

ENERGY (AND MONEY) SAVING HAND DRYERS

Excel Dryer

LEED Fellow Penny Bonda was surprised to find a green alternative to recycled paper towels. In fact, high velocity hand dryers blow away the perceptions of most in the industry.

By Russ Klettke



Penny Bonda

Hotels that vie for world-class travelers, large conventions, and black-tie affairs have to achieve that precarious balance between luxury and sustainability. Chicago's **Fairmont** hotel is one such example.

And sometimes the analysis comes down to the restrooms. No one likes seeing a wastebasket overflowing with paper towels, and now they don't have to. Highly efficient electric hand dryers have replaced recycled paper towels on the basis of superior cost-savings, drying effectiveness, and carbon footprints. The cost part is understandable. It's much easier on the hotel's maintenance staff whose sweeping and disposal tasks disappear with electric hand dryers. But efficacy and resource efficiency is what surprises

The specific hand dryer model in use is the **XLERATOR**, a high-speed energy efficient dryer that has come to dominate its category since its 2001 launch by manufacturer **Excel Dryer, Inc.** of East Longmeadow, Massachusetts (near Boston). It replaces older models from this and other companies that were largely viewed as inadequate

to the task of hand drying. By simply concentrating a blast of heated air at a higher velocity, the dryer works better—in about 10 seconds.

But what surprises many—including **Penny Bonda**, a LEED fellow with the U.S. Green Building Council, a partner with **Ecoimpact Consulting**, and past president of the **American Society of Interior Designers**—is the environmental superiority of this type of hand dryer over recycled paper towels.

"People generally believe that recycled anything is the greenest solution, which often isn't true," Bonda says. She didn't come about this observation casually. She had to see the cradle-to-grave analysis of how electric-powered dryers stood up to recycled-source paper towels for herself.

William Gagnon, vice president of marketing for Excel Dryer, fully anticipated the questions that Bonda and other green designers would have. The company hired **Quantis International** to perform a **Life Cycle Assessment (LCA)**, peer reviewed to ISO 14040

standards) on the XLERATOR, conventional hand dryers, and paper towel systems—recycled and non-recycled—in 2009. Quantis considered the use of resources as well as the release of pollutants throughout each product's life cycle, from raw material acquisition through production, use, and end-of-life treatment. This allowed for direct comparisons between the four products and systems, taking into account the differences in impacts on climate change, freshwater use, human health, ecosystem quality, and resource depletion (i.e., renewable vs. non-renewable energy sources where the dryers are used).

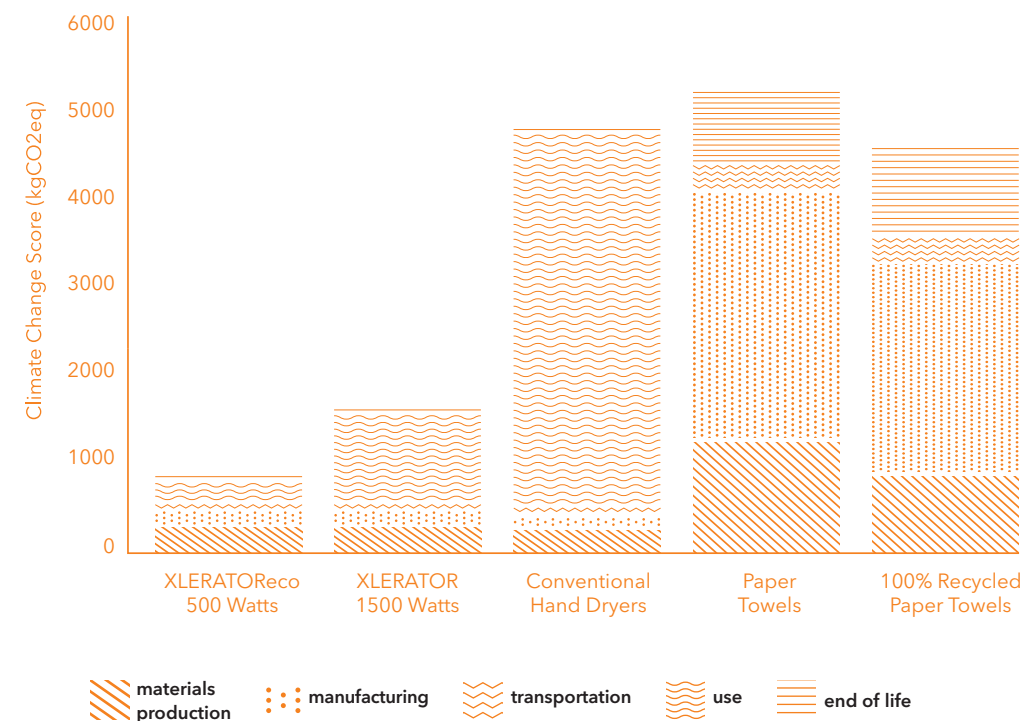
The results of the LCA were conclusive. The XLERATOR performed significantly better than earlier-generation electric dryers, paper towels, and paper towels with 100% recycled content. On all measures.

Bonda is enthusiastic about these results and believes that designers and clients need to be aware of them. "Product and material specification becomes easier, almost intuitive, once the design professional understands the LCA process and the vital role it plays in green design," she says.

Gagnon's father, **Denis Gagnon**, developed the product after purchasing the company in 1997. Almost universally, the complaint was that traditional

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CARBON FOOTPRINT



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PHOTO: WILEY

PHOTO: COURTESY OF EXCEL DRYER, INC.

hand dryers took too long, 30-45 seconds, to truly dry users hands. Excel once had a trade show display in its early days that said, "No Pants Required," referring to the common practice of giving up on the hand dryer by resorting to clothing fabric to complete the task.

They set about a three-year project to design a more powerful, faster, yet energy-efficient version of the dryer (that was originally introduced in 1963). The firm contracted with **Invent Resources**, which employed scientists and engineers in product development. Among their criteria was that the new dryer costs would come in within 15-20% of the existing model and would work on 15-amp circuits. "We were thinking about older buildings with older electrical systems," William Gagnon says.

Both father and son knew they were up against some misconceptions. "At that point, people clearly preferred paper towels," William says. "They as-

sumed a superiority of '100% recycled paper.'" People assumed that recycled paper towels are in some recycling loop, where those towels used are used over and over; in fact they go to landfills after a single use. Recycled content might be preferable to paper derived from non-sustainably raised forests, but even that type of paper towel fell short in the LCA study.

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The results in real-world applications since the product rolled out worldwide have proven the theoretical models. In case study after case study, commercial-scale users (there are residential customers as well)

report significant cost savings: **Longmeadow High School**, near the company headquarters, reports a 96% cost reduction; Boston's **Fenway Park** has units in operation throughout the facility and claims an annual reduction of 123 tons of waste (24% less) compared to the prior year when paper towels were used, in addition to fewer toilets clogged by paper

the hospital's stringent infection control board standards.

Bonda worked with Gagnon to develop a course titled "Next Generation Green Restroom Design v2," eligible for AIA, GBCI and IDCEC CEU credits. "All interior spaces affect human health," she says. "As such, designers have an obligation to provide spaces that protect the health and enhance the well-being of occupants." Because whether in hospitals or hotels, high schools or office buildings, no one wants to get sick. They just want to dry their hands, no pants required, and get on with their day. **gb&d**

towels; the USGBC cites them as "the specified hand dryer of choice" for its own showcase green restrooms in Washington, D.C. Plus, **Northwestern Memorial Hospital** in Chicago had 100 units installed to meet

energy used

energy surplus

37%

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