

Aulani Builds on Hawaiian Spirit of Caring for Land With Green Technologies, Design Elements

KO OLINA, O'AHU, Hawai'i – Inspired by the Hawaiians' deep relationship with nature, which is embodied in the term, *mālama 'āina*, or "care of the land," designers implemented a broad array of green technologies and elements that promote sustainability, energy efficiency and eco-consciousness at *Aulani, a Disney Resort & Spa*.

"Early Hawaiian society was founded on the principal of *kuleana*," said Joe Rohde, vice president and executive designer for Walt Disney Imagineering. "*Kuleana* means that you are here now because, seven generations ago, someone was mindful enough to care about you, the future generation, and made sure that you would have what you needed not only to survive but to thrive."

With that philosophy as the guide, here are some ways that green technologies and philosophies have been implemented at Aulani.

Construction Conservation

- Disney architects used a "cool roof" technology, which reflects the infrared spectrum back into the atmosphere, reducing the roof temperature and helping to keep buildings cool. Also, Aulani features organic "green roofs" above the spa fitness center and the kitchen at 'AMA'AMA. The green roofs increase energy efficiency by deflecting the infrared spectrum and providing natural shade.
- Imagineers selected "certified wood" for use through much of the resort. For the wood to earn certification, forest managers address a range of environmental aspects, including sustainable harvest levels and prompt forest regeneration.
- Elevators are energy efficient, using nearly one-third less energy than traditional elevators. They also don't require petroleum-based lubricants, based on fossil fuels. Emergency stairwells have energy-saving lighting technology, with a bi-level emergency lighting that keeps stairwells illuminated with minimum code lighting at all times. When a person enters the stairwell, sensors activate and the lighting level increases.
- In spaces such as ballrooms and meeting rooms, air quality is monitored using "demand ventilation," a technique that measures the carbon dioxide being emitted from spaces when large numbers of guests gather. Air can be customized for the number of people in the room.
- Heat pump technology is used to capture waste heat from air-conditioning chillers, and to repurpose it for hot water, which is then used throughout the resort. When guests turn on a hot-water faucet, part of the energy being used to heat that water is derived from the air conditioning chillers. This reduces the resort's total water usage.
- Heat pipes are embedded within the air-conditioning system on top of most buildings at Aulani. The pipes serve as a "superconductor," or heat transfer mechanism, which allow fresh air to de-humidify before coming into the buildings. Sealed copper tubes span the incoming and outgoing air paths, with high conductivity that lets them transfer heat by single-phase convection. Since they don't have mechanical moving parts, heat pipes require minimum maintenance and they help Aulani exceed the resort's mandatory energy performance standards.
- Aulani utilizes cooling towers to support the air conditioning and cooling systems. The towers remove the waste heat that's generated by the building's chillers in an effort to lower total water usage.
- A technology known as "Variable Frequency Drive" (VFD) reduces the amount of energy that gets consumed by Aulani air-conditioning systems. VFDs are motors that respond to changing energy demands. For example,

if hotel rooms are not occupied, the VFD motors automatically respond and decrease the energy demand.

- Aulani uses only low-volatile organic compounds (VOC) or VOC-free paints and coatings, as well as only low-VOC or VOC-free adhesives and sealants. All carpets and carpet pads throughout the resort are Green Label Plus, certified by the Carpet and Rug Institute, which means they meet the stringent low-VOC or VOC-free requirements and are among the lowest emitting carpets and carpet pads.
- Indoor air quality standards have been established for the resort by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE).
- Low-flow faucets and fixtures reduce water usage.
- The Aulani construction team successfully recycled more than half of the construction waste materials that were generated on site. Materials that were recycled included concrete, concrete masonry units, wood, metal, steel, aluminum, cardboard and glass, as well as green waste from planting materials.

Guests Can Participate In Conservation

- Aulani has a resort-wide recycling program, including cardboard, aluminum, paper and plastic, as well as food waste. Electronics, batteries, and light bulbs also are recycled.
- Rainbow Reef snorkel lagoon and the Makai Preserve share nature up close with Guests. The preserve is home to the graceful *h?h?manu* brown stingrays and other colorful creatures of the sea. “By creating these experiences for our Guests we hope to enlighten and entertain, and also raise awareness about the importance of supporting conservation here, at home and globally where the Disney Worldwide Conservation Fund is supporting projects,” Rohde said.
- A *lo'i kalo*, or taro field, at the entry of Aulani has four varieties of kalo, grown and harvested for consumption. The field is planted, harvested and maintained by community volunteers.
- Aulani guests can control the lighting as well as regulate the temperature of their rooms. In addition, l?nai door interlocks automatically shut off the central air-conditioning when a l?nai door is opened.
- Aulani guest rooms feature compact fluorescent lights, which are four times more efficient and can last up to 10 times longer than incandescent bulbs.
- The parking garage also offers 34 electric car-charging stations.

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About Aulani, a Disney Resort & Spa

Uniquely designed for families and inspired by the wonders and traditions of Hawaii, Aulani is a family paradise with a touch of magic. Aulani offers kids, adults and families Hawaiian vacation experiences with a special magic that only Disney can create. Delightful rooms and spacious Disney Vacation Club villas, a perfect location on a beautiful beachfront lagoon, and renowned Disney service and enchanting entertainment invite dreamers of every age to savor their time together on Hawaii as never before.

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