



# Designing Restrooms for Sustainable Operation

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

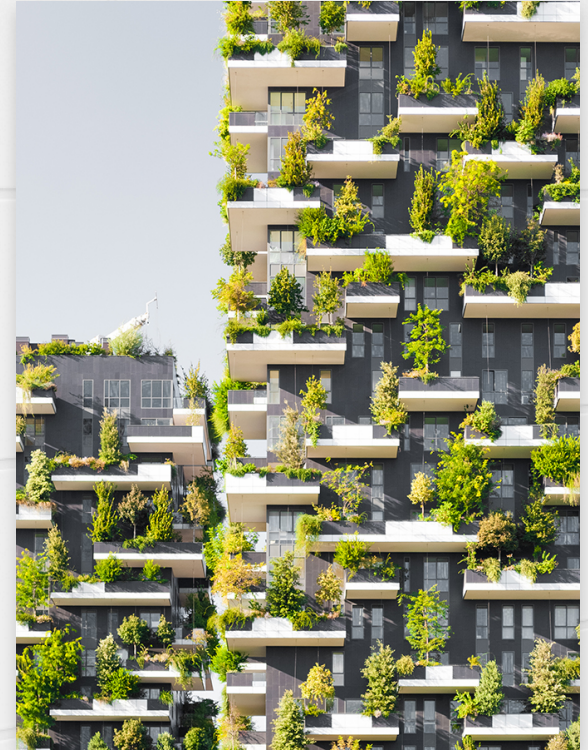


BUILDING VALUE SINCE 1906

A free copy of this guide is available at [bobrick.com](http://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	     	     	    	  	 	

Educating Your Client & Supporting the Specification

# 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				

Educating Your Client & Supporting the Specification

## 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”



Sustainable Operation & Aesthetics

# Case Study



B-823 Manual Foam Soap Dispenser



## Illustrating Sustainability & Harmony



Sustainable Operation & Aesthetics

# 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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