

# The Evolution Continues...

MINIMUM WATER EFFICIENCY PREREQUISITE ADDED TO LEED.

>> BY TOMMY LINSTROTH

For those of you following the rollout of LEED 2009, you're sure to have noticed by now a number of changes to the credits: increased thresholds for existing credits, more regional opportunities and a completely different weighting system.

Another seemingly small but rather significant change has been the addition of a tiny new prerequisite: Minimum Water Efficiency. While all the other changes don't necessarily affect a building's ability to get certified, throwing in a new prerequisite is a pretty strong change — one reflecting the growing importance of water efficiency.

WE PR1 – Minimum Water Efficiency calls for a minimum 20 percent reduction over baseline water fixtures for a project to be eligible to achieve certification. While this used to be pretty simple to attain, changes in the plumbing code have upped the ante in our water efficiency mechanisms to make it more of a challenge (and more difficult to achieve the additional points for higher levels of water savings).

As a quick overview, the prerequisite requires 20 percent water savings, and up to 4 points are available for savings of 30 percent (2 points), 35 percent (3 points) and 40 percent (4 points). While more points are now available, the overall percentage of points associated with water efficiency has remained the same: 3 percent for 2 points, or 4.3 percent for 3 points (with the innovation credit) for a 40 percent savings under LEED 2.2, versus 3.6 percent savings for 4 points when reaching the 40 percent reduction under LEED 2009.

There are a few ways commercial buildings can achieve the prerequisite — but don't necessarily look toward faucet aerators (as many have in the past) to reach your savings. Under the updated IPC code and LEED 2009, 0.5 gallon per minute (gpm) aerators are required in commercial buildings. So, unless you are dropping below that, you're not getting any savings. Automatic sensors could get you some savings, but for the purpose of this column, let's keep it simple.

That leaves us with toilets and urinals (I'm assuming showers are an inconsequential load right now). Let's look at an example: An office build with 200 occupants, 100 men and 100 women, each of whom use the bathroom three times per day and wash their hands after each use (we hope!). For this case, let's say there are no urinals in the building. If we're using a commercial flush valve toilet system, the baseline is 1.6 gpf. In our green building, we're using 1.28 gpf flush valves that are commonly available. This would put our total water savings at...18.6 percent! Not enough to achieve the prerequisite, much less earn any credits! If we happen to have urinals and use the 1.28 gpf flush valves with standard urinals, the savings drop even further to 14 percent — nowhere near the prerequisite.

However, if we change our urinals to waterless, we'll jump to almost 36 percent savings — enough for the prerequisite and even 3 points. Using the pint (1/8-gallon per flush) urinals will put us at 33 percent — enough for 2 points.

So, are offices with no urinals un-certifiable? It certainly can make it much more difficult to achieve, but there are options available with more coming every day. The easiest way is a tank-type toilet. Installing a 1 gpf pressure-assisted toilet works great and reduces water use



by 34.8 percent — just barely short of 3 points but not bad. Dual-flush toilets can also get you there. Assuming a 0.8/1.6 gpf option, you'll end up with almost 31 percent water savings. If you're using flush valves, dual flush is still an option, although in my experience people have a harder time figuring out which way to flush. Half the time people are kicking the darn thing because they don't want to touch it! The flush valve dual flush has a 1.1 and 1.6 gpf option — this alone would get you around 19 percent but still 1 percent shy of that magical 20 percent.

That was a lot of numbers, so here's a quick summary:

- 1.28 gpf flush valves only — 18.6 percent
- 1.28 gpf toilets with 1 gpf urinals — 14 percent
- 1.28 gpf toilets with 0.125 gpf urinals — 33 percent
- 1 gpf toilets — 34.8 percent
- Dual flush (0.8/1.6 gpf toilets) — 31 percent
- Dual flush (1.1/1.6 gpf flush valves) — 19 percent

As you can see, it's not as simple as it used to be. Reducing water consumption is certainly a top priority and relatively easy and inexpensive to do. And plumbing fixtures tend to stay installed for a long time, so choosing the correct fixture is a long-term decision. Just make sure you run the numbers first if you are looking for LEED certification because sometimes those numbers just don't add up. **SF**



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