



Jessica R. Baker
The Montgomery County
Conference Center and Hotel
(MCCCH), Rockville, MD

Appendix C: Hourly Analysis Program Output

Annual Cost Summary

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J.B.

04/02/2005
11:07AM

Table 1. Annual Costs

Component	MCCCH_Corrected (\$)
Air System Fans	22,314
Cooling	53,857
Heating	10,867
Pumps	16,834
Cooling Tower Fans	17,466
HVAC Sub-Total	121,339
Lights	63,996
Electric Equipment	6,004
Misc. Electric	0
Misc. Fuel Use	10,958
Non-HVAC Sub-Total	80,958
Grand Total	202,297

Table 2. Annual Cost per Unit Floor Area

Component	MCCCH_Corrected (\$/ft ²)
Air System Fans	0.092
Cooling	0.223
Heating	0.045
Pumps	0.070
Cooling Tower Fans	0.072
HVAC Sub-Total	0.502
Lights	0.265
Electric Equipment	0.025
Misc. Electric	0.000
Misc. Fuel Use	0.045
Non-HVAC Sub-Total	0.335
Grand Total	0.838
Gross Floor Area (ft ²)	241547.0
Conditioned Floor Area (ft ²)	241547.0

Note: Values in this table are calculated using the Gross Floor Area.

Table 3. Component Cost as a Percentage of Total Cost

Component	MCCCH_Corrected (%)
Air System Fans	11.0
Cooling	26.6
Heating	5.4
Pumps	8.3
Cooling Tower Fans	8.6
HVAC Sub-Total	60.0
Lights	31.6
Electric Equipment	3.0
Misc. Electric	0.0
Misc. Fuel Use	5.4
Non-HVAC Sub-Total	40.0
Grand Total	100.0

Annual Energy and Emissions Summary

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Table 1. Annual Costs

Component	MCCCH_Corrected (\$)
HVAC Components	
Electric	59,385
Natural Gas	61,954
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Remote CW	0
HVAC Sub-Total	121,339
Non-HVAC Components	
Electric	69,997
Natural Gas	10,958
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Non-HVAC Sub-Total	80,955
Grand Total	202,293

Table 2. Annual Energy Consumption

Component	MCCCH_Corrected
HVAC Components	
Electric (kWh)	2,241,431
Natural Gas (therms)	269,646
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0
Non-HVAC Components	
Electric (kWh)	2,701,812
Natural Gas (therms)	47,263
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Totals	
Electric (kWh)	4,943,243
Natural Gas (therms)	316,909
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0

Annual Energy and Emissions Summary

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Table 3. Annual Emissions

Component	MCCCH_Corrected
CO2 (lb)	6,821,857
SO2 (kg)	9,936
NOx (kg)	16,906

Table 4. Annual Cost per Unit Floor Area

Component	MCCCH_Corrected (\$/ft²)
HVAC Components	
Electric	0.246
Natural Gas	0.257
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Remote CW	0.000
HVAC Sub-Total	0.502
Non-HVAC Components	
Electric	0.290
Natural Gas	0.045
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Non-HVAC Sub-Total	0.335
Grand Total	0.838
Gross Floor Area (ft²)	241547.0
Conditioned Floor Area (ft²)	241547.0

Note: Values in this table are calculated using the Gross Floor Area.

Annual Energy and Emissions Summary

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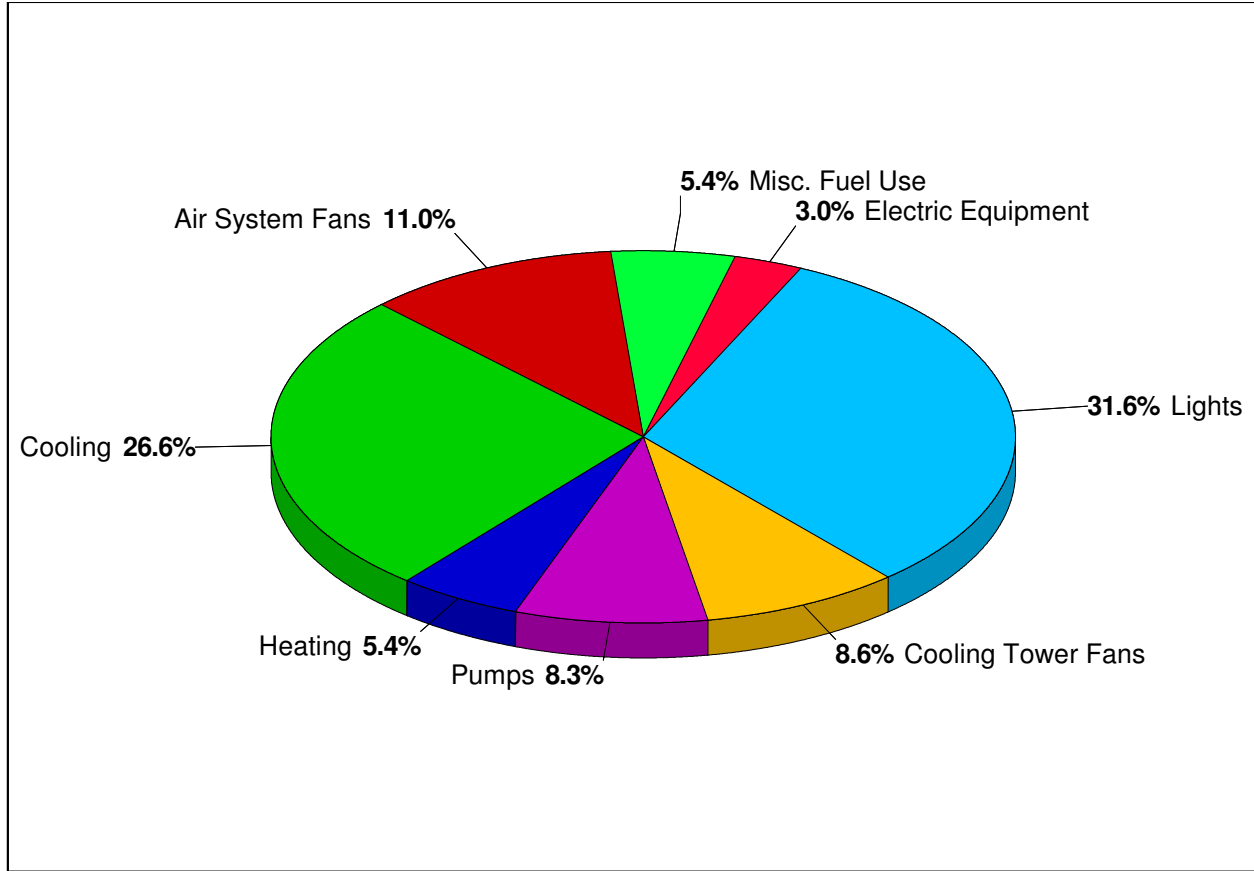
Table 5. Component Cost as a Percentage of Total Cost

Component	MCCCH_Corrected (%)
HVAC Components	
Electric	29.4
Natural Gas	30.6
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Remote CW	0.0
HVAC Sub-Total	60.0
Non-HVAC Components	
Electric	34.6
Natural Gas	5.4
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Non-HVAC Sub-Total	40.0
Grand Total	100.0

Annual Component Costs - MCCCH_Corrected

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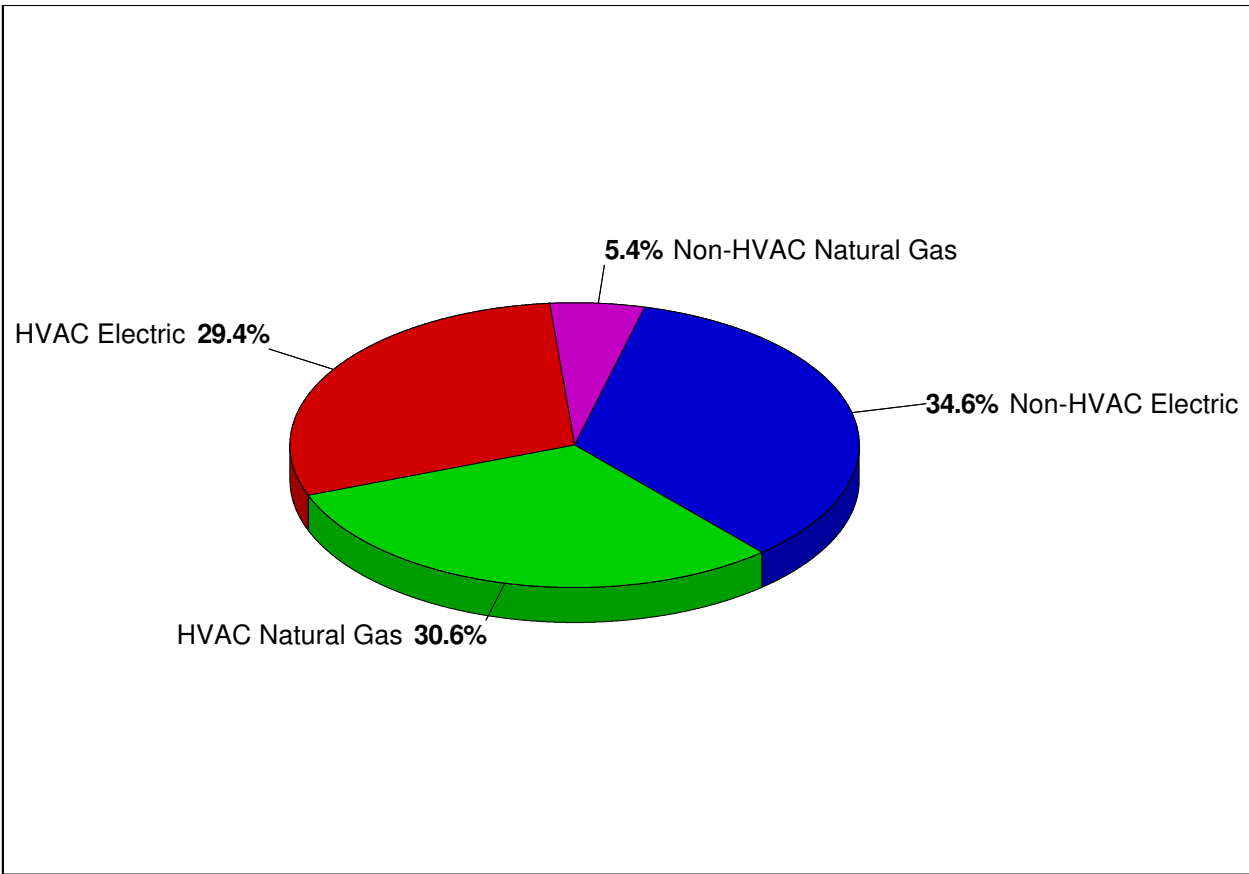


1. Annual Costs

Component	Annual Cost (\$)	(\$/ft ²)	Percent of Total (%)
Air System Fans	22,314	0.092	11.0
Cooling	53,857	0.223	26.6
Heating	10,867	0.045	5.4
Pumps	16,834	0.070	8.3
Cooling Tower Fans	17,466	0.072	8.6
HVAC Sub-Total	121,339	0.502	60.0
Lights	63,996	0.265	31.6
Electric Equipment	6,004	0.025	3.0
Misc. Electric	0	0.000	0.0
Misc. Fuel Use	10,958	0.045	5.4
Non-HVAC Sub-Total	80,958	0.335	40.0
Grand Total	202,297	0.838	100.0

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²



1. Annual Costs

Component	Annual Cost (\$/yr)	(\$/ft ²)	Percent of Total (%)
HVAC Components			
Electric	59,385	0.246	29.4
Natural Gas	61,954	0.257	30.6
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Remote Chilled Water	0	0.000	0.0
HVAC Sub-Total	121,339	0.502	60.0
Non-HVAC Components			
Electric	69,997	0.290	34.6
Natural Gas	10,958	0.045	5.4
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Non-HVAC Sub-Total	80,955	0.335	40.0
Grand Total	202,293	0.838	100.0

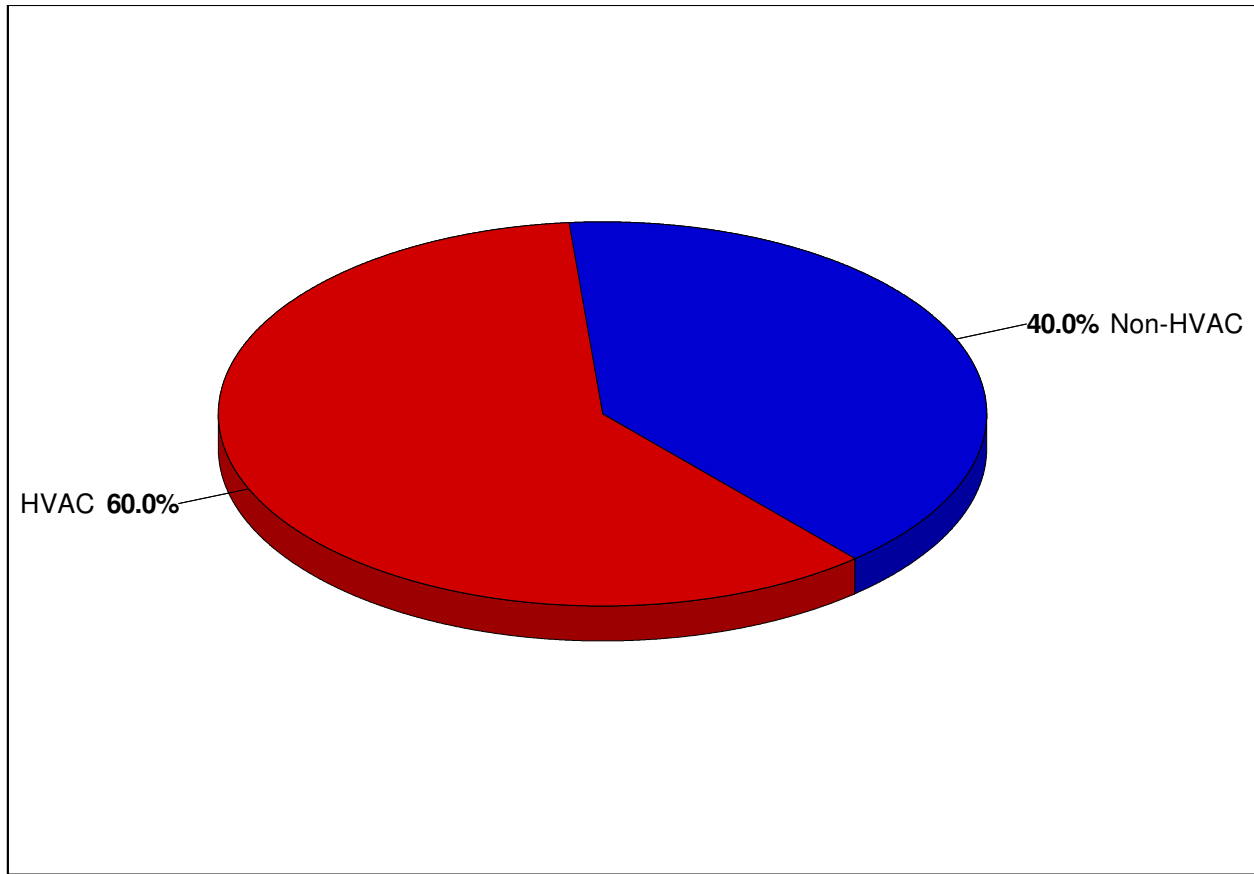
Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area 241547.0 ft²
 Conditioned Floor Area 241547.0 ft²

Annual HVAC & Non-HVAC Cost Totals - MCCCH_Corrected

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1. Annual Costs

Component	Annual Cost (\$/yr)	(\$/ft ²)	Percent of Total (%)
HVAC	121,339	0.502	60.0
Non-HVAC	80,958	0.335	40.0
Grand Total	202,297	0.838	100.0

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²

Annual Cost Summary

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J.B.

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Table 1. Annual Costs

Component	MCCCH_Corrected (\$)
Air System Fans	22,504
Cooling	40,105
Heating	11,272
Pumps	15,999
Cooling Tower Fans	13,013
HVAC Sub-Total	102,894
Lights	64,495
Electric Equipment	6,051
Misc. Electric	0
Misc. Fuel Use	11,385
Non-HVAC Sub-Total	81,931
Grand Total	184,825

Table 2. Annual Cost per Unit Floor Area

Component	MCCCH_Corrected (\$/ft²)
Air System Fans	0.093
Cooling	0.166
Heating	0.047
Pumps	0.066
Cooling Tower Fans	0.054
HVAC Sub-Total	0.426
Lights	0.267
Electric Equipment	0.025
Misc. Electric	0.000
Misc. Fuel Use	0.047
Non-HVAC Sub-Total	0.339
Grand Total	0.765
Gross Floor Area (ft²)	241547.0
Conditioned Floor Area (ft²)	241547.0

Note: Values in this table are calculated using the Gross Floor Area.

Table 3. Component Cost as a Percentage of Total Cost

Component	MCCCH_Corrected (%)
Air System Fans	12.2
Cooling	21.7
Heating	6.1
Pumps	8.7
Cooling Tower Fans	7.0
HVAC Sub-Total	55.7
Lights	34.9
Electric Equipment	3.3
Misc. Electric	0.0
Misc. Fuel Use	6.2
Non-HVAC Sub-Total	44.3
Grand Total	100.0

Annual Energy and Emissions Summary

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J.B.

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Table 1. Annual Costs

Component	MCCCH_Corrected (\$)
HVAC Components	
Electric	65,096
Natural Gas	37,797
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Remote CW	0
HVAC Sub-Total	102,893
Non-HVAC Components	
Electric	70,543
Natural Gas	11,385
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Non-HVAC Sub-Total	81,928
Grand Total	184,821

Table 2. Annual Energy Consumption

Component	MCCCH_Corrected
HVAC Components	
Electric (kWh)	2,428,347
Natural Gas (therms)	158,245
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0
Non-HVAC Components	
Electric (kWh)	2,701,812
Natural Gas (therms)	47,263
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Totals	
Electric (kWh)	5,130,159
Natural Gas (therms)	205,508
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0

Annual Energy and Emissions Summary

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Table 3. Annual Emissions

Component	MCCCH_Corrected
CO2 (lb)	7,079,816
SO2 (kg)	10,312
NOx (kg)	17,546

Table 4. Annual Cost per Unit Floor Area

Component	MCCCH_Corrected (\$/ft²)
HVAC Components	
Electric	0.270
Natural Gas	0.157
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Remote CW	0.000
HVAC Sub-Total	0.426
Non-HVAC Components	
Electric	0.292
Natural Gas	0.047
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Non-HVAC Sub-Total	0.339
Grand Total	0.765
Gross Floor Area (ft²)	241547.0
Conditioned Floor Area (ft²)	241547.0

Note: Values in this table are calculated using the Gross Floor Area.

Annual Energy and Emissions Summary

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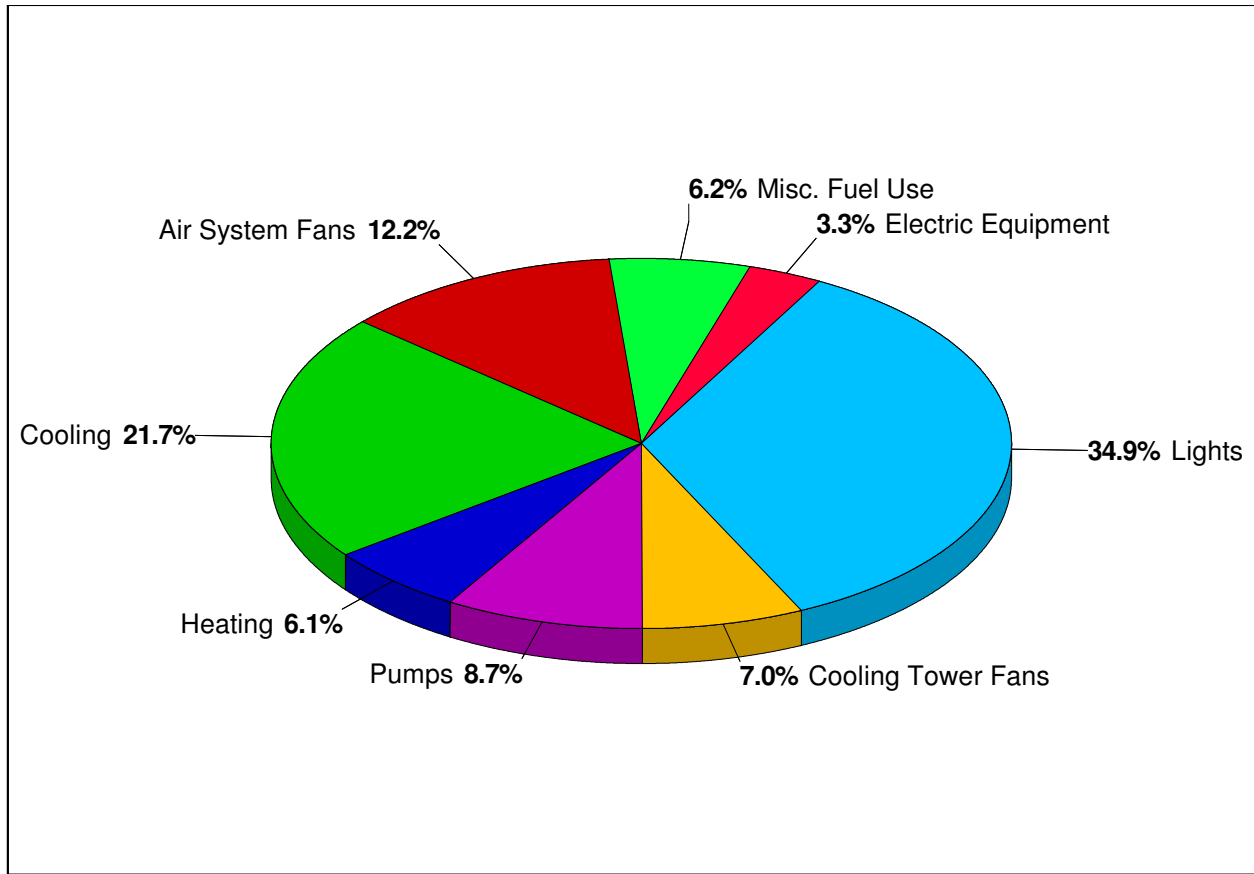
Table 5. Component Cost as a Percentage of Total Cost

Component	MCCCH_Corrected (%)
HVAC Components	
Electric	35.2
Natural Gas	20.5
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Remote CW	0.0
HVAC Sub-Total	55.7
Non-HVAC Components	
Electric	38.2
Natural Gas	6.2
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Non-HVAC Sub-Total	44.3
Grand Total	100.0

Annual Component Costs - MCCCH_Corrected

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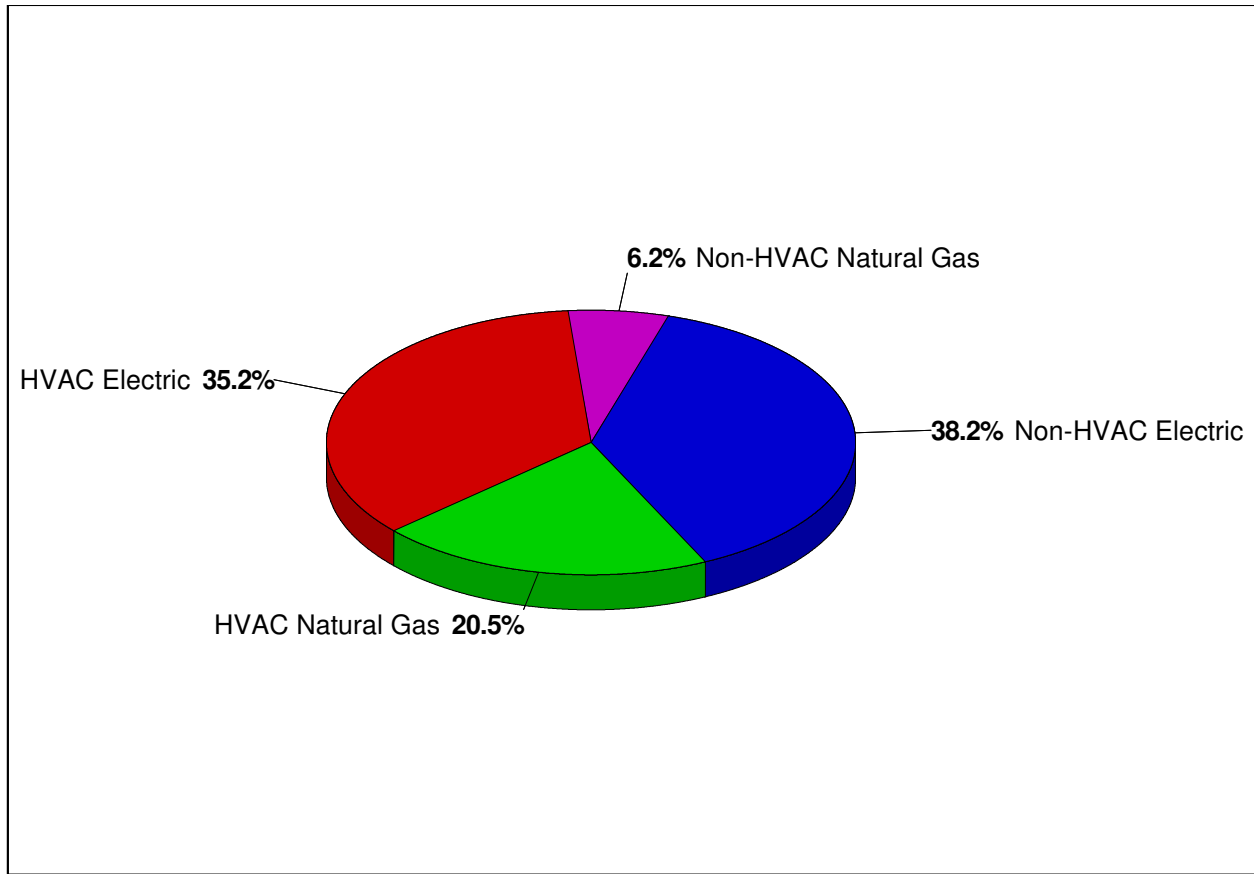


1. Annual Costs

Component	Annual Cost (\$)	(\$/ft ²)	Percent of Total (%)
Air System Fans	22,504	0.093	12.2
Cooling	40,105	0.166	21.7
Heating	11,272	0.047	6.1
Pumps	15,999	0.066	8.7
Cooling Tower Fans	13,013	0.054	7.0
HVAC Sub-Total	102,894	0.426	55.7
Lights	64,495	0.267	34.9
Electric Equipment	6,051	0.025	3.3
Misc. Electric	0	0.000	0.0
Misc. Fuel Use	11,385	0.047	6.2
Non-HVAC Sub-Total	81,931	0.339	44.3
Grand Total	184,825	0.765	100.0

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²

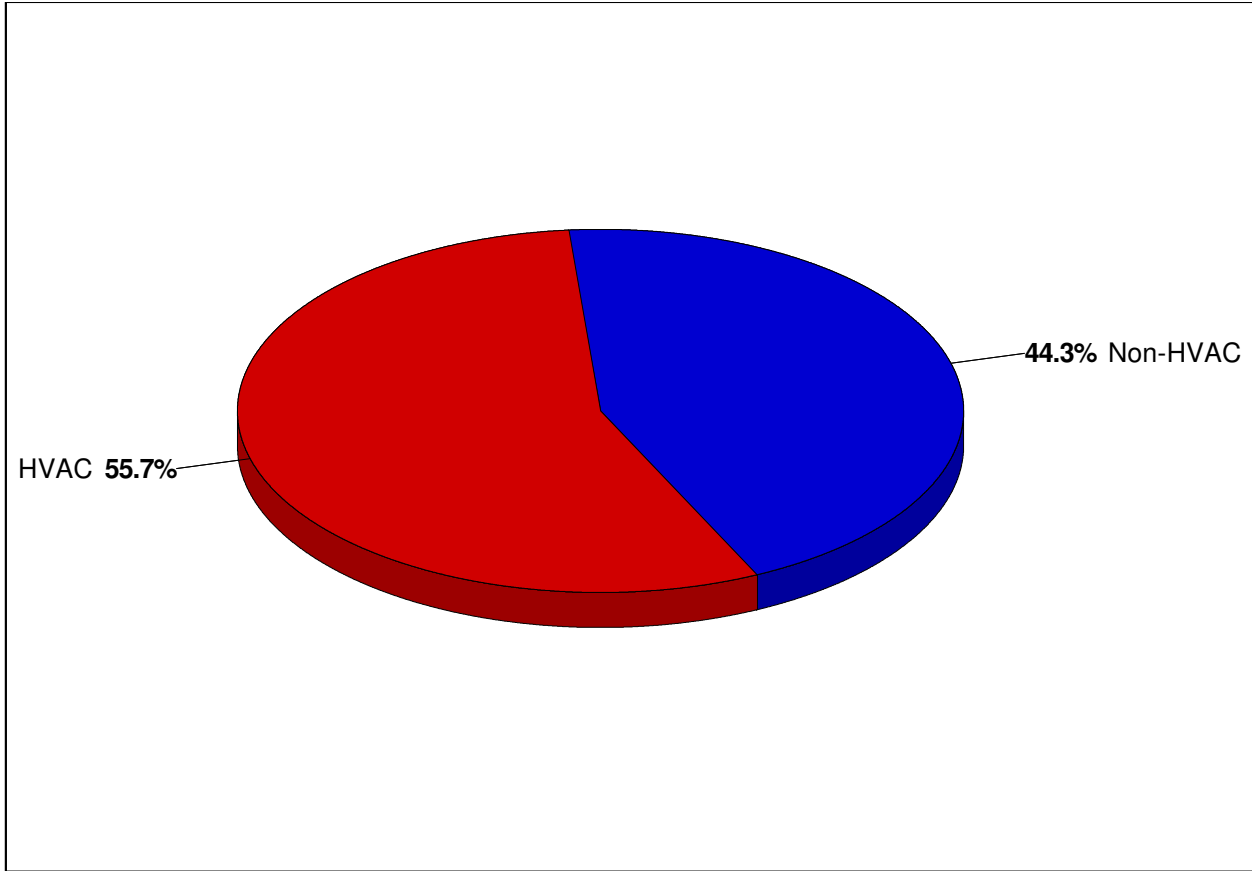


1. Annual Costs

Component	Annual Cost (\$/yr)	(\$/ft²)	Percent of Total (%)
HVAC Components			
Electric	65,096	0.270	35.2
Natural Gas	37,797	0.157	20.5
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Remote Chilled Water	0	0.000	0.0
HVAC Sub-Total	102,893	0.426	55.7
Non-HVAC Components			
Electric	70,543	0.292	38.2
Natural Gas	11,385	0.047	6.2
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Non-HVAC Sub-Total	81,928	0.339	44.3
Grand Total	184,821	0.765	100.0

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²



1. Annual Costs

Component	Annual Cost (\$/yr)	(\$/ft²)	Percent of Total (%)
HVAC	102,894	0.426	55.7
Non-HVAC	81,931	0.339	44.3
Grand Total	184,825	0.765	100.0

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²

Annual Cost Summary

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J.B.

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Table 1. Annual Costs

Component	MCCCH_Corrected (\$)
Air System Fans	22,692
Cooling	24,654
Heating	12,168
Pumps	15,138
Cooling Tower Fans	8,435
HVAC Sub-Total	83,087
Lights	64,991
Electric Equipment	6,097
Misc. Electric	0
Misc. Fuel Use	13,042
Non-HVAC Sub-Total	84,130
Grand Total	167,218

Table 2. Annual Cost per Unit Floor Area

Component	MCCCH_Corrected (\$/ft²)
Air System Fans	0.094
Cooling	0.102
Heating	0.050
Pumps	0.063
Cooling Tower Fans	0.035
HVAC Sub-Total	0.344
Lights	0.269
Electric Equipment	0.025
Misc. Electric	0.000
Misc. Fuel Use	0.054
Non-HVAC Sub-Total	0.348
Grand Total	0.692
Gross Floor Area (ft²)	241547.0
Conditioned Floor Area (ft²)	241547.0

Note: Values in this table are calculated using the Gross Floor Area.

Table 3. Component Cost as a Percentage of Total Cost

Component	MCCCH_Corrected (%)
Air System Fans	13.6
Cooling	14.7
Heating	7.3
Pumps	9.1
Cooling Tower Fans	5.0
HVAC Sub-Total	49.7
Lights	38.9
Electric Equipment	3.6
Misc. Electric	0.0
Misc. Fuel Use	7.8
Non-HVAC Sub-Total	50.3
Grand Total	100.0

Annual Energy and Emissions Summary

C
J.B.

04/02/2005
12:31PM

Table 1. Annual Costs

Component	MCCCH_Corrected (\$)
HVAC Components	
Electric	70,919
Natural Gas	12,168
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Remote CW	0
HVAC Sub-Total	83,087
Non-HVAC Components	
Electric	71,085
Natural Gas	13,042
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Non-HVAC Sub-Total	84,127
Grand Total	167,215

Table 2. Annual Energy Consumption

Component	MCCCH_Corrected
HVAC Components	
Electric (kWh)	2,615,294
Natural Gas (therms)	46,845
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0
Non-HVAC Components	
Electric (kWh)	2,701,812
Natural Gas (therms)	47,263
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Totals	
Electric (kWh)	5,317,106
Natural Gas (therms)	94,108
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0

Annual Energy and Emissions Summary

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J.B.

04/02/2005
12:31PM

Table 3. Annual Emissions

Component	MCCCH_Corrected
CO2 (lb)	7,337,774
SO2 (kg)	10,688
NOx (kg)	18,185

Table 4. Annual Cost per Unit Floor Area

Component	MCCCH_Corrected (\$/ft²)
HVAC Components	
Electric	0.294
Natural Gas	0.050
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Remote CW	0.000
HVAC Sub-Total	0.344
Non-HVAC Components	
Electric	0.294
Natural Gas	0.054
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Non-HVAC Sub-Total	0.348
Grand Total	0.692
Gross Floor Area (ft²)	241547.0
Conditioned Floor Area (ft²)	241547.0

Note: Values in this table are calculated using the Gross Floor Area.

Annual Energy and Emissions Summary

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J.B.

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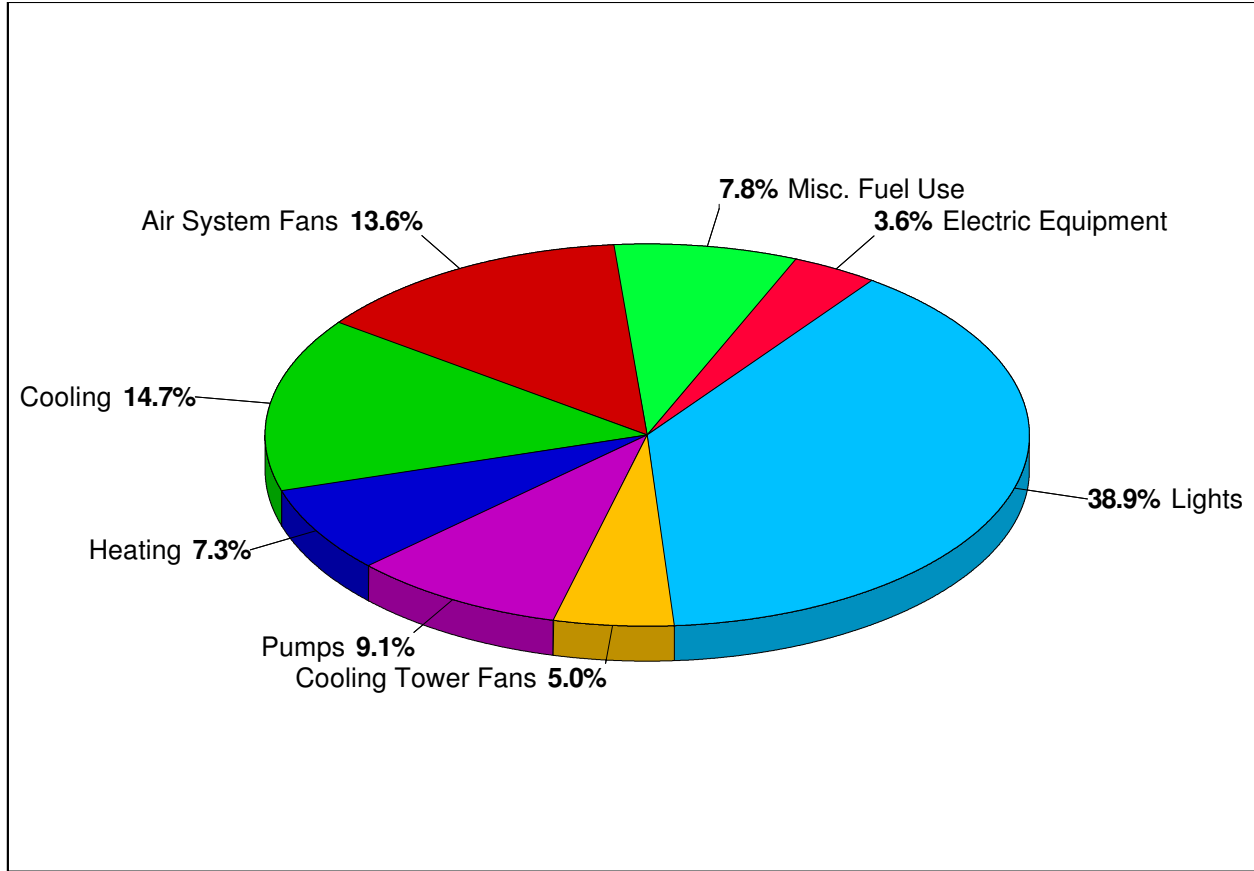
Table 5. Component Cost as a Percentage of Total Cost

Component	MCCCH_Corrected (%)
HVAC Components	
Electric	42.4
Natural Gas	7.3
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Remote CW	0.0
HVAC Sub-Total	49.7
Non-HVAC Components	
Electric	42.5
Natural Gas	7.8
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Non-HVAC Sub-Total	50.3
Grand Total	100.0

Annual Component Costs - MCCCH_Corrected

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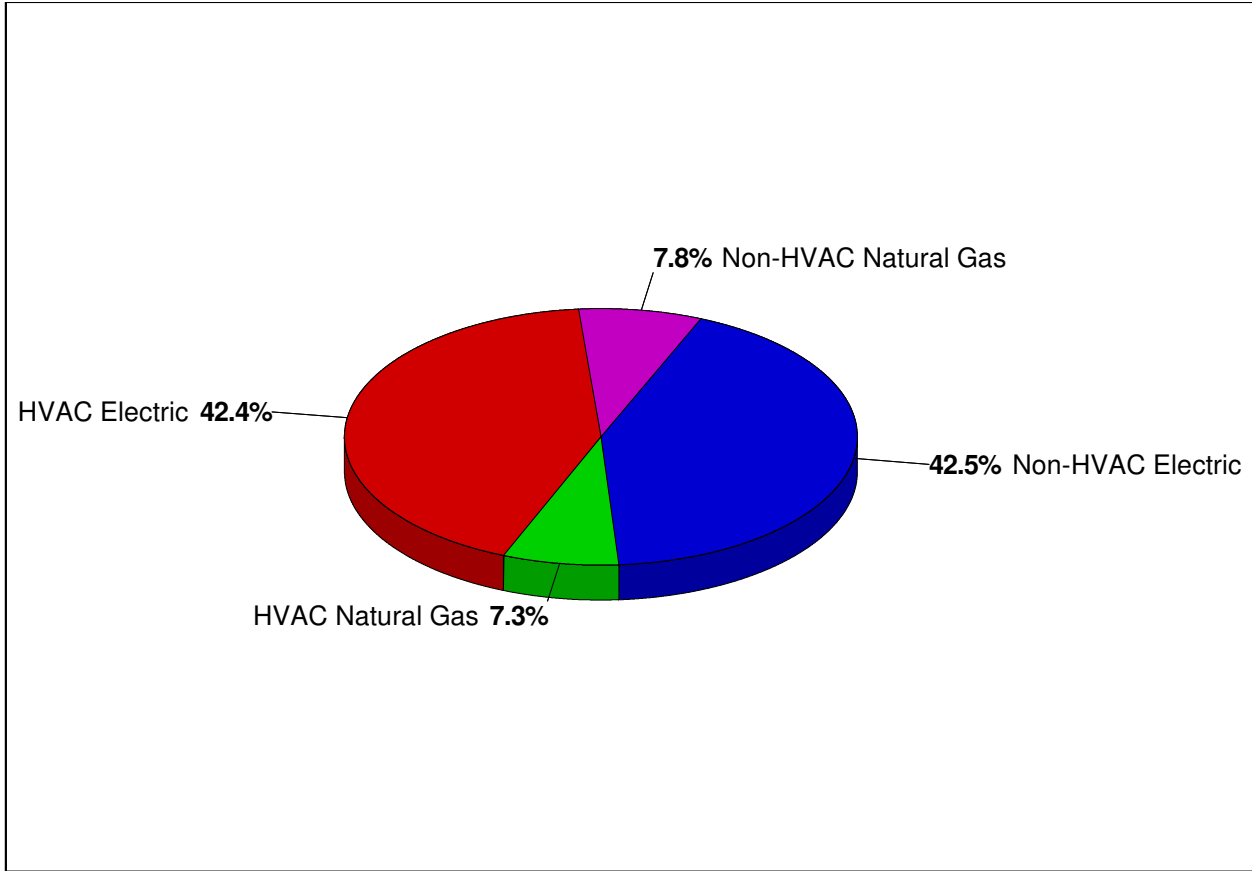


1. Annual Costs

Component	Annual Cost (\$)	(\$/ft ²)	Percent of Total (%)
Air System Fans	22,692	0.094	13.6
Cooling	24,654	0.102	14.7
Heating	12,168	0.050	7.3
Pumps	15,138	0.063	9.1
Cooling Tower Fans	8,435	0.035	5.0
HVAC Sub-Total	83,087	0.344	49.7
Lights	64,991	0.269	38.9
Electric Equipment	6,097	0.025	3.6
Misc. Electric	0	0.000	0.0
Misc. Fuel Use	13,042	0.054	7.8
Non-HVAC Sub-Total	84,130	0.348	50.3
Grand Total	167,218	0.692	100.0

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²



1. Annual Costs

Component	Annual Cost (\$/yr)	(\$/ft ²)	Percent of Total (%)
HVAC Components			
Electric	70,919	0.294	42.4
Natural Gas	12,168	0.050	7.3
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Remote Chilled Water	0	0.000	0.0
HVAC Sub-Total	83,087	0.344	49.7
Non-HVAC Components			
Electric	71,085	0.294	42.5
Natural Gas	13,042	0.054	7.8
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Non-HVAC Sub-Total	84,127	0.348	50.3
Grand Total	167,215	0.692	100.0

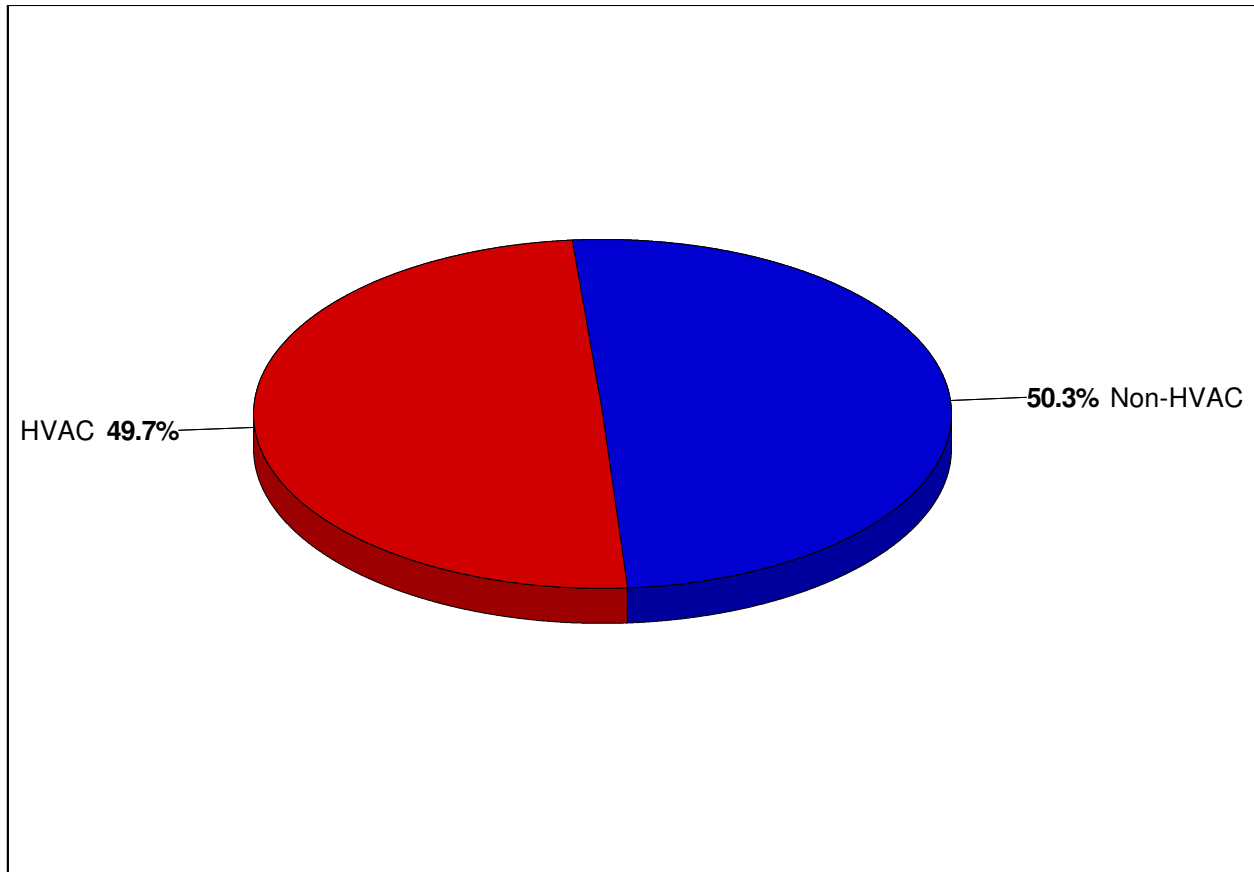
Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area 241547.0 ft²
 Conditioned Floor Area 241547.0 ft²

Annual HVAC & Non-HVAC Cost Totals - MCCCH_Corrected

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J.B.

04/02/2005
12:31PM



1. Annual Costs

Component	Annual Cost (\$/yr)	(\$/ft ²)	Percent of Total (%)
HVAC	83,087	0.344	49.7
Non-HVAC	84,130	0.348	50.3
Grand Total	167,218	0.692	100.0

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²

Annual Cost Summary

Carrier
J.B.

04/02/2005
03:39PM

Table 1. Annual Costs

Component	MCCCH_Corrected (\$)
Air System Fans	22,659
Cooling	20,744
Heating	12,168
Pumps	15,116
Cooling Tower Fans	7,502
HVAC Sub-Total	78,190
Lights	64,903
Electric Equipment	6,089
Misc. Electric	0
Misc. Fuel Use	13,042
Non-HVAC Sub-Total	84,034
Grand Total	162,224

Table 2. Annual Cost per Unit Floor Area

Component	MCCCH_Corrected (\$/ft²)
Air System Fans	0.094
Cooling	0.086
Heating	0.050
Pumps	0.063
Cooling Tower Fans	0.031
HVAC Sub-Total	0.324
Lights	0.269
Electric Equipment	0.025
Misc. Electric	0.000
Misc. Fuel Use	0.054
Non-HVAC Sub-Total	0.348
Grand Total	0.672
Gross Floor Area (ft²)	241547.0
Conditioned Floor Area (ft²)	241547.0

Note: Values in this table are calculated using the Gross Floor Area.

Table 3. Component Cost as a Percentage of Total Cost

Component	MCCCH_Corrected (%)
Air System Fans	14.0
Cooling	12.8
Heating	7.5
Pumps	9.3
Cooling Tower Fans	4.6
HVAC Sub-Total	48.2
Lights	40.0
Electric Equipment	3.8
Misc. Electric	0.0
Misc. Fuel Use	8.0
Non-HVAC Sub-Total	51.8
Grand Total	100.0

Annual Energy and Emissions Summary

Carrier
J.B.

04/02/2005
03:39PM

Table 1. Annual Costs

Component	MCCCH_Corrected (\$)
HVAC Components	
Electric	66,022
Natural Gas	12,168
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Remote CW	0
HVAC Sub-Total	78,190
Non-HVAC Components	
Electric	70,989
Natural Gas	13,042
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Non-HVAC Sub-Total	84,031
Grand Total	162,221

Table 2. Annual Energy Consumption

Component	MCCCH_Corrected
HVAC Components	
Electric (kWh)	2,440,750
Natural Gas (therms)	46,845
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0
Non-HVAC Components	
Electric (kWh)	2,701,812
Natural Gas (therms)	47,263
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Totals	
Electric (kWh)	5,142,562
Natural Gas (therms)	94,108
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0

Annual Energy and Emissions Summary

Carrier
J.B.

04/02/2005
03:39PM

Table 3. Annual Emissions

Component	MCCCH_Corrected
CO2 (lb)	7,096,907
SO2 (kg)	10,337
NOx (kg)	17,588

Table 4. Annual Cost per Unit Floor Area

Component	MCCCH_Corrected (\$/ft²)
HVAC Components	
Electric	0.273
Natural Gas	0.050
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Remote CW	0.000
HVAC Sub-Total	0.324
Non-HVAC Components	
Electric	0.294
Natural Gas	0.054
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Non-HVAC Sub-Total	0.348
Grand Total	0.672
Gross Floor Area (ft²)	241547.0
Conditioned Floor Area (ft²)	241547.0

Note: Values in this table are calculated using the Gross Floor Area.

Annual Energy and Emissions Summary

Carrier
J.B.

04/02/2005
03:39PM

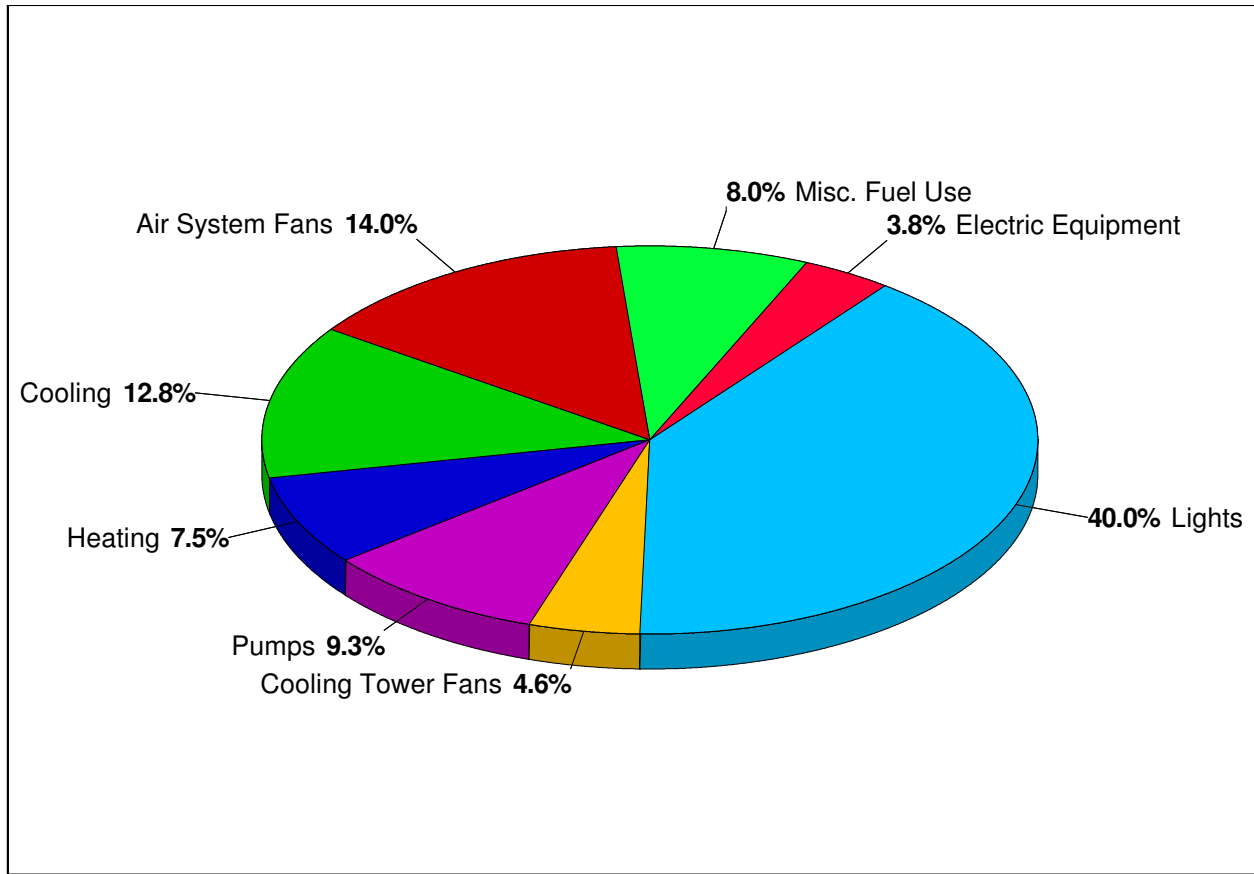
Table 5. Component Cost as a Percentage of Total Cost

Component	MCCCH_Corrected (%)
HVAC Components	
Electric	40.7
Natural Gas	7.5
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Remote CW	0.0
HVAC Sub-Total	48.2
Non-HVAC Components	
Electric	43.8
Natural Gas	8.0
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Non-HVAC Sub-Total	51.8
Grand Total	100.0

Annual Component Costs - MCCCH_Corrected

Carrier
J.B.

04/02/2005
03:39PM



1. Annual Costs

Component	Annual Cost (\$)	(\$/ft ²)	Percent of Total (%)
Air System Fans	22,659	0.094	14.0
Cooling	20,744	0.086	12.8
Heating	12,168	0.050	7.5
Pumps	15,116	0.063	9.3
Cooling Tower Fans	7,502	0.031	4.6
HVAC Sub-Total	78,190	0.324	48.2
Lights	64,903	0.269	40.0
Electric Equipment	6,089	0.025	3.8
Misc. Electric	0	0.000	0.0
Misc. Fuel Use	13,042	0.054	8.0
Non-HVAC Sub-Total	84,034	0.348	51.8
Grand Total	162,224	0.672	100.0

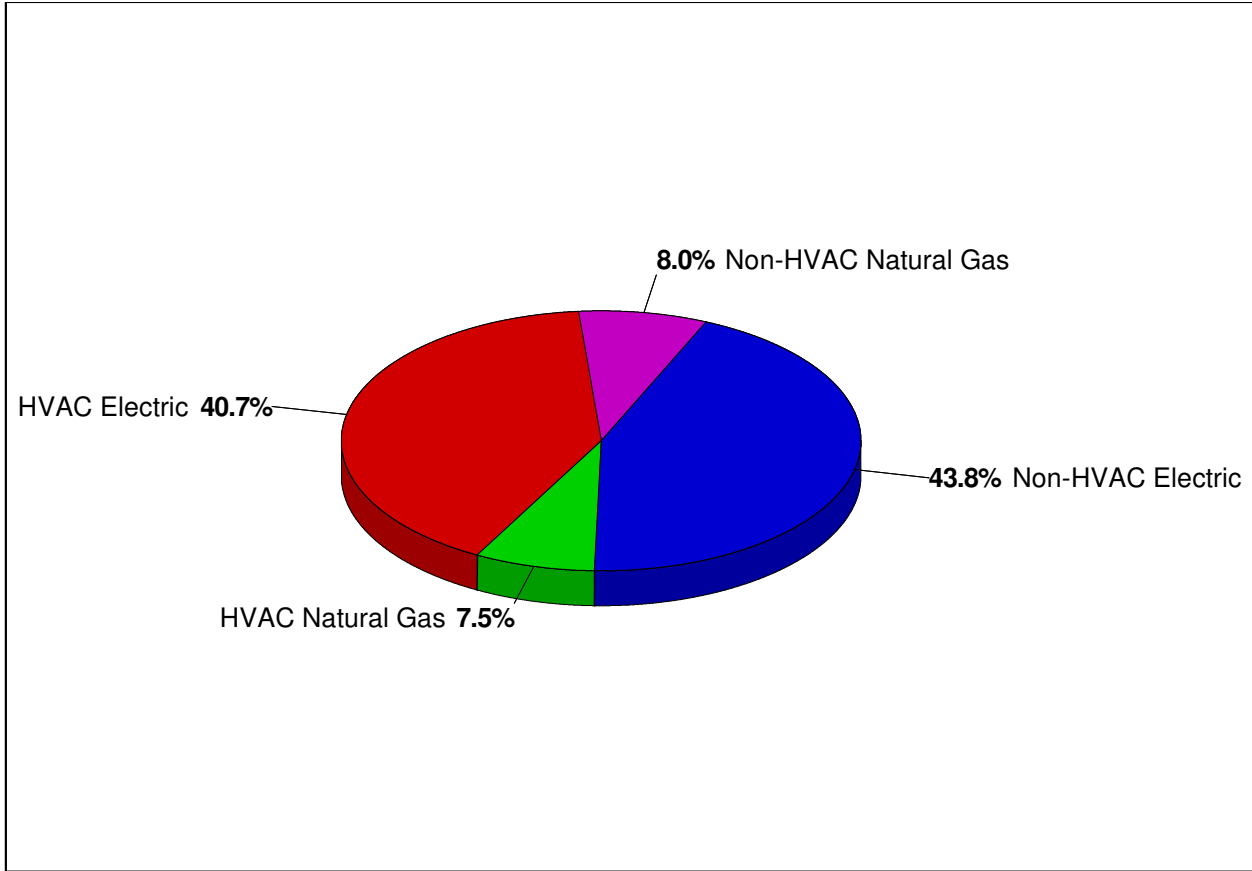
Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²

Annual Energy Costs - MCCCH_Corrected

Carrier
J.B.

04/02/2005
03:39PM



1. Annual Costs

Component	Annual Cost (\$/yr)	(\$/ft ²)	Percent of Total (%)
HVAC Components			
Electric	66,022	0.273	40.7
Natural Gas	12,168	0.050	7.5
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Remote Chilled Water	0	0.000	0.0
HVAC Sub-Total	78,190	0.324	48.2
Non-HVAC Components			
Electric	70,989	0.294	43.8
Natural Gas	13,042	0.054	8.0
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Non-HVAC Sub-Total	84,031	0.348	51.8
Grand Total	162,221	0.672	100.0

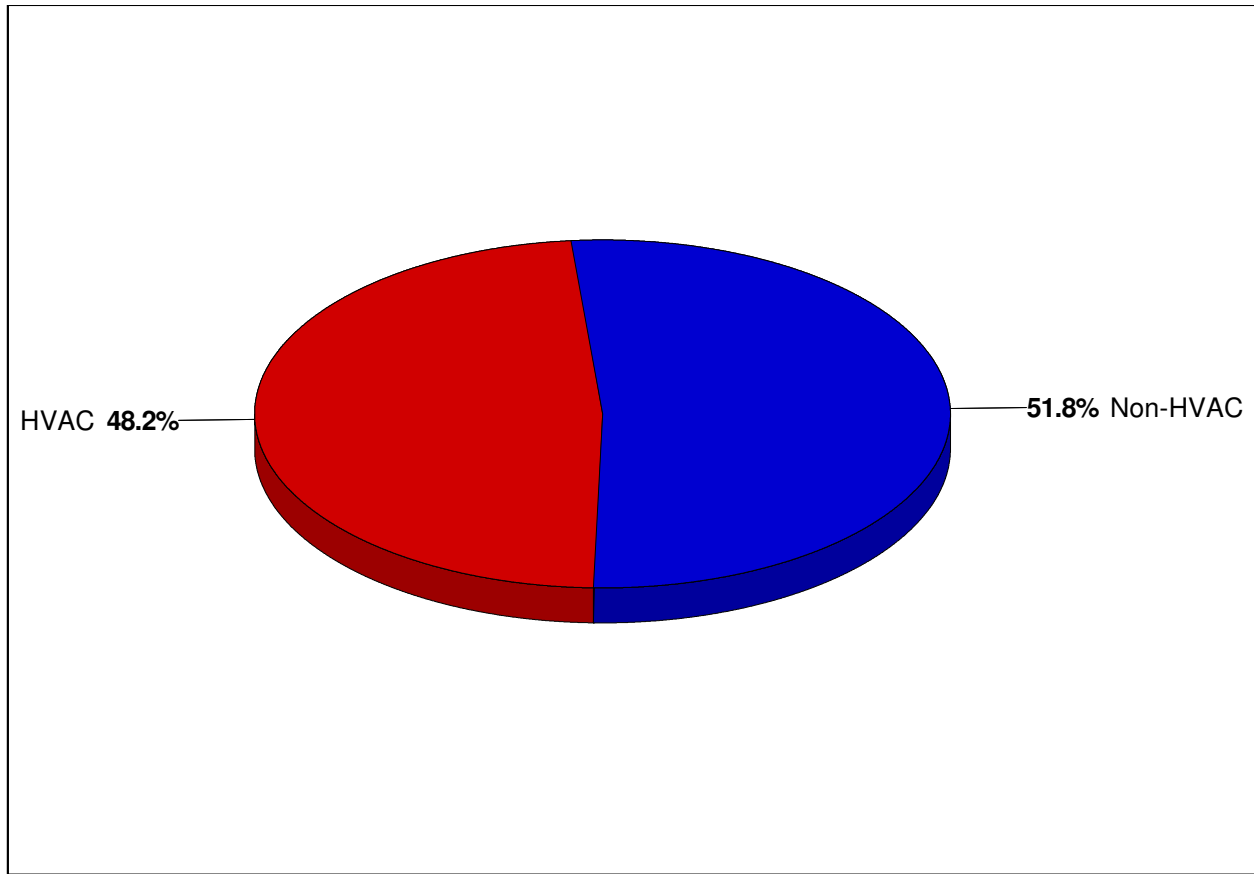
Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²

Annual HVAC & Non-HVAC Cost Totals - MCCCH_Corrected

Carrier
J.B.

04/02/2005
03:39PM



1. Annual Costs

Component	Annual Cost (\$/yr)	(\$/ft ²)	Percent of Total (%)
HVAC	78,190	0.324	48.2
Non-HVAC	84,034	0.348	51.8
Grand Total	162,224	0.672	100.0

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²

Annual Cost Summary

McQuay
J.B.

04/02/2005
03:44PM

Table 1. Annual Costs

Component	MCCCH_Corrected (\$)
Air System Fans	22,674
Cooling	21,874
Heating	12,168
Pumps	15,125
Cooling Tower Fans	7,576
HVAC Sub-Total	79,418
Lights	64,942
Electric Equipment	6,093
Misc. Electric	0
Misc. Fuel Use	13,042
Non-HVAC Sub-Total	84,077
Grand Total	163,495

Table 2. Annual Cost per Unit Floor Area

Component	MCCCH_Corrected (\$/ft²)
Air System Fans	0.094
Cooling	0.091
Heating	0.050
Pumps	0.063
Cooling Tower Fans	0.031
HVAC Sub-Total	0.329
Lights	0.269
Electric Equipment	0.025
Misc. Electric	0.000
Misc. Fuel Use	0.054
Non-HVAC Sub-Total	0.348
Grand Total	0.677
Gross Floor Area (ft²)	241547.0
Conditioned Floor Area (ft²)	241547.0

Note: Values in this table are calculated using the Gross Floor Area.

Table 3. Component Cost as a Percentage of Total Cost

Component	MCCCH_Corrected (%)
Air System Fans	13.9
Cooling	13.4
Heating	7.4
Pumps	9.3
Cooling Tower Fans	4.6
HVAC Sub-Total	48.6
Lights	39.7
Electric Equipment	3.7
Misc. Electric	0.0
Misc. Fuel Use	8.0
Non-HVAC Sub-Total	51.4
Grand Total	100.0

Annual Energy and Emissions Summary

McQuay
J.B.

04/02/2005
03:44PM

Table 1. Annual Costs

Component	MCCCH_Corrected (\$)
HVAC Components	
Electric	67,248
Natural Gas	12,168
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Remote CW	0
HVAC Sub-Total	79,417
Non-HVAC Components	
Electric	71,032
Natural Gas	13,042
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Non-HVAC Sub-Total	84,074
Grand Total	163,491

Table 2. Annual Energy Consumption

Component	MCCCH_Corrected
HVAC Components	
Electric (kWh)	2,483,257
Natural Gas (therms)	46,845
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0
Non-HVAC Components	
Electric (kWh)	2,701,812
Natural Gas (therms)	47,263
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Totals	
Electric (kWh)	5,185,068
Natural Gas (therms)	94,108
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0

Annual Energy and Emissions Summary

McQuay
J.B.

04/02/2005
03:44PM

Table 3. Annual Emissions

Component	MCCCH_Corrected
CO2 (lb)	7,155,599
SO2 (kg)	10,422
NOx (kg)	17,733

Table 4. Annual Cost per Unit Floor Area

Component	MCCCH_Corrected (\$/ft²)
HVAC Components	
Electric	0.278
Natural Gas	0.050
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Remote CW	0.000
HVAC Sub-Total	0.329
Non-HVAC Components	
Electric	0.294
Natural Gas	0.054
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Non-HVAC Sub-Total	0.348
Grand Total	0.677
Gross Floor Area (ft²)	241547.0
Conditioned Floor Area (ft²)	241547.0

Note: Values in this table are calculated using the Gross Floor Area.

Annual Energy and Emissions Summary

McQuay
J.B.

04/02/2005
03:44PM

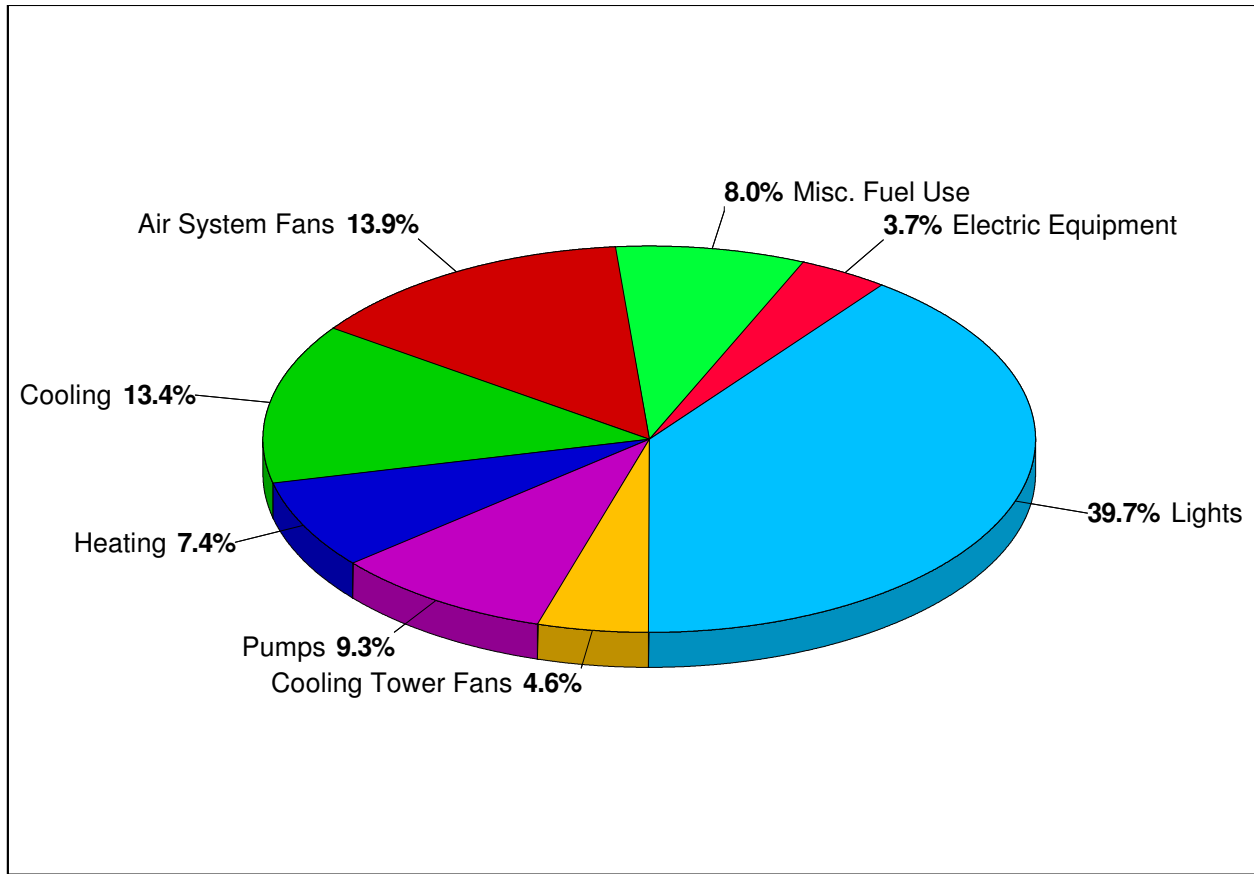
Table 5. Component Cost as a Percentage of Total Cost

Component	MCCCH_Corrected (%)
HVAC Components	
Electric	41.1
Natural Gas	7.4
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Remote CW	0.0
HVAC Sub-Total	48.6
Non-HVAC Components	
Electric	43.4
Natural Gas	8.0
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Non-HVAC Sub-Total	51.4
Grand Total	100.0

Annual Component Costs - MCCCH_Corrected

McQuay
J.B.

04/02/2005
03:44PM

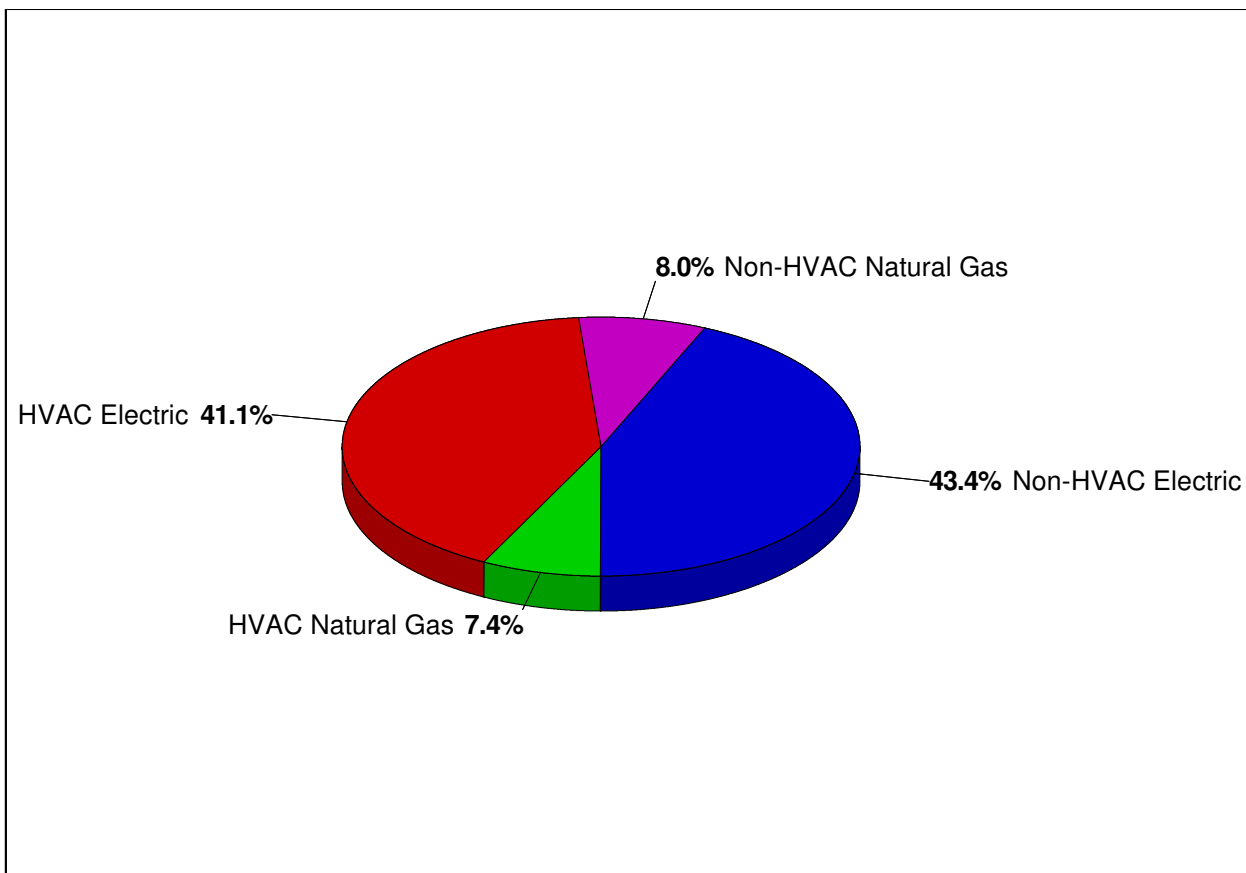


1. Annual Costs

Component	Annual Cost (\$)	(\$/ft ²)	Percent of Total (%)
Air System Fans	22,674	0.094	13.9
Cooling	21,874	0.091	13.4
Heating	12,168	0.050	7.4
Pumps	15,125	0.063	9.3
Cooling Tower Fans	7,576	0.031	4.6
HVAC Sub-Total	79,418	0.329	48.6
Lights	64,942	0.269	39.7
Electric Equipment	6,093	0.025	3.7
Misc. Electric	0	0.000	0.0
Misc. Fuel Use	13,042	0.054	8.0
Non-HVAC Sub-Total	84,077	0.348	51.4
Grand Total	163,495	0.677	100.0

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²



1. Annual Costs

Component	Annual Cost (\$/yr)	(\$/ft ²)	Percent of Total (%)
HVAC Components			
Electric	67,248	0.278	41.1
Natural Gas	12,168	0.050	7.4
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Remote Chilled Water	0	0.000	0.0
HVAC Sub-Total	79,417	0.329	48.6
Non-HVAC Components			
Electric	71,032	0.294	43.4
Natural Gas	13,042	0.054	8.0
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Non-HVAC Sub-Total	84,074	0.348	51.4
Grand Total	163,491	0.677	100.0

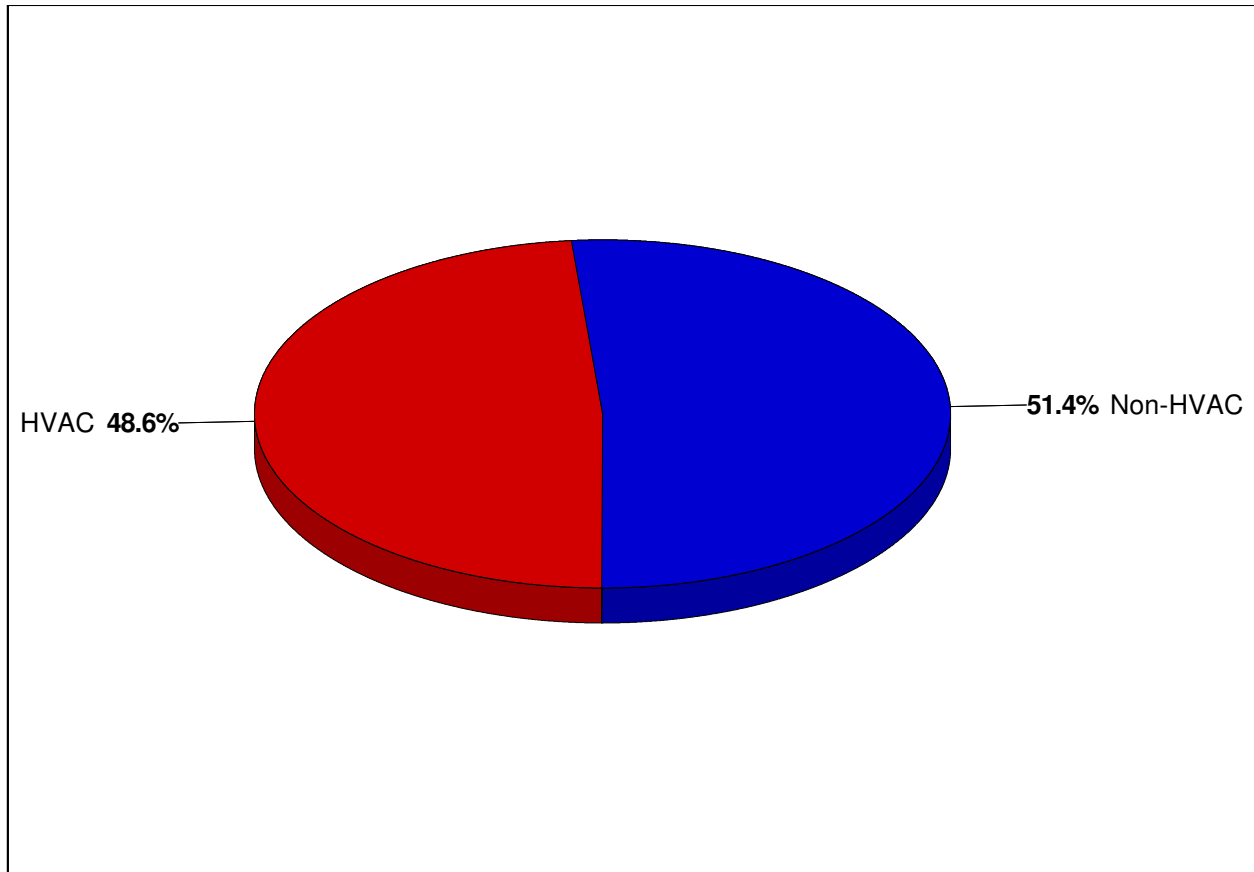
Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area 241547.0 ft²
 Conditioned Floor Area 241547.0 ft²

Annual HVAC & Non-HVAC Cost Totals - MCCCH_Corrected

McQuay
J.B.

04/02/2005
03:44PM



1. Annual Costs

Component	Annual Cost (\$/yr)	(\$/ft ²)	Percent of Total (%)
HVAC	79,418	0.329	48.6
Non-HVAC	84,077	0.348	51.4
Grand Total	163,495	0.677	100.0

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
Conditioned Floor Area **241547.0** ft²

Annual Cost Summary

McQuay600
J.B.

04/02/2005
03:47PM

Table 1. Annual Costs

Component	MCCCH_Corrected (\$)
Air System Fans	22,868
Cooling	20,316
Heating	12,168
Pumps	6,402
Cooling Tower Fans	7,323
HVAC Sub-Total	69,078
Lights	65,496
Electric Equipment	6,145
Misc. Electric	0
Misc. Fuel Use	13,042
Non-HVAC Sub-Total	84,683
Grand Total	153,761

Table 2. Annual Cost per Unit Floor Area

Component	MCCCH_Corrected (\$/ft ²)
Air System Fans	0.095
Cooling	0.084
Heating	0.050
Pumps	0.027
Cooling Tower Fans	0.030
HVAC Sub-Total	0.286
Lights	0.271
Electric Equipment	0.025
Misc. Electric	0.000
Misc. Fuel Use	0.054
Non-HVAC Sub-Total	0.351
Grand Total	0.637
Gross Floor Area (ft ²)	241547.0
Conditioned Floor Area (ft ²)	241547.0

Note: Values in this table are calculated using the Gross Floor Area.

Table 3. Component Cost as a Percentage of Total Cost

Component	MCCCH_Corrected (%)
Air System Fans	14.9
Cooling	13.2
Heating	7.9
Pumps	4.2
Cooling Tower Fans	4.8
HVAC Sub-Total	44.9
Lights	42.6
Electric Equipment	4.0
Misc. Electric	0.0
Misc. Fuel Use	8.5
Non-HVAC Sub-Total	55.1
Grand Total	100.0

Annual Energy and Emissions Summary

McQuay600
J.B.

04/02/2005
03:47PM

Table 1. Annual Costs

Component	MCCCH_Corrected (\$)
HVAC Components	
Electric	56,909
Natural Gas	12,168
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Remote CW	0
HVAC Sub-Total	69,078
Non-HVAC Components	
Electric	71,638
Natural Gas	13,042
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Non-HVAC Sub-Total	84,680
Grand Total	153,758

Table 2. Annual Energy Consumption

Component	MCCCH_Corrected
HVAC Components	
Electric (kWh)	2,069,351
Natural Gas (therms)	46,845
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0
Non-HVAC Components	
Electric (kWh)	2,701,812
Natural Gas (therms)	47,263
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Totals	
Electric (kWh)	4,771,163
Natural Gas (therms)	94,108
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0

Annual Energy and Emissions Summary

McQuay600
J.B.

04/02/2005
03:47PM

Table 3. Annual Emissions

Component	MCCCH_Corrected
CO2 (lb)	6,584,371
SO2 (kg)	9,590
NOx (kg)	16,318

Table 4. Annual Cost per Unit Floor Area

Component	MCCCH_Corrected (\$/ft²)
HVAC Components	
Electric	0.236
Natural Gas	0.050
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Remote CW	0.000
HVAC Sub-Total	0.286
Non-HVAC Components	
Electric	0.297
Natural Gas	0.054
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Non-HVAC Sub-Total	0.351
Grand Total	0.637
Gross Floor Area (ft²)	241547.0
Conditioned Floor Area (ft²)	241547.0

Note: Values in this table are calculated using the Gross Floor Area.

Annual Energy and Emissions Summary

McQuay600
J.B.

04/02/2005
03:47PM

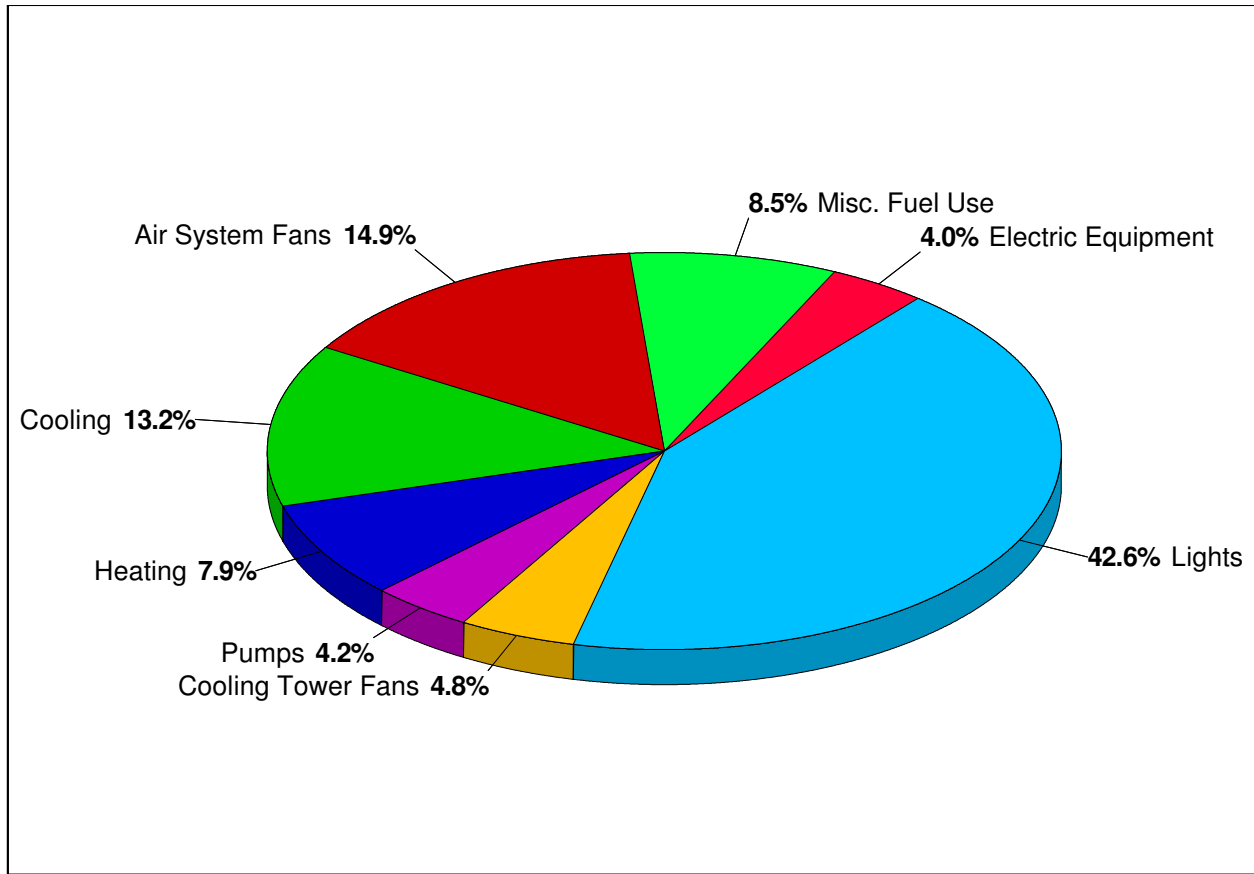
Table 5. Component Cost as a Percentage of Total Cost

Component	MCCCH_Corrected (%)
HVAC Components	
Electric	37.0
Natural Gas	7.9
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Remote CW	0.0
HVAC Sub-Total	44.9
Non-HVAC Components	
Electric	46.6
Natural Gas	8.5
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Non-HVAC Sub-Total	55.1
Grand Total	100.0

Annual Component Costs - MCCCH_Corrected

McQuay600
J.B.

04/02/2005
03:47PM



1. Annual Costs

Component	Annual Cost (\$)	(\$/ft ²)	Percent of Total (%)
Air System Fans	22,868	0.095	14.9
Cooling	20,316	0.084	13.2
Heating	12,168	0.050	7.9
Pumps	6,402	0.027	4.2
Cooling Tower Fans	7,323	0.030	4.8
HVAC Sub-Total	69,078	0.286	44.9
Lights	65,496	0.271	42.6
Electric Equipment	6,145	0.025	4.0
Misc. Electric	0	0.000	0.0
Misc. Fuel Use	13,042	0.054	8.5
Non-HVAC Sub-Total	84,683	0.351	55.1
Grand Total	153,761	0.637	100.0

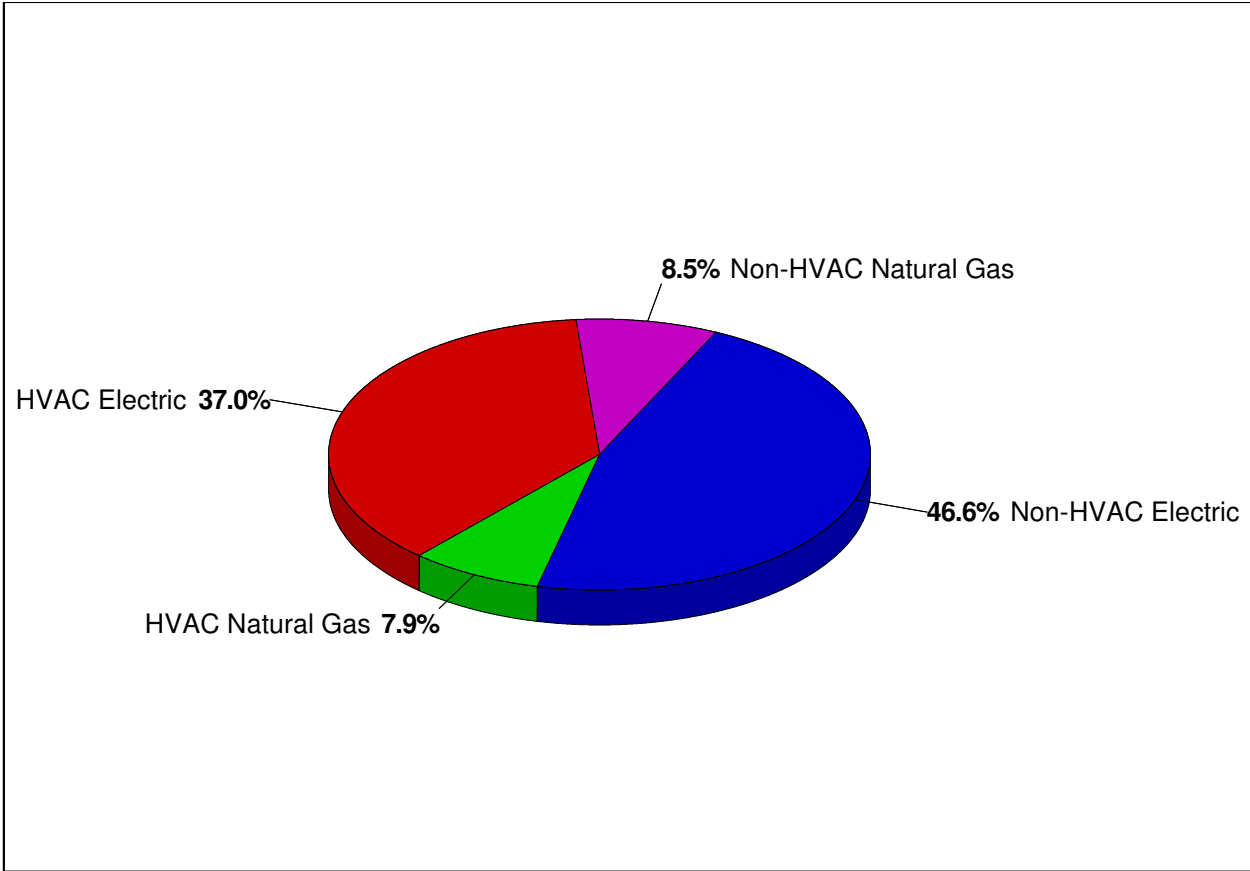
Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²

Annual Energy Costs - MCCCH_Corrected

McQuay600
J.B.

04/02/2005
03:47PM



1. Annual Costs

Component	Annual Cost (\$/yr)	(\$/ft ²)	Percent of Total (%)
HVAC Components			
Electric	56,909	0.236	37.0
Natural Gas	12,168	0.050	7.9
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Remote Chilled Water	0	0.000	0.0
HVAC Sub-Total	69,078	0.286	44.9
Non-HVAC Components			
Electric	71,638	0.297	46.6
Natural Gas	13,042	0.054	8.5
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Non-HVAC Sub-Total	84,680	0.351	55.1
Grand Total	153,758	0.637	100.0

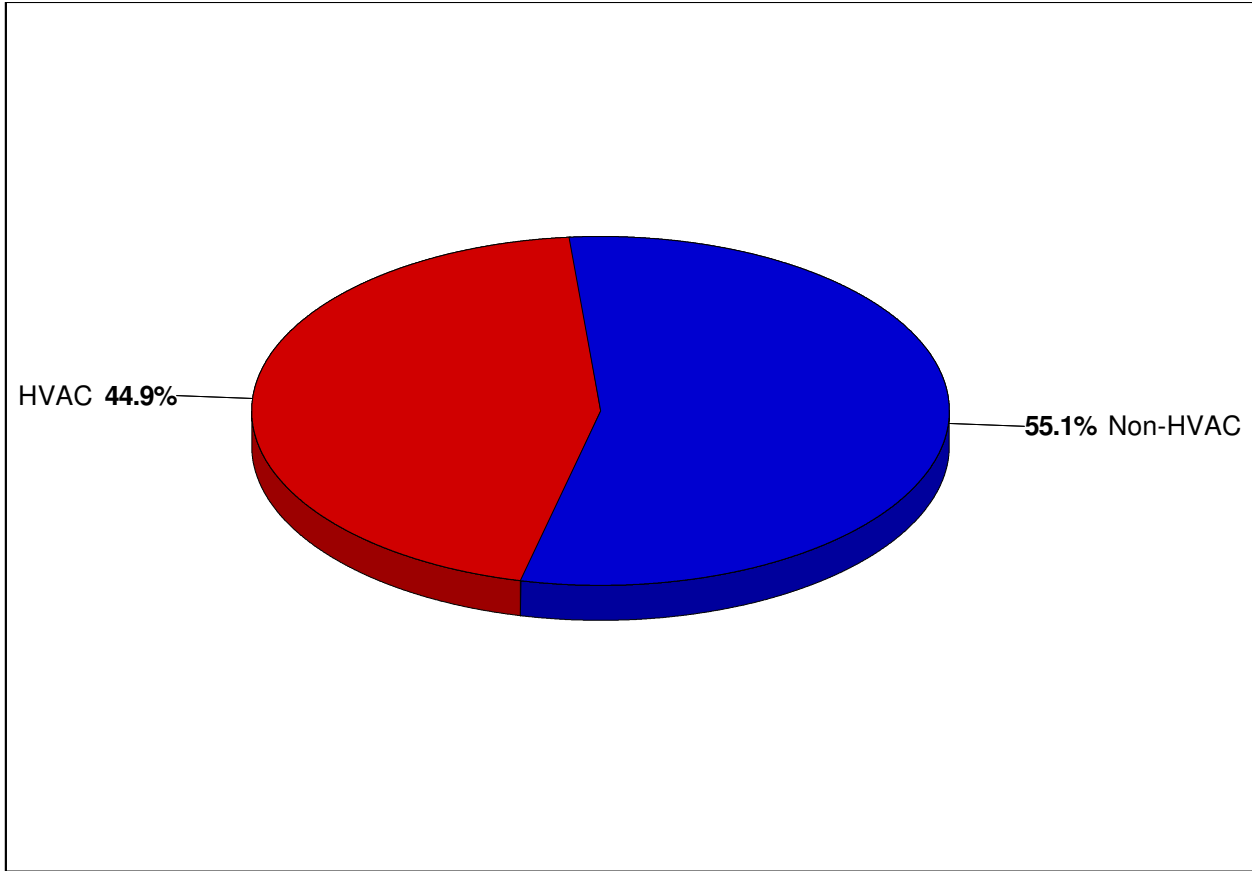
Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²

Annual HVAC & Non-HVAC Cost Totals - MCCCH_Corrected

McQuay600
J.B.

04/02/2005
03:47PM



1. Annual Costs

Component	Annual Cost (\$/yr)	(\$/ft ²)	Percent of Total (%)
HVAC	69,078	0.286	44.9
Non-HVAC	84,683	0.351	55.1
Grand Total	153,761	0.637	100.0

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²

Annual Cost Summary

Trane
J.B.

04/02/2005
03:50PM

Table 1. Annual Costs

Component	MCCCH_Corrected (\$)
Air System Fans	22,634
Cooling	18,828
Heating	12,168
Pumps	15,099
Cooling Tower Fans	7,377
HVAC Sub-Total	76,107
Lights	64,834
Electric Equipment	6,083
Misc. Electric	0
Misc. Fuel Use	13,042
Non-HVAC Sub-Total	83,959
Grand Total	160,067

Table 2. Annual Cost per Unit Floor Area

Component	MCCCH_Corrected (\$/ft²)
Air System Fans	0.094
Cooling	0.078
Heating	0.050
Pumps	0.063
Cooling Tower Fans	0.031
HVAC Sub-Total	0.315
Lights	0.268
Electric Equipment	0.025
Misc. Electric	0.000
Misc. Fuel Use	0.054
Non-HVAC Sub-Total	0.348
Grand Total	0.663
Gross Floor Area (ft²)	241547.0
Conditioned Floor Area (ft²)	241547.0

Note: Values in this table are calculated using the Gross Floor Area.

Table 3. Component Cost as a Percentage of Total Cost

Component	MCCCH_Corrected (%)
Air System Fans	14.1
Cooling	11.8
Heating	7.6
Pumps	9.4
Cooling Tower Fans	4.6
HVAC Sub-Total	47.5
Lights	40.5
Electric Equipment	3.8
Misc. Electric	0.0
Misc. Fuel Use	8.1
Non-HVAC Sub-Total	52.5
Grand Total	100.0

Annual Energy and Emissions Summary

Trane
J.B.

04/02/2005
03:50PM

Table 1. Annual Costs

Component	MCCCH_Corrected (\$)
HVAC Components	
Electric	63,938
Natural Gas	12,168
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Remote CW	0
HVAC Sub-Total	76,107
Non-HVAC Components	
Electric	70,915
Natural Gas	13,042
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Non-HVAC Sub-Total	83,957
Grand Total	160,064

Table 2. Annual Energy Consumption

Component	MCCCH_Corrected
HVAC Components	
Electric (kWh)	2,368,495
Natural Gas (therms)	46,845
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0
Non-HVAC Components	
Electric (kWh)	2,701,812
Natural Gas (therms)	47,263
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Totals	
Electric (kWh)	5,070,306
Natural Gas (therms)	94,108
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0

Annual Energy and Emissions Summary

Trane
J.B.

04/02/2005
03:50PM

Table 3. Annual Emissions

Component	MCCCH_Corrected
CO2 (lb)	6,997,213
SO2 (kg)	10,192
NOx (kg)	17,341

Table 4. Annual Cost per Unit Floor Area

Component	MCCCH_Corrected (\$/ft²)
HVAC Components	
Electric	0.265
Natural Gas	0.050
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Remote CW	0.000
HVAC Sub-Total	0.315
Non-HVAC Components	
Electric	0.294
Natural Gas	0.054
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Non-HVAC Sub-Total	0.348
Grand Total	0.663
Gross Floor Area (ft²)	241547.0
Conditioned Floor Area (ft²)	241547.0

Note: Values in this table are calculated using the Gross Floor Area.

Annual Energy and Emissions Summary

Trane
J.B.

04/02/2005
03:50PM

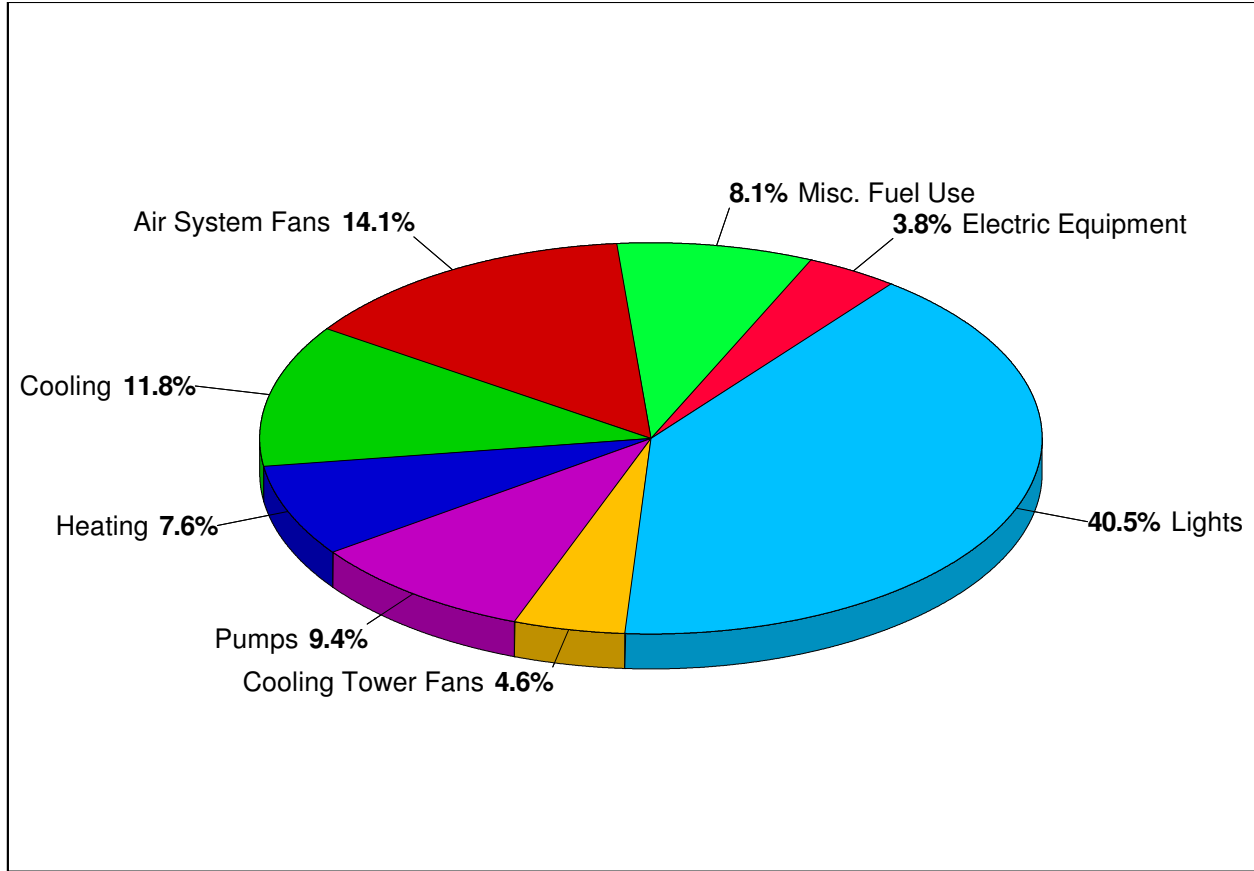
Table 5. Component Cost as a Percentage of Total Cost

Component	MCCCH_Corrected (%)
HVAC Components	
Electric	39.9
Natural Gas	7.6
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Remote CW	0.0
HVAC Sub-Total	47.5
Non-HVAC Components	
Electric	44.3
Natural Gas	8.1
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Non-HVAC Sub-Total	52.5
Grand Total	100.0

Annual Component Costs - MCCCH_Corrected

Trane
J.B.

04/02/2005
03:50PM



1. Annual Costs

Component	Annual Cost (\$)	(\$/ft ²)	Percent of Total (%)
Air System Fans	22,634	0.094	14.1
Cooling	18,828	0.078	11.8
Heating	12,168	0.050	7.6
Pumps	15,099	0.063	9.4
Cooling Tower Fans	7,377	0.031	4.6
HVAC Sub-Total	76,107	0.315	47.5
Lights	64,834	0.268	40.5
Electric Equipment	6,083	0.025	3.8
Misc. Electric	0	0.000	0.0
Misc. Fuel Use	13,042	0.054	8.1
Non-HVAC Sub-Total	83,959	0.348	52.5
Grand Total	160,067	0.663	100.0

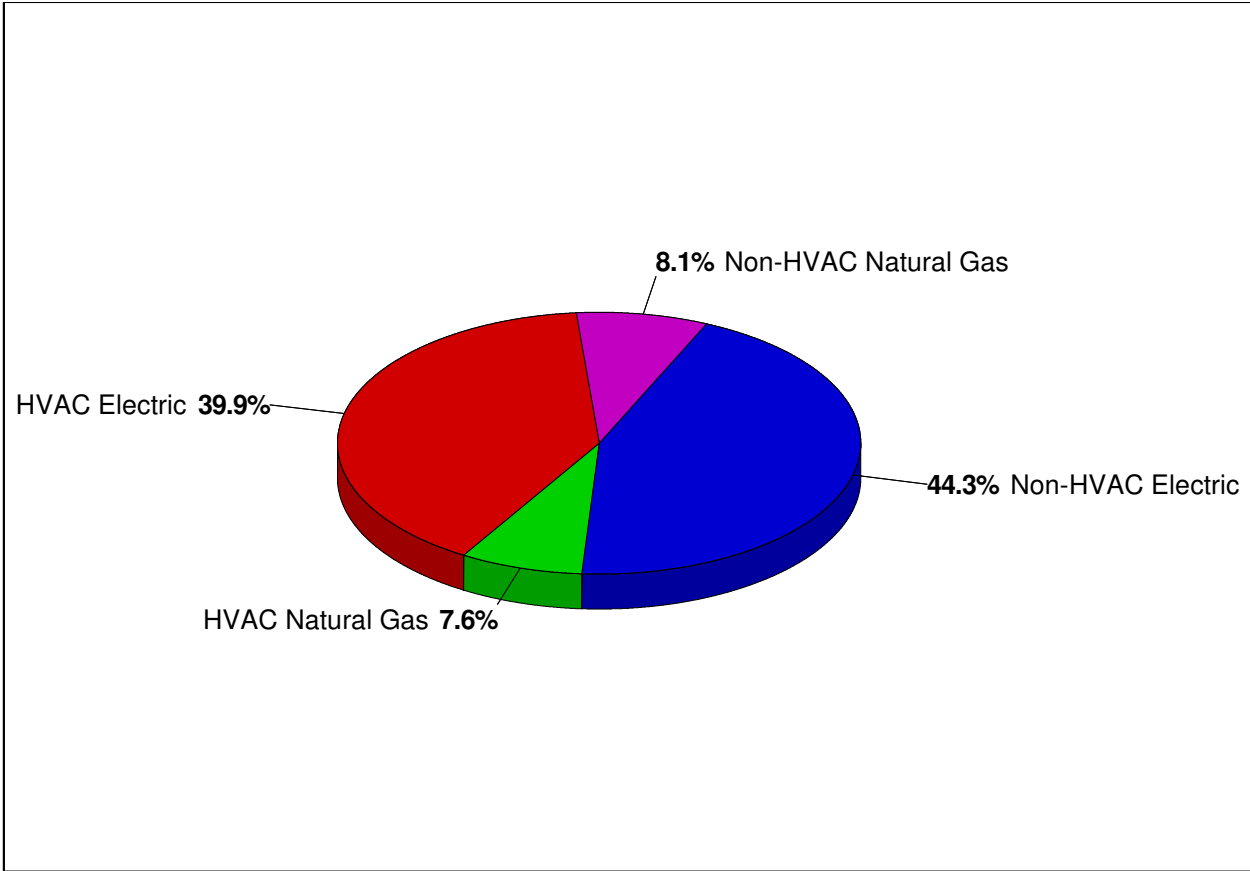
Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²

Annual Energy Costs - MCCCH_Corrected

Trane
J.B.

04/02/2005
03:50PM



1. Annual Costs

Component	Annual Cost (\$/yr)	(\$/ft ²)	Percent of Total (%)
HVAC Components			
Electric	63,938	0.265	39.9
Natural Gas	12,168	0.050	7.6
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Remote Chilled Water	0	0.000	0.0
HVAC Sub-Total	76,107	0.315	47.5
Non-HVAC Components			
Electric	70,915	0.294	44.3
Natural Gas	13,042	0.054	8.1
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Non-HVAC Sub-Total	83,957	0.348	52.5
Grand Total	160,064	0.663	100.0

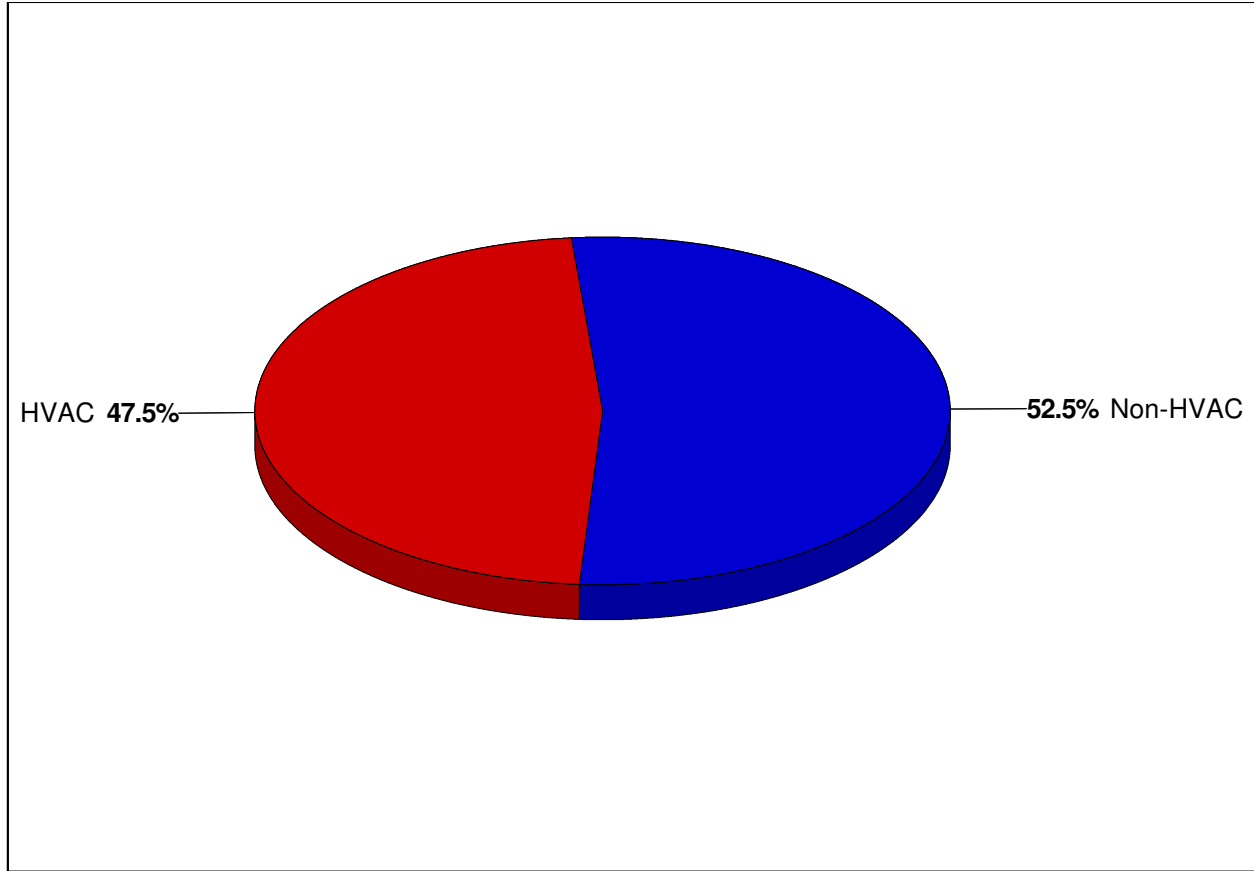
Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²

Annual HVAC & Non-HVAC Cost Totals - MCCCH_Corrected

Trane
J.B.

04/02/2005
03:50PM



1. Annual Costs

Component	Annual Cost (\$/yr)	(\$/ft ²)	Percent of Total (%)
HVAC	76,107	0.315	47.5
Non-HVAC	83,959	0.348	52.5
Grand Total	160,067	0.663	100.0

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
Conditioned Floor Area **241547.0** ft²

Annual Cost Summary

York
J.B.

04/02/2005
03:52PM

Table 1. Annual Costs

Component	MCCCH_Corrected (\$)
Air System Fans	22,678
Cooling	22,252
Heating	12,168
Pumps	15,129
Cooling Tower Fans	7,600
HVAC Sub-Total	79,827
Lights	64,955
Electric Equipment	6,094
Misc. Electric	0
Misc. Fuel Use	13,042
Non-HVAC Sub-Total	84,091
Grand Total	163,918

Table 2. Annual Cost per Unit Floor Area

Component	MCCCH_Corrected (\$/ft²)
Air System Fans	0.094
Cooling	0.092
Heating	0.050
Pumps	0.063
Cooling Tower Fans	0.032
HVAC Sub-Total	0.331
Lights	0.269
Electric Equipment	0.025
Misc. Electric	0.000
Misc. Fuel Use	0.054
Non-HVAC Sub-Total	0.348
Grand Total	0.679
Gross Floor Area (ft²)	241547.0
Conditioned Floor Area (ft²)	241547.0

Note: Values in this table are calculated using the Gross Floor Area.

Table 3. Component Cost as a Percentage of Total Cost

Component	MCCCH_Corrected (%)
Air System Fans	13.8
Cooling	13.6
Heating	7.4
Pumps	9.2
Cooling Tower Fans	4.6
HVAC Sub-Total	48.7
Lights	39.6
Electric Equipment	3.7
Misc. Electric	0.0
Misc. Fuel Use	8.0
Non-HVAC Sub-Total	51.3
Grand Total	100.0

Annual Energy and Emissions Summary

York
J.B.

04/02/2005
03:52PM

Table 1. Annual Costs

Component	MCCCH_Corrected (\$)
HVAC Components	
Electric	67,658
Natural Gas	12,168
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Remote CW	0
HVAC Sub-Total	79,827
Non-HVAC Components	
Electric	71,046
Natural Gas	13,042
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Non-HVAC Sub-Total	84,088
Grand Total	163,915

Table 2. Annual Energy Consumption

Component	MCCCH_Corrected
HVAC Components	
Electric (kWh)	2,497,445
Natural Gas (therms)	46,845
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0
Non-HVAC Components	
Electric (kWh)	2,701,812
Natural Gas (therms)	47,263
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Totals	
Electric (kWh)	5,199,257
Natural Gas (therms)	94,108
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0

Annual Energy and Emissions Summary

York
J.B.

04/02/2005
03:52PM

Table 3. Annual Emissions

Component	MCCCH_Corrected
CO2 (lb)	7,175,171
SO2 (kg)	10,451
NOx (kg)	17,782

Table 4. Annual Cost per Unit Floor Area

Component	MCCCH_Corrected (\$/ft²)
HVAC Components	
Electric	0.280
Natural Gas	0.050
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Remote CW	0.000
HVAC Sub-Total	0.331
Non-HVAC Components	
Electric	0.294
Natural Gas	0.054
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Non-HVAC Sub-Total	0.348
Grand Total	0.679
Gross Floor Area (ft²)	241547.0
Conditioned Floor Area (ft²)	241547.0

Note: Values in this table are calculated using the Gross Floor Area.

Annual Energy and Emissions Summary

York
J.B.

04/02/2005
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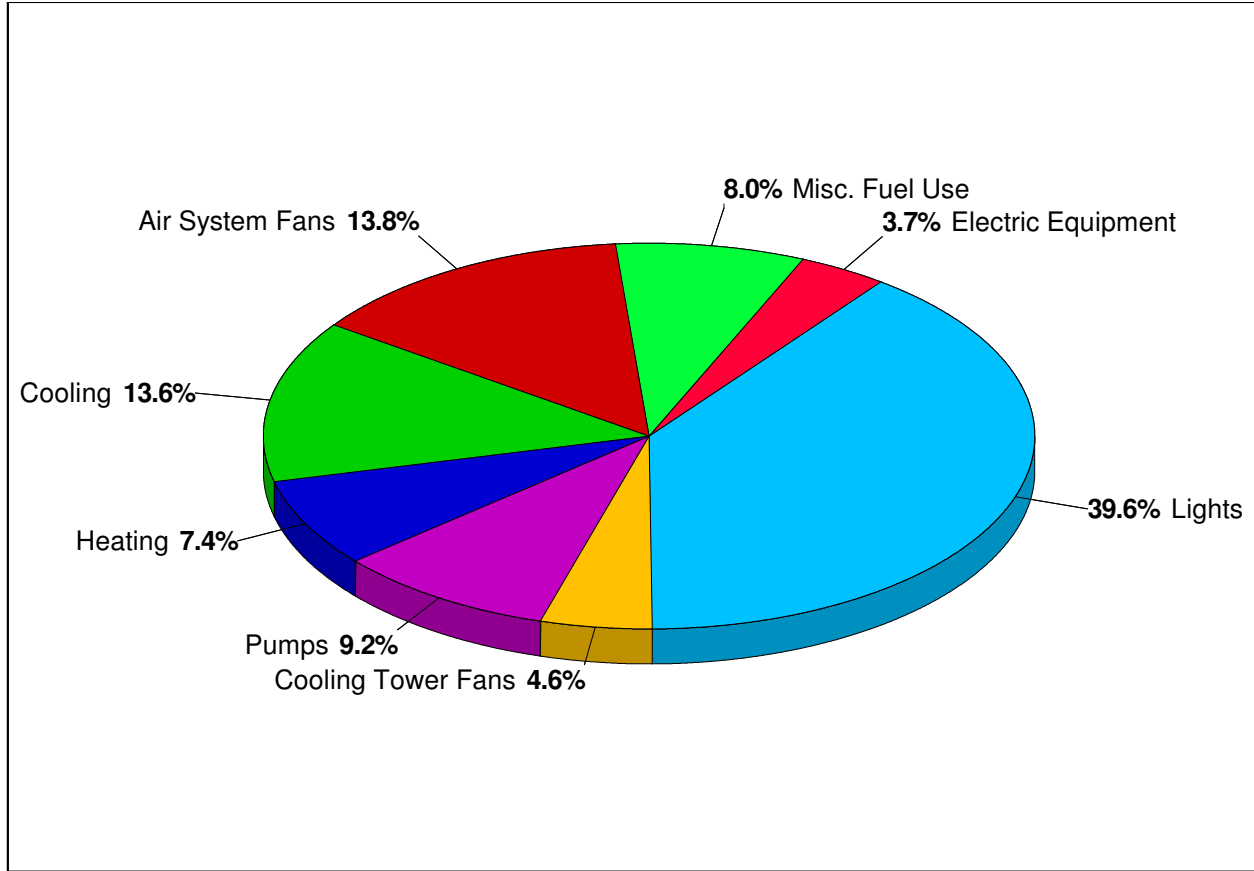
Table 5. Component Cost as a Percentage of Total Cost

Component	MCCCH_Corrected (%)
HVAC Components	
Electric	41.3
Natural Gas	7.4
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Remote CW	0.0
HVAC Sub-Total	48.7
Non-HVAC Components	
Electric	43.3
Natural Gas	8.0
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Non-HVAC Sub-Total	51.3
Grand Total	100.0

Annual Component Costs - MCCCH_Corrected

York
J.B.

04/02/2005
03:52PM



1. Annual Costs

Component	Annual Cost (\$)	(\$/ft ²)	Percent of Total (%)
Air System Fans	22,678	0.094	13.8
Cooling	22,252	0.092	13.6
Heating	12,168	0.050	7.4
Pumps	15,129	0.063	9.2
Cooling Tower Fans	7,600	0.032	4.6
HVAC Sub-Total	79,827	0.331	48.7
Lights	64,955	0.269	39.6
Electric Equipment	6,094	0.025	3.7
Misc. Electric	0	0.000	0.0
Misc. Fuel Use	13,042	0.054	8.0
Non-HVAC Sub-Total	84,091	0.348	51.3
Grand Total	163,918	0.679	100.0

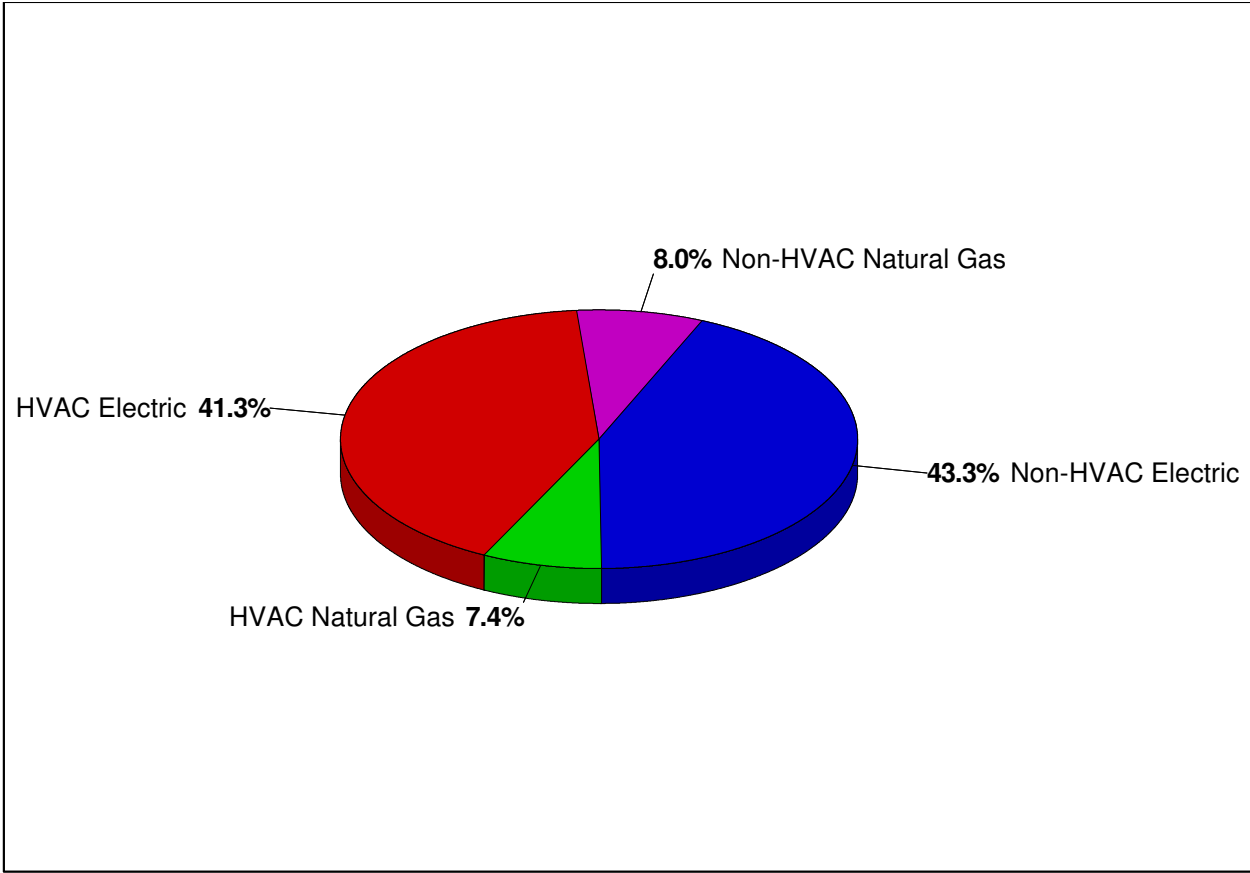
Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²

Annual Energy Costs - MCCCH_Corrected

York
J.B.

04/02/2005
03:52PM



1. Annual Costs

Component	Annual Cost (\$/yr)	(\$/ft ²)	Percent of Total (%)
HVAC Components			
Electric	67,658	0.280	41.3
Natural Gas	12,168	0.050	7.4
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Remote Chilled Water	0	0.000	0.0
HVAC Sub-Total	79,827	0.331	48.7
Non-HVAC Components			
Electric	71,046	0.294	43.3
Natural Gas	13,042	0.054	8.0
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Non-HVAC Sub-Total	84,088	0.348	51.3
Grand Total	163,915	0.679	100.0

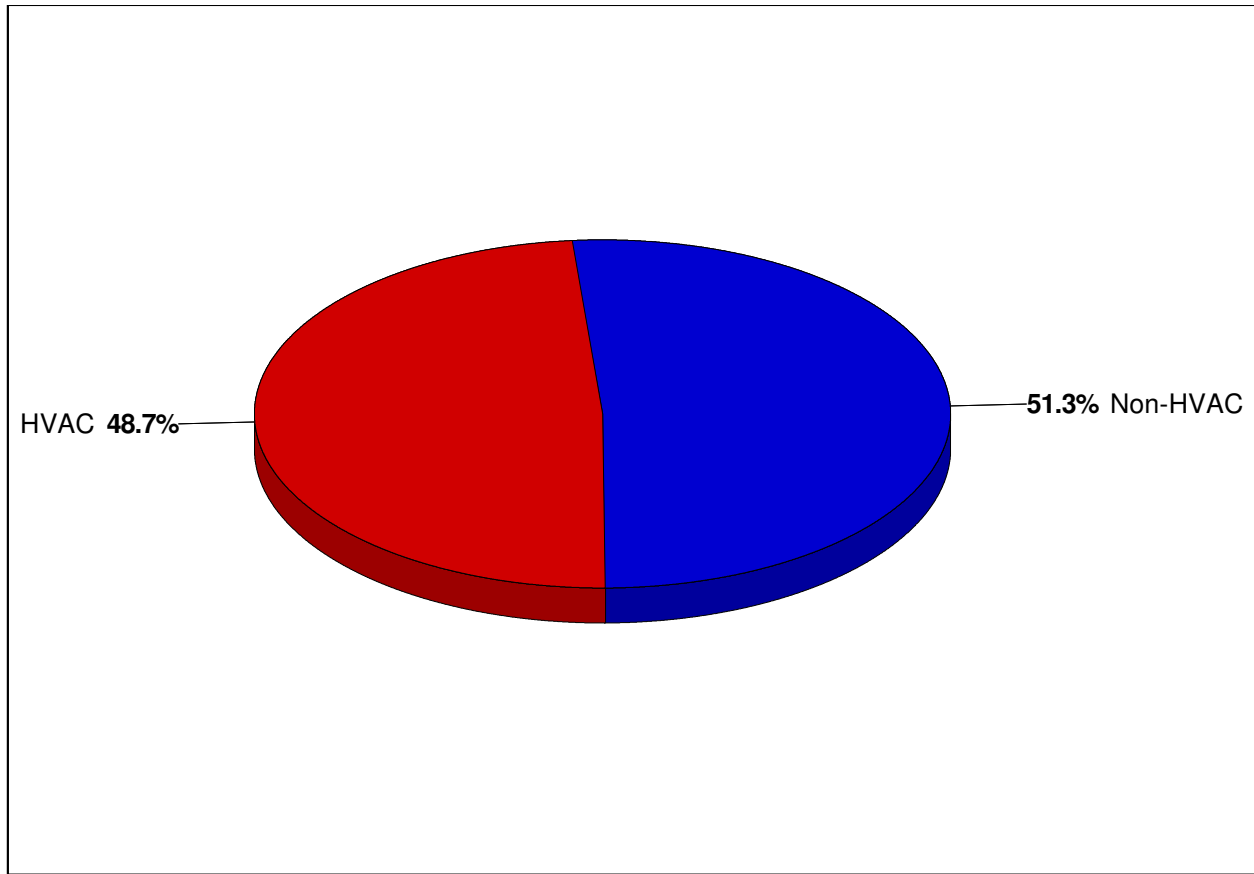
Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²

Annual HVAC & Non-HVAC Cost Totals - MCCCH_Corrected

York
J.B.

04/02/2005
03:52PM



1. Annual Costs

Component	Annual Cost (\$/yr)	(\$/ft ²)	Percent of Total (%)
HVAC	79,827	0.330	48.7
Non-HVAC	84,091	0.348	51.3
Grand Total	163,918	0.679	100.0

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area **241547.0** ft²
 Conditioned Floor Area **241547.0** ft²

FINAL.TXT
ENERGY BUDGET BY SYSTEM COMPONENT

Building: MCCCH 03-30-05
 Weather: Washington (Washington TMY) HAP v3.27b
 Prepared by: Jess Page 1 of 1

TABLE 1. ANNUAL COIL LOADS

Component	(kBTU)	(kBTU/sqft)*
Cooling Loads	15808951	70.867
Heating Loads	3045821	13.653

TABLE 2. ENERGY CONSUMPTION BY SYSTEM COMPONENT

Component	<----- Site Energy *-----> (kBTU)	(kBTU/sqft)*	<----- Source Energy *-----> (kBTU)	(kBTU/sqft)*
Air System Fans	3002756	13.460	10724129	48.073
Cooling Plants	3714577	16.651	13266345	59.469
Absorption Chillers	0	0.000	0	0.000
Heating Plants	3799043	17.030	3809288	17.076
Pumps	1327682	5.952	4741723	21.256
Cooling Towers	1024265	4.591	3658089	16.398
>>> HVAC Total	12868323	57.685	36199572	162.272
Lights	7135349	31.986	25483390	114.234
Electric Equipment	416687	1.868	1488169	6.671
Misc. Electric	0	0.000	0	0.000
Misc. Fuel Use	4725741	21.184	4725741	21.184
>>> Non-HVAC Total	12277777	55.038	31697298	142.089
>>> GRAND TOTAL	25146100	112.722	67896872	304.361

- * Site Energy is the actual energy consumed.
- * Source Energy is the site energy divided by the electric generating efficiency of 28.0%
- * Cost per unit floor area is based on the gross building floor area.
 Gross floor area.....: 223080 sqft
 Conditioned floor area.....: 223080 sqft

MONTHLY ENERGY USE BY SYSTEM COMPONENT

Building: MCCCH 03-30-05
 Weather: Washington (Washington TMY) HAP v3.27b
 Prepared by: Jess Page 1

TABLE 1. JANUARY - JUNE

Component	Jan	Feb	Mar	Apr	May	Jun
Air System Fans (kWh):	68936	62325	71123	72815	76815	76452
Cooling Plants:						
Electric (kWh)	37170	34635	52604	70017	98434	140506
Nat. Gas (Therm)	0	0	0	0	0	0
Absorption Chillers:						
Electric (kWh)	0	0	0	0	0	0
Nat. Gas (Therm)	0	0	0	0	0	0
Heating Plants:						
Electric (kWh)	305	244	156	55	0	0

FINAL.TXT						
Nat. Gas (Therm)	9905	7922	5059	1781	0	0
Pumps (kWh):	27564	24898	27700	28527	30483	39051
Cooling Towers (kWh):	13549	12885	17575	21812	28049	35366
Lighting (kWh):	177871	160408	177097	172307	177484	171534
Electric Eqpt (kWh):	10418	9365	10281	10112	10349	9976
Misc Electric Eqpt (kWh):	0	0	0	0	0	0
Misc Fuel Use:						
Nat. Gas (Therm)	4020	3625	4001	3895	4010	3875

TABLE 2. JULY - DECEMBER

Component	Jul	Aug	Sep	Oct	Nov	Dec
Air System Fans (kWh):	81653	80048	76111	75097	69193	69489
Cooling Plants:						
Electric (kWh)	180320	163374	134816	80365	55455	40985
Nat. Gas (Therm)	0	0	0	0	0	0
Absorption Chillers:						
Electric (kWh)	0	0	0	0	0	0
Nat. Gas (Therm)	0	0	0	0	0	0
Heating Plants:						
Electric (kWh)	0	0	0	44	124	241
Nat. Gas (Therm)	0	0	0	1417	4044	7823
Pumps (kWh):	44482	42521	38094	31147	27140	27514
Cooling Towers (kWh):	39920	38341	34579	25003	17934	15183
Lighting (kWh):	178257	177097	171921	177871	171534	177871
Electric Eqpt (kWh):	10486	10281	10044	10418	9976	10418
Misc Electric Eqpt (kWh):	0	0	0	0	0	0
Misc Fuel Use:						
Nat. Gas (Therm)	4030	4001	3885	4020	3875	4020

ELECTRIC BILLING DETAILS

Building: MCCCH
Weather: Washington (Washington TMY)
Prepared by: Jess

03-30-05
HAP v3. 27b
Page 2

TABLE 3. ELECTRICAL ENERGY TOTALS (in kWh)

Billing Period	Time-of-Day Period					2nd Meter
	Peak	Mid-Peak	Normal	Off-Peak	Overall	
Jan	68218	0	58207	209386	335811	0
Feb	65465	0	56003	183292	304760	0
Mar	82336	0	69960	204241	356537	0
Apr	74452	0	61115	240079	375646	0
May	95632	0	74313	251670	421615	0
Jun	113911	0	89525	269449	472885	0
Jul	109047	0	84858	341212	535118	0
Aug	123852	0	96494	291316	511662	0
Sep	106557	0	82769	276240	465565	0
Oct	84541	0	66810	248593	399944	0
Nov	80964	0	67012	203379	351356	0
Dec	69391	0	59646	212662	341699	0
Totals	1074367	0	866712	2931518	4872597	0

TABLE 4. BILLING DEMANDS (in kW)*

Billing	Time-of-Day Period				

Period	FINAL.TXT					Overall
	Peak	Mid-Peak	Normal	Off-Peak		
Jan	557.2	0.0	544.6	575.3	575.3	
Feb	589.6	0.0	559.8	547.6	589.6	
Mar	793.6	0.0	774.5	759.7	793.6	
Apr	827.0	0.0	779.8	802.5	827.0	
May	922.6	0.0	912.7	908.0	922.6	
Jun	931.6	0.0	920.9	920.6	931.6	
Jul	927.3	0.0	922.9	923.6	927.3	
Aug	934.3	0.0	927.8	919.1	934.3	
Sep	929.1	0.0	926.0	922.1	929.1	
Oct	805.3	0.0	772.1	829.5	829.5	
Nov	785.7	0.0	768.2	774.7	785.7	
Dec	559.8	0.0	567.1	556.4	567.1	

* Data in this table is based on actual demands from Table 5, modified by applicable demand determination clause.

ELECTRIC BILLING DETAILS

Bui lding: MCCCH
Weather: Washi ngton (Washi ngton TMY)
Prepared by: Jess
03-30-05
HAP v3.27b
Page 3

TABLE 5. MAXIMUM DEMANDS (in kW)*

Billing Period	Time-of-Day Period					Overall
	Peak	Mid-Peak	Normal	Off-Peak		
Jan	557.2	0.0	544.6	575.3	575.3	
Feb	589.6	0.0	559.8	547.6	589.6	
Mar	793.6	0.0	774.5	759.7	793.6	
Apr	827.0	0.0	779.8	802.5	827.0	
May	922.6	0.0	912.7	908.0	922.6	
Jun	931.6	0.0	920.9	920.6	931.6	
Jul	927.3	0.0	922.9	923.6	927.3	
Aug	934.3	0.0	927.8	919.1	934.3	
Sep	929.1	0.0	926.0	922.1	929.1	
Oct	805.3	0.0	772.1	829.5	829.5	
Nov	785.7	0.0	768.2	774.7	785.7	
Dec	559.8	0.0	567.1	556.4	567.1	

* Values derived using hourly kW data, modified only for power multiplier and power factor multiplier clauses.

TABLE 6. MAXIMUM DEMAND TIMES

Billing Period	Time-of-Day Period					Overall
	Peak	Mid-Peak	Normal	Off-Peak		
Jan	1/ 5/1500		1/ 6/1100	1/ 8/2200	1/ 8/2200	
Feb	2/ 2/1500		2/ 2/1100	2/18/1600	2/ 2/1500	
Mar	3/ 9/1500		3/10/ 800	3/26/1200	3/ 9/1500	
Apr	4/14/1600		4/ 7/1100	4/15/1500	4/14/1600	
May	5/31/1800		5/31/1100	5/14/1600	5/31/1800	
Jun	6/30/1800		6/30/1100	6/24/1400	6/30/1800	
Jul	7/14/1800		7/27/1000	7/ 8/1800	7/14/1800	
Aug	8/17/1400		8/17/1100	8/ 6/1500	8/17/1400	
Sep	9/ 1/1400		9/ 1/1100	9/ 2/1400	9/ 1/1400	
Oct	10/25/1500		10/25/1100	10/14/1600	10/14/1600	
Nov	11/15/1500		11/28/1100	11/25/1600	11/15/1500	
Dec	12/ 5/1400		12/ 5/ 800	12/ 4/2200	12/ 5/ 800	