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## HOTEL TERRA JACKSON HOLE / TETON VILLAGE, WYO. /

- ▲ Inspired by the surrounding landscape, a design team proves luxury can be sustainable.

COVER AND ABOVE PHOTOS COURTESY OF CAMERON R. NEILSON

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# WINTER GREEN





## HOTEL TERRA BRINGS ECO CHIC TO THE MOUNTAINS

BY JIM SCHNEIDER

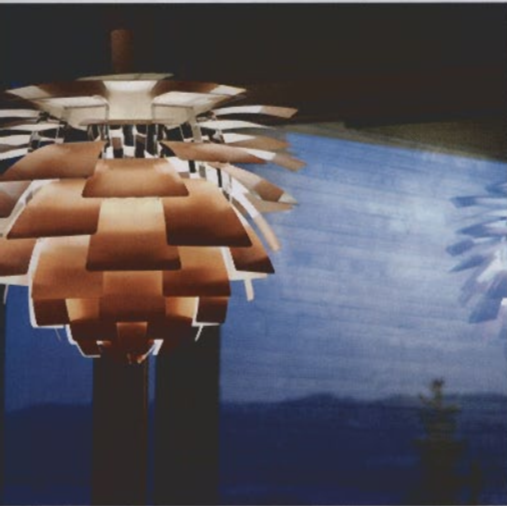


PHOTO COURTESY OF CALLISON/CHRIS EDEN

**J**ACKSON HOLE, WYO., is a place known for its breathtaking natural beauty. Vacationers come from all around the world to enjoy one of the top ski destinations in the U.S. Visitors seek scenery and activity, but they also want comfort and luxury during their stay. The designers of the 6-story, 72-room Hotel Terra in Teton Village, Wyo., set out to show a resort can offer all the creature comforts while preserving the very environment that draws so many people to Jackson Hole. Along with implementing a state-of-the-art, energy-efficient heating and cooling system and making use of sustainable, recycled materials in construction and interior design, the hotel runs a green operation. Daylighting, water and power conservation, green cleaning, native landscaping and even the use of eco-friendly fabrics factor into the hotel's day-to-day operation. For many, sustainability brings to mind ideas of sacrifice rather than luxury, but the team behind Hotel Terra was determined to demonstrate to its guests that comfort, style and green can exist happily together.

PHOTOS COURTESY OF CAMERON R. NEILSON UNLESS OTHERWISE INDICATED





## LOTS TO LEARN

"Being based out of Jackson Hole, the environment has always been really important to us," says Ryan Schoen, vice president of development for Terra Resort Group, Teton Village. "You look out the back door and it's such a beautiful landscape. We recognize the demand hotels put on the environment, so it was important to us to find ways to reduce our impact, as well as the costs of the building."

"Terra Resort Group wanted to create a destination resort—ultimately, one of a new brand of boutique-sized hotels that would be about maintaining sustainability, operationally and in architectural design," explains interior designer, Erin Langan, LEED AP, associate principal with the project's design firm, Seattle-based Callison. "Many basic things, such as using fly ash in the concrete

everyone. Now there probably are 10 projects in Jackson Hole looking for LEED certification [from the Washington, D.C.-based U.S. Green Building Council]. Most contractors have been to classes and how at least understand what green means. Architects, contractors and everyone has become far more aware than they were three or four years ago."

## LUXURY LODGING

Along with taking a different approach to building and operating a ski resort, Hotel Terra sought its own look, as well. "Hotel Terra wanted to be more of a modern mountain resort rather than a traditional mountain resort," Langan recalls. "The guiding design factors were to bring some contemporary vocabulary into the genre and create a resort that reflects the values of sustainability."

“ WE RECOGNIZE THE DEMAND HOTELS PUT ON THE ENVIRONMENT, SO IT WAS IMPORTANT TO US TO FIND WAYS TO REDUCE OUR IMPACT, AS WELL AS THE COSTS OF THE BUILDING. ”

— Ryan Schoen, vice president of development, Terra Resort Group

and identifying opportunities for daylighting, were incorporated very early in the process."

As the first of Terra Resort Group's planned offering of green properties, the project in many ways was starting from scratch. "It was my first time putting something like this together," Schoen admits. "I'd read a lot of theories and had researched a lot of materials but never actually implemented the whole procedure, so there definitely was a learning curve."

Part of that learning curve was educating the subcontractors about the finer points of sustainable construction. "When we started the project back in 2005, everyone basically said it was going to be too expensive, cost too much to manage and that the subcontractors were going to put in this huge cost increase because they wouldn't know what green was or what they had to do for it," Schoen recalls. "The cost was not higher; the project just required closer management on the part of

"The aesthetics are derived from the steep site and the neighboring cluster of lodge buildings located near the base of the tram," explains Glen Peterson, project manager at Callison. "The design of the building is very much related to where it is built. It fits into the Teton Village vernacular but uses modern materials; a lot of exposed steep detailing and bolted connections express the structure of the building."

Material selection was vital to achieving the desired look and environmental footprint. "We used natural stone from the vicinity whenever possible," Langan says. "We specified low-VOC paint, Greenguard-certified carpets and recycled timbers, as well as a lot of industrial steel as trim and finish." Langan stresses the importance of reviewing the performance history of the products specified. For example, it took some effort and a little trial and error on the part of the project team to find a low-VOC paint that would fit the



performance and environmental standards set for Hotel Terra.

The developer also sought to change the association of eco-friendly with a granola type of style. "We used a contemporary detailing approach where things are very clean," Langan explains. "We tried to use sustainable materials in a way that comes across as luxury, rather than casual. This hotel brand wants to put forward that the new luxury is clean air, fresh water and being close to nature, rather than some other idea of luxury that includes excessive consumption to the detriment of the environment."

### COMFORTABLE CONSERVATION

The guest rooms have expansive views and use large, double-pane, argon-filled windows to provide openness to the environment and daylighting

"Our system is centralized, conserves energy and doesn't take up floorspace; it's in the ceiling, which allows a better economy of scale," Schoen continues. "It works off centralized gas-powered boilers located in the basement along with an array of condensers on the roof. The building then is divided into zones—approximately six per floor—that are connected individually to the condensers on the roof. Each can call for heating and cooling on demand and each room has its own heating and cooling controls."

Because of extreme weather conditions, Hotel Terra is highly insulated. "We made sure to check all the areas where the windows met the walls because that's where there's a ton of heat loss caused by poor installation and craftsmanship," Schoen says. "We undertook a very diligent process to make sure we weren't losing heat in



without sacrificing performance and energy conservation. Daylight and views are available in 95 percent of the hotel's occupied spaces, including the back-of-house office spaces and front desk. "Because we're a 24-hour operation, we want to make sure it's a positive experience for our guests and all our staff members," Schoen says.

In a cold environment, energy conservation is very important. "We spent a lot of time with the mechanical system we put into the building," Schoen explains. "We decided not to go with a full, four-pipe heating and cooling system where hot water always is circulating around the building and cold water goes to a return waste pipe. The two-pipe zoning system we implemented allows us to heat and cool the different areas of the hotel, so each room can individually adjust heating and cooling, which has traditionally been a challenge for hotels not using those noisy, inefficient, under-window units.

those areas." The process included separating the steel exterior wall framing from the wall sheathing then wrapping the entire building with rigid insulation while incorporating an exterior plywood base for attaching wood siding and trim. Special attention was paid to reducing air infiltration around the door and window openings.

The property also is working to implement a building-management system that, when completed, will be integrated into the property-management program. When a guest checks in, the heat automatically will activate in his or her unit and when a guest checks out, the heat will go down in that unit. The system is designed to be user friendly and Web accessible for the property's operator.

Another issue on the minds of the team was water conservation. "We made sure to have low-flow fixtures and dual-flush toilets throughout the building," Schoen says. "Based on

## GREEN TEAM

### OWNER/DEVELOPER/OPERATIONS

TERRA RESORT GROUP, Teton Village, Wyo.,  
[www.terraresortgroup.com](http://www.terraresortgroup.com)

### DESIGN ARCHITECT/INTERIOR DESIGNER

CALLISON, Seattle, [www.callison.com](http://www.callison.com)

### ARCHITECT OF RECORD

CORNERSTONE ARCHITECTURAL GROUP,  
Seattle, [www.cornerstonearch.com](http://www.cornerstonearch.com)

### GENERAL CONTRACTOR

DHS GENERAL CONTRACTING, Teton Village,  
(307) 734-0008

### COMMISSIONING AGENT

COMMISSIONING AGENTS USA, Golden, Colo.,  
[www.cxa-usa.com](http://www.cxa-usa.com)





## MATERIALS AND SOURCES

- **DOUBLE-PANE, LOW-E, ARGON-FILLED WINDOWS** / JELD-WEN, Klamath Falls, Ore., [www.jeld-wen.com](http://www.jeld-wen.com)
- **HVAC SYSTEM** / CITY MULTI from Mitsubishi Electric, Suwanee, Ga., [www.mehvac.com](http://www.mehvac.com)
- **ROOFING** / Eco-Shake 100 percent recycled content roofing from Re-New Wood, Wagoner, Okla., [renewwood.com](http://renewwood.com)
- **LOW-VOC PAINT** / Benjamin Moore, Montvale, N.J., [www.benjaminmoore.com](http://www.benjaminmoore.com)
- **CARPETS** / Masland Carpets, Carlisle, Pa., [www.maslandcarpets.com](http://www.maslandcarpets.com)
- **LOW-FLOW FAUCETS** / Cascade Faucets Inc., Delta, British Columbia, Canada, [www.cascadefaucets.com](http://www.cascadefaucets.com)
- **DUAL-FLUSH TOILETS** / Caroma, Hillsboro, Ore., [www.caromausa.com](http://www.caromausa.com)
- **WALL SYSTEM** / Team Panels International, Denver, [www.teampanels.com](http://www.teampanels.com)

average usage and occupancy loads as determined by the USGBC, we have been able to achieve 24 percent water conservation over a baseline building. Currently, we are showing that we are using 1,000 gallons [3785 L] less water per day than the baseline calculation."

Resource conservation also was important to the hotel's structural design. "One of the things we did was minimize the amount of structural materials we used in the building," explains Steve Barnes, project manager with Seattle-based Cornerstone Architectural Group, the hotel's architect of record. "We did that by building bearing walls and spanning the walls with the floor structure, which was a 7-inch [178-mm] concrete slab on a metal deck. Rather than building a structural steel frame with beams and columns then infilling with walls and floors, we allowed the walls to support the building. This reduces the weight of the building, which reduces the weight of the foundations. It also increases the speed of construction and allows construction activities to continue through the freezing winter weather conditions."

"On the upper four floors of the building, we used a panelized wall system similar to structural insulated panels for homes," Schoen adds. "After we got into it, we realized how much faster it would go up and how much energy it would save. The panels are factory-built in a controlled environment. There is very little waste because they are built to exact specifications in the warehouse."

Schoen says he learned the importance of commissioning while working on this project. "We did start commissioning a little too late," he notes. "That needs to be started from day one to make sure the building is going to achieve the level of performance everyone says it will. It was tough getting our commissioning

“ONCE YOU HAVE SUSTAINABLE PRODUCTS AND SYSTEMS IN PLACE, IF YOU USE TOO MUCH WATER, POLLUTE THE AIR AND DON'T HAVE A PROPER OPERATIONAL SETUP, YOU'RE NOT ACHIEVING WHAT YOU SET OUT TO ACHIEVE.”

— Erin Langan, LEED AP, associate principal, Callison





agent up to speed because of how late he was brought into the process, but he raised some very important issues, especially on the mechanical side. He was very good at making sure the system was going to be operated in a way that allows us to realize all the energy savings."

**ALL IN**

Hotel Terra opened in February 2008 and has earned a LEED for New Construction Silver certification from the USGBC. It is a condo hotel, which means its 32 units (some of which are multi-bedroom and can be split into several rental units) are sold to individual owners who then choose to occupy them or use them as a rental investment. The units sold out completely only 48 hours after being placed on the market.

Although the performance data for the first year has not been fully gathered and tabulated, Schoen is confident of a good return on investment and notes the economic benefits of creating an efficient hotel were very much on his mind. "The dollar impact was as important to us as the environmental," he admits. "We are not a nonprofit company. If we can't make green work in everyday life, how are we going to convince people who don't care about the environment to do these things?"

In the end, support for the hotel's green initiatives has come from all directions. "Actually, the hotel staff has been by far the most supportive. They have been the standard-bearers for the whole movement," Schoen says. "Every day, someone comes up with a new idea. For example, someone will come with a new environmentally friendly cleaning material and say, 'let's try this out.' The housekeeping staff knows it's much healthier for them."

"One of the reasons I like working with Terra Resort Group is that for them, sustainability is not just a function of the building, it's a function of operations," Langan says. "They are committed to going forward in a sustainable fashion. Once you have sustainable products and systems in place, if you use too much water, pollute the air and don't have a proper operation setup, you're not achieving what you set out to achieve. They are working to incorporate sustainability in small ways, as well as bigger ways."

Guests even are participating. "We find our toughest critics now are our guests. When you say you're going to do something environmental, people check you out," Schoen says. "For example, we don't change the sheets every night unless the guest requests it. People actually make a mark on the corner of sheets to make sure we haven't changed them. People are waiting to catch us, and that's a good thing because it's keeping everyone honest."

