

Component Consumption

Property
 Purcell
 5455 128th
 Fennville, MI 49408

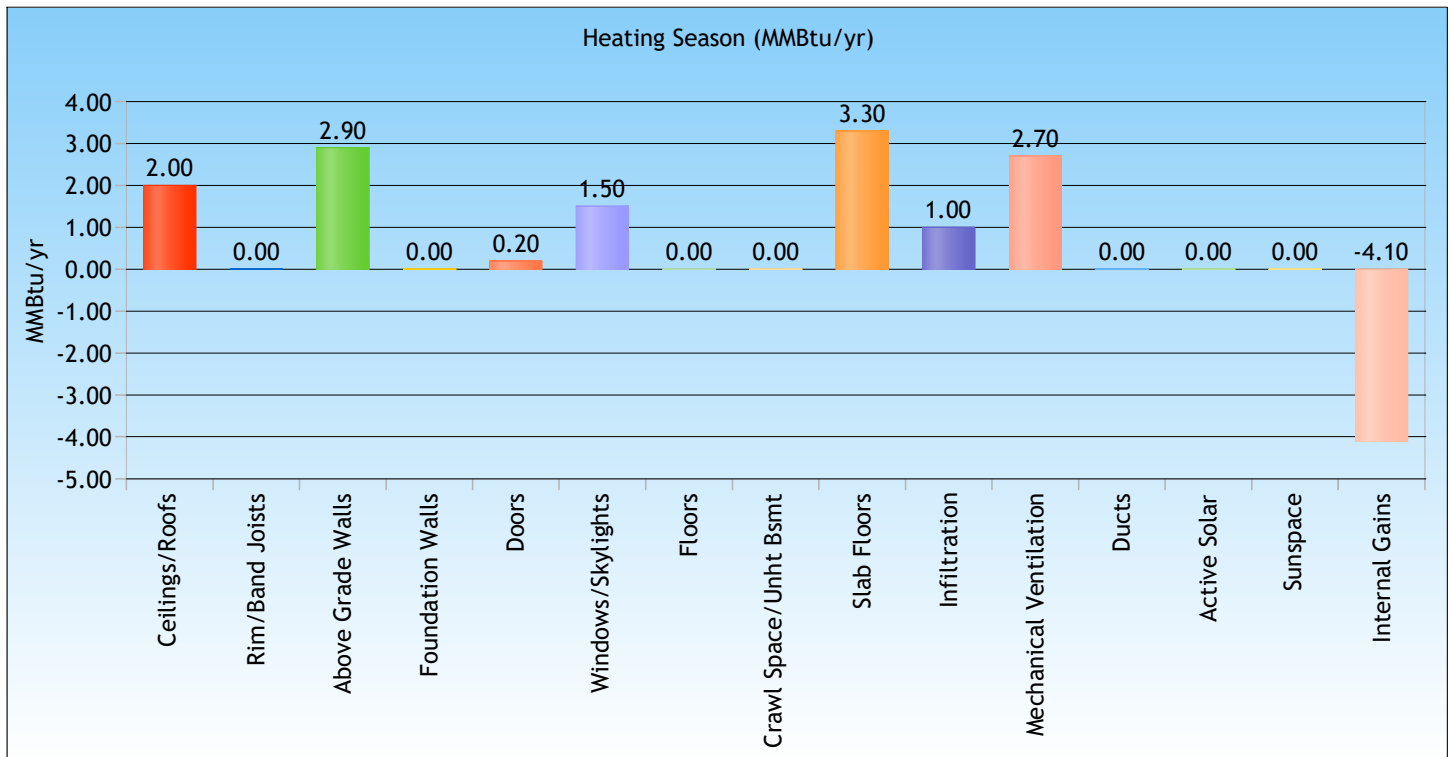
Organization
 The Home Energy Assessor
 616-443-6697
 John R Kuiper

HERS
 Confirmed
 8-28-18
 ID:6388891

Weather: Grand Rapids, MI
 5455 128th
 5455 128thREG.blg

Builder
 R Value Homes

Heating Season	MMBtu/yr
Ceilings/Roofs	2.0
Rim/Band Joists	0.0
Above Grade Walls	2.9
Foundation Walls	0.0
Doors	0.2
Windows/Skylights	1.5
Floors	0.0
Crawl Space/Unht Bsmt	0.0
Slab Floors	3.3
Infiltration	1.0
Mechanical Ventilation	2.7
Ducts	0.0
Active Solar	0.0
Sunspace	0.0
Internal Gains	-4.1
Total	9.4



REM/Rate - Residential Energy Analysis and Rating Software v15.7

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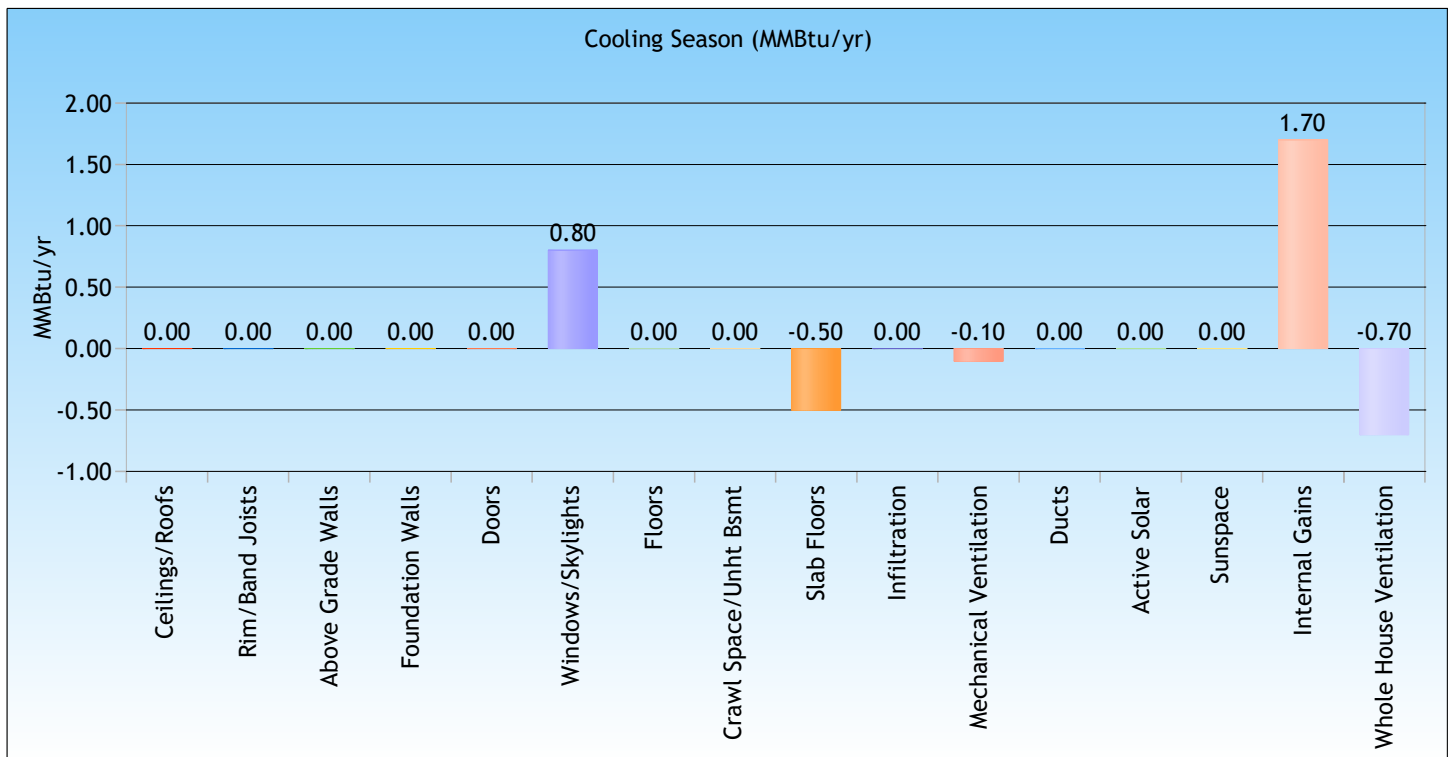
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Cooling Season	MMBtu/yr
Ceilings/Roofs	0.0
Rim/Band Joists	0.0
Above Grade Walls	-0.0
Foundation Walls	0.0
Doors	-0.0
Windows/Skylights	0.8
Floors	0.0
Crawl Space/Unht Bsmt	0.0
Slab Floors	-0.5
Infiltration	-0.0
Mechanical Ventilation	-0.1
Ducts	0.0
Active Solar	0.0
Sunspace	0.0
Internal Gains	1.7
Whole House Ventilation	-0.7
Total	1.3



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Energy Cost and Features

Property

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Annual Energy Costs	\$/yr
Heating	409
Cooling	60
Water Heating	113
Lights & Appliances	1102
Photovoltaics	-1436
Service Charges	84
Total	332
Average Monthly(\$/Month)	28

Energy Features

Ceiling w/Attic	R-60 Blown Attic**** U=0.017
Sealed Attic	None
Vaulted Ceiling	None
Above Grade Wall	ICF Wall R-23**** U=0.040
Foundation Walls (Cond)	None
Foundation Walls (Uncond)	None
Doors	Triple Pane Glass**** U=0.131
Windows	0.15/0.39**** U=0.150
Floors	None
Slab Floors	R-10 under R-23 peri**** U=0.029
Infiltration	Htg: 0.86 Clg: 0.86 ACH50
Infiltration Measure	Blower door
Mechanical Ventilation	Balanced: HRV, 116 cfm, 80.0 watts.
Interior Mass	None
Mechanical Equipment 1	ASHP: Htg: 36.0 kBtuh, 12.3 HSPF. Clg: 24.0 kBtuh, 23.0 SEER.
Mechanical Equipment 2	Water Heating: Heat pump, Elec, 3.24 EF.
Programmable Thermostat	Heat=Yes; Cool=Yes
Ducts	NANA
Duct Leakage to Outside	NA
Total Duct Leakage	NA
Lights/Appliances	Rating Tab
Active Solar	None

Note: Where feature level varies in home, the dominate value is shown.

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Energy Cost and Features

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Energy Features

Photovoltaics	7670.00
Sunspace	No

Note: Where feature level varies in home, the dominate value is shown.

Lights and Appliances

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Electric Consumption

	kWh/yr
Interior Lighting	738.3
Exterior Lighting	51.5
Garage Lighting	25.0
Refrigerator	2332.0
Freezer	0.0
Dishwasher	117.2
Oven/Range	387.3
Clothes Washer	32.9
Clothes Dryer	343.2
Mechanical Ventilation Fan	700.8
Ceiling Fan	0.0
Plug Loads	2549.2
Total	7277.4

Annual Energy Cost

	\$/yr
Interior Lighting	112
Exterior Lighting	8
Garage Lighting	4
Refrigerator	353
Freezer	0
Dishwasher	18
Oven/Range	59
Clothes Washer	5
Clothes Dryer	52
Mechanical Ventilation Fan	106
Ceiling Fan	0
Plug Loads	386
Total	1102

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2015 Michigan Energy Cost Compliance

Property

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Annual Energy Cost

	2015 Michigan Code	\$/yr	As Designed
Heating	1082		448
Cooling	130		100
Water Heating	179		178
SubTotal - Used to Determine Compliance	1390		726
Mechanical Ventilation Fan	31		107
Lights & Appliances (minus MechVent)	1077		1005
Photovoltaics	-0		-1450
Service Charge	84		84
Total	2583		473

Mandatory Requirements

Annual Energy Cost Check	PASSES
Duct Insulation R-Value Check (per Section N1105.2)	PASSES
Window U-Value and SHGC Check (per Section N1102.5)	PASSES
Home Infiltration (Section N1102.4.1.2)	PASSES
Duct Leakage (Section N1103.2.2)	PASSES
Mechanical Ventilation (Section N1103.5)	PASSES
Mechanical Ventilation Fan Efficacy (Section N1103.5.1)	PASSES
Mandatory Requirements Check Box (2015 MI Code)	PASSES

This home **MEETS** the annual energy cost requirements of Section N1105 of the 2015 Michigan Energy Conservation Code based on a climate zone of 5A. In fact, this home surpasses the requirements by 47.8%.

Name | John R Kuiper
Organization | The Home Energy Assessor

Signature | *John R. Kuiper.*
Date | September 2018

In accordance with the MI Code, building inputs, such as setpoints, infiltration rates, and window shading may have been changed prior to calculating annual energy cost. Furthermore, the standard reference design HVAC system efficiencies are set equal to those in the design home as specified in the MI Code. These standards are subject to change, and software updates should be obtained periodically to ensure the compliance calculations reflect current federal minimum standards.

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HOME CERTIFIED TO MEET THE PROVISIONS OF THE 2015 MICHIGAN ENERGY CODE

This home built at
5455 128th, Fennville, MI
by R Value Homes

exceeds the minimum requirements for the 2015 Michigan Energy
Code

Building Features

Ceiling Flat	R-60.0	Duct	NA
Sealed Attic:	NA	Duct Leakage to Outside:	NA
Vaulted Ceiling	NA	Total Duct Leakage:	NA
Above Grade Walls	R-23.0	Infiltration:	Htg: 0.86 Clg: 0.86 ACH50
Foundation Walls	NA	Window	U-Value: 0.150, SHGC: 0.390
Exposed Floor	NA	Air-Source HP	Electric, Htg: 12.3 HSPF. Clg: 23.0 SEER.
Slab	R-23.0 Edge, R-10.0 Under	Water Heating	Heat pump, Electric, 3.24 EF, 50.0 Gal.

The organization below certifies that the proposed building design described herein is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2015 Michigan Energy Code requirements in compliance with Chapter 11 based on Climate Zone 5A and with all mandatory requirements.

Name | John R Kuiper
Organization | The Home Energy Assessor

Signature | *John R. Kuiper.*
Date | September 2018

The 2015 Michigan Energy Code is a registered trademark of the International Code Council, Inc. ("ICC").
No version of this software has been reviewed or approved by ICC or its affiliates.
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Home Energy Rating Certificate

Property
Purcell
5455 128th
Fennville, MI 49408

HERS
Rating Type: Confirmed
Rating Date: 8-28-18
Registry ID: 992658997

Certified Energy Rater: John R Kuiper
Rating Number:

HERS Index: 7

Efficient Home Comparison: 93% Better

General Information

Conditioned Area	2120 sq. ft.	House Type	Single-family detached
Conditioned Volume	19080 cubic ft.	Foundation	Slab
Bedrooms	3		

Mechanical Systems Features

Air-source heat pump:	Electric, Htg: 12.3 HSPF. Clg: 23.0 SEER.
Water Heating:	Heat pump, Electric, 3.24 EF, 50.0 Gal.
Duct Leakage to Outside	NA
Ventilation System	Balanced: HRV, 116 cfm, 80.0 watts.
Programmable Thermostat	Heat=Yes; Cool=Yes

Building Shell Features

Ceiling Flat	R-60.0	Slab	R-23.0 Edge, R-10.0 Under
Sealed Attic	NA	Exposed Floor	NA
Vaulted Ceiling	NA	Window Type	U-Value: 0.150, SHGC: 0.390
Above Grade Walls	R-23.0	Infiltration Rate	Htg: 0.86 Clg: 0.86 ACH50
Foundation Walls	NA	Method	Blower door

Lights and Appliance Features

Percent Interior Lighting	100.00	Range/Oven Fuel	Electric
Percent Garage Lighting	100.00	Clothes Dryer Fuel	Electric
Refrigerator (kWh/yr)	2332	Clothes Dryer CEF	2.62
Dishwasher (kWh/yr)	199	Ceiling Fan (cfm/Watt)	0.00

Estimated Annual Energy Cost

Use	MMBtu	Cost	Percent
Heating	9.4	\$405	117%
Cooling	1.7	\$78	23%
Hot Water	2.6	\$113	33%
Lights/Appliances	24.8	\$1105	320%
Photovoltaics	-32.4	\$-1440	-416%
Service Charges		\$84	24%
Total	6.1	\$346	100%

Criteria

This home meets or exceeds the minimum criteria for the following:

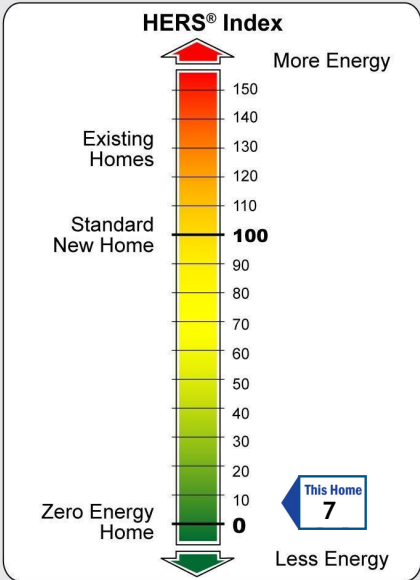
John R Kuiper
The Home Energy Assessor

Grand Rapids, MI
616-443-6697

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The Home Energy Rating Standard Disclosure for this home is available from the rating provider.

RESNET HERS Index Certificate



5455 128th
Fennville, MI 49408
Rater: John R Kuiper
Registry ID: 992658997
Annual Estimates*:
Elec(kWh): 1778
CO2 emissions(Tons): 1
Energy Savings (\$) **: 4508
*Based on standard operating conditions
**Based on U.S. DOE designation of a HERS Index of 130 as the 'Typical Existing Home'

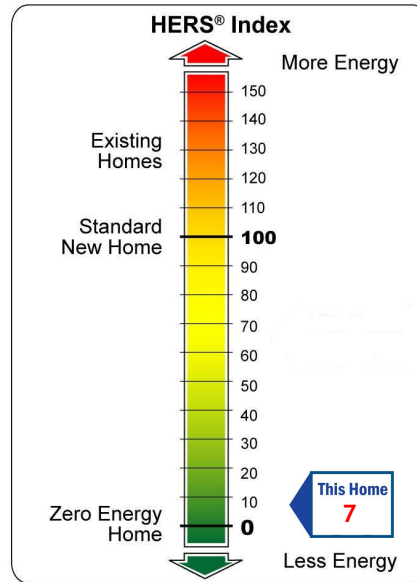
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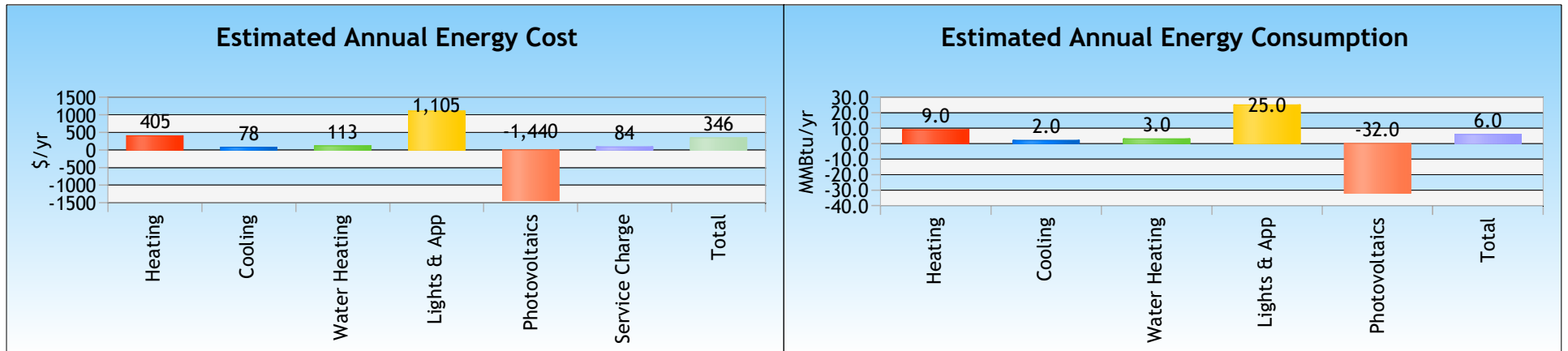
This home has been inspected and performance tested in accordance with Chapter 3 of the RESNET standards.



HERS PERFORMANCE



ENERGY RATING CERTIFICATE



Address 5455 128th
Fennville, MI 49408

House Type Single-family detached

Cond. Area 2120 sq. ft.

Rating No.

Issue Date September 01, 2018

Certification Inspected and Tested

Annual Estimates*
Electric(kWh): 1778
CO2 emissions(Tons): 1
Annual Savings**: \$4508

* Based on standard operating conditions
** Based on a HERS 130 Index Home

John R Kuiper
The Home Energy Assessor
Certified Rater John R Kuiper
Rater ID 6388891
Registry ID 992658997
Rating Date 8-28-18

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