



Green Newsletter
January 2008

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Green Taking Root in Codes

Green building is growing across the nation, taking root in both the industrial and residential markets. The development of green has seen the emergence of new technology and building practices. Part of responsible and sustainable building requires developing code that supports new ideas, while still promoting public health and safety.

One of the big issues in this UPC development cycle is the expanded use of gray water and reclaimed water. The IAPMO technical committee reviewed the proposals regarding these issues and felt that it was important to study them further. They created a Gray Water and Reclaimed Water Task Group to gather more information and submit recommendations on the proposals. The following are some of the proposals that are being discussed.

Definition

Item number 219 seeks to redefine reclaimed water as "Non potable water that meets or as a result of treatment, meets federal requirements for its intended uses. The level of treatment and the quality of reclaimed water shall be approved by the Authority Having Jurisdiction."

In the past, reclaimed water was defined as being wastewater treated externally by a public utility. But with the emergence of green and the drought affecting many parts of the nation, conservation has become important, and the opportunities for conservation through the use of reclaimed water are great. The new definition will allow for other safe and proven sources of reclaimed water, such as rainwater harvesting and gray water that is treated on site.

The definition of gray water may also change. The proposal removes the classification of gray water as "household" waste water, and opens the door for gray water to be used in all occupancies and building types. Gray water remains distinct from reclaimed water in that it is untreated and is not required to meet quality requirements before it is reused.

Use

The 2006 UPC limits the use of reclaimed water systems to the flushing of fixtures and priming floor drains in non-residential buildings. Item number 218 seeks to change this. In their review, the task group found no technical substantiation to prevent the safe use of reclaimed water in residential or other buildings. It pointed to the safe and successful use of reclaimed water in states such as California, Arizona, Texas and New Mexico. With proper treatment, whether it is onsite or at another location, reclaimed water can be used for flushing toilets and urinals, irrigation, make up water for fountains, and other approved functions, in both commercial and residential buildings.

Gray water may also see a significant change in regard to its usage. Currently, gray water is only allowed for underground irrigation for residential applications. The changes proposed would not limit its use to residential occupancies.

Safety

Important to the use of gray water and reclaimed water, and any water for that matter, is the system's design. It is imperative to public health that the plumbing system

performs properly, and that all safety measures are in place. To ensure this, it is necessary that the system be designed by a person registered or licensed to perform plumbing work and that the water meets minimum quality standards approved by the authority having jurisdiction. The proposed changes would add language to the code that makes this requirement clear and absolute.

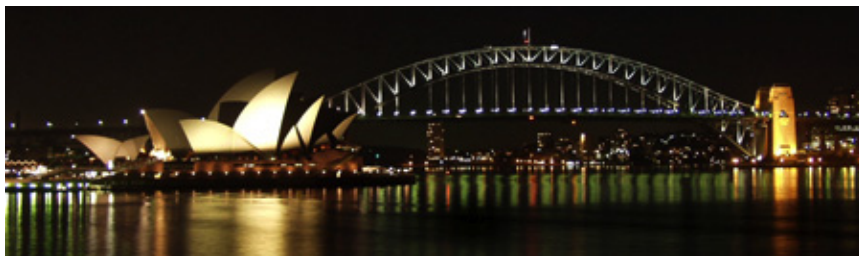
The benefit of green codes

Millions of gallons of safe, potable drinking water are wasted every day. They are flushed away or used for irrigation. There are numerous advantages to expanding the definitions and use of gray and reclaimed water. Their use stretches the effective water supply of potable water. Toilets and irrigation account for much of residential water use - using the water collected from showers, bathroom sinks, and laundry just makes sense.

The proposed changes are a step in allowing the new technology in water reuse systems to be utilized while maintaining public health and safety.

The recommendations of the committee will be passed along to the Technical Committee as public comments, which will act on them at its meeting May 5-7 in Denver. It should be noted that all parties are welcome to submit comments on these or any of the other proposals to the UPC and UMC up to the deadline of Feb. 1. (See "Call for Comments" below for more information.)

Win a Study Tour in Australia!



Complete the World Plumbing Review magazine's online Climate Change — Sustainable Plumbing Global Survey and you are automatically entered into the drawing to win a five-night study tour in Sydney, Australia.

In a rapidly changing world, sustainability issues continue to dominate discussions, regardless of country or region. In fact, water is the new oil.

WPR decided to ask you - the people who make the decisions and specify the outcomes - what you think.

WPR hopes this survey will reveal the practical applications of sustainability in the plumbing industry, and the winner will have a chance to meet the influencers on the other side of the world and garner their thoughts and opinions.

Study tour prize includes:

- Roundtrip travel from your home to Sydney, Australia
- 5-night accommodations in Sydney, the world's No. 1 destination
- Pre-arranged visits/meetings of your choice, with industry leaders to further your study of plumbing design/installation practice

To complete the survey and enter the contest, visit: www.wpr.com.au

Look for the World Plumbing Review magazine to be included with IAPMO's Official Magazine in the upcoming year.

President Signs Energy Bill



President Bush has signed the Energy and Security Act of 2007. The bill will signify changes for a wide variety of industries, and is an effort to enhance energy conservation and efficiency.

"Today, we make a major step with the Energy Independence and Security Act. We make a major step toward reducing our dependence on oil, confronting global climate change, expanding production of renewable fuels and giving future generations a nation that is stronger, cleaner and more secure," said the President at the signing ceremony held at the Department of Energy.

Higher fuel standards

A significant portion of the bill targets automakers, calling on them to improve fuel efficiency by 40 percent. The Corporate Average Fuel Economy (CAFE) standards for all vehicles must be 35 miles per gallon by 2020. Beginning with 2011 models, the National Highway Traffic Safety Administration will increase the CAFE standard annually for cars and light trucks.

The new fuel standards will likely be reached by reducing the weight of the car by using alternatives to steel such as carbon fiber, aluminum, and plastics. General Motors said automakers are also looking at enhanced engine and transmission efficiency - which already can be found in gas-electric hybrid vehicles - reduced tire resistance and improved aerodynamics.

Tax incentives and credits will also be given to encourage the development or purchase of hybrid cars.

Increased ethanol production

The controversial increase in the production of ethanol was also included in the bill. The new mandate requires 36 billion gallons by 2022, with 1/3 of that being ethanol from corn stock. The other 2/3 will be cellulosic ethanol, produced from feedstock such as prairie grass or woodchips.

Democrats say that the bill in its entirety will cut U.S. oil demand by 4 million barrels a day in 2030, more than twice the current amount of daily imports.

Energy in the home and office

The bill updates the Energy Policy Conservation Act, setting new appliance efficiency standards. Regional standards will be implemented for furnaces and air conditioning units.

Incandescent light bulbs will soon be phased out under the bill, to be replaced with more efficient fluorescent or LED bulbs. The Alliance to Save Energy group projected that the new lighting standards alone will lower consumer's annual electric bills by \$13 billion in 2020, and remove the need for 60 mid-size power plants.

Not enough?

Some environmentalists have said that the bill is not enough, and that important measures were stripped out. The Senate, under the threat of a White House veto, cut tax incentives and utility mandates for renewable power generation such as wind and solar.

Despite its flaws, the bill is still viewed by most as a step toward conservation, efficiency and energy independence.

Austin Empowers Water Conservation Movement



We've all heard it - water is going to be the oil of the twenty-first century. The prolonged drought in much of the US has highlighted this reality, and many cities and governments are starting to take the issue seriously. While some cities are trying to play catch up, Austin, Texas, has long been a leader and national player when it comes to water conservation.

Taking early action

Austin first launched its water efficiency program back in 1983, when there was an increase in water demand due to a housing and commercial boom.

"Austin and the surrounding Central Texas region is experiencing rapid growth in population, employment, and land area affected by development," said Danny McNabb, Building Regulations Manager for the city. The City of Austin grew from a population of 465,000 in 1990 to more than 650,000 people by 2000. By 2010, Austin's population is projected to reach 800,000 - an increase of almost 19,000 people annually, according to McNabb. Regional projections are even more dramatic: Hays, Travis and Williamson Counties' combined 2000 population of 1.16 million is projected to increase to more than 1.4 million by 2010, McNabb said.

In its beginning, the program mainly focused on providing incentives and rebates to install water efficient equipment, services to reduce demand, and regulatory measures.

Austin was an early proponent of low flush toilets, mandating the installation of 1.6 gpf toilets in 1991, a year before the government mandate. Two toilet replacement programs, The Free Toilet Program and The Toilet Rebate Program, were developed to encourage the replacement of older, less efficient models. A similar program was also offered for the purchase of water- and energy-efficient clothes washers.

The rebates weren't just aimed at conservation in the home. Five hundred dollars was offered for the installation of large capacity rainwater harvesting systems. Incentives were also given to replace landscape with drought tolerant trees and shrubs. Customers were offered free irrigation system audits to help them identify areas of improvement.

Due to landscape watering being the key factor of peak day water usage, a three-stage system of seasonal restrictions was implemented on outdoor watering and irrigation.

The city also implemented a block rate structure for its residential customers. The four-tier system increases rates for those who use more water. While commercial customers were not included in this system, they were charged a "peak rate" in the summer due to the higher usage.

Moving forward

With continued growth comes the need for increased conservation. More recently, the City Council formed a Water Conservation Task Force, and set a goal of reducing peak day water use by 1 percent a year for the next 10 years.

"Our efforts will be directed toward quantifiable, structural changes in water use," said Councilman Lee Leffingwell, chairman of the new water conservation task force. "We're not relying on education efforts and voluntary water conservation, though savings from that are certainly welcome."

The task force came back with a detailed report of recommendations, with the cost and benefit of implementing each item. In May 2007, the City Council voted unanimously to adopt the measures (with minor amendments) recommended by the task group.

What does it take?

One of the big opportunities for saving water is through efficient plumbing and fixtures. Part of the recommendations called for amendments to the *2003 UPC*. For instance, new urinals must have a maximum discharge of one-half gallon per flush. Pressure reduction valves are required on new residential houses with static water pressure above 65 pounds per square inch (psi), as opposed to 80. New multi-family housing units are also required to have sub-metering. Furthermore, plumbing fixtures must comply with current plumbing code standards on transfer of title. These changes are estimated to save more than 3.5 million gallons a day.

Extensive measures were enacted limiting outdoor watering and irrigation for both commercial and residential buildings. Watering is limited to twice a week, and only during approved hours. Prior to building, an irrigation plan and water budget must be submitted and approved by the City. Landscape must not exceed 50 percent turf grass; new homes must have a minimum of 6 inches of soil. Sprinklers must be installed according to the manufactures specifications, there should be no overspray into non-irrigated areas, and there should be zero runoff. Irrigation systems must also have a city approved weather control system as well, designed to shut off irrigation systems in the event of rainfall. Failure to meet these requirements can result in a \$500 maximum fine.

Efficiency standards were also implemented for car washes. Automatic vehicle washes are limited to 40 gallons per vehicle, and in bay washes to 55 gallons. Large vehicle washes are limited to 75 gallons per vehicle. Hand wash nozzles are not to exceed 3 gallons per minute.

Other efficiency requirements targeted cooling towers and commercial clothes washers. Adjustments were made to water utility rates, and the leak detection program was also extended. The full list of the city's recommendation can be viewed [here](#).

In total, the recommendations are estimated to have a peak water day savings of 32.7 millions of gallon per day.

Green Codes

McNabb has also been following the UPC code development cycle with keen interest, particularly the proposals in regard to reclaimed and gray water.

"I see the need for code language that regulates safe Rain Water Harvesting on a large scale as one of the most important pieces of legislative language of the next code adoption process," he said. "Rain water used for multiple uses at a residence or commercial establishment takes the burden off of the utility supplier. Austin will be proactive in this measure along with condensation recovery and reuse, and grey water reuse and reclaimed water use in residential and commercial establishments. Future generations will judge us by our actions and initiatives regarding water conservation."

The City of Austin operates two major wastewater treatment plants, Walnut Creek and South Austin Regional. Reclaimed water from these plants provides a non-potable water supply to applicable commercial, industrial, institutional and residential users in the city.

Support key to success

A successful program involves the support of its citizens. So, how do Austin residents feel about these strict measures?

"Citizens in the Austin area generally understand there is no more water than what is already available, and the growth that is sure to come means water conservation is a must," McNabb said. He added that if the 10 percent goal is met, the expansion at the Ullrich Treatment plant could be delayed by seven years, and Water Plant No. 4 could be delayed by eight years. That means tax dollars saved, something that puts a smile on everyone's face.

Part of the program's success can definitely be attributed to the city's public relations effort regarding water efficiency. The city has implemented extensive outreach programs to inform its citizens of new policy changes and penalties. They also continue to offer education and incentive programs to encourage participation.

What can cities new to the conservation movement do?

"Begin a water conservation initiative that includes the Mayor and the City Council," McNabb said. "Obtain their buy into water conservation efforts and put initiatives into place." Participation from all parties involved is the key to conservation. And the time to conserve water is now.

IAPMO First Association of Code Officials to Partner with EPA WaterSense



The International Association of Plumbing and Mechanical Officials (IAPMO) has announced a promotional partnership with the EPA WaterSense^(sm) program, distinguishing IAPMO as the first association of code officials to be accepted as WaterSense partners.

The WaterSense program offers consumers a simple way to make product purchasing choices that conserve water with no sacrifice to quality or performance. Certified WaterSense products will save consumers money through decreased water usage. IAPMO agrees that protecting and preserving the nation's water supply is critical to the United States' economic future and the health of its citizens.

"We are excited to partner with the U.S. EPA on its new WaterSense program," said Pete DeMarco, IAPMO director of Special Programs. "IAPMO has a long history of facilitating the understanding, acceptance and installation of water-efficient technologies in plumbing code jurisdictions across the country. The EPA can rely on IAPMO to champion further developments in water efficiency in the arenas of testing and research, codes and standards and plumbing and mechanical code development."

IAPMO R&T Lists First WaterSense High Efficiency Lavatory Faucet

IAPMO R&T is pleased to recognize NEOPERL as the first manufacturer to be independently certified to meet the U.S. EPA WaterSense criteria for lavatory faucets.

The WaterSense program offers consumers a simple way to make product choices that use less water, with no sacrifice to quality or product performance. Products bearing the WaterSense mark are certified more water-efficient than products that don't meet WaterSense standards.

Using water more efficiently will conserve supplies for future generations. According to U.S. EPA estimates, at least 36 states are projecting water shortages by 2013. Each American uses an average of 100 gallons of water per day at home, but by making simple changes can easily reduce that figure by 30 percent.

"IAPMO R&T is proud to report that two other manufacturers have listed their products to this specification," said Shahin Moinian, senior director of IAPMO R&T, "and there are more manufacturers that are strongly considering certification of their products to the specification in the near future."

Protecting and preserving the nation's water supply is critical to the United States' economic future and human health.

Marie-Helene Pernin of NEOPERL said the company pushed hard to meet the standard because "WaterSense-labeled products perform as well as or better than their less-efficient counterparts. By making available WaterSense-labeled products, we can help our customers protect the environment and help them save money on utility bills."

For more information on having products listed, contact Tricia.Schwenke@iapmort.org or for more information on the WaterSense program visit www.epa.gov/watersense.



IBM Releases its 5 in 5

IBM has made its predictions as to the 5 innovations that will change our lives over the next 5 years. First on the list? Technology to go green and save you money.

In the near future you will be able to control your house's energy usage through your cell phone or a web browser. Appliances such as dishwashers, air conditioners, house lights and more will be connected to a smart grid that will allow complete control. You will be able to track their electricity usage, turn them on and off, and even limit how much you are spending on energy.

[\[To read the full story\]](#)

Flush Off in Seattle

The toilet has been getting a lot of much deserved press lately, particularly high-efficiency toilets. The EPA recently held a "flush off" in Seattle to increase awareness of the advantage in switching to a 1.28 gallon per flush toilet.

Toilets are the biggest waters users in the house, accounting for nearly 30 percent of the daily water consumption. According to the EPA, 4.8 billion gallons of water are flushed in the U.S. every day.

Old models used to use 3.5 gallons or more to flush. In 1992 the government mandated that toilets use only 1.6 gallons of water. The first models had their share of problems, with the complaint being that it sometimes took 3-4 flushes for them to work.

Technology has come along way. The new models use 1.28 gpf or less, and some feature a dual flush option - an even lower flush for liquids. They also perform even better then the 3.5 models. And thanks to the EPA's WaterSense program, the toilets must go through a certification process, such as the one offered by IAPMO's R&T, to ensure it performs well.

Several states have implanted laws requiring the new 1.28 gpf models to become the standard in the up coming years. With drought looming over much of the U.S., other states will be sure to follow.

"Water efficiency is the wave of the future and the WaterSense program is an excellent way to help families and communities save water, money and energy," said Benjamin Grumbles, assistant administrator for water at EPA. "It's a way to tap into the technology and environmental stewardship to help reduce the demand on water infrastructure across the country and keep more water in the ecosystem."

UN Breakthrough on Climate Change Reached in Bali

187 countries meeting in Bali in December agreed to launch negotiations toward a crucial and strengthened international climate change deal.

The decision includes a clear agenda for the key issues to be negotiated up to 2009. These are: action for adapting to the negative consequences of climate change, such as droughts and floods; ways to reduce greenhouse gas emissions; ways to widely

deploy climate-friendly technologies; and financing both adaptation and mitigation measures.

[To read the full press release]

US Greenhouses Gases Decline

The Energy Information Administration has released a report stating that greenhouse gases declined 1.5 percent in 2006. Since 1990, U.S. GHG emissions have grown at an average annual rate of 0.9 percent. The 2006 emissions decrease is only the third decline in annual emissions since 1990.

[To read the full press release]

Rancho California Water District Adds Tier to Water Rate Structure

Water is a precious commodity in Southern California. Dry conditions and looming water shortages are forcing water agencies to take stricter measures to limit customer use. The Rancho California Water District has imposed a third tier to their water rate structure in an effort to limit waste.

The third tier of the rate structure is set at \$428 per acre-foot, as opposed to the current \$332 per acre-foot. (There are about 326,000 gallons in one acre-foot.) The higher rate is hoped to discourage the roughly 29 percent of the district's customers who use 200 percent more than their allotted amount. Golf courses, parks and cemeteries will likely see an increase as well.

As of yet, there have been no reductions on commercial or residential water use. If drought conditions continue, however, that may soon change.

Alliance to Save Energy Fact Sheet & Efficiency Tips

The Alliance to Save Energy has released state-by-state fact sheets on winter heating costs to reflect current price hikes for home heating fuels. The fact sheets also have energy-efficiency tips, including products with the ENERGY STAR label.

The fact sheets can be viewed at www.ase.org/statefacts.

Call for Comments

IAPMO is currently accepting comments to the actions taken by the Plumbing and Mechanical Technical Committees as published in the Report on Proposals (ROP). The IAPMO consensus code development process is open to anyone who has an interest in plumbing or mechanical systems. The process invites the participation of the IAPMO members and the general public.

Comments are accepted through the close of business (Pacific Time) on Feb. 1. Forms can be downloaded at www.iapmo.org. Comments should be sent to the Code Development Department.

Both the Plumbing and Mechanical Technical Committees will be meeting in Denver,

from May 5-9, to review and act on all comments received, including the Assembly Comments passed at IAPMO's Las Vegas Assembly Consideration Session. The Denver Technical Committee meetings are open to the public and anyone in the audience may voice their position to the committee in this open forum.

For more information or for technical assistance, please call Lynne Simnick, director of Code Development, at (909) 472-4110.



International Trade Show for Kitchen & Bath, Plumbing, Commercial/Industrial PVF, Heating and Air Conditioning
Georgia World Congress Center
Atlanta, GA, USA
October 1 - 3, 2008

Events Calendar:

Green Cities 08
January 10-13, 2008
Darling Harbor, Australia
www.greencities.org.au

International AHR Expo
January 22-24, 2008
Javits Convention Center
New York City, NY
www.ahrexpo.com

**ACCA 2008
Conference & Indoor Air Expo**
February 5-7, 2008
The Broadmoor
Colorado Springs, CO
www.indoorairexpo.com

**The International
Builders Show**
February 13-16, 2008
Orange County Convention
Center, Orlando, FL
www.buildersshow.com

ISH China 2008
Feb 19-22, 2008
Shanghai International Expo Centre
Shanghai, China
www.messefrankfurt.com

**Mechanical Contractors
North American Association
(MCAA) 2008**
March 2-8, 2008
Palm Desert, CA
www.mcaa.org

**The Midwest Builders
Show and Conference**
March 12-13, 2008
Donald E. Stephens
Convention Center
Rosemont, IL
www.midwestbuildersshow.com

**CMX-CIPHEX National
Trade Show**
March 27-29, 2008
Metro Toronto Convention Center
www.cmxciphexshow.com

**IAPMO Technical Committee
Meeting 2008**
May 5-9, 2008
The Adams Mark Hotel
Denver, CO
www.iapmo.org

Partners and Memberships



Green Electronic Newsletter

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