

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: 1060
ACH @ 50 Pascals: 3.00
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: #1 Fuel Oil
Equipment Type: Improved efficiency boiler
Flame retention burner; improved heat exchanger, vent dampers, modulating aquastat
Certified AFUE: 80
Upgrade Devices: None
Heat Distribution: Hydronic
0% in Un-conditioned Space, Not Insulated

0% in Semi-conditioned Space, Not Insulated
Improvement to Evaluate: New Boiler
Location: Primary Heating System
Excluded Levels: ...
Level: 83%
Level: 87%
Level: 94%, <130 F distribution
DIY Costs: No

Secondary System

No System Installed

Cooling

Cooling System: None Present

Hot Water Heater

Fuel Type: #1 Fuel Oil
Equipment Type: High Efficiency Oil Tank
Oil storage tank post 2004
Energy Factor: 0.6
Location: Conditioned Space, > 60 deg F
Improvement to Evaluate: Oil On-Demand Type
DIY Costs: No

Other

Dryer: Electricity
Range: Electricity
Misc. Electric Use: Average

Fuel Prices

Electricity, (\$/kWh): \$0.13 (Approx. Utility Price)
#1 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: On Pilings
Framing Type: 2 x Lumber
Insulating Sheathing: None
Top Insulation Layer: None
Bottom Insulation Layer: R-30 Batt:FG or RW, 9.5 inches
Insulation Quality: OK
Calculated R-Value: 30.6

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), 3 inches
Insulation for 2' to 4' Perimeter: XPS (Blue/Pink Foam), 3 inches
Insulation Quality: OK
Calculated R-Value: 24

Below Grade Floor Center: Garage

Temperature: Garage
Gross Area, Sq. Ft.: 163
Distance to Grade: On Grade
Center Insulation: XPS (Blue/Pink Foam), 3 inches
Insulation Quality: OK
Calculated R-Value: 52.1

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), 2 inches
Structural Wall: 2 x 4, 16 inches on center
 R-13 Batt:FG or RW, 3.5 inches
Window and door headers are insulated: Yes
Insulation Quality: OK
Calculated R-Value: 23.1
Improvement to Evaluate: ADD rigid foam to interior or exterior, no wall covering costs
Location: Above-Grade Wall: House
Excluded Levels: ...
 Level: R-5
 Level: R-10
 Level: R-15
 Level: R-25
 Level: R-30
 Level: R-40
 Level: R-50
DIY Costs: No

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), 2 inches
Structural Wall: 2 x 4, 16 inches on center
 R-13 Batt:FG or RW, 3.5 inches
Window and door headers are insulated: Yes
Insulation Quality: OK
Calculated R-Value: 23.1

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: 0.32
Storm Door: None
Calculated R-Value: 3.1
Improvement to Evaluate: REPLACE door with better insulated door
Location: Exterior Door: House

DIY Costs: No

Garage Door: Garage

Temperature: Garage
Gross Area, Sq. Ft.: 76.8
Door Type: Sectional, EPS core, 2", no thermal break
Certified U-Value: 0.32
Insulating Blanket: None
Calculated R-Value: 3.1

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: 0.32
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: 0.32
Certified SHGC: 0.600
Solar Heat Gain Coefficient including Window Coverings: 0.45
Improvement to Evaluate: REPLACE window with triple pane window
Location: Window/Skylight: NonSouthWin
Excluded Levels: ...
Level: triple pane, low-E, argon
DIY Costs: No

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
Improvement to Evaluate: ADD blown cellulose to Energy Truss
Location: Ceiling w/ Attic: House
Excluded Levels: ...
Level: R-12
Level: R-33
Level: R-42
DIY Costs: No

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
\BEES Qualifying models (89 points-ish)\Juneau Prototype - 15.2 DHW 2012 BEES (heating
unchanged).hm2*
Report Date: 3/30/2015