

312 W Hyman

312 West Hyman Avenue, Aspen, CO

OUTDOOR DESIGN CONDITIONS

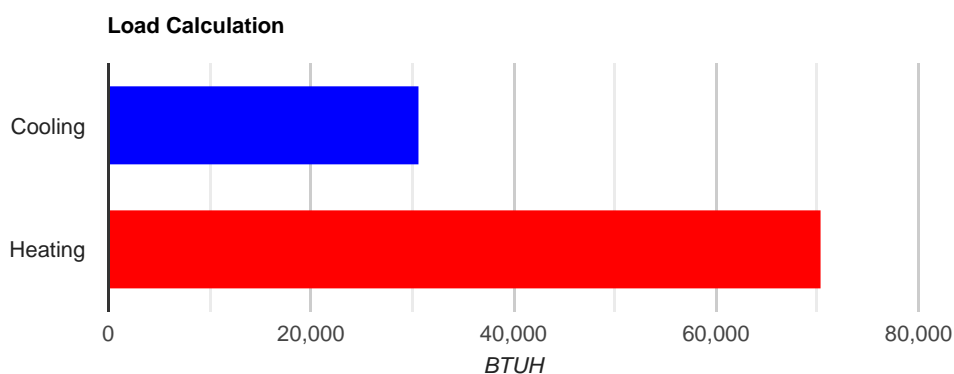
Weather station: Aspen, Pitkin Co. SAWRS

Summer Outdoor F	82	Summer Indoor F	72	Design Grains	-49	Daily Range	High
Winter Outdoor F	1	Winter Indoor F	72	Cooling RH	45	Elevation (Ft)	8,018

LOAD CALCULATION TOTALS

HVAC System: whole house

Heated square footage	2,162	Heating BTUH	70,264
Cooled square footage	2,162	Cooling BTUH	30,677
Heated volume (above grade CF)	20,032	CFM	1,527
Cooled volume (above grade CF)	20,032	Sensible cooling	30,244
Exposed wall area (SF)	2,451	Latent cooling	432
		SHR	0.986



APPROVED ACCA MJ8 CALCULATIONS

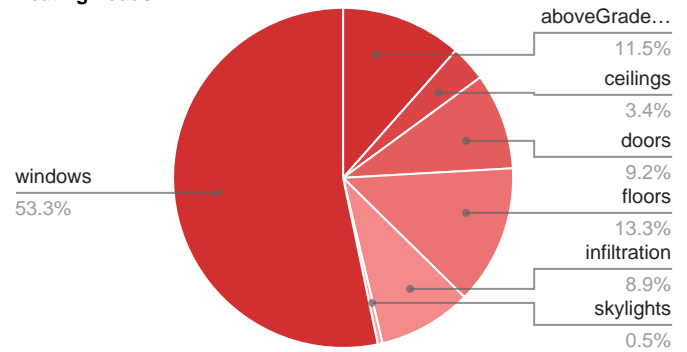


Calculations are based on the ACCA Manual J 8th Edition and are approved by ACCA. All computed calculations are estimates on building use, weather data, and inputted values such as R-Values, window types, duct loss, etc. Equipment selections should meet both the latent and sensible gain as well as building heat loss.

HEATING LOADS

Section	Area	Heat Loss
aboveGradeWalls	1,677	8,097
ceilings	1,164.6	2,398
doors	168	6,441
floors	1,250	9,314
infiltration	0	6,263
skylights	36	320
windows	606	37,433
Totals		70,264

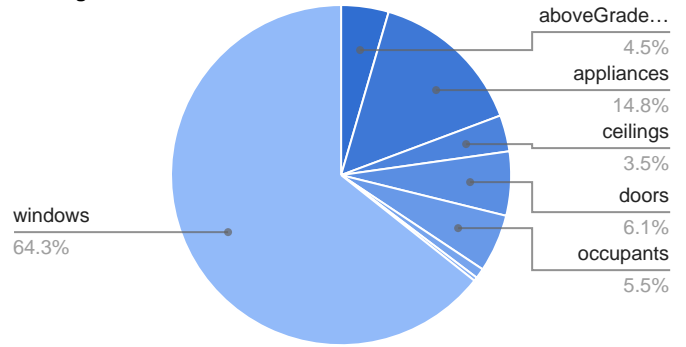
Heating Loads



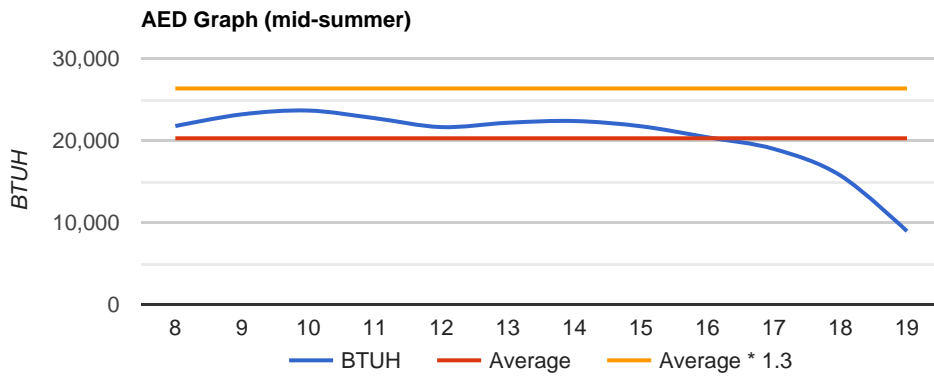
COOLING LOADS

Section	Area	Sensible	Latent
AEDExcursion	0	0	0
aboveGradeWalls	1,677	1,414	0
appliances	0	4,268	358
ceilings	1,164.6	1,081	0
doors	168	1,905	0
floors	1,250	0	0
infiltration	0	415	-1,026
occupants	0	920	800
plants	0	0	300
skylights	36	113	0
windows	606	20,129	0
Totals		30,244	432

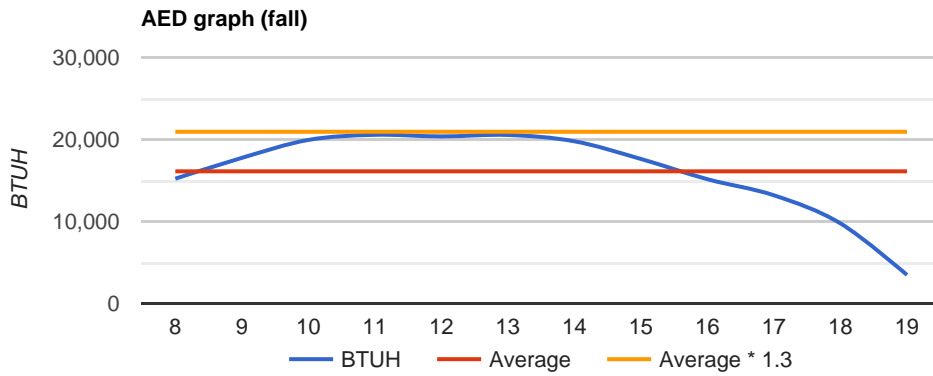
Cooling Loads



FENESTRATION LOADS



This graph represents hourly aggregate fenestration loads in mid-summer.



This graph represents hourly aggregate fenestration loads in October.

COMPONENT LOADS

Above Grade Walls					
System generated wall - E Frame Wall, Wood framing, R-19 cavity insulation, Stucco or Siding.	Construction nr:	12E-0s w	Exposure:	E	Heating BTUH: 463
	U Value:	0.068	Area:	96	Cooling BTUH: 81
System generated wall - S Frame Wall, Wood framing, R-19 cavity insulation, Stucco or Siding.	Construction nr:	12E-0s w	Exposure:	S	Heating BTUH: 116
	U Value:	0.068	Area:	24	Cooling BTUH: 20
System generated wall - S Frame Wall, Wood framing, R-19 cavity insulation, Stucco or Siding.	Construction nr:	12E-0s w	Exposure:	N	Heating BTUH: 879
	U Value:	0.068	Area:	182	Cooling BTUH: 153

Above Grade Walls

System generated wall - E Frame Wall, Wood framing, R-19 cavity insulation, Stucco or Siding.	Construction nr: 12E-0s w U Value: 0.068	Exposure: E Area: 90	Heating BTUH: 435 Cooling BTUH: 76
System generated wall - W Frame Wall, Wood framing, R-19 cavity insulation, Stucco or Siding.	Construction nr: 12E-0s w U Value: 0.068	Exposure: W Area: 90	Heating BTUH: 435 Cooling BTUH: 76
System generated wall - N Frame Wall, Wood framing, R-19 cavity insulation, Stucco or Siding.	Construction nr: 12E-0s w U Value: 0.068	Exposure: N Area: 120	Heating BTUH: 579 Cooling BTUH: 101
System generated wall - W Frame Wall, Wood framing, R-19 cavity insulation, Stucco or Siding.	Construction nr: 12E-0s w U Value: 0.068	Exposure: W Area: 113	Heating BTUH: 546 Cooling BTUH: 95
System generated wall - N Frame Wall, Wood framing, R-19 cavity insulation, Stucco or Siding.	Construction nr: 12E-0s w U Value: 0.068	Exposure: N Area: 108	Heating BTUH: 521 Cooling BTUH: 91
System generated wall - E	Construction nr: 12E-0s w U Value: 0.068	Exposure: E Area: 94	Heating BTUH: 454 Cooling BTUH: 79

Above Grade Walls

<p>Frame Wall, Wood framing, R-19 cavity insulation, Stucco or Siding.</p>			
<p>System generated wall - E Frame Wall, Wood framing, R-19 cavity insulation, Stucco or Siding.</p>	<p>Construction nr: 12E-0s W U Value: 0.068</p>	<p>Exposure: E Area: 147</p>	<p>Heating BTUH: 710 Cooling BTUH: 124</p>
<p>System generated wall - S Frame Wall, Wood framing, R-19 cavity insulation, Stucco or Siding.</p>	<p>Construction nr: 12E-0s W U Value: 0.068</p>	<p>Exposure: S Area: 170</p>	<p>Heating BTUH: 821 Cooling BTUH: 143</p>
<p>System generated wall - W Frame Wall, Wood framing, R-19 cavity insulation, Stucco or Siding.</p>	<p>Construction nr: 12E-0s W U Value: 0.068</p>	<p>Exposure: W Area: 189</p>	<p>Heating BTUH: 912 Cooling BTUH: 159</p>
<p>System generated wall - W Frame Wall, Wood framing, R-19 cavity insulation, Stucco or Siding.</p>	<p>Construction nr: 12E-0s W U Value: 0.068</p>	<p>Exposure: W Area: 70</p>	<p>Heating BTUH: 338 Cooling BTUH: 59</p>
<p>System generated wall - E Frame Wall, Wood framing, R-19 cavity insulation, Stucco or</p>	<p>Construction nr: 12E-0s W U Value: 0.068</p>	<p>Exposure: E Area: 62</p>	<p>Heating BTUH: 299 Cooling BTUH: 52</p>

Above Grade Walls

Siding.			
System generated wall - S Frame Wall, Wood framing, R-19 cavity insulation, Stucco or Siding.	Construction nr: 12E-0s w U Value: 0.068	Exposure: S Area: 42	Heating BTUH: 203 Cooling BTUH: 35
System generated wall - W Frame Wall, Wood framing, R-19 cavity insulation, Stucco or Siding.	Construction nr: 12E-0s w U Value: 0.068	Exposure: W Area: 80	Heating BTUH: 386 Cooling BTUH: 67

Below Grade Walls

There are no components for this section.

Ceilings

System generated ceiling. Ceiling below roof joists, Metal, Light, R-38.	Construction nr: 18B-38 ml U Value: 0.029	Area: 197.9	Heating BTUH: 407 Cooling BTUH: 184
System generated ceiling. Ceiling below roof joists, Metal, Light, R-38.	Construction nr: 18B-38 ml U Value: 0.029	Area: 197.9	Heating BTUH: 407 Cooling BTUH: 184
System generated	Construction nr: 18B-38 ml U Value: 0.029	Area: 768.8	Heating BTUH: 1,583 Cooling BTUH: 713

Ceilings

ceiling.

Ceiling below roof joists, Metal, Light, R-38.

Skylights

Default skylight(s) for ceiling id 1057849.

Flat, NFRC rated.

Construction nr: 8G

Exposure: W

Area: 6

Heating BTUH: 53

Cooling BTUH: 19

Default skylight(s) for ceiling id 1057832.

Flat, NFRC rated.

Construction nr: 8G

Exposure: W

Area: 6

Heating BTUH: 53

Cooling BTUH: 19

east

Flat, NFRC rated.

Construction nr: 8G

Exposure: E

Area: 12

Heating BTUH: 107

Cooling BTUH: 38

Default skylight(s) for ceiling id 1057814.

Flat, NFRC rated.

Construction nr: 8G

Exposure: W

Area: 12

Heating BTUH: 107

Cooling BTUH: 38

Skylight cooling BTUHs shown here are daily average values. See AED graphs for details of fenestration loads during the day.

Doors

Default doors for wall id 3906851

Wood Door, Panel.

Construction nr: 11

U Value: 0.54

Area: 48

Exposure: S

Heating BTUH: 1,840

Cooling BTUH: 544

Default doors for wall id 3904817

Wood Door, Panel.

Construction nr: 11

U Value: 0.54

Area: 24

Exposure: E

Heating BTUH: 920

Cooling BTUH: 272

Doors						
Default doors for wall id 3904811 Wood Door, Panel.	Construction nr:	11	Area:	24	Heating BTUH:	920
	U Value:	0.54	Exposure:	W	Cooling BTUH:	272
Default doors for wall id 3907097 Wood Door, Panel.	Construction nr:	11	Area:	24	Heating BTUH:	920
	U Value:	0.54	Exposure:	S	Cooling BTUH:	272
Default doors for wall id 3906843 Wood Door, Panel.	Construction nr:	11	Area:	48	Heating BTUH:	1,840
	U Value:	0.54	Exposure:	S	Cooling BTUH:	544

Floors						
System generated floor. Concrete slab on grade floor, R-10 slab insulation.	Construction nr:	22C-10pl	Heating U Value:	0	Heating BTUH:	1,796
	Area:	220	Cooling U Value:	0	Cooling BTUH:	0
					F Value:	0.937
System generated floor. Concrete slab on grade floor, R-10 slab insulation.	Construction nr:	22C-10pl	Heating U Value:	0	Heating BTUH:	4,258
	Area:	604	Cooling U Value:	0	Cooling BTUH:	0
					F Value:	0.937
System generated floor. Concrete slab on grade floor, R-10 slab insulation.	Construction nr:	22C-10pl	Heating U Value:	0	Heating BTUH:	732
	Area:	66	Cooling U Value:	0	Cooling BTUH:	0
					F Value:	0.937
System generated floor. Concrete slab on grade floor, R-10 slab insulation.	Construction nr:	22C-10pl	Heating U Value:	0	Heating BTUH:	665
	Area:	60	Cooling U Value:	0	Cooling BTUH:	0
					F Value:	0.937
System generated floor. Concrete slab on grade floor, R-10 slab	Construction nr:	22C-10pl	Heating U Value:	0	Heating BTUH:	1,863
	Area:	300	Cooling U Value:	0	Cooling BTUH:	0
					F Value:	0.937

Floors			
insulation.			

Windows				
Default small windows for wall id 3906851 Window, NFRC rated, Clear glass.	Construction nr:	1G	U Value: 0.87	Heating BTUH: 741
	Area:	12	SHGC: 0.67	Cooling BTUH: 410
	Exposure:	S		
Default medium windows for wall id 3906851 Window, NFRC rated, Clear glass.	Construction nr:	1G	U Value: 0.87	Heating BTUH: 2,224
	Area:	36	SHGC: 0.67	Cooling BTUH: 1,230
	Exposure:	S		
Default small windows for wall id 3904799 Window, NFRC rated, Clear glass.	Construction nr:	1G	U Value: 0.87	Heating BTUH: 371
	Area:	6	SHGC: 0.67	Cooling BTUH: 107
	Exposure:	N		
Default medium windows for wall id 3904799 Window, NFRC rated, Clear glass.	Construction nr:	1G	U Value: 0.87	Heating BTUH: 2,224
	Area:	36	SHGC: 0.67	Cooling BTUH: 643
	Exposure:	N		
Default small windows for wall id 3904817 Window, NFRC rated, Clear glass.	Construction nr:	1G	U Value: 0.87	Heating BTUH: 371
	Area:	6	SHGC: 0.67	Cooling BTUH: 209
	Exposure:	E		
Default medium windows for wall id 3904817 Window, NFRC rated, Clear glass.	Construction nr:	1G	U Value: 0.87	Heating BTUH: 1,482
	Area:	24	SHGC: 0.67	Cooling BTUH: 835
	Exposure:	E		
Default small windows for wall	Construction nr:	1G	U Value: 0.87	Heating BTUH: 371
	Area:	6	SHGC: 0.67	Cooling BTUH: 236

Windows					
id 3904811 Window, NFRC rated, Clear glass.	Exposure:	W			
Default medium windows for wall id 3904811 Window, NFRC rated, Clear glass.	Construction nr: Area: Exposure:	1G 24 W	U Value: SHGC:	0.87 0.67	Heating BTUH: 1,482 Cooling BTUH: 945
Default small windows for wall id 3907240 Window, NFRC rated, Clear glass.	Construction nr: Area: Exposure:	1G 12 N	U Value: SHGC:	0.87 0.67	Heating BTUH: 741 Cooling BTUH: 214
Default small windows for wall id 3907234 Window, NFRC rated, Clear glass.	Construction nr: Area: Exposure:	1G 6 W	U Value: SHGC:	0.87 0.67	Heating BTUH: 371 Cooling BTUH: 236
Default medium windows for wall id 3907234 Window, NFRC rated, Clear glass.	Construction nr: Area: Exposure:	1G 24 W	U Value: SHGC:	0.87 0.67	Heating BTUH: 1,482 Cooling BTUH: 945
Default small windows for wall id 3907165 Window, NFRC rated, Clear glass.	Construction nr: Area: Exposure:	1G 12 N	U Value: SHGC:	0.87 0.67	Heating BTUH: 741 Cooling BTUH: 214
Default medium windows for wall id 3907165 Window, NFRC rated, Clear glass.	Construction nr: Area: Exposure:	1G 12 N	U Value: SHGC:	0.87 0.67	Heating BTUH: 741 Cooling BTUH: 214
Default small windows for wall id 3907166	Construction nr: Area: Exposure:	1G 12 E	U Value: SHGC:	0.87 0.67	Heating BTUH: 741 Cooling BTUH: 417

Windows				
Window, NFRC rated, Clear glass.				
Default medium windows for wall id 3907166 Window, NFRC rated, Clear glass.	Construction nr: Area: Exposure:	1G 12 E	U Value: SHGC:	0.87 0.67 Heating BTUH: 741 Cooling BTUH: 417
Default large windows for wall id 3907166 Window, NFRC rated, Clear glass.	Construction nr: Area: Exposure:	1G 36 E	U Value: SHGC:	0.87 0.67 Heating BTUH: 2,224 Cooling BTUH: 1,252
Default small windows for wall id 3907099 Window, NFRC rated, Clear glass.	Construction nr: Area: Exposure:	1G 12 E	U Value: SHGC:	0.87 0.67 Heating BTUH: 741 Cooling BTUH: 417
Default medium windows for wall id 3907099 Window, NFRC rated, Clear glass.	Construction nr: Area: Exposure:	1G 36 E	U Value: SHGC:	0.87 0.67 Heating BTUH: 2,224 Cooling BTUH: 1,252
Default large windows for wall id 3907099 Window, NFRC rated, Clear glass.	Construction nr: Area: Exposure:	1G 36 E	U Value: SHGC:	0.87 0.67 Heating BTUH: 2,224 Cooling BTUH: 1,252
Default small windows for wall id 3907097 Window, NFRC rated, Clear glass.	Construction nr: Area: Exposure:	1G 6 S	U Value: SHGC:	0.87 0.67 Heating BTUH: 371 Cooling BTUH: 199
Default medium windows for wall id 3907097 Window, NFRC rated,	Construction nr: Area: Exposure:	1G 36 S	U Value: SHGC:	0.87 0.67 Heating BTUH: 2,224 Cooling BTUH: 1,213

Windows

Clear glass.				
<p>Default large windows for wall id 3907097</p> <p>Window, NFRC rated, Clear glass.</p>	<p>Construction nr: 1G Area: 72 Exposure: S</p>	<p>U Value: 0.87 SHGC: 0.67</p>	<p>Heating BTUH: 4,447 Cooling BTUH: 2,438</p>	
<p>Default small windows for wall id 3907098</p> <p>Window, NFRC rated, Clear glass.</p>	<p>Construction nr: 1G Area: 6 Exposure: W</p>	<p>U Value: 0.87 SHGC: 0.67</p>	<p>Heating BTUH: 371 Cooling BTUH: 236</p>	
<p>Default medium windows for wall id 3907098</p> <p>Window, NFRC rated, Clear glass.</p>	<p>Construction nr: 1G Area: 36 Exposure: W</p>	<p>U Value: 0.87 SHGC: 0.67</p>	<p>Heating BTUH: 2,224 Cooling BTUH: 1,417</p>	
<p>Default small windows for wall id 3904883</p> <p>Window, NFRC rated, Clear glass.</p>	<p>Construction nr: 1G Area: 6 Exposure: W</p>	<p>U Value: 0.87 SHGC: 0.67</p>	<p>Heating BTUH: 371 Cooling BTUH: 236</p>	
<p>Default medium windows for wall id 3904883</p> <p>Window, NFRC rated, Clear glass.</p>	<p>Construction nr: 1G Area: 12 Exposure: W</p>	<p>U Value: 0.87 SHGC: 0.67</p>	<p>Heating BTUH: 741 Cooling BTUH: 472</p>	
<p>Default small windows for wall id 3906873</p> <p>Window, NFRC rated, Clear glass.</p>	<p>Construction nr: 1G Area: 6 Exposure: E</p>	<p>U Value: 0.87 SHGC: 0.67</p>	<p>Heating BTUH: 371 Cooling BTUH: 209</p>	
<p>Default medium windows for wall id 3906873</p> <p>Window, NFRC rated, Clear glass.</p>	<p>Construction nr: 1G Area: 12 Exposure: E</p>	<p>U Value: 0.87 SHGC: 0.67</p>	<p>Heating BTUH: 741 Cooling BTUH: 417</p>	

Windows

Default small windows for wall id 3906843 Window, NFRC rated, Clear glass.	Construction nr: 1G Area: 6 Exposure: S	U Value: 0.87 SHGC: 0.67	Heating BTUH: 371 Cooling BTUH: 205
Default medium windows for wall id 3906843 Window, NFRC rated, Clear glass.	Construction nr: 1G Area: 12 Exposure: S	U Value: 0.87 SHGC: 0.67	Heating BTUH: 741 Cooling BTUH: 410
Default large windows for wall id 3906843 Window, NFRC rated, Clear glass.	Construction nr: 1G Area: 36 Exposure: S	U Value: 0.87 SHGC: 0.67	Heating BTUH: 2,224 Cooling BTUH: 1,230

Window cooling BTUHs shown here are daily average values. See AED graphs for details of fenestration loads during the day.

Ventilation

There are no components for this section.

Hot water piping

There are no components for this section.

Ducts

There are no components for this section.

Infiltration

Leakage Category: Semi-Tight	NCFM 106 Heating:	Heating BTUH: 6,263
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Infiltration

NCFM 50
Cooling:

Sensible BTUH: 415
Latent BTUH: -1,026

Blower Motor

There are no components for this section.

Winter Humidification

There are no components for this section.

Occupants

Nr. Occupants: 4

Sensible BTUH: 920

Latent BTUH: 800

Appliances

Color television

Quantity: 1

Sensible BTUH: 683

Latent BTUH: 0

Computer and monitor

Quantity: 1

Sensible BTUH: 538

Latent BTUH: 0

Light Fixture - 100W

Quantity: 3

Sensible BTUH: 1,023

Latent BTUH: 0

Range with hood and exhaust to outdoors

Quantity: 1

Sensible BTUH: 0

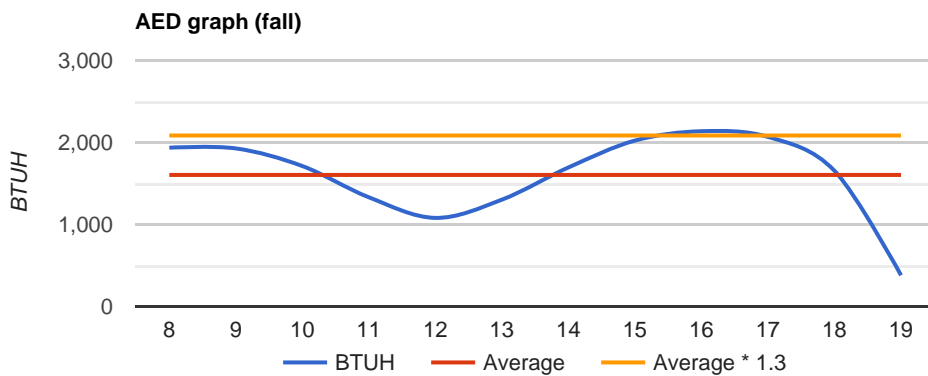
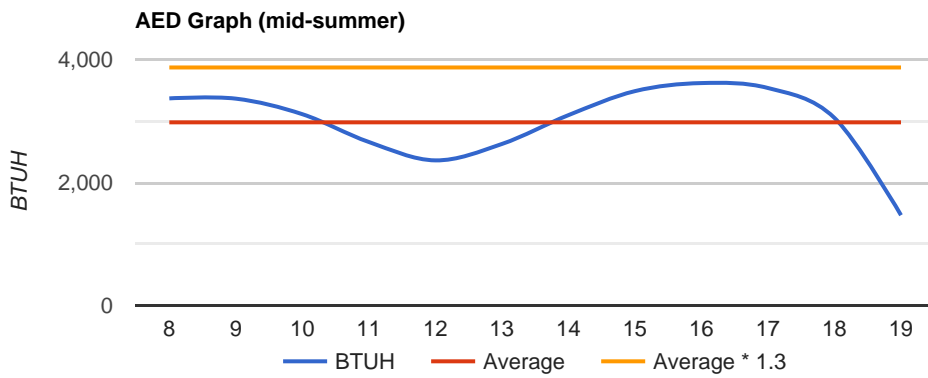
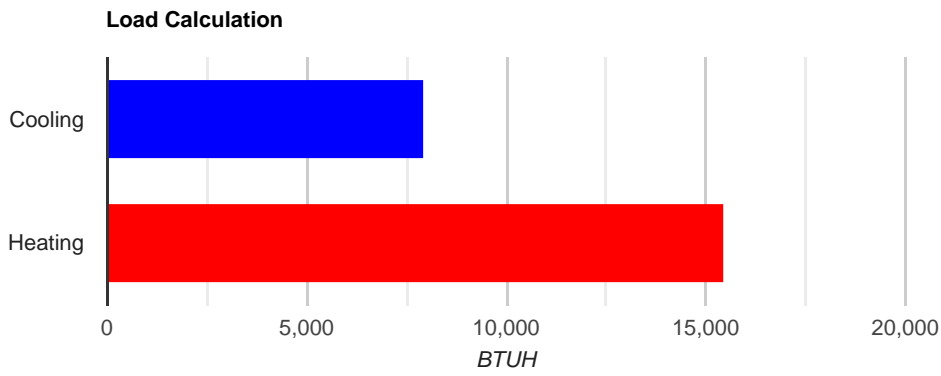
Latent BTUH: 0

Appliances		
Dishwasher	Quantity: 1	Sensible BTUH: 1,024 Latent BTUH: 358
Refrigerator or Freezer - 16CuFt	Quantity: 1	Sensible BTUH: 1,000 Latent BTUH: 0

Plants		
Plant Size: medium	Quantity: 5	Latent BTUH: 100
Plant Size: large	Quantity: 5	Latent BTUH: 150
Plant Size: small	Quantity: 5	Latent BTUH: 50

ROOM DETAIL

Room name: LL Living	
Heated square footage 604	Total Cooling BTUH 7,909
Cooled square footage 604	Total Heating BTUH 15,455
Heated volume (above grade CF) 4,832	CFM 357
Cooled volume (above grade CF) 4,832	Exposed wall area (SF) 512



ROOM DETAIL

Room name: Bath 2

Heated square footage **66**

Total Cooling BTUH **1,159**

Cooled square footage **66**

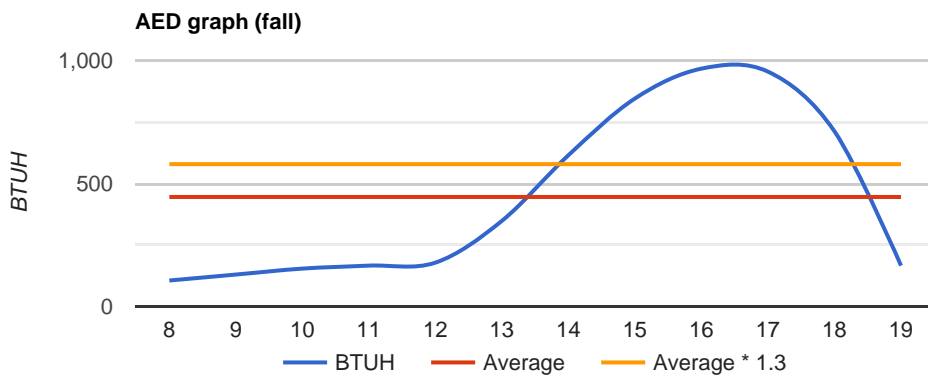
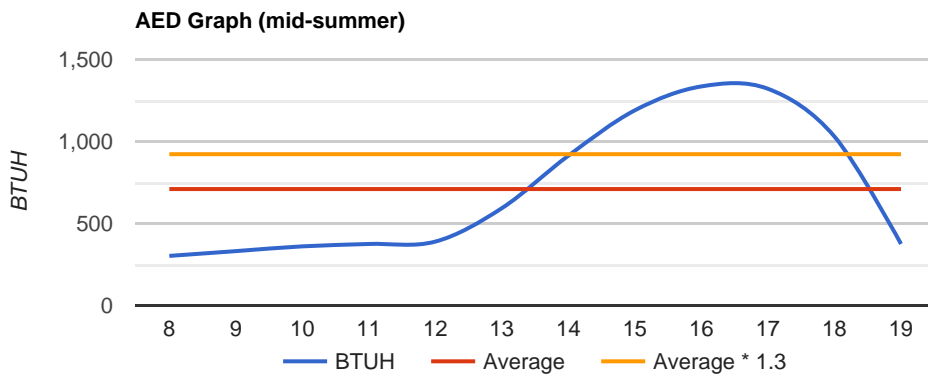
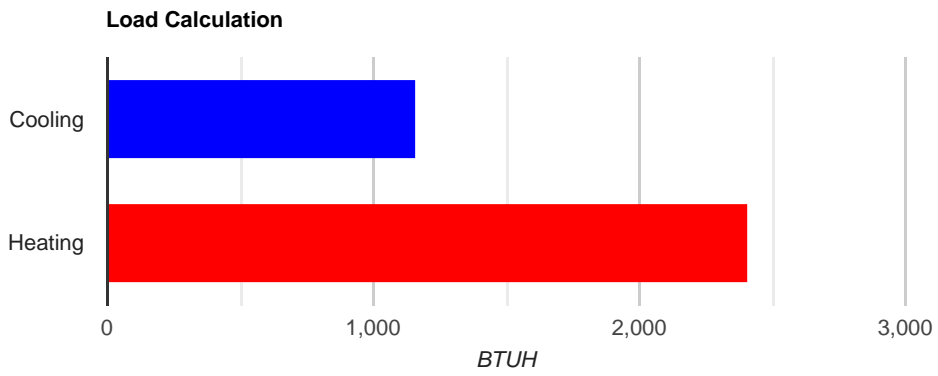
Total Heating BTUH **2,406**

Heated volume (above grade CF) **528**

CFM **60**

Cooled volume (above grade CF) **528**

Exposed wall area (SF) **88**



ROOM DETAIL

Room name: Bedroom 2

Heated square footage **300**

Total Cooling BTUH **2,960**

Cooled square footage **300**

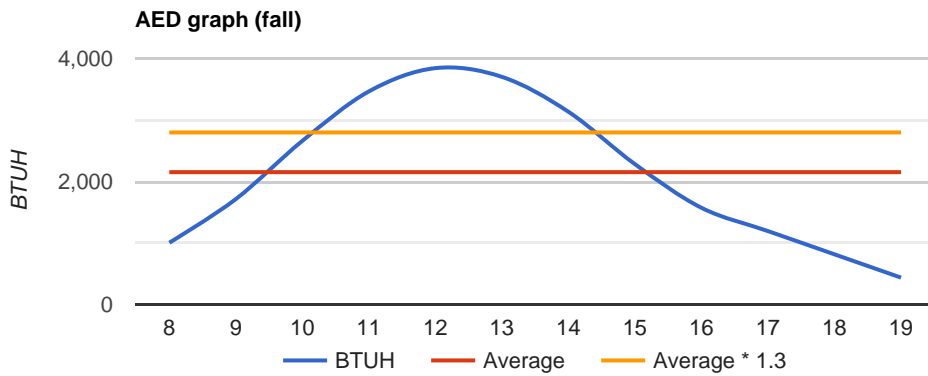
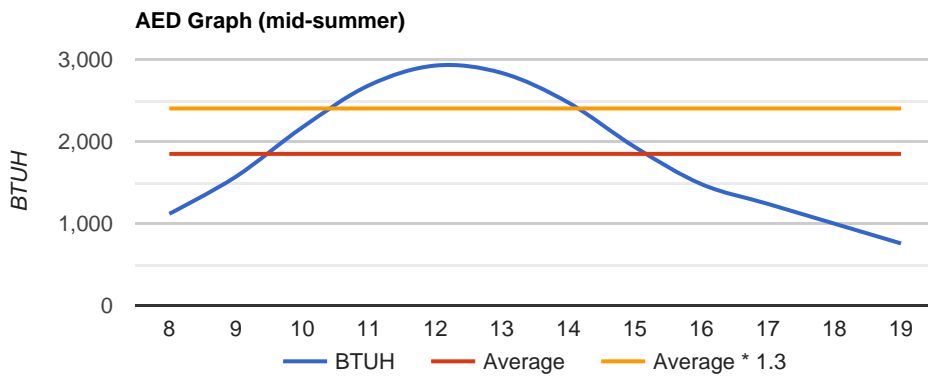
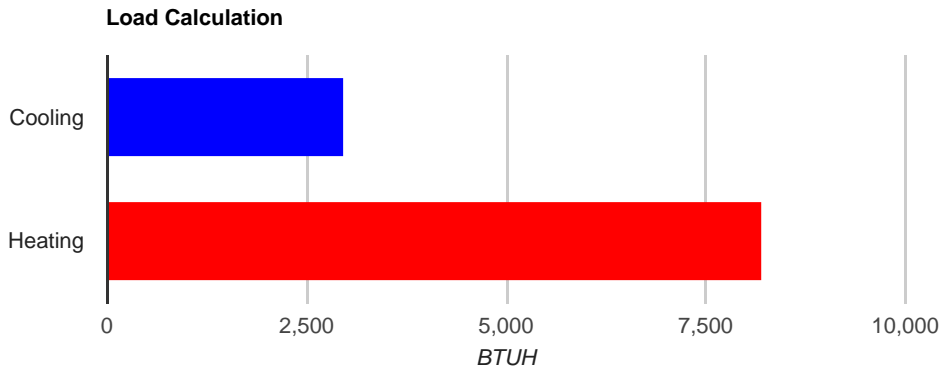
Total Heating BTUH **8,200**

Heated volume (above grade CF) **2,400**

CFM **154**

Cooled volume (above grade CF) **2,400**

Exposed wall area (SF) **224**



ROOM DETAIL

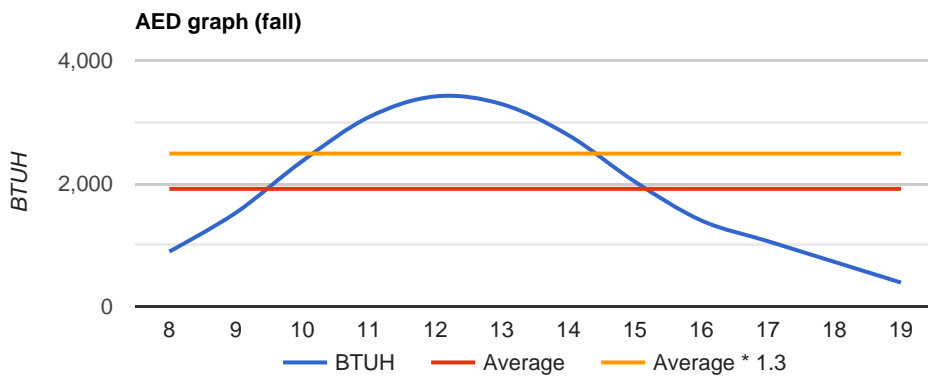
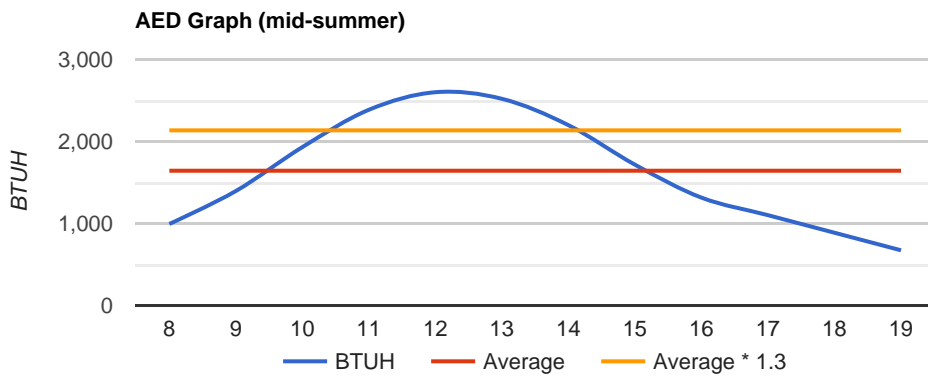
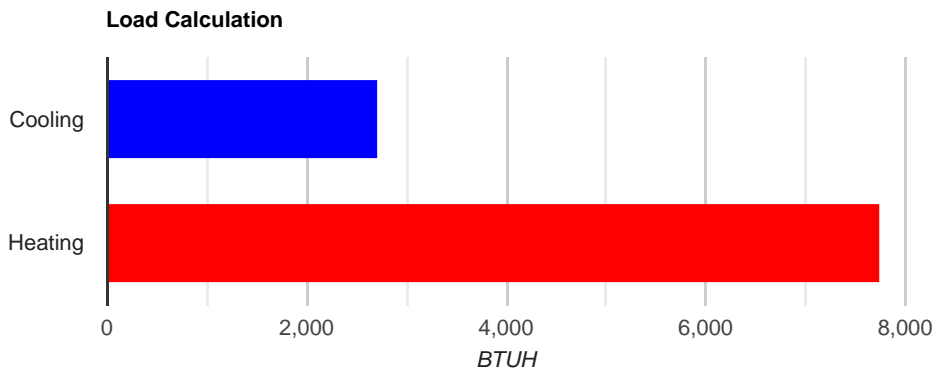
Room name: Bedroom 3

Heated square footage **220** Total Cooling BTUH **2,697**

Cooled square footage **220** Total Heating BTUH **7,733**

Heated volume (above grade CF) **1,760** CFM **140**

Cooled volume (above grade CF) **1,760** Exposed wall area (SF) **216**



ROOM DETAIL

Room name: Bathroom 3

Heated square footage **60**

Total Cooling BTUH **1,150**

Cooled square footage **60**

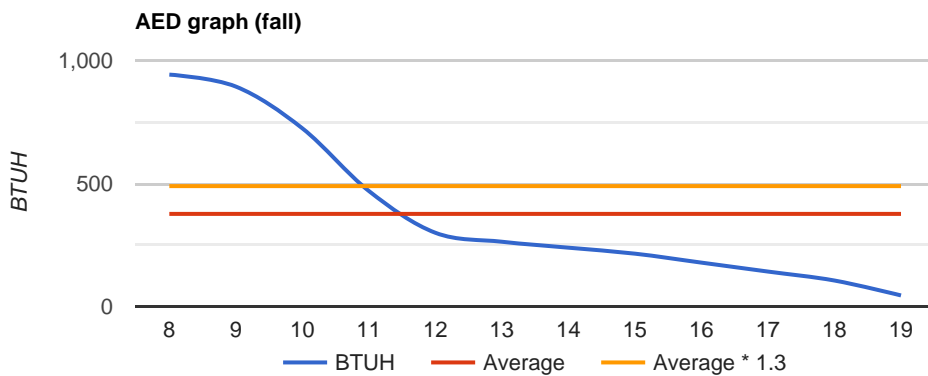
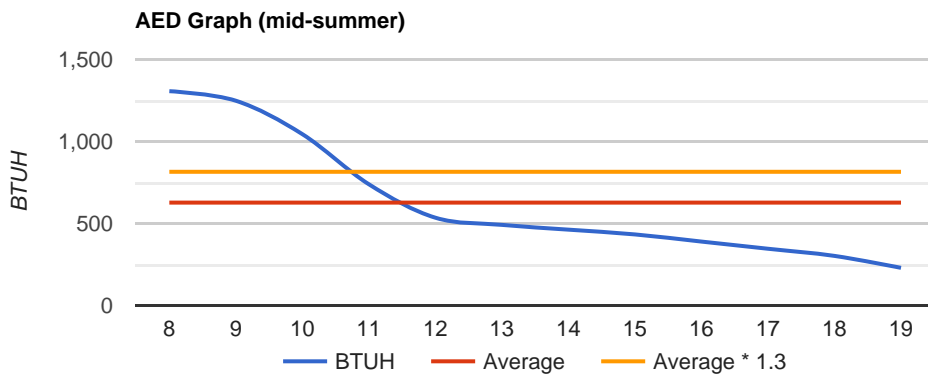
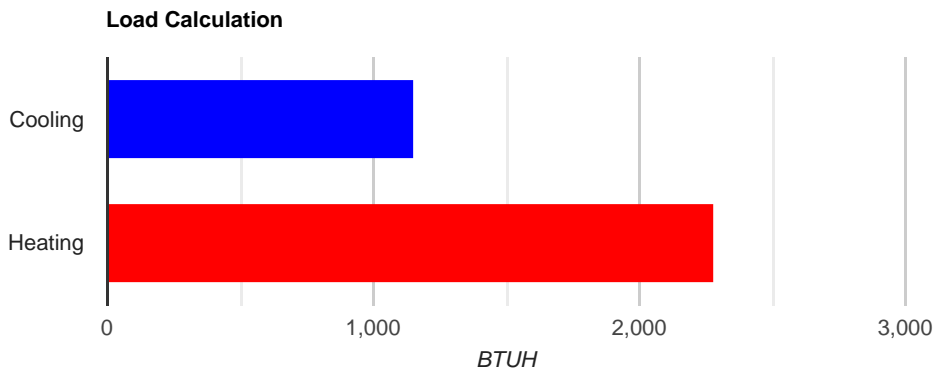
Total Heating BTUH **2,281**

Heated volume (above grade CF) **480**

CFM **59**

Cooled volume (above grade CF) **480**

Exposed wall area (SF) **80**



ROOM DETAIL

Room name: Great Room

Heated square footage **588**

Total Cooling BTUH **12,152**

Cooled square footage **588**

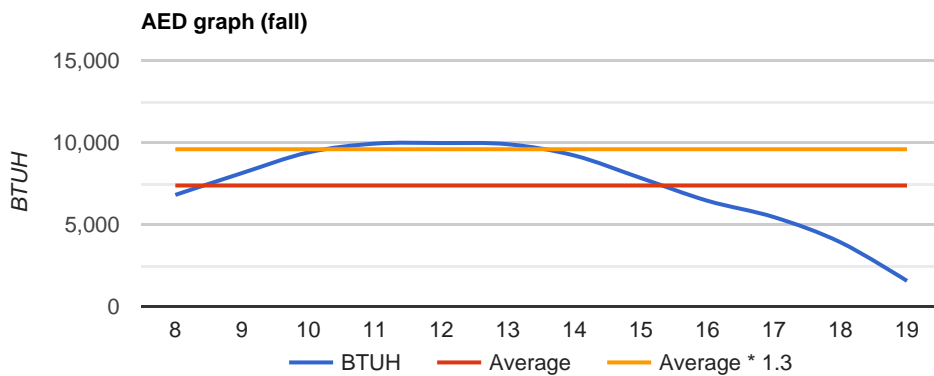
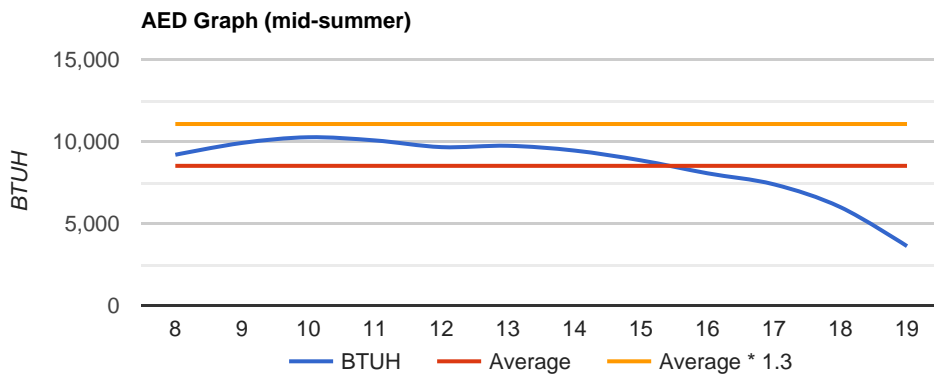
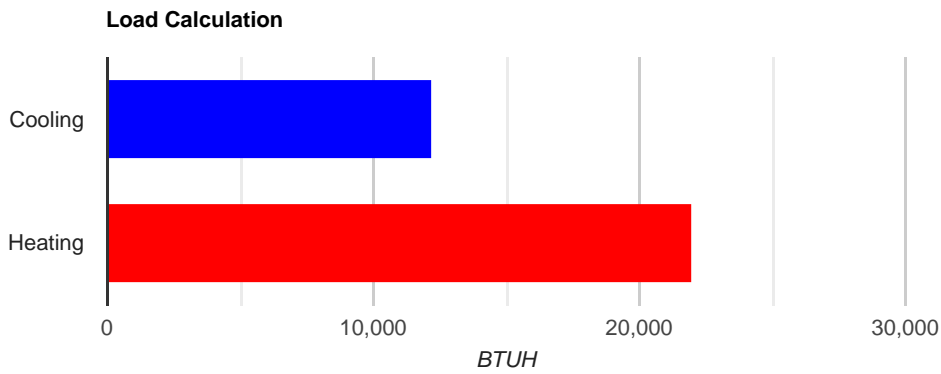
Total Heating BTUH **21,951**

Heated volume (above grade CF) **6,468**

CFM **609**

Cooled volume (above grade CF) **6,468**

Exposed wall area (SF) **770**



ROOM DETAIL

Room name: Bedroom 1

Heated square footage **168**

Total Cooling BTUH **4,284**

Cooled square footage **168**

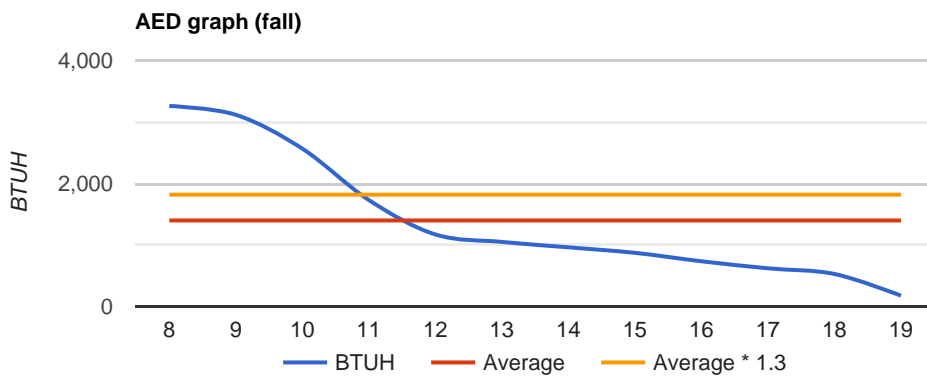
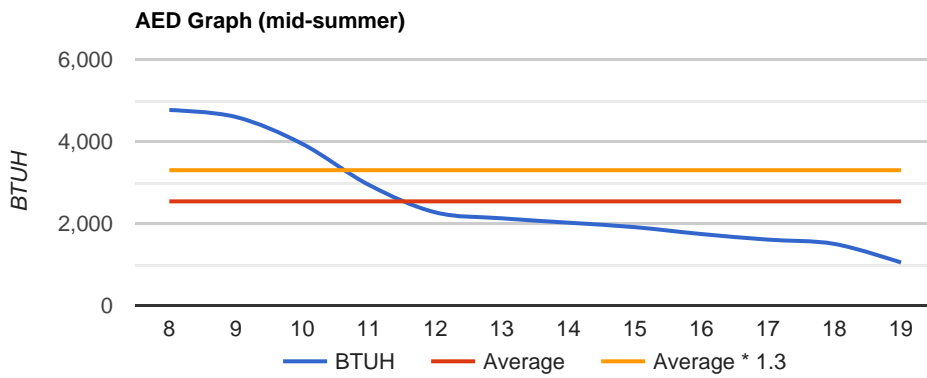
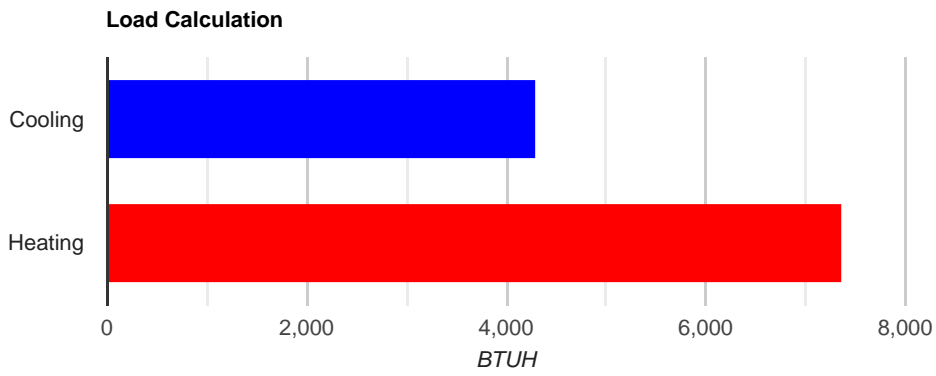
Total Heating BTUH **7,355**

Heated volume (above grade CF) **1,848**

CFM **222**

Cooled volume (above grade CF) **1,848**

Exposed wall area (SF) **286**



ROOM DETAIL

Room name: bath 1 & closet

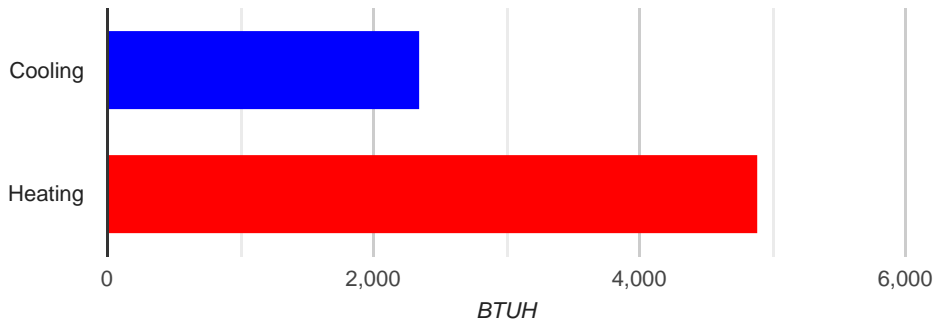
Heated square footage **156** Total Cooling BTUH **2,342**

Cooled square footage **156** Total Heating BTUH **4,883**

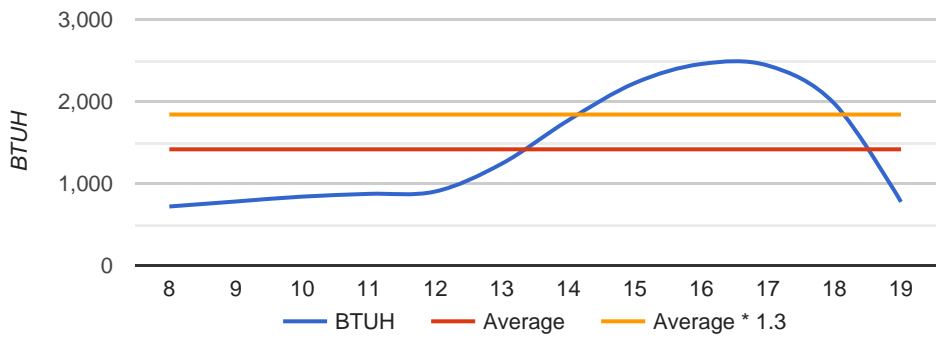
Heated volume (above grade CF) **1,716** CFM **124**

Cooled volume (above grade CF) **1,716** Exposed wall area (SF) **275**

Load Calculation



AED Graph (mid-summer)



AED graph (fall)

