EC WISE

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First PHA EPC In Montana

The Helena Housing Authority (HHA), a small PHA with 366 units, has started the first EPC in Montana. The total project is $2.4 million which the PHA expects to repay with utility savings over the next 15 years after completing the energy upgrades on all 366 housing units.

The HHA excluded approximately $700,000 of the project costs from the EPC and will pay for this portion of the project with American Recovery and Reinvestment Act (ARRA) funds. The HHA financed the remaining $1.7 million of the project and will use the energy savings each year to repay the debt.

The HHA has 132 housing units that were constructed in 1939. These units may be completely renovated, so the HHA decided that these units would only receive short term energy upgrades which would give a faster payback for the EPC. These upgrades will include weatherization and new light sockets to accommodate compact florescent lights. The remaining units will receive full energy upgrades including new toilets, faucets, sinks and showerheads.

Natural gas furnaces and the central boiler systems at several properties will be replaced to improve heating and efficiency. Solar panels will be installed and will power HHA's main office.

Due to HHA's small staff size they utilized Johnson Controls an Energy Services Company (ESCO) to complete the project. The ESCO has guaranteed the HHA $210,000 in savings each year, but this could be higher which would allow the HHA to pay down the debt faster.

The HHA began involving the residents early in the project. They held workshops with residents before the project began. This gave the residents valuable information on the project, which the HHA believes will assist in furthering the goals of the EPC while minimizing conflicts.

The EPC will also support local contractors and suppliers. It is estimated that the project could create 58 jobs and inject $5 million in additional spending into the state's economy.

Additional benefits of this EPC include standardization of inventory which will reduce maintenance costs and by reducing the authority's carbon footprint, keeping an estimated 1.4 million pounds of carbon dioxide, 795 pounds of sulfur dioxide, and 2,295 pounds of nitrogen oxide from entering the atmosphere. That's the equivalent to removing 146 passenger cars from the highways or the planting of 204 acres of trees per year.

UPCOMING EVENTS

Healthy Buildings 2009
Sept 13-17, 2009 | Syracuse, NY
www.hb2009.org/home

2009 PHADA Legislative Forum
Sept 20-22, 2009 | Washington, DC
www.tinyurl.com/phada09

Energy and Environmental Building Alliance Conference and Expo
Sept 28-30, 2009 | Denver, CO
www.eeba.org/conference/index.html

National Council of State Housing Agencies Annual Conference
Oct 3-6, 2009 | San Antonio, TX
www.ncsha.org/conference.cfm/2882

CitiesAlive! 2009, International Green Infrastructure Congress
October 19-21, 2009 | Toronto, Canada *www.citiesalive.org*

For additional information please contact Josh LaFromboise, Executive Director of the Helena Housing Authority at (406) 442-7970 Ext 117 or email to *jlafromboise@hhamt.org*.

Build a Rain Garden to Conserve Water

A rain garden catches rainfall and stormwater runoff and is designed to withstand the extremes of moisture and high concentrations of nutrients, particularly Nitrogen and Phosphorus that are found in stormwater runoff. Rain gardens catch stormwater runoff and serve to slow the stormwater as it travels downhill, giving the water more time to seep into the soil and less opportunity to gain momentum and erosive power.

A rain garden is not only attractive, but it may also support habitat for birds and butterflies. It may be a small contained garden plot, or it may be incorporated into a larger garden as a border or as an entry feature. What defines a rain garden is that it catches and stores water and then assists in the treatment of that water by removal of nutrients.

Soils in the rain garden are engineered and appropriate plants must be selected especially for the rain garden. Nutrient levels and overall sediment loads in the stormwater are reduced by the action of the plants and growing media on the water. Multiple rain gardens over an area will have a positive cumulative effect on both the volume and quality of stormwater run-off.

There are two basic types of rain gardens – under-drained and self-contained. Both types of rain gardens are used to improve stormwater quality, reduce runoff volumes and generally facilitate infiltration of cleaned water. Which type of garden is selected to be built is a balance of volumes of water to be treated, existing soil conditions, available space, and budget for the project.

Additional information on rain gardens can also be found at the Low Impact Development Center *website*. Rain garden design templates for the Northeast United States can be found by *clicking here*. These templates provide a set of easy to use rain garden designs for the landscape industry and citizens to facilitate building a rain garden.

Low Volume Irrigation for Landscaping

In many communities between 30% - 50% of the total water supply is used for landscape irrigation. Low volume irrigation systems (sometimes referred to as drip or trickle irrigation) are among the most effective means of achieving significant water savings. Like conventional overhead irrigation systems, low volume systems require proper design, installation, maintenance and operation for optimum water savings and plant performance.

Unlike overhead irrigation systems, the primary design goal of a low volume system is to apply water to a uniform soil depth, either directly to the plant root zone or in a limited area. Water is delivered at or below the surface of the planted area versus to the surface of the planted area.

Installation: Most low volume irrigation systems are installed at or near the surface of the landscape area and covered with 2-3 inches of mulch. Typically, this type of installation requires less time and cost than a conventional overhead system. In some commercial applications, the system is installed in an underground trench and exposure of any drip tubing is minimal.

Low-volume irrigation systems reduce or eliminate water waste by applying water to meet specific plant needs. The rate of application is also more closely aligned with the soil's infiltration rate, and water is directly applied to the plant root system/zone to maximize water use efficiency and reduce loses through evaporation. Since water is directed exactly where it is needed most, very little is wasted on the areas between widely spaced plants, or on streets, sidewalks and gutters.

Soaker hoses and porous hoses are both types of low volume irrigation systems. A soaker hose can be moved to various locations within the landscape or it can be left in a more permanent location and pressurized by a regular garden hose as needed. Most soaker hoses are used in conjunction with an automated system. A porous hose is very similar to a soaker hose. However, its unique construction material enables the entire hose to deliver irrigation water. These systems are frequently used in landscape beds and are also used in sub-irrigation systems for turfgrass. A porous hose can be an effective means of providing water to the landscape however, the delivery rate can be somewhat variable in areas that are not level.

Drip systems typically use polyethylene pipe to deliver water to a small drip emitter. Emitters come in a variety of sizes, shapes and specifications. Most are rated in gallons/hour, making it relatively easy to determine how much water is being applied during irrigation. Drip emitters can be spaced evenly along the delivery pipe or clustered at specific locations within the landscape area. Drip emitters with pressure compensation and backflow prevention provide optimum control over the volume of irrigation water supplied.

The use of a good low-volume irrigation system is one of the most valuable ways to conserve water in the landscape. These systems are typically low cost, easy to operate and relatively maintenance free.

PHA's are Using Green Roofs to Reduce Stormwater Runoff and Heat

CMHA

In the fall of 2007 Cuyahoga Metropolitan Housing Authority (CMHA) installed green roofs at seven of its low-rise family units building in Lakeview Terrace. The plants are doing extremely well and they documented their progress with two separate *slideshows*, one showing the 2008 growth season, and one showing the 2009 season. In 2009 the plantings exploded into a lush covering which is beautiful and contributes to the energy efficiency of the buildings.

DCHA – Regency House Senior Center

In April 2009 the District of Columbia Housing Authority (DCHA), celebrated the opening of the Regency House Senior Center green roof. The 6,140 square foot sustainable roof consists of low-level vegetation, stone walkways, and assorted seating areas. A rain-harvesting system helps irrigate the roof using rainwater as much as possible instead of the city's water. In addition, the roof includes six state-of-the-art solar panels that collect energy used to power the building.

Other green building improvements to Regency House include a heat-recovery system to conserve energy during the summer months and new water-efficient toilets, showerheads, and faucets installed in every unit.

Regency House Senior Center consists of 159 apartments and has housed elderly and disabled residents ages 62 and over since 1962.

PHA Youth Recycling Field Trips

CMHA took teen residents to the local recycling/landfill facility to learn about recycling

Recently, Cuyahoga Metropolitan Housing Authority's (CMHA) Energy Group took teenage residents on a tour of the Lorain County Recycling/Landfill Facility located in Oberlin, Ohio.

The goal of this tour was to create awareness on how they can do their part to ensure future generations will benefit from our earth's dwindling natural resources.

"Today I learned that recycling is important and it's something that I can do to make a difference." said Brittany Church, CMHA resident. "And to see where all our trash goes into the landfill had a big impact on me."

CMHA and the Girl Scouts went to the Cleveland Zoo to learn about recycling

Recently, CMHA and the Girls Scouts took a field trip to the Cleveland Metroparks Zoo. Both the zoo and CMHA's Energy Conservation/Sustainability Department share a similar mission that focuses on conserving the natural world around us. The zoo is not only concerned about the lives of the plants and animals exhibited, but also the natural resources used every day.

Scouts from CMHA's Garden Valley and Woodhill Estates are highlighting recycling as one of the merit areas that they are working on for 2009. "The zoo was a lot of fun and I learned what it means to not just throw things away, but to recycle and reuse," said Shayla Pettway from the Garden Valley Girl Scout Troop.

Nancy Hughes, Educational Director for the Cleveland Zoo explained the importance of recycling in their everyday work environment. She also concentrated on the zoo's program for recycling cans, bottles, paper, cell phones, and ink cartridges.

"Overall I think it was a very positive learning experience for both the kids and the adults," said Larry Davis, CMHA Sustainability Manager. "It was an informative session that held the kids attention. They walked away knowing a lot more about recycling."

We want to hear from you! Please send us nominations for projects to be highlighted in the EcoWise success stories.

Contact us at *ecowise@deval.us*