



Seeing the light Audubon center third local building to tap solar power

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NEWBURYPORT - With rain barrels collecting water to use in gardens, to the 60 solar panels on the roof providing electricity, the Massachusetts Audubon Joppa Flats Education Center hopes to practice what it preaches when it comes to protecting wildlife and conservation.

The education center, which has focused on energy efficiency for many years, will use the sun to provide as much as 40 percent of the building's electric needs and plans to include a water collection system to utilize rainwater, instead of the city's water supply.

"We're trying to do something to make a difference," said Bill Gette, director of Joppa Flats Center on the Plum Island Turnpike. "There's no pollution, no contribution to carbon emissions. The benefits to the environment start immediately."

A crew from Solar Works Inc., a Vermont company that has installed solar panels for 25 years, is installing 60 solar panels along three sections of the building's roof. During daylight hours, the panels will absorb the sun, using it to generate electricity in the building.

The center will be the third major entity in Newburyport to install solar panels. The Tannery Mall generates 18 percent of its electricity through 375 solar panels on its roof, and Bixby International in the Industrial Park is generating solar power to offset its high electricity use.

"In the near future we're going to have to do more and more with this," Gette said. "If everyone had solar, think how much less oil we'd be importing."

The Massachusetts Audubon is using a state grant and private donations to pay for the \$80,000 project. It expects the payback period to be about 10 years.

Over a 25-year period, the solar panels will save 140 tons of carbon dioxide and is the equivalent of planting more than 1,300 trees, said Ron French, president of Solar Works Inc.

"We like working with the Mass. Audubon," French said. "They're being progressive with environmental issues and demonstrating to other people that this works. It's real electricity that's clean. Visitors can see the technology and think about it for their home or business."

Thor Thomforde, senior field technician with Solar Works, said the solar panels are linked and connected to an inverter inside the building. The inverter converts the power, like a battery, to be used as the building's

electric supply. The 60 solar panels produce about 10 kilowatts of power.

While the cost is high up front, Thomforde said, the long-term benefit is significant. Unlike other sources of power - coal or gas - there is an abundant supply of sunlight and the maintenance of the panels is generally minimal, Thomforde said.

"There's no moving parts. There's very little to break down," Thomforde said. "The panels are quietly doing their thing."

Gette said educational material will be in the center to explain how the solar power works to visitors and schoolchildren.

Along with solar, the facility is collecting rainwater. There are four 80-gallon barrels collecting water runoff from the building's roof. The water is used for watering plants and butterfly gardens. The center also attaches a hose to the barrels to use rainwater to clean or wash off trucks and materials.

"We're saving thousands of gallons of city water, that helps," Gette said. The center plans to install underground water collection tanks to be able to pump out additional rainwater for use.

Across the state, Massachusetts Audubon is creating green buildings, spokesman Ted Clark said.

"It's such a valuable teaching tool - to practice what you preach," Clark said. "It makes financial sense. Saving on energy costs is a really big deal. It has less impact on the environment and wildlife. There's no reason to send pollution in the environment if we don't need to."

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Going green statewide

Along with energy efficient improvements to its Joppa Flats Education Center, the Mass Audubon has created "green" buildings at several other facilities including:

*** Welfleet Bay Wildlife Sanctuary, South Welfleet**

Solar panels on the roof and the ground provide electricity for the nature center. Flooring was made with recycled tires and old newspapers were used in insulation. A rainwater recovery systems collects and stores rainwater for use in the gardens. The building was designed to capture natural light, minimizes the need for artificial lights.

*** The Boston Nature Center, Mattapan**

The urban sanctuary is considered one Boston's greenest buildings according to Mass Audubon. The facility is home to a community gardens that provides food for 260 families. Renewable energy is used throughout the facility including geothermal heat pumps, solar hot water system, and high-performance glass.

*** Broadmoor Wildlife Sanctuary, Natick**

The Broadmoor sanctuary was converted from an antique horse barn and includes natural ventilation, use of natural light, and solar heating. The center has composting toilets that have saved more than 2 million

gallons of water over 20 years, Mass Audubon said. A rainwater collection systems stores 1,200 gallons of rainwater for use in landscaping. Solar power generates 75 percent of the building's electricity.

Source: Mass Audubon

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Photos



Thor Thomforde, front, and Bruce Harrington of Solar Works Inc. install solar panels on the roof of the Joppa Flats Education Center on Tuesday.