Partnering with the Pinoleville Pomo Nation: A Human Centered Co-Design Approach

Ryan Shelby  
Alfred P. Sloan Ph.D. Student Fellow  
Dept. of Mechanical Engineering

Angela James  
Vice Chairperson of the Pinoleville Pomo Nation  
Dir. Of Tribal Economic Development

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Introduction to CARES

• CARES is an engineering and sustainability assessment organization based at UCB

• Participants include community, industry, academia, and government reps

• Team members disciplines:
  – Architecture
  – Engineering
  – Business
  – Environmental Design and Planning
Mission of CARES

• Enable consumers and stakeholders to make informed decisions about sustainability and renewable energy technologies.
The Pinoleville Pomo Nation

- The Pinoleville Pomo Nation is a Native American tribe located in Mendocino County
The Pinoleville Pomo Nation: Ukiah Parcel

- The PPN’s land reserve consists of ~106 acres on two parcels
Concerns of the Pinoleville Pomo Nation

- Rising heating and cooling costs
- Drought conditions
- HUD-financed housing provides basic necessities
- No representation of the cultural and traditional values
Pinoleville Pomo Nation and UC Berkeley Partnership

• Engineering 10 is a freshmen engineering design class

• Project goal: Assess the needs and design sustainable housing that could be integrated into the tribal community
Human Centered Co-design Innovation Workshop

• Workshop held to understand needs and brainstorm concepts with PPN.

• End user is the expert!

• Community generated knowledge is a priority
Innovation Workshop: Top Needs

- Energy Conservation
- Learn and Use Traditional Techniques (Cultural Values)
- Privacy
- Exercise
- Storage
- Safety
- Comfort
- Lower Energy Costs
- Space
Design 2: Daylighting with green roof and ground cooling
Culturally Relevant Innovative Building
A Real-life Lesson in Design

What started as a six-week project for freshmen engineering students may create culturally sensitive and energy-efficient housing for a small California Indian tribe.

A roundhouse-style design conceived in last spring’s E10 Engineering Design and Analysis course has been embraced by members of the Pinoleville Pomo Nation. The tribe plans to submit the UC Berkeley concept when it applies for federal funding to build up to 25 new homes in the Mendocino County community of Ukiah.

“There’s an acute need for housing here,” says David Edmunds, environmental director for the tribe, which has about 300 members scattered throughout Northern California. “Housing is considered a linchpin for a lot of things the tribe wants to accomplish.”

Student design embraced by Pinoleville Pomo Nation

What started as a six-week project for engineering freshmen is helping to create culturally sensitive and energy-efficient housing for a small California Indian tribe.

A yurt-style house design conceived in last spring’s E10, Engineering Design and Analysis, was used as the base concept for several successful housing grant applications by members of the Pinoleville Pomo Nation (PPN), who will use the funds to build up to 26 new homes in the Mendocino County community of Ukiah, California.
Outcomes of Partnership

• Empowered the PPN to make informed decisions about various renewable energy options

• E10 students were able to develop professional and communication skills

• Federal funding secured to build culturally inspired sustainable homes and buildings

• Construction begins in Summer 2009
Final Thoughts

• Successful products/projects must have constant user interaction

• Human centered design: needs of community are the priority

• Power dynamics are equal or shifted towards the community

• Co-designing  Best solutions  Willingness to Adopt

• A model for future collaboration between Native Americans tribes and universities
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Q/A?

- Email: ryan_shelby@berkeley.edu
- Office: (510) 643-8146