Toilets and Water Conservation

Toilet manufacturers in the U.S. gradually began to reduce the water consumption of toilets in the 1960’s. By 1980, the water consumption of most toilets had dropped from an average of 5-7 gallons per flush (gpf) to 3.5 gpf. Meanwhile, some European countries were well ahead of the U.S. In 1972, Sweden, struggling with polluted estuaries around Stockholm caused by excessive discharges from sewage treatment plants, instituted the first regulations to limit the amount of water used for flushing toilets – establishing the maximum flush at 1.6 gallons. During the ‘70s, imported four and six liter Swedish toilets made by Ifo became popular in the U.S., especially among homeowners who had septic system problems.

The first statewide restriction on the water use of toilets in the U.S. were adopted in 1987 (to become effective in March 1989) – not in the arid southwest, but in Massachusetts. This law, establishing a limit of 1.6 gpf for most toilets, was followed rapidly by similar laws in other states. By the early ‘90s, at least 17 states had 1.6 gpf regulations in place. Meanwhile, water conservation experts, as well as many manufacturers who were struggling to produce different toilets for different markets asked the federal government to step up to the plate and establish national regulations on toilets. The Energy Policy Act of 1992, which went into effect in January 1994, established national standards of 1.6 gpf and superseded state regulations. Manufactures could now produce toilets to a single water conservation standard.

The bar has been pushed even farther as today, you can buy high-efficiency toilets (HETs) that use 1.28 gpf, or dual-flush toilets that can use as little as 0.8 gpf. If you are replacing an older toilet, when you choose a high-efficiency, dual-flush or 1.6 gpf toilet, you will help save water and continue the long evolution of the toilet.

Many “green” buildings now use reclaimed rainwater and dual-flush toilets, which can use as little as 0.8 gallons per flush.

Resources

Environmental Building News
Volume 13
Number 1
January 2004

Angie’s List
Portland
November 2006

Compiled by the Tualatin Valley Water District
1850 SW 170th Ave.
Beaverton, OR 97006
(503) 642-1511
www.tvwd.org
The idea of flushing human waste away using water goes back more than 4,000 years. In the Harappa civilization of Western India in 2500 BC, many houses had toilets with waterborne drainage channels covered with fired brick. During the period of King Minos on the Isle of Crete around 1700 BC, rulers had extravagant bathrooms with hot and cold water and a way to flush away human waste. The sophisticated public latrines of ancient Rome also used flowing water to carry away wastes.

But after the fall of the Roman Empire, advances in sanitation ceased. Chamber pots and open cesspools prevailed in densely populated cities. “Night soil” was dumped into street gutters, and many rivers became open sewers. In the hot summer of 1859, the River Thames became so pungent that the English Parliament was suspended! But by this time, major advances were being made with toilets.

In England in 1596, Sir John Harrington, godson to Queen Elizabeth I, designed and built the first flush toilet, but he was so ridiculed by his peers for this absurd device that he gave up his career as an inventor. Further progress with flush toilets would wait almost two centuries – until 1775, when Alexander Cummings reinvented the “water closet” and introduced the first S-trap to keep sewer odors from escaping through the toilet. In 1885 Thomas Twyford revolutionized toilet design by replacing the metal and wood contraptions seen previously with an all-porcelain design.

In the history of toilets, it is important to point out that Thomas Crapper did not invent the flush toilet. Born in 1836, Crapper had an active career in the English plumbing industry from 1861 to 1904 and he patented some minor improvements in drains, pipe joints, and water closets. But the “Silent Valveless Water Waste Preventer” (a siphon-discharge toilet) that he is often credited with inventing was actually developed by Albert Giblin. Crapper marketed this device under his name, however, and World War I soldiers passing through England came to identify the “Crapper” with water closets – a term that has certainly stuck (in some circles).

Flush Toilets Today

It’s no great secret that not all 1.6 gpf toilets performed satisfactorily. Toilets have come a long way since the first water conservation standards went into effect in 1994. Using the MaP tested toilets list will ensure you are buying a toilet that will perform at the highest level. Manufacturers use a variety of technologies to achieve performance, and if they have been third party tested, you can rest assured they will perform.