The Value of Clean
How Cleaning Improves Your Bottom Line

How Dirty Is Your Child’s School
Infographic/Video
Value of Clean
Infographic
Video

Objectives

▪ Define the value of cleanliness to facility managers and building owners
▪ Demonstrate how budget reductions can create unintended consequences that impact revenue
▪ Calculate the financial ROI of improved cleanliness, quality management and ways to reduce costs
▪ Verify how investments in hygiene improve occupant wellness and increase employee productivity
▪ Review third-party studies, surveys and scientific data that demonstrate the value that cleanliness provides
Laying the Foundation

Before you can determine the proper investment in cleaning products or services, or calculate the financial benefits they provide, important steps include:

- Establish quality management standards
- Properly workload all tasks to determine frequencies, staffing and budget needs
- Track financial impact of cleaning services
- Obtain surface life cycle data
- Obtain human resources data regarding organization absenteeism, wage rates and other productivity indicators
Quality Management Foundation

The Cleaning Industry Management Standard (CIMS) was created for building service contractors and in-house service providers.

It applies to an organization’s management and performance systems and processes.

It should be thought of as a framework to help facility service providers develop customer-centered organizations.

Source: issa.com/cims

Work Ticket Resolution
Cost Per Work Ticket (CPT)

Work Ticket Activities

- Cost to receive the complaint
- Cost to process the work ticket
- Management approval
- Cost of labor to perform rework
- Communicating to the customer that error is resolved
- Cost related to a deficiency
- Cost of losing a customer due to poor quality

Source: Crosby, P. (1979). 25 Years - Quality is Free

Poor quality can decrease revenue by 30%

Cost Per Work Ticket (CPT)

Work Ticket Activities

- Very effective metric to “dollarize” the impact of an investment in quality cleaning operations
- Work tickets could cost an average of $13-49 each
- The cost of resolving an issue includes time/cost to:
  - Receive added work requests resulting from insufficient cleaning
  - Create a ticket
  - Schedule rework or remediate the situation
  - Complete the added task and assess the rework
  - Communicate completion to the occupant originating the request.

Source: Aberdeen Group, Profit Planning Group and ISM
## Value of Clean Calculator 2.0

### Work Ticket Resolution

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complaints currently addressed per month</td>
<td>50</td>
</tr>
<tr>
<td>Complaints per month handled after additional cleaning</td>
<td>25</td>
</tr>
<tr>
<td>Cost to process handle and resolve one customer complaint</td>
<td>20</td>
</tr>
<tr>
<td><strong>Annual Work Ticket Cost Savings</strong></td>
<td>$6,000</td>
</tr>
</tbody>
</table>

Source: Aberdeen Group, Profit Planning Group and ISM

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### Occupant Absenteeism

- Stress
- Personal Illness
- Family Needs
- Entitlement Mentality
- Personal Needs

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Absenteism

- Health-related lost productive time (LPT) total $225.8 billion per year
- LPT for a health-related reason totals $1,320 per employee per year
- Causes of absenteeism:
  - Headaches
  - Colds / Flu
  - Asthma
  - Stress
  - Repetitive motion injuries
  - Workplace factors
  - Individual factors

Source: Journal of Occupational Environmental Medicine in 2003

Persistence of Clinically Relevant Bacteria on Dry Inanimate Surfaces

The longer a nosocomial pathogen persists on a surface, the longer it may be a source of transmission and thus endanger a patient, healthcare worker or cleaning professional.

The most common nosocomial pathogens may survive on surfaces for months and can be a continuous source of transmission if no regular preventive surface disinfection is performed.

Source: BMC Infectious Diseases 2006, 6:130
Hygiene Intervention Project

Researchers for Kimberly-Clark Professional’s *The Healthy Workplace Project* tested improved hygiene’s impact in an office environment:

- Hand sanitizer, wipes and facial tissue were placed on workers’ desks and in select areas of the office
- Office employees were trained on highly touched objects and the need to sanitize these areas regularly
- Instructional cards and signage were placed on desks, break rooms and areas where employees congregate
- Highly touched objects were measured before and after the hygiene intervention using an ATP unit

Source: Kimberly-Clark Professional

Highly Touched Objects & Contamination

These surfaces were found to have high levels of contamination (Hygiena - ATP counts of 151-315 when tested by The Healthy Workplace Project* research team.)

Source: Kimberly-Clark Professional
Hygiene Intervention Outcomes

Research concluded that the tested interventions could:

- Reduce the probability of infection for common cold and influenza by approximately 80%
- Reduce number of surfaces contaminated by viruses by 62%
- Reduce absenteeism by as much as 46%
- Lead to more satisfied tenants and a cleaner building, which improve attraction and retention
- Elevate the level of cleanliness in buildings without increasing annual cleaning costs of the existing cleaning contractor or in-house staff
- For Building Service Contractors, improve ability to enhance client relationships by promoting workplace wellness

Value of Clean Calculator 2.0

Estimated annual cost of hygiene intervention is $44 per person per year. An office with 100 employees would incur costs of $4,400 per year. The potential savings in absenteeism is $66,000 annually. The total savings after the investment in hygiene products is $61,600 per year.
Presenteeism

Presenteeism: An employee comes to work but is not fully functioning, due to illness. Productivity can be reduced by 30% or more, often more costly than absenteeism.

Negative Effects of Presenteeism
- Spending additional time on tasks
- Decreased quality of work
- Lack of initiative
- Lowered ability to perform at their peak
- Decreased quantity of work completed
- Inability to be social with coworkers
- Lack of motivation
Presenteeism - Productivity Impact

- In a study of 400 managers and employees conducted by HLW International LLP (*Buildings, 1999*), employees’ productivity levels were determined to be heavily influenced by the cleanliness of the office in which they worked.

- The study found that cleaning has a very real and measurable value, specifically reporting a 5 percent productivity gain ($125,000) in a 100-associate office with an average salary of $25,000.

- Productivity of employees was not the only area impacted; employers who found it difficult to recruit prospective employees also were affected.

Cleaning Impact: Minnesota Department of Health

- Good housekeeping protocols that thoroughly removed dust from surfaces were found to have both health and comfort benefits.

- When building occupants experienced mild symptoms of distress or discomfort (dry eyes, itchy or watery eyes, dry throat, lethargy, headaches, chest tightness), they began to perceive a loss in performance.

- This performance loss ranged from 3-8% depending on the number of symptoms.

- In another study, exposure to a reservoir of dust (an old carpet) affected subjects' typing, arithmetic, logical reasoning, memory, and creative thinking skills by 2-6%.

- While motivation can overcome small burdens of environmental stress, continued environmental stress can drain a person’s physical and mental resources, which ultimately can affect performance.
Value of Clean Calculator 2.0

**Absenteeism**
- Number of Employees or Building Occupants: 100
- Cost of absenteeism per employee per year: $1,328
- Absenteeism % Reduction Target: 50%
- Total Cost of Employee Absenteeism per Year: $66,000

**Building Occupant Labor Productivity**
- Wage Rate (use average for the workforce): $12
- Taxes, Insurance, and Benefits: 30.00%
- Labor Productivity Improvement %: 4%
- Annual Productivity Improvement (based on employees/occupants above): $129,702

*HLW International reported a 5% productivity gain in a 100-associate office*

Source: Buildings. (1999, November 1). (v93, No 11.).
Cleanliness Study
Quick Serve Restaurants (QSR)

- 1000 respondents
- Ages 18-64
- Online panel of over 5 million users
- Past 90 days of 28 QSR chains
- 20 aspects of cleanliness

Most Annoying Cleanliness Aspects
(Selected as one of four most annoying and four most often found)

Source: Procter & Gamble
Cleanliness Study
Quick Serve Restaurants (QSR)

National Importance Trends
(Extremely / Very Important - Net)

- Indulgent
- Kid Appeal
- Variety
- Healthiness
- Like you
- Convenience
- Affordability
- Speed
- Friendliness
- Value
- Temperature
- Quality
- Accuracy
- Taste
- Cleanliness

Source: Procter & Gamble

Chain Store Atmospheric Study

- 956 U.S. consumers
- Consumers age 16 and older
- Survey elements
  - Passive elements (static aspect) of the store
  - Active / interactive elements (stimulation)
  - Cleanliness levels
- Conclusion: Cleanliness is the most important out of 13 aspects of store atmosphere

Chain Store Atmospheric Study

Importance of Atmospheric Elements
(Rated Highly Important (7-9 out of 9))

<table>
<thead>
<tr>
<th>Element</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleanliness</td>
<td>90%</td>
</tr>
<tr>
<td>Lighting</td>
<td>67%</td>
</tr>
<tr>
<td>Temperature</td>
<td>64%</td>
</tr>
<tr>
<td>Aisle Width</td>
<td>58%</td>
</tr>
<tr>
<td>Fixtures</td>
<td>42%</td>
</tr>
<tr>
<td>Flooring</td>
<td>37%</td>
</tr>
<tr>
<td>Quietness</td>
<td>36%</td>
</tr>
<tr>
<td>Music</td>
<td>27%</td>
</tr>
<tr>
<td>Product Demos</td>
<td>25%</td>
</tr>
<tr>
<td>Wall Designs</td>
<td>16%</td>
</tr>
<tr>
<td>Announcements</td>
<td>16%</td>
</tr>
<tr>
<td>Special Events</td>
<td>13%</td>
</tr>
<tr>
<td>TVs with Ads</td>
<td>5%</td>
</tr>
</tbody>
</table>


Restroom Cleanliness Survey

- 1000 U.S. Adults / Three Surveys
- 94% would avoid a business if they encountered a dirty restroom
- Restroom cleanliness was primary value

Business Respondents Would Avoid - Dirty Restrooms

Source: Cintas. (2011, July 21). Dirty Restroom Leads to Lost Business, by Harris Interactive
Asset Preservation - Carpet

Carpet Life Cycle

- Carpet & Rug Institute prescribes frequency minimums
- Leading carpet mills have maintenance guidebooks prescribing frequency minimums
- Warranties are based on scheduled maintenance
- LEED and CIMS-GB require a carpet program / log
- IICRC S100 carpet cleaning standard has detailed cleaning guidelines
- Soil is abrasive and causes fiber damage that reduces the life expectancy of carpet assets

Source: IICRC and Carpet & Rug Institute
Carpet Life Cycle - Formula

\[
\text{Cost of Carpet and Installation} + \text{Removal and Disposal Cost} + \text{Cost of Cleaning Over Carpet's Life} = \text{Life Cycle Cost per Year}
\]

Carpet Life In Years

Source: CRI

Four Cornerstones of Carpet Maintenance

- **Preventive**: Stopping soils from entering the facility with matting and entrance cleaning
- **Daily**: Removing dry soil daily using vacuums. Spotting to remove wet and oily substances
- **Interim**: Appearance-based cleaning and pile lifting
- **Restorative**: Restoration cleaning designed to restore the carpet to its original condition

Source: CRI
Value of Clean Calculator 2.0

CRI estimates that properly maintained carpet can last 3 times longer than poorly maintained carpet.

Source: CRI

Floor - Life Cycle & Cleaning Cost

Life Cycle of Floor Types

<table>
<thead>
<tr>
<th>Floor Finish</th>
<th>Installed Cost</th>
<th>Life Cycle Cost</th>
<th>Expected Life (y)</th>
<th>Cost Per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarry Tile</td>
<td>$8.53</td>
<td>$16.13</td>
<td>50</td>
<td>$0.32</td>
</tr>
<tr>
<td>Glazed Ceramic Floor Tile</td>
<td>$7.00</td>
<td>$16.30</td>
<td>50</td>
<td>$0.33</td>
</tr>
<tr>
<td>Glazed Porcelain</td>
<td>$8.34</td>
<td>$17.64</td>
<td>50</td>
<td>$0.35</td>
</tr>
<tr>
<td>Mosaic Tile</td>
<td>$6.20</td>
<td>$17.50</td>
<td>50</td>
<td>$0.35</td>
</tr>
<tr>
<td>Unglazed Porcelain</td>
<td>$8.30</td>
<td>$17.60</td>
<td>50</td>
<td>$0.35</td>
</tr>
<tr>
<td>Natural Hardwood</td>
<td>$9.31</td>
<td>$20.80</td>
<td>50</td>
<td>$0.42</td>
</tr>
<tr>
<td>Travertine-Turkish</td>
<td>$12.50</td>
<td>$21.80</td>
<td>50</td>
<td>$0.44</td>
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<tr>
<td>Marble</td>
<td>$21.00</td>
<td>$30.30</td>
<td>50</td>
<td>$0.61</td>
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<tr>
<td>Laminate</td>
<td>$8.84</td>
<td>$17.77</td>
<td>25</td>
<td>$0.71</td>
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<tr>
<td>Man-Made Hardwood</td>
<td>$9.56</td>
<td>$18.51</td>
<td>25</td>
<td>$0.74</td>
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<tr>
<td>Portland Cement Terrazzo</td>
<td>$14.85</td>
<td>$24.27</td>
<td>30</td>
<td>$0.81</td>
</tr>
<tr>
<td>Stained Concrete</td>
<td>$12.40</td>
<td>$24.60</td>
<td>25</td>
<td>$0.98</td>
</tr>
<tr>
<td>Carpet</td>
<td>$3.22</td>
<td>$6.50</td>
<td>6</td>
<td>$1.06</td>
</tr>
<tr>
<td>Resin Terrazzo</td>
<td>$8.50</td>
<td>$16.53</td>
<td>15</td>
<td>$1.10</td>
</tr>
<tr>
<td>Sheet Vinyl</td>
<td>$6.00</td>
<td>$13.00</td>
<td>10</td>
<td>$1.39</td>
</tr>
<tr>
<td>Poured Epoxy</td>
<td>$6.18</td>
<td>$15.18</td>
<td>10</td>
<td>$1.52</td>
</tr>
<tr>
<td>VCT</td>
<td>$3.91</td>
<td>$8.35</td>
<td>10</td>
<td>$1.63</td>
</tr>
</tbody>
</table>

Source: Tile Council of North America
Ceramic vs. VCT

Ceramic Tile

VCT

Value of Clean Calculator 2.0

Surface (Substrate) Life Cycle Cost

- Number of Square Feet: 50000
- Ceramic Tile: 50
- VCT: 10
- Product & Installation Cost/Sq. Ft.: 7
- Annual Maintenance from Workloading: 30000
- Life Cycle Cost Over Life of the Surface: $2,150,000
- Cost Per Year Over Life of the Surface: $43,000
- Cost per Sq. Ft. per Year: $0.66
Floor Surface Life Cycle Comparison

Reducing Hospital Associated Infections (HAI)
HAI Statistics

- 2 million patients suffer with healthcare-associated infections (HAIs) in the USA
- Direct cost of HAIs to hospitals ranges from $28 billion to $45 billion in the U.S.
- Healthcare-associated infections (HAIs) have increased by 36% in the U.S.
- 90,000 estimated deaths annually
- HAI rates and a federal pay-for-performance measure will no longer allow Medicare to pay more for patients with HAIs


Hygiene Management Results

Six-month independent study of 3M Clean-Trace™ Hygiene Management System, which uses specially trained cleaners and cleaning best practices.

- Identified frequently touched surfaces
- 48% reduction of c-difficile (HA-CDI)
- Increased HCAHPC scores
- Reduced individual cases of (HA-CDI) by 85 – annual savings $413,000

Source: Michael Phillips, MD, New York University Langone Medical Center, New York, NY
Daytime Cleaning

- Daytime Cleaning is a term used to describe the restructuring of the cleaning system to enable workers to provide cleaning services during the normal working day.

- Daytime Cleaning offers economical benefits in areas such as building security, worker productivity, energy savings, communications, and accountability.

- Cleaners perform tasks such as the cleaning of entrances, restroom cleaning and stocking, vacuuming, break room cleaning, emptying trash, and most other cleaning activities.

Source: Diversey HHCP Day Cleaning Certification Program

Daytime Cleaning
Case Study Operational Outcomes

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>APPA Service Level</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Quality Assurance Scores</td>
<td>Low 80 percent</td>
<td>Low to mid 90 percent</td>
</tr>
<tr>
<td>Production Rates Per Worker 7 hr. Shift</td>
<td>20,000-24,000</td>
<td>36,000-42,000</td>
</tr>
<tr>
<td>Worker Fatigue</td>
<td>Lower rates of production</td>
<td>High rate of production</td>
</tr>
<tr>
<td>Full-time Equivalent Employee Count</td>
<td>315</td>
<td>282</td>
</tr>
<tr>
<td>Worker Absenteeism</td>
<td>17-20 percent</td>
<td>11-12 percent</td>
</tr>
<tr>
<td>Worker Transportation</td>
<td>98 percent of 315 workers drove their own car to work</td>
<td>40 percent of 282 workers van pool to work</td>
</tr>
</tbody>
</table>

Source: University of Washington & Diversey HHCP Day Cleaning Certification Program
Energy Savings

- There is a lightbulb for every 50 sq. ft. of a commercial building

- Kilowatt rate per hour is between 7-15 cents per hour

- The average night cleaning crew needs additional lighting for 6-8 hours per night

- Sustainability directors are looking for ways to support a policy and save money

- Lighting is 35% of energy costs in a commercial building

Source: data from 2005 Buildings Energy Data Book & Diversey HHCP Day Cleaning Certification Program

EPA Building – Denver, Colorado

- Daytime cleaning has reduced energy costs by 28%, saving the building owner nearly $250,000 annually

Source: www.edcmag.com/articles/print/the-case-for-daytime-cleaning
How to Calculate Energy Cost Savings

- Type of Fixture: T8’s are 1” in diameter; T12’s are 1 1/2”. T8’s run on an electronic ballast and will not run (efficiently) in a fixture with a regular ballast. A four-foot T8 is 32 watts, while the four-foot T12 is 40 watts. Number of Fixtures: The typical commercial facility has a light fixture for every 50 sq. ft. of office space.

- Occupancy Sensors: If an organization has installed occupancy sensors to further manage lighting, the estimated percentage of savings derived from these sensors should be included.

- Hours per Night: Most night cleaning operations consume between 5 and 7 hours of lighting per shift on at least 260 days a year. These numbers are then multiplied by the kilowatt-hour (kWh) that a facility consumes.

- Cost: Electricity is measured by the (kWh). When a customer uses 1000 watts for 1 hour, that is a kilowatt-hour. The most recent utility bill provides an organization's cost per kWh. Alternatively, there are a number of websites that provide cost ranges by geographic region. One such link is [www.eia.gov/electricity/monthly](http://www.eia.gov/electricity/monthly).

Value of Clean Software 2.0

![Energy Savings Calculator](image)

- **Building Square Feet**: 50000
- **Type of Fixture**: T-8, T-12
- **Savings % from Occupancy Sensors**: 5%
- **Service Days per Week**: 5
- **Hours per Day Saved through Day Cleaning**: 6.0
- **Cost per KW Hour**: $0.09
- **Annual Energy Savings at 50% Level**: $40,681
- **Annual Energy Savings at 100% Level**: $51,362

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Value of Clean Calculator 2.0

Entry information about your organization on this page. To learn more about cost reduction opportunities, just check the box next to the title:

Work Ticket Resolution
- Complaints currently addressed per month: 0
- Complaints per month handled after additional cleaning: 0
- Cost to process handle and resolve one customer complaint: 23
- Annual Work Ticket Cost Savings: $0

Absence
- Number of Employees or Building Occupants: 0
- Total Cost of Absenteeism per Employee per Year: $1,229
- Absenteeism % Reduction Target: 10%
- Total Cost of Employee Absenteeism per Year: $0

Building Occupant Labor Productivity
- Wage Rate (use average for the workforce): $10
- Taxes, Insurance, and Benefits: 33.00%
- Labor Productivity Improvement %: 5%
- Total Productivity Improvement (based on employees/occupants above): 90

Surface (Substrate) Life Cycle Cost
- Number of Square Feet: 5000
- Surface Type: Carpet, VCT
- Estimated Life in Years: 6, 10
- Product & Installation Cost/Sq. Ft.: 3.22, 3.91

Asset Preservation
- Number of Square Yards of Carpet: 0
- Total Installed Cost per Square Yard: 0
- Total Asset Value: $0
- Incremental Carpet Care Investment per Year: 0
- Carpet Life with Current Plan: 5
- Carpet Life with Additional Carpet Care Investment: 5
- Annual Asset Preservation Savings: $0

Energy Savings
- Building Square Feet: 0
- Type of Fixture: T-8
- Savings % from Occupancy Sensors:
  - 0%
- Service Days per Week: 5
- Hours per Day Saved through Day Cleaning: 8.8
- Cost per KWH: $0.15
- Annual Energy Savings at 50% Level: $0
- Annual Energy Savings at 100% Level: $0

Total Annual Savings-Excluding Asset Preservation: $0

Value of Clean Summary

This section estimates the return on investment of your cleaning investment:

Annual Cleaning Investment: $5000
- Main Carpet Care Investment: $500
- Plan for Other Cleaning Investments: $500
- In-House Equipment Costing: $0

Number of months your organization needs to realize your investment in cleaning:

Savings Summary per Year
- Recurring Items: $293,613
- Asset Preservation: $2,167

Learn to calculate these savings at www.issa.com/valuecalc, courtesy of ISSA, the worldwide cleaning association.

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ISSA Value of Clean Toolkit

- Value of Clean Calculator 2.0
- Value of Clean White Paper
- PowerPoint Presentation & Video
- Customer Leave-behind Cards
- Library of Articles/Webinars

Member download: issa.com/value
Customer access: issa.com/value tips

The ISSA Clean Standard can help
Give your school a way to measure cleanliness, protect student and staff health, and improve academic performance.

Download the Clean Standard today
issa.com/cleanstandard
SCHOOL FACILITY BUDGETS ARE BEING CUT, SCHOOLS ARE GETTING DIRTIER

ONLY 43.5% OF SCHOOL DISTRICTS PROVIDE GUIDANCE FOR INFECTIOUS DISEASE PREVENTION

CLEANLINESS IS USUALLY DEFINED BY VISUAL INSPECTION

WHEN QUANTITATIVE STANDARDS ARE USED TO MEASURE CLEANLINESS, HEALTH CAN IMPROVE

ISSA CLEAN STANDARD
0714-2014
Measuring the Cleanliness of K-12 Schools
1. Overview and Background

The goal of the Standard for Measuring the Effectiveness of Cleaning in K-12 Schools (hereinafter referred to as the Clean Standard: K-12) is to provide schools with a tool that will help them measure and monitor the effectiveness of the cleaning processes at their facilities thereby contributing to the quality of the indoor environment for the benefit of students and staff.

The Clean Standard: K-12 is a performance-oriented standard that is focused on:

- The desired levels of cleanliness that can be reasonably achieved;
- Recommended monitoring and inspection procedures designed to measure the effectiveness of cleaning procedures using quantitative measures (i.e., ATP Meters) and traditional methods (i.e., sight, smell, touch); and
- How to use the results of monitoring and inspection to evaluate and improve the cleaning processes and products that are critical to maintaining a safe and healthy learning environment for students and staff.

The Standard is focused on achieving and maintaining an effective cleaning program through the use of a systematic approach and standardized guidelines. As such, the Clean Standard: K-12 provides schools with a framework and protocol for using ATP meters along with qualitative methods to measure and assess cleaning effectiveness on a periodic and consistent basis.
Summary

- Data provides information based on fact, not opinion
- Defining the value of clean (value of custodial services; in-house or out-sourced) is imperative to justifying budget & expense
- Tools, like the Value of Clean calculator and the K-12 Clean Standard, are necessary – and do not have to cost you anything more than TIME
- Leave a business card or your info/email address if you’d like any of the tools, documents, and PPT from the presentation