

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: 9/15/2014

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: 2800
ACH @ 50 Pascals: 7.93
Average Ceiling Height to Ground or Exposed Floor: 17.6
Heated Volume: 21,185.6
Ventilation System Type: None
Improvement to Evaluate: Install Heat Recovery Ventilation
DIY Costs: No

Heating

Thermostat Setpoint: 70
Night Setback Thermostat: None

Primary System

Fuel Type: #1 Fuel Oil
Equipment Type: Improved efficiency boiler
Flame retention burner; improved heat exchanger, vent dampers, modulating aquastat
Certified AFUE: 83.2
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: Electricity
Equipment Type: Standard Electric Tank
Conventional electric tank with 1inch of fiberglass insulation.
Standard Energy Factor: 0.9
Location: Conditioned Space, > 60 deg F
Improvement to Evaluate: Electric On-Demand Replacement
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-25 Batt:FG or RW, 8 inches
Insulation Quality: OK
Calculated R-Value: 27.6

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: None
Insulation for 2' to 4' Perimeter: None
Insulation Quality: OK

Calculated R-Value: 6.7

Below Grade Floor Center: Garage

Temperature: Garage
Gross Area, Sq. Ft.: 163
Distance to Grade: On Grade
Center Insulation: None
Insulation Quality: OK
Calculated R-Value: 35.5

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: None
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: 12.2
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: None
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: 12.2

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, quarter lite
Certified U-Value: 0.40
Storm Door: None
Calculated R-Value: 2.5
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, Wood uninsulated
Certified U-Value: 0.57
Insulating Blanket: None
Calculated R-Value: 1.8

Windows - Total Area 333.2 sq. ft.

Window: SouthWin

Temperature: Living Space
Gross Area, Sq. Ft.: 157.8
Orientation: South
External Shading: Little
Glass: Double, glass
Certified U-Value: 0.54
Certified SHGC: 0.770
Solar Heat Gain Coefficient including Window Coverings: 0.58

Window: NonSouthWin

Temperature: Living Space
Gross Area, Sq. Ft.: 175.4
Orientation: Not South
External Shading: Moderate
Glass: Double, glass
Certified U-Value: 0.54
Certified SHGC: 0.770
Solar Heat Gain Coefficient including Window Coverings: 0.58
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-25 Batt:FG or RW, 8 inches
Top Insulation Layer: None
Insulation Quality: OK
Calculated R-Value: 27.4
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
\Median As-Is Models\Juneau Prototype - Retrofit Model - 15.2 DHW.hm2*
Report Date: 3/30/2015