

# AkWarm Home Inputs

## Client

Prototype Home  
AK

## Home Location

Southeast Region  
Juneau, AK

*Reference City:* Juneau, City of  
*Electric Utility:* AEL&P - Residential  
*Gas Utility:* None

## Rating Information

*Rating Type:* From Plans  
*Date:* 10/24/2014

## Rater

Dustin Madden  
CCHRC

## Occupancy

4 Occupants  
Owner Occupied

## House Type/Size

*House Type:* Single Family  
*Heated Floor Area, sq.ft.:* 1,995.8  
*Conditioned Garage Floor Area, sq.ft.:* 547.3  
*# of Bedrooms:* 3  
*Windshielding:* Average

## Actual Energy Costs

*Annual Fuel Cost:* \$0.00  
*Annual Electric Cost:* \$0.00

## Air

*From Blower Test CFM @ 50 Pascals:* 600  
*ACH @ 50 Pascals:* 1.70  
*Average Ceiling Height to Ground or Exposed Floor:* 17.6  
*Heated Volume:* 21,185.6  
*Ventilation System Type:* Mechanical with no Heat Recovery  
*System has controls to operate at less than maximum flow:* Yes

## Heating

*Thermostat Setpoint:* 70  
*Night Setback Thermostat:* All of Home

## Primary System

*Fuel Type:* #2 Fuel Oil  
*Equipment Type:* Improved efficiency boiler  
Flame retention burner; improved heat exchanger, vent dampers, modulating aquastat  
*Certified AFUE:* 85.3  
*Upgrade Devices:* None  
*Heat Distribution:* Hydronic  
0% in Un-conditioned Space, Not Insulated

0% in Semi-conditioned Space, Not Insulated

## **Secondary System**

No System Installed

## **Cooling**

*Cooling System:* None Present

## **Hot Water Heater**

*Fuel Type:* #2 Fuel Oil

*Equipment Type:* Indirect (sidearm) -efficient

Uses home's high efficiency boiler as heat source; hot water is circulated through a heat exchanger in a separate insulated storage tank

*Energy Factor:* 0.803

*Location:* Conditioned Space, > 60 deg F

## **Other**

*Dryer:* Electricity

*Range:* Electricity

*Misc. Electric Use:* Average

## **Fuel Prices**

*Electricity, (\$/kWh):* \$0.13 (Approx. Utility Price)

*#2 Oil, (\$/gallons):* \$4.05 (Library Price)

## **Shell Components**

**Floors - Total Area 1,475.2 sq. ft.**

### **Above Grade Floor: House**

*Temperature:* Living Space

*Gross Area, Sq. Ft.:* 1,175.8

*Exposure:* Insulated Crawlspace

*Framing Type:* 2 x Lumber

*Insulating Sheathing:* None

*Top Insulation Layer:* None

*Bottom Insulation Layer:* R-38 Batt:FG or RW, 12 inches

*Insulation Quality:* OK

*Calculated R-Value:* 45.4

### **Below Grade Floor Perimeter: Garage**

*Temperature:* Garage

*Gross Area, Sq. Ft.:* 136.5

*Distance to Grade:* On Grade

*Insulation Covers Slab Perimeter:* Yes

*Insulation for 0' to 2' Perimeter:* XPS (Blue/Pink Foam), 2 inches

*Insulation for 2' to 4' Perimeter:* XPS (Blue/Pink Foam), 2 inches

*Insulation Quality:* OK

*Calculated R-Value:* 18.7

### **Below Grade Floor Center: Garage**

*Temperature:* Garage

*Gross Area, Sq. Ft.:* 163

*Distance to Grade:* On Grade

*Center Insulation:* XPS (Blue/Pink Foam), 2 inches

*Insulation Quality:* OK

*Calculated R-Value:* 46.7

**Walls - Total Area 2,868.3 sq. ft.**

**Above Grade Wall: House**

*Temperature:* Living Space  
*Gross Area, Sq. Ft.:* 2,554.2  
*Wall Type:* Single Stud  
*Siding Configuration:* Siding and Sheathing  
*Insul. Sheathing:* XPS (Blue/Pink Foam), 4 inches  
*Structural Wall:* 2 x 6, 24 inches on center  
R-21 Batt:FG or RW, 5.5 inches  
*Window and door headers are insulated:* Yes  
*Insulation Quality:* OK  
*Calculated R-Value:* 41

**Above Grade Wall: Garage**

*Temperature:* Garage  
*Gross Area, Sq. Ft.:* 314.1  
*Wall Type:* Single Stud  
*Siding Configuration:* Siding and Sheathing  
*Insul. Sheathing:* XPS (Blue/Pink Foam), 4 inches  
*Structural Wall:* 2 x 6, 16 inches on center  
R-21 Batt:FG or RW, 5.5 inches  
*Window and door headers are insulated:* Yes  
*Insulation Quality:* OK  
*Calculated R-Value:* 40.2

**Doors - Total Area 116.4 sq. ft.**

**Exterior Door: House**

*Temperature:* Living Space  
*Gross Area, Sq. Ft.:* 39.6  
*Door Type:* Entrance, Fiberglass, polyurethane core, no glass  
*Certified U-Value:* 0.25  
*Storm Door:* None  
*Calculated R-Value:* 4

**Garage Door: Garage**

*Temperature:* Garage  
*Gross Area, Sq. Ft.:* 76.8  
*Door Type:* Sectional, polyurethane core, 2" w/ thermal break  
*Insulating Blanket:* None  
*Calculated R-Value:* 7.1

**Windows - Total Area 333.2 sq. ft.**

**Window: SouthWin**

*Temperature:* Living Space  
*Gross Area, Sq. Ft.:* 157.8  
*Orientation:* South  
*External Shading:* Little  
*Glass:* Triple, Glass  
*Certified U-Value:* 0.20  
*Certified SHGC:* 0.600  
*Solar Heat Gain Coefficient including Window Coverings:* 0.45

**Window: NonSouthWin**

Temperature: Living Space  
Gross Area, Sq. Ft.: 175.4  
Orientation: Not South  
External Shading: Moderate  
Glass: Triple, Glass  
Certified U-Value: 0.20  
Certified SHGC: 0.600  
Solar Heat Gain Coefficient including Window Coverings: 0.45

**Ceilings - Total Area 1,485.4 sq. ft.**

**Ceiling with Attic: House**

Temperature: Living Space  
Gross Area, Sq. Ft.: 1,485.4  
Framing Type: Energy Truss  
Framing Spacing: 24 inches  
Insulated Sheathing: None  
Bottom Insulation Layer: R-38 Batt:FG or RW, 12 inches  
Top Insulation Layer: None  
Insulation Quality: OK  
Calculated R-Value: 40.4

**Design Heat Loss**

Outdoor Temperature at Heating Design Conditions Option: Use Library Value  
Outdoor Temperature at Heating Design Conditions Value (deg F): 1.0  
Airport Wind Speed at Heating Design Conditions Option: Use Library Value  
Airport Wind Speed at Heating Design Conditions Value (mph): 8.3  
Mechanical Ventilation Flow Rate Option: User Override  
Mechanical Ventilation Flow Rate Value (cfm): 0.0  
Main Home Heating System Distribution Efficiency Option: From Primary Heating System  
Main Home Heating System Distribution Efficiency Value (%): 100.0  
DHW Load is Served by Primary Heating System: No  
Garage Load is Served by Primary Heating System: No  
Garage Temperature (deg F): 55.0  
House/Garage Uninsulated Common Area (sq feet): 0.0  
Mechanical Ventilation Rate for Garage (cfm): 0.0  
Garage Heating System Distribution Eff (%): 100.0

**AkWarm Version Info**

Application: AkWarm, Version 2.4.0.0  
Calculation Engine: 2.4.0.0  
Energy Library: 3/24/2015

Filename: C:\Users\dustin\Dropbox\R15 HERS\03. Work\AKWarm Test Models\15.2 Gal DHW Models  
\95 Point Models\Juneau Prototype - 15.2 DHW 95 pointer.hm2  
Report Date: 3/30/2015