

# Rural Development, Inc.

**A developer dedicated to providing truly affordable homes by approaching the “zero-energy” goal.**

Rural Development, Inc. (RDI) has been recognized nationally as a leader in developing and building sustainable, affordable housing; part of RDI's mission is to provide efficient, healthy, affordable homes to residents of Franklin County, MA. RDI partnered with the U.S. Department of Energy's Building America Program and the Consortium for Advanced Residential Buildings (CARB), led by Steven Winter Associates, to achieve even greater levels of home performance. With this project, in partnership with local architects Austin Design, Inc., RDI is making a significant step towards creating Zero Energy Homes.

During the design of the home, RDI worked closely with CARB and Austin Design, Inc. to incorporate efficiency and renewable energy systems effectively and affordably. The 1,350-sq.ft. home, located in Colrain, MA, is expected to require 72% less energy to operate than a typical code-compliant home. The PV system is expected to provide 74% of the home's electricity needs, and the solar thermal system should provide more than 44% of the space and water heating loads.

This home is also serving as a prototype for RDI. Using many of the same advanced systems (such as double-wall construction and solar electric systems), RDI is working with Austin Design and CARB to design a 20-unit development in Greenfield, MA. The first homes in this development are scheduled for completion in summer 2008.



For more detailed information view our article in Energy Design Update [June 2007](#).

**Rural Development, Inc.** included these features to create an affordable home that is sustainable and energy-efficient. RDI plans to incorporate many of the same features in its upcoming solar village in Greenfield, MA.

## Renewable Energy Features

- 3.22 kW Evergreen Solar PV System with Magnetek Inverter
- 57 ft<sup>2</sup> of evacuated tube solar collectors by American Solar Works provide space heat and domestic hot water

## Energy Efficient Features

- Takagi tankless water heater provides auxiliary heat for radiant floor system and domestic hot water
- Paradigm Low-E Windows with Heat Mirror (U-0.20)
- R-50 blown-in cellulose insulation in roof
- R-43 blown-in cellulose insulation in 12” double wall
- R-20 insulated radiant slab
- Energy Star® Appliances
- 100% Compact Fluorescent Lighting

## Green Building Features

- Low-flow faucets, showerheads and dual-flush toilets
- Low-VOC paints
- Drought resistant grass seed
- Durable HardiePlank™ fiber-cement siding
- Polished concrete floor

## Best Practices

- Home owner education
- Proper air-sealing
- ASHRAE 62.2 Ventilation

## Certifications

- Exceeds Energy Star® Homes Standards with predicted HERS Index = 13
- Participating in the LEED® for Homes Pilot