

Towards a Sustainable Society: The Visitor Center *Yukimuro* Cooling System

The Urabandai Visitor Center provides information about the lakes, ponds, and wetlands of Urabandai, and the wildlife that inhabits the region. The center reduces its environmental impact by using sustainable cooling and heating systems. The visitor center uses a traditional cooling system in summer with a renewable winter resource: snow. In winter, snow is gathered and piled up inside a *yukimuro*, or insulated snow storage room, located directly across from the visitor center. Vents in the visitor center direct warm air through a pipe system in the building's framework. The air travels underground and into the *yukimuro*, where up to 180 tons of snow can be compacted and stored.

As the snow melts, the water collects beneath the storage room, and the surrounding cold air is cycled back into the visitor center. This eco-friendly cooling system is complemented by other sustainable features, such as the center's use of diatomaceous earth as a wall coating. This absorbent, clay-like material made of fossilized plankton helps regulate humidity by absorbing moisture from the air.

Japanese communities living in colder climates have long taken advantage of the natural properties of snow and ice to preserve food. Use of *yukimuro* as a natural refrigerator is believed to have been widespread during the Edo period (1603–1867), and they are still used for energy-efficient cold storage in alpine regions of Japan.