Georgia Institute of Technology

GREEN CLEANING MANUAL

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PURPOSE

Consider the following pages of this manual to be your specification for the implementation of green cleaning program.

The impacts of the operation and maintenance of facilities on the health of its occupants and the environment at large can be significant. Buildings constitute microcosms or miniature versions of a campus or city: they take in materials, expel other materials as waste, and use a lot of energy in lighting, heating, and air-conditioning the spaces. In addition, each building has its own climate and atmosphere, often more polluted than the outside air. The flow of materials alone is significant, with tap water, paper products, lighting, carpet, paint, cleaning products, and many others coming in. Some of these, such as cleaning products, carpet, and paint, may have impacts on maintenance workers and building occupants while used. Others are disgorged to streams through sewage where they can harm aquatic life or escape to the atmosphere to exacerbate local air pollution, global warming, or ozone depletion. ((BSCAI), 2004)

The awareness in recent years of the impact that indoor air quality has on learning, health, and productivity has driven the search for a more holistic approach to the care of facilities: that of stewardship, based on the unique needs of an individual building and its occupants to fulfill their mission. Green cleaning has been described as cleaning for human health without harming the environment. Its goal is to protect building occupants, visitors, and cleaning and maintenance personnel, as well as reduce polluting effects.

Stewardship

The success of a green cleaning program hinges not on the products, but on a larger principle – **STEWARDSHIP** – that strives to mobilize human resources including owners, occupants, cleaning/maintenance staff or outside contractors, visitors and vendors to minimize health and environmental risks while maximizing occupant morale and productivity.

TEN STEWARDSHIP PRINCIPLES

For the care and maintenance of a building and its occupants, stewardship principles go beyond basic operations:

1. **Commitment to people.** Buildings don't get dirty or clean by themselves. These activities are dependent on people. A successful green cleaning program should involve both cleaning personnel and building occupants. Get people involved, keep them involved by educating them in the process, including them in communication of issues and resolutions, and celebrate successes!
2. **Clean to protect for health and the environment**. While appearance is very important, it is not what is seen that is the real focus of environmental concern. Even clean-appearing buildings can be extremely unhealthy. Focus on cleaning not only for cleaning's sake, but also to protect health and the environment.
3. **Clean and maintain the building as a whole,** not as separate components. Cleaning and maintenance in one area of a building can have a major impact on other areas. For example, fumes from the stripping and recoating of a floor in one area can contaminate adjacent areas or even the entire building via the HVAC systems. Appropriate procedures must be in place to protect the health and safety of occupants, visitors and cleaning personnel throughout the entire building.

4. **Use safe products, processes and equipment**. Adopt purchasing policies that specify products and equipment with reduced environmental impact.
5. **Plan for accidents.** Specific procedures must be developed to address accidents. Plans and procedures should address weather related emergencies, common spills, water leaks, smoke or air contamination by a noxious chemical reaction and Blood Borne Pathogens.
6. **Minimize human exposure to harmful contaminants** and cleaning residues. Store all cleaning products in appropriate, sealable, clearly labeled containers. Workers should be trained in the use of Personal Protective Equipment (PPE), adequate ventilation should be established during and after the use of odorous chemicals, work schedules and advanced notification should be utilized to minimize exposure to building occupants, visitors, and cleaning personnel.
7. **Minimize pollutants.** The products and procedures that are used for building maintenance due to their ability to quickly and efficiently remove oils, soils, living organisms, etc., can also contribute to a building's problems if used incorrectly.
8. **Ensure building occupant, visitor, and cleaning/maintenance personnel safety at all times.** Establish and practice effective policies and procedures, training, and communication.
9. **Minimize the amount of pollutants entering the building** while maximizing the amount of pollutants extracted. It is significantly more effective in terms of both time and money to keep contaminants out of the building rather than try to remove them once they have entered.
10. **Dispose of cleaning waste in environmentally safe ways** following building policies, manufacturer's instructions, and state and local guidelines.

The first step to implementing a green cleaning program is to adopt a Green Cleaning Policy ensuring all stakeholders (owners, occupants, visitors, maintenance and cleaning staff, as well as vendors) have a clear path to follow now and in the future. The Green Cleaning Policy should: include purchasing of sustainable cleaning products, materials, and cleaning equipment; address cleaning procedures; direct who, or what, they apply to, the time period covered, how success will be measured, and the persons responsible for implementing and enforcing the policies.

The second step to implementation is to observe and evaluate the products and procedures already in use. Products cannot be separated from process as they are interrelated in the indoor air quality of a building. According to the EPA, the quality of a building's indoor environment is a combined product of the site, climate, building systems, contaminant sources, and activities of occupants. Indoor sources of pollution come from building materials and furnishings, equipment and supplies, dirt and moisture, cleaning operations, maintenance and repairs, visitors, and occupants and their activities. Outdoor sources of pollution are carried in by occupants and visitors, natural forces of weather, insects and rodents, and building ventilation methods whether manual or mechanical. The pollutants brought from the outside to the inside of a building are dirt, moisture, pesticides, fertilizers, emissions, odors, smog, carbon monoxide and carbon dioxide fumes, allergens.

The third step to implementing a green cleaning program is to gain consensus from all stakeholders, those affected by the Green Cleaning Policy, procedures, and purchasing. At times, understanding what something is can be more easily defined by describing what it is not. Thus, the concept most essential to understanding green housekeeping practices is it is not simply replacing one product with another. It is a different thought process.

A green cleaning program is *not* simply the replacement of toxic products with a less toxic or non-toxic alternatives.

A green cleaning program *is*:

- **A process that allows the reduction in the overall impacts on human health and the environment**
- **An approach that takes a holistic view of a facility, it's mission and the activities that take place within the facility**

After many years of research, the U.S. Environmental Protection Agency (EPA) cites indoor environmental pollution as a serious health threat. Approximately 90% of our time is spent indoors where it has been documented that the indoor air in many instances is many times worse that outdoors. According to the EPA, the quality of a building's indoor environment is a combined product of the site, climate, building systems, contaminant sources, and activities of the occupants.[1] Indoor sources of pollutants are building materials and furnishings, equipment and supplies, dirt and moisture, cleaning solutions and operations, maintenance and operations, occupants and their activities.

The fourth step to successful implementation is education and training – Toxic compounds found in many cleaning products and pesticides can jeopardize the health of janitorial and maintenance staff as well as building occupants and visitors. The importance of reducing cleaning and maintenance staff exposure to the hazardous compounds in the tools of their trade has been gaining attention from environmental and regulatory agencies. An effective training program is an investment in the most expensive resource of an organization – its staff. Training may be defined as the development of appropriate habits of thought, action, skills, knowledge and attitude[2] and must be provided on a continuous basis. Education and training must also include the occupants or users of a building to maintain the facility standards by preventing the introduction of toxic compounds by items they might bring into the building on their own; aerosol sprays, deodorizers, sanitizers, etc.

The final step is to evaluate the new process and make needed adjustments to ensure continued success – a green housekeeping program is truly best defined as one that has the least impact on human health and the natural environment while ensuring that the necessary level of un-wanted and potentially harmful contaminants are removed as the result of effective cleaning.[3] Audits of a facility are required to assess the quality of cleanliness and to determine what APPA Appearance Level has been achieved. Audits should be done on a regular basis to evaluate the products and methods being used and whether changes need to made to the products, the processes, or the training.

The purpose of this Green Cleaning Manual is to provide the framework for developing and maintaining a program to clean and maintain a building that reduces the overall negative impacts on human health and the environment that can be associated with traditional cleaning solutions and methods.

[1] U. S. Environmental Protection Agency
[2] APPA Custodial Staffing Guidelines for Educational Facilities
[3] IFMA Sustainability Guide – Global Green Cleaning

Georgia Institute of Technology

Facilities Operations and Maintenance
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GREEN CLEANING POLICY

I, *Tommy Little*, declare that *Georgia Institute of Technology* has adopted a Green Cleaning Policy in an effort to avoid exposure of building occupants and maintenance personnel to potentially hazardous chemical, biological and particle contaminants, which adversely impact air quality, health, building finishes and systems, and the environment. The green cleaning standards are outlined below and discussed in greater detail in the Green Cleaning Manual, and will be incorporated in Facilities Management Operations.

Section 1: Scope

This policy addresses environmental best practices for cleaning the interior of Georgia Tech's facilities. Specifically, it addresses purchasing sustainable cleaning, hard-floor and carpet products, and entryway systems; procuring sustainable cleaning materials and equipment; implementing standard operating procedures for effective cleaning; promoting and improving hand hygiene; following guidelines for handling cleaning chemicals; training employees; collecting and addressing occupant feedback; and using chemical concentrates and dilution systems.

Section 2: Performance Metric

- Green cleaning equipment purchases should meet the guidelines indicated in the Green Cleaning Manual. This manual adheres to requirements of LEED EBOM IEQ credits 3.1, 3.3, and 3.4. Standards include Green Seal GS-37, 9, 1, and 41, Environmental Choice CCD-110,146, 148, 112, 113, 115, 147, 82, 86, and 104, California Code of Regulations maximum allowable VOC levels, and the U.S. EPA Comprehensive Procurement Guidelines. Documentation of all purchases related to the applicable categories must be maintained on an annual basis.
- Documentation of the type of chemical, volume, and concentration used in all cleaning processes must be maintained
- Documentation of the frequency of each cleaning process must be maintained.
- Records and documentation for all guidelines, training, occupant feedback, and other strategies must be maintained
- A log of all powered cleaning equipment must be maintained. This log must document the date of equipment purchase, all repair and maintenance activities, and include vendor specification sheets for each type of equipment in use.

Section 3: Goals

The overall goal of this Green Cleaning Policy is to reduce the exposure of building occupants, visitors and maintenance personnel to potentially hazardous chemical, biological and particle contaminants, which adversely impact air quality, health, productivity, building finishes, building systems and the environment. Goals that the project strives to meet by adhering to the policy are as follows:

- Implement the plans and procedures addressed in the Green Cleaning Manual. The manual includes information regarding:
    - evaluating and purchasing sustainable cleaning products, materials, and equipment,
    - green cleaning procedures,
    - safe handling procedures,

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- staffing and training, and
- quality assurance.

- At least 30% of the total products purchased, by cost, must meet the criteria outlined in Section 2 of this policy as well as in the Green Cleaning Manual.

Section 4: Procedures and Strategies

The Green Cleaning Policy will be adhered to by the procedures and strategies outlined in the Green Cleaning Manual.

Section 5: Responsible Parties

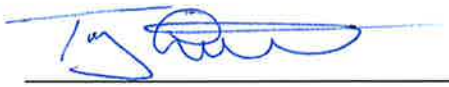
The *Associate Director, Building Services* at *Georgia Institute of Technology*, with support from the *Building Services Leadership Team*, is responsible for managing the implementation and success of the Green Cleaning Policy.

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 shall review all proposed cleaning activities before implementation.

Green cleaning strategies for the property shall include actions performed by both in house staff, and any contractors supplying services or vendors supplying products at *Georgia Institute of Technology*.

Section 6: Time Period

This policy shall take effect on *January 1, 2014* and shall continue indefinitely or until amended and/or replaced by a subsequent Green Cleaning Policy.



(Department Head/Owner Signature)

Tommy Little

(Department Head/Owner Printed Name)

Associate Director, Building Services

(Title)

December 13, 2013

(Date)

EVALUTATING & PURCHASING SUSTAINABLE CLEANING PRODUCTS, MATERIALS, & EQUIPMENT

Cleaning Products

Cleaning and maintenance workers suffer high rates of illness and injury from the use of dangerous equipment, cleaning solutions with toxic ingredients, and lack of effective training for the tasks. One important way to help protect both humans and the environment is through careful selection of less hazardous products and processes by choosing the safest possible products, equipment and procedures available to accomplish the task and provide appropriate training in their use.

The purchase of environmental preferable, sustainable, or "green" products means buying products that have a reduced environmental impact while maintaining the same quality and performance. Less hazardous but equally effective products are currently available for almost all cleaning applications including disinfectants, general-purpose cleaners, degreasers, tile cleaners, toilet cleaners, and glass and window cleaners.

The first step to greening your cleaning products is to conduct an audit of the products currently being used. The audit will document the chemicals in each product, what it is used for, how it is dispensed, how it is disposed of. (See Evaluating Cleaning Products and Audit Sheet). Once an audit has been completed, a decision can be made about which products for which tasks can be eliminated, combined, or replaced with products meeting the requirements outlined in the requirements section below.

Environmentally Preferable Purchasing guidelines will be applied to all purchases of:

- Cleaning Products – general purpose, bathroom, glass, carpet, de-greasers, hard surfaces, odor control, drain or grease trap, hard floor care.
- Janitorial Paper Products and Trash Bags
- Hand Soaps
- Janitorial Equipment – Vacuum Cleaners, carpet extraction machines, powered floor equipment (electric, propane or battery)

The following guidelines should be considered when selecting cleaning products:

- Reduced Toxicity – look for products that are nontoxic or less toxic that do not contain ingredients listed on the audit sheet.
- Appropriateness – match the product to the application. In most cases all cleaning requirements can be met with less than six products.
- Minimal Packaging – less packaging reduces solid waste: concentrates with dilution control systems can manage cost, application, and training issues.
- Third Party Certified Product – GreenSeal, Greenguard, and Environmental Choice.
- No Hazardous Disposal

The best approach to replacing identified toxic products is to start with the most toxic first. Phase in new environmentally preferable products as the existing supply runs out and train all staff members as each new product is introduced. By phasing in new products and procedures you will manage the costs of replacement.

Purchasing Requirements

A minimum of 30% of all annual purchases of cleaning products (by cost) **must** meet 1 or more of the following standards for the appropriate category:

- Green Seal GS-37: General purpose, bathroom, glass and carpet cleaners used for industrial and institutional purposes
- Environmental Choice CCD-110: Cleaning and Degreasing compounds
- Environmental Choice CCD-146: Hard Surface Cleaners
- Environmental Choice CCD-148: Carpet and Upholstery Care

Disinfectants, metal polish, floor finishes, strippers or other products not addressed by the above standards **must** meet 1 or more of the following standards for the appropriate category:

- Green Seal GS-40: Industrial and Institutional Floor Care Products
- Environmental Choice CCD-112: digestion additives for cleaning and odor control
- Environmental Choice CCD-113: Drain or grease trap additives
- Environmental Choice CCD-115: Odor control additives
- Environmental Choice CCD-147: Hard Floor Care
- California Code of Regulations maximum allowable VOC levels for the specific product category

To identify products which meet these requirements, the following websites may be helpful:
www.environmentalchoice.com
www.greenguard.org
www.greenseal.org

Purchases of both compliant and noncompliant products will be tracked for program evaluation.

Evaluating Cleaning Products

Each category of cleaning products has a limited number of health and environmental attributes that might differentiate one product from another. The following list of product issues is for 17 individual products that cover the majority of janitorial requirements. This list is not intended to be complete, but is only intended to serve to identify some of the typical issues for each product type.

Always consult the Furniture and Finishes Care and Cleaning Instructions Manual which references each area of the building to the manufacturer's cleaning and warranty guidelines before applying any cleaning product. The nature of green housekeeping products is to contain less or no harsh contents but reference to the manual is essential for preservation of the exemplary finishes in this building.

Eliminate the use of aerosol cans!

1. ALL PURPOSE CLEANERS

All Purpose Cleaners consist of a broad array of possible formulations. The following are some of the specific issues to compare for this product category:

pH: Prefer those with a neutral pH (closer to 7) as compared to those with extreme pH (closer to 1 or 14)

Biodegradability: Prefer those that are readily biodegradable as compared to those that are slower to degrade. Unfortunately, many older formulations use excellent performing ingredients that have been found to have serious environmental and health concerns (see ingredients to avoid).

Dyes & Fragrances: Prefer those with no or low levels of dyes and fragrances compared to those products that are heavily dyed or fragranced. If dyes are necessary use those that are approved for foods and cosmetics (F&C).

VOCs: Prefer those that have no or low VOC as compared to alternatives with higher levels. Consider detergent based products compared to those containing solvents.

More Preferable Ingredients: surfactants containing terms such as lauryl, amides, and glycosides.

Less Preferable Ingredients: Nonyl Phenol Ethoxylates, NTA, EDTA, glycol ethers, sodium hydroxide, potassium hydroxide, sodium metasilicate, phosphates.

2. BATHROOM CLEANERS

Bathroom Cleaners are often acids because of the need to remove mineral deposits from sinks, bowls and urinals. Frequently they are heavily dyed and strongly fragranced. The following are some of the specific issues to compare for this product category:

pH: Prefer those with a more neutral pH as compared to those with extreme pH (closer to 1). Bathroom cleaners may fall more in the range of pH 4 as compared to traditional products that may have a pH below 1.

Dyes & Fragrances: Prefer those with no or low levels of dyes and fragrances compared to those products that are heavily dyed or fragranced. If dyes are necessary use those that are approved for foods and cosmetics (F&C).

Biodegradability: Prefer those that are readily biodegradable as compared to those that are slower to degrade. Unfortunately, many older formulations use excellent performing ingredients that have been found to have serious environmental and health concerns (see ingredients to avoid).

More Preferable Ingredients: surfactants containing terms such as lauryl, amides, glycosides, citric or acetic acid.

Less Preferable Ingredients: nonyl phenol Ethoxylates, NTA, EDTA, hydrochloric acid, phosphoric acid.

3. BATHROOM DISINFECTANTS

Bathroom Disinfectants are similar to general disinfectants, but typically may have an acidic pH (closer to 1) to remove hard water deposits in sinks, bowls and urinals. The selection issues include both those under general disinfectants and bathroom cleaners. Care in selection and use is important. The following are some of the specific issues to compare for this product category:

See Bathroom Cleaners for similar attributes.

Antimicrobial Ingredients: Prefer antimicrobial ingredients that have a lower potential for persistence in the environment and to accumulate in living tissue compared to those with a greater potential.

More Preferable Active Ingredients: hydrogen peroxide.

Less Preferable Active Ingredients: sodium hypochlorite (chlorine bleach), quaternary ammonium compounds, alcohols, phenolic compounds.

4. CARPET CLEANER

See All Purpose Cleaners. In addition, select carpet cleaners that when dry are not sticky or tacky. This minimizes re-soiling and extends the time between cleaning.

5. METAL CLEANER/POLISH

Metal Cleaner/Polish frequently use petroleum distillates, which are poisonous and derived from a non-renewable resource. The following are some of the specific issues to compare for this product category:

VOC: Prefer those that have no or low VOC as compared to alternatives with higher levels.

Bio-Based / Renewable Resources: Prefer products that use oils derived from renewable resources as compared to oils from non-renewable resources.

More Preferable Ingredients: (examples needed)

Less Preferable Ingredients: petroleum distillates, ammonia.

6. FLOOR FINISHES

Floor Finishes must be durable and appropriate for the prescribed maintenance method, but they typically contain heavy metals. Importantly, floor finishes must be compatible with the stripping solution. The following are some of the specific issues to compare for this product category:

Durability: Prefer finishes that are more durable (require less maintenance such as buffing, restoring and recoating) than less durable finishes that require more frequent maintenance.

Heavy Metals: Prefer non-metal cross-linked polymers as compared to those containing heavy metals. Another significant benefit of non-metal polymer formulas is that frequently they can be removed with less hazardous floor strippers.

More Preferable Ingredients: metal-free polymers.

Less Preferable Ingredients: metal-cross linked polymers.

7. FLOOR STRIPPERS

Floor Strippers typically have extreme pH, solvents and ammoniated compounds necessary to remove metal cross-linked floor finishes. Floor strippers must be compatible with the floor finish. The following are some of the specific issues to compare for this product category:

pH: Prefer those with a pH closer to neutral (in the range of 10 to 12) as compared to those with extreme pH (closer to 14).

VOC: Prefer those that have no or low VOC as compared to alternatives with higher levels.

Bio-Based / Renewable Resources: Prefer those that containing naturally derived solvents as compared to those containing non-renewable derived solvents.

More Preferable Ingredients: d-Limonene (citrus solvent) and methyl esters.

Less Preferable Ingredients: ethylene glycol mono butyl ether (butyl cellusolve), 2-butoxyethanol, ammonia, and sodium hydroxide.

8. FURNITURE POLISH

Furniture Polishes frequently use petroleum distillates, which are poisonous and derived from a nonrenewable resource. The following are some of the specific issues to compare for this product category:

VOC: Prefer those that have no or low VOC as compared to alternatives with higher levels.

Bio-Based / Renewable Resources: Prefer products that use oils derived from renewable resources as compared to oils from non-renewable resources.

More Preferable Ingredients: citrus (lemon and orange) oils.

Less Preferable Ingredients: petroleum distillates.

9. GENERAL DEGREASER

General Degreasers are typically heavy-duty cleaners that include solvents for removing oil-based soils. Traditional solvents are typically derived from a non-renewable sources (e.g., petroleum), can be flammable, have a high degree of VOCs which can cause respiratory irritation and contribute to environmental pollution and some have severe health impacts. The following are some of the specific issues to compare for this product category:

See All-Purpose Cleaners

VOC: Prefer those that have no or low VOC as compared to alternatives with higher levels.

Bio-Based / Renewable: Prefer products that use oils derived from renewable resources as compared to oils from non-renewable resources.

Flashpoint: Prefer products that have a high flashpoint compared to those with a low flashpoint.

More Preferable Ingredients: d-Limonene (derived from citrus fruits) and methyl esters from soy and corn.

Less Preferable Ingredients: glycol ethers in general, ethylene glycol mono butyl ether (butyl cellusolve), and sodium hydroxide.

10. GENERAL DISINFECTANTS

General Disinfectants are similar to cleaners (see all-purpose cleaners) with additional ingredients added to kill bacteria and other unwanted organisms, and bathroom disinfectants. Because disinfectants kill organisms they are toxic by definition. Some are persistent in the environment and accumulate in living tissue. Care in selection and use is important. The following are some of the specific issues to compare for this product category:

See Bathroom Disinfectants for similar attributes.

Antimicrobial Ingredients: Prefer antimicrobial ingredients that have a lower potential for persistence in the environment and to accumulate in living tissue compared to those with a greater potential.

More Preferable Active Ingredients: hydrogen peroxide.

Less Preferable Active Ingredients: sodium hypochlorite (chlorine bleach), quaternary ammonium compounds and phenolic compounds.

11. GLASS CLEANERS

Glass Cleaners are cleaners that have ingredients added to reduce streaking and to evaporate quickly. Traditional glass cleaners can contain alcohol and other solvents (typically glycol ethers) or ammonia. The following are some of the specific issues to compare for this product category:

VOCs: Prefer those that have no or low VOC as compared to alternatives with higher levels. Consider detergent based products compared to those containing solvents.

Flashpoint: Prefer products that have a high flashpoint compared to those with a low flashpoint.

pH: Prefer those with a neutral pH (closer to 7) as compared to those with extreme pH

(Closer to 1 or 14)

Biodegradability: Prefer those that are readily biodegradable as compared to those that are slower to degrade. Unfortunately, many older formulations use excellent performing ingredients that have been found to have serious environmental and health concerns (see ingredients to avoid).

Dyes & Fragrances: Prefer those with no or low levels of dyes and fragrances compared to those products that are heavily dyed or fragranced. If dyes are necessary use those that are approved for foods and cosmetics (F&C).

More Preferable Ingredients: surfactants containing terms such as lauryl, amides, and glycosides.

Less Preferable Ingredients: ammonia, alcohols, propylene glycol, ethylene glycol and other glycol ethers.

12. GRAFFITI REMOVER

Graffiti Remover used to be formulated with chlorinated solvents (e.g., methylene chloride) before they were banned due to their environmental impact. Many graffiti removers are packaged in aerosol contains which often contain hydrocarbon propellants (e.g., propane, butane), which are highly flammable and can contribute to indoor air quality problems.

VOCs: Prefer those that have no or low VOC as compared to alternatives with higher levels.

Consider detergent based products compared to those containing solvents.

Flashpoint: Prefer products that have a high flashpoint compared to those with a low flashpoint.

pH: Prefer those with a neutral pH (closer to 7) as compared to those with extreme pH

(Closer to 1 or 14)

More Preferable Ingredients: n-Methyl-2-Pyrolidone, d-Limonene.

Less Preferable Ingredients: methylene chloride, petroleum distillates, propane, butane, isobutene, and sodium hydroxide.

13. GUM REMOVER

Gum Removers used to be formulated with chlorinated solvents (e.g., Freon) before they were banned due to their environmental impact. Dry ice and carbon dioxide are preferable replacements. Degreasers can be used in some situations (see section on General Degreasers).

VOCs: Prefer those that have no or low VOC as compared to alternatives with higher levels. Consider detergent based products compared to those containing solvents.

Flashpoint: Prefer products that have a high flashpoint compared to those with a low flashpoint.

pH: Prefer those with a neutral pH (closer to 7) as compared to those with extreme pH

(Closer to 1 or 14)

More Preferable Ingredients: dry ice, carbon dioxide.

Less Preferable Ingredients: Freon, dichloro-difluoromethane, trichloro-fluoromethane.

14. LIME & SCALE REMOVER

Lime & Scale Removers are acids because of the need to remove mineral deposits from sinks, bowls and urinals.

pH: Prefer those with a more neutral pH as compared to those with extreme pH (closer to 1). Environmentally preferable lime and scale removers may fall more in the range of pH 4 as compared to traditional products that may have a pH below 1.

More Preferable Ingredients: citric or acetic acid.

Less Preferable Ingredients: hydrochloric or phosphoric acid.

15. SOLVENT SPOT REMOVERS

Solvent Spot Removers are necessary for spot removal particularly on carpets. Use detergent based spotters if possible (must be followed with extraction or other method to remove/absorb the detergent).

See All-Purpose Cleaners

VOCs: Prefer products that have no or low VOC compared to those with higher VOC content.

Flashpoint: Prefer products that have a high flashpoint compared to those with a low flashpoint.

More Preferable Ingredients: d-Limonene (derived from citrus fruits) and methyl esters from soy and corn.

Less Preferable Ingredients: mineral spirits, 2-butoxyethanol

16. URINAL DEODORIZERS

Urinal Deodorizers are traditionally blocks placed in urinals to reduce odors. Preferably these deodorizers should be eliminated altogether through more frequent cleaning and other methods of deodorizing. However, if urinal deodorizers are still required preference should be given to those with the safest ingredients.

Biodegradability: Prefer detergents that are readily biodegradable as compared to those that are slower to degrade. Unfortunately, many older formulations use excellent performing ingredients that have been found to have serious environmental and health concerns (see ingredients to avoid).

More Preferable Ingredients: surfactants containing terms such as lauryl, amides, glycosides

Less Preferable Ingredients: nonyl phenol ethoxylates, Para dichlorobenzene

17. WOOD & STONE FLOOR COATINGS

Wood & stone floor coatings have traditionally been solvent-based products. While extremely durable to protect flooring materials that are very expensive to replace, these coatings can be quite hazardous during the drying and curing period. The two primary issues to consider during product selection is the use of zero or low-VOC containing materials which will reduce indoor air quality concerns and the products durability which is important to protect the flooring and due to the product and applications cost. One final note, many janitorial firms lack specific expertise in application for these types of finishes. Thus, supplier support (e.g., training) is very important.

Durability: Prefer durable finishes that require less maintenance (e.g., recoating) then less durable finishes that require more frequent recoating.

Flashpoint: Prefer products that have a high flashpoint compared to those with a low flashpoint.

More Preferable Ingredients: water- or epoxy-based finishes.

Less Preferable Ingredients: xylene, Stoddard sol

INDUSTRIAL/INSTITUTIONAL CLEANING PRODUCT AUDIT SHEET

Conducting Audit: _____

Date: _____

This worksheet is to audit the ingredients of cleaning products currently being used. This audit will show compliance or non-compliance with product content regulations of Green Seal GS-37 Guidelines. In the left hand column of this worksheet list all products currently being used. The ingredients listed across the top of the worksheet are those less favorable for good indoor air quality (IAQ).

Read the product labels for each and place a check in the column of any ingredients listed on the label.

Product Name	Alcohol	Amonium Hydroxide	Ammonia	Butane	2-Butoxyethanol	Dichloro-difluoromethane	EDTA	Freon	Glycol Ethers	Hydrochloric Acid	Isobutene	Mineral Spirits	Methylene Chloride	Nonyl Phenol Ethoxylates	Nitrilotriacetic	Para-dichlorobenzene	Propane	Propylene Glycol	Petroleum Distillates	Phenolic Compounds	Phosphoric Acid	Phosphates	Potassium Hydroxide	Quaternary Ammonium	Sodium Hydroxide	Sodium Hypochlorite	Sodium Metasilicate	Stoddard Solvent	Trichloro-Fluoromethane	Xylene

Disposable Paper and Plastic Bags

The issues associated with selecting paper products compared to cleaning products are significantly simpler. The issues of concern for paper are primarily focused at the manufacturing stage of the product. Whereas cleaners may have more than a dozen individual ingredients which can vary significantly from category to category and even amongst different products within the same category, paper is relatively similar. Paper has less emphasis on health issues during the products usage stage, or environmental impacts as a result of disposal. The three basic issues of concern for paper include:

- Total recovered material (recycled content)
- Post-consumer recycled content
- Bleaching process

Purchasing Requirements

A minimum of 30% of all annual purchases of disposable janitorial paper products and trash bags (by cost) **must** meet 1 or more of the following standards for the applicable product category:

- EPA Comprehensive Procurement Guidelines for Janitorial Paper and Plastic Trash Can Liners
- Green Seal GS-01 for tissue paper
- Green Seal GS-09 for paper towels and napkins
- 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.

Additional Recommendations

Three further recommendations for paper products include the following:

- No use of de-inking solvents containing chlorine or any other chemicals listed in the Toxics Release Inventory in the manufacture of paper products.
- No use of chlorine or chlorine derivatives in bleaching processes for paper products.
- Paper dispensers, for example those used in restrooms to dispense paper hand towels should be "touch free", which reduces the potential for cross-contamination of bacteria and other potentially harmful pathogens.

Janitorial Equipment

Good equipment that is appropriate for the intended job and well maintained is essential for effective cleaning. Equipment that is poorly designed or maintained can do more harm than good, merely circulating dirt rather than extracting it. It is important to select equipment that will not only extract pollutants but also trap the captured residues. It must have both sufficient strength and adequate filtration for the job. Inspect equipment regularly to ensure it is free of damage or defects and operating as intended. In selection of all equipment it is preferable to select those that are durable, energy-efficient, and quiet and Energy Star rated when available. All new equipment purchases will comply with the following requirements:

Vacuum Cleaner Features

- A Carpet and Rug Institute (CRI) "Green Label" Certificate
- High Efficiency Particulate Air (HEPA) filtration capable of trapping 96 % of all airborne particles as small as .3 micron in size
- Operates with a sound level less than 70 dBA
- Ergonomically designed to minimize vibration, noise and user fatigue
- It is preferable to use vacuums with a beater bar to increase the amount of soil removal
- Upright models are better than canister models for cleaning carpets. They also cost the least and are easier to store.
- Manual height adjustment
- On/off brush switch for cleaning hard floors
- Warranty for at least three years
- Canister vacuums are better for cleaning drapes, upholstery, under furniture and other spots that require a hose and tools

Floor Machine Features

- Machines are fitted with operator safety guards.
- Automatic scrubbing machines are equipped with variable-speed feed pumps and on-board 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.
- Propane powered 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 90 dBA.
- Equipment is ergonomically designed to minimize vibration, noise and user fatigue.
- Equipment is designed with safeguards, such as rollers or rubber bumpers, to reduce damage to building surfaces.
- 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 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 of less than 70dBA

Preferable Practice: Inventory current janitorial equipment used including vendor specifications for each type of equipment. Develop and maintain a log of purchases, inspection records, and maintenance for each piece of equipment

Definitions

Automatic floor scrubbers are essentially a combination of items: a mop and bucket, floor buffer/polisher and a wet/dry vac. The machine dispenses water (mixed with a cleaning chemical), scrubs the floor with a pad then squeegees the water back up in to a recovery tank. Unlike a mop and bucket, the floor is dry after the machine squeegees the water up, and the machine can cover a much larger surface in less time.

Scrubbers are also capable of being used in floor restoration projects, like stripping of existing floor finishes so the facility can lay fresh wax.

Buffers/polishers, which usually feature 175 rpm, are slow-spinning floor machines. There are many names in the industry for this type of product, says Paul Albrecht, national rental manager with Clarke US. "Buffers, polishers, swing machines, side-by-sides to name a few," he explains.

Buffers/polishers are used primarily to clean a floor with various scrubbing pads designed for different applications from daily scrubbing to deep scrubbing to stripping of existing floor finishes. An adapter can be added to these units that can grind concrete, hone marble or sand hardwood floors. "They are very versatile units with a low cost of ownership," says Albrecht.

Burnishers are designed for one purpose — to "polish" a floor. Spinning much faster than a buffer/polisher, burnishers use a soft, non-aggressive nylon floor pad to restore a high-shine finish — the "wet" look you're probably familiar with — to floors.

Most burnishers have an rpm between 1,500 and 2,000 with some as high as 2,500 rpm. As burnishers move over the floor, the friction from the pad and the floor surfaces cause high heat which briefly liquefies the floor finish, which then re-solidifies instantaneously creating not only a shining floor but a harder floor finish. "Floors finishes that are burnished regularly not only have a better appearance but will last longer before needing to be stripped and refinished," says Albrecht.

Sweepers have come a long way in the past 10 years. Technology has improved dust collection systems, so now they're much more effective." Sweepers can be used on both hard floors and carpets.

GREEN CLEANING PROCEDURES

Green cleaning procedures are a process that reduces the overall impacts of cleaning on health and the environment. As discussed earlier, while product selection is important, product cannot be separated from process, making green cleaning procedures equally important. Selecting environmentally friendly products for operation and maintenance of a building is a conscious effort to reduce impacts on health and the environment and provide environmental, economic and social benefits.

ALWAYS CONSULT THE FURNITURE AND FINISHES CARE AND CLEANING INSTRUCTIONS MANUAL WHICH REFERENCES MANUFACTURER'S CLEANING AND WARRANTY GUIDELINES BEFORE APPLYING ANY CLEANING PRODUCT. The nature of green cleaning products is to contain less or no harsh contents, but reference to your facility manual of finishes is essential for preservation of the exemplary finishes in a building.

Entryways

Entryways are the first line of defense against contaminants. Thus, special effort should be focused in these areas. Begin by cleaning outside walkways leading into the facility. This is especially true during inclement weather. (See section on Building Exterior Cleaning and Maintenance).

- Large outside entryway areas can be swept daily (weather permitting) with a mechanized sweeper.
- Outdoor areas should be periodically cleaned with a high-pressure power washer. During snow and ice, procedures need to be put in place to first protect occupants and visitors from slips and falls. The selection of the appropriate ice melting compounds that will not be tracked into the building is important.
- Use walk-off mats both outside the entryways, as well as just inside the doors. Mats should be long enough so that as an adult walks across the mat each foot hits the mat at least twice (typically a minimum of ten to twelve feet). Walk-off mats should not just be used during inclement weather, but all year round. Vacuum walk-off mats at least daily, more frequently in high traffic entryways, using a vacuum with a beater bar and vacuum in both directions. Walk-off mats must be cleaned frequently and don't forget to periodically clean underneath them as well.

Dusting

Traditional dusting and dust mopping techniques frequently move dust and other contaminants from one area to another, such as from a bookshelf to the floor. It is important to recognize that moving the dust around is more than just an efficiency issue. Dusting and dust mopping activities that do not capture soils frequently stir them into the air and re-introduce into the HVAC system where people can then inhale the particles, which for some can become a serious health hazard.

In addition to the traditional procedures for dusting and dust mopping it is preferable to minimize chemical dust treatments. It is preferable to use a vacuum cleaner fitted with a wide

area hard floor attachment as compared to a dust mop treated with a high VOC content solvent. If dust mopping is used prefer the widest swivel action mop possible (based on the size of area and the physical abilities of the custodial worker) and a water-based dust mop treatment. Feather dusters should not be used. It is preferable to dust with lint-free micro-fiber cloths that are neatly folded like a handkerchief to expose multiple sides for absorbing dust (for recommendations on vacuums and dusting compounds see the section of product selection).

- Dust from high to low i.e., dust window blinds, light fixtures, and furniture before dust mopping floors.
- Use micro-fiber cloths, dust mop covers and dust mitts.
- Do not use feather dusters. Use lint-free micro-fiber dusting cloths or a vacuum instead.

FLOOR CARE: General Maintenance

The procedures for floor care in a green cleaning program are similar in most instances with those of a traditional program. Beyond the traditional issues, floor care in a green cleaning program addresses the selection of environmentally preferable products and equipment, along with some minor modifications of the procedures themselves.

In a green cleaning program the primary effort should be a pollution prevention strategy, or one that minimizes the need to strip and recoat a floor, or extract a carpet. Thus, a specific focus should be on preventative measures, such as keep outside entryways clean to prevent soils from being tracked into the facility. This may include sweeping, use of a power sprayer, etc. Use entry mats to capture soils and moisture from shoes. It is preferable that the mats be large enough for each shoe to hit the mat two times (approximately ten to twelve feet).

- Frequent vacuuming of entryway mats and grating systems.
- Frequent dust mopping of resilient tile floors, especially close to entryways and other sources of particulates (i.e. near copier rooms).
- Periodically clean under floor mats to reduce the potential for moisture to lead to bacterial and fungal growth. Wet floor mats should be replaced with dry mats as soon as possible.

In general, an intensive cleaning focus is on the entryways to capture soils at the entries rather than to remove it after it has spread throughout the entire facility. When floors and carpets need to be spray buffed or spot cleaned, solutions should be applied from a sprayer in a stream, as compared to a fine mist. This will minimize the amount of material that is atomized and potentially inhaled, as well as minimize over-spray. When floors and carpets need to be stripped, recoated or extracted, it is important that the work be scheduled in off peak hours and that occupants are notified. It is preferable to use the least toxic products possible. Use the least amount of water and ventilate the area with fans if necessary for rapid drying to minimize both the possibility of mold growth and slip-fall incidents.

It is preferable to conduct major cleaning activities on a weekend or some other extended time period when occupants will not be in the facility. This allows maximum time for the building to be ventilated (flushed with fresh air) prior to the return of the occupants.

- Select appropriate metal-free floor finishes that are extremely durable to minimize the need for stripping and recoating.
- Products must meet GreenSeal GS-40 for floor care products or Environmental Choice CCD-147 for hard floor care.
- Build a solid base, which can be between 6 and 12 coats for a 20% solids floor finish.
- Develop a system to maintain floors on a daily basis, using walk-off mats, dust mopping or vacuuming.
- Develop an interim restoration program to maintain adequate levels of floor finish and appearances on an as needed basis rather than a scheduled basis.

Dust Mopping

- Use microfiber dust mop covers. Microfiber attracts dust electro-statically and does not require treatment with a chemical.
- Dust mop the area, use a continuous motion, without lifting the mop from the floor.
- Begin with the mop next to the wall. Walk to the other end of the work area. At the opposite end, pivot the dust mop so that the leading edge remains the same. Return to the opposite end. Overlap the previously mopped path by 2 to 4 inches, to ensure complete coverage.
- One pass with a properly treated dust mop removes dirt, dust and abrasive particles, without leaving the floor dull or slippery. Sweep accumulated soil to a collection area, lightly shake loose soil from the dust mop, and continue. Remove gum, tape or other sticky residue with a scraper, using care not to mar or scratch the floor finish. Continue the dust mopping process until the entire area has been dust mopped. When completely finished, pick up the collected debris using a counter brush and dustpan.
- Replace microfiber dust covers as they become soiled and place the dirty cover in a laundry bag. Always change the microfiber mop cover when changing from one type of room to another to prevent cross contamination.
- Using a color coded system for different areas of cleaning is another way to prevent cross contamination from bathrooms to classrooms to food service to hallways, etc.
- Store the mop in a hanging position. DO NOT store the dust mop on the floor.
- Microfiber dust cloths do not need to be treated with chemicals.
- Wash and dry soiled microfiber mop heads and cloths separately from other fabric items
- Use a separate dust mop for entry ways and interior spaces to reduce the possibility of abrasive particles that scratch surfaces.

Floor Stripping

- Schedule the task for off hours. Notify building occupants of the upcoming process.
- Wear Person Protective Equipment (PPE).
- Prepare the area. Place "Floor Hazard" signs at entrances to the area being stripped. Move furniture. Work around heavy furniture or equipment that cannot be moved. Sweep the floor with a treated dust mop. Remove gum, tape and other foreign materials with a scraper using care not to mar or scratch the surface finish.
- Prepare equipment. Assemble two mop heads and handles. Label one "STRIP MOP". Label the other “RINSE MOP". Assemble two mop buckets and wringers. Label one "STRIP BUCKET". Label the other "RINSE BUCKET". Place black or high productivity stripping pad

on the rotary floor machine. Fill the Strip Bucket with a solution of floor stripper (see section on product selection) following manufacturer's recommendations for dilution rates and water temperature. Fill the Rinse Bucket with clean, cold water. Add a small amount of a neutral pH cleaner (see section on product selection) following manufacturer's recommendations for dilution rates. Equip a wet vacuum with a floor squeegee tool. Place the equipment in the area where the work will begin.

- Apply stripping solution to the floor, using the STRIP MOP and STRIP BUCKET. Dip mop in stripping solution. Lift mop and allow excess stripper to drain back into the bucket. Fan out the mop head on the floor and apply stripping solution along the edges. Continue applying solution using an arc motion from right to left, covering the area between the edges. Apply sufficient solution to thoroughly wet the floor, but DO NOT flood it. (Adequate solution coverage will allow a match or toothpick to float on the surface.) Do not allow solution to dry on the floor. Re-apply as necessary to keep the floor wet. Immediately wipe off splashes from walls, baseboards, glass partitions, etc. with a damp cloth. Allow solution to remain on the floor 5 to 10 minutes. Re-apply as necessary to keep the floor wet.
- Scrub the floor with the rotary floor machine and stripping pad. Scrub in a circular motion, from side to side. Overlap the strokes made by the machine. Keep the floor wet. Re-apply solution as necessary.
- Remove the stripping solution from the floor with the wet vacuum and floor squeegee tool. Examine the floor for complete finish removal. Re-strip any areas with residual gloss.
- Rinse the floor. Apply rinse solution using the RINSE MOP and RINSE BUCKET. Apply sufficient water to thoroughly wet the floor, but DO NOT flood it. Remove the rinse solution from the floor using the wet vacuum and floor squeegee tool.
- Damp mop the floor with clean water. Empty the Rinse Bucket and refill with clean water. Rinse the RINSE MOP with clean water. Damp mop the floor with clean water. Remove Floor hazard signs only when floor is completely dry.

Buffing and Burnishing

Periodic buffing and burnishing, which is necessary to maintain many types of floor finishes, create high levels of dust – a combination of dirt, powdered floor finish, and abrasive materials from the burnishing pad. If this dust becomes airborne it will cover furniture, and other surfaces, imbed in carpet and upholstery, and can be hazardous to workers and building occupants. For this reason burnishing and buffing machinery must be selected with appropriate guards, filter and vacuum attachments to contain the dust (See Janitorial Equipment section).

- Schedule the task for off hours. Notify building occupants of the upcoming process.
- Wear Person Protective Equipment (PPE).

Carpet Care

Extraction Cleaning

Carpets can act as a "sink" that allows particles and other unwanted material to filter down into the backing of the carpets. Once deep down in the carpet the can lead to damage of the fibers

and the need to ultimately replace the carpets. But from a health perspective, the biggest enemy of a healthy indoor environment is when moisture provides an opportunity for these unwanted contaminants to become biologically active.

Thus, extraction cleaning can get deep down into the carpets and remove the unwanted contaminants. Unfortunately, extraction cleaning can also add large amounts of water to the carpet, especially if the equipment is not functioning properly. Select appropriate cleaning solutions (See section on Safe and Effective Carpet Cleaning).

Spot Cleaning

When carpets need to be spot cleaned, solutions should be applied from a sprayer in a stream or coarse spray, as compared to a fine mist. This will minimize the amount of material that is atomized and potentially inhaled, as well as minimize over-spray.

FOOD AREAS: Breakrooms, Catering Kitchens, Etc.

Particular attention should be paid to food waste, trash receptacles containing food debris, recyclables such as soda cans, and other objects that contain food residues, which can attract pests. Making every effort to eliminate those things that attract pests is critical to protecting occupant health by reducing or eliminating the need for pesticides inside the building. Ask occupants to rinse out food and drink containers before placing in recyclable collection. Refrigerators used by occupants for their personal use should be emptied and cleaned periodically by the occupants. Integrated pest management (IPM) should be followed.

- CLEAN AND SANITIZE FLOORS, TABLES, ETC. SEE SECTION ON PRODUCT SELECTION FOR RECOMMENDED PRODUCTS.
- SEPARATE RECYCLABLES FROM TRASH AND MAKES SURE RECYCLABLE AREAS ARE KEPT CLEAN (I.E. RINSE SODA CANS) NOT TO ATTRACT PESTS.
- MAKE SURE THAT OCCUPANTS UNDERSTAND HOW TO PROPERLY SEPARATE TRASH AND RECYCLABLES AND PROPERLY DISPOSE OF EACH.
- MAKE SURE THAT WASTE CONTAINERS ARE COVERED AND EMPTIED AT LEAST DAILY.

Restrooms

While procedures for cleaning restrooms in a green maintenance program are similar to those in a traditional cleaning program, because of their heavy use and moisture, restrooms must be cleaning frequently using appropriate cleaning products (see section on product selection). Make sure that cleaning is done thoroughly, including hard to reach areas such as behind toilets and around urinals. Periodically machine scrub restroom floors with a sanitizer or steam (see section on product selection). Make sure that label directions for appropriate dilutions for necessary dwell times are followed to allow for germ-killing activities to be thorough. Dwell time for many sanitizers and disinfectants is ten minutes.

Many products used in the restroom can be quite hazardous, such as drain cleaners and toilet bowl cleaners (see section on product selection). Make sure that appropriate personal protective equipment is used. *NEVER MIX PRODUCTS.*

Use large trash cans where possible to minimize overflow and reduce the frequency for policing the area.

- Check supply cart for proper equipment and supplies.
- *USE ONLY APPROVED PRODUCTS MEETING GREEN SEAL GS 37 STANDARDS, OR ENVIRONMENTAL CHOICE CCD-110, CCD 146 OR CCD 148.*
- Prepare the area. Place a Restroom Closed sign at the door, if applicable.
- Clean from high to low, towards the doorway, and do dry work before wet work
- Clean the exterior of all dispensers and re-stock supplies, including paper towel dispensers, feminine hygiene dispensers, toilet tissue dispensers and hand soap dispensers.
- Remove trash from all waste receptacles. Clean receptacles with a sanitizer cleaner. Replace liners.
- Dust mop or sweep the floor, pick up collected debris with dustpan, dispose of in trash receptacle.
- Clean all sinks using sanitizer cleaner and microfiber cloths. Leave sanitizer on surfaces according to manufacturer's directions.
- Clean all mirrors with glass cleaner and micro-fiber clothes.
- Clean and sanitize all toilets and/or urinals. Remove urinal screens from the urinals and using the bowl swab, push water level down in stools. Apply bowl cleaner to the exposed interior surfaces of the bowls and/or urinals, specifically under the rim. Allow time for the chemical to work, while cleaning partitions and showers (approximately 10 minutes - follow manufacturer's directions).
- *Waterless urinals* – remove debris from the bowl. Spray with mist cleaner. Wipe clean and dry. **Never dump cleaning solutions or other chemicals into bowl.**
- Remove graffiti from walls and stall partitions. Clean stall partitions with disinfectant cleaner.
- Clean both sides of entrance/exit doors with a sanitizer cleaner, paying special attention to clean hand contact areas.
- Scrub the inside of the bowls and urinals with a bowl swab. Use an abrasive sponge for difficult soils. Clean the exterior of the bowls and urinals with disinfectant cleaner. Clean both sides of the toilet seat. Clean the walls around the bowls or urinals with disinfectant cleaner. Flush bowls and urinals. Polish all chrome surfaces with a dry cloth (after cleaning with sanitizer cleaner).
- Scrub the floor with a sanitizing cleaner using a microfiber mop cover. If needed, scrub floor grout with a tile and grout brush. Rinse with clear water. Squeegee or vacuum up water, if necessary.
- Treat sink, shower or floor drains with drain maintainer, if necessary. Flush toilets and run sink and shower water once a week to keep the drains clean and the “p” trap full of water.
- Inspect your work. If you are satisfied with your work, allow the floor to dry and re-open the restroom. Return cart to supply area, place dirty microfiber cloths and mop covers in the laundry bag and restock.

Hand Hygiene

Proper hand hygiene has been proven to help prevent spread of disease and therefore is an integral part of a sustainable operations program. Promoting a green cleaning program to clean for health ensures the occupants of a building have reduced exposure to potentially hazardous chemical, biological and particulate contaminants, which adversely affect air quality, human health, building finishes, building systems and the environment. Many studies have shown that healthier indoor air quality reduces sick days for building occupants and cleaning and maintenance workers. A proper hand hygiene program adds to the prevention of disease and a goal of fewer lost days at work or school.

Requirements

A minimum of 30% of all annual purchases of hand soaps (by cost) **must** meet 1 or more of the following standards

- Contain no antimicrobial agents (other than as a preservative), except as required by health codes and other laws and regulations.
- Green Seal GS-41, for industrial and institutional hand cleaners.
- Environmental Choice CCD-104, for hand cleaners and hand soaps.

Additionally:

- Alcohol-based hand sanitizers must be provided at appropriate locations as determined by the facility, i.e. restrooms, entrances, food facilities, gymnasiums.
- Posters reminding and promoting frequent hand washing and hand sanitizing will be posted in all restrooms.
- The importance of hand hygiene will be a part of all training programs.
- Hands-free dispensers must be used for hand towels and hand soap to eliminate levers and cranks that users share.

Vulnerable Building Occupants

One of the primary goals of Green Cleaning is to protect the health of building occupants. This is done in many ways, including the identification and removal of harmful contaminants, such as particulates, mold spores, bacteria and viruses. While cleaning can reduce exposure to these and other harmful contaminants, sometimes the process of cleaning as well as the cleaning products themselves can adversely affect the health of building occupants. This is especially true for people with special needs due to pre-existing health conditions such as asthma or allergies, or reduced immune systems resulting from disease, illness, or other health conditions.

Accommodations should be made relative to cleaning activities for individuals who are more vulnerable than the average building occupant.

- Identify those building occupants with individual needs and sensitivities.
- Develop a plan to address the individual needs of occupants with sensitivities.

- Change products, procedures, and/or cleaning schedules as necessary to accommodate their individual needs.
- Address ventilation requirements to help mitigate any problems.

Some people may have heightened sensitivities to chemicals in cleaning products or dust stirred up during the cleaning process. In some cases, different cleaning products may be necessary; in other cases, the time of day that cleaning takes place may need to be altered.

In those cases where changing the cleaning products or cleaning schedule can alleviate the problem for vulnerable building occupants, the cleaning staff should initiate the necessary program modifications.

SAFE HANDLING PROCEDURES

Spills

Unattended spills can result in slip and fall accidents, damage to surfaces, invitation to pests and result in creation of mold and mildew.

- All water or wet spills will be remedied as soon as possible to minimize impacts on both health and the environment. All moisture must be removed with 24 hours.
- Develop and communicate a protocol for spill notification.
- Clean spills while still fresh.
- Use the proper cleaning solutions and use only what is necessary.
- Dispose of properly.

OSHA Blood-Born Pathogen Standards

While OSHA required training does not deviate in a green cleaning program, because the Blood-Born Pathogen Standard requires among other things the use of an intermediate grade disinfectant that is tuberculocidal (kills TB), proven effective against the Hepatitis B Virus (HBV) or a specified dilution of chlorine bleach (sodium hypochlorite), special attention must be given under the green maintenance program.

Each of these disinfectant products is very effective at killing both HBV and HIV 1 (AIDS) the two target organisms of concern. However, these same products tend to have more health and environmental impacts then other possible disinfectant/sanitizers that may be desirable for general cleaning. However, because the OSHA Standard specifies the use of these more aggressive products, they must be used.

Thus, in a Green Cleaning program, it is recommended that a product specifically meeting OSHA's requirements be used along with all of the specified procedures, and this be clearly separate from the products and procedures used for general disinfecting/sanitizing. This separation will meet the OSHA requirements, clearly differentiate the procedures for the different types of disinfecting/sanitizing reducing the potential for confusion and reduce overall health and environmental impacts. These specialized cleaning products will be kept in a separate plastic container, preferably red, and clearly marked “BLOOD-BORN PATHOGEN CLEANUP”.

- FOLLOW PROPER PROTOCOL TO IDENTIFY THE SPILL.
- Use safety cones or other means to make sure that occupants do not come in contact with spill.
- Use proper personal protective equipment (PPE).
- Disinfect area with appropriate solution.
- Dispose properly in a red bag.
- Report event to supervisor for documentation if protocol requires.

Adding Labels to Your Containers

Labels are essential to identify hazardous and non-hazardous materials. They identify what's inside. If the material is a waste, a label tells us how long it has been there. Labels are required for used material or waste collection containers.

If a container loses its label, or if you feel that the original label does not provide all the information you want, prepare a replacement. An example of such a label is provided below:[4]

ABC Glass Cleaner

HAZARD – Moderate Eye Irritant Flammable

Contains Isopropanol

CAUTION!

MAY CAUSE EYE IRRITATION

Avoid contact with eyes.

Wash thoroughly after handling.

FIRST AID: In case of contact, immediately flush eyes with plenty of water.

Call a physician if irritation persists.

[4] This page was adapted from the City of Phoenix training program for Hazardous Material Inventory Management.

Measuring/Diluting/Mixing Products

Action Items:

1. Develop and use chemical mixing and storage guidelines that require separate outside exhausting, no air re-circulation, negative pressure relative to surrounding occupied areas, and drains plumbed for appropriate disposal of liquid waste. Identify sinks and drains with signage.
2. Always wear Personal Protective Equipment (PPE) when mixing chemicals.
3. Automatic dispensers might make sense if you use lots of chemicals, and are working in a building with custodial closets. A well-designed dispensing system can save you money, and also can make chemical mixing safer for your employees. However, mixing units can have problems, particularly when filled with seldom used chemicals, so it is important to evaluate your needs carefully before selecting a dispenser. Because of its simplicity and ease of maintenance, a manual dispensing system is usually best.
4. Use appropriate protective equipment when mixing concentrated cleaning products.
5. Follow manufacturer's dilution directions. Do not under- or over-dilute concentrated cleaning products.
6. Make sure that spray bottles (secondary containers) have appropriate labels.
7. Never mix different cleaning products together.
8. Keep products with incompatible ingredients i.e. Ammonia away from tub & tile cleaner containing bleach. "Away from" means in a separate room, in a separate cabinet, or on separate shelves (but not stored one over the other).
9. If you have space, consider storing products with acids or other strong ingredients in plastic tubs so that any leaks will not harm the storage rack or janitorial closet.
10. Rotate your stock of stored products so that the oldest ones are used first. Some janitorial products (for example, bleach) have a shelf life. Be sure all such products are used before the time expires.
11. Keep spill clean-up kits in each building, and train your workers in their use.
12. Develop and use janitorial training modules addressing the importance of correct measuring diluting and mixing of cleaning products.

Highly concentrated cleaning products reduce environmental impacts from packaging and transportation, and typically reduce actual use cost compared to less concentrated alternatives. However, to gain the environmental benefits and to protect workers exposed to these more highly concentrated products during mixing, extra care should be used.

Products should always be diluted accurately according to manufacturer's directions. This can be achieved through a variety of methods including measuring cups, simple dispensing pumps and more complicated automated dilution equipment. Dilution equipment should be periodically checked for accuracy.

Cleaning personnel should understand that adding extra concentrated cleaning product does not make the cleaner work better or faster. Failing to follow manufacturer's mixing instructions wastes products and the associated product expense, can result in longer times to do the job

(i.e. removing residues), can cause slippery floors and surfaces, and improperly diluted solutions can be hazardous to the worker as well as the occupants of the building.[5]

NEVER MIX CLEANING PRODUCTS TOGETHER!

[5] City of Phoenix training program for Hazardous Material Inventory Management.

Hazardous Waste

In most facilities you are not likely to encounter hazardous waste, but you should know how to respond if you do. Hazardous waste can range from dangerous chemicals to sewage-contaminated carpet to body fluids and includes materials that are:

- highly flammable
- corrosive
- reactive
- toxic
- infectious

Handling of hazardous waste is regulated and requires a permit. If you encounter what you think is hazardous waste, report to your supervisor for instructions to dispose of it properly according to facility protocol and state and federal regulations.

A list of hazardous wastes as defined by your state will be kept on file in the facility maintenance administration office. A copy will be in each cleaning/maintenance supply area. In addition, hazardous waste disposal protocol will be a part of staff training, and verification of the existence of hazardous waste definitions and protocol information in each cleaning/maintenance supply area will be part of the quarterly walkthrough checklist.

STAFFING & TRAINING

Georgia Tech Building Services Training Module

REMEMBER YOUR SAFETY ITEMS
PROTECT YOURSELF!

Always wear safety goggles when you use chemicals or clean restrooms

Use your mask when using chemicals or around dust

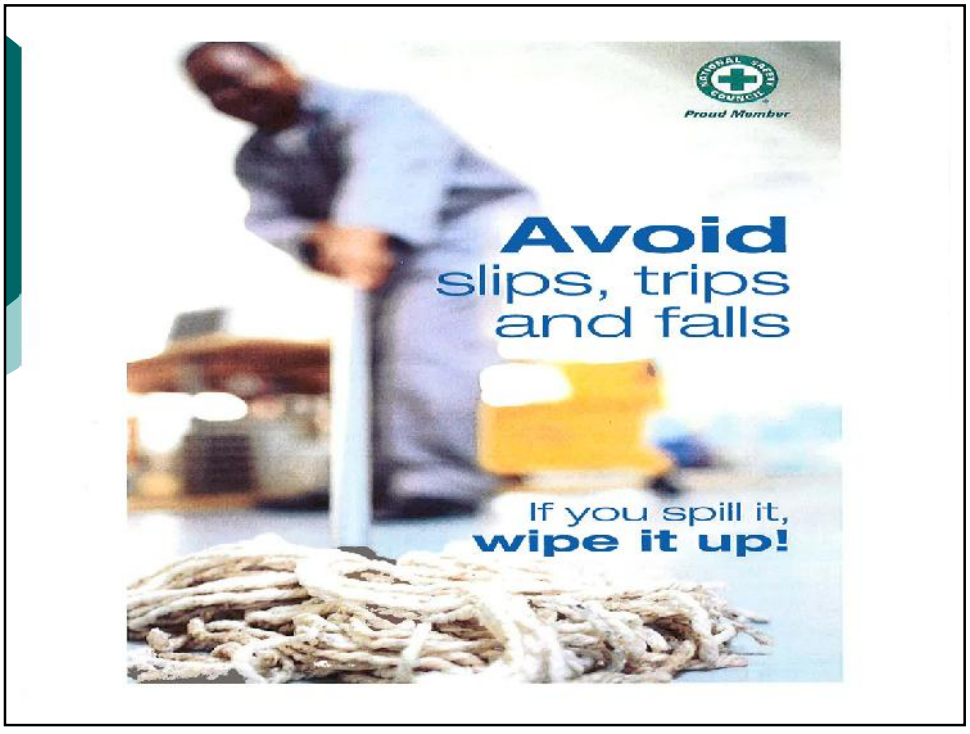
Always wear your gloves
Change often and after cleaning
Restrooms and/or Labs

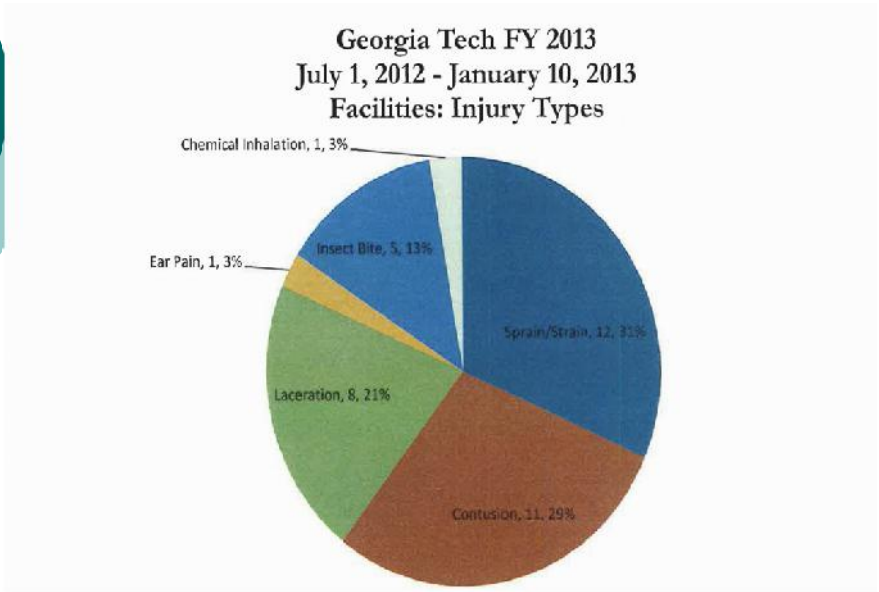
CORRECT USE OF SAFETY ITEMS

WET FLOOR SAFETY PROCEDURE

You must ALWAYS Use TWO "WET FLOOR" signs when mopping an area. One at each end of the area where you are working.

REMEMBER to use a large sign at any corner area so it is visible from both walking paths.





Incorrect Laundry Procedures

Bag 1 - The micro-fiber mop is inside a trash bag in the net bag.

Incorrect Laundry Procedures

Bag 2 - The micro-fiber mop is inside a trash bag & has a loop end mop both in the net bag.

Correct Laundry Procedures

ONLY THESE ITEMS ALLOWED IN LAUNDRY BAG:
Micro-fiber rags (Yellow, Blue, and Green)
Flat Micro fiber mop heads
***Bags must be pinned**
Use Laundry Control form provided and tape to Zone laundry bag

NEW SOAP DISPENSER

GREEN BLINKING LIGHT – DISPENSER WORKING PROPERLY

RED BLINKING LIGHT
- DISPENSER NEEDS NEW CARTIDGE OR THERE IS A PROBLEM

SOLID RED LIGHT
- DISPENSER NEEDS NEW BATTERY
REPORT TO SUPERVISOR OR LEAD

NEW SOAP DISPENSER

TO OPEN SOAP DISPENSER DEPRESS LATCHES ON BOTH SIDES.

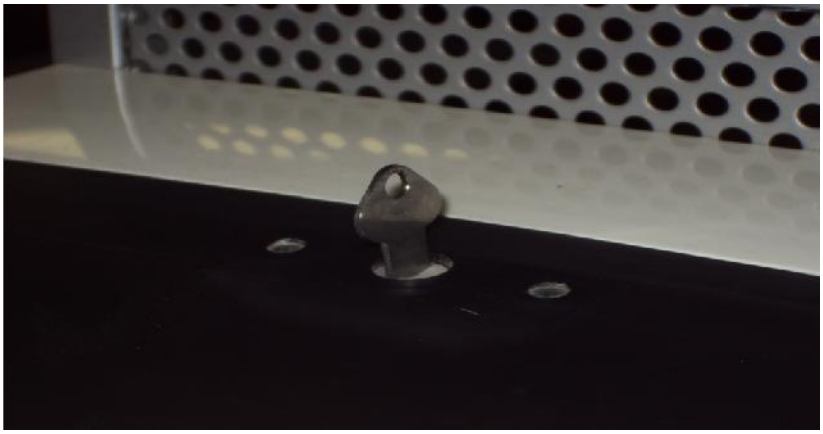
NEW SOAP DISPENSER

TO RESET SOAP DISPENSER PRESS BUTTON INSIDE.

DROP ROLL PAPER TOWEL DISPENSER

Proper Use and Guidelines

PROPER DROP ROLL PROCEDURE FOR PAPER TOWEL DISPENSERS



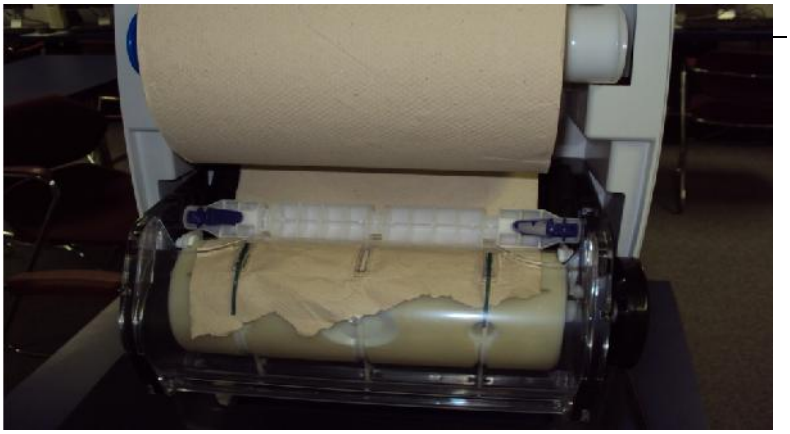
How to Replace a Paper Towel Roll

Place key in top of dispenser and turn clockwise 45°. Do not push down on key as it will break.

PROPER DROP ROLL PROCEDURE FOR PAPER TOWEL DISPENSERS

To put a new roll in the dispenser, match the blue side of the roll with the blue holder in the dispenser.

PROPER DROP ROLL PROCEDURE FOR PAPER TOWEL DISPENSERS



Next, feed the end of the roll under the white roller bar (Part 1)

PROPER DROP ROLL PROCEDURE FOR PAPER TOWEL DISPENSERS

Turn the wheel on right side of dispenser *counterclockwise* to feed all the way through (Part 2).

PROPER DROP ROLL PROCEDURE FOR PAPER TOWEL DISPENSERS

When towels get almost to the end, remove small roll from holders and drop into the bottom at the back of the dispenser.

PROPER DROP ROLL PROCEDURE FOR PAPER TOWEL DISPENSERS

Then feed new roll on white roller and secure under purple tabs.

PROPER DROP ROLL PROCEDURE FOR PAPER TOWEL DISPENSERS

You will now have a roll ready to go when the drop roll runs out!!

DISPENSER FULL

NO MORE SPRAY BOTTLES!

BUILDING SERVICES

ONLY
APPROVED CHEMICALS

NO SPRAY BOTTLES !

MSDS SHEETS

MATERIAL SAFETY DATA SHEETS

IONATOR

DISINFECTANT SPRAY

SANI-BOWL CLEANER

LEMON -ALL

LIQUID ENZYMES

DISINFECTING WIPES

CREAM CLEANSER

OXY- ORANGE

TILEX

CLR

SCENTURION

GUARDSMAN
FURNITURE POLISH

PLEDGE
FURNITURE POLISH

CLEANING WITH MICROFIBER

- YELLOW - ONLY FOR USE ON TOILETS AND URINALS AND THEIR PARTITIONS
- GREEN – IS FOR GENERAL PURPOSE CLEANING ANYWHERE
- BLUE – IS FOR WINDOWS AND MIRRORS

ALWAYS CLEAN YOUR MICROFIBER CLOTH EVERY DAY
IMMERSE IN A BUCKET OF OXYORANGE AND THEN RINSE WITH COLD WATER
HANG TO DRY IN YOUR CUSTODIAL CLOSET AT END OF SHIFT AND REMEMBER TO TURN THEM IN ON WASH DAY


activeion
GPX

Measured Results -ATP Meter Testing

BUILDING TEST AREA			
	ATP Before[1]	ATP w/Hospital Grade[2] (disinfectant)	ATP ionator EXP[3]
Men's urinal	175	2	**1**
Men's flush valve	24	3	**1**
Women's toilet	96	4	**2**
Women's flush valve	83	6	**2**
Restroom counter top	66	1	**0**
Training Desktop	145	6 (Green: gen purpose)	**3**
Breakroom Table	99	6	**3**
Telephone	460	40	**4**
Door handle	87	12	**5**
Men's Toilet	600	5	**0**
Computer Table	180	5 (Green: gen purpose)	**1**

[1]Indicates bacteria counts.
[2]Disinfectant and Green general purpose cleaner were left to sit for at least 10 minutes.
[3]The ionator EXP was sprayed for 6 seconds and immediately wiped.

Your custodial cart should always be stocked with the following items.

Chemicals
- Creme cleanser
- Soap
- Bowl cleaner (if needed)

Safety items
- Safety glasses
- Gloves
- Face Mask
- Wet floor signs

Tools & Supplies
- Tissue
- Paper towels
- Seat covers
- Sanitary disposal bags
- Bowl mop
- Duster
- Micro-fiber cloths
- Door stop
- Broom & Dustpan
- Mop & Bucket
- Rags
- Large & small bags
- Utility brush

WHAT WE LOOK FOR IN A CLOSET

- Chemical Dispenser working
- Supplies organized on shelves
- Custodial sink clean
- Mops stored upright
- Dust mops off floor
- Equipment clean
- Mop buckets cleaned
- Powered Equipment stored properly
- Batteries for powered equipment checked
- Vacuum cord properly attached
- Cart clean and properly stocked
- No open or outdated chemicals stored
- Closet clean & well-organized
- Is closet securable?

What your closet says about you

A dirty, poorly organized closet reflects badly on you and our profession. The pride you take in maintaining your work and storage area is usually a good indication of how well you perform your job.

A clean, well organized closet shows you take pride in your work and are prepared to do your best everyday.

RECYCLING PROGRAM

- Custodians NEVER empty deskside recycling containers
- Large Blue recycling bins are taken out by custodial staff weekly to be picked up by the Office of Waste Management
- The AWARE program

Routine Cleaning Tasks

Spruce-up Checklist

- Sweep/Pick-up litter & empty trash receptacles
- Erase white/chalkboards, if permitted
- Spot clean **soiled** building surfaces and furnishings
- Spot polish glass & bright metal surfaces
- Dust mop/spot mop **soiled** hard floors
- Spot clean & vacuum **soiled** carpets and entrance mats
- Rearrange furniture to its original position

Add for Restroom, Lab, & Food Service Areas

- Refill soap and paper products if needed
- Clean and disinfect **soiled** restroom fixtures

Routine Cleaning Tasks

- Sweep/Pick-up litter – empty & spot clean trash receptacles
- Erase white/chalkboards, if permitted - exchange erasers
- Dust & spot clean cleared horizontal surfaces
- Dust mop/sweep & spot mop hard floors
- Spot clean & vacuum carpeted traffic patterns and mats
- Rearrange furniture to original position

Add for Restroom, Wet Lab, & Food Service Areas

- Re-supply soap and paper products – polish mirrors
- Clean and disinfect soiled restroom fixtures and partitions
- Damp mop and spot scrub hard floor surfaces

Detail Cleaning Tasks

- Clean/disinfect soiled trash and recycling receptacles
- Spot clean vertical building and furniture surfaces and dust blinds
- Clean and polish glass and bright metal surfaces
- Detail vacuum carpets using a back-pack vacuum
- Pile brush & bonnet shampoo **soiled** carpets – replace mats
- Damp mop/auto-scrub hard surfaced floors
- Burnish or buff floors coated with floor finish
- Machine/hand scrub ceramic and quarry tile floors

  Add for Restrooms
- De-scale rest room fixtures; remove soap buildup in sinks

GT EHS
(12/2013)

Chemical Safety Training Requirements for Custodial Workers

In order to be in compliance with the Georgia Right to Know Law (Public Employee Hazardous Chemical Protection and Right to Know Act of 1988) all Georgia Tech employees must be trained annually on the Georgia Right to Know Law. The requirements of the law are as follows:

- The employee's right to receive information regarding hazardous chemicals faced on the job
- The employee's right to have their physician receive information on the chemicals to which they may be exposed
- The employee's right to receive formal training and education on hazardous chemicals
- The knowledge of what a material safety data sheet (MSDS) is, and how to use it
- Where hazardous chemicals are used in their work area

Topics covered under the chemical safety training requirements for custodial workers include the physical and chemical hazards associated with the green chemicals in which they use, as well as the laboratory chemicals that they may come in contact with. The training also covers biological and radiological hazards associated with the services in which the custodians provide to the laboratories. Custodial workers are also trained on the proper techniques for picking up trash and mopping floors. Emergency procedures pertaining to chemicals spills are also addressed in the training.

Any cleaning chemicals that are to be disposed or recycled must be collected by the Hazardous Materials group of Environmental Health and Safety (EHS). Custodial workers are not responsible for disposing or recycling cleaning chemicals.

Training records for the chemical safety training are kept on file with EHS. Custodial workers will also certificates for completion of Right to Know and Chemical Safety that should be kept in their personnel files. The frequency for Chemical Safety training is every 2 years after any initial hire.

Green Cleaning Training Checklist

EMPLOYEE INFORMATION		
Name:	Start date:	
Position:	Manager:	
FIRST DAY		
☐ Provide employee with Green Cleaning Manual. ☐ Assign "buddy" employee(s) to answer general question.	☐ Review Performance Level Standards	
POLICIES		
☐ Review Green Cleaning Policy.	• 10 Stewardship Principles • Environmental Stewardship	• Environmentally Preferable Purchasing
PRODUCT PURCHASING GUIDELINES		
☐ Review product purchasing guidelines	• Industrial/Institutional Cleaning Product Audit Sheet • Questions for Evaluating Cleaning Products • Disposable Paper & Plastic Bags	• Microfiber Products • Janitorial Equipment • Vacuum Cleaner Criteria
PROCEDURES		
☐ Review Indoor Procedures	• Measuring / Diluting / Mixing Products • Minimizing Use of Janitorial Products • Adding Labels to Containers • Safe Storage & Mixing • Custodial Closet Monthly Inspection • Acceptable Appearance Levels • Cleaning Procedures • Safe & Effective Carpet Cleaners • Safe & Effective Floor Stripping	• Hazardous Waste • Regulatory Compliance Standards: OSHA, EPA, other

X_____ X_____

Trainee Trainer

QUALITY ASSURANCE

OCCUPANT COMFORT SURVEY

[BUILDING NAME]

BACKGROUND

1. How many years have you worked in this building?
   ☐ Less than 1 year
   ☐ 1-2 years
   ☐ 3-5 years
   ☐ More than 5 years

2. How long have you been working at your present workspace?
   ☐ Less than 3 months
   ☐ 4-6 months
   ☐ 7-12 months
   ☐ More than 1 year

3. In a typical week, how many hours do you spend in your workspace?
   ☐ Less than 10
   ☐ 10-30
   ☐ More than 30

4. What is your age?
5. ☐ 18 or under
   ☐ 19-30
   ☐ 31-50
   ☐ Over 50

LOCATION

6. In what building is your workspace located?
   _____

7. On what floor level is your workspace located?
   _____

8. Within that floor level, where is your workspace located? (e.g. South side next to a window, NW corner, core, front of building near the elevator lobby, etc.)
   _____

9. Is your workspace located within 15 feet of an exterior wall? ☐ YES ☐ NO

10. Is your workspace located within 15 feet of a window? ☐ YES ☐ NO

11. If you are willing, please specify the exact location of your workspace (e.g. room number or space designation):

    _____

    (OPTIONAL)—This is so we may see if the issues you may identify in this survey can be resolved.

12. Which of the following best describes your workspace?
    ☐ Enclosed office, private
    ☐ Enclosed office, shared with other people
    ☐ Cubicles with high partitions (5' or higher)
    ☐ Cubicles with low partitions (lower than 5')
    ☐ Workspace in open office with no partitions (just desks)
    ☐ Other, please specify:

    _____

THERMAL COMFORT

13. How would you characterize the temperature in your workspace?

☐ -3	☐ -2	☐ -1	☐ 0	☐ 1	☐ 2	☐ 3
Very Cold	Cold	Slightly Cold	Neutral	Slightly Warm	Warm	Hot

    If you are dissatisfied, please describe the problematic issues:

    _____

    _____

14. Are there certain parts of your body that are too warm or too cold?
    ☐ YES ☐ NO
    If yes, please indicate which parts:
    ☐ Head ☐ Neck ☐ Back ☐ Arms
    ☐ Hands ☐ Thighs ☐ Lower legs ☐ Feet

AIR QUALITY

15. Is your workplace air stuffy/stale?
    ☐ YES—it is a major problem ☐ YES—it is a minor problem ☐ NO

16. Does your workplace air smell bad?
    ☐ YES—it is a major problem ☐ YES—it is a minor problem ☐ NO
    If the smell is a major problem, which of the following contribute:
    ☐ Food ☐ Carpet ☐ Cleaning Products

☐ Other People ☐ Perfume ☐ Other, please specify:

_____

_____

17. How satisfied are you with the overall air quality in your workspace?

☐ -3	☐ -2	☐ -1	☐ 0	☐ 1	☐ 2	☐ 3
Very Dissatisfied	Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Satisfied	Very Satisfied

If you are dissatisfied, please describe the problematic issues:

_____

_____

ACOUSTICS

18. How satisfied are you with the acoustical privacy in your workspace (e.g. your ability to have conversations without your neighbors overhearing or vice versa)?

☐ -3	☐ -2	☐ -1	☐ 0	☐ 1	☐ 2	☐ 3
Very Dissatisfied	Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Satisfied	Very Satisfied

If you are dissatisfied, please describe the problematic issues:

_____

_____

19. How satisfied are you with the noise level in your workspace?

☐ -3	☐ -2	☐ -1	☐ 0	☐ 1	☐ 2	☐ 3
Very Dissatisfied	Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Satisfied	Very Satisfied

20. Are there any noises that interfere with your work on a regular basis?

☐ YES ☐ NO

If yes, please specify:

_____

_____

LIGHTING

21. How would you rate your visual comfort in your workspace (e.g. glare, uneven lighting, etc.)?

☐ -3	☐ -2	☐ -1	☐	☐ 1	☐ 2	☐ 3
Very Uncomfortable	Uncomfortable	Slightly Uncomfortable	OK	Slightly Comfortable	Comfortable	Very Comfortable

22. Are you getting the right amount of light on your work task areas?

☐ YES ☐ NO

If no, please describe the problem:

_____

23. How does the light quality impact your overall work productivity?

☐ -3	☐ -2	☐ -1	☐ 0	☐ 1	☐ 2	☐ 3
Extremely Negatively	Negatively	Slightly Negatively	Neutral	Slightly Positively	Positively	Extremely Positively

24. Are you performing any tasks that require good-to-excellent color discrimination such as color matching?

☐ YES ☐ NO

25. Have you noticed any "flicker" from the lighting that you feel is problematic?

☐ YES ☐ NO

26. Do you know of any situations where occupants have "worked around" (i.e. disabled) any of the lighting controls because the occupant was dissatisfied with how the control worked?

☐ YES ☐ NO

27. Do you sometimes have difficulty seeing your computer monitor because of the lighting?

☐ YES ☐ NO

28. Do you sometimes have difficulty seeing other tasks because of the lighting?

☐ YES ☐ NO

29. Are there common areas you use that are poorly lighted (e.g. break room, corridors, etc.)?

☐ YES ☐ NO

If yes, please describe the problem:

_____

_____

CLEANLINESS & MAINTENANCE

30. How satisfied are you with the general cleanliness of the overall building?

☐ -3	☐ -2	☐ -1	☐ 0	☐ 1	☐ 2	☐ 3
Very Dissatisfied	Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Satisfied	Very Satisfied

31. How satisfied are you with the cleaning service provided for your workspace?

☐ -3	☐ -2	☐ -1	☐ 0	☐ 1	☐ 2	☐ 3
Very Dissatisfied	Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Satisfied	Very Satisfied

32. How satisfied are you with the general maintenance of the building?

☐ -3	☐ -2	☐ -1	☐ 0	☐ 1	☐ 2	☐ 3
Very Dissatisfied	Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Satisfied	Very Satisfied

If you are dissatisfied with the cleanliness of the overall building, the cleaning service provided for your workspace, or the general maintenance of the building, please describe the problematic issues:

_____
_____
_____

OVERALL COMFORT

33. Does your workspace allow efficient execution of your work? ☐ YES ☐ NO

34. How satisfied are you with the level of visual privacy of your workspace?

☐ -3	☐ -2	☐ -1	☐ 0	☐ 1	☐ 2	☐ 3
Very Dissatisfied	Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Satisfied	Very Satisfied

35. How satisfied are you with the adjustability of your office equipment to meet your needs?

☐ -3	☐ -2	☐ -1	☐ 0	☐ 1	☐ 2	☐ 3
Very Dissatisfied	Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Satisfied	Very Satisfied

36. How would you rate your overall comfort in your workspace?

☐ -3	☐ -2	☐ -1	0	☐ 1	☐ 2	☐ 3
Very Uncomfortable	Uncomfortable	Slightly Uncomfortable	OK	Slightly Comfortable	Comfortable	Very Comfortable

We hope the questions in this survey have covered any potential concerns you may have. If there are any other issues you would like to share with us regarding your workspace, please provide an explanation of the problems:

_____
_____
_____

Thank you for taking the time to complete this survey. We appreciate your willingness to share information about the comfort of your workspace. [Include instructions here about where to turn in or how to submit the completed survey.]

Cleaning Closet Monthly Inspection

It is the responsibility of each cleaning staff member to maintain his or her equipment and closet in a clean, operational, and well-maintained condition at all times.

EMPLOYEE: _____ **SUPERVISOR**: _____ **DATE**: _____

CLOSET LOCATION: _____

RATING: 4 = Very Good, 3 = Good, 2 = Satisfactory, 1 = Unsatisfactory

DESCRIPTION		RATING
Closet: clean, organized and in order.		
Equipment upkeep: clean, working and maintained.		
Chemicals: labeled and in correct containers.		
Sink: clean and clog free.		
Cart: clean, orderly, properly equipped and properly stocked.		
Misc.: absence of personal items, cans, bottles, food, papers, etc.		
Supplies: properly supplied and stored.		
Ventilation is operable		
Cleaning cloths, mop heads, etc. –dirty are clearly separated from clean.		

_____ _____

Employee Signature Supervisor Signature

Equipment Repair Log

Date	Initials	Equipment Name	Equipment Inventory #	Description of Repair Made to Equipment

Appearance Levels

The APPA, the association for educational facilities professionals, identifies five levels of cleanliness in their "Custodial Staffing Guidelines". This publication is considered by the cleaning industry as the standard for custodial staffing at many educational institutions. These appearance levels are listed below.

Level 1 – Orderly Spotlessness

- Floors and base moldings shine and/or are bright and clean; colors are fresh. There is no build-up in corners or along walls.
- All vertical and horizontal surfaces have a freshly cleaned or polished appearance and have no accumulation of dust, dirt, marks, streaks, streaks, smudges, or fingerprints. Lights all work and fixtures are clean.
- Washroom and shower fixtures and tile gleam and are odor-free. Supplies are adequate.
- Trash containers and pencil sharpeners hold only daily waste, are clean and odor-free.

Level 2 – Ordinary Tidiness

- Floors and base moldings shine and/or are bright and clean; colors are fresh. There is no build-up in corners or along walls, but there can be up to two days' worth of dust, dirt, stains, or streaks.
- All vertical and horizontal surfaces are clean, but marks, dust, smudges, and fingerprints are noticeable upon close observation. Lights all work and fixtures are clean.
- Washroom and shower fixtures and tile gleam and are odor-free. Supplies are adequate.
- Trash containers and pencil sharpeners hold only daily waste, are clean and odor-free.

Level 3 – Casual Inattention

- Floors are swept or vacuumed clean, but upon close observation there can be stains. A buildup of dirt and/or floor finish in corners and along walls can be seen.
- There are dull spots and/or matted carpet in walking lanes. There are streaks or splashes on base molding.
- All vertical and horizontal surfaces have obvious dust, dirt, marks, smudges, and fingerprints. Lamps all work and fixtures are clean.
- Trash containers and pencil sharpeners hold only daily waste, are clean and odor-free.

Level 4 – Moderate Dinginess

- Floors are swept and vacuumed clean, but are dull, dingy, and stained. There is a noticeable buildup of dirt and/or floor finish in corners and along walls.
- There is a dull path and/or obviously matted carpet in the walking lanes. Base molding is dull and dingy with streaks or splashes.
- All vertical and horizontal surfaces have conspicuous dust, dirt, smudges, fingerprints, and marks. Lamp fixtures are dirty and some lamps (up to 5%) are burned out.
- Trash containers and pencil sharpeners have old trash and shavings. They are stained and marked. Trash containers smell sour.

Level 5 – Unkempt Neglect

- Floors and carpets are dull, dirty, dingy, scuffed and/or matted. There is a conspicuous buildup of old dirt and/or floor finish in corners and along walls. Base molding is dirty, stained, and streaked. Gum, stains, dirt, dust balls, and trash are broadcast.
- All vertical and horizontal surfaces have major accumulations of dust, dirt, smudges, and fingerprints, all of which will be difficult to remove. Lack of attention is obvious.
- Light fixtures are dirty with dust balls and flies. Many lamps (more than 5%) are burned out.

The APPA conducted a study, "Cleanliness and Learning in Higher Education", to investigate the impact that cleanliness has on student performance. Poor building conditions, including inadequate custodial service have shown a correlation to low student attendance. This study also reports that over a third of the respondents said that a lack of cleanliness became a distraction at level 3 (casual inattention). 74.1% of the respondents said that their desired level of cleanliness is a level 2 (ordinary tidiness).

The findings of this study can be similarly applied to an office environment. Therefore, it can be assumed that cleanliness affects employee attendance and productivity. This is why it is important to maintain a Level 2 Appearance Level at all times.

Equipment Quarterly Preventative Maintenance Checklist

Equipment	Model #				Serial#				Asset#				Purchase Date			
	Date				Date				Date				Date			
1. Plug																
Blades straight, firmly mounted, screws tight?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Does cord strain relief securely grip cord jacket?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Are all wires completely covered?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
2. Cord																
Cord jacket free of cuts, cracks, and exposed wires?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
3. Strain Relief (Machine End)																
Complete, unbroken, in proper position?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Cord jacket free of breaks, cracks, cuts?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
4. Switches																
All switches firmly mounted?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Switches operate with positive snap action?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Switches illuminate where required?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
5. Operational Test																
With power do all switches make good contact?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Do all electrical functions operate normally?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced

6. Cleanliness																
Surface clean?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Underside clean of excessive build-up?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Filters and/or bags clean or replaced?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
7. Mechanical																
Handle tight?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Screws and bolts tight?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Wheels tight and functioning properly?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Cam lock height adjustment firm?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Drive block fits snugly on mount?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Gear unit sounds normal?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Bumpers in place and secure?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Motor cooling vents open?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Solution filter in place and intact?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Unit free of any leaks?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
Blades are sharp?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced
8. Fluids																
Fluids at appropriate level & changed per manufacturer specifications using approved product?	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced	Yes	No	N/A	Replaced

Guidelines for Reading Material Safety Data Sheets (MSDS)

Occupational Safety and Health Administration (OSHA) requires that all manufactured compounds are accompanied by an MSDS sheet listing hazardous ingredients, physical and chemical characteristics which include VOCs, fire and explosion hazard data, reactivity data, health hazards data, precautions for safe handling and control measures. A copy of the MSDS sheet for all compounds used in the cleaning and maintenance of a building are to be kept on file for easy access by all cleaning and maintenance workers, preferably in all janitorial closets and storage areas at each building. In case of emergency all stakeholders should know where this file is located.

- All employers with hazardous chemicals in their workplace must prepare and implement a written Hazard Communication Program to educate all stakeholders about work hazards and how to protect themselves to reduce the incidence of chemical related illnesses and injuries.
- All chemical or cleaning products must be stored in their original container.
- All chemical or cleaning products must be properly labeled (see section on labeling).
- A file of all MSDS sheets is readily available to all stakeholders and emergency personnel.
- Always wear appropriate PPE when handling any chemicals or cleaning products.

An OSHA MSDS sheet contains the following information included on the following forms provided by the Department of Labor.

Conclusion: Remember, when working with chemicals, always take the time to review the MSDS and familiarize yourself with the hazards, safe handling, and proper First Aid measures associated with the chemical.

Material Safety Data Sheet

May be used to comply with
OSHA's Hazard Communication Standard,
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

U.S. Department of Labor

Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY *(As Used on Label and List)*	Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name	Emergency Telephone Number
Address *(Number, Street, City, State, and ZIP Code)*	Telephone Number for Information
	Date Prepared
	Signature of Preparer *(optional)*

Section II - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	%*(optional)*

Section III - Physical/Chemical Characteristics

Boiling Point		Specific Gravity (H_2O = 1)	
Vapor Pressure (mm Hg)		Melting Point	
Vapor Density (AIR = 1)		Evaporation Rate (Butyl Acetate = 1)	
Solubility in Water			

Appearance and Odor

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
Extinguishing Media			
Special Fire Fighting Procedures			
Unusual Fire and Explosion Hazards			

(Reproduce locally) OSHA 174, Sept. 1985

Section V - Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable		
Incompatibility *(Materials to Avoid)*			
Hazardous Decomposition or Byproducts			
Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur		

Section VI - Health Hazard Data

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
Health Hazards *(Acute and Chronic)*			
Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
Signs and Symptoms of Exposure			

Medical Conditions Generally Aggravated by Exposure
Emergency and First Aid Procedures

Section VII - Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled
Waste Disposal Method
Precautions to Be taken in Handling and Storing
Other Precautions

Section VIII - Control Measures

Respiratory Protection *(Specify Type)*		
Ventilation	Local Exhaust	Special
	Mechanical *(General)*	Other

Protective Gloves	Eye Protection
Other Protective Clothing or Equipment	
Work/Hygienic Practices	

* U.S.G.P.O.: 1986 - 491 - 529/45775