Michaels Engineering LEED® Brief

WATER EFFICIENCY

SUGGESTIONS...

Do you have certain LEED® topics you'd like to know more about? Send an email with your suggestion to the author listed below and your topic might become a future LEED® Brief!

DID YOU KNOW...

...One code-compliant toilet fixture in a commercial facility can consume enough water to fill a large swimming pool every year!

...A 5,000 square foot landscaped area will require almost 140,000 gallons of water annually- enough to serve the entire water needs of two homes!

MEET THE AUTHOR

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LEED® CATEGORY #2: WATER EFFICIENCY

Potable water is not an unlimited resource. Today, in the Midwestern United States we have a plentiful supply of potable water, but in many areas of the world, water is scarce due to factors such as drought, pollution, and limited natural supply. The second category of focus for Leadership in Energy and Environmental Design (LEED®) is Water Efficiency. This brief provides an overview of the water efficiency benefits encouraged by LEED® that promote the reduction of potable water consumption for landscaping, sewage conveyance, and standard occupant uses.

WATER CONSERVATION AND ITS IMPORTANCE

Data from the World Heath Organization and other agencies indicate that southwestern states such as Arizona will face severe freshwater shortages by 2025 at current consumption levels. Additional studies show that as many as 4 billion people worldwide will be affected by severe water shortages by 2050. This information reveals that water conservation truly is an important practice if we are to avoid severe problems in the future.

As startling as the above statistics may sound, we can have a significant impact on the availability of one of our most important natural resources by how we use, and more importantly, don't use potable water in the present.

REDUCING THE USE OF POTABLE WATER FOR BUILDINGS

The most significant consumers of water in a building are plumbing fixtures such as faucets, showers, urinals, and toilets. Although it may seem difficult to use less water with these fixtures, recently developed technologies can be designed into a building as an effective way to reduce potable water use. Water fixture retrofits are also many times economically feasible.

Building codes in many locations require the use of low-flow faucets and showerheads as established by the Energy Policy Act (EPACT) of 1992. EPACT 1992 limits toilet usage to 1.6 gallons per flush, urinals to 1.0 gallon per flush, and sink and shower flow to 2.5 gallons per minute. Since EPACT 1992 was adopted, several significant water-saving technologies have been developed that help to reduce water consumption.

Many advanced water-saving technologies are commercially available and in use today. These include dual flush toilets (tank and flush valve type) and waterless urinals. Although use of these fixtures is not yet widespread, they are gaining acceptance as more users discover the benefits of reduced water consumption.

There are also several uses of water for buildings that can be served with recycled non-potable water such as rainwater or gray water. (Gray water includes sink, drinking fountain, and shower drainage.) The re-use of water is an effective method for reducing potable water use.

Perhaps the simplest, most cost-effective method for reducing the use of potable water is to eliminate unnecessary use. Often times, landscaping is designed with non-native or non-adaptive decorative plants that require regular care and watering. Using native plants reduces the need for watering and saves the building owner money through reduced initial cost (irrigation systems are not required) and lower buildings and grounds costs.

PLANNING FOR THE FUTURE

As the world's population and consumption grows, we will inevitably be faced with an increasing threat of water resource shortages. The LEED® Water Efficiency requirements ensure that, through sustainable design and implementation, we can occupy buildings that will conserve this finite resource for future generations.