What do Energy Experts Have to Say about Water?

It depends on who you ask...

AEI's Answer:

GLOBAL DIMENSIONS. Climate change and reduced availability of water are worldwide challenges.

RISING COSTS. The average cost of water and of wastewater in the US rose over 80% between 1998 and 2012, and some expect the rate of increase to quicken. "You're paying for the ability to receive water…"

THE WATER:ENERGY NEXUS. A large fraction of total water use goes to the generation, transmission, and consumption of energy. Meanwhile, energy needed to supply, collect, treat, and dispose of water typically accounts for 30% of US water utilities' operating budgets .

NUISANCE? OR NUANCE... AEI's planning and design optimizes the matching of water use needs – quantity and quality—with sources. In recognizing as an opportunity what some mightoverlook as a nuisance, we create designs that creatively - and cost effectively - reduce and reuse water.

[1]Art Jensen, CEO, Bay Area Water Supply and Conservation Agency
[2]According to a survey undertaken by Black & Vetch and reported in 2012 Strategic Directions in the U.S. Water Utility Industry.

What does AEI do about it?

ASSESS	Campus- or building-scale water use reduction plans
PLAN	Campus water action plans
GUIDE	Building energy and water design standards
DESIGN	High performance—water and energy—MEP building design services
EXPAND	The best solutions match water needs and opportunities across a site or campus

AEI Affiliated Engineers®

AEI enables our clients to meet their water & energy goals.

As engineer of high performance buildings and author of campus climate action and infrastructure master plans, we plan, design, and implement resource-efficient solutions that use far less energy and water than their counterparts. And we understand that relationships of resource use are also true in conservation.

METHODIST HOSPITAL RESEARCH INSTITUTE

The 24,000 square foot vivarium of this translation research facility was the focus of design for reduced water use. Reliance on chilled water systems for sterilizers and recirculated animal drinking water systems save approximately 900,000 gallons of water per year. The cost of water in Houston has increased by XYZ% since the Institute's design began eight years ago.

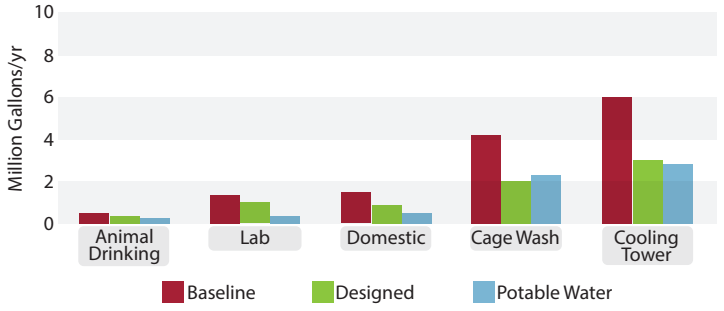
UNIVERSITY OF WISCONSIN HEALTH AT THE AMERICAN CENTER .

The design for this 84-bed hospital, clinic and wellness center reduces total water use by 34% and reuses most of what remains.

Heating and cooling system use was reduced through the orientation and massing, heat recovery chillers, and process energy load reduction. Selection of scientific, food service, laundry, and hydro-therapy equipment prioritized both lowest combined water- and energy-intensity and best-cost.

UNIVERSITY OF PITTSBURGH MEDICAL CENTER'S CENTER FOR INNOVATIVE SCIENCE

Selection of equipment and design of mechanical systems for this 350,000 square foot research building will reduces water use by 46% and energy demand by 21% . AEI's methodical life cycle cost examination of equipment and systems revealed a new reality: the cost of water was a greater determinant than the cost of energy in many aspects of this building's design.



The site landscape has a naturalized plant palette as background to lushly-planted ornamental zones and a series of seven interconnected ponds. These receive, retain, and naturally filter site rain and stormwater, roof water, and condensate from the building air handling units. Minor mechanical intervention prepares the water quality for reuse in the central utility plant – eighty percent of cooling tower and landscape need is supplied with greywater.