Green Clean Schools Track at ISSA/INTERCLEAN

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HEALTHY SCHOOLS CAMPAIGN

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HEALTHY SCHOOLS CAMPAIGN
Assessment, Cost Savings and Green Cleaning in Schools

Learning from the Leaders
What Is a Value Proposition?

An analysis and quantified review of the benefits, costs and value that an organization can deliver to customers/funders and other stakeholders

A value proposition is...

A succinct statement (e.g., 2–4 sentences) that clearly describes the tangible results a customer gets from your program.

An offer to someone in which they get more than they give up.

The basic reasoning for why people should support your program.

A succinct success story that uses tangible results to draw interest.

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The Framework for Effective School IAQ Management: Six Key Drivers

**Organize**
- Develop Systematic Approach
- Identify Existing Assets
- Design Standard Operating Procedures
- Empower an IAQ Leader
- Build an Effective Team
- Create Champions
- Secure Senior Buy-in

**Communicate**
- Share Your Goals
- Make IAQ Meaningful
- Be Transparent and Inclusive
- Communicate Results (Return on Investment)

**Evaluate**
- Solicit Feedback
- Capture Return on Investment
- Measure, Assess and Track Program Implementation
- Document Accomplishments
- Determine the Most Effective Strategies for Continuous Improvement

**Assess**
- Walk the Grounds
- Listen to Occupants
- Use Technology
- Determine a Baseline
- Keep Customers Satisfied
- Identify and Prevent Risks

**Act**
- Educate Staff About IAQ to Change Behavior
- Train Occupants to Address IAQ Risks
- Address the Source of Problems

**Plan**
- Prioritize Actions
- Put Goals in Writing
- Start Small
- Work in Stages
- Plan for the Future

**Action Kit**
- HVAC
- Moisture/Mold
- IPM
- Cleaning & Maintenance
- Materials Selection
- Source Control
- Energy Efficiency
The Framework for Effective School IAQ Management: Seven Technical Solutions

**Quality HVAC**
- Inspect HVAC systems regularly
- Establish a maintenance plan
- Change filters regularly and ensure condensate pans are draining
- Provide outdoor air ventilation according to ASHRAE Standards or local code
- Clean air supply diffusers, return registers and outside air intakes
- Keep unit ventilators clear of books, papers and other items

**Control of Moisture/Mold**
- Conduct routine moisture inspections
- Establish mold prevention and remediation plan
- Maintain indoor humidity levels between 30% and 60%
- Address moisture problems promptly
- Dry wet areas within 24–48 hours

**Strong Integrated Pest Management (IPM)**
- Inspect and monitor for pests
- Establish an IPM plan
- Use spot treatments and baits
- Communicate with occupants prior to pesticide use
- Mark indoor and outdoor areas treated with pesticides

**Effective Cleaning and Maintenance**
- Conduct routine inspections of school environment
- Develop a preventative maintenance plan
- Train cleaning/maintenance staff on protocols
- Ensure material safety data sheets (MSDS) are available to staff
- Clean and remove dust with damp cloth
- Vacuum using high-efficiency filters

**HVAC**
- Ventilation

**Moisture/Mold**
- Humidity Control

**IPM**
- Integrated Pest Management

**Cleaning & Maintenance**
- Regular Cleaning

**Materials Selection**
- Low-VOC Materials
- Low-Emitting Products

**Source Control**
- Remove Sources

**Energy Efficiency**
- Energy Audits

**Aggressive Source Control**
- Regular Building Walkthrough Inspections
- Test for radon; mitigate if necessary
- Implement a hazardous materials plan (use, label, storage and disposal)
- Establish a school chemical management and inventory plan
- Implement smoke-free policies
- Establish an anti-idling school bus policy
- Use walk-off mats at building entrances
- Conduct pollutant-releasing activities

**Integrated Energy Management Solutions**
- Protect IAQ during energy efficiency upgrades and building renovations
- Conduct regular HVAC maintenance and tune-ups
- Install programmable thermostats
- Consider performing post-construction commissioning for HVAC systems
- Control moisture in building assemblies, mechanical systems and occupied spaces
Design, Implement and Evaluate an IAQ and Green Cleaning Program

- **Target Population**: Which individuals are you committed to serving? How many? All students and staff, in particular, custodial staff and students with asthma.

- **Inputs**: What are your investments, costs and assets? equipment, products, staff time

- **Activities and Tasks**: What activities are you conducting to meet your desired outcomes? Use the Framework and Technical Solutions to identify activities.

**ACT**
- Educate Staff About IAQ to Change Behavior
- Train Occupants to Address IAQ Risks
- Address the Source of Problems
Design, Implement and Evaluate an IAQ and Green Cleaning Program

- **Outputs**: What products of your activities are you tracking? Staff trained, assessments completed, policies developed

- **Outcomes**: What goals is your program committed to achieving? Where and how are you acquiring the data you need to evaluate? Staff recruitment/retention, occupant compliance, streamlined processes, fewer products; improved cleanliness

- **Impact**: What is your overall mission? What long-term benefits do you anticipate for your target population? Cost savings; health improvements; customer satisfaction, student, staff and building performance
Value Proposition Worksheet

Your Value Proposition:
The brief guide to your program is focused on creating a compelling case for your program’s impact on student learning outcomes. You will share the details of your program with educational leaders, including its benefits and costs.

Filling in Your Value Proposition:
1. Table 1: Assess your target population
   - Number of students: __________
   - Percentage of students: __________
   - Benefits: __________
   - Cost: __________

   2. Table 2: Fill in the table below to determine your program’s costs and benefits.
   - Cost: __________
   - Benefits: __________

   3. Table 3: Analyze your program’s impact on student learning outcomes.
   - Number of students: __________
   - Percentage of students: __________
   - Benefits: __________
   - Cost: __________
Michael Jones
Director of Custodial Services,
Columbia, Missouri
Identifying the Issues - 2008

Conventional paper towels, tissue, and soap

35+ traditional cleaning chemicals and floor products

Traditional cloth/disposable cleaning rags, single mop buckets and string mops

Traditional upright vacuums and equipment

No consistent cleaning program - **Unhealthy buildings and complaints**

Health and Indoor Air Quality issues - **Roof leaks, 150+ trailers**

Poor quality entrance floor matting

No shared responsibility or cleaning for health

Funding of operating and capital improvements were not priorities

**Vision and Plan to Improve Indoor Environmental Health**

(Return on Investment)
Roadmaps to Success - 2009

Missouri Green Cleaning Guidelines and Specifications for Schools

Healthy Schools Campaign

Indoor Air Quality

Tools for Schools

EPA SHIELDS Network

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Changes and Savings 2009 - 2011

EcoLogo certified paper towels and tissue- 22%
EcoLogo certified hand soap- 33%
Environmentally sensitive cleaning chemicals- 20%
Microfiber wipers and tools- 40%
Floor finish application- 28%- Pour & spread equals no waste
Trash can program- 30% plus reduction of 40K bags into landfill
In-house equipment repair and preventative maintenance- 35%

Changes created approximately $175K in savings
Reinvest the Savings to Further Your Green Program

- Restroom cleaning machines
- Double bucket wet mop system
- Backpacks with HEPA filtration
- Interior and exterior floor matting
- Electrically converted water auto scrubbers

Sustainable Green Program Using Less While Obtaining Better Results

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Process Cleaning for Healthy Schools

Began installation of new cleaning program August 2014
Standardized cleaning program
Concentration on high touch surfaces
Created 2 custodial trainer positions and just added 3rd
System provides checks and balances to ensure buildings are clean and healthy
Reduced 15 total FTE with NO custodial job loss

Savings of $500K reinvested into custodial department with 17% average increase to staff
Continue to Evolve Your Green Program

Engineered Water: Will save $40K in annual operating budget

Sustainability: Produce our own chemicals eliminating 2,184 gallon plastic bottles and 546 shipping boxes each year back into environment.

Cost of units supported by Board of Education and funded through capital assets
Green Cleaning That Works

Team Effort

- Chairs Stacked by Students
- Worktops Left Clear
- Clutter/Debris Removed by Students

Conditions After School - Prior To Cleaning
District Policies and Programs
Board Support

• Student Allergy Prevention and Response Policy
• Energy and Environmental Policy
  • Integrated Pest Management
  • District Organizational Goals
    • Fiscal Responsibility
    • Student Based Recycling Program

Use Board Policies and Programs to Support your Green Cleaning Agenda
Promote Your Program on District Website

Custodial Services

- Green Cleaning Program
- Helpful Links
- Recycling
- Teacher and Staff Cleaning Supplies
- Warehouse Surplus

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Custodial Building Inspection Report

Custodial Trainers Complete Inspections 2-3 times per year
Proactive approach to provide feedback
Results communicated to Head Custodian and Principal

Provides Opportunity for Shared Responsibility and Better IAQ
Random Surveys

Please answer the following questions based on your satisfaction

1. Very Satisfied  
2. Satisfied  
3. Dissatisfied  
4. Very Dissatisfied

1. How satisfied are you with the cleanliness of your classroom by Custodial Staff? 82.07%
2. How do you rate the courtesy of the custodial staff? 97.11%
3. How do you rate the responsiveness of custodial staff? 95.85%
4. Overall, how satisfied are you with our service? 88.08%

Random Surveys Contribute to Communication Between Teachers, Staff, Principals, Administration, and Board
Columbia Public Schools
An Excellent Education For All Our Students

Mission Statement

Vision
Our desired future state
To be the best school district in our state.

Mission
Why we exist
We provide an excellent education for our students by adhering to organizational goals.

Purpose
What we do
To be a valuable asset for our community by preparing our children so that they will be competitive in an ever-changing, unpredictable world.

Values
The non-negotiable family principles that guide us

- Honesty
- Focus on what works
- Transparency
- Teamwork
- Mutual respect
- Persistence
- Adaptability
- Positive approach
- Commitment

Columbia Public Schools
Organizational Anchors

All students graduate college- or career-ready

Every teacher becomes the best

Our operations make our mission possible

All students graduate college- or career-ready
- Ninety percent of students will attend school at least ninety percent of the time
- Out-of-school suspension numbers will decrease for all student groups
- Students will achieve academic progress

Every teacher becomes the best
- Our professional development plan will give teachers the skills they need
- Our district evaluation plan will help teachers and administrators be better

Our operations make our mission possible
- We will be fiscally responsible with taxpayer money
- Our support staff makes it possible for us to achieve AEO for our kids
Graduation Rates

2012 – 2013........85.7%
2013 – 2014........88.2%
2014 – 2015........90.3%
2015 – 2016........90.2%

District Attendance Rates Remain around 94.8%
Our Value Proposition

Bold Goal:
The bold goal of my program is to create a vision and plan for our green cleaning program, along with shared ownership, to improve indoor environmental health.
In addition, using green cleaning products and processes is fiscally responsible.

Green Cleaning Products:
By changing to green cleaning products and green cleaning processes, this program generated $175,000 in cost savings for Columbia Public Schools within the first 2 years (2009-2011).
Green Cleaning Products

- **Target Population:** Protecting the health of staff, students and community.

- **Inputs:** Time to research which products to switch to, efficacy, etc.: 9 months. Staff time: Unlimited hrs. Training time: 16 - 40 hrs.

- **Activities/Tasks:** Plan – Work in stages to switch to green cleaning products.

- **Outputs:**
  - Reduced 35 conventional cleaning products down to 7 green cleaning products.
  - Traditional cleaning rags, dust mops, and wet mops were replaced with microfiber.

- **Outcomes:** Reduce IAQ and health complaints.

- **Impact:** $175,000 in cost savings. Healthier staff and students.
Our Value Proposition

Implemented Standardized Cleaning Process:

By implementing a standardized cleaning process to ensure schools were clean and healthy, this program generated $500,000 in cost savings, which was reinvested into the Custodial Department, within 1 year (2014-2015).
Standardized Cleaning Process

- **Target Population:** Protecting the health of staff, students and community.

- **Inputs:** Implemented the process in 1 year with consultant, which cost $15,000. Time to train staff.

- **Activities/Tasks:** 
  - **Act** – Trained custodial staff initially and on-going training 2-3 times per year. Educated teachers/staff through newsletters on their role in keeping their classrooms cleaning ready. 
  - **Assess** – Conduct inspections 2-3 times per year. 
  - **Evaluate** – Conduct satisfaction surveys and Communicate findings to all.

- **Outputs:**
  - 162 of custodial staff successfully trained. 
  - 2-3 inspections per year.

- **Outcomes:** Improve cleanliness. Reduce IAQ and health complaints. Teachers and staff reported almost 90% satisfaction.

- **Impact:** $500,000 in cost savings for the 1st year, which was reinvested into Custodial Department. Healthier staff and students.
Recognition

• 2010 EPA’s Tools for Schools National Great Start Award
• 13 buildings Received EPA’s Energy Star Award

• 2010 Best New Program
• 2011 Grand Award Winner

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Thank you!
Shawna Cragun
Director of Custodial Services,
Davis School District
President, USCMA
Utah Schools Custodial Managers Association
Davis School District

102 facilities
73,000 students
8,000 staff members
+10,000,000 square feet of floor space
604 permanent custodial employees
798 substitute custodians
Assessment

Find strengths and weaknesses

Find policy and procedure issues

Identify training problems
Assessment

PERSONNEL
MORAL
BUDGET
TRAINING
CHEMICALS
PROCESSES
MACHINES
IPM
Training

Then:
• Professional Development Day (Once a year for everyone)
  • 2 hours part-time
  • 4 hours full-time
26 lessons for general custodians (1 time training upon being hired full-time)

Now:
• Professional Development Day (once a year for everyone)
  • 4 hours part-time
  • 8 Hours full-time
• Winter Appreciation Meeting
• Spring and Fall Training Classes
• Online resources
• Coordinators
• Newsletters
• Website-informational
• Bank of training hours- 2000

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Chemicals

Testing several green chemicals and chemical systems at specific locations
Collecting data
  • ATP testing-same or better
  • Looking at changes in student attendance- 3% increase in student attendance
  • Look at changes in teacher attendance-Future
  • Cost comparison of products- No increase in chemical cost
Communicating/teaching why with school personnel
  • Validity of green
  • Health and safety
Machines

One machine with multiple purposes

- Save space
- Save money

Better system- using damaged equipment to complete repairs

Cost savings $15,000 per year reinvested into better machines
Implementing IPM

Then:
• Pest Management Cost  -$10,000
• Spending payed for pesticides

Now:
• Spending pays for monitors, logs, IPM tools, and very, very seldom pesticides
• Cost savings $10,000 by not spraying pesticides
• Reinvested in IPM program
Consumables

HVAC Filters
- Then: standard 90 day HVAC filter
- Now: high quality 1-year HVAC filter (filters cost more, but time saved makes it cost effective)

Soap
- Then: conventional
- Now: 0.4 ml (verses 0.9 ml) Found $40,350 in overspending because of missing meters, EcoLogo certified

Industrial paper
- Then: conventional
- Now: 50% post-consumer waste, 65% recycled fiber, coreless, EcoLogo certified
Resource Management

Remote control programmable thermostats with central monitoring
Structureware
Weather trak systems
Net Zero Buildings

Energy Costs—same as 10 years ago
  Even with 6 new elementary and 2 new junior high schools
  Other districts’ average cost per square foot: $1.20-$1.50
  Davis $0.70 per square foot

  Cost savings $4,000,000 per year for 10 years!!!!!!!!!!!!!!! Yes, 4 million per year
Our Value Proposition

The goal of our program is to create the healthiest, safest, and most environmentally-friendly schools possible with the resources available.

Green:
In addition, using environmentally friendly products and processes is financially responsible. By changing products/processes/building systems, this program will generate $4,080,200 in cost savings for Davis School District per year.
Target population: students, staff, and community

Input: time to research

Activities/Tasks: training, facility assessments, feedback, data collection

Outputs:
- Reduce 58 cleaning products down to 22
- Reduce the number of machines needed in schools
- Implement IPM
- Change conventional HVAC filters, soap, chemicals (specific locations) and toilet tissue to greener products
- Implement resource saving measures

Outcomes: reduce absenteeism, reduce IAQ complaints, reduce exposure to potentially harmful chemicals, save energy and water resources, staff retention, improved moral

Impact: $4,080,200 in cost savings annually and healthier staff and students!
Thank You!

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