Designing Restrooms for Sustainable Operation

An Introduction to Cost-Effective, Energy-Efficient Restroom Solutions

BOBRICK

BUILDING VALUE SINCE 1906

A free copy of this guide is available at bobrick.com

Think Beyond LEED.
Think Authentic Sustainability.

- LEED and green design are increasingly important—and expected.
- Primary contributors often come to mind:
  - Building envelope materials
  - Regional materials
- Being “authentically sustainable” requires a sustainable approach to long-term operation to complement the primary contributors to LEED and other green objectives

Consider the Product You Specify

- Give **thoughtful consideration** to the products that you're specifying.
- Consider products that save money and resources:
  - Reduce waste
  - Reduce energy consumption
  - Don't rely on batteries
  - Minimize usage of consumables
  - Minimize water use
- Consider products that save time:
  - Easy to refill
  - Easy to maintain

Excess Waste

Proprietary Soap Dispensing Systems

- Excess packaging and plastic waste
- Restrict owner’s purchasing freedom
- Staff must replace each plastic cartridge with a new one
- Labor intensive

Reducing Waste

Bulk Soap Dispensing Systems

- Non-proprietary systems enable use of bulk universal soap, which can be purchased on the open market, reducing costs and offering greater choice
- Utilizes bulk jugs rather than proprietary cartridges
- Eliminates labor intensive replacement and disposal of partially filled cartridges

Reducing Maintenance

Top-Fill vs. Bottom-Fill Soap Dispensers

- Filling mechanism can have a significant impact on maintenance costs
- Bottom-fill
  - High-effort, high labor
  - Often requires temporary removal of ADA panel
  - Commonly replaced with owner-provided dispensers
- Top-fill
  - Low-effort, low labor

B-823 Manual Foam Soap Dispenser

Reducing Soap Usage

Benefits of Foam Soap

- Reduced number of hand washes
- Increased volume (10 times original volume) leads to decreased soap & water usage
- A complete, luxurious and effective hand-wash

B-823 Manual Foam Soap Dispenser

B-823 Manual Foam Soap Dispenser

- Frees facilities from proprietary contracts
- Saves up to $1,000 per sink per year compared to proprietary liquid
- Architectural design with chrome finish
- 57% less post-consumer waste compared to proprietary cartridges
- Accommodated growing preference for a rich, lathery, hygienic hand wash
- Meets ADA Standards

B-830 SureFlo®
Tank-in-a-Box System

- Significantly reduces servicing time
- Eliminates need to remove panels to change cartridges
- Low-soap indicator light and built-in reservoir

Comparison of Soap Dispensing Solutions

	Tank-in-a-Box System	Bulk Foam	Bulk Liquid	Cartridge-Based Foam	Cartridge-Based Liquid	Retail Soap Bottles
Soap Type	Foam	Bulk jug foam soap	Bulk jug liquid soap	Proprietary plastic cartridges	Proprietary plastic cartridges	N/A
Most Sustainable Operating Feature	Manual	Manual	Automatic	Manual	Automatic	N/A
Refill Mechanism	Replace Box	Top-fill	Top-fill	Bottom-fill	Bottom-fill	N/A
Labor Hours & Effort	Minimal	Low	Low	High	High	N/A
Waste						
Sustainability Index						

Optimizing Paper Towel Consumption

Roll Paper Towel Dispensers

- Generally considered more sustainable than folded paper towel systems
- Units can feature adjustable towel pull lengths, shorter second pull lengths and delayed second activation.
  - In high-traffic environments, portion control features may have a diminished effect.
- Stub roll utilization feature provides complete consumable usage at less replacement time
- Non-proprietary systems permit purchasing freedom

B-29744 Automatic, Universal Semi-Recessed Roll Towel Dispenser Equipped with LED Light

Optimizing Paper Towel Consumption

Folded Paper Towel Dispensers

- Many facilities prefer folded paper towels due to the elimination of stub roll waste and their versatility.
- Employees often use folded towels at their workstations, to remove makeup, to grab restroom door handles and clean up minor spills.
- More absorbent than roll towels
- Built-in portion control
- Prone to “handful” dispensing

B-262 Folded Paper Towel Dispenser

Optimizing Paper Towel Consumption

TowelMate®

- Equipped into established dispensing cabinets
- Eliminates handful dispensing by separating towels
- As economical as roll towel systems
  - Reducing towel usage by up to 20%

Cost Savings Analysis: TowelMate®

If currently using Multifold Paper Towels...		
Before TowelMate 		
Cost per case of paper:	*Required Field	$21.13
Monthly number of cases used:	*Required Field	33
Annual cost of paper:		$8,367
After with TowelMate Installed		
Monthly number of cases used:		24.75
Annual cost of paper:		$6,276
Annual Savings:		$2,092
Number of folded towel dispensers in building:	*Required Field	40
Unit price for TowelMate Accessory:	*Required Field	$50.00
Total cost of TowelMate Accessories:		$2,000
Payback in Months:		11.5

Waste Reduction Solutions

Hand Dryers

- Reduces waste compared to paper towel systems
- Eliminate need to store & manage paper towel inventory
- 95% cost savings compared to paper towel systems

B-7188 TerraDry™ QuietDry™ Series
Surface-Mounted Hand Dryer

Optimizing Hand Dryer Energy Use

InstaDry™ Surface-Mounted Hand Dryer

- Meets patrons needs and desire for a quick, thorough hand-dry
- Best-in-class power rating of 200 watts (0.2 kW)
- Motor life can be as much as 7,500 hours (or 10 years) in high-traffic environments
- ADA compliant design, with less than 4" wall projection.

B-7125 InstaDry™
Surface-Mounted Hand Dryer

Bobrick InstaDry™ Hand Dryer: Relative Operating Cost Comparison

Feature	Bobrick InstaDry™	Brand X Eco	Brand D
Power Rating	0.2 kW	0.5 kW	1.0 kW
Annual Electrical Running Cost*	$	$$$	$$$$$

*Cost is based on 500 activations per day, such as a sports stadium at 12.5 cents per kWh (based on US average electrical cost taken from U.S. Energy Information Administration).

A Holistic Approach to Hand Dryer Selection

Top considerations include:

- Low-wattage can mitigate energy costs in high-traffic environments
- Elevate design with stainless steel, recessed or semi-recessed units
- Research noise levels to ensure appropriate acoustics for the environment
- LEED does not address many of these issues
  - Approach product selection holistically to ensure authentic sustainability.
- Design can prevent floor puddles and splashing

B-3725 ADA Recessed Hand Dryer

Comparison of Hand Drying Solutions

	Hand Dryers	Universal Roll Towels	Folded Paper Towels	Proprietary Roll Towels
Energy Costs	$ - $$$ Varies by wattage	$	–	$
Source of Excess Waste	None	Stub roll	“Handful” dispensing	Stub roll
Features to Optimize Sustainability	Low-Wattage	Adjustable Dispensing Lengths Stub Roll Utilization	Pull Rod Accessory	Adjustable Dispensing Lengths Stub Roll Utilization
Noise	Medium-High	None	None	None
Sustainability Index	5 leaves	3 leaves	2 leaves	1 leaf

Economical Maintenance and Owner-Provided Products

- Inappropriate products will make the restroom difficult to operate
- Equates to more labor hours and costs for the building owner
- Architects have no control over the product that the owner will choose as a replacement
- Primary examples include hastily attached soap and paper towel dispensers

The “Frankenrestroom”

Case Study

B-823 Manual Foam Soap Dispenser

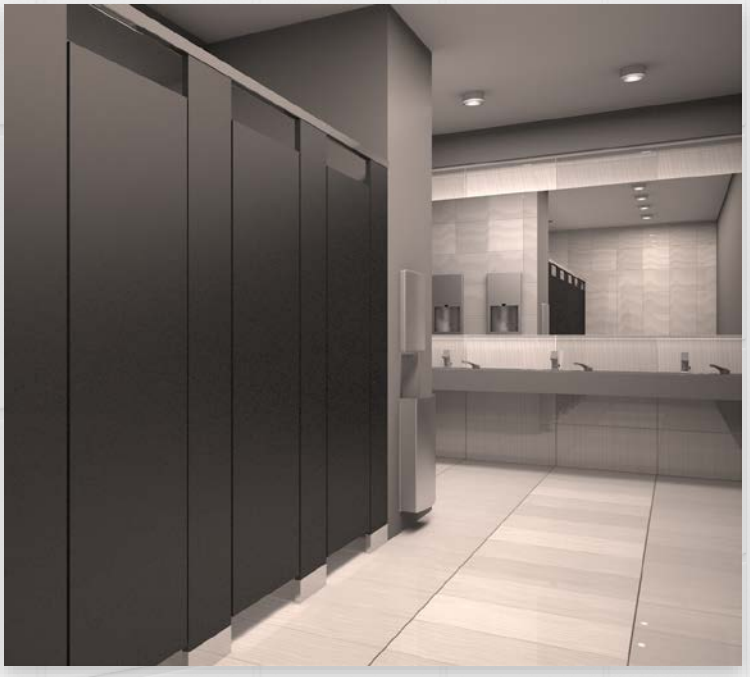
Illustrating Sustainability & Harmony

Communicating the Full Value of Sustainable Products

- Communicate the full value of the sustainable products you specify to appropriate project stakeholders:
  - Property management contacts
  - Building service contractors or facility managers/operators
- Engage with a manufacturer's representative to ensure effective communication
- **When the necessary materials are not provided, any party can compromise your design intent.**

Product Lifecycle Approach

- Durable materials reduce need for additional construction materials and associated manufacturing costs
- Most durable toilet partition materials include:
  - Compact Laminate (CL)
  - Solid Color Reinforced Composite (SCRC)
  - High Pressure Laminate (HPL)
- Provide relevant compliance and testing documentation



Thank you for your interest in Designing Restrooms for Sustainable Operation.

Please contact Bobrick Washroom Equipment, Inc. If you have questions related to the information presented within this program.

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