



## Project Case Study

Discovery Village  
1075 Anamosa Street, Rapid City,  
South Dakota 57701

### About the Project

Type: Multifamily apartment complex  
Unit Size: 858-1056 square feet, 1-3  
bedrooms

Performance: ENERGY STAR certified and  
Hers index rating

Website: [Discovery Village Apartments](#)

Location: Rapid City, SD

### Verifiers voice:

Johnson Environmental specializing in consulting, building performance, testing and rating, modeling, and affordable construction, BlueLine Development INC., partnered with Johnson Environmental in order to get the proper testing and certifications needed. By doing this, the development was able to get certain funding and certifications from the South Dakota Housing Development Authority to be able to allow low-income families/individuals the opportunity to do more.



**Developer:** BlueLine Development, INC.

**Verifier:** Johnson Environmental

**Architect:** VanDeWalle Architects LLC

**MEP:** Civil Engineer: KTM Design Solutions, INC.

**Structural Engineer:** Rise Structural Associates INC.

**Mechanical Engineer:** Innovative Engineering Solutions LLC.

### Overview:

Discovery Village in Rapid City is an income-qualified apartment community with 36 one-two bedroom units that just finished construction in December of 2021. This property is a Low Income Housing Tax Credit project, in order to qualify to live here, you must not exceed the income amount per household. To be a low-income housing development, there are requirements and restrictions that must be met by the South Dakota Housing Development Authority.

### Tax credits

Johnson Environmental specializes in consulting, building performance, testing and rating, modeling, and affordable construction, BlueLine Development partnered with Johnson Environmental in order to get the proper testing and certifications needed. By doing this, the development was able to follow the guidelines of ENERGY STAR and the Hers rating index to receive a score of 47.



## Energy Code Checklist

→Energy Certificate:

- ENERGY STAR certified
- ENERGY STAR appliances
- Hers rating index between 51-53

→Window value:

- U-value=0.24

→Heating/cooling:

- Seasonal energy efficiency ratio (SEER) cooling system of 14
- Air furnace 95% annual fuel utilization efficiency (AFUE)

→Lighting:

- LED lighting

→Tests:

- Blower door test
  - Infiltration: Htg: 800 Clg: 800 CFM50
  - Total duct leakage: 70 CFM @ 25 pa

→Water heating:

- Electric, 3.57

→Green energy:

- Diversion of 100.2 tons of CO2

→Insulation/infiltration:

- R 23 wall insulation

**Rapid City, SD:**

Home to Mount Rushmore, Rapid City was rated a safe and low stress place to live. Aside from being surrounded by much forestry and mountains, this city is home to several colleges and historical locations. Tourism and property development have been growing, boosting the economy of Rapid City.

**Features consistent with ENERGY STAR:**

- Wheelchair accessible
- Programmable thermostats
- Exterior landscaping
- Drought-resistant plants and irrigation systems
- Washer/dryer
- Play area for children
- Savings of \$16,580 per year between units

**Chart of energy cost and consumption**

Annual Energy Costs	Annual Consumption British thermal units (MMBtu)
Heating.....\$55	Heating..... 6 (MMBtu)
Cooling.....\$32	Cooling..... 2.3 (MMBtu)
Water heating.....\$34	Water heating..... 1.3 (MMBtu)
Lights and appliances..... \$220	Lights and appliances..... 9.6 (MMBtu)
Total annual energy cost per year..... \$342 per unit	Total energy consumption..... 19.1 (MMBtu)

\*Based on a two bedroom unit. Prices may vary depending on monthly usage.



