Learn From the Leaders: Wellesley Public Schools

August 6, 2018
Logistics

- Webinar will run approximately one hour.
- A recording of the webinar will be available online.
- Please take two minutes to complete the survey at the end.
Q&A Session

• Q&A will be held during the final 15 minutes.
• Ask questions through the “chat” in the lower right side of your screen.
Polls

- We’ll have audience polls during each speaker introduction.
- Please participate so we can get a better idea of our audience.
About Healthy Schools Campaign
About
Green Clean
Schools

Green Clean Schools
greencleanschools.org
What is Green Cleaning? Our 5 Step Approach

Step 1: Prepare Your School
Step 2: Identify Green Cleaning Products
Step 3: Introduce Green Equipment + Supplies
Step 4: Adopt Green Cleaning Training + Procedures
Step 5: Share the Responsibility

Green Clean Schools
greencleanschools.org

HEALTHY SCHOOLS CAMPAIGN
Today’s Panelists

• Michael Andersen, Custodial Service Manager, Wellesley Facilities Management Department
• Antonios Vassiliadis, Custodial Supervisor, Wellesley High School
• Jeff Johnson, Director of Marketing and Product Management for Orbio Technologies, a Tennant Company Group
Town of Wellesley

Green Cleaning Program Overview
Wellesley Public Schools

- Wellesley, Massachusetts
- 7 elementary schools, a middle school, a high school, a preschool
- Over 5,000 students
- Buildings managed by the Wellesley Facilities Management Department
- Green Cleaning program started in 2012 (when FMD was created)
- Sustainability is part of our mission statement
  - Green Products, Equipment, and Practices
  - Energy Conservation

Green Clean Schools
greencleanschools.org

Healthy Schools Campaign
Why a Green Cleaning Program?

• Facilities Management Department (FMD) Goals:
  • Safety and Health
    • Staff and Students
  • Improve Custodial Services
    • Efficiency
  • Increase Facility Lifespans
  • Sustainability
  • Energy Conservation

A successful green cleaning program can help us reach these goals
Implementing our Green Cleaning program

• Started researching and purchasing greener chemicals and equipment
• Implemented “team cleaning” at our High School and Middle School
• Training for all staff
  • New chemicals, equipment, techniques and procedures
• Working with school staff, parents, and students
  • Keeping everyone informed and involved in the program
• Monitoring and assessing the results with each change
• Continue to research - green cleaning is always evolving
  • Technologies
  • Techniques
  • Strategies
  • Equipment

Green Clean Schools
greencleanschools.org
Green Cleaning Products

- Our program switched to greener products over time:
  - Went from mixing from bottles, to “pack-it”, then to portion control

- Continued research lead to discovery of On-site Generation (OSG) products
  - Green aspects of on-site generation match our green cleaning goals
On-site Generation Eliminates

- Chemical Manufacture: Smokestack Particulates
- Shipping: Tailpipe CO₂ Emissions
- Inventory: Safety Cost
- Concentrate Exposure: Cleaning Staff Safety
- Chemical Residues: Slip/Fall, Odors
- Packaging Disposal: Landfill

Green Clean Schools
greencleanschools.org
On-site Generated Cleaning Products

- Advocated for funding
  - Will help the FMD achieve our sustainability goals
    - Very green and safe chemicals for staff and children in the schools
  - Save money over time
    - No more buying chemicals – just salt pellets and maintenance on systems
- Started with a pilot system at our high school
  - Went very well, great cleaning results and Custodians approved
- Invested in OSG systems in all schools
- Generate both a Multi-Surface Cleaner and Disinfectant/Sanitizer
  - All on-site by our Orbio os3 systems
  - Covers the majority of our cleaning chemical needs
On-site Generated Cleaning Products

**General Purpose Cleaner**

- Multi-surface *Cleaner*
  - Active ingredient: 0.05% Sodium Hydroxide
  - Colorless
  - Odorless
  - No VOCs
  - Non-Irritating to Skin + Eyes

**Hospital Grade Disinfectant/Sanitizer**

- Multi-micro™ 200
  - Active Ingredient: <0.02% Hypochlorous Acid
  - Food Contact Surface Sanitizer
  - Non-Food Contact Surface Sanitizer
  - Colorless
  - Slight “pool smell”
  - Non-Irritating to Skin
  - pH Neutral

Green Clean Schools
greencleanschools.org

HEALTHY SCHOOLS CAMPAIGN
Specialty Green Products

- **Microfiber Cloths**
  - Microfibers act like a scraper while they lift and trap dirt and moisture in the nooks and crannies of the individual fibers
    - Traditional cloth fiber just pushes the dirt from one point to another
  - Color coded: blue for glass, red for counters, green for bathrooms, etc.
  - Machine washable

- **Walk-Off Mats**
  - Waterhog ECO Premier Entrance Mats
    - Made from 100% PET post-consumer recycled drink bottles and 15% post-consumer recycled tires
    - Properly functioning mats can trap up to 80% of dirt and moisture at the entrance
    - Lessen the cleaning load on staff—more efficient
Green Cleaning Equipment

• Backpack vacuums with HEPA filters
• Floor machines with on-board nano-clean technology
• Kaivac no-touch cleaning system
Training

• The program needs more than just green products and equipment, the custodians need to know how to use them and why
  • Training demo provided with each piece of new equipment
  • New cleaning products are put into place with a full set of instructions how and where to use each product
  • Quarterly professional development meetings
    • Topics include: Safety, techniques, awareness, ergonomics, minor-maintenance
    • General updates to our program
Training

Green Clean Schools
greencleanschools.org

HEALTHY SCHOOLS CAMPAIGN
Building Control System

• Metasys
  • District-wide building automation system
  • remotely track and gather data on items such as temperatures, ventilation, and equipment functionality
  • By adjusting temperature set points, including night-setbacks and vacation periods, we minimize heating and cooling loads to save energy
  • Also has lighting controls in some buildings to create energy efficient schedules
Building Control System

Green Clean Schools
greencleanschools.org

HEALTHY SCHOOLS CAMPAIGN
Recycling

• School staff, parents, and students all involved
  • Single-stream recycling in every school (started in 2011)
  • Lunch programs:
    • Liquid waste diversion in elementary schools
      • Liquids (such as milk and juice) poured out into buckets, then cartons recycled
    • Recyclable food trays used and cleaned off for recycling
    • Food recovery
      • Pre-packaged unused food stored in a share cooler on a weekly basis
      • Prepared food that does not get served stored in a freezer and donated at the end of the week
Recycling

Green Clean Schools
greencleanschools.org

HEALTHY SCHOOLS CAMPAIGN
Program Challenges

• Getting others to “buy-in”
  • Investing in new green equipment and chemicals
  • Training seasoned Custodians to change their ways

• Frequent training and updating
  • Staying current with chemicals, equipment, and techniques
    • Training required with each change
    • Sometimes confusion over what is currently correct
Program Benefits

• **FMD goals are being met**
  • Improved health and safety efforts
    • Custodians, school staff and students no longer exposed to harsh chemicals
    • Air quality is improved through the building management system
  • Improved Custodial services
    • More efficient
      • Team cleaning, new equipment, correct chemicals, training
  • Improved sustainability and energy conservation efforts
    • Generating majority of cleaning chemicals on-site
    • Building management system creating HVAC and lighting schedules
    • School recycling programs
Highlighting Key Aspects of Our Program

- **Team Cleaning**
  - High School

- **On-site Generation**
  - Generating cleaning chemicals on-site
Team Cleaning
At Wellesley High School
What is Team Cleaning?

• How does a landscaping crew work when they show up at a job?
  • Each person on a specific piece of equipment until entire job is done
    • Mower
    • Weed-whacker
    • Blower
    • Clean-up

• Why not clean the same way?
  • Each Custodian has an assignment
    • Bathrooms
    • Hallways
    • Stairwells
    • Trash
    • Vacuuming
    • Rotate assignments weekly
Benefits

• Efficient use of time
• Less total equipment needed
• Take pride and ownership over the whole building
  • Not just “my section”
• Employee familiarity with all techniques, equipment, and building tasks
• Can allow for changes and coverage when short-staffed
Challenges

• Getting buy-in from employees
  • Some stuck in their “old-school” mentality
• School staff and student engagement
  • Need support to operate efficiently
• Altering the program to fit your building and staffing levels
  • Had help from a vendor sizing the workload
  • Adapted based on real cleaning times, building schedules, etc.
Wellesley High School

• Opened in 2012
• 280,000 square feet
• Typical High School things to work around:
  • After school programs, music lessons, athletics, staff staying late, banquets, concerts, plays, rentals
• Team Cleaning
  • 8 or 9 staff involved depending on the day
  • 8 different roles that rotate weekly
Staff and Student Engagement

- Memo sent out when team cleaning started
- To both the Principals and the Superintendent
- Asking for support
- Need help from students and staff to increase efficiency:
  - Chairs put up in each classroom at the end of the day
  - Teachers and students pick up larger items off the floor
  - One trash and one recycle barrel per room, both left near the exit door
How We Made it Fit

• First started with a program based on square footage for assignments
  • Worked with a vendor who analyzed a building layout
  • Used our current staffing levels to help determine assignments

• Monitored cleaning times, “runs”
  • Performed each assignment several times, taking into account the type of square footage being cleaned

• Made changes to the size of each assignment
  • Make all assignments equal based on time
  • Most efficient use of the time each custodian is on the clock
How We Made It Fit

• Assignment #1: On Call/Trash
  • Be on call for school staff
  • Collect all classroom, office, and hallway trash
  • Help out where needed

• Assignment #2: Vacuum 1
  • Vacuum assigned areas
  • Spot mop classrooms
  • Clean assigned areas water fountains
  • Clean assigned areas glass and walls
  • Remove classroom black marks

• Assignment #3: Bathrooms
  • Clean and stock all gang bathrooms and faculty bathrooms
    • Use Kaivac when possible
    • Dust or Vacuum ceiling vents in Bathrooms (1-2 times/week)

• Assignment #4: Hallways
  • Remove hallway scuff marks
  • Sweep all hallways
  • Machine wash 1st floor halls (nightly)
  • Machine-Wash 2nd 3rd and 4th floor halls (rotating)
    • Spot mop halls that are not washed
    • Buff 2nd 3rd and 4th floor halls (rotating)

• Assignment #5: Stairs
  • Dust stairway rails and ledges (1-2 times/week)
  • Vacuum all stairs and entryways
  • Mop stairs (when needed/rotation)
    • Main Stairs and Lobby Stairs Nightly
  • Clean stairwell and entryway glass

Also have Vac 2, 3, and 4 roles
How We Made It Fit

Vacuum all classrooms and hall edges of the 3rd and 4th floor C Wings.

Vacuum the Locker Rooms (assist with other locker room cleaning if needed).

Sweep the gym.

**HEALTHY SCHOOLS CAMPAIGN**

Green Clean Schools
greencleanschools.org
Custodian’s Opinion

• Started working as a Custodian in this team cleaning program
  • Started in 2012
• Now runs the operation
  • Starting in 2016
• Observations
On-Site Generation
An Overview
OSG – On-site Generation

Barrels with Uncontrolled Dilution → Concentrates with Dilution Control → On-Site Generation

Green Clean Schools
greencleanschools.org

HEALTHY SCHOOLS CAMPAIGN
Evolution of Cleaning Chemicals

- Traditional Cleaning Chemicals
- “Green” Cleaning Chemicals
- On-Site Generation

- Ordering
- Shipping
- Inventory
- Packaging
Evolution of Cleaning Chemicals

- Traditional Cleaning Chemicals
- “Green” Cleaning Chemicals
- On-Site Generation

- Ordering
- Shipping
- Inventory
- Packaging
OSG Technologies – EAW Water Electrolysis

Disinfectant/Sanitizer (HOCl)

Cleaner (NaOH)
OSG Technologies – Liquified Ozone (O3)

1. Extra Oxygen molecule added to stable O2.
2. Looks for a soil or bacteria to attach to.
3. Oxidizes
4. Returns to stable O2.

Green Clean Schools
greencleanschools.org

HEALTHY SCHOOLS CAMPAIGN
OSG Process Change

Conventional Packaged Chemicals
• Purchase concentrates, distribute, dilute to RTU
• “Dispenser in every closet”
• Expense $ budget

OSG
• Generate and Distribute
• RTU or Concentrate
• Capital $ budget

Green Clean Schools
greencleanschools.org

HEALTHY SCHOOLS CAMPAIGN
Implementation

1. Site Survey
   • Where are chemicals dispensed today? How much?
   • Locations for OSG devices (Central location)

2. ROI
   • Replaceable chemicals expense vs OSG device capital cost + wear items

3. Solution/device evaluation

4. Roll-out – install & train
OSG Supplier Questions

1. Who installs?
2. What is warranty?
3. Who services?
4. Who trains?
5. List of organism claims? (Organism Efficacy Summary)
6. What are the wear components? On-going costs?
7. What is the life expectancy of device?
8. What is the output shelf life?
Questions?

Green Clean Schools
greencleanschools.org
Platinum Sponsors

Diversey

UNGER®

Quality Tools for Smart Cleaning™

Gold Sponsors

Bona®

ECOLAB®

ECOS PRO®

GOJO®

ORBIO TECHNOLOGIES

Silver Sponsors

Americo

CleanCore

EnvirOx, LLC

GenEon Technologies

ProTeam

Solaris Paper

Spartan Chemical Company, Inc.

Tork, an Essity Brand

Green Clean Schools
greencleanschools.org

HEALTHY SCHOOLS CAMPAIGN
Thank You!

• Visit greencleanschools.org for resources and to register for upcoming events.
• A recording of the webinar and the presentation will be posted to our website and emailed to attendees.
• Join us at Green Clean Schools ISSA/INTERCLEAN Education Track in Dallas October 29-30.