

Energy Budget by System Component - OPTION 4 - VRF No Controls

1517200 Skelly Building Energy Model
Smith & Boucher

09/10/2015
02:13PM

1. Annual Coil Loads

Component	Load (kBTU)	(kBTU/ft ²)
Cooling Coil Loads	2,205,681	34.437
Heating Coil Loads	516,234	8.060
Grand Total	2,721,915	42.497

2. Energy Consumption by System Component

Component	Site Energy (kBTU)	Site Energy (kBTU/ft ²)	Source Energy (kBTU)	Source Energy (kBTU/ft ²)
Air System Fans	543,349	8.483	1,940,532	30.297
Cooling	344,432	5.378	1,230,114	19.206
Heating	479,776	7.491	658,104	10.275
Pumps	0	0.000	0	0.000
Heat Rejection Fans	0	0.000	0	0.000
HVAC Sub-Total	1,367,556	21.351	3,828,749	59.778
Lights	1,452,146	22.672	5,186,235	80.972
Electric Equipment	825,561	12.889	2,948,433	46.033
Misc. Electric	0	0.000	0	0.000
Misc. Fuel Use	0	0.000	0	0.000
Non-HVAC Sub-Total	2,277,707	35.561	8,134,667	127.005
Grand Total	3,645,263	56.913	11,963,416	186.783

Notes:

1. 'Cooling Coil Loads' is the sum of all air system cooling coil loads.
2. 'Heating Coil Loads' is the sum of all air system heating coil loads.
3. Site Energy is the actual energy consumed.
4. Source Energy is the site energy divided by the electric generating efficiency (28.0%).
5. Source Energy for fuels equals the site energy value.
6. Energy per unit floor area is based on the gross building floor area.
 Gross Floor Area **64050.0** ft²
 Conditioned Floor Area **64050.0** ft²

Monthly Energy Use by Component - OPTION 4 - VRF No Controls

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1. Monthly Energy Use by System Component

Component	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Air System Fans (kWh)	13557	12244	13554	13084	13500	13045	13532	13522	13039	13510	13104	13556
<i>Cooling</i>												
Electric (kWh)	0	0	4867	8342	10041	16501	23077	18347	11301	8471	0	0
Natural Gas (Therm)	0	0	0	0	0	0	0	0	0	0	0	0
Fuel Oil (na)	0	0	0	0	0	0	0	0	0	0	0	0
Propane (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote HW (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote Steam (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote CW (na)	0	0	0	0	0	0	0	0	0	0	0	0
<i>Heating</i>												
Electric (kWh)	4992	2926	5958	823	192	19	0	0	96	539	1131	3647
Natural Gas (Therm)	864	582	856	333	144	23	0	0	80	289	311	622
Fuel Oil (na)	0	0	0	0	0	0	0	0	0	0	0	0
Propane (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote HW (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote Steam (na)	0	0	0	0	0	0	0	0	0	0	0	0
Pumps (kWh)	0	0	0	0	0	0	0	0	0	0	0	0
Heat Rej. Fans (kWh)	0	0	0	0	0	0	0	0	0	0	0	0
Lighting (kWh)	36147	32649	36147	34981	36147	34981	36147	36147	34981	36147	34981	36147
Electric Eqpt. (kWh)	20499	18555	20499	20054	20194	20054	20804	20194	20054	20499	19749	20804
Misc. Electric (kWh)	0	0	0	0	0	0	0	0	0	0	0	0
<i>Misc. Fuel</i>												
Natural Gas (Therm)	0	0	0	0	0	0	0	0	0	0	0	0
Propane (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote HW (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote Steam (na)	0	0	0	0	0	0	0	0	0	0	0	0

Energy Budget by System Component - OPTION 4 - VRF with Controls

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1. Annual Coil Loads

Component	Load (kBTU)	(kBTU/ft ²)
Cooling Coil Loads	1,964,501	30.671
Heating Coil Loads	317,340	4.955
Grand Total	2,281,841	35.626

2. Energy Consumption by System Component

Component	Site Energy (kBTU)	Site Energy (kBTU/ft ²)	Source Energy (kBTU)	Source Energy (kBTU/ft ²)
Air System Fans	244,585	3.819	873,518	13.638
Cooling	323,047	5.044	1,153,741	18.013
Heating	169,379	2.645	411,352	6.422
Pumps	0	0.000	0	0.000
Heat Rejection Fans	0	0.000	0	0.000
HVAC Sub-Total	737,012	11.507	2,438,611	38.074
Lights	1,452,146	22.672	5,186,235	80.972
Electric Equipment	825,561	12.889	2,948,433	46.033
Misc. Electric	0	0.000	0	0.000
Misc. Fuel Use	0	0.000	0	0.000
Non-HVAC Sub-Total	2,277,707	35.561	8,134,667	127.005
Grand Total	3,014,719	47.068	10,573,278	165.079

Notes:

1. 'Cooling Coil Loads' is the sum of all air system cooling coil loads.
2. 'Heating Coil Loads' is the sum of all air system heating coil loads.
3. Site Energy is the actual energy consumed.
4. Source Energy is the site energy divided by the electric generating efficiency (28.0%).
5. Source Energy for fuels equals the site energy value.
6. Energy per unit floor area is based on the gross building floor area.
 Gross Floor Area **64050.0** ft²
 Conditioned Floor Area **64050.0** ft²

Monthly Energy Use by Component - OPTION 4 - VRF with Controls

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1. Monthly Energy Use by System Component

Component	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Air System Fans (kWh)	6097	5360	6001	5845	5893	6156	6728	6245	5881	5968	5453	6057
<i>Cooling</i>												
Electric (kWh)	0	0	4934	7799	9393	15462	21242	16968	10827	8056	0	0
Natural Gas (Therm)	0	0	0	0	0	0	0	0	0	0	0	0
Fuel Oil (na)	0	0	0	0	0	0	0	0	0	0	0	0
Propane (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote HW (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote Steam (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote CW (na)	0	0	0	0	0	0	0	0	0	0	0	0
<i>Heating</i>												
Electric (kWh)	7062	4226	8052	922	58	1	0	0	42	440	1636	5140
Natural Gas (Therm)	163	79	217	82	23	3	0	0	13	57	32	83
Fuel Oil (na)	0	0	0	0	0	0	0	0	0	0	0	0
Propane (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote HW (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote Steam (na)	0	0	0	0	0	0	0	0	0	0	0	0
Pumps (kWh)	0	0	0	0	0	0	0	0	0	0	0	0
Heat Rej. Fans (kWh)	0	0	0	0	0	0	0	0	0	0	0	0
Lighting (kWh)	36147	32649	36147	34981	36147	34981	36147	36147	34981	36147	34981	36147
Electric Eqpt. (kWh)	20499	18555	20499	20054	20194	20054	20804	20194	20054	20499	19749	20804
Misc. Electric (kWh)	0	0	0	0	0	0	0	0	0	0	0	0
<i>Misc. Fuel</i>												
Natural Gas (Therm)	0	0	0	0	0	0	0	0	0	0	0	0
Propane (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote HW (na)	0	0	0	0	0	0	0	0	0	0	0	0
Remote Steam (na)	0	0	0	0	0	0	0	0	0	0	0	0