

ECOWISE

June 2011 | Volume 9, Issue 6

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CMHA Installs Green Roofs on Low-Rise Buildings



Thriving foliage growing on a CMHA green roof.
Photo: CMHA

In the fall of 2007, Ohio's Cuyahoga Metropolitan Housing Authority (CMHA) began a modernization project dedicated to increasing energy efficiency and reducing costs for all of its buildings, regardless of age. This \$33.6 million Energy Performance Contract included improvements for 7,000 units. The cost of the improvements will be repaid over the course of 12 years by the energy savings generated by the improvements. One of the most interesting changes was the installation of green roofs on low-rise family unit buildings.

Green roofs can create energy savings and even increase the life span of roof systems. They are essentially vegetated surfaces that are installed over man-made structures and can incorporate elaborate

gardens, trees, simple grasses, or ground covers. The actual energy savings of green roofs depend on the type of building, load, and season – although in low-rise buildings, such a roof can achieve savings of up to 20 percent in air conditioning costs alone.

Green roofs slow the transfer of heat into the building by reducing the ambient temperature of a roof's surface, which also reduces the building's cooling requirements. Green roofs also provide insulation to the structure, thereby reducing heating requirements. Other benefits include reduction in air and noise pollution, as well as protection from heat, ultraviolet radiation, and physical damage, resulting in a longer lasting roof system.

The benefits of the new green roofs at CMHA have extended beyond cost savings. The development's residents participated in all aspects of the project, including planting a variety of locally available, drought-resistant grasses and small plants. This project created paid employment for numerous residents, as well as transferable job skills.

Other improvements made by the Cuyahoga Metropolitan Housing Authority included new windows, Energy Star furnaces and hot-water tanks, lighting, boilers, building-automation systems, security systems, card-entry systems, and fire-safety systems. However, none of these could boast the beauty of the lush covering on the roofs of the Cuyahoga homes today.

To learn more about CMHA's green roofs, visit: <http://www.cmha.net/epc/greenroofs.aspx>

UPCOMING EVENTS

- » **National Healthy Homes Conference**
June 20-23, 2011
Denver, CO
<http://www.healthyhomesconference.org>
- » **Greening the Heartland**
June 22-24, 2011
Cincinnati, OH
<http://bit.ly/dpydeq>
- » **Going Green: Intelligent Investments for Public Housing**
Presented by U.S. Department of Housing and Urban Development (HUD), Office of Public and Indian Housing
July 13 -14, 2011
Boston, MA
- » **6th Annual Green Homes & Sustainable Communities Conference**
July 14 – 15, 2011
New Orleans, LA
<http://bit.ly/kYoMYE>

For Upland Housing Authority, Native Grass is Greener



Native plants replace grass in Los Olivos. Photo: UHA

In 2006, the Upland Housing Authority (UHA) conducted a water analysis at its Los Olivos property in Southern California. For over 60 years, UHA had been manually watering the landscape of this 13-acre, 97-unit property. The analysis found that UHA's water usage was remarkably high.

A few years later, Los Olivos embarked on its first landscaping redesign since it was built in 1943. This new design, called xeriscaping, involved incorporating computer-controlled "smart" irrigation. Specifically, contractors installed an automatic controller that estimates weather variables from a local satellite on a day-by-day basis. The data is then used to administer the precise amount of water required by current weather conditions.

UHA also replaced approximately 200,000 square feet of existing water-hungry grass turf with drought-tolerant plants native to California. The layout involved mixed colorful grasses and flowering shrubs of various heights, colors, and annual flowering patterns.

Native plants have evolved and adapted to local conditions over thousands of years. Thus, they can survive winter cold and summer heat. Once established, they require little maintenance and are resistant to most pests and diseases. Drip irrigation was also installed throughout the native landscaping at Los Olivos, while rotary nozzles were retained for the remaining grass.

These changes were expected to reduce water consumption at the site by almost 50 percent, with the goal of ensuring that the savings achieved were significant enough to pay for the project within 20 years. According to Executive Director Don Swift, UHA is well on its way to achieving this objective. "In the first 2 months, we saw our water bill go from \$15,000 down to \$7,200. The savings we have realized will not only pay for the landscaping but assist in our own funding."

To learn more about UHA's landscaping, visit:

<http://bit.ly/kQZw6j>

To learn more about replacing grass with native plants, visit:

<http://bit.ly/mzxgod>

Resident's Corner | Save Water: One Drop at a Time

We are often warned of the need to save water, but are water shortages a real concern? Recent reports by the Natural Resources Defense Council and the environmental nonprofit Ceres found that the 10 largest U.S. cities at risk of water shortages in the near future were Los Angeles, Houston, Phoenix, San Antonio, the San Francisco Bay Area, Fort Worth, Las Vegas, Tucson, Atlanta, and Orlando.



These cities are taking steps to decrease water use and improve infrastructure. There are many things we can do, too. Many of us know to take short showers and turn off the water while we brush teeth, as well as only wash full loads of laundry and dishes. What else can we do? For other ways to save water - and money - try the following:

- Use a broom instead of a hose to clean your driveway and sidewalk.
- Teach your children to turn off faucets tightly after each use.
- Avoid water toys that require a constant flow of water.
- Bathe your young children together.
- If you are running the bath or shower while waiting for the water to heat, put a large bucket under the faucet to catch the water. Then, use this water for plants, cleaning, or other needs.
- Do not throw away ice cubes that may have fallen on the floor when filling a glass; instead, drop them in the soil of a house plant.
- Use the water in which you have boiled vegetables to make stocks or soups - or pour it on your garden when cooled.
- After cleaning out fish tanks, use the old, nutrient-rich water for your plants.
- Keep a pitcher of water in the refrigerator instead of running the tap until it is cold.
- Wash your pets on an area of the lawn that needs water.
- Check for toilet leaks by adding food coloring to the tank. After 30 minutes, see if any of the dye has leaked into the bowl. (However, be sure to flush as soon as the test is done to avoid staining the tank.)
- Report all leaks in faucets, sinks, pipes, and toilets to management. A drip rate of one drip per second can waste more than 3,000 gallons per year.

You can also encourage your building maintenance department to do the following:

- Use native plantings that conserve water. Learn what plants are local to your State here: <http://1.usa.gov/mKmKPX>
- Water lawns for 5 minutes and then repeat two to three times later to keep water from being wasted on sloping lawns.
- Do not water the lawn when it is windy, as most of the water blows away or evaporates.
- Spread a layer of organic mulch around plants to retain moisture and save water.

To find out more about saving water and calculating water savings, visit:

<http://www.epa.gov/WaterSense/>

Contact Us:

Public and Indian Housing Information Resource Center (PIH IRC)

2614 Chapel Lake Drive
Gambrills, MD 21054

Toll free number: 1-800-955-2232

Fax number: 1-443-302-2084

E-mail: pihirc@firstpic.org (Put "EcoWise" in subject line)

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