



BUILDING  
WELLNESS  
INSTITUTE

GREEN CLEANING –  
WHAT'S IN IT FOR ME?

WELCOME



Green Cleaning? What is it?

**Cleaning for appearance is no longer enough!**



# The New Order of Cleaning

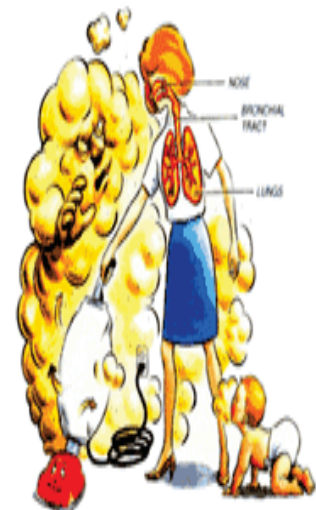
## Official definition of Green Cleaning:

*“CLEANING FOR HEALTH WHILE PROTECTING  
THE ENVIRONMENT”*



## SOME FACTS

**According to the EPA, each work day, 53 million people in the American population are exposed to polluted air. Among the many toxins found in indoor air are the chemicals, contaminants, and particulates released during traditional cleaning practices.**



## WASTE contributed annually by the cleaning industry\*:

6 billion pounds	of chemicals
4.5 billion pounds	of paper
35 thousand pounds	of equipment
35 billion	plastic liners



\*Steve Ashkin, The Ashkin Group

## CLEANING'S IMPACT ON CLEANERS

<b>Acid toilet bowl cleaner</b>	<b>Hydrochloric acid</b>	<b>Burns eyes &amp; skin Can cause blindness</b>
<b>Carpet spotter</b>	<b>Perchloroethylene Hexane</b>	<b>Poisonous Causes cancer Flammable</b>
<b>General purpose cleaner</b>	<b>Butoxyethanol Sodium hydroxide Ethanolamine</b>	<b>Burns eyes and skin Poisonous</b>
<b>Floor finish stripper</b>	<b>Butoxyethanol Sodium hydroxide Ethanolamine</b>	<b>Burns eyes and skin Poisonous</b>
<b>Baseboard stripper</b>	<b>Butoxyethanol Sodium hydroxide Ethanolamine</b>	<b>Burns eyes and skin Poisonous</b>

# SOME FACTS

The average custodian uses 5 gallons of hazardous chemicals each year. He/she is exposed to these chemicals on a daily basis.



Over \$ 75 million is being spent each year on medical expenses and lost time wages for custodians due to injuries relating to exposure to chemicals.



Using safer cleaning products and an improved ventilation system has been shown to increase worker productivity by up to 5% and to save institutions nationwide \$30 to \$150 billion annually.



# SOME FACTS

**Asthma among children has increased significantly over the past several years.**

**Dust, cleaning chemicals, roaches can trigger asthma attacks.**



# So what *are* the benefits?

Benefits of a green cleaning program include:

- **Protecting Human Health**
- Protecting Environmental Health
- Improving Performance
- Increasing ROI

**Resource  
Conservation**



+

**Health &  
Wellness**



= **Sustainability**

## Protecting Human Health



Studies by the the *U.S. EPA* and *Cornell Medical College* reveal that high-performance green and healthy cleaning results in the following health benefits:

### **Indoor Air Quality Improvements<sup>1</sup>**

- 52 % reduction in airborne dust**
- 59 % decrease in Volatile Organic Compounds(VOCs)**
- 40 % reduction in bacteria**

### **Health Improvements<sup>2</sup>**

- 24% reduction in reported illnesses**
- 34% fewer doctor visits**
- 24% reduction in courses of antibiotics**
- 46 % fewer days absent from school**

Indoor air quality programs can have significant impact for high performance schools. **Green cleaning programs focus on improving air quality** because contaminants are typically at least two to five times worse indoors than outdoors. (2)

In another school study, implementation of new indoor air quality programs, equipment and supplies had the following health related results: (3)

- Airborne dust inside the building decreased by 52%
- Volatile organic chemical (VOC) concentrations decreased by 49%
- Bacteria decreased by 40%
- Fungi colony-forming units decreased by 61%
- 25% increase in test scores



(2) U.S. Environmental Protection Agency

(3) Indoor Environment Characterization of a Non-Problem Building: Assessment of Cleaning Effectiveness, US Environmental Protection Agency, March 1994. (conducted at the Frank Porter Graham Child Development Center, Chapel Hill, NC)

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## REDUCTION OF WASTE



- **Chemicals**  
Significantly less chemicals in use
- **Equipment**  
Sustainable equipment increases the life span
- **Soap**  
Environmentally safer soaps are entered into the waste stream
- **Paper**  
Less paper and chlorine free products are used for cleaning
- **Plastic liners**  
Bio-degradable and recycled plastic products in use

# Improving Performance

As stated by Frumkin, Geller, Rubin and Nodvin in *Safe and Healthy School Environments*:

“A safe and healthy school environment does more than benefit student health, it also improves academic performance and morale. It does more than protect students, it also safeguards faculty and staff.”



According to expert Dr. Michael A. Berry, PhD  
(citing the Charles E. Young study)



“There is a direct connection between healthy school environments; behaviors and attitudes of students, parents, and educators; and academic achievement.”(1)

(1) Healthy School Environment and Enhanced Educational Performance – The Case of Charles Young Elementary School, Washington, DC, Carpet & Rug Institute, January 2002.

## Case Study: The Charles Young Elementary School

Green cleaning can play a vital role in creating a healthier environment, and as a consequence, improve the quality of education at your school. The results below prove that better indoor air quality can result in improved student attendance and attitude, teacher attitude and retention, and even improvement of math and reading scores.

Charles Young Elementary School in Washington D.C. implemented green cleaning and indoor air quality programs that addressed total environmental quality. Below are some of their remarkable results:

- **School attendance increased from 89% to 93%**
- **Math scores at basic or above increased from 51% to 76%**
- **Reading scores at basic or above increased from 59% to 75%**

Note: All other factors in this study generally remained the same; therefore, *the results can be attributable to the newly implemented green cleaning and indoor air quality programs.*



Green Cleaning enhances the performance of students, faculty and staff by:

- Diminishing school absences
- Decreased “presenteeism”
- Fewer job injuries
- Less facility damage



“Presenteeism” – a groundbreaking concept in organizational behavior literature – refers to productivity losses that occur when employees/students come to work/school but under-perform due to physical and psychological causes.\*

\*Abstract from *The International Journal of Human Resource Management*

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- **Increasing ROI**

**Resource  
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Common misconceptions of green cleaning:



Green Cleaning provides financial benefits:

**“Cost-wise it’s been much better for us. Now we have one chemical to cover three different areas of cleaning. It’s much more efficient”**

**– Cynthia Akins, Knollwood  
(GS-42 certified)**



***Cost savings have been between 10-20%***

# Increasing ROI



**In 2008, UNCG became the first state university to adopt the Green Seal chemicals offered on the state contract. This led to UNCG's green cleaning program. The state's Healthier and Greener Schools Act mandating green and sustainable cleaning didn't go into effect until 2011.**

**Before the university began its green cleaning program, the chemicals on hand cost roughly \$3.07/gallon. Switching to Green Seal-certified chemicals brought the cost down to an estimated 25 cents/gallon, and reduced chemical usage by 75%.**



--Ada Baldwin, Assistant Director of Housekeeping at UNC-Greensboro

# Increasing ROI



“In the past, green cleaning products were more expensive, but that is not the case anymore. At a minimum the decision to use green cleaning products will be cost neutral. A strong case can be made for cost savings, but this largely depends on what one is switching from: if the current products are not purchased in concentrate form, if dilution control systems are not being utilized, if the current number of products being used is excessive and can be replaced by a smaller group of core products, etc., then a significant cost savings can be realized.”



--Jason Luke, *Associate Director of Custodial Support Services at Harvard University Medical Center*

# Increasing ROI

- In a pilot test conducted by the Green Purchasing Institute for the State of Hawaii, two schools in Honolulu reduced the cost of their restroom cleaning products from \$6-12 per gallon to less than \$1 per gallon by replacing a ready-to-use conventional product with a highly-concentrated Green Seal-certified product.
- Riverside Military Academy in Gainesville, GA realized a \$280,000 annual savings by replacing 20 different cleaning products with a single Green Seal-certified product to clean 270 dorm rooms and 100 bathrooms.
- The Portland, OR municipal transit agency, experienced a substantial cost savings when it switched to certified “green” cleaners, reducing the number of products it used from 22 to 4. “Initial cleaning chemical cost savings to the municipality amounted to 70%, not including training cost savings associated with the inventory simplification.”
- Harvard University Medical School reported saving \$11,700 a year when it switched to green cleaning products by reducing the number of products they used.



# Increasing ROI

## And more....

- After the Palm Beach County School District (Florida) saved over \$500 in one school during a three-month pilot project, it began phasing in green cleaning to all of its 180 schools in June 2008, with a projected annual district-wide savings of \$360,000. (1)
- Northern Tioga County School District (Pennsylvania) saved nearly \$20,000 in one year by eliminating aerosols and other hazardous cleaning products. “Ounce for ounce, aerosols often are more expensive than other cleaning solutions and emit harmful fumes that are inhaled by building occupants.”(1)
- A 2003-2004 pilot project led by the Healthy Schools Campaign to introduce green cleaning into the Chicago Public School District revealed that the price of Green Seal-certified products was cost-competitive with traditional products.(2)



1 Connecticut Foundation on Environmentally Safe Schools, “Green Cleaning in Schools is Cost Effective,” October 2008; [www.safehealthyct.org/documents/Green\\_Cleaning\\_Cost\\_Effective\\_2\\_.doc](http://www.safehealthyct.org/documents/Green_Cleaning_Cost_Effective_2_.doc).

2 Healthy Schools Campaign, “Green Clean Schools: Success Stories”, [www.healthyschoolscampaign.org/programs/gcs/success.php](http://www.healthyschoolscampaign.org/programs/gcs/success.php).

## More Stats:



- The average custodian uses five gallons of hazardous chemicals each year. He/she is exposed to these chemicals on a daily basis.
- Over \$75 million is being spent each year on medical expenses and lost time wages for custodians due to injuries relating to exposure to chemicals.
- Using safer cleaning products and an improved ventilation system has been shown to increase worker productivity by up to 5% and to save institutions nationwide \$30 to \$150 billion annually.

Significant savings through:

- Concentrated products
- Pre-measured
- Dilution control systems
- Elimination of duplicate products



# Increasing ROI

Patrick Pizzo, *Director of Facilities & Operations for E. Meadow Union Free School District*, cited the following cost savings reductions since instituting their green cleaning program:

- cost of hand soap – 39%
- cost for paper products - 88%
- cost for dust mops – 10%
- polyurethane use – 29%
- stripper – 100%
- wax – 49%
- baseboard cleaner – 88%
- buffing chemicals – 100%
- cost for window cleaning – 77%



# Increasing ROI

## School Certification

Those schools pursuing LEED-EBOM will be particularly interested in green cleaning, because the USGBC final new version IV includes a credit for utilizing a ***certified cleaning service (GS 42 or CIMS GB)***.



## So, where do I begin?



Creating a better environment from the inside out

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## Buy green products?



Creating a better environment from the inside out

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## Greenwashing?

Coined by New York environmentalist Jay Westerveld in 1986.....

“Greenwashing” is a growing concern as users attempt to ensure that the products/services they are using are, in fact, environmentally preferable. Essentially, greenwashing is the practice of companies disingenuously spinning their products, services and policies as environmentally friendly when in fact, they are not.



## START:

- ✓ Learn about green products to avoid greenwashing, waste of time, effort and money.
- ✓ Purchase products that are certified by an accredited agency such as Green Seal, EcoLogo (UL), or EPA.



- ✓ Become educated about green, healthy cleaning processes. Train your staff as well.
- ✓ Consider certification for your department to achieve and maintain all of the benefits of a recognized green, healthy cleaning program. (GS 42 or CIMS GB)



# What are they saying?



## Harvard University

“GS-42 certification for our in-house custodial operation marked a major milestone in our progress towards a more sustainable campus at Harvard. The extraordinary thoroughness of the Green Seal certification process convinced us of its legitimate value. By ingraining the rigorous requirements throughout all of cleaning activities we have changed the way our staff thinks about the term ‘sustainability’ ... **from a slogan to Standard Operating Procedure.** GS-42 certification has proven to be a challenge that was well worth the effort.”

--Jeffrey Smith, *Director, Facilities Maintenance Operations*  
*Harvard University*



# What are they saying?



## University of Maryland, College Park

“I am pleased beyond measure to accept Green Seal’s G-S 42 Certification on behalf of the University of Maryland, College Park, Department of Facilities Management. As a campus focused on, and committed to, environmentally sustainable practices, we have already been recognized as one of “America’s Greenest Campuses” and have been honored by the Princeton Review’s Green College Honor Roll, and the College Sustainability Report Card, among others. Attaining GS-42 Certification made sense as the next step in our quest to be a world class organization, and we will be proud to communicate this achievement to our students, faculty and staff.”

--Harry A. Teabout III *Director, Department of Building and Landscape Services, Facilities Management*



# What are they saying?

## Howard County Public Schools

**“We’ve now raised the bar by protecting the health of our students and faculty, and by providing our staff with the knowledge and hands-on skills they need to become leaders in environmental wellness.”**

--Olivia Claus, *Manager, Office of Custodial Services*  
*Howard County Public School System*



## Resources

Free tools to green a campus:

- [www.greenseal.org](http://www.greenseal.org)
- GS-42 guidebook
- checklists, templates

Training & Consultant assistance:



(Only accredited GS-42 trainer)



# THANK YOU

**Marion Stecklow**  
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