



Energy



Transportation



Buildings



Industrial



Agriculture



Sequestration

Zero Energy Community Evaluation

Client: University of California, Davis
Ongoing

When UC Davis developed the West Village residential community for students and faculty, the University's goal was to build comfortable, affordable, zero net energy housing. The buildings that include apartment, single-family homes, commercial spaces, and sites for the local school district incorporate aggressive energy efficiency measures coupled with on-site renewable generation designed to meet the community's entire annual energy demand.

Frontier Energy consulted on the community's design in 2010 to develop a cost-effective package of energy efficiency measures that provide favorable life-cycle economics and meet the community zero net energy goals. In 2016, we consulted on the first single-family models.

The Frontier team used several computer simulations to evaluate the hourly energy use preliminary building design options, and then analyze the energy and cost impacts of building materials, space and water heating, and a shift from gas to electric appliances.

In fall 2020, a new phase of West Village opened and added 1,500 student beds. The Frontier team continues to work with UC Davis and the other West Village partners to achieve the project's zero net energy objective.



FRONTIER ENERGY:

- Evaluated efficiency options that cost-effectively reduce the energy load of multi- and single-family residential and mixed-use buildings
- Worked with the developers to integrate energy features into the designs
- Evaluated initial and life-cycle economics and assessed local, state, and federal energy efficiency incentive opportunities
- Developed full-year hourly energy use profiles for individual building types and aggregated the profiles to develop a project-wide energy use profile



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