National Park Service
2005 Environmental Achievement Awards

Winner

Yellowstone National Park/Xanterra Parks & Resorts

"Turning Buildings Green: A Sustainable Design Success Story at Yellowstone"

Yellowstone National Park teamed with Xanterra Parks & Resorts, the park's largest concessioner for the environmentally sensitive design and construction of new concessioner employee housing. In 2004, the team completed construction of two new single-family housing units in Gardiner, Montana using the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) Green Building Rating System.

Highlights of this innovative project include:

- The team chose a site at the old Yellowstone Park Service Station fuel transfer facility, to avoid building on prime farmland, land subject to flooding, land located near waterways or wetlands, land identified as habitat for threatened or endangered species, or undeveloped public parkland.
- The team chose to retain a maximum amount of undeveloped land (69% of the lot's square footage) by constructing homes that are tall and narrow, rather than spread out over a large area. Thus, the team was able to promise neighbors and visitors that the majority of the lot would remain in a natural state.
- The site was landscaped with native, drought-resistant plants and grasses that stand up well in winter, yet remain attractive year-round.
- Windows were oriented toward the equator to maximize direct sunshine and capture the "free" heat in a thermal mass inside the houses (the concept of passive solar design).
- Rather than utilizing wood framing and fiberglass insulation, the team incorporated Integrated Concrete Form (ICF) walls and Structural Insulated Panel (SIP) rooftops.
- The team recycled or reused every feasible pound of construction waste and successfully diverted over 53 percent of the project's waste from disposal.
- Each of the houses is equipped with a 1.2-kilowatt solar photovoltaic generation system.
- The team entered into a two-year contract with Renewable Choice Energy to ensure that 100 percent of the electricity for the new houses is purchased from renewable sources.
- Each house has energy-saving compact fluorescent bulbs or tubes, propane boilers, and water conserving fixtures.
- Materials were used and actions were taken during construction to ensure that high level of air quality during occupancy (i.e., use of low-VOC paints, venting of houses, etc.).

The process for designing and constructing these houses should serve as model for other NPS units.