Partnering with the Pinoleville Pomo Nation: A Human Centered Approach

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Agenda

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- Technology and Human Centered Design
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- Pinoleville Pomo Nation and Berkeley Partnership
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- Outcomes of the Partnership
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About Me

- Home: Letohatchee, AL
- 3rd yr. doctoral student in Mechanical Engineering
- Research Focus: Sustainability, Product Design, Expert Systems
- Graduation: May 2011

Sustainability Technology

- Some technology solutions:
- Great concern about environmental impacts

Sustainability Technology

- Slow adoption by populous

- Reasoning:

Technology and Human Centered Design

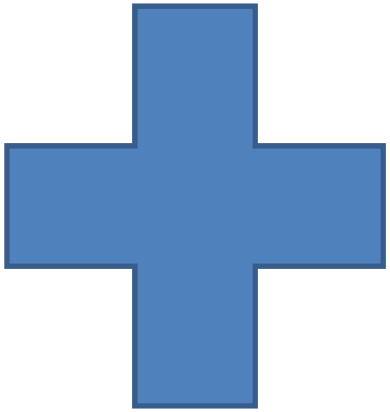
- Technology Centered Design focus:

  Performance and Reliability

Technology and Human Centered Design

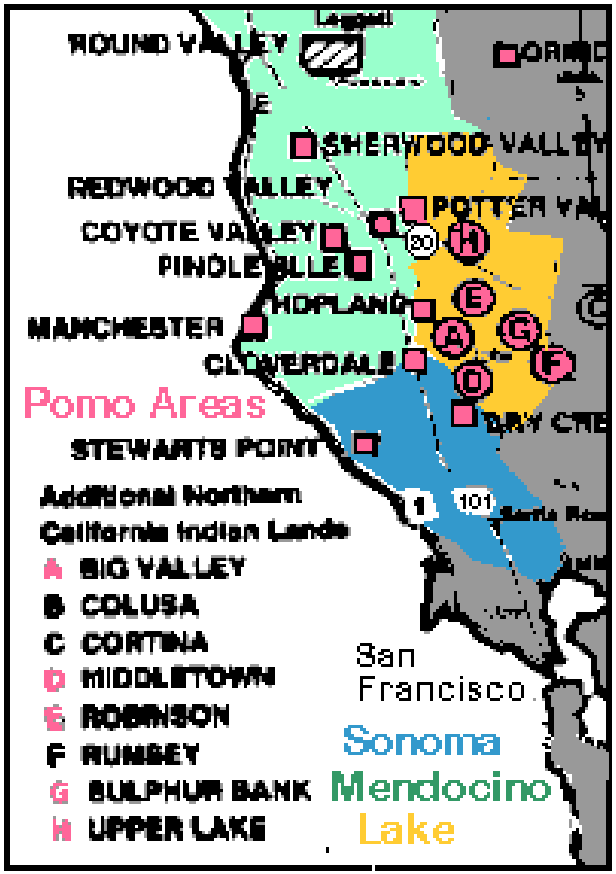
- Human Centered Design focus:

  Meet needs of people
  Maintain performance and reliability



The Pinoleville Pomo Nation

- The Pinoleville Pomo Nation is a Native American tribe located near Ukiah, CA



Concerns of the Pinoleville Pomo Nation

- ~300 members scattered throughout N. CA
- Most are seeking to return to the lands of the PPN

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

Innovation Workshop

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

- End user is the expert!

- Engage with end user constantly!

Innovation Workshop: Top Needs

- Energy Conservation
- Learn and Use Traditional Techniques (Cultural Values)
- Privacy
- Exercise
- Storage
- Safety
- Comfort
- Lower Energy Costs
- Space

Innovation Workshop: Brainstormed Concepts

Design 1: Wind with Grey Water System and Pedal Power

E10 Rounded Yurt Style Home Prototype

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 sought to build culturally inspired sustainable homes and buildings
- Initiated discussion within the PPN about other ways to implement sustainability best practices in the community

Future Status

- Architecture studio in spring will further refine initial prototype

- PPN and E10 students will start brainstorming additional power generations options

- Introduction to engineering for youth

- Partnership with CARES:
  - create a Tribal Strategic Energy Plan
  - create GIS maps of renewable energy potential
  - install PV and solar hot water systems

Final Thoughts

- A model for future collaboration between Native Americans tribes and universities
- Sustainability allows one to have a higher quality of life
- Successful products/projects must have constant user interaction
- Co-designing → Best solutions → Willingness to Adopt

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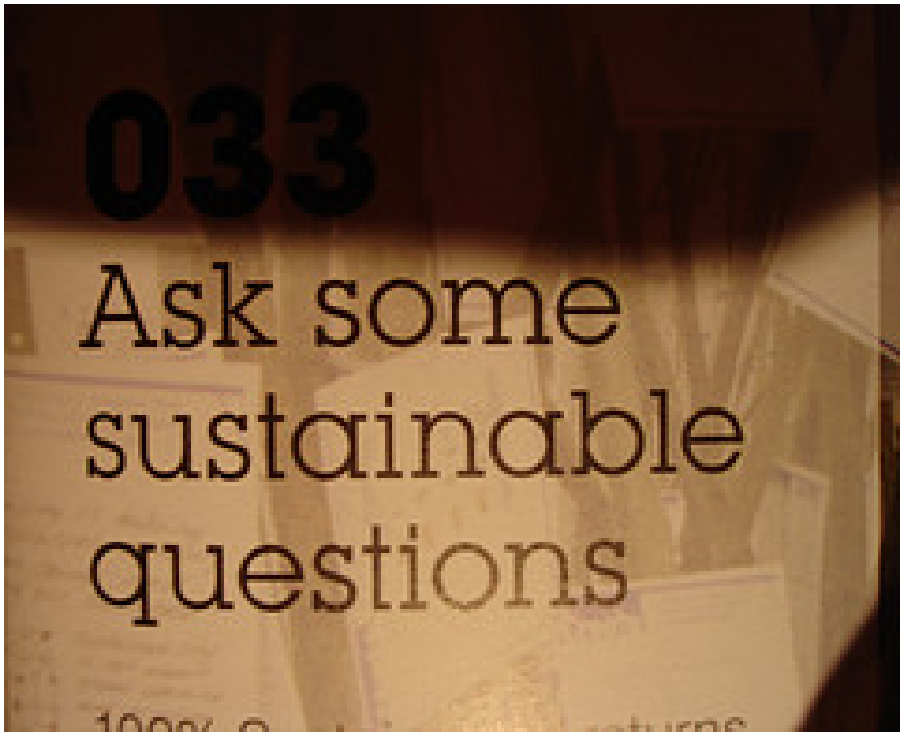
Q/A?



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