



Simple Heating System Size: Washington State

This heating system sizing calculator is based on the Prescriptive Requirements of the 2018 Washington State Energy Code (WSEC) and ACCA Manuals J and S. This tool will calculate heating loads only. ACCA procedures for sizing cooling systems should be used to determine cooling loads.

Please complete the green drop-downs and boxes that are applicable to your project. As you make selections in the drop-downs for each section, some values will be calculated for you. If you do not see the selection you need in the drop-down options, please contact the WSU Energy Program at energycode@energy.wsu.edu or (360) 956-2042 for assistance.

Project Information

2 Bed Unit - 3 Story Stack w/ Basement
Bradley Heights Apartments
Puyallup, WA

Contact Information

Milbrandt Architects
25 Central Way Suite 210
Kirkland, WA 98033 425.454.7130

Heating System Type: All Other Systems Heat Pump

To see detailed instructions for each section, place your cursor on the word "Instructions"

Design Temperature

Instructions Puyallup

Design Temperature Difference (ΔT) 51
ΔT = Indoor (70 degrees) - Outdoor Design Temp

Area of Building

Conditioned Floor Area

Instructions Conditioned Floor Area (sq ft) 4,076

Average Ceiling Height

Instructions Average Ceiling Height (ft) 9.1

Conditioned Volume 37,092

Glazing and Doors

Instructions U-0.22

U-Factor X Area = UA
0.220 X 626 = 137.72

Skylights

Instructions U-0.50

U-Factor X Area = UA
0.50 X 0 = ---

Insulation

Attic

Instructions R-49

U-Factor X Area = UA
0.026 X 1,007 = 26.18

Single Rafter or Joist Vaulted Ceilings

Instructions No Vaulted Ceilings in this project.

U-Factor X Area = UA
--- X 0 = ---

Above Grade Walls (see Figure 1)

Instructions R-21 Intermediate

U-Factor X Area = UA
0.056 X 3,449 = 193.13

Floors

Instructions No Floors above unconditioned spaces.

U-Factor X Area = UA
--- X --- = ---

Below Grade Walls (see Figure 1)

Instructions R-21 Interior

U-Factor X Area = UA
0.042 X 574 = 24.13

Slab Below Grade (see Figure 1)

Instructions No Slab Below Grade in this project.

F-Factor X Length = UA
0.303 X 0 = ---

Slab on Grade (see Figure 1)

Instructions R-10 Perimeter

F-Factor X Length = UA
0.540 X 1,019 = 550.26

Location of Ducts

Instructions Unconditioned Space

Duct Leakage Coefficient 1.10

Figure 1.

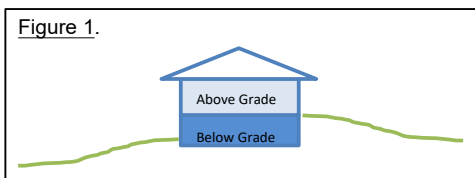


Table with 2 columns: Calculation Name and Value. Includes Sum of UA (931.42), Envelope Heat Load (47,503 Btu / Hour), Air Leakage Heat Load (20,430 Btu / Hour), Building Design Heat Load (67,933 Btu / Hour), Building and Duct Heat Load (74,726 Btu / Hour), and Maximum Heat Equipment Output (93,407 Btu / Hour).