

US Marine Corps and US Navy: Go Green!

Realizing that it is the single largest energy consumer in the United States, the US Department of Defense (DOD) has made saving energy a priority in everything it does. But saving energy isn't the only concern; there are also the effects of military bases on the environment. All branches of the military are incorporating methods of reducing water use and energy consumption, with the Marine Corps and the Navy providing just two of the many alternative solutions being sought.

GUNG-HO FOR CHANGE

The Marine Corps Recruit Depot (MCRD) in San Diego, Calif., will begin recycling black water for subsurface irrigation to minimize its water usage in the drought-prone city. The new MCRD Living Machine system will extract wastewater from an existing sewer line at the base and treat it to meet rigorous water reuse standards for the state of California. The onsite system will recycle 10,000 gpd of sewer-mined wastewater. MCRD provides basic training for more than 21,000 recruits per year and is recognized as one of the leading DOD facilities for the implementation of clean technology.

"The Living Machine system offers us the opportunity to go beyond conventional water reuse technologies and achieve a significant new level of control over our water resources," said Richard Hatcher, energy manager at the MCRD. "This is an opportunity for MCRD to demonstrate innovative technology, serve as a model for other Marine Corps facilities, and be a partner in San Diego's water-saving efforts."

The recycling technology adapts tidal wetlands, accelerating and enhancing its plant and microbial activity with advanced environmental engineering and information technology. Although each project is different—depending on whether it will be installed indoors or out



The Living Machine system, which looks like tropical planters (at the Port of Portland, Ore., headquarters; above), is a functional ecosystem using enhanced natural recycling. The Marine Corps Recruit Depot in San Diego, Calif. (right), will use this technology to recycle black water for subsurface irrigation, minimizing water use.

and the climate—there are several features common to the recycling system:

- A settling tank or filter (depending on the size of the project) in which water is gathered, the flow is equalized, and solids are allowed to settle
- The control system monitors system performance and water flow
- Wetlands installations containing gravel aggregate, beneficial microorganisms, and plants developed to work as an ecosystem
- An optional disinfection system using ozone, ultraviolet, or chlorine
- A reuse system in which clean, treated water is gathered in a storage tank and distributed for reuse—such as toilet flushing, animal and pen cleaning, irrigation, decorative surface features such as ponds or waterfalls—or returned directly to the environment

FULL SPEED AHEAD

The US Navy recently concluded its largest demonstration of shipboard alternative fuel use with the successful arrival of the destroyer *Paul F. Foster*, which has been reconfigured to provide the Navy an at-sea, remotely controlled, engineering test and evaluation platform. The ship received approximately 20,000 gallons of a 50–50 blend of an algae-derived, hydroprocessed algal oil and petroleum. Assistant Secretary of the Navy Jackalynne Pfannenstiel commented: "We can have an impact as a technology leader, highlighting and demonstrating the viability of biofuels as we are here today. This demo, the largest to date, is a major milestone for us. More than 50% of our fuel goes to maritime use."

The alternative fuels effort supports the Navy's overall energy strategy to increase energy security and safeguard the environment. Recent alternative-fuel testing has included a demonstration at the US Naval Academy, in Annapolis, Md., and the Naval Surface Warfare Center in Panama City, Fla. Navy Hornet jets also have tested a 50-50 blend of conventional JP-5 jet fuel with a plant-based product (cemelina, a plant in the mustard family), as have the famed Blue Angels, marking the first time the entire squadron flew using biofuels.





2011 Awards Recognize Infrastructure Innovations

The *Be Inspired Special Recognition Awards* honor the extraordinary work of Bentley users improving and sustaining the world's infrastructure. Five independent panels of jurors, comprising accomplished Bentley users and distinguished industry experts, selected the 59 finalists and the *Special Recognition Awards* candidates from nominations submitted by 270 organizations in 42 countries. The winners of the *Be Inspired Awards* were announced at the invitation-only event that was held in Amsterdam, the Netherlands.

Candidates for Bentley's third annual *Be Inspired Special Recognition Awards* were placed into nomination by the jurors for their uniquely innovative and visionary achievements embracing multiple categories. The nominees were then reviewed by a panel of Bentley executives.

The *Be Inspired Special Recognition Awards* winners and finalists from the water sector in 2011 are as follows:

CONNECTING PROJECT TEAMS

- **Winner:** Los Angeles Department of Water and Power: LADWP ProjectWise Implementation, Los Angeles, Calif.

INNOVATION IN ASSET LIFECYCLE INFORMATION MANAGEMENT

- **Finalist:** Bristol Water: Enterprise Management of Street Works Noticing, Bristol, United Kingdom

INNOVATION IN WATER AND WASTEWATER TREATMENT PLANTS

- **Winner:** CDM: Galveston Main Wastewater Treatment Plant, Galveston, Texas
- **Finalist:** Arup: Sludge Treatment Facility Hong Kong, Hong Kong, China
- **Finalist:** Gippsland Water, Gippsland Water Factory, Maryvale, Victoria, Australia

INNOVATION IN WATER, WASTEWATER, AND STORMWATER NETWORKS

- **Winner:** General Directorate of Izmir Water and Wastewater Authority: IZSU Geographic Infrastructure Information System Project, Izmir, Turkey
- **Finalist:** Barwon Region Water Corporation: Instant Access to Fire-Flow Results, Geelong, Victoria, Australia
- **Finalist:** SimTejo: Aquasafe-Smart Management System, Lisbon, Portugal

Outstanding Civil Engineering Achievement Finalists Announced

The five finalists for the 2012 Outstanding Civil Engineering Achievement (OCEA) award have been announced by the American Society of Civil Engineers (ASCE). Established in 1960, the OCEA program recognizes projects for their contribution to the well-being of people and communities, their resourcefulness in planning and design challenges, and their innovative use of materials and techniques. Selected from the nominees, the 2012 finalists are:

- Cherry Island Landfill Vertical Expansion Project, Wilmington, Del.
- Hoover Dam Bypass Bridge, Boulder City, Nev.
- Nacimiento Water Project, San Luis Obispo County, Calif.

- Willamette River Combined Sewer Overflow Tunnel Program, Portland, Ore.
- US 191 Colorado River Bridge, Moab, Utah.

The OCEA award winner will be announced on March 22, 2012, during ASCE's annual Outstanding Projects and Leaders Awards (OPAL) gala in Washington, D.C. Also recognized during the event will be the five OPAL Award honorees (one each for construction, design, education, government, and management), the Henry L. Michel Award for Industry Advancement of Research winner, and the Charles Pankow Award for Innovation winner.

The **Charleston (S.C.) Water System** has received the state's top honor for quality, the 2011 SC Governor's Quality Award. The Governor's Quality Award program recognizes organizations that achieve excellent performance in developing, implementing, and deploying a quality management system based on the Malcolm Baldrige Criteria for Performance Excellence. The program is administered by the SC Quality Forum, an affiliate of the SC Chamber of Commerce, which recognizes and encourages improvements in quality and productivity by organizations throughout the state.

Bentley Systems has announced the acquisition of FormSys, based in Perth, Australia. The acquisition will expand Bentley's SACS software offerings for the design and analysis of floating structures, further extending the company's reach in the offshore energy market. The FormSys team will become a part of the Integrated Engineering Group within Bentley; this group includes structural and offshore offerings.

The **District of Columbia Water and Sewer Authority (DCWSA)** has broken ground on its largest construction project—the Blue Plains Tunnel. As part of the \$2.6 billion Clean Rivers Project, the Blue Plains Tunnel is one of three tunnels that will be built to store and convey combined sewer overflows. Running 60–120 feet deep under the eastern shore of the Potomac and Anacostia rivers, the Blue Plains Tunnel is expected to be completed in 2015. The Clean Rivers Project was a response to a consent decree reached among DCWSA, the US Environmental Protection Agency, and the district government as a measure to reduce combined sewer overflows to the Anacostia and Potomac rivers and Rock Creek, and to

improve the quality of the Chesapeake Bay waters.

Extech Instruments has announced the relocation of its headquarters to an all-new facility in Nashua, N.H., to accommodate strong growth and to serve customers better in the years ahead. Extech announced the move, along with the Billerica, Mass., operations of parent company, FLIR Systems' Commercial Systems Division, to Nashua, N.H.

Pump Solutions Group, a business unit operating within the Dover Fluid Management Segment of Dover Corp., has acquired **Tianjin RedScrew Pump Manufacturing Technology Co.** The RedScrew Pump manufacturing facility is ISO 9001-certified and is located in Tianjin, China. The terms of the transaction were not disclosed.

The **San Diego (Calif.) County Water Authority** has begun direct negotiations with **Poseidon Resources** to purchase water from the Carlsbad Desalination Project. The Water Authority expects water from the Carlsbad project will be available by 2016 and estimates that its wholesale water rates would rise approximately 8–11% if such water is added to its supply mix.

East Jordan Iron Works and its affiliated companies—Norinco, Cavanagh, McCoy, and HaveStock—will all do business using the same name and brand—EJ—with facilities in the Americas, Europe, Asia, and Australia.

The **US Environmental Protection Agency (USEPA)** has released an update to Energy Star's national energy performance

scale methodology for hospitals. Energy Star's portfolio manager, an online energy measurement and tracking tool, will now include the updated hospital methodology. The update reflects new survey data provided by the American Society for Healthcare Engineering and the significant changes in how hospitals use energy in recent years. Improving the energy efficiency of America's hospitals by 10% would save 7.3 billion kilowatt-hours of electricity, 243 million therms of natural gas each year, and about \$740 million annually in energy bills. The updated performance scale methodology for hospitals includes data inputs for the number of magnetic resonance imaging machines and personnel and adjustments to weather normalization to reflect the amount of energy used to cool the building. Additionally, the methodology's 5-million-square-foot-size cap was removed, allowing larger hospitals to take advantage of the online tool.

Innovyze has been selected by JEA—**Jacksonville (Fla.) Electric, Water, Wastewater, & Reclaimed Utility**—to model and help manage its reclaimed water system. JEA's water system consists of 134 artesian wells delivering more than 120 mgd through 36 treatment plants and 4,619 miles of water lines; its sewer system comprises more than 3,925 miles of collection lines, 1,281 pump stations, and six regional sewer treatment plants handling more than 60 mgd of wastewater.

Information in Industry News may describe products offered by companies in the water industry. AWWA does not endorse these products, nor is it responsible for any claims made by the companies concerned.