

Sustaining Rural Communities









How might sustainable architecture satisfy the socioeconomic needs of a rural community?







Bowbells, North Dakota

Burke County Seat

Population: 350

Determining A Need

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

Before oil activity hit the area, small businesses were lost, including a grocery store and an auto repair shop.

Those essential businesses are not the only establishments the community 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

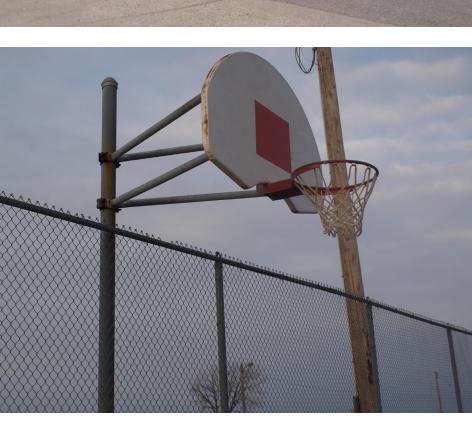
A mixed-use development such as this can satisfy more than one need.

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.

Showcasing Sustainability

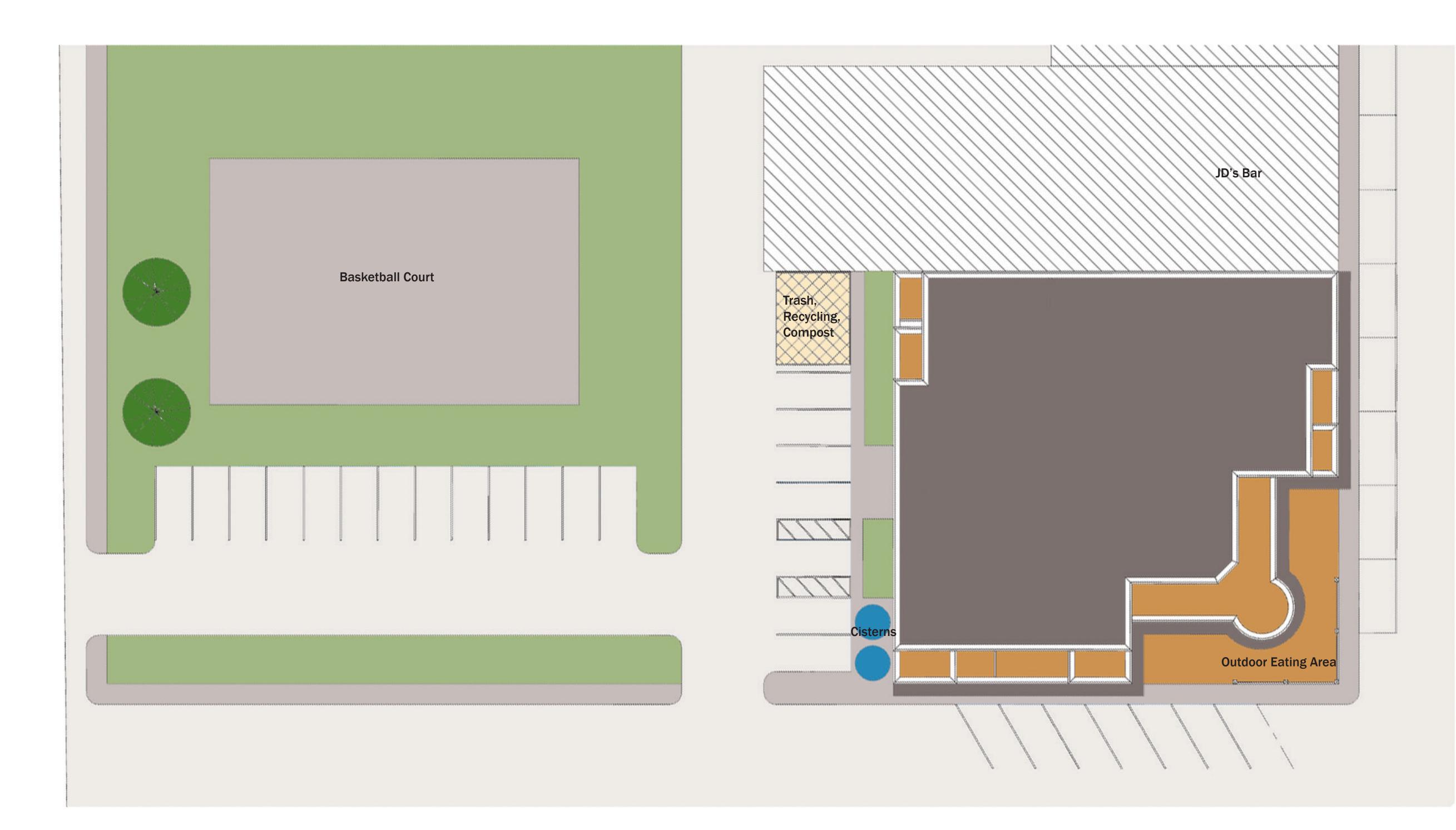
Sustainable developments can respond to the environment in a number of ways. Strategies used in this project include: recycling, composting, rainwater harvesting, and providing natural light and ventilation.

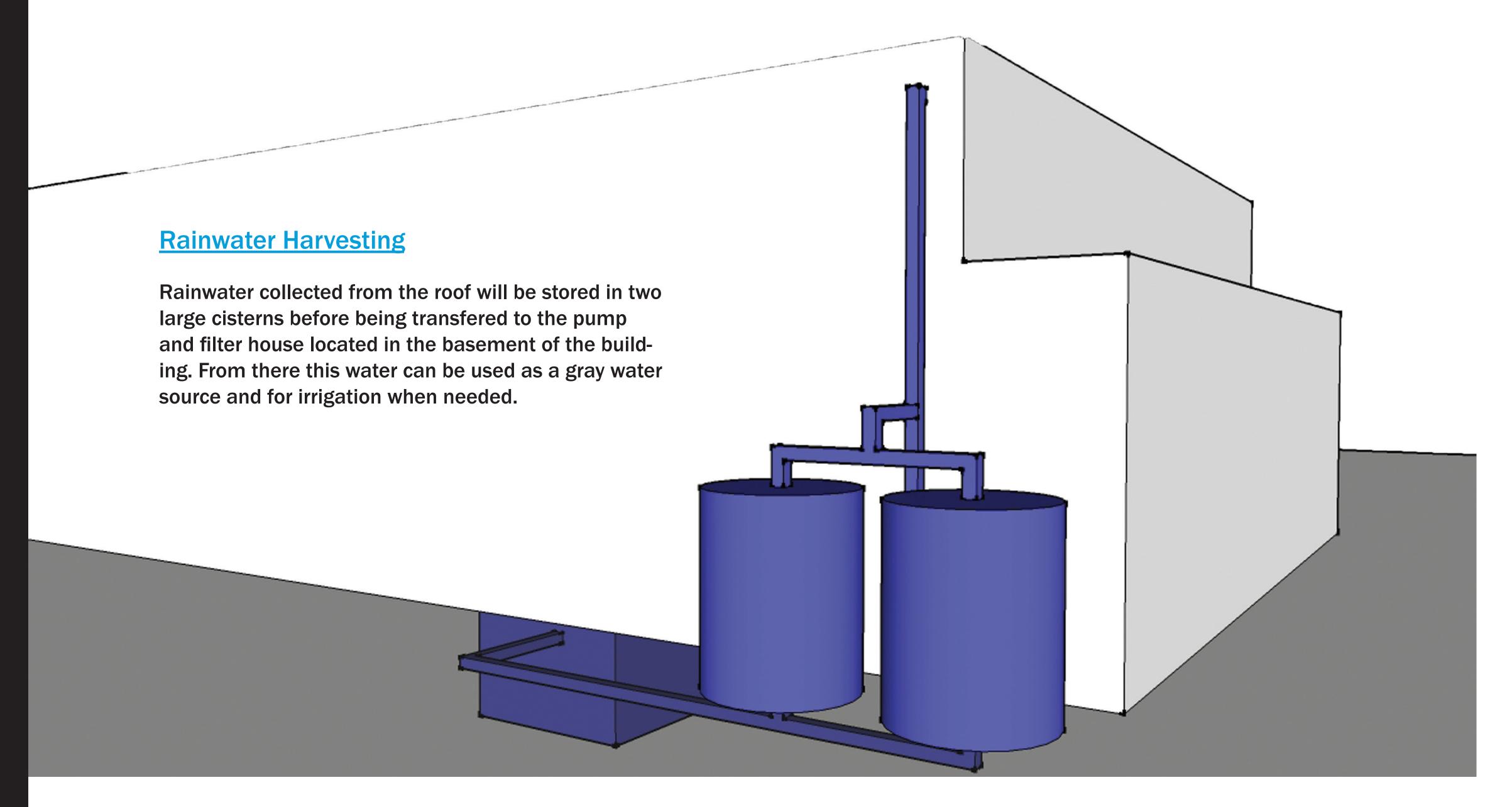
Sustaining Rural Communities
ARCH 772 Design Thesis
Samantha Parkinson
Advisor: David Crutchfield
Software Used: Revit, SketchUp, Adobe Suites

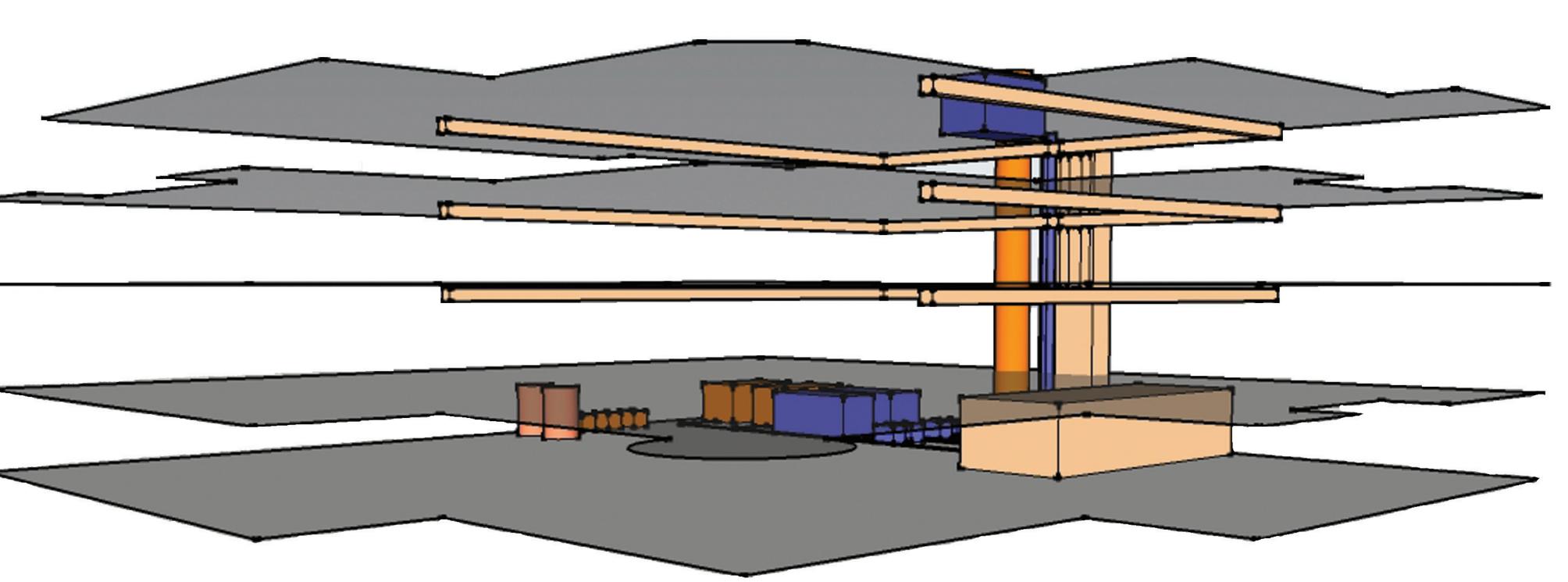
Developments such as this will establish connections by providing a community atmosphere, allowing users to interact iwth the environment by recycling or being outdoors, and finally designing to respond to nature as noted above.

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









HVAC - VAV

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