



Sustainable Green Cleaning

Cleaning for Health and the Environment

Training Library
Workbook



Green Cleaning Leadership Since 1990

BETCO'S ENVIRONMENTAL COMMITMENT

At Betco® Corporation, being environmentally responsible is a company standard. We are committed to developing products, programs and procedures that meet or exceed health and environmental standards while providing cost effective benefits to accomplish your maintenance goals.

Since 1990, Betco has shown its environmental leadership through use of the Green Earth® brand of products; packaged in recyclable containers and delivered through chemical management systems.

We have expanded our green leadership position by introducing a complete green solution – including green equipment, floor care, cleaners, skin care products and training resources.

The purpose of this workbook is to provide an overview of the Sustainable Green Cleaning opportunity to assist you in making an informed decision.

BETCO'S SUSTAINABILITY STATEMENT

Sustainability means meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Betco's dedication to promoting environmental, sustainability efforts and green practical solutions started in 1990 with our Green Earth dilution control and chemical program. Over the years, Betco continues to expand our Green Earth brand of chemicals, equipment and procedures with sustainable efforts in three specific areas commonly called the "triple bottom line".

Economic growth – we strive to provide cost effective products and programs for our customers while continuing to invest in the growth of our personnel.

Environment protection – we strive to lessen the impact on the environment in the short and long-term while operating in an environmentally responsible manner, taking steps to reduce both Betco's and our customer's carbon footprint, consuming less energy, using fewer nonrenewable resources and producing less waste.

Social responsibility – we strive to continually enhance work place and community safety while lessening the impact on the environment.

Bottom line; Betco will provide products that meet customer needs while being environmentally responsible.

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1. WHAT IS GREEN CLEANING?

Executive Order 13101 defines Green Cleaning as the use of products and services that **reduce the health and environmental impact** compared to similar products and services used for the same purpose. Another definition of Green Cleaning is cleaning to safeguard human health while minimizing the impact to the environment. Its goal is to protect the health of building occupants, visitors and cleaning personnel, as well as reducing polluting effects on our air and water. Unlike traditional cleaning, it goes far beyond simple appearance, focusing on products and services that have fewer adverse health and environmental impacts as compared with others that might be used for the same purpose.

For the past two decades, the major emphasis in the JanSan industry has been to find new ways to “do more with less”. Accordingly, most new cleaning procedures, products and systems have been developed with the primary goal of improving the productivity of cleaning personnel and reducing costs. Although these aspects are important, the health of the facility and those who live, work or occupy it have not received the same deserved attention. Green Cleaning changes all of this by helping to clarify the connection between cleaning, health and the protection of our environment.

Green Cleaning is more than just using “green” products. The success of a green cleaning program is dependent on numerous other factors. While the selection of product is important, it will have little effect in an otherwise inadequate cleaning regimen that leaves facilities dirty and the health of occupants, visitors and the environment at risk. Green Cleaning encompasses a total program including chemicals, procedures, equipment, paper, liners, mops, matting, everything used in an effective cleaning program.

The movement toward green cleaning does not imply that traditional methods are inadequate or have created unsafe conditions. Instead it can be viewed as simply taking the next step beyond our current approaches to further reduce polluting impacts while continuing to maintain and improve the healthfulness, comfort and aesthetics of our surroundings.

2. WHAT IS SUSTAINABILITY?

The Brundtland Commission defined sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs”.

As with Green Cleaning, sustainability also minimizes cleanings impact on people and the environment but more importantly, it is a process, not a product. It is a process to protect resources for the future.

Why is protecting the resources more important now than ever before? The world’s population continues to grow at a rapid rate. The population is estimated to reach 7 billion by 2012 and over 9 billion by 2050. Most of the growth will come in developing countries which means an accelerated requirement for raw materials to manufacture finished goods.

So what does that mean for our industry? As manufacturers, distributors and users of cleaning products, we need to continually explore ways to conserve resources. Whether it is utilizing renewable raw materials versus petroleum based products or the implementing of more aggressive recycling programs, we need to think of the long-term consequences.

As we move from just green cleaning to Sustainable Green Cleaning, we need to expand our view of the impact on not only the **environment** but should include **economic** and **social thinking**. This concept is called the “triple bottom line” (also known as profit, planet and people). A well managed organization should have a balance between these 3 elements in order to truly be sustainable.

Economic (profit) – companies must be profitable to stay in business but at the same time they must be aware of their environment and their social responsibilities. We should consider processes for source reduction, increased worker productivity and lower facility maintenance costs.

Environment (planet) – we should use more renewable resources, use products with lower VOCs, conserve water and other utilities and recycle or reuse as much as possible.

Social (people) – pertains to fair and beneficial business practices toward staff, customers and the local community. Things like using greener products to lessen the negative impact on employees, good training practices, paying a living wage, working with the community to promote sustainable practices and just using the Golden Rule when dealing with people.

3. WHY SHOULD WE BE CONCERNED WITH SUSTAINABLE GREEN CLEANING?

Source Reduction:

- The USA comprises about 5% of the world's population and annually produces 27% of the world's garbage.
- The USA uses 6 billion pounds of chemical products yearly.
- The USA uses 4.5 billion pounds of paper products yearly.
- The USA uses 35 billion pounds of plastic liners yearly.
- The USA disposes 500 million pounds of cleaning equipment yearly.
- The USA disposes of 100 million tons of construction waste yearly.
- 80% of our time is spent in doors.

Indoor Air Quality (IAQ):

- EPA rates the indoor environment is potentially 3-5 times more harmful to humans than the outdoor environment.
- EPA rates indoor air quality as one of the top 5 health risks.
- Two-thirds of commercial buildings are rated as having "sick building syndrome" = \$20 billion in worker compensation claims.
- There are 100 million lost work days each year do to poor indoor air quality = \$100 billion.
- These numbers emphasize the immediate need to be concerned about the cleaning process and its effect on the health of the user, occupant, visitor and the indoor and outdoor environment.
- Also more state and local governments are mandating environmentally preferable purchasing procedures, products, equipment and cleaning procedures.

THE WORLD POPULATION WILL BE 9 BILLION BY 2050 WITH GREATER DEMANDS FOR RESOURCES

4. BENEFITS OF SUSTAINABLE GREEN CLEANING

The primary benefit of Sustainable Green Cleaning, with its emphasis on cleaning for health, not just appearance, is a cleaner, healthier building. A healthier indoor environment translates into many concrete, bottom-line benefits (Triple Bottom Line) for building owners, managers, service personnel and building occupants.

Increased Indoor Air Quality (IAQ) and Productivity –

Excessive VOCs, airborne dust and other indoor pollutants can cause numerous health problems among building occupants and workers, resulting in increased absenteeism and lower productivity on the job. The average American spends 80% of their time each day indoors and the EPA ranks indoor air quality as one of the top 5 risks in the US. A recent study estimated that the value of increased productivity and reduced absenteeism among office workers from better cleaning methods could be as high as \$160 billion nationwide. A University of San Diego survey found that absenteeism was reduced by 2.9 days for workers in green buildings. Another analysis estimated that businesses could realize an increase in worker productivity up to 5-7% through improvement in indoor environment through better ventilation and cleaning methods.

Reduced absenteeism is a key issue with public schools. A study in the Syracuse, NY school system showed improved cleaning practices increased attendance by more than 11%, resulting in an increase of \$2.5 million in state reimbursements. Other studies in elementary schools show a marked increase in standardized test scores from 20-50% and total illness has decreased by 20-30% in surveyed schools.

Improved worker recruitment and retention –

A healthy indoor environment improves morale among existing employees, reduces turnover and facilitates recruitment of new personnel. People want to work in a healthy environment.

Potential greater rental income and building value –

More tenants are aware of indoor air quality and will actually spend more per square foot in a “green” building. USSA Realty Company reported an 80 cent/sq. ft. increase in market value of environmentally sustained properties.

Lower operating costs –

Better cleaning procedures and safer products can significantly improve the health of building occupants, reducing healthcare and insurance costs. Experts expect insurance companies to offer lower rates for Sustainable Green Cleaned buildings in the future. Sustainable Green Cleaning can also reduce the cost of environmental protection to the community as a whole. Correcting a problem at the source, such as using safer products, costs significantly less and is more effective than taking corrective action downstream at a later date. Recent California studies have shown a 20-30% yearly savings due to more efficient water use and a 20-30% savings due to more efficient heating and cooling systems.

Fewer complaints –

As the public has become more aware of the hazards of poor indoor air quality, building occupants have become increasingly intolerant of substandard maintenance. If the building is maintained better, there will be fewer complaints from the occupants.

Compliance with new governmental regulations –

In recent years, state, local and federal governments have increased their regulation of VOCs and other hazardous chemicals. By using less toxic chemicals, green cleaning helps insure compliance with current and emerging regulations. A number of states and municipalities have started creating tax incentives to encourage more responsible construction and maintenance procedures to protect people and the environment. There are numerous states and local municipalities that have mandated selected forms of Sustainable Green Cleaning and more will be forth coming in the future, especially in the education sector.

Longer lasting buildings –

Green cleaning extends the life of a facility's carpets, floors, furnishings, computers, HVAC systems and other components. This reduces replacement costs and saves the owner money in the long-run. Recent surveys have shown as much as .30¢ to .70¢ annual savings per square footage total operational costs for the building.

Better public image –

With the increased publicity the indoor and outside environment has received in recent years, Sustainable Green Cleaning will create a more favorable public image for companies in their communities.

Source reduction –

A main component of Sustainable Green Cleaning is the use of concentrated chemicals through a chemical management system versus using ready to use products. This will make an impact on the materials dumped into landfills each year. Also the use of recycled materials, paper and plastic and facility recycling program, will impact the source reduction.

5. GREEN CERTIFICATION AND PARTNERSHIP PROGRAMS

5 - a. GREEN SEAL

What is Green Seal:

Green Seal is an independent, non-profit organization that strives to achieve a healthier and cleaner environment by identifying and promoting products and services that cause less toxic pollution and waste, conserve resources and habitats and minimize global warming and ozone depletion. It works with manufacturers, industry sectors, purchasing groups and governments at all levels to “green” the production and purchasing chain.

Mission: to achieve a more sustainable world by promoting environmentally responsible production, purchasing and products.

Through its standard setting, certification and education programs, Green Seal:

- Identifies products that are designed and manufactured in an environmentally responsible manner.
- Offers scientific analyses to help consumers make educated purchasing decisions regarding environmental impacts.
- Ensures consumers that any product bearing the Green Seal Certification Mark has earned the right to use it.
- Encourages manufacturers to develop new products that are significantly less damaging to the environment than their predecessors.

History:

In the late 1980's the environmental community felt that after two decades of hard-won litigation and advocacy campaigns, it was time to incorporate a less adversarial approach to industry in their programs. They decided to initiate in the United States a product ecolabeling program, similar to the ones in Germany and Canada. Ecolabeling helps consumers identify green products.

When the Green Seal logo is present on a product, the end user can be assured the product was evaluated by an independent unbiased third party for fourteen different criteria.

Green Seal was founded in 1989 as a non-profit organization and issued the first product certifications in 1992. A number of environmental standards were completed and several major companies applied to have their products evaluated.

Green Seal Services:

Purchasing –

- Institute or improve green purchasing
- Lists of recommended products
- Standards, criteria and contract language
- Environmental or financial justification for environmental purchases

Operations –

- Evaluation of building maintenance
- Recommendations for environmental improvement
- Environmental product criteria, service contracts
- Manual for specific operations

Facilities –

- Evaluation and design
- Recommendations for environmental upgrading
- Equipment criteria and recommendations
- Identification of potential savings through environmental improvement

Standards:

Green Seal bases its work on thorough, state-of-the-art scientific evaluations using internationally accepted methodologies like ASTM standardized testing. Product evaluations are conducted using a life-cycle approach to ensure that all significant environmental impacts of a product are considered, from raw materials through manufacturing to disposal in creating their standards. Green Seal uses the following 14 specific criteria to evaluate products.

- | | |
|---------------------------------------|-------------------------|
| Meets performance tests | No aquatic toxicity |
| No human toxicity | Biodegradable |
| No carcinogens or reproductive toxins | No eutrophication |
| No skin/eye corrosivity | Use of concentrates |
| Not a skin sensitizer | Safe fragrances |
| Non-combustible | No endocrine disruptors |
| Minimal VOCs | Reduced packaging |

Certification:

Once a standard has been established, Green Seal accepts applications for certification. Products are then evaluated for compliance with the applicable Green Seal standard. The manufacturing facility is then visited to evaluate quality control procedures. Once certified, products are subject to annual monitoring to insure that the product offered for sale continues to meet the Green Seal standard. Certification and yearly renewal fees are charged participating manufacturers.

GS-37 Standard for Industrial & Institutional Cleaners:

Bathroom cleaners. (Green Earth® Peroxide Cleaner)

This category includes products used to clean hard surfaces in a bathroom such as counters, walls, floors, fixtures, basins, tubs, and tile. It includes products that are required to be registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), such as disinfectants and sanitizers. The product must have a dilution rate of at least 1:16.

Bowl and Urinal cleaners. (Green Earth® Peroxide Cleaner) may include ready to use or concentrated products.

General-purpose cleaners. (Green Earth® Daily Floor Cleaner) This category includes products used for routine cleaning of hard surfaces including impervious flooring such as concrete or tile. It does not include cleaners intended primarily for the removal of rust, mineral deposits, or odors. It does not include products intended primarily to strip, polish, or wax floors, and it does not include cleaners intended primarily for cleaning toilet bowls, dishes, laundry, glass, carpets, upholstery, wood, or polished surfaces. This category does not include any products required to be registered under FIFRA, such as those making claims as sterilizers, disinfectants, or sanitizers. The product must have a dilution rate of at least 1:32.

Glass cleaners. (Green Earth® Glass Cleaner) This category includes products used to clean windows, glass, and polished surfaces. This category does not include any products required to be registered under FIFRA, such as those making claims as sterilizers, disinfectants, or sanitizers. The product must have a dilution rate of at least 1:16.

Carpet Cleaners. (Green Earth® Peroxide Cleaner) This category includes products, wet or dry, used to clean and spot carpets. The product must perform as well as a nationally recognized product in its category in both cleaning efficiency and re-soiling resistance. The product must have a dilution rate of at least 1:16.

Disinfectants. There is no standard for disinfectants. By nature disinfectants kill bacteria, good and bad. The green community suggests using fewer disinfectants, ones with moderate pH, low VOCs and only in specified areas like ORs, ERs, critical care areas, food service/production and contact areas.

GS 40 Floor-Care Products, finishes and compatible strippers:

Finishes. (Green Earth® Floor Finish and Green Earth® Prelude) will include floor finish designed to polish, protect or enhance floor surfaces by leaving a protective wax, polymer or resin coating that is designed to be periodically removed (stripped) and reapplied. The finish must meet normal performance criteria such as, stripability; slip resistance, resistance to black heel marking, etc. Certified finishes will contain no heavy metals like zinc.

GS 40 Floor Strippers. (Green Earth® Finish Stripper will remove green and conventional finishes) The floor finish stripper is defined as a product designed to remove floor finish through breakdown of the finish polymers or by dissolving or emulsifying the finish, polish or wax. This standard does not address general purpose cleaners that can be used to clean floors, floor sealers, spray buffing products or products designed to remove floor wax solely through abrasion.

GS 41 Hand Soaps: (Green Earth® Clario Foam, Lotion and Clear Soaps)

This standard establishes criteria for industrial and institutional hand soaps. The standard does not apply to hand cleaners used in households, for preparation operations or medical facilities, nor do they cover anti-bacterial hand cleaners or hand sanitizers. Criteria for hand cleaners in this standard include:

- o Perform as well or better than conventional hand cleaners.
- o Are biodegradable and have limited toxicity to aquatic life.
- o Are packaged in recyclable packaging, ideally incorporating recycled content.
- o Have eliminated ingredients considered likely to negatively impact health and the environment.

GS 42 Environmental Standard for Cleaning Services:

This standard will establish requirements for cleaning service providers, including in-house and external cleaning services, to create a Green Cleaning program that protects human health and the environment. Green Cleaning encompasses all indoor activities typically required to clean commercial, public and industrial buildings. This standard does not include maintenance of exterior areas or residential buildings.

Cleaning Service Providers will develop and maintain a set of written guidelines or Standard Operating Procedures that govern the cleaning procedures, chemical handling and tracking requirements, equipment maintenance and operation procedures, communication protocols and requirements, training and inspection programs and reporting and record keeping procedures.

GS 53 Specialty Cleaning Products For Industrial And Institutional Use – In Development

Products to be considered under this standard are – cleaning products containing microorganisms, dish cleaning products, furniture polish, graffiti removers, metal cleaning, odor removers, oven cleaners, upholstery cleaning products and disinfectants.

Other Green Seal Standards relevant to the Jan San Industry:

- GS 01 tissue paper
- GS 09 paper towels and paper napkins
- GS 11 powdered laundry bleach
- GS 33 lodging properties
- GS 46 restaurants

Manufacturers pay for product certification.

5 - b. UNITED STATES GREEN BUILDING COUNCIL (USGBC)



What is USGBC?

USGBC is a standard-setting organization focused on the rapidly growing green building industry. It was formed to address the significant impacts of building design and operation on human health and the natural environment. It is a coalition of leaders from all segments of the building industry, including building owners and managers, architects and engineers, builders, building service contractors, product manufacturers, insurance companies and all levels of government. Currently there are over 20,000 members in the USGBC.

Mission:

Its mission is to accelerate the development and implementation of green building practices and promote buildings that are environmentally responsible, profitable and healthy places to live and work.

Leadership in Energy and Environmental Design (LEED) Green Building Rating System:

In 2002, USGBC began development of its nationally accepted LEED rating system. This program is a complete set of assessment tools to promote sustainable building design, construction and operations practices. LEED is voluntary, consensus-based, market-driven standards designed to raise consumer awareness of green building benefits, encourage environmental leadership in the building industry and promote certification of high-performance, sustainable buildings nationwide.

LEED standards are currently available or under development for assessing building performance and meeting sustainability goals in a variety of green building areas.

LEED – EB O&M	Existing Building Operations & Maintenance
LEED – NC	New construction and major renovation projects
LEED – CI	Commercial and interior projects that create more efficient and healthier interiors
LEED – CS	Core and shell projects allows the building owner to educate tenants about the advantages of green
LEED – H	Standards for single-family and low-rise multi-family residences.
LEED – ND	Neighborhood development
LEED for Retail	
LEED for Schools	
LEED for Healthcare	

LEED – EB Rating System:

Certified level	40* - 49 points
Silver level	50 - 59 points
Gold level	60 - 79 points
Platinum level	80 - 100 points

Distributors, manufactures and building service contractors can assist building managers earn 25-30% of the base level (*) certification points.

Criteria to earn LEED Certification Points:

Indoor Environmental Quality – reduce the exposure of building occupants and maintenance personnel to potentially hazardous biological and particulate contaminants.

- **EQ Prerequisite 3 – GREEN cleaning policy
(Required)**
- **EQ Credit 3.1 – high performance cleaning program
(1 point)**
- **EQ Credits 3.2 – custodial effectiveness assessment
(1 point)**
- **EQ Credits 3.3 – purchase of sustainable cleaning products and materials
(1 point)**
- **EQ Credit 3.4 – sustainable cleaning equipment
(1 point)**
- **EQ Credit 3.5 – entryway systems
(1 point)**
- **EQ Credit 3.6 – indoor integrated pest management
(1 point)**

Other potential points:

Sustainable Sites – Green Site and Building Exterior Maintenance (SS Cr. 2)

- Cleaning exterior with proper chemicals. (Exterior walls, walkways, windows, ice melter)
- Exterior maintenance equipment (Leaf blowers, sweepers)

Potential of 1 point

Sustainable Sites – Integrated Pest Management (SS Cr. 3)

- Supply pest management services for customers

Potential 1 point

Materials and Resources – Sustainable Purchasing Policy (MR Pr. 1)

- Fulfillment of MR Cr. 1 Sustainable Purchasing on-going Consumable

Required

Materials and Resources – Sustainable Purchasing - Ongoing Consumable Goods (MR Cr. 1)

- Purchase of copy paper, envelopes, batteries

Potential of 1 point

Materials and Resources – Solid Waste Management – Ongoing Consumable Goods (MR Cr. 7)

- Establishment of a recycling program

Potential 1-5 points

Regional Priority – awarded for unique environmental issues.

1 -1 points possible

Innovation in Operations – the ability to earn additional credits for exceptional environmental practices beyond those already addressed in LEED-EB.

- **Credit 1 - 4 points possible**
- **Credit 2 - LEED Accredited Professional – 1 point possible**
- **Credit 3 - Documenting sustainable building cost improvements – 1 point possible**

Benefits of a “Green Building”: many of the same benefits mentioned for “Green Cleaning”

Environmental – enhance and protect ecosystems, improve air and water quality, reduce solid waste, conserve natural resources and decreases greenhouse gases.

Economic – reduce operating costs, enhance asset value and profits, improve employee productivity and satisfaction. Utilities, state and federal agencies and other sources are providing financial incentives and rebates for facilities adopting LEED measures. Potentially receive a higher rental rate from occupants concerned with the environment and healthy working conditions.

Health and safety – enhance occupant comfort, safety and health.

Community – minimize the strain on local infrastructures (water treatment, utilities and health care facilities and costs) and improve quality of life. Facilities are recognized as a well-run and well-managed building.

How do I get LEED Certified?:

To start the process, it is encouraged that a team be assembled to manage the certification process, which means preparing documentation and calculations to fulfill the prerequisites and credit submittal requirements to become LEED certified. The “green team” could consist of personnel from environmental services, human resources, training safety, as well as building managers, building occupants and possibly suppliers.

The team should identify which rating system the building desires to be certified and the desired level of certification. Then they will review the checklist provided by the USGBC to help develop their strategy, such as which points would be easy or difficult to achieve, where they will need to collect data, whether or not they need a consultant with certification experience, budgets and other potential issues they may need to consider prior to committing to the program.

Once the commitment is made, the building owner must register with the USGBC. Next the submitter must provide specific documentation which includes site plan, floor plans, elevation and photos, for tracking the building project. After documentation is provided it is reviewed and the different credits are interpreted by the USGBC council. Next the final application is submitted. The building is either awarded certification or rejected. If rejected, the submitter can appeal the results with further documentation supporting their cause.

Owners must also pay a fee to become LEED registered and certified. The charges vary based on the size of the facility. The certification process can take up to one year. Betco has a certified LEED AP to assist in your certification efforts.

5 - c. ECOLGO



The Ecologo program helps consumers identify products and services that are less harmful to the environment. The original Environmental Choice Program was established in 1988. The Program's official symbol of certification features three stylized doves intertwined to form a maple leaf, representing consumers, industry and government working together to improve Canada's environment.

Ecologo standards address resource use, chemicals used during production, waste and emission reduction, energy consumption and packaging.

A key aspect of the certification process is the requirement for third party verification of compliance to Ecologo certification criteria as a condition for certification and licensing. This process ensures the Program's credibility and includes:

- A review of each applicant company's product and process information.
- An examination of the company's quality assurance (QA) / quality control (QC) measures.
- Where deemed necessary by Ecologo officials, an audit of the company's facilities for purposes of initial certification.

Canada's EcoLogo program is internationally renowned because of the program's stringent certification process. The certification programs include the following categories: agricultural and horticultural products, automotive related products, building and construction related products, cleaning and janitorial products, consumer products, containers and packaging, electricity products, lubricants and absorbents, marine products, office furniture equipment and business products, paper products, printing products and services and miscellaneous industrial products and services.

Manufacturers pay for product certification.

CURRENT BETCO ECOLOGO CERTIFIED PRODUCTS: GREEN EARTH PUSH, GREEN EARTH RESTROOM CLEANER, GREEN EARTH VELOCITY

5 - d. DESIGN FOR THE ENVIRONMENT (DFE)



EPA's Design for the Environment (DfE) works in partnership with industry, environmental groups, and academia to reduce risk to people and the environment by finding ways to prevent pollution. For more than 15 years, through partnership projects, DfE has evaluated human health and environmental concerns associated with traditional and alternative chemicals and processes in a range of industries. These analyses have empowered hundreds of businesses to select safer chemicals and technologies. DfE focuses on industries that combine the potential for chemical risk reduction with a strong motivation to make lasting, positive changes.

DfE program reviews each product component, starting with the chemical component's structure to determine its key health and environmental characteristics. Then ingredient characteristics are compared to other chemicals in the same use class and considers any possible negative synergies between the ingredients. DfE identifies cleaning products that contain the safest possible ingredients, perform well and are cost effective.

Product manufacturers who become Design for the Environment partners and earn the right to display the Design for the Environment logo on recognized products have invested heavily in research, development and reformulation, to ensure that their ingredients and finished product line up on the green end of the health and environmental spectrum, while maintaining or improving product performance.

Manufacturers pay a fee for the testing and certification process.

CURRENT BETCO DfE CERTIFIED PRODUCT: GREEN EARTH VELOCITY

5-e. CARPET AND RUG INSTITUTE (CRI)



CRI is a non-profit trade organization that conduct tests of carpet, cushions, adhesives, cleaning chemicals and equipment. Their goal is to continually improve best practices in product improvement, environmental responsibility and customer care.

- Certification for vacuums
- Certification of extractors – **FIBERPRO FP 8 & 20**
- Certification of cleaners and spotters – **FIBERPRO SPOTTER**

There is a fee for certification.



5 – f. GREENGUARD

GreenGuard Environmental institute was created to protect human health and quality of life by enhancing indoor air quality and reducing people’s exposure to chemicals and other pollutants. GreenGuard certifies products and materials for low chemical emissions and provides a resource for choosing healthier products and materials for indoor environments.



5 – g. USDA BioPreferred

The U.S. Department of Agriculture (USDA) launched a new labeling initiative to identify biobased products, which are commercial or industrial products whose main ingredients are renewable plant or animal materials. The purpose of the labeling initiative is to more clearly identify biobased products for all buyers and to promote the increase sale and use of biobased products in the commercial market and for consumers. The use of biobased products help increase U.S. energy independence by reducing the use of petroleum in manufactured products. They also reduce the introduction of fossil carbon into the atmosphere, thus mitigating potential climate change impacts. And finally, the use of biobased products supports the farming industry.

There are a number of product categories like industrial cleaners, hand cleaners, adhesive and mastic removers, general purpose cleaners, glass cleaners and graffiti and grease removers. Betco has a number of products certified under this initiative.

There is a fee for certification.

CURRENT BETCO CERTIFIED BIOPREFERRED PRODUCTS: CITRUSOLV CONCENTRATE, CLARIO FOAMING INSTANT HAND SANITIZER, CLARIO INSTANT HAND SANITIZER, GREEN EARTH GLASS CLEANER, GREEN EARTH NATURAL ALL PURPOSE CLEANER, TRITON HANDSANITIZER.

5 - h. ISSA CLEANING INDUSTRY MANAGEMENT STANDARD (CIMS)



The Cleaning Industry Management Standard is designed to assist cleaning The Cleaning Industry Management Standard is designed to assist cleaning organizations (in-house and service contractors) in setting up a management system that allows an organization to meet specific goals. The Standard is a management framework that can be used to develop customer-centered, quality organizations.

One of the most important features of the Standard is that it is non-prescriptive and is based on management principles that have proven to be primary characteristics of quality, customer-centered organizations. It does not require, recommend or other wise endorse any particular process or product; it allows individual organizations flexibility in choosing the most effective ways in which to meet their management requirements.

The standard is composed of the following sections:

Quality – a general framework to ensure effective operations and continual improvement.

Service Delivery – these processes include staffing, bidding, costing, budgeting and purchasing.

Human Resources – the organization should demonstrate that it efficiently and effectively manages “human capital” in a way that enhances organizational performance.

Health, Safety and ENVIRONMENTAL STEWARDSHIP – processes, systems and documentation to insure the safety, health and sustainability of the facility while insuring a positive impact on the environment.

Management Commitment – demonstrate an organizations commitment to management systems to meet customer needs and expectation, now and in the future.

Green Building – establishes a specific framework to ensure that the organization uses environmentally preferable practices in addition to the management best practices identified in the five core sections of the Standard. The requirements parallel LEED EB O&M certification requirements.

There is a fee for the certification process.

BETCO HAS CIMS CERTIFIED PROFESSIONALS TO ASSIST WITH YOUR CERTIFICATION EFFORTS.

5 - i. HOSPITALS FOR A HEALTHY ENVIRONMENT (H2E)



- H2E – non-profit organization to support environmentally sustainable health care facilities.
- The Green Guide for Health Care is a self-certifying, best practices toolkit for health care.
- The point system provides design and construction teams a way to baseline and benchmark their achievement and to support continuous improvement.
- The Green Guide for Health Care borrows the credit numbering scheme from the USGBC LEED rating system.
- The Green Guide does not recommend products.

5 – j. HEALTHY SCHOOLS CAMPAIGN



- Environmental Audits - working with students, teachers and community members for greater awareness and understanding of the school environment.
- Green Cleaning - working with school building engineers to reduce the use of toxic cleaning products in schools.
- Healthy and High Performing Schools - working to improve school construction standards.
- Promoting Healthy Eating - working with schools to conduct assessments.
- Legislative Advocacy - supporting a range of environmental health issues to improve school environments.
- Betco is a supporting partner.

6. SUSTAINABLE GREEN CLEANING PROCEDURES

The following section covers Sustainable Green Cleaning procedures for commercial facilities. This is not a “how to” manual. It will not tell you, for example, how to strip and refinish a floor; but it will address how hard floor care differs in a green cleaning approach. What determines the differences are the underlying health and environmental issues, not just the appearance of the building.

A key issue that cuts across all cleaning procedures is the issue of cleaning frequencies. Cleaning for health or Sustainable Green Cleaning generally requires the same or higher frequencies. To some extent, you may be able to balance the increased costs with increased efficiencies.

Keep in mind too that these procedures can only serve as a general guideline because commercial buildings vary tremendously. It is virtually impossible to assemble a single, comprehensive and standardized set of Sustainable Green Cleaning procedures. As you encounter new environments and new situations, you will have to apply the principles of Green Cleaning to develop your own procedures.

Betco offers users a complete Sustainable Green Cleaning Policy template on Betco.com under the Sustainability tab.

Identify people with special needs -

- Identify building occupants with individual needs and sensitivities.
- Develop a plan to address the individual needs.
- Change products/procedures/schedules as necessary to accommodate their individual needs.
- Address ventilation requirements to help mitigate the problems.
- Communicate plans to special needs personnel and all building occupants.
- Continually request feedback from occupants to make appropriate changes.

Entryways –

- Roughly 80% of the dirt in a building is tracked in through the entrance.
- The matting system should be 12 -15 feet long. For a main entrance, an ideal system would include an outside scraper mat, foyer mat and an inside carpet mat.
- Always place caution signs prior to cleaning entryways.
- Mats should be vacuumed at least once a day; vacuum in both directions using upright vacuums with a beater bar. Be sure to clean under mats as well. Replace dirty mats with clean ones weekly under normal conditions, more often in wet weather or extremely dirty conditions. Scrub dirty mats with detergent or carpet solution, rinse them thoroughly and let them dry on a periodic basis.
- Providing trash receptacles and cigarette urns at all entrances will reduce the amount of food, cigarettes and other trash brought into the building. Ensure they are emptied and cleaned on a regular basis.
- Sweep exterior sidewalks, entry areas and steps leading into the building on a daily basis. Periodically clean sidewalks and entry areas with a high pressure power washer.
- Clean and store equipment after each use.

Hard Floor Care –

- Utilize appropriate entryway cleaning systems and maintenance procedures.
- Always place caution signs prior to beginning floor maintenance work.
- Hard floors should be vacuumed daily using a high quality backpack vacuum. Advantages – it removes more dirt, improving air quality, it stirs up less dirt and dust up into the air, it is more effective at removing dirt from grout, corners, edges and under furniture and it improves productivity.
- Establish and monitor a plan for routine, interim and restorative maintenance. Use the Betco Life Cycle of Floor Care module and Cleaning Task Cards to train personnel.
- Hard floors should also be damp mopped or cleaned with an automatic scrubber to remove dirt not picked up by the vacuum. Microfiber mops are more effective at removing dirt than traditional yarn mops.
- Encourage the use of zinc-free floor finishes and environmentally preferable strippers. Always keep a base of 6-8 coats of finish on floors.
- Encourage the use of a top scrub and recoat procedure versus a total strip-out to limit the amount of highly alkaline strippers poured down the drain.
- Notify occupants in advance of stripping and recoating operations. Always place caution signs prior to starting floor maintenance.
- Arrange to have the ventilating system operating in the occupied cycle during and after stripping and refinishing operations.
- Only use chemical products according to label instructions.
- Always supply and wear the proper personal protective equipment (PPE).
- Dispose of excess solutions properly.
- Clean up spills as soon as possible.
- Clean and store equipment after each use.

Carpet Care –

- Utilize appropriate entryway systems and maintenance procedures.
- Always place caution signs prior to beginning carpet maintenance work.
- Vacuum carpet in lobbies, elevators and high traffic areas thoroughly every day. Use high efficiency vacuum cleaners with microfiltration bags. | Replace vacuum bags when they are half full to minimize emissions. Clean or replace filters regularly.
- Establish and monitor a plan for routine, interim and restorative maintenance. Use the Betco Life Cycle of Carpet module and Cleaning Task Cards to train personnel.
- Clean up spills on carpet as quickly as possible. Create a spill cart with a spotting kit and portable spotting machine.
- Maximize the amount of water extracted from the carpet to minimize moisture and potential for mold, mildew and bacterial growth. Make sure the vacuum pickup is working properly.
- Increase ventilation to dry carpets fully within 24 hours or less to minimize the potential for microbial growth. Use floor fans or carpet dryers.
- Notify occupants in advance when extraction operations are scheduled.
- Arrange to have the ventilating system operating in the occupied cycle during and after the extraction procedure.
- Only use chemical products according to label instructions.
- Always supply and wear the proper personal protective equipment (PPE).
- Dispose of excess solutions properly.
- Clean and store equipment after each use.

Dust mopping – vacuuming is preferred to dust mopping

- Use the widest micro fiber dust mops appropriate for the area to be cleaned.
- If using a dust mop treatment, follow label instructions. A water based product is preferable.
- Launder mops on a regular basis.
- Use a continuous motion, without lifting the mop from the floor to limit particulates in the air.
- Use Betco Cleaning Task Cards to insure proper training.
- Clean and store equipment after each use.

Dusting –

- Use microfiber dust cloths to capture and remove dust.
- Replace soiled cloths with clean ones. Always use folded clothes and refold soiled area to maximize the use of the dust cloth.
- Use vacuum attachments or backpacks for high dusting.
- Avoid feather dusters and other methods that stir up dust.
- Avoid dust cloth treatments which can leave residues and emit VOCs.
- Spray dust treatment onto the cloth versus spraying product directly onto the surface.
- Use Betco Cleaning Task Cards to insure proper training.

Restrooms –

- Establish and monitor a plan for routine, interim and restorative maintenance. Use the Betco Restroom Cleaning module and Cleaning Task Cards to train personnel.
- Always place caution signs and close the restroom prior to starting the cleaning process.
- Frequently clean surfaces that hands come in contact with to eliminate the spread of germs; door knobs, light switches and fixture handles.
- Eliminate moisture, keep floors dry to eliminate slip/fall accidents and the build up of bacteria, mold and mildew.
- Ensure trash receptacles are cleaned and emptied daily.
- Restroom floor drains have a very high potential for biocontamination and should be disinfected regularly. Ensure drains are operating properly.
- Recommend the installation of no touch towel dispensers to the facility manager if restrooms are not equipped with these.
- Arrange to have the ventilating system operating in the occupied cycle during and after the cleaning procedure.
- Only use chemical products according to label instructions.
- Always supply and wear the proper personal protective equipment (PPE).
- Dispose of excess solutions properly.
- Clean and store equipment after each use.

Food Areas –

- Clean and sanitize floors, tables, counters and other surfaces.
- Separate recyclables from trash as needed.
- Remove trash daily.
- Remove recyclables as needed.
- Ensure floor drains are operating properly.

Odor Control –

- Be aware of excessive odors in all areas of the building.
- Many odors can be oxidized with Peroxide Cleaners or Liquid bacteria digesters.

Spills –

- Clean spills up as soon as possible. Place cautions signs if appropriate.
- Use appropriate cleaning solutions and follow label directions.
- Make sure occupants know the person to contact in case of spills.
- Always supply and wear the proper personal protective equipment (PPE).
- Dispose of excess solutions properly.
- Clean and store equipment after each use.

Handling chemicals and dilution of concentrated chemicals –

- Using concentrated chemicals reduces the overall environmental impact from packaging and transportation and usually reduces costs.
- Train all workers in the safe handling and use of cleaning chemicals.
- Use appropriate protective equipment when mixing concentrated cleaning products.
- Follow manufacture's dilution directions or use properly functioning chemical management dispensers.
- Put appropriate labels on secondary containers such as spray bottles.
- Never mix different cleaning products together.
- Ensure that chemicals are stored properly.
- Apply product onto a cloth versus spraying it onto the surface to reduce VOCs and possible slip and fall issues.

OSHA Blood-borne Pathogen Standard –

- Use the Betco OSHA Blood-borne Pathogen module to train employees.
- Use safety cones or other means to make sure that occupants do not come in contact with spills.
- Use proper personal protective equipment (PPE).
- Use an OSHA approved disinfectant diluted per label directions. Betco pH 7 Q, pH 7 Q Ultra, Quat Stat, Quat Stat SC, Fight Bac, TB 94 and TB Plus all meet EPA requirements for clean up of bodily fluids.
- Dispose of all materials properly in a biohazard bag.

OSHA Right To Know Standard –

- Use the Betco OSHA Right To Know module to train employees.
- Constantly update MSDS sheets for chemicals used in the facility.

Trash Removal –

- Pull trash daily so as not to attract insects and other pests.
- Cover trash cans that contain food waste.
- Make sure that dumpsters or other outside trash receptacles are emptied regularly.
- Make sure that trash and recyclables are being separated properly.
- Use Betco Cleaning Task Cards to insure proper employee training.

Indoor Plants –

- Educate occupants on appropriate care guidelines for indoor plants. Monitor use of fertilizers or pesticides so as not to adversely affect the indoor air quality.
- Ensure that plants are not in direct contact with carpets and ventilation units.
- Clean up any spills of soil or moisture as soon as possible.

Integrated Pest Management (IPM) –

- Establish, monitor and communicate the IPM program to employees and building occupants.
- Improve sanitation through thorough cleaning and by removing food sources.
- Manage waste, cover trash containers and remove waste frequently.
- Maintain the building structure, seal cracks, fix leaks, etc.
- Install physical barriers to pest entry.
- Notify employees and occupants of treatment times and their role in the IPM program.

Recycling Programs –

- Recycling reduces the amount of solid waste and lessens the burden on solid waste disposal sites, such as landfills and incinerators.
- Insure that collection meets guidelines of the recycling hauler and recycling facility.
- Locate bins throughout the facility, ease of access increases participation.
- Educate occupants as to what can be recycled and how it should be separated.
- Educate occupants to rinse food and drink containers before placing them in bins.
- Put signs on or near trash cans to remind occupants to recycle.
- Track recycling results.
- Monitor recycling collection bins to see if they are attracting cockroaches and other pests.

Garage Maintenance –

- Collect and remove trash daily.
- Sweep the parking surface and stairwells weekly.
- Wash the parking surface at least twice a year.
- Inspect floor drains and lighting fixtures periodically.
- Make sure floor drains, basins and traps are kept free of trash and debris to prevent clogging and standing water.
- Inspect doors to insure they are sealed properly to prevent exhaust from entering the building.

Roof Maintenance –

- Perform routine roof inspections monthly.
- Keep roofs clean and free of debris.
- Keep drainage systems clear.
- Keep roof access limited to authorized personnel to minimize foot traffic.
- Insure fans and vents are clean and operating properly.

Maintaining HVAC Systems –

- Keep mechanical rooms clean and free of rodents and other pests.
- Cleaning and disinfecting air conditioner drip pans monthly.
- Replace the biocide pack for air conditioner drip pans monthly.
- Clean or replace filters on HVAC systems based on manufacturer's recommendations.
- Clean or replace filters on humidifiers according to the manufacturer's recommendations.

Fabric Cleaning – partitions, wall fabrics, furniture, drapery

- Vacuum regularly.
- Deep clean periodically.
- Treat spots immediately.

Basements –

- Examine basement areas for dirt, evidence of insects and other pests and excessive moisture.
- Insure drains are operating properly.

Stairs and Elevators –

- Look for dirt and excessive moisture.
- Inspect and clean on a regular basis.

Cleaning Closets –

- They should be clean, dry and adequately ventilated.
- Check drains and wash basins to see if they are free of bacteria, odors and operating properly.
- Insure chemical management systems are operating properly.

Building Exterior –

- Look for excessive dirt, standing water and damage in parking lots.
- Examine the building's exterior and report any damage.
- Look for drainage problems around the building.
- Insure drains are operating properly.

7. SELECTING SUSTAINABLE GREEN PRODUCTS

Traditionally users considered performance and cost when selecting products. In a Sustainable Green Cleaning program they will consider performance, cost, health and environmental issues. In a Sustainable Green Cleaning program, product selection should be based on the following criteria:

Impact on health and the indoor environment - select products that are safer for workers and building occupants and that do not adversely affect the indoor environment.

Impact on the larger environment - select products that have little or no negative impact on the outside environment.

Performance - the products must do the job.

Cost - be sure to consider performance and productivity in the cost equation. Look at the overall cost of the procedure, not just the individual chemical or equipment cost.

Type of facility - use the same products wherever appropriate to simplify purchasing, procedures and training.

General guidelines for selecting chemicals –

- Select the least toxic products needed to perform a specific cleaning task.
- Use products with low VOC content (Volatile Organic Compound – the part of a product that evaporates during drying).
- Look for products with a moderate pH (a chemical scale which expresses the degree of acidity or alkalinity of water based solutions), 4 to 11.
- Avoid products containing known or suspected carcinogens.
- If hazardous products must be used, ensure worker safety through extensive training and use of personal protective equipment.
- Products that leave little or no residue after cleaning.
- Products that are designed to work in cold water.
- Use single cleaning products for multiple applications.
- Choose products that are readily biodegradable. (the capability of organic matter to be decomposed by biological processes)
- Select metal free floor finishes.
- Select products that are derived from renewable resources, feed stocks, such as detergents and solvents made from corn starch, coconut oil and orange peels. This will reduce the demand for petroleum.

Packaging –

- Purchase chemical products as concentrates.
- Select products that come in recyclable containers.
- Select products that minimize outside packaging.
- Recycle all possible packaging.

Selecting paper products –

Select products with maximum recycled content. (post consumer fiber or recovered fiber)

Post consumer fiber – paper, paperboard and fibrous wastes.

Recovered fiber – post consumer content as well as manufacturing wastes from the paper-making process and repulped paper and paperboard from obsolete inventories.

Selecting products with the highest amount of post consumer fiber diverts the greatest amount of paper waste from landfills.

Bleaching Process – do not use paper products that have been manufactured with de-inking solvents containing chlorine or any other chemicals listed in the EPA Toxic Release Inventory.

Select roll towels versus C-fold towels. Use jumbo paper for toilet and towel usage with controlled dispensing systems.

EPA guidelines for minimum levels of recycled content – Comprehensive Procurement Guidelines (CPC)

Product Category	Post consumer	Recovered
Toilet tissue	20-60%	20-100%
Paper towels	40-60%	40-100%
Facial tissue	10-15%	10-100%
Toilet seat covers	40-60%	40-100%
Industrial wipes	40%	40-100%
Plastic liners	10-25%	- -

Use high density trash bags versus linear low density bags made from petroleum base raw materials.

Microfiber Mops and Cloths –

Microfiber cloth is composed of 80% polyester and 20% polyamide. The polyester fibers serve as the scrubbing and cleaning element, while the polyamide provides an absorbent quick-drying element. Individual fibers are 1/100th the size of a human hair and 1 square inch of cloth contains approximately 90,000 microfibers. The fibers are partially split to create deep channels in the strands. These channels provide dramatically more surface area to lift and trap dirt more effectively than traditional cotton fibers.

When microfiber cloths are used dry, the wedge-shaped filaments create an electrostatic charge that attracts and clings to dirt. Ideal for dusting floors, walls, ceilings, counters or any other flat surface, they are more economical than disposable electrostatic wipes which must be discarded when they become dirty.

Microfiber pads can attract and retain 7 times their weight in dirt and liquids. Because the fabric is highly absorbent, it can deliver and remove far more liquid to and from the floor. Due to the properties of polyamide, microfiber fabric dries in one-third the time of cotton.

Density is key to determining the quality of microfiber. Denser material can absorb more liquid and dust and will last longer.

Equipment –

- **Vacuums** – capable of capturing 96% of particulates, 0.3 microns in size and operate at less than 70 db sound levels. Carpet & Rug Institute (CRI)
- **Extractors** – capable of removing moisture so the carpet will be dry within 24 hours and have a solution metering device to limit the amount of liquid applied. Carpet & Rug Institute (CRI). Betco FP 8 and FP 20 are CRI certified.
- **Floor machines and burnishers** – should be equipped with vacuums for capturing fine particulate and operate at less than 70 db sound levels.
- **Propane machines** – have high efficiency, low emission engines. All Betco propane equipment meets this requirement.
- **Automatic scrubbing machines** – should be equipped with a solution metering device to control the amount of liquid applied and a properly vacuuming system.
- **Battery** - powered equipment should be equipped with environmentally preferable gel or AGM batteries.
- Powered equipment should be ergonomically designed to minimize vibration, noise and user fatigue.
- Powered equipment should be designed with safeguards, such as rollers or rubber bumpers, to reduce potential damage to building surfaces.
- A logbook should be kept for all powered equipment to document purchase dates, maintenance history and equipment information sheets.

Choosing a supplier –

A good supplier can give you a more broad selection of green products, make informed recommendations based on the advantages of specific products and provide support for a green training program. Effective inventory management by you and the supplier can minimize the amount of cleaning chemicals stored in the building while ensuring an uninterrupted supply of products.

Ask them:

- What other facilities are you supporting with environmentally preferable products and procedures?
- Do you carry “certified” products?
- Ask if they are familiar with the United States Green Building Council’s LEED Certification program. Then ask them to briefly explain how they can help you obtain certification points.
- Ask them for a copy of an implementation plan.

8. IMPLEMENTING A SUSTAINABLE GREEN CLEANING PROGRAM

The Sustainable Green Cleaning concept is actually intangible, something you can't see, touch, smell or hear, so your challenge in gaining support and commitment is to make it more tangible. The amount of detail, method of presentation and key points of focus will vary depending on the nature of your organization and your specific audience at the time.

By nature, people are resistant to change. Change is perceived as hard, time consuming and threatening. The following ideas will assist you to implement a successful green cleaning program.

Step 1 - Obtain commitment

For a green cleaning program to succeed, commitment from the CEO down is essential. You need the commitment of employees in all areas and at all levels, from managers to cleaners, to building occupants.

Keep reminding management that the process is dynamic. As you conduct the pilot program you will keep them informed of results and needed changes. And most importantly, continually re-confirm the management and personnel commitment.

Step 2 - Develop an implementation or "green" team

General thoughts - assemble a team from operations, purchasing, supply management, human resources, vendors, training and occupational safety to develop, implement and assess the green program. Someone from top management will also need to be included on your "green team" in order to demonstrate support and add the "muscle" if needed.

Others you may want to include on your "green team" are building occupants, service contractors and vendors. All of the team members may have specific agendas and concerns so be sure to select a team leader with the ability to communicate, manage multiple priorities and processes and fosters a sense of teamwork.

"Green team" for schools should include – school district representative, school administrator, teacher, plant operations, custodians, teachers, school nurse, parent-teacher organization representative, school board representative, transportation and students.

"Green team" for a healthcare facility should include – administration, nurse, doctor, infection control, purchasing, environmental services, operations, patient advocate group, laundry, food services, transportation and community relations.

The key to selecting your "green team" is finding people with the time and desire to participate in this process.

Step 3 - Evaluate current cleaning products, equipment, procedures and training. Pick items that you can realistically measure and take action on. Keep it simple and collect data that is readily available and can be communicated easily. The Betco Sustainable Green Cleaning survey form will assist with the evaluation.

Items to consider:

Inventory cleaning products - review purchasing records and conduct a walk through to survey what is actually being used. Also during the walk through, inventory what “other” chemicals are found and determine how they are brought into the facility. During the survey collect any product, vendor or distributor information concerning the cleaning products including MSDS sheets and review labeling information. Identify any products that have been linked to **worker injuries** or **occupant complaints**. Determine alternatives that are environmentally preferable.

Survey all powered cleaning equipment. Identify all equipment used, where it is used, the current condition of the equipment and review the maintenance records. Determine alternatives that are environmentally preferable.

Survey and inspect all other tools and supplies used in the cleaning process: mops, buckets, wringers, paper, wipers, liners, toilet tissue, etc. Determine alternative tools and supplies that are environmentally preferable.

Evaluate current training programs. Review all training and safety literature and materials. Evaluate and look for compliance with the existing procedures. Determine what adjustments will need to be implemented for the green cleaning program. It will be essential to tell cleaners why a procedure is done a certain way or why a certain product is being used. Let them participate in the planning and implementation of the green cleaning program.

Conduct a general housekeeping walk through. Evaluate the overall quality of the current cleaning and look for problems as well as opportunities for improvement. If the housekeeping is outsourced, get a copy of the current cleaning specifications and look for compliance.

Consider doing a survey of cleaning employees and building occupants for overall satisfaction. This will help you identify specific areas of concern and place proper priorities for the greening program. (Available on Betco.com)

Document and review any recycling program in place. Look for evidence that the program is being used and producing the intended results.

Do a survey of building occupants to identify any people with special sensitivity to cleaning chemicals.

Step 4 - Establish an effective communication system between building employees and building occupants

Successful implementation of a stewardship plan depends on everyone understanding and carrying out their individual parts of the green cleaning plan. Therefore, your central communications goal is to ensure everyone understands their roles and responsibilities. The better they understand the overall plan and how their efforts fit into the success of the plan, the more likely you are to succeed.

The general guideline for most of the communications is to be positive. Introducing a green cleaning program should send the message that you are trying to make the building better and not that the building was bad and needed to be fixed.

A best practice suggestion for successful implementation is developing an overall theme or brand for the green cleaning program. Encourage participation from all segments, management to employees to occupants, in the naming of the new program or in the expansion of a current program. Also it is helpful to **create a mission and/or vision statement** which will give focus and importance to the green cleaning program.

Let everyone know what is going to happen, why it is going to happen, when it is going to happen and encourage feedback for everyone on a continual basis. The following are helpful hints for a successful communication plan.

Introduction of the Sustainable Green Cleaning program – tell people about how important cleaning is in general. Many of your building's occupants probably think of cleaning as little more than pulling the trash, replacing the paper towels and vacuuming up the stray bits of paper on the carpet. This is your chance to really explain the value of cleaning in general. You can emphasize how green cleaning will enhance their health and the indoor/outdoor environment.

Stress improvement – you need to explain how the products, services, procedures and strategies in the plan reduce the impact on the health of the employee, building occupant and visitor and the environment will be positively effected. Everyone wants to know “what’s in it for me”.

Setting expectations – set realistic expectations from the beginning; it won't be perfect but we can make it better. People (employees or occupants) that suffer from asthma, allergies or other respiratory problems, may think the new program will fix everything. You need to emphasize the green cleaning program will make things better but you can't make them perfect.

Explaining the changes – what are you doing differently and why is that better for employees and occupants. Highlighting the benefits derived from new equipment, chemicals, supplies and procedures being implemented will yield a long list of potential communication points.

On-going communication – the initial communications explained what, why and how the green cleaning program will be implemented and effect employees and building occupants. After implementation you will want to continue your positive communication process by letting people know when you're planning to conduct major cleaning activities that they are likely to smell, see, hear, notice or otherwise be affected by. The key is to let them know before the project occurs, don't wait for them to complain about it. Examples would be – scrub and recoating, stripping and recoating, carpet spotting, shampooing or extracting, application of pesticides, fertilizers or weed killers, wall washing, ceiling tile cleaning, deep cleaning of restrooms or other major projects.

Examples of ways to communicate your message are: newsletters, news releases, bulletin board information, company Intranet information, posters, periodic emails, provide means for communicating questions or comments, anything that will communicate your message. Betco has a number of communication templates for your use on Betco.com.

Step 5 - Develop a Pilot Plan

The green team should develop a Sustainable Green Cleaning pilot plan based on all the information that they collected and then prioritized in order to make sure that everyone is on the same page. The plan typically covers what products and procedures will be changed, including when those changes will happen, who will be responsible and area(s) that will be affected. Analyze the information and look for the best opportunities for improvement. As you do so, you need to look for and document the changes you propose for products, procedures and other pollution-prevention strategies. The key for your pilot plan is to gain buy-in from your green team and upper management and to show results after you implement each stage.

You don't have to do everything at once. By getting the pilot plan in place, achieving real results and communicating progress, you provide the foundation for the more challenging opportunities and continual improvement.

Priorities for your Pilot Plan:

- **Most immediate results** – strategies that eliminate the most immediate risks to building employees and building occupants or that demonstrate harm to the environment.
- **Greatest potential gain** – changes in products or procedures that yield the greatest health benefits for employees or building occupants.

- **Easiest to demonstrate and measure** – opportunities for improvement that are measurable and demonstrate progress to employees and building occupants.
- **Most cost-effective** – opportunities that produce little visible change but offer measurable cost savings.

The specific points in your plan will depend on the findings from your survey. Normally your plan will address the following topics. The specific recommendations for each area are outlined in the **Betco Green Cleaning Workbook** and on Betco.com.

- Identifying vulnerable employees and occupants
- Cleaning chemicals
- Recycling
- Floor care
- Carpet care
- Janitorial paper products
- Equipment
- Dusting and spot cleaning surfaces
- Entryways
- Food areas
- Restrooms
- Indoor plants
- Green cleaning training program

Train building occupants – the employees and occupants of your building need training to understand their roles in a successful Sustainable Green Cleaning program. Areas of training should include – spills, eating in the workplace, bringing cleaning products from home, locked offices and of course recycling programs.

Step 6 - Monitor results and celebrate success

Pre-pilot surveys allow you to develop a baseline for staff and occupant response to cleaning methods and products before starting the pilot. It is now time to make an assessment concerning the pilot program. Use this input to validate your goal accomplishments and re-enforce the benefits of the program. It is important to gain some detailed information about how the green cleaning program has been received and whether it has succeeded at the level of performance. This feedback will provide support for expansion of the pilot to full scale implementation or let you know that there are aspects that need to be worked out before expansion is possible.

- Survey janitorial workers, building occupants or others who may be involved with the pilot to see if they have any issues or concerns about using the new products, tools or procedures.
- Use the results of your surveys to identify those items that are highly

successful and to flag those which did not work as well and need to either be readdressed or dropped in future efforts.

- Make sure to solicit feedback from those who expressed reservations about the pilot to ensure that they feel heard and respected.
- Communicate the progress of the green program and what the next steps are and who will be affected. Use the same process as before to select the next area(s) for implementation. If it worked before, it will work again.

Make a plan how you will **celebrate the success** of the program and how you will communicate it to the staff, building occupants and the community. Take advantage of opportunities for positive press and staff recognition to set the stage for further implementation. Continue to use previous successful communication tools.

Also develop an **awards program** for employees and occupants who contribute to continuous improvement for offering successful ideas on green procedures or environmentally preferable products.

9. FREQUENTLY ASKED QUESTIONS

Q. What does green cleaning mean?

A. Green Cleaning in its most simplified form is defined as cleaning to protect health while minimizing the effect on the environment.

Q. What does Sustainability mean?

A. Taking care of current resources so future generations will have adequate resources.

Q. How can I be sure I am not being duped into buying products that make untrue claims about chemical safeness?

A. Take a good look at the claims the product is making. If it looks like smoke and mirrors, it probably is. Additionally third party certification (i.e. Green Seal, Ecologo, DfE) insures an independent unbiased party has reviewed and certified the product.

Q. How can a maintenance manager convince upper building management to go green?

A. Green program equals healthier employees, more satisfied tenants. A green commitment means a closer look at your overall cleaning program which will result in lower costs, greater productivity and less employee turnover. For example, compare the cost of a scrub and recoat procedure versus an entire strip out. Explain the “Triple Bottom Line” advantage.

Q. What can being LEED certified do for my facility?

- A. Excellent exposure for your facility, a commitment to your tenants. Generally LEED buildings can offer a higher rental rate per square foot and greater occupancy rates than their conventional counterparts.
- Q. How can I get started with a green cleaning program?
- A. Start small, identify major impact areas and suggest to upper management a pilot test program with one building or one floor or one hallway. Use the Betco 6 Step Implementation Process as a benchmark.
- Q. Where can I go to obtain information concerning Sustainable Green Cleaning?
- A. Several websites have excellent detailed information. To name a few: www.betco.com, www.greenseal.org, www.usgbc.org, www.issa.com, www.h2e-online.org, www.greencleanschools.org
- Q. How much more will a Sustainable Green Cleaning program cost me?
- A. Overall you will save money, when you institute an entire green program, by looking at ways to be more productive and truly analyzing your entire cleaning operation.
- Q. How do I know that Sustainable Green Cleaning products will do as well as my current products?
- A. Like anything else, try the products for yourself. The technology has advanced to the point where we can get similar results with green products than by using conventional cleaners.

10. TAKING A SURVEY

The survey should look at all areas of the building to identify existing problems that require immediate remediation. It should also identify areas that may require higher cleaning frequencies or special procedures to prevent potential problems from occurring as well as areas where the cleaning operation can be improved. Be alert to areas of excessive moisture throughout the building, which can support the growth of mold and mildew. Look for condensation on walls, musty odors, damp carpet and water damaged ceiling tiles.

You may find it helpful to have a facility floor plan and a digital camera during your survey.

Always have appropriate personnel to conduct and verify the survey results.

The results of the survey will assist in establishing priorities and goals for the Sustainable Green Cleaning program.

The survey form below will assist you in conducting your initial green program survey and periodic monitoring surveys after implementation.

DATE _____



FACILITY _____

INSPECTION PERSONNEL _____

GREEN BUILDING SURVEY

Green Cleaning Policy	Comments/Recommendations
Written Standard Operating Policy (SOP) –LEED IEQ credit 3.1	
Purchase of sustainable cleaning, hard floor, carpet care, tools, janitorial paper and plastic liner products meeting the criteria of LEED IEQ Credit 3.3. (Y/N)	
Purchase of sustainable cleaning equipment meeting the criteria of LEED IEQ Credit 3.4. (Y/N)	
Establish a policy addressing how an effective cleaning and hard floor and carpet maintenance system will be consistently utilized, managed and audited. Specifically address cleaning to protect vulnerable building occupants. (Y/N)	
Develop strategies for promoting and improving hand hygiene, including both hand washing and the use of alcohol-based waterless hand sanitizers. (Y/N)	
Develop guidelines addressing the safe handling and storage of cleaning chemicals used in the building, including a plan for managing hazardous spills or mishandling incidents. (Y/N)	
Develop requirements for staffing and training of maintenance personnel appropriate to the needs of the building. Specifically address the training of maintenance personnel in the hazardous use, disposal and recycling of cleaning chemicals, dispensing equipment and packaging. LEED IEQ credit 3.2 (Y/N)	
The use of chemical concentrates with appropriate dilution systems to minimize chemical use wherever possible. (Y/N)	
Provide for collecting occupant feedback and continuous improvement to evaluate new technologies, procedures and processes. (Y/N)	

Current Chemicals – Manufacturer/Distributor	Comments/Recommendations
Conditions	
Floor Care	
GS40 products (Y/N)	
Ecologo (Y/N)	
Carpet Care	
GS37 products (Y/N)	
Ecologo (Y/N)	
Disinfectants	
Ecologo (Y/N)	
General Cleaners	
GS37 products (Y/N)	
Ecologo (Y/N)	
EPA DfE (Y/N)	
Odor Control	
Low VOC products (Y/N)	
Skin Care	
GS41 products (Y/N)	
Ecologo (Y/N)	
Foam soaps (Y/N)	
Antibacterial soaps (Y/N)	
Lockable dispensers (Y/N)	
Hand Sanitizers (Y/N)	
Bulk fill dispensers (Y/N)	
Cartridge fill dispensers (Y/N)	
Hand washing program in place (Y/N)	
Chemical Management System (Y/N)	
Other Chemicals	

Current Chemicals – Manufacturer/Distributor	Comments/Recommendations
Manufacturer/Distributor	
CRI Certified vacuums (Y/N)	
CRI Certified extractors (Y/N)	
Powered floor equipment – passive/active vacuum systems < 70 db (Y/N)	
Scrubbers – adjustable solution control (Y/N)	
Propane equipment – high efficiency, low-emission engines with catalytic converters meeting CARB or EOA guides; < 90 db (Y/N)	
Gel batteries (Y/N)	
Maintenance logs being utilized (Y/N)	
Current Towel Manufacturer/Distributor	
Made with recycled materials (Y/N)	
Made with rapidly renewable resources or tree free fibers (Y/N)	
No de-inking using chlorine solvents (Y/N)	
No bleaching with chlorine (Y/N)	
Using jumbo roll dispensers (Y/N)	
Current Tissue Manufacturer/Distributor	
Made with recycled materials (Y/N)	
No de-inking using chlorine solvents (Y/N)	
No bleaching with chlorine (Y/N)	
Using jumbo roll dispenses (Y/N)	
Current Liner Manufacturer/Distributor	
Using high density liners (Y/N)	
Using low density liners (Y/N)	
Right sized for containers (Y/N)	
Double bagging (Y/N)	
EPA compliant, 10% post-consumer content (Y/N)	
Micro Fiber wiping, dusting and mopping products (Y/N)	

Restrooms	Comments/Recommendations
Conditions	
Excessive dirt, moisture present in restroom (Y/N)	
Leaks or standing water present (Y/N)	
Noticeable odors present (Y/N)	
Soap dispensers, showers, towel dispensers, exhaust fans, vents, sinks, drains, toilets and urinals are working properly (Y/N)	
What is the condition of flooring? What type of flooring is present? Is it sealed? (Y/N) Type of coating.	
Touch free urinals, toilets, dispensers (Y/N)	
Non-para urinal blocks (Y/N)	
Use foam hand soap (Y/N)	

Cleaning Closets	Comments/Recommendations
Conditions	
Adequate number of cleaning closets presents (Y/N)	
Closet is organized, chemicals and equipment are properly labeled (Y/N)	
Properly Ventilated (Y/N)	
Hazardous items are stored safely (Y/N)	
Floor drains are operating properly (Y/N)	
Noticeable odors present (Y/N)	
Excess moisture or standing water present (Y/N)	
Chemical dispensing equipment present and operating properly (Y/N)	

Recycling Program	Comments/Recommendations
Written program (Y/N)	
Items recycled – paper, cardboard, plastic, glass, metals, mercury containing light bulbs, batteries containers labeled in place (Y/N)	
Occupants have been trained (Y/N)	
Containers emptied according to plan (Y/N)	

Storage Areas	Comments/Recommendations
Conditions	
Hazardous materials such as highly flammable, corrosive, reactive, toxic or infectious items present (Y/N)	
Excessive dirt or moisture present (Y/N)	
Doors sealed properly to prevent exhaust from entering building (Y/N)	
Noticeable odors present (Y/N)	
Insects or rodents present (Y/N)	

Stairs and Elevators	Comments/Recommendations
Conditions	
Excessive dirt or moisture present (Y/N)	
Materials stored in stairwell (Y/N)	
Safety concerns (malfunctioning elevators, damaged hand rails, loose or broken stairs).	
Noticeable odors present (Y/N)	
What is the condition of flooring? What type of flooring is present? Is it coated? (Y/N) Type of coating.	

Office and Work Areas	Comments/Recommendations
Conditions	
Excessive dirt, clutter or storage of food present (Y/N)	
What is the condition of flooring? What type of flooring is present? Is it coated? (Y/N) Type of coating.	
Closets contain excess dirt or moisture (Y/N)	
Water damage present in ceiling tiles (Y/N)	
Telephones, door knobs and light switches clean and operating properly (Y/N)	
Noticeable odors present (Y/N)	
Trash receptacles cleaned and emptied (Y/N)	

Food Areas	Comments/Recommendations
Conditions	
Excessive dirt, moisture or open food containers present on counters, tables, floors, cabinets, refrigerators and area under sinks (Y/N)	
Presence of insects and rodents (Y/N)	
Floor drains operating properly (Y/N)	
Trash receptacles are covered and emptied daily (Y/N)	
Noticeable odors present (Y/N)	
What is the condition of flooring? What type of flooring is present? Is it coated? (Y/N) Type of coating.	

Pest Management	Comments/Recommendations
Written policy for Integrated Pest Management (Y/N)	

Building Exterior	Comments/Recommendations
Conditions	
Sidewalk, roads, parking lots – dirt present, type of soil.	
Building exterior damage present if so where?	
Condition of drainage around building	
Drains operating properly (Y/N)	
Condition of dumpsters, insects and rodents present (Y/N)	
Presence of standing water in parking lot (Y/N)	

Building Entrances & Exits	Comments/Recommendations
Conditions	
Evaluate matting systems – scraper mats, foyer mats and inside carpet mats.	
Matting maintenance program present (Y/N), frequency of maintenance.	
Waste receptacles cleaned and emptied (Y/N)	
Glass doors and window coverings are clean and in proper working condition (Y/N)	
Noticeable odors present (Y/N)	
What is the condition of flooring? What type of flooring is present? Is it coated? (Y/N) Type of coating.	

Public Areas	Comments/Recommendations
Conditions	
Public telephones, vending machines and light switches are clean (Y/N)	
Waste receptacles cleaned and emptied (Y/N)	
What is the condition of flooring? What type of flooring is present? Is it coated? (Y/N) Type of coating.	
Noticeable odors present (Y/N)	

Basements and Crawl Spaces	Comments/Recommendations
Conditions	
Dirt, insects, other pests, or moisture present (Y/N)	
Hazardous materials present (Y/N)	
Drains operating properly (Y/N)	
Vents and filters free of moisture and excess dirt (Y/N)	
Cracks in flooring, foundation or walls (Y/N)	
Noticeable odors present (Y/N)	
What is the condition of flooring? What type of flooring is present? Is it coated? (Y/N) Type of coating.	

Mechanical Rooms and Systems	Comments/Recommendations
Conditions	
Excessive dirt and moisture present (Y/N)	
HVAC Filters need to be replaced (Y/N)	
Insects or rodents present (Y/N)	
Hazardous materials present (Y/N)	
Noticeable odors present (Y/N)	
Vents and exhaust fans clean and operating properly (Y/N)	

Garages and Loading Docks	Comments/Recommendations
Conditions	
Excessive dirt or moisture present (Y/N)	
Hazardous materials such as highly flammable, corrosive, reactive, toxic or infectious items present (Y/N)	
Doors sealed properly to prevent exhaust from entering building (Y/N)	
Insects or rodents present (Y/N)	
Noticeable odors present (Y/N)	
What is the condition of flooring? Type of flooring is present? Is it coated? (Y/N) Type of coating.	

Roof Areas	Comments/Recommendations
Conditions	
Exhaust fans and vents clean and operating properly (Y/N)	
Storage of materials present (Y/N)	
Leaks or standing water present (Y/N)	
Screens or barriers are in place to prevent pest entry into the building (Y/N)	

Additional Areas	Comments/Recommendations

10. RESOURCES FOR INFORMATION FOR THIS WORKBOOK

- Betco Corporation – www.betco.com
- Green Seal – www.greenseal.org
- United States Green Building Council (USGBC) – www.usgbc.org
- Association of Physical Plant Administrators (APPA) – www.appa.org
- Canada’s Environmental Choice Program (Ecologo) – www.Ecologo.ca
- U.S. Department of Agriculture (USDA) www.usda.gov
- Environmental Protection Agency (EPA) www.epa.gov/oppt/epp/pubs/cleanfct.pdf
- EPA Design for the Environment (DfE) – www.epa.gov/dfe/
- EPA Comprehensive Procurement Guideline (CPG) – www.epa.gov/cpg/
- EPA’s Environmentally Preferable Purchasing – www.epa.gov/epp/
- Healthy Schools Campaign – www.healthyschools.com
- Collaborative for High Performance Schools (CHPS) – www.chps.net
- Green Guide for Health Care (GGHC) – www.gghc.org
- Hospitals for Healthy Environment – www.h2e-online.org
- Green Guard – www.greenguard.org
- ISSA – www.issa.com
- Stephen Ashkin – SteveAshkin@AshkinGroup.com
- Green Cleaning University – greencleaninguniversity.org
- Carpet and Rug Institute (CRI) - www.carpet-rug.org
- International Executive Housekeepers Association – www.ieha.org
- International Facility Management Association – www.ifma.org
- IFMA Operation Manual
- The Pennsylvania Green Building Operations and Maintenance Manual
- Guide To Green Cleaning from BSCAI
- Green Cleaning for Dummies – available from ISSA

11. GREEN CLEANING CERTIFICATION EXAM

NOTE: exam is also available on Betco.com; certificates of completion are available from Betco Gold distributors or Betco Regional Managers.

1. Green Cleaning is cleaning to lessen the impact on the employee, building occupants, visitors and on the indoor and outside environment?
TRUE FALSE
2. A benefit of Sustainable Green Cleaning is reduced absenteeism?
TRUE FALSE
3. The Green Seal organization certifies products as being environmentally preferable.
TRUE FALSE
4. Green finish strippers will take off regular floor finish also?
TRUE FALSE
5. LEED-EB certification is only for extra big buildings?
TRUE FALSE
6. Having an entryway matting system with a plan for its maintenance will earn a LEED-EB certification point?
TRUE FALSE
7. Recycling aluminum can, paper, plastic and glass will earn LEED-EB certification points?
TRUE FALSE
8. Using micro fiber mops is a Sustainable Green Cleaning best practice?
TRUE FALSE
9. Using GS37 certified products is a Sustainable Green Cleaning best practice?
TRUE FALSE
10. Identifying building occupants that have special needs or sensitivities to certain chemicals is a Sustainable Green Cleaning best practice?
TRUE FALSE
11. Eating more green beans is a Sustainable Green Cleaning best practice?
TRUE FALSE

12. Always wear the manufacturer's recommended personal protective equipment (PPE) when performing normal duties?
TRUE FALSE
13. Don't worry about reading product label directions?
TRUE FALSE
14. Always use the product with the highest pH value when cleaning?
TRUE FALSE
15. When selecting paper products, select ones with maximum recycled content?
TRUE FALSE
16. Micro fiber mops are only used in tiny little spaces?
TRUE FALSE
17. When selecting vacuum cleaners, select one with a db noise level less than 70?
TRUE FALSE
18. When selecting an auto scrubber, insure the machine has a solution metering device to minimize the amount of liquid applied?
TRUE FALSE
19. When choosing a supplier for Sustainable Green Cleaning products, select the one that takes you to lunch?
TRUE FALSE
20. When you start a Sustainable Green Cleaning program, create a team consisting of personnel from many departments?
TRUE FALSE

12. GLOSSARY

Acrylic – type of polymer found in floor finishes.

Acute effect – an adverse effect that develops rapidly from a short term high level exposure to a material.

Alkalinity – useful in removing acidic, fatty and oily soils.

Allergic reaction – an abnormal physiological reaction to chemical or other stimulus.

All purpose cleaner – a detergent suitable for general cleaning duties.

Antimicrobial – an agent which inhibits or destroys bacteria, fungi, protozoa or viruses that are pathogenic.

Asphyxiant – a vapor or gas which can cause unconsciousness or death by suffocation.

Bacteria – single cell microorganisms not containing chlorophyll.

BioBased – products that are composed in whole or in significant part of biological products or renewable agricultural materials that can be continually produced without diminishing supply.

Bloodborne pathogen – disease causing bacteria normally contained in bodily fluids.

Butyl cellusolve (butyl) – a water soluble solvent frequently used in degreasing products.

Carbon Footprint – a measure of the impact human activities have on the environment in terms of the amount of greenhouse gases produced, measured in units of carbon dioxide.

Carcinogen – cancer causing agent.

CIMS – Cleaning Industry Management Standard – is designed to assist cleaning organization (in-house and service contractors) in setting up a management system that allows an organization to meet specific goals.

Concentrated chemicals – the undiluted form of a dilutable cleaning product.

Chronic toxicity – adverse affects caused by continuous or repeated exposure to a harmful organism over a period of time equal to ½ of the organism’s lifetime.

Corrosion – process of gradual eating away by chemical action.

Cross-contamination (cross-infection) – the process of transferring bacteria from one person or an object to another person.

Design For The Environment (DfE) – EPA’s voluntary partnership program which works with industry sectors to improve the performance, health and safety attributes of products.

Detergent – synthetic cleaning agent which is useful in physical removal of soils.

Disinfectant – an agent that destroys harmful bacteria and/or viruses on inanimate surfaces. Products making disinfectant claims must be registered with the EPA.

Ecolabeling – A labeling system which helps end users identify green products. The ecolabel ensures the product was evaluated by an independent non-biased third party for performance and environmental attributes.

EcoLogo Program (Canada) – Canada’s Ecolabeling program that identifies products and services that are less harmful to users, occupants and the environment.

Ecosystems – An ecological community together with its environment, functioning as a unit.

Environmental impact – the possible adverse effect of the release of a material into the environment as listed in MSDS information.

Environmentally preferable product – A product that has a reduced impact on the health and safety of workers, and the environment compared to traditional products.

Environmental Protection Agency (EPA) – has responsibility to regulate the environmental issues. A governmental branch responsible for safeguarding our nation’s land, water, and air resources.

Federal Insecticide Fungicide and Rodenticide Act (FIFRA) - products that make claims such as sterilizers, disinfectants, or sanitizers must be registered under this act.

FIFRA – Federal Insecticide Fungicide and Rodenticide Act. Products that make claims such as sterilizers, disinfectants, or sanitizers must be registered under this act.

Flammability – the capacity of a material to ignite easily and burn rapidly.

Flash point – the lowest temperature at which the vapor from a product will ignite.

Fungi (fungus) – vegetable organisms that lack chlorophyll and are filamentous. Fungus includes mold, mildew, yeast and mushrooms.

Fungicide – a chemical agent that destroys fungi.

Greenhouse Gases – gases in the Earth’s atmosphere that produce the greenhouse effect. Greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxide, halogenated fluorocarbons, ozone, perfluorinated carbons and hydro fluorocarbons.

Greenwashing – disinformation to present an environmentally responsible public image that isn’t warranted.

GS-37 – Green Seal standard for Bathroom Cleaners, General Purpose Cleaners, Glass Cleaners and carpet cleaners.

GS-40 – Green Seal standard for floor finishes and floor strippers.

GS-41 – Green Seal standard for hand cleaners, industrial and institutional, for non anti-bacterial products. This standard does not include products used in households, food preparation operations or medical facilities.

GS-42 – Green Seal standard for cleaning service providers, including in-house and building contractors, to create a Green Cleaning program that protects human health and the environment.

Germicide – any substance that kills germs. Another name for a disinfectant.

Gram positive and gram negative – classification of bacteria by their reaction to staining. A dye is applied to bacteria and those that remain permanently stained are gram positive. If the stain is easily removed they are gram negative. Staph and Strep are examples of gram positive bacteria. Pseudomonas and salmonella are examples of gram negative bacteria.

Green Cleaning – cleaning to safeguard human health while minimizing the impact on the environment.

Green Seal – Non-profit agency that works with manufacturers, industry sectors, purchasing groups and government branches to “green” the production and purchasing chain. Their mission is to achieve a more sustainable world by promoting environmentally responsible production, purchasing and products.

Hazardous material – any substance having the properties capable of producing adverse effects on the health or safety of people.

Healthy Schools Campaign – non-profit organization that works with students, teachers and community members for greater awareness and understanding of the school environment.

HEPA filters – “High Efficiency Particulate Arrestance” the filter must retain and filter out all particles from the air that passes through it down to 0.3 microns in size at an efficiency rating of 99.97%.

Hospitals for Healthy Environment – non-profit organization to support environmentally sustainable health care facilities.

Indoor Air Quality (IAQ) – deals with the content of interior air that could affect the health and comfort of building occupants.

Infection – a condition in which microorganisms have entered the body and produced an adverse reaction.

Ingestion – taking a substance into the body by mouth.

Inhalation – taking a substance into the body by breathing.

Inorganic – a substance not made of the combination of carbon and hydrogen.

Irritant – something that causes an inflammation reaction in the eyes, skin or respiratory system.

LEED – Leadership in Energy and Environmental Design. Rating system defines green buildings using a common set of standards created by United States Green Building Council.

LEED – EB – USGBC standard for existing buildings

LEED – NC – USGBC standard for new construction

LEED – CI – USGBC standard for commercial and interior projects

LEED – CS – USGBC standard for core and shell projects

LEED – H – USGBC standard for homes and the home building industry

LEED – ND – USGBC standard for neighborhood development

LEED – Retail – USGBC standard for retail facilities

LEED – Schools – USGBC standard for educational facilities

LEED – Hospitals – USGBC standard for health care facilities

Lethal concentration (LC) – the concentration required to cause death in a given species of animal or plant.

Life Cycle Assessment – is an analysis of the environmental aspects and potential impacts associated with a product, process or service.

Microfiber – material which provides dramatically more surface area to lift and trap dirt more effectively than traditional cotton fibers,

Microorganisms – plants or animals visible only with the aid of a microscope.

Mildew – a growth, usually white, produced by fungus.

Mold – a woolly growth, produced by fungus.

Molecule – the smallest unit into which a substance can be divided that retains all of the chemical identity of that substance.

Neutral – a chemical state that is neither acidic or alkalie (base); 5-9 on the pH scale.

Occupational Safety and Health Agency (OSHA) – establishes and enforces laws relating to worker safety.

Pathogen – any disease producing organism.

Personal protective equipment (PPE) – equipment worn to prevent workers from harmful exposures or conditions.

Pesticide – an agent which prevents, repels, destroys or mitigates pests types include insecticides, disinfectants and sanitizers, rodenticides and herbicides.

pH – a simple chemical scale which expresses the degree of acidity or alkalinity of a solution. The scale runs from 0 to 14. 7 is the neutral point. Numbers below 7 indicate acidity. Numbers above 7 indicate alkalinity.

Pilot project – a test project to assist in implementing a green cleaning program.

Pollutants – waste material that contaminates air, soil, or water.

Post consumer content – is the percentage of material in a product that was consumer waste and has served its intended purpose.

Readily renewable – a resource that can be replenished by natural means at rates comparable to its rate of consumption.

Ready to use chemicals (RTU) – cleaners that are not diluted before use.

Recovered content – post consumer content as well as manufacturing wastes from the paper-making process and re-pulped paper and paperboard from obsolete inventories.

Recycled materials – materials that are reused to make other products.

Recycled content – is the proportion of preconsumer or postconsumer recycled material.

Recycling – is the collection, reprocessing, marketing and use of materials that were diverted or recovered from the solid waste stream.

Reduce – using less of a product in order to lessen the impact on the environment.

Renewable resources – any natural resource that can replenish itself naturally over time, such as wood, soy, citrus or solar energy.

Reuse – reusing products or byproducts from processes for the same function, a similar function or a new function.

Sanitizer – an agent that reduces the number of bacteria to a safe level but does not completely eliminate them, as judged by public health requirements.

Solvents – substances used to solubilize other materials.

Source reduction – refers to any change in the design, manufacture, purchase, or use of materials or products (including packaging) to reduce their amount or toxicity before they become municipal solid waste.

Surfactant – surface-active-agent which increases the emulsifying, foaming, dispersing, spreading and wetting properties of a product.

Sustainability – products and procedures that will maintain human health, the environment and facilities for future generations.

Toxic – substance causing adverse effects in the body like a poison.

Triple Bottom Line – refers to the results of organizations along three dimensions- economic (profit), environment (planet) and social (people).

United States Green Building Council (USGBC) – non-profit agency that addresses the significant impacts of building design and operation on human health and the natural environment.

Use dilution – the final concentration at which a product is used.

USGBC – United States Green Building Council – non-profit agency that addresses the significant impacts of building design and operation on human health and the natural environment.

Virucide – a chemical agent that kills viruses.

Volatile – that part of a product that evaporates during drying.

Volatile Organic Compound (VOC) – measure of ingredients that release into the air that can lead to poor indoor air quality.

Waste – unwanted materials left over from a manufacturing process. Waste is also the refuse from places of human or animal habitation.

Waste reduction – using source reduction, recycling or composting to prevent or reduce waste generation.

Waste stream – the total flow of solid waste from a facility that is recycle, burned or disposed of in landfills.

Waterless urinals – fixtures that do not require potable or grey water to flush.