

April 28, 2021

To: Duane Bontrager - Facilities and Construction Manager, Harrisonburg  
Redevelopment and Housing Authority

Re: Lineweaver Annex, DHCD Housing Innovations in Energy Efficiency (HIEE) Funding

Dear Duane,

Per my preliminary analysis, Lineweaver Annex is projected to have a post-renovation weighted-average HERS score of 67. Therefore, the development is projected to meet the performance requirements for DHCD Housing Innovations in Energy Efficiency (HIEE) Funding.

I've included projected HERS certificates for each grouping of units for reference. Energy modeling assumptions for the renovation are listed on the following page.

In addition, the development plans to certify under the EarthCraft Virginia Multifamily Renovation (ECMFR) v5 green building program. Preliminary ECMFR scoring is included for reference.

Sincerely,



John C. Semmelhack  
owner, Think Little  
RESNET Rater #4837591



**ENERGY MODELING ASSUMPTIONS:**

**Slab on grade:** existing R-10 vertical insulation, except uninsulated at patios and elevated balconies

**Steel framed walls:** existing R-15 batt insulation between studs, new R-15 EPS exterior foam board insulation.

**CMU Walls:** new R-19 EPS exterior foam board

**New windows:**  $U = 0.32$ ,  $SHGC = 0.24$

**New 1/2 lite balcony/patio doors:**  $U = 0.23$ ,  $SHGC = 0.11$

**Roof:** New R-34 polyisocyanurate foam board under new membrane roof

**New Packaged Terminal Heat Pumps (PTHP)** (1 in living room, 1 in bedroom):  $COP = 3.3$ ,  $EER = 11.8$ , with integrated dehumidification cycle and outside air ventilation fan

**New heat pump water heater:**  $UEF = 3.75$

**Ventilation:** balanced ventilation systems - 50cfm continuous total exhaust from each unit (25cfm from bathrooms, 25cfm from kitchens) and 50 cfm continuous total supply (via PTHP units), 100W total fan power

**Low-flow fixtures:** shower heads and bathroom faucet aerators

**Lighting:** 100% LED indoor and balcony/patio lighting for apartments

**Refrigerator:** new, 400kWh/yr

**Dishwasher:** none

**Clothes washer and dryer:** none in apartments

**Air tightness:** 0.3cfm50/ft<sup>2</sup> apartment enclosure



# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: jL9RRP9d

### HERS® Index Score:

# 65

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$466

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type A - Unit 014  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	3.3	\$95
Cooling	1.4	\$39
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>19.7</b>	<b>\$672</b>

**This home meets or exceeds the criteria of the following:**

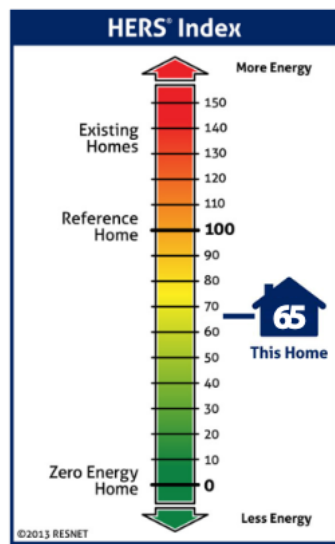
### Rating Completed by:

**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*  
John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:24 PM



### Home Feature Summary:

Home Type:	Apartment, inside unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Adiabatic, R-0
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A



# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: yL0GGlo2

### HERS® Index Score:

# 65

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$451

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type A - Unit 015  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	3.1	\$88
Cooling	1.3	\$38
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>19.4</b>	<b>\$665</b>

**This home meets or exceeds the criteria of the following:**

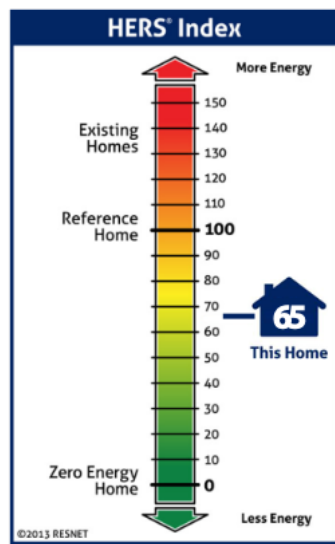
### Rating Completed by:

**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*  
John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:30 PM



### Home Feature Summary:

Home Type:	Apartment, inside unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Adiabatic, R-0
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A



Ekotrope RATER - Version:4.0.0.2661

The Energy Rating Disclosure for this home is available from the Approved Rating Provider.  
This report does not constitute any warranty or guarantee.

# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: M28m63zL

### HERS® Index Score:

# 66

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$455

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type B - Unit 016, 022  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	4.1	\$117
Cooling	1.4	\$39
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>20.5</b>	<b>\$694</b>

**This home meets or exceeds the criteria of the following:**

### Rating Completed by:

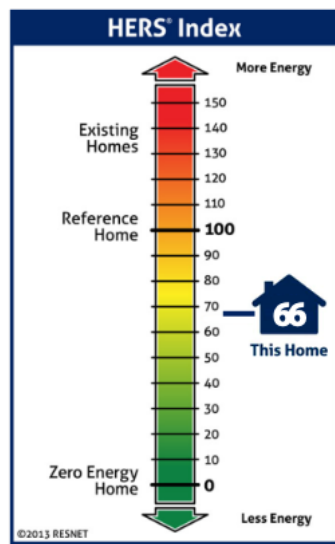
**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*

John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:35 PM



### Home Feature Summary:

Home Type:	Apartment, end unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Adiabatic, R-0
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A

# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: Pdayy7ed

### HERS® Index Score:

# 68

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$417

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type B - Unit 017, 019, 020, 021  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	3.5	\$99
Cooling	1.3	\$37
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>19.8</b>	<b>\$675</b>

**This home meets or exceeds the criteria of the following:**

### Rating Completed by:

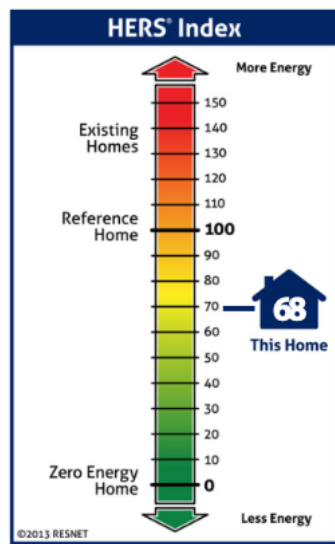
**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*

John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:45 PM



### Home Feature Summary:

Home Type:	Apartment, inside unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Adiabatic, R-0
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A



# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: ILKMXXev

### HERS® Index Score:

# 71

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$425

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type A - Unit 018  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	3.1	\$89
Cooling	1.4	\$40
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>19.5</b>	<b>\$668</b>

**This home meets or exceeds the criteria of the following:**

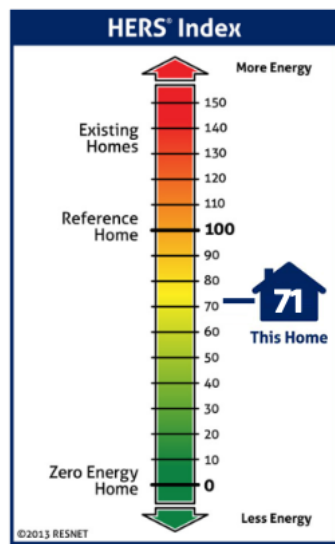
### Rating Completed by:

**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*  
John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:40 PM



### Home Feature Summary:

Home Type:	Apartment, inside unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Adiabatic, R-0
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A

# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: MvDjjanL

### HERS® Index Score:

# 69

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$381

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type B - Unit 023, 024  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	3.4	\$97
Cooling	1.3	\$38
Hot Water	4.8	\$135
Lights/Appliances	10.8	\$307
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>20.4</b>	<b>\$692</b>

**This home meets or exceeds the criteria of the following:**

### Rating Completed by:

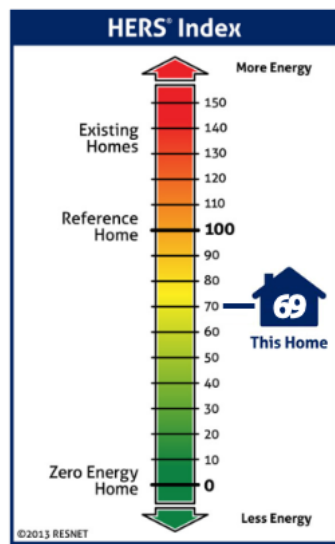
**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*

John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:50 PM



### Home Feature Summary:

Home Type:	Apartment, inside unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 0.9 Energy Factor
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 50 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Adiabatic, R-0
Window Type:	U-Value: 0.3, SHGC: 0.32
Foundation Walls:	N/A



# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: VdGIIIDzv

### HERS® Index Score:

# 69

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$445

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type A - Unit 025  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	3.6	\$101
Cooling	1.4	\$39
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>19.9</b>	<b>\$679</b>

**This home meets or exceeds the criteria of the following:**

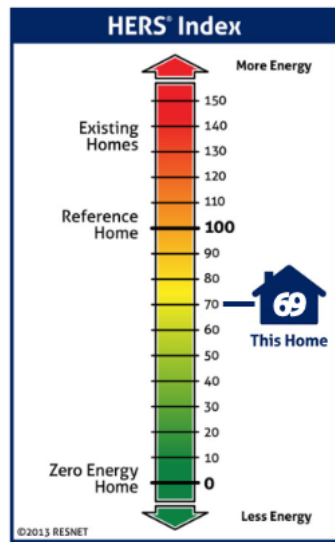
### Rating Completed by:

**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*  
John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:59 PM



### Home Feature Summary:

Home Type:	Apartment, inside unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Adiabatic, R-0
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A

# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: YdxrrYZ2

### HERS® Index Score:

# 62

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$466

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type A - Unit 114-314  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	2.8	\$78
Cooling	1.3	\$37
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>19.1</b>	<b>\$654</b>

**This home meets or exceeds the criteria of the following:**

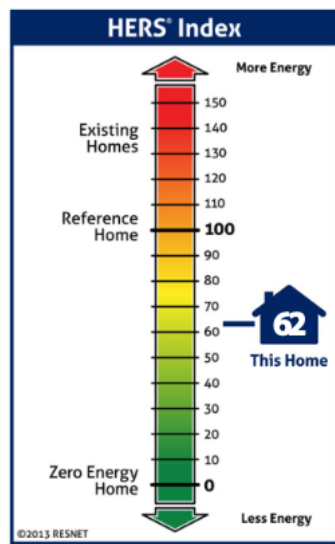
### Rating Completed by:

**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*  
John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:27 PM



### Home Feature Summary:

Home Type:	Apartment, end unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Adiabatic, R-0
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A

# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: MvDjjBQL

### HERS® Index Score:

# 63

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$450

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type A - Unit 115-315  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	2.5	\$72
Cooling	1.3	\$36
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>18.8</b>	<b>\$647</b>

**This home meets or exceeds the criteria of the following:**

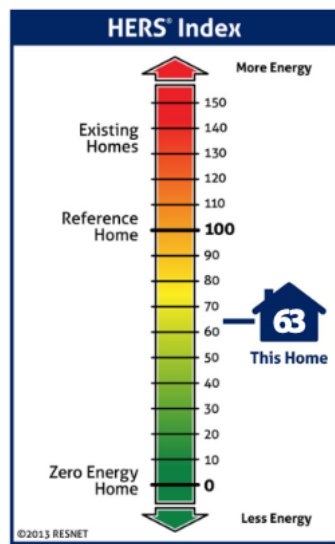
### Rating Completed by:

**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*  
John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:31 PM



### Home Feature Summary:

Home Type:	Apartment, end unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Adiabatic, R-0
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A



Ekotrope RATER - Version:4.0.0.2661

The Energy Rating Disclosure for this home is available from the Approved Rating Provider.  
This report does not constitute any warranty or guarantee.

# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: 7dBZVVgd

### HERS® Index Score:

# 66

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$448

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type B - Unit 116-316, 122-322  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	3.6	\$102
Cooling	1.4	\$39
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>19.9</b>	<b>\$679</b>

**This home meets or exceeds the criteria of the following:**

### Rating Completed by:

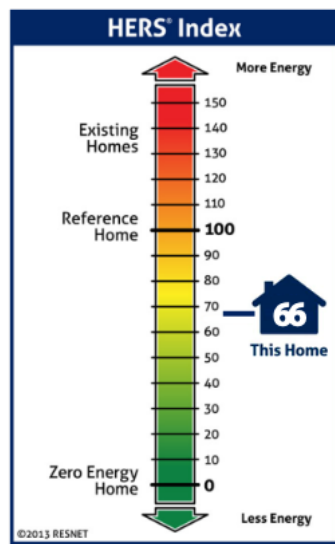
**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*

John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:37 PM



### Home Feature Summary:

Home Type:	Apartment, end unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Adiabatic, R-0
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A

# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: 0vQyyRxv

### HERS® Index Score:

# 68

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$419

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type B - Unit 117-317, 119-319, 12  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	3.3	\$93
Cooling	1.3	\$38
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>19.6</b>	<b>\$669</b>

**This home meets or exceeds the criteria of the following:**

### Rating Completed by:

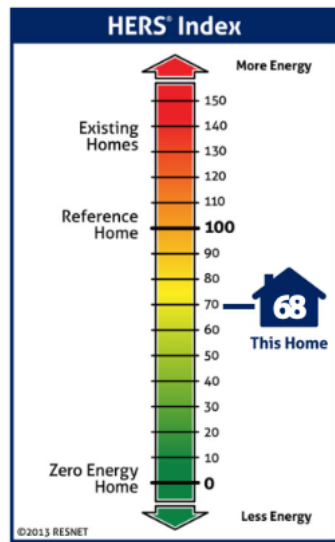
**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*

John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:46 PM



### Home Feature Summary:

Home Type:	Apartment, end unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Adiabatic, R-0
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A



# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: pdWBqq0L

### HERS® Index Score:

# 69

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$430

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type A - Unit 118-318  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	2.7	\$78
Cooling	1.3	\$38
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>19.1</b>	<b>\$654</b>

**This home meets or exceeds the criteria of the following:**

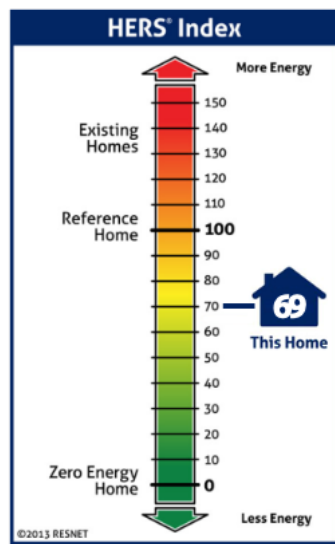
### Rating Completed by:

**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*  
John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:41 PM



### Home Feature Summary:

Home Type:	Apartment, inside unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Adiabatic, R-0
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A



# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: jL9RRrzd

### HERS® Index Score:

# 68

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$421

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type B - Unit 123-323, 124-324  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	3.3	\$94
Cooling	1.2	\$35
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>19.5</b>	<b>\$668</b>

**This home meets or exceeds the criteria of the following:**

### Rating Completed by:

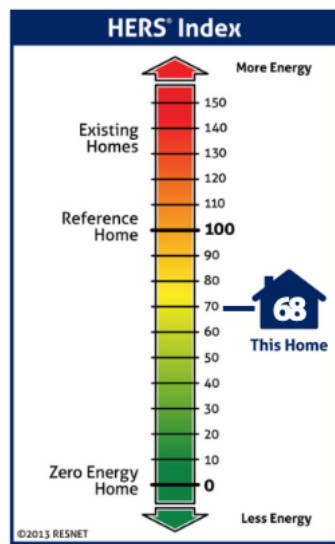
**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*

John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:52 PM



### Home Feature Summary:

Home Type:	Apartment, end unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Adiabatic, R-0
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A



Ekotrope RATER - Version:4.0.0.2661

The Energy Rating Disclosure for this home is available from the Approved Rating Provider.  
This report does not constitute any warranty or guarantee.

# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: zLOyyWGv

### HERS® Index Score:

# 64

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$446

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type A - Unit 125-325  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	2.9	\$83
Cooling	1.3	\$36
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>19.2</b>	<b>\$658</b>

**This home meets or exceeds the criteria of the following:**

### Rating Completed by:

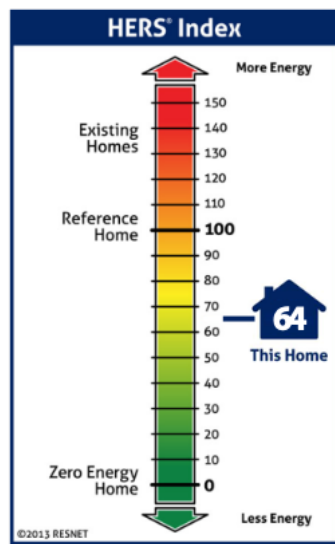
**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*

John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 9:00 PM



### Home Feature Summary:

Home Type:	Apartment, inside unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Adiabatic, R-0
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A



Ekotrope RATER - Version:4.0.0.2661

The Energy Rating Disclosure for this home is available from the Approved Rating Provider.  
This report does not constitute any warranty or guarantee.

# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: YLerrW5d

### HERS® Index Score:

# 66

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$470

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type A - Unit 414  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	3.5	\$98
Cooling	1.5	\$44
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>20.0</b>	<b>\$680</b>

**This home meets or exceeds the criteria of the following:**

### Rating Completed by:

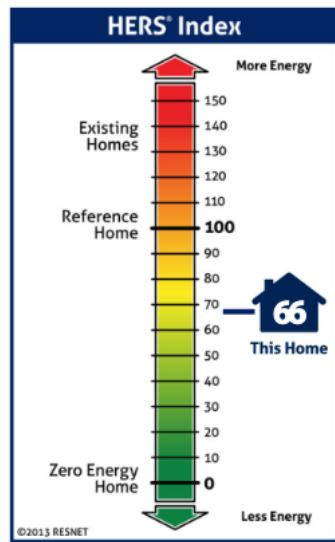
**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*

John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:28 PM



### Home Feature Summary:

Home Type:	Apartment, end unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Vaulted Roof, R-34
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A

# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: 6LAXxBe2

### HERS® Index Score:

# 65

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$459

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type A - Unit 415  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	3.1	\$87
Cooling	1.5	\$42
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>19.5</b>	<b>\$667</b>

**This home meets or exceeds the criteria of the following:**

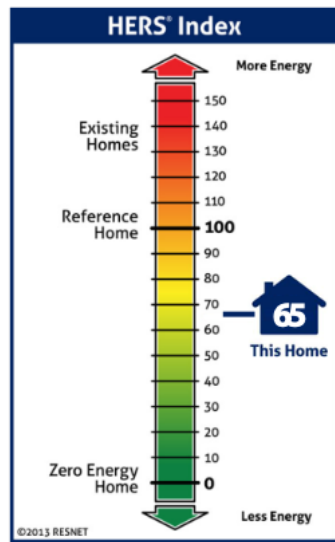
### Rating Completed by:

**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*  
John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:33 PM



### Home Feature Summary:

Home Type:	Apartment, end unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Vaulted Roof, R-34
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A



Ekotrope RATER - Version:4.0.0.2661  
The Energy Rating Disclosure for this home is available from the Approved Rating Provider.  
This report does not constitute any warranty or guarantee.

# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: gdEJ55lv

### HERS® Index Score:

# 67

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$460

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type B - Unit 416, 422  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	4.1	\$115
Cooling	1.5	\$43
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>20.6</b>	<b>\$697</b>

**This home meets or exceeds the criteria of the following:**

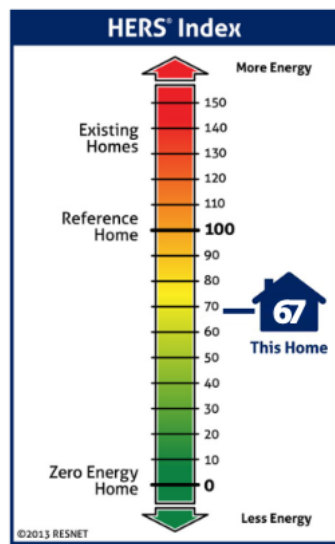
### Rating Completed by:

**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*  
John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:38 PM



### Home Feature Summary:

Home Type:	Apartment, end unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Vaulted Roof, R-34
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A



# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: j2rrrpn2

### HERS® Index Score:

# 70

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$432

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type B - Unit 417, 419, 420, 421  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	3.8	\$107
Cooling	1.5	\$42
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>20.2</b>	<b>\$687</b>

**This home meets or exceeds the criteria of the following:**

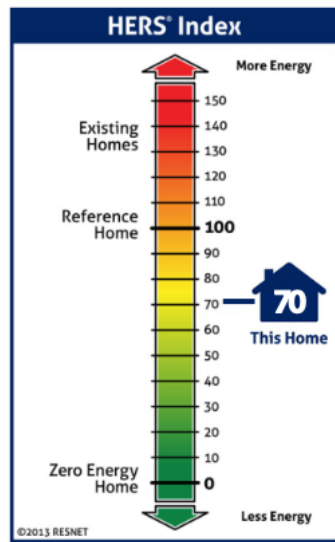
### Rating Completed by:

**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*  
John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:49 PM



### Home Feature Summary:

Home Type:	Apartment, end unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Vaulted Roof, R-34
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A



# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: q2R1llGv

### HERS® Index Score:

# 70

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$442

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type A - Unit 418  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	3.2	\$90
Cooling	1.5	\$43
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>19.7</b>	<b>\$672</b>

**This home meets or exceeds the criteria of the following:**

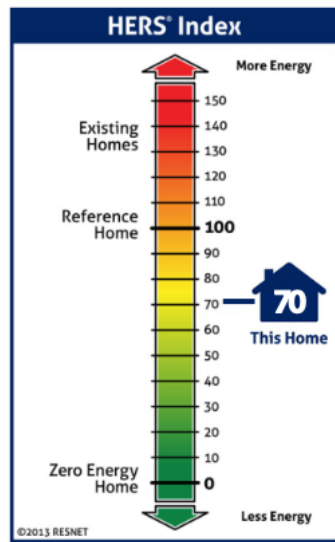
### Rating Completed by:

**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*  
John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:43 PM



### Home Feature Summary:

Home Type:	Apartment, inside unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Vaulted Roof, R-34
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A

# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: x25MMbq2

### HERS® Index Score:

# 69

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$433

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type B - Unit 423, 424  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	3.8	\$108
Cooling	1.4	\$40
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>20.2</b>	<b>\$686</b>

**This home meets or exceeds the criteria of the following:**

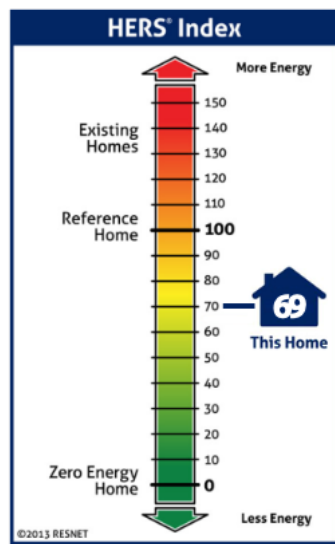
### Rating Completed by:

**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*  
John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 8:53 PM



### Home Feature Summary:

Home Type:	Apartment, end unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Vaulted Roof, R-34
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A

# Home Energy Rating Certificate

## Projected Report

Rating Date:  
Registry ID:  
Ekotrope ID: KvprnEL

### HERS® Index Score:

# 68

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$457

\*Relative to an average U.S. home

### Home:

Lineweaver Annex - Type A - Unit 425  
Harrisonburg, VA 22902

### Builder:

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	3.4	\$96
Cooling	1.5	\$41
Hot Water	2.6	\$75
Lights/Appliances	12.3	\$350
Service Charges		\$114
Generation (e.g. Solar)	0.0	\$0
<b>Total:</b>	<b>19.8</b>	<b>\$676</b>

**This home meets or exceeds the criteria of the following:**

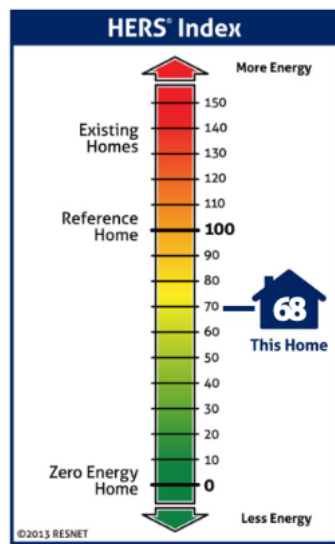
### Rating Completed by:

**Energy Rater:** John Semmelhack  
RESNET ID: 4837591

**Rating Company:** Think Little Home Energy LLC

**Rating Provider:** Viridiant  
1431 W. Main Street, Richmond, VA 23220

*John Semmelhack*  
John Semmelhack, Certified Energy Rater  
Digitally signed: 4/28/21 at 9:02 PM



### Home Feature Summary:

Home Type:	Apartment, inside unit
Model:	N/A
Community:	N/A
Conditioned Floor Area:	437 ft <sup>2</sup>
Number of Bedrooms:	1
Primary Heating System:	Air Source Heat Pump • Electric • 3.3 COP
Primary Cooling System:	Air Source Heat Pump • Electric • 11.8 EER
Primary Water Heating:	Water Heater • Electric • 3.75 UEF
House Tightness:	0.3 CFM50 / s.f. Shell Area
Ventilation:	50 CFM • 100 Watts
Duct Leakage to Outside:	Forced Air Ductless
Above Grade Walls:	R-30
Ceiling:	Vaulted Roof, R-34
Window Type:	U-Value: 0.32, SHGC: 0.24
Foundation Walls:	N/A



Ekotrope RATER - Version:4.0.0.2661

The Energy Rating Disclosure for this home is available from the Approved Rating Provider.  
This report does not constitute any warranty or guarantee.