

Purdue's Dual-Flush Numbers Show Dramatic Water Drop

Talk all you want about how well a product works, but there's nothing like cold, hard data to prove a point and make someone a believer. When Michael Carson, senior mechanical engineer at Purdue University, first heard about UPPERCUT dual-flush flushometers (from Sloan Valve Co.), he was skeptical.

"We were curious as to whether it would make a difference," Carson remembers thinking when he and his co-horts were offered a chance to test dual-flush flushometers at Purdue's main campus in West Lafayette, IN.

Purdue initially decided to retrofit the women's restrooms in two of its administrative buildings with a total of 12 new dual-flush

handles. Carson and his engineering team chose the printing services and telecommunications buildings because both have good historical water-use information, restroom plumbing fixtures are the buildings' only major water source and women comprise a high proportion of the populations.

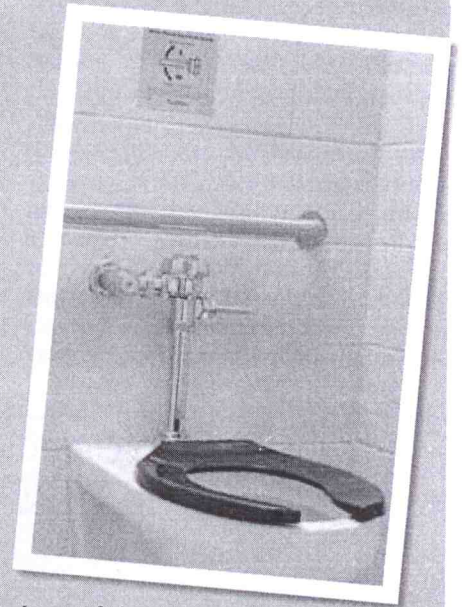
Purdue installed the dual-flush handles in the women's restrooms in these two buildings in July 2005. Carson and his team have closely examined the monthly water-use data from the buildings' water meters, and the figures tell an interesting before-and-after story.

In the printing services building, water use dropped from an average of 10,228 gallons a month from July 2004 to June 2005 (before the change) to 5,803 gallons a month from July 2006 to June 2007 (after installation).

That equates to about a 43% decrease in water usage.

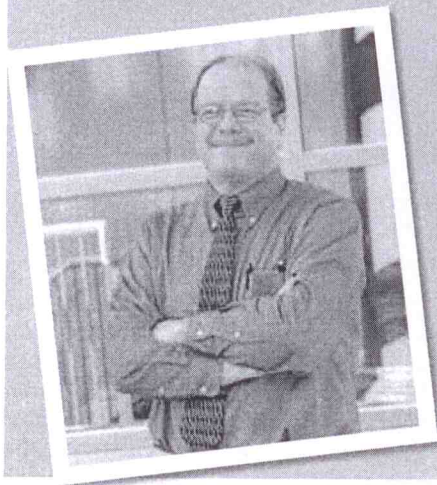
In the telecommunications building, water use dropped from about 12,229 gallons a month (July 2004-June 2005) to 8,622 gallons (July 2006-June 2007) for a total median decrease of nearly 30%. Some single month-to-month comparisons yield a drop of almost 50%.

Carson solely attributes these decreases to the new dual-flush handles, because no other water usage or fixtures



changed in the period studied. "The numbers are straight water meter readings," he says. "We saw no other cause for the water use to drop."

Left: Michael Carson, senior mechanical engineer at Purdue University, attests to the significant water use decrease at two campus buildings where the dual-flush handles were installed. **Above:** Regular users of the Purdue University restrooms, in which the dual-flush flushometer handles have been installed, are happy to do their part to reduce water usage.



cycle based on how long the user stays in the sensor range. Although it's just a matter of time before dual-flush valves are commonplace, this automatic operation immediately overcomes restroom visitors' learning curve because it doesn't rely on user selection or habit change.

Dual-flush functionality can be retrofitted onto installed flushometers or as part of complete systems. When adding manual dual-flush functionality to an existing flush valve, you simply replace the standard flushometer handle with a dual-flush handle. The dual-flush retrofit handle will work on most standard 1.6-gpf flush valves. It is a good idea to check with the fixture manufacturer before doing large-scale renovations.

By specifying plumbing systems that automatically save water, either by having a lower water consumption or due to

sensor operation in the case of the electronic dual-flush flushometers, you're helping the facility save water — even if restroom users are oblivious to the technology.

Putting It Into Practice

In addition to LEED, movements such as the Clinton Climate Initiative, which is working to accelerate the development and usage of energy-saving technologies, show the momentum of sustainable issues. As corporations come under greater pressure to treat sustainability more seriously, plumbing professionals also are finding that they need to give more than just lip service to these issues.

Plumbing engineers have a responsibility to recognize the effectiveness of water-efficient plumbing systems and to recom-