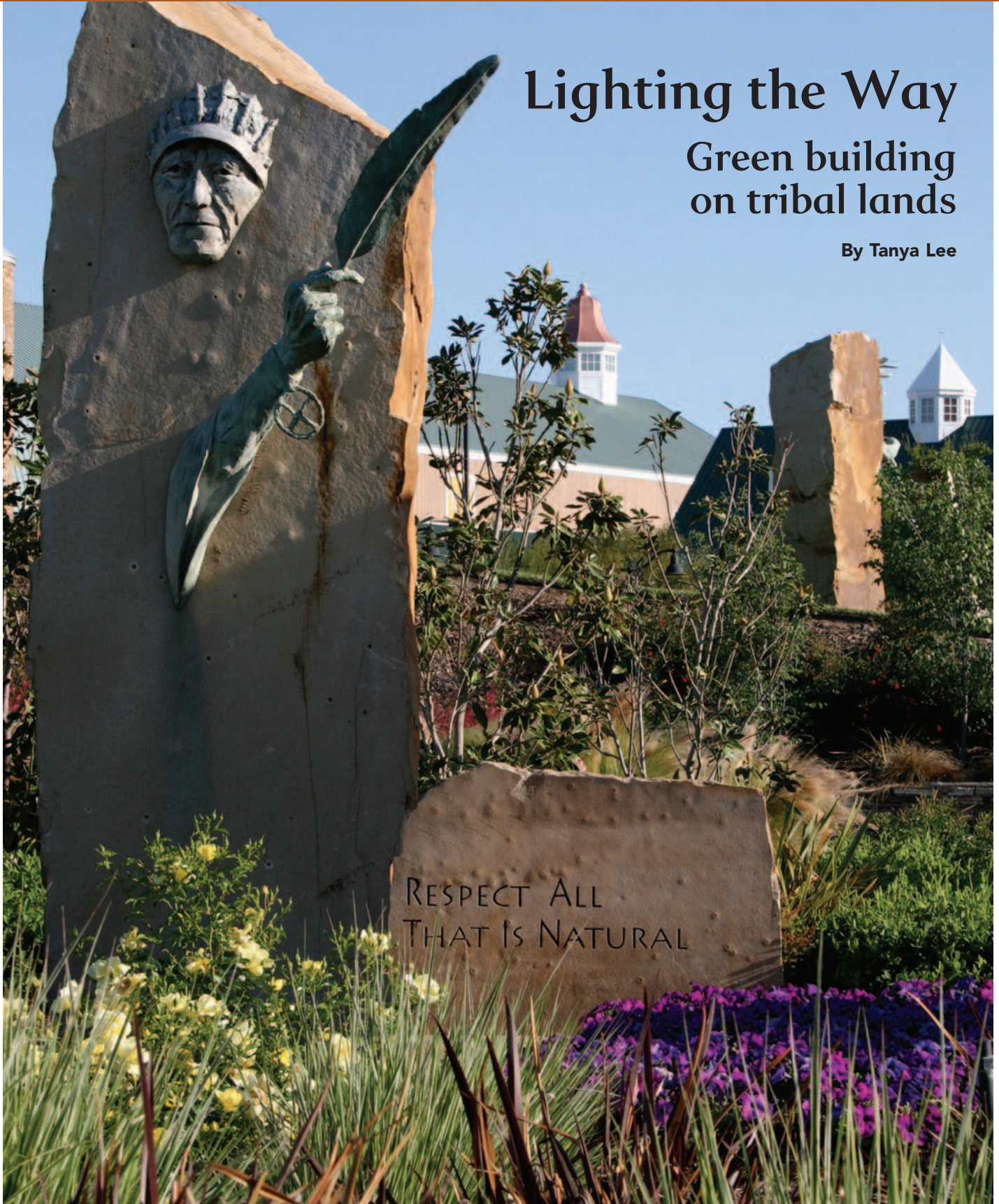


Lighting the Way

Green building on tribal lands

By Tanya Lee



The Barona Tribe's landscaping program includes plants, paving, and sculpture.

Conservation and sustainability, passwords to the twenty-first century, are nothing new in many Native American communities.

**As one tribal spokesperson said,
“We were doing green before anyone had heard of green.”**

Using everything from traditional practices to the most up-to-date technology, tribes have learned much about how to preserve the environment and develop robust economies at the same time. The programs described here show there's a lot more to creating sustainable environments than installing compact fluorescent light bulbs and telling the kids to turn off the water while they're brushing their teeth.

Water: Barona Band of Mission Indians

The arid California landscape near San Diego is home to the 400-member Barona Band of Mission Indians. In a desert environment, the tribe has dealt with water scarcity for a very long time, said Jay Bart, director of risk management. In response: “Many years ago the tribe began planning how to capture all of our water.”

Now, 100 percent of the water used by the tribe and by guests at the Barona Valley Ranch

Resort & Casino is processed at a state-of-the-art water reclamation plant. All of it — irrigation runoff, rainwater, condensation from air conditioners, morning dew and “every flush.” The primary disinfectant is ultraviolet light, which kills most bacteria. A modicum of chlorine takes care of the rest.

Before the reclaimed water is captured in retention ponds and used for landscaping, the sludge is squeezed out. The biosolids go to California's Imperial Valley as fertilizer.

Conserving and reusing water must start long before the water gets to the reclamation facility, explained Rick Messura, assistant general manager for hospitality operations. Everything that comes onto the reservation is selected and monitored to make sure it will not end up polluting the land. Chemicals used for cleaning in the resort casino and in tribal offices, for example, must be checked for compatibility with the water reclamation process.



Conceptual drawing of the Confederated Tribes of Warm Springs' proposed Bridge of the Gods at the Columbia River Resort Casino.



A guest room at the Aqua Caliente Casino & Resort Spa in Rancho Mirage, Calif., has roll-up shades that reduce solar gain. Photo courtesy of Agua Caliente Band of Cahuilla Indians.

Landscaping at the resort and golf course is a key component of the water conservation program. “We use drip irrigation even though drip systems are difficult to maintain. We use hand-watering if that’s called for,” said Bart. A weather station monitors water, soil and land conditions constantly. Bart can use radio controls to manage the watering regime. Even the lawn mowers used to groom the golf course have been called into action. They have sensors that relay back which sections need water and which do not.

“We don’t overwater and we don’t waste water,” said Bart. “We don’t plant what we can’t water. If we don’t have the water to use plants in a particular areas, our horticulturalist uses paving stones and other features to create a pleasing environment.”

The result of this complex, meticulously-executed program?

“Paradise,” said Bart and Messura almost simultaneously. “Come and visit.”

The U.S. Environmental Protection Agency recently honored the tribe with a 2007 National Clean Water Act Recognition Award for “outstanding and innovative technological achievements in wastewater treatment and pollution abatement pro-

grams.” Tribal officials expect the resort casino to achieve the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) certification. “We made sure we would exceed LEED standards.”

The Barona Tribe is eager to share its knowledge with other tribes and communities. Elected officials from nearby communities frequently tour the property, the water reclamation facility and the demo gardens, said Messura. Those who wish to visit need only call to schedule a tour.

Energy: Aqua Caliente Band of Cahuilla Indians

The Aqua Caliente Casino & Resort Spa in Rancho Mirage, Calif., 120 miles southeast of Los Angeles, has a new 340-room luxury hotel and a nearly-completed 2,000-seat showroom. These facilities are models of high-tech energy-saving construction.

The light color and the material of the hotel’s exterior envelope reduce solar gain — and the need for air conditioning, explained Tom Davis, chief planning and development officer for the tribe. The color reflects light, and the material absorbs less heat than conventional exterior finishes.



Aqua Caliente Casino & Resort Spa’s exterior. Photo courtesy of Agua Caliente Band of Cahuilla Indians.

In the showroom (a facility for entertainers, boxing matches, fashion shows and other such events), air conditioning ducts are set in the floor, not near the ceiling as is usual. “We can turn on the A/C just before people come in, and patrons feel the cool air as soon as they sit down,” said Davis. No longer necessary: running the cooling system for an hour or two before showtime in order to prechill the building.

High-efficiency transformers distribute electricity in the building. They are more expensive to put in, Davis said, but they transfer electricity into the building more efficiently than regular transformers and thus save significant energy and money. LED lighting and compact fluorescent bulbs illuminate corridors.

Many green innovations, such as the transformers, cost more upfront and save money as the years go by. But that’s not always the case, explained Cherie Hayek Morgan, LEED specialist at the firm Hnedak Bobo Group, which has designed a number of projects on tribal lands. “People always immediately think that sustainable costs more, but many features of a building that contribute to sustainability don’t cost anything. An example is how

you site the building, which can have a huge impact on energy costs for heating and cooling.”

Waste Management: Coquille Indian Tribe

The Coquille Indian Tribe in North Bend, Oregon, has just completed a \$40-million casino expansion project that includes a seven-story, 92-room hotel tower. They have found that one of the best ways to conserve resources and energy is to reuse and recycle. Waste management is a keystone of their environmental program.

Richard Rudder, executive director of facilities management, has put his expertise to work to create an ambitious recycling program. The tribe conducted a comprehensive — and by its very nature, low-tech — waste audit. “We took the trash bags out of the compactor, opened them up, and figured out what was inside that

could be recycled,” said Rudder.

Bill Snyder, general manager of Coquille Cranberries, said, “We found that 35 percent to 50 percent of waste going to the landfill could be recycled, not counting food wastes. Within the next 12 to 18 months all of that material, a total of 156 tons a year, he estimated, will be recycled.

In partnership with the Star of Hope Group, the tribe started by shredding and recycling office documents.

Newspapers, magazines and cardboard went to the county dump for recycling. But that was pretty much the end of it. “We are in rural Oregon,” Rudder said, “The recycling opportunities are not that great.”



The Coquille Indian Tribe's waste audit was not a high-tech investigation.

So he is working with the manager at the dump to create more and better opportunities. A significant challenge for the county — and for many Native American communities — is distance. “The county has to haul a semi truckload of recyclables to the nearest recycling cen-

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Source: U.S. Green Building

ter, which is 280 miles away in Portland, Ore. The county makes money on paper and cardboard, but recycling glass, plastic and aluminum will probably cost money. For example, light bulbs are a problem to recycle. "That will cost us money," said Rudder, "but it's okay." A clear example of "lighting the way" to more sustainable practices.

With recycling outside of the local community so difficult, Rudder has developed some closer-to-home strategies. In the casino, items that can't be used are sent back to purchasing, inventoried and stored in a large garage — slot stools, computer desks, CPUs. When someone needs a special desk chair for health reasons, for example, their regular chair is sent to purchasing where it is inventoried and stored. It will go to the next employee who needs a desk chair.

Computer CPUs are recycled through a business that employs developmentally-delayed people. "They recondition the CPUs and sell them." Others, to the tune of truckloads full, go to local high schools. Computer monitors are more difficult to deal with, and Rudder is still looking for a feasible way to reuse or recycle them.

Discarded linens go to charitable organizations to sell and to local clinics and school programs, and grease from the kitchens is converted to diesel fuel for the tribe's organic cranberry farm. Snyder said the effort fuels three trucks, a dumptruck, and a vehicle used by another tribal enterprise, ORCA Communications.

All leading to one conclusion: Trash is about to become very scarce on the Coquille Indian Reservation.

An Ethic: Grand Traverse Band of Ottawa and Chippewa Indians

The Grand Traverse Band of Ottawa and Chippewa Indians' Turtle Creek Casino & Hotel in Michigan, like all of the projects discussed in this article, is a symbol and an embodiment of the tribe's cultural and environmental values. Put simply, "The tribe is taking care of the earth. It is our responsibility to do this."

The Turtle Creek project is a 350,000-square-foot expansion of the tribe's original gaming facility. It includes a 137-room hotel and several restaurants, one of which is the higher-end Bourbon 72 with its 2,400-square-foot green roof planted with grasses, shrubs, and flowers.

In contrast to most casinos, this one is designed to use natural light provided by a skylight running the length of a football field from the casino entrance to the hotel, an innovation guests find appealing.

The floor of the casino is raised so louvers in the floor can accommodate a forced air ventilation system that strips the

toxins out of the circulated air before it is released back into the environment. "The air ends up cleaner when it goes out than when it came in," said Sean Carlson, the tribe's marketing director.

An unusual if not unique feature of this casino project is the 12 Champion Maples on the property. "These are old-growth genetically-superior trees that the tribe is reintroducing back into the ecology," said Carlson. The trees, he said, indicate the level of the tribe's commitment to stewardship. "Each one of these trees costs \$3,000 as opposed to the \$300 we would expect to pay for a standard tree. And just looking at them, no one knows the difference." He strongly recommends this strategy as a "best practice" for other tribes. The trees were obtained from the Champion Tree Project, <http://www.championtrees.org/champions/index.htm>.

Stephen Knowles of Walsh Bishop Architects designed this project. He offered some insight into how designers work with tribes. "Tribes we have worked with have a core belief that their role is to be keepers of the land. We work collaboratively to show how design ideas in their project can embody and support this belief."

Asked what are some of the most effective strategies a green casino might utilize, he suggested, "Mechanical systems, site design and management for water and day lighting have had a significant effect on our recent designs. We are now looking at material innovations to see how this can increase the sustainable performance goals of our projects."

LEED Certification: The Confederated Tribes of Warm Springs

No casino, Indian or otherwise, has yet achieved LEED certification.

"LEED certification provides independent, third-party verification that a building project meets the highest green

building and performance measures,” said Hnedek Bobo Group's Cherie Hayek Morgan. “Any third-party verification brings public recognition because it indicates an understanding of an ethic at a high level of sustainability. Projects that have certification get a lot of publicity.”

The Confederated Tribes of Warm Springs' proposed Bridge of the Gods Columbia River Resort Casino is designed to meet LEED standards, said tribal attorney Ellen Grover of Karnopp Petersen LLP.

Planning for the \$389-million, 603,000-square-foot riverfront destination resort and casino designed by Walsh Bishop Architects includes a state-of-the-art ventilation system, a green roof to reduce runoff and filter storm water, vegetation amendments to get rid of invasive species, solar lights in the parking lot and parking structure, public transportation for employees and customers, and a commitment to carbon neutrality. “The tribe will perform a carbon inventory and use local mitigation and an offset program for operating the facility,” said Grover.

The 4,600-member tribe has executed a gaming compact with the State of Oregon, but it cannot be approved until land on which to build the project is secured. The tribe has filed a request asking the Bureau of Indian Affairs to take into trust 25 acres of land in the city of Cascade Locks for the project. The 90-day comment period on the draft environmental impact statement ended May 15. Now the BIA is responding to those comments, as is required by law.

Because the site is within the Columbia River Gorge National Scenic Area, and because the tribe's intent is not always understood, the project has generated considerable public opposition. Grover's response: “The project will be on the river and this is a river tribe. The Columbia River is a very important resource, and the tribe intends to display its environmental values in this project.

“The facility will be located in what has already been defined as the urban area in the Columbia River Gorge National Scenic Area,” she continued. “Some of our opponents object because of the location of the project, but it is a site within the scenic area that will be developed in any case. The Columbia River Gorge National Scenic Area Act calls for the preservation of natural and cultural resources, as well as economic development in a defined urban area, which is already exempt from the scenic regulations.”

The EIS, said Grover, is a study of environmental impacts, so the tribe's commitment to building a green project will be taken into consideration as the BIA makes its decision on the fee-to-trust land application.

These Native American tribes are indeed lighting the way to a future when a commitment to conservation and sustainability is not expressed by barely-significant gestures but by practices that that actually get the job done. ♦

Not Only Casinos: Confederated Tribes of the Umatilla Indian Reservation

From solar projects to wind investments to recycling whole buildings, every tribe we talked to was pursuing environmentally-sound projects in addition to their casinos and resorts.

The Confederated Tribes of the Umatilla Indian Reservation are planning a tribal services building that incorporates many of the best features of responsible building, though the tribe is not looking for LEED certification. “We don't consider it a green building, but it was designed with a green idea in mind,” said Rob Quaempts, director of public works.

The project is still on the drawing board, but the tribe has already enrolled in the Oregon Energy Trust, Quaempts explained, which provided \$150,000 in incentives. Some of the features planned for the facility are exterior window shading, improved storm water conduits so that water infiltrates the ground instead of going into storm water drains, and landscape grading away from the building to direct water to natural catch basins where it will be used for landscaping.

Quaempts said the tribe considered using alternative power generation for the building, “but we cannot put a hold on the building to make it solar-ready. The wiring is there to hook up solar energy paneling and wind power.”

Croswell explained that the tribe is an investor in the Rattle Snake Road wind project, and it could be possible to forge a link between the new government services building and the project. The tribe is also co-owner of a natural gas-fired power plant.

The tribe is the largest non-government employer in Washington State with 1200 employees. Thirty-four percent of the employees in the tribe's enterprises (as opposed to its government) are non-tribal members.

“The City of Pendleton and the county look to us as leaders in economic development,” said Croswell.

As this project moves forward, they could soon be looking to the tribe as leaders in green development as well.



Confederated Tribes of the Umatilla Indian Reservation Executive Director Don Sampson and Public Works Director Rob Quaempts review architectural drawings of the tribes' new tribal services center.