



# JOHNSON ENVIRONMENTAL

## Project Case Study

### Nesmith Townhomes

208 North Nesmith Avenue  
Sioux Falls, SD

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#### About the Project

Type: Townhouse

Unit Size: 1,597 square feet, 3 bedrooms, 1 bath

Performance: ENERGY STAR certified and Hers index rating

Website: [Nesmith Townhomes](#)

Location: Sioux Falls, SD

**Developer:** Lloyd Companies

**Verifier:** Johnson Environmental

**Architect:** Koch Hazard Architects

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

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

#### Features:

-Annual savings of up to \$977 per unit

-Washer dryer in unit

-Dependable siding roofing, 30-year warranty

-Mold reduction techniques/products used

-Drought resistance plants and irrigation systems

#### Overview:

This community is located in Sioux Falls, SD and is supported by the Affordable Housing Solutions to be able to provide assistance on the process of putting a payment down. With it having a walking score of 67, privacy is still available with the option of walking or driving close by. Closely located next to the Nesmith Townhomes is Whittier Middle School, Augustana University, Falls Park, and many more activities and essentials.

#### Verifiers voice:

Johnson Environmental specializes in consulting, building performance, testing and rating, modeling, and affordable construction, Lloyd Companies has 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. This townhouse is not only energy efficient, but supports income restrictions.



## Energy Code Checklist

→Energy Certificate:

- ENERGY STAR certified
- ENERGY STAR certified appliances
- Hers rating index of 47

→Heating/cooling:

- Seasonal energy efficiency ratio (SEER) cooling system of 15
- Air furnace 96.2% annual fuel utilization efficiency (AFUE)

→Water heating:

- Natural gas, .69 EF

→Green energy:

- Up to 5 ton CO2 diversion per unit
- Up to 10 lbs/yr of Sulfur Dioxide prevented
- 19.9 lbs/ys of Nitrogen Oxides prevented

→Tests:

- Blower door test
  - Infiltration: Htg: 372 Clg: 372 CFM50
  - Total duct leakage: 90 CFM @ 25 pa
- Mechanical system design
- Moisture control or indoor air quality consulting

→Insulation/infiltration:

- R 21 wall insulation
- R 20 slab

→Window value:

- U-value=0.28

→Lighting:

- LED lighting

### Sioux Falls, SD

The city contains many different shopping options as it has a city feel to it while still having that option of privacy. It is home to many affordable housing options as well as many more up and coming buildings. With Sioux Falls having a population of nearly 181,000 people, this is the perfect city in South Dakota if you're looking for a nice place to settle down or pass through for some time.



### Chart of energy cost and consumption

Annual Energy Costs	Annual Consumption (MMBtu) one million British thermal unit
Heating.....\$241	Heating..... 32.3 (MMBtu)
Cooling.....\$39	Cooling..... 1.5(MMBtu)
Water heating.....\$91	Water heating..... 12.6 (MMBtu)
Lights and appliances..... \$352	Lights and appliances..... 15 (MMBtu)
Total annual energy cost per year..... \$724 per unit	Total energy consumption..... 61.3 (MMBtu)

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

