

0.0	0.00
0.0	0.00
0.0	0.00
0.0	0.00
0.0	0.00
0.0	0.00
0.0	0.00
0.0	0.00
0.0	0.00
0.0	0.00

Sum of Vertical Fenestration Area and UA
Vertical Fenestration Area Weighted U = UA/Area

204.8	51.19
	0.25

Overhead Glazing (Skylights)

Component Description	Ref.	U-factor

Qt.	Width		Height	
	Feet	Inch	Feet	Inch

Area	UA
0.0	0.00
0.0	0.00
0.0	0.00
0.0	0.00
0.0	0.00
0.0	0.00

Sum of Overhead Glazing Area and UA
Overhead Glazing Area Weighted U = UA/Area

0.0	0.00
	0.00

Total Sum of Fenestration Area and UA (for heating system sizing calculations)

204.8	51.19
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Simple Heating System Size: Washington State

This heating system sizing calculator is based on the Prescriptive Requirements of the 2018 and 2021 Washington State Energy Code (WSEC) . 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.

This tool is for the permitting purposes only. A Manual J calculation is required to meet the requirement of the Washington State Energy Code.

Project Information

FONG ADDITION
8801 SE 56TH ST
MERCER ISLAND, WA 98040

Contact Information

AARON HECKMAN - HECKMAN ARCHITECTS
501 ROY ST, SUITE 232C
SEATTLE, WA 98109

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](#)

Design Temperature 17

Design Temperature Difference (ΔT) 53

$\Delta T = \text{Indoor (70 degrees)} - \text{Outdoor Design Temp}$

Area of Building

Conditioned Floor Area

[Instructions](#)

Conditioned Floor Area (sq ft)

Average Ceiling Height

[Instructions](#)

Average Ceiling Height (ft)

Conditioned Volume

10,800

Glazing and Doors

[Instructions](#)

U-Factor X Area = UA

0.250 X 205 = 51.25

Skylights

[Instructions](#)

U-Factor X Area = UA

0.50 X [] = 0.00

Insulation

Attic

[Instructions](#)

U-Factor X Area = UA

0.024 X 1,080 = 25.92

Single Rafter or Joist Vaulted Ceilings

[Instructions](#)

U-Factor X Area = UA

No selection [] --

Above Grade Walls (see Figure 1)

[Instructions](#)

U-Factor X Area = UA

0.041 X 947 = 38.83

Floors

[Instructions](#)

U-Factor X Area = UA

No selection [] --

Below Grade Walls and Slabs (see Figure 1)

[Instructions](#)

Wall & Slab

Depth

Wall U-Factor X Area = UA

No Selection [] --

Slab F-Factor X Length = UA

-- [] --

Slab on Grade (see Figure 1)

[Instructions](#)

F-Factor X Length = UA

No selection [] --

Location of Ducts

[Instructions](#)

Duct Leakage Coefficient

1.000

Sum of UA 116.00

Envelope Heat Load 6,148 Btu / Hour

Sum of UA x ΔT

Air Leakage Heat Load 6,182 Btu / Hour

Volume x 0.6 x ΔT x 0.018

Building Design Heat Load 12,330 Btu / Hour

Air leakage + envelope heat loss

Building and Duct Heat Load 12,330 Btu / Hour

Ducts in unconditioned space: sum of building heat loss x 1.10

Ducts in conditioned space: sum of building heat loss x 1

Maximum Heat Equipment Output 15,412 Btu / Hour

Building and duct heat loss x 1.40 for forced air furnace

Building and duct heat loss x 1.25 for heat pump

Figure 1.

