How might sustainable architecture satisfy the socio-economic needs of a rural community?

Determining a Need
Bowbells' major sources of business are agriculture and oil. Having both is putting a strain on the community's infrastructure.

Before oil activity hit the area, small businesses, such as a grocery store and an auto repair shop, were closed, including a grocery store and an auto repair shop. These essential businesses are not the only establishments the community has lost. Bowbells also lost a diner and swimming pool, which gave residents a place to gather.

Now, with oil activity at the back door, the population is rising but there is little to no housing available.

Satisfying a Need
A mixed-use development such as this can satisfy more than one need.

- **Grocery Cooperative:** Providing a sense of community and restoring a much needed supply service.
- **Business Incubator:** Allowing small businesses and offices to be established.
- **Coffee Shop and Deli:** Giving residents and workers a place to meet and enjoy a meal.
- **Apartments:** Providing an opportunity for young families to establish roots in the community.
- **Courts:** Renovating an existing amenity will provide new parking and a safe place for play.

Sustainable Architecture

Sustainable developments can respond to the environment in a number of ways. Strategies used in this project include: recycling, composting, rainwater harvesting, and providing natural light and ventilation.

Developments such as this will establish connections by providing a community atmosphere, allowing users to interact with the environment by recycling or being outside, and finally designing to respond to climate as noted above.

To overcome green development's greatest flaw, the lack of understanding, this building will act as an example and provide information on designing green.

- **Rainwater Harvesting:** Rainwater collected from the roof will be stored in two large cisterns before being transferred to the pump and filter house located in the basement of the building. From there this water can be used as a grey water source and for irrigation when needed.

- **HVAC - VAV:** A variable air volume system is quite versatile and is frequently used in a building of this size. The one downfall of using this system is the limited control in certain areas. This problem can be overcome with a variable air volume (VAV) reheat system, in which a reheat coil and local thermostat is used to condition the air before entering the local ductwork.

- **Basketball Courts:** Across the alley is a lot owned by the city. To fulfill parking requirements, the courts will be renovated and a parking lot for both the courts and the building located of Railway Street.