

Life at Home

THE BOSTON GLOBE THURSDAY, SEPTEMBER 30, 2004

Techniques you can try

Although the Doyle Center isn't a home, many of its techniques are easily applied to houses or apartments.



"Zero waste material"
Bathroom counters
 Looks and performs like Corian, but lighter, more environmentally friendly than Corian or granite.
Why it's eco-friendly: Made entirely from reclaimed solid-surface materials; byproducts of manufacturing are sent to other companies for reuse in their own products.
Price: Similar to granite and Corian.
avonitesurfaces.com/products/Recycled.asp



Cork flooring
 Durable, low-maintenance, fire-resistant, soft underfoot, provides thermal and acoustic insulation.
Why it's eco-friendly: Cork is a bark that can be harvested from the same cork oak trees every nine years.
Price: Less than many hardwoods; comparable to ceramic tile.
naturalcork.com



Exterior siding by Wersafit
 Resembles clapboard siding but its baked-on finish can go 10-15 years without painting. Has none of the toxins of medium-density fiberboard.
Why it's eco-friendly: Made from the byproduct of timber harvested for hardwood furniture.
Price: Much less than cedar siding; save even more on upkeep.
wags-system.com



Bamboo flooring
 More durable than hardwood floors with comparable appearance; comes pre-finished.
Why it's eco-friendly: Bamboo is a fast-growing grass.
Price: Less than many hardwoods; durability results in lower upkeep costs.
bamboohardwoods.com



Carpet made with Eco Solution Q fibers
 Highly durable, stain-resistant, and easy to clean. Emits no harmful toxins.
Why it's eco-friendly: A quarter of its fibers are reclaimed, and it can be completely recycled to produce new carpet when it wears out.
Price: Comparable to mid-range commercial carpeting.
ecosolutionq.com



Desktops made with Dakota Burt
 Resembles burl wood veneer; offers durability and functionality of wood for interior use.
Why it's eco-friendly: Made from agricultural byproducts such as sunflower seed hulls, soy, and wheat.
Price: Less than solid-wood and wood-veneer countertops; compatible to laminated countertops.
environbiocomposites.com/dakota.php

Green with pride

When land conservator needed space, the natural choice was to build on principles of sustainability, disturbing as little as possible

By Bess Hochstein
 GLOBE CORRESPONDENT

Two years ago, the Trustees of Reservations identified a parcel of land in Leominster that needed to be protected — from the organization itself.

The 113-year-old conservation group needed new office and conference space, and had received a gift from an anonymous donor to fund a project of statewide significance that would send a strong message of environmentalism. The trustees decided to build in the woods of its 50-acre Doyle Reservation.

But before the first tree was felled, the committee responsible for the project decided instead to build across the street, flanking a Colonial-style structure that housed regional offices. Explains Eric Kluz, the project's architect and principal of HKT Architects of Somerville, "One of the keys to having a green building is looking at a sustainable site — not disturbing a virgin site."

Green site selection is one of many lessons followed, and imparted, by the new Doyle Conservation Center, a \$5 million, 18,000-square-foot building

that is the largest capital project ever undertaken by the trustees. Notes Andrew Kendall, executive director of the trustees, "We don't typically build buildings. We typically work against development."

Altogether, the trustees protect more than 53,000 acres of land across Massachusetts, stretching from Crane Beach in Ipswich to Bartholomew's Cobble in Sheffield. One reason for building the center was to support a new initiative to share its expertise with smaller land conservators statewide.

GREEN, Page H8



GLOBE STAFF PHOTOS/SUZANNE KREITZ

Conservation organization leads by example

► GREEN

Continued from Page H1

The trustees decided that if they were going to build, they would go green — that is, make it as environmentally sustainable as possible. Explains Kendall, "We thought it was critically important to stand as an expression of the Trustees' mission and to espouse our values." For guidelines, they turned to the US Green Building Council, which has established standards for sustainability in five categories: energy and water use, siting, materials, and indoor air quality. Getting a gold certification from the council, which the trustees anticipate, would be the equivalent of a green stamp of approval.

The guiding principle of the standards, many of which can easily be applied to homes, apartment buildings, or any structure, is to have minimal impact on the environment. In the Doyle Center's case, the result is a functional, aesthetically pleasing work space and conference center with vaulted ceilings and gracious stonework on the grounds. Its design, construction techniques, materials, and other facets will be on display to the public Saturday during an open house that is part of a regionwide display of green buildings coordinated by the



GLOBE STAFF PHOTOS/SUZANNE KREITER

Jim Younger goes over plans for the Doyle Center, which boasts composting toilets that use just 3 ounces of water per flush, and lamp posts made out of trees that were on the site.

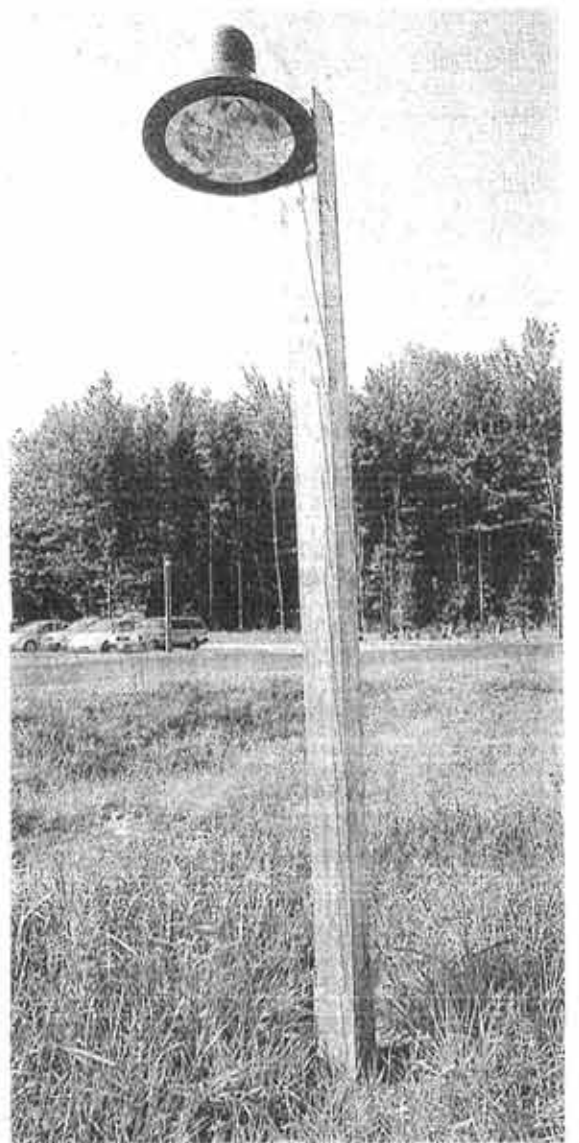
Northeast Sustainable Energy Association.

Visitors will learn that the center taps solar power for 25 percent of its electricity via roof-mounted

photovoltaic panels, which were funded through a grant from the Massachusetts Technology Collaborative. Two geothermal wells descend 1,500 feet below ground, drawing on the earth's stable 50- to 55-degree temperature for natural heating and cooling. An energy-recovery ventilator extracts heat from exhausted air and applies it to the fresh air being brought into the building. Large expanses of operable, superinsulated windows bring the outside inside to 90 percent of the occupied building. Temperature is monitored by the building's central "brain"; should the interior become too warm, windows at the top of the building open to vent



hot air and an e-mail instructing office dwellers to open their windows is automatically sent.



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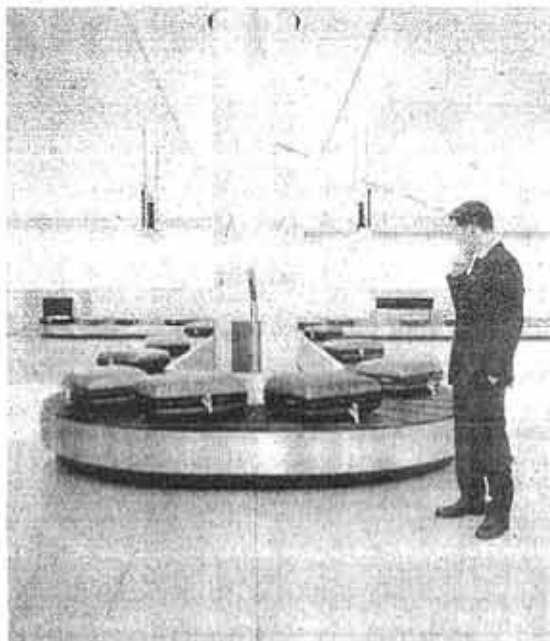
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The building also demonstrates the interrelated benefits of green design. For example, the use of geothermal wells precludes emission of fumes from burning oil or gas, which produces better indoor air quality. Interior air quality is further enhanced by the energy recovery ventilator, operable windows, and open floor plan. Use of environmentally friendly building and finish materials, from desktop to carpet to paint, promotes a toxin-free, healthful indoor environment as well as a healthier planet.

The center emphasizes water efficiency. The bathrooms boast composting toilets that use just 3 ounces of water per flush, about 80 percent less than even low-flow toilets. Jim Younger, director of structural resources for the trustees, calculates that "one flush of a traditional, low-flow toilet equals 65 flushes of our toilet." Even the small amount of water used is a concession to people's expectations that toilets should have bowls instead of simple chutes. Explains Younger, "The water is mixed with lubricant to create foam. This minimal amount of water is only to keep the bowl clean. By having a bowl we've cre-

ated the perception of using a regular toilet. And we've still accomplished our goal." The toilets feed into odorless bins in the building's basement. Bacteria and fungi break down and reduce the waste by 90 percent, producing just one wheelbarrow full of compost to be removed once every four years.

The grounds require no watering. A network of retention ponds — "bioswales" seeded with wet meadow grasses — captures rain-

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water runoff from the center's impervious surfaces, such as the roof and parking lot. Heavy rain creates streams that irrigate the landscape, which consists of native plants that are hearty, drought resistant, and low maintenance — they require no chemical fertilizers or insecticides. Showing again how green design serves multiple purposes, the bioswales also slow the water down to stem erosion and filter the

water, cleansing it to prevent pollution by oil from the parking lot or particles from the building.

The landscape was designed to produce a natural environment. While the plants will take time to establish themselves, the goal has already been met. Notes Younger, "The other day a Blue Heron landed in a retention pond. We also

Continued on next page

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Group's 'green' site embraces its mission

Continued from preceding page
had a Solitary Sandpiper. We've created a wetland habitat."

Younger, an architect by trade, was point person for the trustees, but he worked side-by-side with Kluz and the project's landscape architect, Michael Wasser, principal of Hines Wasser & Associates of Brookline. Kendall was involved at every step as well. The contractor, Mullane Corp. of Leominster, also embraced the building council's guidelines. Subcontractors were required to work with uncommon green materials and follow unfamiliar work practices: stockpiling topsoil from the cleared site for later use in landscaping; reusing cleared trees for mulch and exterior lightposts; and sorting waste materials into different dumpsters for recycling. States Kluz with clear pride, "Over 75 percent of the construction waste from the project was recycled."

Selecting a local craftsman to fabricate desks was another green choice that bore multiple benefits. Although Dave Decker of Wayne Woodworks in Wakefield had never before worked with Dakota Burl — a woodlike composite of agricultural by-products — having him build custom-designed desks proved less expensive than ordering office-systems furniture, and it kept money in the local economy, an additional green recommendation.

Many homeowners perceive cost as an obstacle to building green, and Younger acknowledges that the up-front costs of green design are higher. "It's a question of whether you're willing to pay more today for something that will save you money in the future. It's what I'd call smart consumerism."

"Green elements added about 15 percent to the construction costs of the Doyle Conservation Center. While the initial costs of installing a geothermal heating and cooling system were greater than the cost of installing a typical air-to-air heat pump system, the

Resources

To visit the Doyle Center

The Doyle Conservation Center, 464 Abbott Ave., Leominster, will be open from 10 a.m. to 1 p.m. Saturday as part of the Northeast Sustainable Energy Association's Green Buildings Open House. From Greater Boston, take Route 2 west. Take exit 31A (Route 12 South) to Leominster. Turn right at the exit onto Route 12 South. Take your first right onto Lindell Avenue. Go three-quarters of a mile and take a right onto Abbott Avenue; you'll see a sign for the Doyle Reservation. For more information, call the center at 978-840-4446, or visit thetrustees.org. The center will also be hosting tours Oct. 23 from 9 to noon.

To see other green buildings

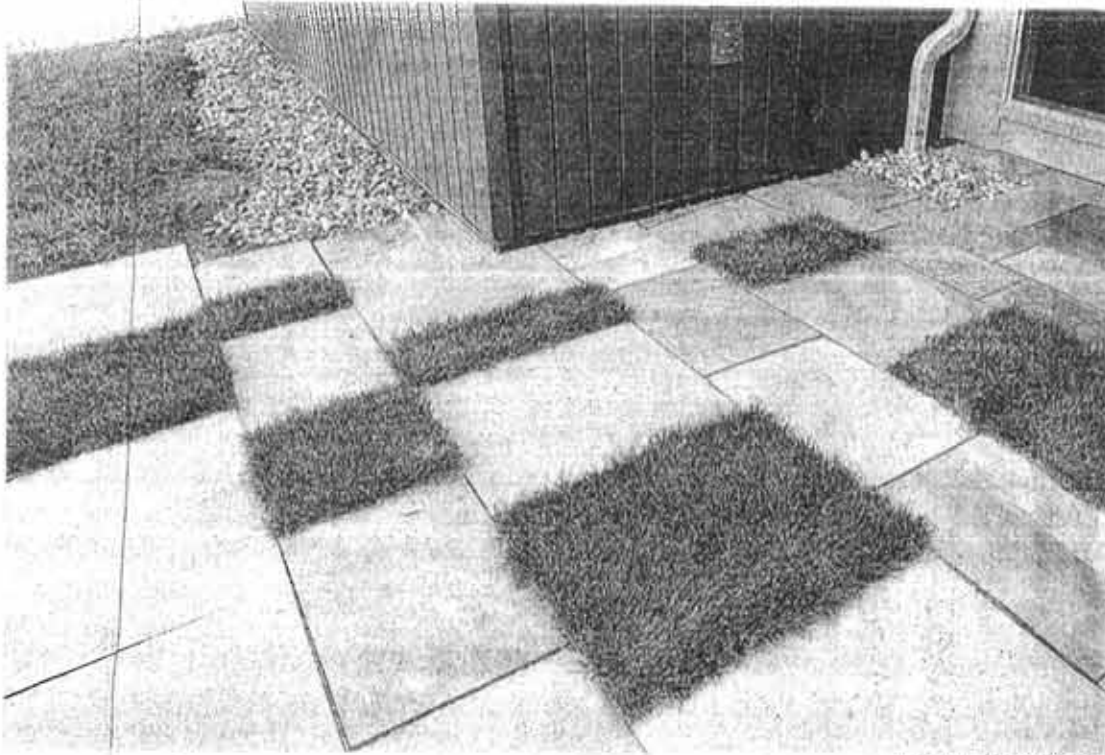
Altogether, more than 350 sites in New England, New York, New Jersey, Delaware, Pennsylvania, Maryland, and Washington, D.C. are opening their doors Saturday, about a dozen, including several single-family homes, are in Greater Boston. To find the participating buildings nearest you, go to www.nesee.org.

To learn about building green

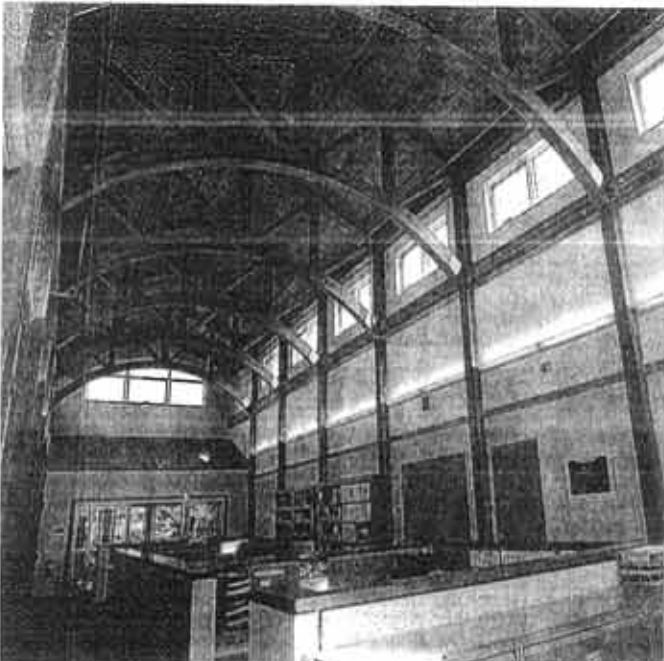
The US Green Building Council (usgbc.org) is a coalition of professionals in the building industry working to promote buildings that are environmentally responsible, profitable, and healthy places to live and work. Its Leadership in Energy and Environmental Design program creates standards to define green building principles and certify building projects that demonstrate commitment to sustainability. Building professionals can take an exam to become LEED-accredited.

anticipated savings from annual utility costs will result in payback in less than six years.

"As a leading conservation organization in the nation, it is our job to lead by example, protecting resources for future generations to enjoy. Building green not only makes financial sense but the payback is immediate knowing that we are building responsibly, supporting the local community, and creating a powerful tool that can be shared to promote a conservation ethic."



GLOBE STAFF PHOTOS/SUZANNE KREITER



The Doyle Center relies heavily on "green" thinking, such as the patio (above) and a network of retention ponds — "bioswales" (below) — that have been seeded with wet meadow grasses to capture rainwater runoff. Inside, vaulted ceilings are one way to bring natural light indoors.



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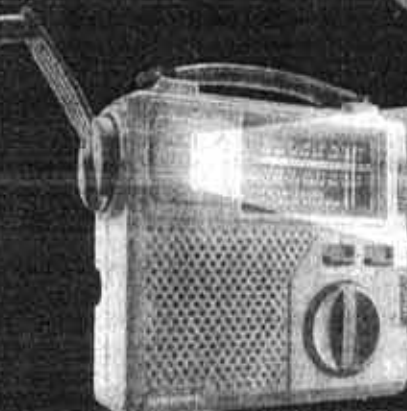
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