

[From Winter 2003-04]

Interpreting Sustainable Design

For some people, forty years is a lifetime. In forty years, a child can grow into an adult and have children of their own. For forty years, Chincoteague National Wildlife Refuge (CNWR) has been trying to build a visitor center to accommodate the public's ever-increasing demand for wildlife-dependent educational and interpretive programming. With visitation hovering around 1.5 million, it has been long overdue. -This past October 25th, the wait ended when refuge staff opened the doors to the Herbert H. Bateman Educational and Administrative Center (BEAC). The Center is better than what was dreamed of forty years ago. Complete with a 125-seat auditorium, a classroom/wet lab, and 5,000 square-feet of state-of-the-art interactive exhibits, CNWR has entered into a new era of visitor education.

Leading by example, the staff at CNWR focused on creating a building that was a showcase in itself using resources throughout the building that were either sustainable, recycled, or environmentally friendly. This "green architecture," or sustainable design, has helped to make CNWR and the BEAC a leader in sustainable design for the U.S. Fish & Wildlife Service.

The sustainable design aspects are incorporated into both the interior and exterior of the building. Sustainably harvested cedar is used for the exterior siding, while pine beams, from a sustainably harvested and certified forest are laced throughout the interior portion of the building. This certification process incorporates sustainable practices in the harvesting and production of wood products throughout the country. Fast growing wood products are used in both the floor covering and the ceiling panels. The wood floors are bamboo which grows quickly and is produced easily here in the United States. The ceiling panels are created from fibrous material found in Aspen trees which also grow quickly.

In addition to sustainable products, engineered wood is utilized for all of the rafters and support beams. These beams are manufactured from younger trees and from wood strands, and make use of leftover wood pieces and cutoffs from fast growing trees, thus minimizing depletion of forests and using wood scraps efficiently.

Environmental efficiency was incorporated into the floor coverings as well. For example, recycled rubber flooring is in the education classroom and in certain areas of the exhibits, while cork flooring can be found in the exhibit space and information desk area. Cork has the benefit of growing quickly, while being easy to work. Recycled carpet adorns the auditorium and hallways, and is used throughout the administrative building.

Keeping in mind the climate and weather at the refuge, zinc roofing was chosen for its beneficial effects with regard to both plants and animals. This heavy metal is essential in a healthy life cycle, and ultimately helps the recreated wetland around the building receive all the nutrients necessary for proper functioning. The facility's re-created wetland incorporates the basic biology of crucial wetland functions, allowing water to be recycled and cleaned on the premises, thus reducing water intake. The process functions by pumping gray water from the sinks, toilets, and waterless urinals into created wetlands, using native vegetation, outside of the building. Once the water is cleaned, it is then pumped back into the toilets for flushing and recycling again. This helps save approximately 40,000 gallons of water a year.

Additionally, the geothermal heating and cooling system consists of a series of wells that are connected to the building's heating system with underground piping. The ground keeps the water in the underground piping at a constant temperature of 55 degrees F. In the winter, the building's heating system will pick up heat from the water. In the summer, the reverse will occur. This process improves the efficiency of the heating system.

When in the building, one of the best natural resources is evident at all times. Natural day lighting is in every public room of the facility except for the restrooms. The design and placement of the building takes full advantage of the sun during the day by lighting exhibits, the auditorium, classroom, teacher resource room, and other open areas in the building. This allows for increased attentiveness of visitors and staff while decreasing the use of electricity.

The building itself is meant to be an educational tool to showcase sustainable design and green architecture and technology. From the recycled tire flooring in the classroom to the constructed wetlands that filter and recycle the building's waste water, attention was paid to every detail of the building's design. In fact, the building has already won two awards for sustainability.

The Center's 5,000 square feet of exhibits are sure to please, educate, and amaze. As you walk through the exhibits, you are taken on a journey through the habitats of the refuge. Each habitat, with its unique assemblage of plant and animal species, is presented in a way that both children and adults can understand and enjoy. People leave the facility not only educated about the wildlife resources and at CNWR, but also with a greater appreciation of the National Wildlife Refuge System.

Building an education center on a national wildlife refuge is never meant to take the place of the real experience. Therefore, the exhibits were designed to be mere appetizers to the main course which lies outside the facility's doors. Once on the trails, visitors will continue to learn about the resources through self-guided interpretive hubs.

On October 25, 2003, more than 3,000 people toured the new center. Teachers and school groups are beginning to compete for workshops and field trips to the refuge. The excitement created over this facility in the National Wildlife Refuge System's centennial year will surely spill over into 2004 and throughout the country.

The refuge's goal is to create an awareness and appreciation of the National Wildlife Refuge System. As our visitors return home (CNWR receives visitors from all 50 states and U.S. territories), they will surely bring with them a new-found knowledge of the refuge system and hopefully become a supporter of their own local national wildlife refuge.

Alison Penn, Environmental Education Specialist
Kelly Chose, Outdoor Recreation Planner