Earthship Biotectures

Experimental Subdivision in Taos, New Mexico
Greater World Earthship Community

Ann Schmidt
Sustainability and the Built Environment
What is an Earthship?

Building with natural & recycled materials
Solar and wind electricity
Food production
Thermal/solar heating & cooling
Water harvesting
Contained sewage treatment
Natural and Recycled Materials

- Used Tires
  - Rammed earth tires are the frame of the structure

- Bottles and Cans
  - Used as a filler to minimize the use of concrete in the structure.

- Adobe
  - Plaster
  - Interior walls
  - Exterior landscaping walls
Solar Heating and Cooling

- **Passive Solar Design**
  - Southern Oriented
  - Wall of glass

- **Thermal Mass Construction**
  (heats and cools slowly to maintain comfortable temperatures)
  - Rammed earth tire construction
  - Burmed earth wall connects to deeper earth mass
  - Stone, concrete, or tile flooring
Water Harvesting & Contained Sewage

- Rain water and snow is collected from the roof
- Stored in large cisterns
- Used 4 times
  1. Filtered and used for drinking, bathing and cleaning
  2. Grey water is then filtered through an indoor botanical cell and used to grow plants for food
  3. Recycled grey water is used to flush toilets
  4. Black water is then treated in a septic system, then used to irrigate outer botanical cell.
Solar and Wind Electricity

- Earthships produce their own electricity with a prepackaged photovoltaic / wind power system.

- This energy is stored in batteries and supplied to electrical outlets.

- Earthships can have multiple sources of power, all automated, including grid supplement.
Packaged Earthship
Who developed the Concept?

Michael Reynolds

Michael Reynolds is an Architect/developer of Earthship Biotectures. Mr. Reynolds has been developing Earthships for over 30 years. He is the developer of the Greater World Earthship Community.
The Greater World Earthship Community

“That which contributes to its surroundings in the world at large is constantly reinforcing it’s own existence.”
Ground View
Aerial Photo & Plat Map
Gravel Pit Reclamation Project
Gravel Pit Reclamation Project
Close Up
Conclusion

This architecture exceeds the general expectations of a sustainable building.

- What would entice a developer to build a subdivision in CA?

- Is this a realistic subdivision for California’s central valley?
More Information

http://www.earthship.org
Organization researching development of Earthships

http://www.pinkhammer.blogspot.com/
Find out how one woman at the Greater World community built her Earthship.

http://www.lowcarbon.co.uk
Earthship research in the UK.