



Province of Guanacaste, Nosara, Costa Rica

OLAS VERDES HOTEL

With great beaches, local culture and lush rainforest vegetation from the nearby Ostional Wildlife Refuge, Nosara, Costa Rica is a surf and watersport lovers dream. Surfing is king there, with many vacationers coming back year after year to ride the waves. In 2013, when a local surf school lost its headquarters, six patrons turned investors jumped in to build a hotel the school could partner with. The aptly named Olas Verdes Hotel, which means “green waves” in Spanish, would take green tourism to the next level. The HVAC selection for the project: Mitsubishi Electric Cooling & Heating Zoned Comfort Solutions®.

CHALLENGE

A team in Costa Rica wanted to build a low-impact hotel with extremely low energy-usage

SOLUTION

Mitsubishi Electric Zoned Comfort Solutions®

RESULT

Hotel that meets top sustainability building certifications, including LEED® Platinum

SUSTAINABILITY FROM THE GROUND UP

Carl Kish, co-founder of STOKE Certified (the first sustainability certification program designed for surf and snow resorts, destinations and events) was working as a sustainable tourism consultant in Nosara when the investors asked him to join their project.

“The team wanted to integrate sustainability from the ground up,” noted Kish. “They envisioned this project being a catalyst for sustainable development in the area.”

Kish, as the project manager, assembled a group to closely follow LEED® building guidelines throughout development of the hotel. Choosing high-quality, energy-efficient equipment was a central focus of this group, particularly when it came to the HVAC selection.

DEVELOPING AN HVAC STRATEGY

“The team really wanted inverter technology and low energy consumption on the compressors,” explained Carlos Alfaro Alvarez of HITEC, the project’s

general contractor that designed, installed and now maintains the property’s heating and cooling equipment. “Mitsubishi Electric’s technology was the most efficient and had the best warranty of any brand we reviewed with seven years for the compressor and five years for parts.”

Ultimately, HITEC installed only five outdoor units for the entire hotel, which consists of a main clubhouse, restaurant and 17 individual guest villas that each include a bedroom, living room and bathroom.

Determined to minimize the energy footprint as much as possible, Kish and team developed an HVAC strategy for the villas.

“Donald Loria, the local architect, did a lot of work to incorporate natural ventilation and shading so that guests wouldn’t depend on air conditioning for every room. The contractors were careful to not cut down trees during construction so that we’d have natural cooling from abundant vegetation,” said Kish. “We knew our clients would want comfortable conditioning in their bedrooms though, so we put ductless units there and used large fans in each living room. The restaurant

and clubhouse are both open air structures and the administration office is indoors and has a ductless unit.”

This HVAC design has proven to be a benefit to guests as well.

“When you walk in most hotels, you can hear every unit running,” expressed Luis Pardo, general manager, Olas Verdes Hotel. “When you walk in here, there’s no noise and you’re comfortable. In this industry, you always get complaints about room temperature, but since opening the Olas Verdes Hotel, guests actually tell us how much they love the Mitsubishi Electric units!”

Pardo credits the wall-mounted indoor units’ quick cooling capabilities and quiet

operation for their guests’ satisfaction. Utilizing the Mitsubishi Electric EB-50 Centralized Controller has also been a critical tool for keeping energy consumption low and preventative maintenance.

USING CONTROLS FOR COMFORT + EFFICIENCY

“HITEC was able to install a smart controls system. From our administrative office we can manage each unit in every room and monitor how they’re performing,” noted Kish. “If someone leaves their AC on all day, we can easily turn it off without going to their room. If someone dials down the temperature too low, we can adjust it.”

Pardo also explained how the controls system helped them identify best HVAC



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operation practices. “When we first opened, we assumed most guests would want really cool rooms and dialed back the indoor units to 65 degrees. From monitoring the controls, we quickly realized the units work so well that everyone was way too cold. Now, we set the indoor units to 73 degrees and very rarely does a guest change the temperature during their stay. From every side, using Mitsubishi Electric HVAC is a win-win.”

COMMITMENT TO GREEN TOURISM

Since opening in December 2015, Kish and the project team’s commitment to energy efficiency have paid off. In 2016, Olas Verdes was the first surf hotel in the world to receive LEED Platinum Certification. They also have Costa Rica’s

Project Completed: December 2015 |

Sustainable Tourism Certification, which they renew every two years. Kish was also finally able to award Olas Verdes and their surf school partner STOKe Certification – the former being the first hotel to receive this accreditation in Central America.

By coupling the highly-efficient Zoned Comfort Solutions system with solar panels and battery storage, the hotel has also been successful in reaching its ultimate goal: maintaining a low energy load.

ENERGY PERFORMANCE

Sphera, a Central American consulting agency for LEED certified projects, works with Kish and the hotel staff to monitor the energy data. In a recent report, Kish noted that the hotel’s highest daily energy consumption “can peak at 600 kWh during high occupancy and fall to 200 kWh during low demand.” Sphera explained that these numbers put the Olas Verdes Hotel at “40 percent more efficient than the baseline building performance rating” based on the ASHRAE standard, which is the highest level of energy efficiency for the LEED New Construction v3 (2009) requirements.

In honoring the local landscape, the Olas Verdes Hotel has made quite the impression on other hospitality venues in the area, as well as guests. “This hotel is an experience,” expressed Pardo. “With the design and construction, we want guests to feel connected to the jungle, the beach and simplicity.”



PROJECT TEAM

General Contractor (HVAC Designer + Installer):

HITEC, San Rafael, Costa Rica

Project Management:

STOKe Certified, San Diego, California

Architect:

Prendas Loria, Nosara, Guanacaste, Costa Rica

Energy Monitoring:

Sphera, San José, Costa Rica

EQUIPMENT

- ▶ **15** MSZ-GE12NA – Wall-Mounted Indoor Units
- ▶ **5** MXZ-8BNA – M-Series Outdoor Units
- ▶ **1** EB-50 – Centralized Controller