

Walk Gently on
Mother Earth



Green Floors

Virginia School Plant Managers Association
2nd Annual Conference
Williamsburg, VA
October 20, 2009

Presented By: Andrew Davis, *Richmond Public Schools*; Jim Ailor, *Energy Solutions*

What does *GREEN* mean anyway?

It isn't:

- About being a tree-hugging hippie or a staunch environmentalist
- A passing fad the media is playing up

It *IS* all about:

- Cultivating a sense of respect for your environment
- Being grateful for what you have
- Realising that every single choice one makes has consequences
- Conserving Earth's resources
- Protecting & preserving the environment for future generations

Why go GREEN?

Overpopulation

Greenhouse gasses

Pollution

Climate change

Extinctions

Global warming

Water shortages

Mass migrations

Food shortages

Rising sea levels

the green mantra

REUSE
REDUCE
RECYCLE



Why Should Schools Go *GREEN* With Floors?

- *Green* floors provide a safer environment for teachers, students, parents, cleaning workers, other staff & visitors
- *Green* floors reduces harmful contaminants & pollutants: floor chemicals, airborne particles, VOCs, bacteria & fungi
- *Green* floors improve student attendance & scores on standardized tests
- *Green* floors reduces illness, illness-related absenteeism & teacher turnover
- *Green* floors are safer, easier & less-costly to maintain than traditional floors
- *Going Green* with floors is straightforward, well documented, cost-effective and highly beneficial

More importantly, *Green Floors*...

- Extend floor life
- Improve indoor air quality
- Provide healthier indoor & *outdoor* environment
- Increase efficiency of operations and use of resources
- Create favorable learning and teaching conditions
- Generate community goodwill
- Avoid future liability issues
- Educate the next generation on the value of caring for the environment

Discussion Background

- Annually, Americans spend over \$1 Billion on floor care products
- The institutional/commercial cleaning industry employs 2-3 million custodians
- From 1993 to 1997, 12% of work-related asthma cases in four monitored States were associated with exposure to cleaning products
- Most people spend 90% of their time indoors
- Dirty floors and potent floor care products contribute in a substantive way to indoor air pollution, health problems & environmental issues
- Routine chemical exposure is believed to be a major factor in many allergy-related childhood diseases
- Each year, 6 out of every 100 cleaning workers are injured on the job; more than 12% of these injuries involve floor care products
- Some of the most dangerous, potent & environmentally harmful chemicals used in today's school environment are involved with traditional hard surface floor care & maintenance

Traditional Floor Care Products Convey *Significant* Environmental & Human Health Risks

Floor care ingredients and documented risks

Butoxyethanol	Absorbed through skin; Damages blood, liver, kidneys, developing embryos
Monoethanolamine	Absorbs through skin; damages blood, liver, kidneys, developing embryos; can damage eyes and skin
Sodium hydroxide or Sodium Metasilicate	Can cause blindness and severely damage skin
VOCs	Can cause nose & lung irritation rashes, nausea, headaches & asthma
EGBE, EGEE, EGME (Ethylene Glycol Ethers— butyl, ethyl & methyl)	Possible carcinogens and learning toxicants Can cause birth defects & harm reproductive organs Potentially hazardous through inhalation & skin contact
Zinc	Known to be toxic to aquatic life in streams, rivers & lakes
APEs & NPEs	Known for bioaccumulation and endocrine disrupters
Amonia	Severe respiratory irritant
MEA (monoethanolamine)	Severe eye irritant; and may cause nausea, headaches and dizziness

Green Seal Certification

- A universally-accepted *Green* standard remains a *work-in-progress*
- ISO, EPA, DEQ, etc, offer numerous categories & standards for environmental quality, health, safety, etc
- *Green Seal* is “...an independent, non-profit organization that uses science-based standards and the power of the marketplace to achieve a more sustainable world”
- *Green Seal* emerging as the “UL” of America’s *Green* program
- *Green Seal* has established a comprehensive list of “environmental standards” for the modern world
- *Green Seals* GS-40 & GS-42 establish environmental standards for floor care products and service providers respectively
- To achieve *Green Seal* certification products must contain:
 - No phosphates or phosphonates
 - No carcinogens, mutagens or teratogens
 - No persistent bioaccumulative or toxic chemicals
 - No ozone depleting compounds
 - No or low volatile organic content
 - No hazardous waste characteristics

The shifting *Green* paradigm...

“Studies have begun to document what those in the cleaning industry have long believed: Cleaning is not merely an *expense* that keeps floors looking shiny and minimizes the number of complaints about the lack of toilet paper in the restroom, etc. Rather, cleaning plays a vital role in supporting the work of an organization's most important asset... *its people*.”

Green Floor Economics

- *Green* ≠ Green (\$\$\$)
- *Green* can save organizations/schools significant money:
 - Reduced worker absenteeism & improved health
 - Increased worker productivity & decreased labor costs
 - Improved teacher morale & reduced turnover
 - Improved student attendance i.e., increased state & federal funding
 - Reduced ongoing maintenance, supply & equipment costs
 - Reduced consumption of goods and decreased energy usage

Real World Cleaning Results...

- Research at the UNC's Frank Porter Graham Child Development Center has documented numerous beneficial effects of a comprehensive cleaning program:
 - Airborne dust declined 52%
 - Total VOCs declined 49%
 - Total bacteria declined 40%
 - Total fungi declined 61%
- As a result of these environmental improvements:
 - # of illnesses declined 24%
 - # of doctor visits declined 34%
 - # of courses of antibiotics declined 24%
 - School absences declined 46%

Source: "The All Purpose Solution," Stephen P. Ashkin, American School & University, October 1, 2003
(<http://www.ashkingroup.com/pdfs/Education/ashkin%20asu%20october%202003.pdf>)

Real World Cleaning Results...

- Improving the indoor environment at the Charles Young Elementary School in Washington, D.C. produced the following outcomes:
 - Passing math scores on standardized tests increased by 51%
 - Passing reading scores on standardized tests increased by 27%
 - Attendance increased by 4.5%

Source: "The All Purpose Solution," Stephen P. Ashkin, American School & University, October 1, 2003
(<http://www.ashkingroup.com/pdfs/Education/ashkin%20asu%20october%202003.pdf>)

Real World Cleaning Results...

- Studies have shown that cleaning & improving the indoor working environment can boost worker productivity 0.5% to 7% (*a 0.5% productivity improvement equals approximately \$1.50 per square foot savings to an organization*)
- Via a comprehensive **Green** cleaning program, schools likely can achieve improvement levels approaching 7% by eliminating harmful chemicals & VOCs, bacteria, viruses & other causes of illnesses often found in school environments
- The Syracuse Public School District increased attendance by 11.17% via an improved cleaning strategy; this attendance boost resulted in a \$2.5 million increase in state funding for Syracuse

Green Floor How Tos...

- Use steam for cleaning whenever & wherever possible; steam is *100% green* and also completely sanitizes the environment/surface being cleaned
- Always use/maintain clean inside & outside entryway mats (*more than 90% of floor "dirt & grime" comes from the outside via doors*)
- Perform *frequent* dusting/vacuuming & damp mopping with clean, clear water (clean the mats TOO!!)
- Minimize/eliminate chemical usage—use sparingly and only approved *Green* chemicals
- Clean up and properly dispose of chemical excesses & spills
- Use *Green Seal* approved products & services, always following manufacturers recommendations

Getting started with a *Green Floor* Program...

The *Green Floor* process necessarily begins with an intensive deep-cleaning initiative focused on removing what is often many years worth of biofilms, grime, dirt, wax buildup, floor sealants, gum, dust, mold, mildew, etc. This initial process is *required* to provide a clean, beautiful, sanitary substrate/floor on which to base the new green program.

6 *Green* basics to start you off...

- Never litter
- Go easy on & with natural resources
- Be consumer-lite in all your life activities
- Consider your trash
- We ARE what we eat
- Use environmentally friendly products & services



Walk Gently on Mother Earth



*...She's all we've got and
"time is running out" !!*

Questions?