Life Cycle Cost Analysis

May 3, 2006

35% Design Submittal

Index:

Executive Summary

A limited life cycle cost analysis was performed to compare a baseline building to our proposed building meeting the SPIRIT criteria identified in our design package. The analysis performed was a simple payback type with a 20 year length assuming a 4.5% discount rate.

The two cases compared were as follows:

Base building meeting minimum ASHRAE requirements

In this case the building was modeled to conform to ASHRAE 90.1, 2004 edition. The lighting wattage and building envelope followed the ASHRAE tabled values. The central plant consisted of air-cooled chillers with primary-secondary pumping. The building air distribution system was modeled around VAV units with central heat recovery.

Building meeting SPIRIT energy savings

In this case the increased energy efficiency of our building as identified in the SPIRIT report was used. The Central Plant consists of VFD controlled water cooled centrifugal chillers with VFD controlled cooling towers. The building air systems are similar to the base case except that more efficient fans, controls and heat recovery are used. The building glass, walls, roof and lighting also employ higher efficiency materials and technologies. The bottom line is a 26% energy savings over the bas building.

Even though the base case cost $600,000 less than the SPIRIT case, the lower annual operating cost of the SPIRIT building results in a 4.4 year payback. Enclosed is a summary of the lifecycle cost summary.

Life Cycle Cost Summary

Lifecycle Summary

Project: Jackson Barrack 141st Readiness Center
Prepared By: L. T. Vivien, Jr. & Associates, Inc.

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Lifecycle Study

Type of Analysis	Simple Payback Analysis	
Length of Analysis	20	yrs
Discount Rate	4.50	%

Table 1. Executive Summary

Economic Criteria	Best Design Case for Each Criteria	Value ($)
Payback Analysis	Building meeting Spirit energy savings	-
Lowest Annual Operating Cost	Building meeting Spirit energy savings	$166,450
Lowest First Cost	Base building meeting minimum ASHRAE requirements	$2,600,000

Table 2. Design Cases Ranked by First Cost

Design Case Name	Design Case Short Name	Total Present Worth ($)	Annual Operating Cost ($/yr)	First Cost ($)
Base building meeting minimum ASHRAE requirements		$8,952,547	$301,986	$2,600,000
Building meeting Spirit energy savings		$6,701,425	$166,450	$3,200,000

Table 3. Incremental Analysis Data

Challenger	Base Case	Additional First Cost ($)	Payback Period (yrs)
[Winner]		$600,000	4.4

Study Inputs

Study Title	Lifecycle Study	
Study Description :		
Type of Analysis	Simple Payback Analysis	
Base Year	1	
Currency Symbol	$	
Length of Analysis	20	yrs
Discount Rate	4.50	%

Design Case Inputs

Type of Analysis ..... Simple Payback Analysis
Length of Analysis ..... 20 yrs
Income Taxes ..... Not Considered

General Information :

Design Case Name ..... Base building meeting minimum ASHRAE requirements
Design Case Short Name .....
Description :

Investment Costs :

Initial Investment Cost ($)	$2,600,000
Percent Financed	0 %
Term Of Loan (Years)	1
Annual Interest Rate	0.00 %
Salvage Value ($)	$0

Annual Operating Costs :

Annual Energy Cost ($)	$125,993
Energy Cost Escalation Rate	5.00 %
Annual Maintenance Cost ($)	$50,000
Maintenance Cost Escalation Rate	5.00 %

Design Case Inputs

Type of Analysis ..... Simple Payback Analysis
Length of Analysis ..... 20 yrs
Income Taxes ..... Not Considered

General Information :

Design Case Name ..... Building meeting Spirit energy savings
Design Case Short Name ....
Description :

Investment Costs :

Initial Investment Cost ($)	$3,200,000
Percent Financed	0 %
Term Of Loan (Years)	1
Annual Interest Rate	0.00 %
Salvage Value ($)	$0

Annual Operating Costs :

Annual Energy Cost ($)	$86,450
Energy Cost Escalation Rate	5.00 %
Annual Maintenance Cost ($)	$80,000
Maintenance Cost Escalation Rate	5.00 %

Analysis Details

Project: Jackson Barrack 141st Readiness Center
Prepared By: L. T. Vivien, Jr. & Associates, Inc.

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Lifecycle Study

Type of Analysis	Simple Payback Analysis	
Length of Analysis	20	yrs
Discount Rate	4.50	%

1A. Summary of Results

Base Case	Base building meeting minimum ASHRAE requirements []
Challenger **[Winner]**	Building meeting Spirit energy savings []
[] Total Present Worth ($)	$8,952,547
[] Total Present Worth ($)	$6,701,425
Net Present Worth Savings ($)	$2,251,122
Payback Period (yrs)	4.4 years

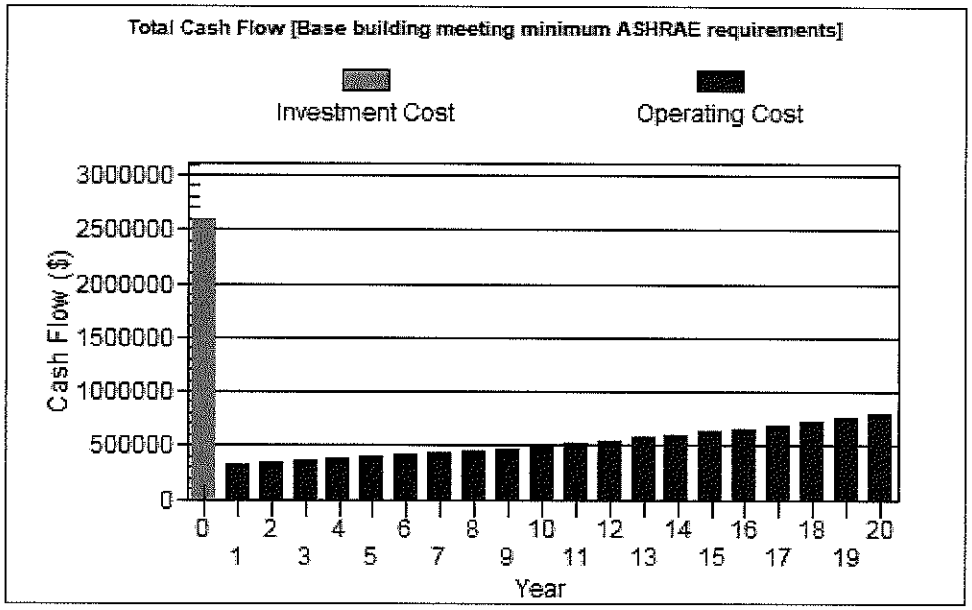
1B. Comparative Analysis Details

		Cash Flow (Present Worth $)			SIR and Payback Calculation (Present Worth $)				
Year	Date	[] Cash Flow ($)	[] Cash Flow ($)	Net Present Worth Savings ($)	Operating Cost Savings ($)	Cumulative Operating Cost Savings ($)	Additional Investment Cost ($)	Cumulative Additional Investment Cost ($)	Year-End SIR
0	Initial	2,600,000	3,200,000	-600,000	0	0	600,000	600,000	0.000
1	1	303,431	167,246	136,184	136,184	136,184	0	600,000	0.227
2	2	304,883	168,047	136,836	136,836	273,021	0	600,000	0.455
3	3	306,342	168,851	137,491	137,491	410,511	0	600,000	0.684
4	4	307,807	169,659	138,149	138,149	548,660	0	600,000	0.914
5	5	309,280	170,470	138,810	138,810	687,470	0	600,000	1.146
6	6	310,760	171,286	139,474	139,474	826,944	0	600,000	1.378
7	7	312,247	172,106	140,141	140,141	967,085	0	600,000	1.612
8	8	313,741	172,929	140,812	140,812	1,107,896	0	600,000	1.846
9	9	315,242	173,756	141,485	141,485	1,249,382	0	600,000	2.082
10	10	316,750	174,588	142,162	142,162	1,391,544	0	600,000	2.319
11	11	318,266	175,423	142,843	142,843	1,534,387	0	600,000	2.557
12	12	319,789	176,262	143,526	143,526	1,677,913	0	600,000	2.797
13	13	321,319	177,106	144,213	144,213	1,822,126	0	600,000	3.037
14	14	322,856	177,953	144,903	144,903	1,967,029	0	600,000	3.278
15	15	324,401	178,805	145,596	145,596	2,112,625	0	600,000	3.521
16	16	325,953	179,660	146,293	146,293	2,258,917	0	600,000	3.765
17	17	327,513	180,520	146,993	146,993	2,405,910	0	600,000	4.010
18	18	329,080	181,384	147,696	147,696	2,553,606	0	600,000	4.256
19	19	330,654	182,251	148,403	148,403	2,702,009	0	600,000	4.503
20	20	332,236	183,123	149,113	149,113	2,851,122	0	600,000	4.752
Totals		8,952,547	6,701,425	2,251,122	2,851,122		600,000		

Cash Flow Details

Lifecycle Study

Type of Analysis	Simple Payback Analysis	
Length of Analysis	20	yrs
Discount Rate	4.50	%



1A. Component Cash Flows [Base building meeting minimum ASHRAE requirements], Actual Value

Year	Date	Cash Investment ($)	Loan Principal ($)	Loan Interest ($)	Total Investment Cost ($)	Annual Operating Cost ($)	Non-Annual Operating Cost ($)	Total Operating Cost ($)	Total Cash Flow ($)
0	Initial	2,600,000	0	0	2,600,000	0	0	0	2,600,000
1	1	0	0	0	0	317,085	0	317,085	317,085
2	2	0	0	0	0	332,940	0	332,940	332,940
3	3	0	0	0	0	349,587	0	349,587	349,587
4	4	0	0	0	0	367,066	0	367,066	367,066
5	5	0	0	0	0	385,419	0	385,419	385,419
6	6	0	0	0	0	404,690	0	404,690	404,690

Cash Flow Details

Year	Date	Cash Investment ($)	Loan Principal ($)	Loan Interest ($)	Total Investment Cost ($)	Annual Operating Cost ($)	Non-Annual Operating Cost ($)	Total Operating Cost ($)	Total Cash Flow ($)
7	7	0	0	0	0	424,925	0	424,925	424,925
8	8	0	0	0	0	446,171	0	446,171	446,171
9	9	0	0	0	0	468,479	0	468,479	468,479
10	10	0	0	0	0	491,903	0	491,903	491,903
11	11	0	0	0	0	516,499	0	516,499	516,499
12	12	0	0	0	0	542,323	0	542,323	542,323
13	13	0	0	0	0	569,440	0	569,440	569,440
14	14	0	0	0	0	597,912	0	597,912	597,912
15	15	0	0	0	0	627,807	0	627,807	627,807
16	16	0	0	0	0	659,198	0	659,198	659,198
17	17	0	0	0	0	692,157	0	692,157	692,157
18	18	0	0	0	0	726,765	0	726,765	726,765
19	19	0	0	0	0	763,104	0	763,104	763,104
20	20	0	0	0	0	801,259	0	801,259	801,259
Totals		2,600,000	0	0	2,600,000	10,484,729	0	10,484,729	13,084,729

1B. Present Worth Cash Flows [Base building meeting minimum ASHRAE requirements]

Year	Date	Total Investment Cost ($)	Total Operating Cost ($)	Total Present Worth ($)
0	Initial	2,600,000	0	2,600,000
1	1	0	303,431	303,431
2	2	0	304,883	304,883
3	3	0	306,342	306,342
4	4	0	307,807	307,807
5	5	0	309,280	309,280
6	6	0	310,760	310,760
7	7	0	312,247	312,247
8	8	0	313,741	313,741
9	9	0	315,242	315,242
10	10	0	316,750	316,750
11	11	0	318,266	318,266
12	12	0	319,789	319,789
13	13	0	321,319	321,319
14	14	0	322,856	322,856
15	15	0	324,401	324,401
16	16	0	325,953	325,953
17	17	0	327,513	327,513

Cash Flow Details

Project: Jackson Barrack 141st Readiness Center
Prepared By: L. T. Vivien, Jr. & Associates, Inc.

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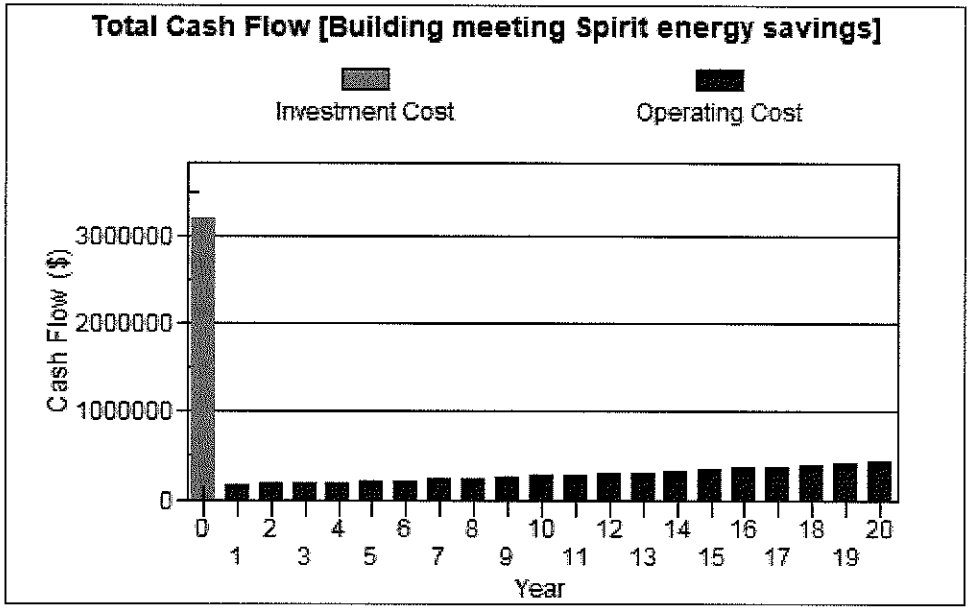
Year	Date	Total Investment Cost ($)	Total Operating Cost ($)	Total Present Worth ($)
18	18	0	329,080	329,080
19	19	0	330,654	330,654
20	20	0	332,236	332,236
Totals		2,600,000	6,352,550	8,952,550

Cash Flow Details



2A. Component Cash Flows [Building meeting Spirit energy savings], Actual Value

Year	Date	Cash Investment ($)	Loan Principal ($)	Loan Interest ($)	Total Investment Cost ($)	Annual Operating Cost ($)	Non-Annual Operating Cost ($)	Total Operating Cost ($)	Total Cash Flow ($)
0	Initial	3,200,000	0	0	3,200,000	0	0	0	3,200,000
1	1	0	0	0	0	174,773	0	174,773	174,773
2	2	0	0	0	0	183,511	0	183,511	183,511
3	3	0	0	0	0	192,687	0	192,687	192,687
4	4	0	0	0	0	202,321	0	202,321	202,321
5	5	0	0	0	0	212,437	0	212,437	212,437
6	6	0	0	0	0	223,059	0	223,059	223,059
7	7	0	0	0	0	234,212	0	234,212	234,212
8	8	0	0	0	0	245,922	0	245,922	245,922
9	9	0	0	0	0	258,219	0	258,219	258,219
10	10	0	0	0	0	271,130	0	271,130	271,130
11	11	0	0	0	0	284,686	0	284,686	284,686
12	12	0	0	0	0	298,920	0	298,920	298,920
13	13	0	0	0	0	313,866	0	313,866	313,866

Cash Flow Details

Project: Jackson Barrack 141st Readiness Center
Prepared By: L. T. Vivien, Jr. & Associates, Inc.

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Year	Date	Cash Investment ($)	Loan Principal ($)	Loan Interest ($)	Total Investment Cost ($)	Annual Operating Cost ($)	Non-Annual Operating Cost ($)	Total Operating Cost ($)	Total Cash Flow ($)
14	14	0	0	0	0	329,560	0	329,560	329,560
15	15	0	0	0	0	346,038	0	346,038	346,038
16	16	0	0	0	0	363,339	0	363,339	363,339
17	17	0	0	0	0	381,506	0	381,506	381,506
18	18	0	0	0	0	400,582	0	400,582	400,582
19	19	0	0	0	0	420,611	0	420,611	420,611
20	20	0	0	0	0	441,641	0	441,641	441,641
Totals		3,200,000	0	0	3,200,000	5,779,020	0	5,779,020	8,979,020

2B. Present Worth Cash Flows [Building meeting Spirit energy savings]

Year	Date	Total Investment Cost ($)	Total Operating Cost ($)	Total Present Worth ($)
0	Initial	3,200,000	0	3,200,000
1	1	0	167,246	167,246
2	2	0	168,047	168,047
3	3	0	168,851	168,851
4	4	0	169,659	169,659
5	5	0	170,470	170,470
6	6	0	171,286	171,286
7	7	0	172,106	172,106
8	8	0	172,929	172,929
9	9	0	173,756	173,756
10	10	0	174,588	174,588
11	11	0	175,423	175,423
12	12	0	176,262	176,262
13	13	0	177,106	177,106
14	14	0	177,953	177,953
15	15	0	178,805	178,805
16	16	0	179,660	179,660
17	17	0	180,520	180,520
18	18	0	181,384	181,384
19	19	0	182,251	182,251
20	20	0	183,123	183,123
Totals		3,200,000	3,501,425	6,701,425

Estimated Construction Cost

Base building meeting minimum ASHRAE requirements

Building connected load = 387 tons x $2,000/ton = $774,000
Plant capacity (air cooled) = 900 tons x $2,000/ton = $1,800,000
Total Cost = $2,574,000 round up to **$2,600,000**

Building meeting Spirit energy savings

Building connected load = 387 tons x $2,500/ton = $967,500
Plant capacity (water cooled) = 900 tons x $2,500/ton = $2,250,000
Total Cost = $3,217,500 round down to **$3,200,000**

Estimated Maintenance Cost

Base building meeting minimum ASHRAE requirements

$50,000

Building meeting Spirit energy savings

$80,000

Jackson Barracks 141st Field Artillery Battalion Readiness Center

Energy Analysis – Base Building meeting minimum ASHRAE requirements

May 3, 2006

35% Design Submittal

Lucien T. Vivien, Jr. & Associates, Inc.

Design Weather Parameters & MSHGs

Design Parameters:

City Name	**New Orleans IAP**	
Location	**Louisiana**	
Latitude	**30.0**	Deg.
Longitude	**90.3**	Deg.
Elevation	**30.0**	ft
Summer Design Dry-Bulb	**95.0**	°F
Summer Coincident Wet-Bulb	**80.0**	°F
Summer Daily Range	**15.5**	°F
Winter Design Dry-Bulb	**30.0**	°F
Winter Design Wet-Bulb	**25.3**	°F
Atmospheric Clearness Number	**0.90**	
Average Ground Reflectance	**0.20**	
Soil Conductivity	**0.800**	BTU/(hr-ft-°F)
Local Time Zone (GMT +/- N hours)	**6.0**	hours
Consider Daylight Savings Time	**No**	
Simulation Weather Data	**New Orleans (TMY)**	
Current Data is	**User Modified**	
Design Cooling Months	**January to December**	

Design Day Maximum Solar Heat Gains

(The MSHG values are expressed in BTU/(hr-ft²))

Month	N	NNE	NE	ENE	E	ESE	SE	SSE	S
January	21.9	21.9	24.8	102.0	162.3	206.8	227.3	224.9	217.6
February	25.3	25.3	60.7	136.4	191.4	216.2	223.3	205.7	192.3
March	28.8	32.9	106.3	161.5	205.2	217.5	199.9	168.9	149.1
April	32.1	69.8	138.8	183.1	199.5	196.0	163.8	118.4	92.6
May	35.4	98.1	156.9	190.8	196.0	176.1	135.1	81.4	57.8
June	45.7	109.5	162.5	190.7	190.3	167.0	121.4	66.8	47.8
July	36.7	100.3	155.0	185.8	189.9	173.1	130.5	78.0	56.6
August	33.6	71.5	134.9	175.4	194.1	189.5	156.9	113.5	89.8
September	29.8	29.8	100.8	156.1	192.5	207.8	191.5	163.1	145.4
October	26.0	26.0	63.8	128.8	181.3	213.1	212.5	197.7	187.1
November	22.2	22.2	30.2	94.1	162.5	203.5	223.5	220.6	214.5
December	20.3	20.3	20.3	85.6	151.0	197.2	225.2	228.2	222.4
Month	**SSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**	**HOR**	**Mult**
January	223.8	227.0	207.4	165.2	94.9	30.5	21.9	166.9	1.00
February	204.1	220.4	220.9	187.1	135.3	65.5	25.3	202.3	1.00
March	168.7	200.3	216.8	200.4	166.8	106.4	29.3	231.5	1.00
April	118.4	163.8	196.0	199.5	183.1	138.8	69.8	245.0	1.00
May	81.1	134.8	176.7	194.8	190.4	157.2	99.2	249.2	1.00
June	67.2	121.7	166.2	191.5	191.1	162.2	108.5	248.3	1.00
July	79.0	131.5	171.2	192.4	187.5	154.6	97.4	246.1	1.00
August	114.3	157.9	188.8	192.5	177.1	135.1	69.7	240.3	1.00
September	164.0	192.6	207.6	195.4	153.7	99.8	31.8	223.7	1.00
October	199.7	216.0	207.8	183.9	131.7	57.6	26.0	198.4	1.00
November	221.5	223.6	203.5	159.2	100.4	25.1	22.2	165.8	1.00
December	228.2	225.2	197.1	151.1	85.6	20.3	20.3	149.8	1.00

Mult. = User-defined solar multiplier factor.

Cooling Design Temperature Profiles

Jackson Barracks
L. T. Vivien, Jr. & Associates, Inc.

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Location: New Orleans IAP, Louisiana

(Dry and Wet Bulb temperatures are expressed in °F)

Hr	January		February		March		April		May		June	
	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB
0000	64.3	63.8	66.3	65.8	71.3	70.4	74.3	72.6	78.3	74.7	81.3	76.8
0100	63.5	63.0	65.5	65.0	70.5	70.0	73.5	72.3	77.5	74.5	80.5	76.6
0200	62.7	62.2	64.7	64.2	69.7	69.2	72.7	72.1	76.7	74.3	79.7	76.4
0300	62.1	61.6	64.1	63.6	69.1	68.6	72.1	71.6	76.1	74.1	79.1	76.3
0400	61.7	61.2	63.7	63.2	68.7	68.2	71.7	71.2	75.7	74.0	78.7	76.2
0500	61.5	61.0	63.5	63.0	68.5	68.0	71.5	71.0	75.5	74.0	78.5	76.1
0600	61.8	61.3	63.8	63.3	68.8	68.3	71.8	71.3	75.8	74.0	78.8	76.2
0700	62.6	62.1	64.6	64.1	69.6	69.1	72.6	72.1	76.6	74.2	79.6	76.4
0800	64.0	63.5	66.0	65.5	71.0	70.3	74.0	72.5	78.0	74.6	81.0	76.8
0900	66.0	64.5	68.0	66.6	73.0	70.9	76.0	73.0	80.0	75.2	83.0	77.3
1000	68.3	65.2	70.3	67.3	75.3	71.6	78.3	73.7	82.3	75.8	85.3	77.9
1100	71.0	66.1	73.0	68.2	78.0	72.3	81.0	74.4	85.0	76.5	88.0	78.5
1200	73.4	66.9	75.4	68.9	80.4	73.0	83.4	75.1	87.4	77.1	90.4	79.1
1300	75.3	67.5	77.3	69.5	82.3	73.5	85.3	75.6	89.3	77.6	92.3	79.6
1400	76.5	67.9	78.5	69.9	83.5	73.9	86.5	75.9	90.5	77.9	93.5	79.9
1500	77.0	68.0	79.0	70.0	84.0	74.0	87.0	76.0	91.0	78.0	94.0	80.0
1600	76.5	67.9	78.5	69.9	83.5	73.9	86.5	75.9	90.5	77.9	93.5	79.9
1700	75.5	67.5	77.5	69.5	82.5	73.6	85.5	75.6	89.5	77.6	92.5	79.6
1800	73.7	67.0	75.7	69.0	80.7	73.1	83.7	75.1	87.7	77.2	90.7	79.2
1900	71.7	66.3	73.7	68.4	78.7	72.5	81.7	74.6	85.7	76.7	88.7	78.7
2000	69.7	65.7	71.7	67.8	76.7	72.0	79.7	74.1	83.7	76.1	86.7	78.2
2100	68.0	65.1	70.0	67.2	75.0	71.5	78.0	73.6	82.0	75.7	85.0	77.8
2200	66.5	64.6	68.5	66.8	73.5	71.0	76.5	73.2	80.5	75.3	83.5	77.4
2300	65.2	64.2	67.2	66.4	72.2	70.7	75.2	72.8	79.2	75.0	82.2	77.1

Hr	July		August		September		October		November		December	
	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB
0000	82.3	76.8	82.3	76.8	80.3	75.8	76.3	73.6	70.3	69.8	65.3	64.8
0100	81.5	76.6	81.5	76.6	79.5	75.6	75.5	73.4	69.5	69.0	64.5	64.0
0200	80.7	76.5	80.7	76.5	78.7	75.4	74.7	73.2	68.7	68.2	63.7	63.2
0300	80.1	76.3	80.1	76.3	78.1	75.2	74.1	73.0	68.1	67.6	63.1	62.6
0400	79.7	76.2	79.7	76.2	77.7	75.1	73.7	72.9	67.7	67.2	62.7	62.2
0500	79.5	76.1	79.5	76.1	77.5	75.0	73.5	72.9	67.5	67.0	62.5	62.0
0600	79.8	76.2	79.8	76.2	77.8	75.1	73.8	72.9	67.8	67.3	62.8	62.3
0700	80.6	76.4	80.6	76.4	78.6	75.3	74.6	73.2	68.6	68.1	63.6	63.1
0800	82.0	76.8	82.0	76.8	80.0	75.7	76.0	73.5	70.0	69.5	65.0	64.5
0900	84.0	77.3	84.0	77.3	82.0	76.2	78.0	74.1	72.0	70.9	67.0	66.5
1000	86.3	77.9	86.3	77.9	84.3	76.8	80.3	74.7	74.3	71.6	69.3	67.3
1100	89.0	78.5	89.0	78.5	87.0	77.5	83.0	75.4	77.0	72.3	72.0	68.2
1200	91.4	79.1	91.4	79.1	89.4	78.1	85.4	76.1	79.4	73.0	74.4	68.9
1300	93.3	79.6	93.3	79.6	91.3	78.6	87.3	76.6	81.3	73.5	76.3	69.5
1400	94.5	79.9	94.5	79.9	92.5	78.9	88.5	76.9	82.5	73.9	77.5	69.9
1500	95.0	80.0	95.0	80.0	93.0	79.0	89.0	77.0	83.0	74.0	78.0	70.0
1600	94.5	79.9	94.5	79.9	92.5	78.9	88.5	76.9	82.5	73.9	77.5	69.9
1700	93.5	79.6	93.5	79.6	91.5	78.6	87.5	76.6	81.5	73.6	76.5	69.6
1800	91.7	79.2	91.7	79.2	89.7	78.2	85.7	76.2	79.7	73.1	74.7	69.0
1900	89.7	78.7	89.7	78.7	87.7	77.7	83.7	75.6	77.7	72.5	72.7	68.4
2000	87.7	78.2	87.7	78.2	85.7	77.2	81.7	75.1	75.7	72.0	70.7	67.8
2100	86.0	77.8	86.0	77.8	84.0	76.7	80.0	74.6	74.0	71.5	69.0	67.3
2200	84.5	77.4	84.5	77.4	82.5	76.3	78.5	74.2	72.5	71.0	67.5	66.8
2300	83.2	77.1	83.2	77.1	81.2	76.0	77.2	73.9	71.2	70.7	66.2	65.7

Schedule Input Data

DRILL (Fractional)

Hourly Profiles:

1:Profile One

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	0	0	0	0

2:Profile Two

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	2	2	2	2	2	2	2	2	2	2	2	2
Tuesday	2	2	2	2	2	2	2	2	2	2	2	2
Wednesday	2	2	2	2	2	2	2	2	2	2	2	2
Thursday	2	2	2	2	2	2	2	2	2	2	2	2
Friday	2	2	2	2	2	2	2	2	2	2	2	2
Saturday	1	1	1	1	1	1	1	1	1	1	1	1
Sunday	1	1	1	1	1	1	1	1	1	1	1	1
Holiday	2	2	2	2	2	2	2	2	2	2	2	2

Schedule Input Data

Sample Schedule (Fractional)

Hourly Profiles:

1:Profile One

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	1	51	100	100	100	100	100	100	100	100	100	100	100	50	26	0	0	0	0

2:Profile Two

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	1	1	1	1	1	1	1	1	1	1	1	1
Tuesday	1	1	1	1	1	1	1	1	1	1	1	1
Wednesday	1	1	1	1	1	1	1	1	1	1	1	1
Thursday	1	1	1	1	1	1	1	1	1	1	1	1
Friday	1	1	1	1	1	1	1	1	1	1	1	1
Saturday	2	2	2	2	2	2	2	2	2	2	2	2
Sunday	2	2	2	2	2	2	2	2	2	2	2	2
Holiday	2	2	2	2	2	2	2	2	2	2	2	2

thermostat (Fan / Thermostat)

Hourly Profiles:
1:Profile One

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	U	U	U	U	U	U	O	O	O	O	O	O	O	O	O	O	O	O	O	U	U	U	U	U

O = Occupied; U = Unoccupied

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	1	1	1	1	1	1	1	1	1	1	1	1
Tuesday	1	1	1	1	1	1	1	1	1	1	1	1
Wednesday	1	1	1	1	1	1	1	1	1	1	1	1
Thursday	1	1	1	1	1	1	1	1	1	1	1	1
Friday	1	1	1	1	1	1	1	1	1	1	1	1
Saturday	1	1	1	1	1	1	1	1	1	1	1	1
Sunday	1	1	1	1	1	1	1	1	1	1	1	1
Holiday	1	1	1	1	1	1	1	1	1	1	1	1

Wall Constructions

Face Brick + R-7 Board

Wall Details

Outside Surface Color ..... **Medium**
Absorptivity **0.675**
Overall U-Value ..... **0.125** BTU/(hr-ft²-°F)

Wall Layers Details (Inside to Outside)

Layers	Thickness in	Density lb/ft³	Specific Ht. BTU / (lb - °F)	R-Value (hr-ft²-°F)/BTU	Weight lb/ft²
Inside surface resistance	0.000	0.0	0.00	0.68500	0.0
1/2-in gypsum board	0.500	50.0	0.26	0.44803	2.1
R-7 board insulation	0.750	2.0	0.22	5.20833	0.1
Air space	0.000	0.0	0.00	0.91000	0.0
4-in face brick	4.000	125.0	0.22	0.43290	41.7
Outside surface resistance	0.000	0.0	0.00	0.33300	0.0
Totals	**5.250**	-		**8.01726**	**43.9**

Roof Constructions

Built-up Roof + R-14 Board + Steel Deck

Roof Details

Outside Surface Color ..... **Dark**
Absorptivity **0.900**
Overall U-Value ..... **0.066** BTU/(hr-ft²-°F)

Roof Layers Details (Inside to Outside)

Layers	Thickness in	Density lb/ft³	Specific Ht. BTU / (lb - °F)	R-Value (hr-ft²-°F)/BTU	Weight lb/ft²
Inside surface resistance	0.000	0.0	0.00	0.68500	0.0
22 gage steel deck	0.034	489.0	0.12	0.00011	1.4
R-14 board insulation	2.000	2.0	0.22	13.88889	0.3
Built-up roofing	0.375	70.0	0.35	0.33245	2.2
Outside surface resistance	0.000	0.0	0.00	0.33300	0.0
Totals	**2.409**	-		**15.23944**	**3.9**

Window Constructions

Sample Window Assembly

Window Details:

Detailed Input	**No**	
Height	**1.00**	ft
Width	**1.00**	ft
Overall U-Value	**1.220**	BTU/(hr-ft²-°F)
Overall Shade Coefficient	**0.250**	

Space Input Data

AHU 1-1

1. General Details:
Floor Area ..... **11255.0** ft²
Avg. Ceiling Height ..... **10.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... **RETAIL: Storage Rooms**
OA Requirement 1 ..... **0.0** CFM/person
OA Requirement 2 ..... **0.15** CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **0.80** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:
Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:
Wattage ..... **2000.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:
Occupancy ..... **10** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:
Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	2029.0	400	0	0
W	2238.0	0	0	0
S	1841.0	160	0	0

3.1. Construction Types for Exposure N
Wall Type ..... **Face Brick + R-7 Board**
1st Window Type ..... **Sample Window Assembly**

3.2. Construction Types for Exposure W
Wall Type ..... **Face Brick + R-7 Board**

3.3. Construction Types for Exposure S
Wall Type ..... **Face Brick + R-7 Board**
1st Window Type ..... **Sample Window Assembly**

4. Roofs, Skylights:
(No Roof or Skylight data).

5. Infiltration:
Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... **Slab Floor On Grade**
Floor Area ..... **11255.0** ft²
Total Floor U-Value ..... **0.100** BTU/(hr-ft²-°F)
Exposed Perimeter ..... **0.0** ft
Edge Insulation R-Value ..... **0.00** (hr-ft²-°F)/BTU

7. Partitions:
(No partition data).

AHU 1-2

1. General Details:
Floor Area ..... 5824.0 ft²
Avg. Ceiling Height ..... 10.0 ft
Building Weight ..... 70.0 lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... EDUCATION: Classroom
OA Requirement 1 ..... 15.0 CFM/person
OA Requirement 2 ..... 0.00 CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... Recessed (Unvented)
Wattage ..... 1.40 W/ft²
Ballast Multiplier 1.08
Schedule ..... Sample Schedule

2.2. Task Lighting:
Wattage ..... 0.00 W/ft²
Schedule ..... None

2.3. Electrical Equipment:
Wattage ..... 2000.0 Watts
Schedule ..... Sample Schedule

2.4. People:
Occupancy ..... 300 People
Activity Level ..... Office Work
Sensible ..... 245.0 BTU/hr/person
Latent ..... 205.0 BTU/hr/person
Schedule ..... Sample Schedule

2.5. Miscellaneous Loads:
Sensible ..... 0 BTU/hr
Schedule ..... None
Latent ..... 0 BTU/hr
Schedule ..... None

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	2423.0	480	0	0
E	939.0	320	0	0

3.1. Construction Types for Exposure N
Wall Type ..... Face Brick + R-7 Board
1st Window Type ..... Sample Window Assembly

3.2. Construction Types for Exposure E
Wall Type ..... Face Brick + R-7 Board
1st Window Type ..... Sample Window Assembly

4. Roofs, Skylights:
(No Roof or Skylight data).

5. Infiltration:
Design Cooling ..... 0.00 CFM
Design Heating ..... 0.00 CFM
Energy Analysis ..... 0.00 CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... Slab Floor On Grade
Floor Area ..... 5824.0 ft²
Total Floor U-Value ..... 0.100 BTU/(hr-ft²-°F)
Exposed Perimeter ..... 0.0 ft
Edge Insulation R-Value ..... 0.00 (hr-ft²-°F)/BTU

7. Partitions:
(No partition data).

AHU 1-3

1. General Details:
Floor Area ..... 7851.0 ft²
Avg. Ceiling Height ..... 10.0 ft
Building Weight ..... 70.0 lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... OFFICE: Office Space
OA Requirement 1 ..... 20.0 CFM/person
OA Requirement 2 ..... 0.00 CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... Recessed (Unvented)
Wattage ..... 1.10 W/ft²
Ballast Multiplier 1.08
Schedule ..... Sample Schedule

2.2. Task Lighting:
Wattage ..... 0.00 W/ft²
Schedule ..... None

2.3. Electrical Equipment:
Wattage ..... 5000.0 Watts
Schedule ..... Sample Schedule

2.4. People:
Occupancy ..... 85 People
Activity Level ..... Office Work
Sensible ..... 245.0 BTU/hr/person
Latent ..... 205.0 BTU/hr/person
Schedule ..... Sample Schedule

2.5. Miscellaneous Loads:
Sensible ..... 0 BTU/hr
Schedule ..... None
Latent ..... 0 BTU/hr
Schedule ..... None

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	1100.0	0	0	0
S	1650.0	320	0	0

3.1. Construction Types for Exposure E
Wall Type ..... Face Brick + R-7 Board

3.2. Construction Types for Exposure S
Wall Type ..... Face Brick + R-7 Board
1st Window Type ..... Sample Window Assembly

4. Roofs, Skylights:
(No Roof or Skylight data).

5. Infiltration:
Design Cooling ..... 0.00 CFM
Design Heating ..... 0.00 CFM
Energy Analysis ..... 0.00 CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... Slab Floor On Grade
Floor Area ..... 7851.0 ft²
Total Floor U-Value ..... 0.100 BTU/(hr-ft²-°F)
Exposed Perimeter ..... 0.0 ft
Edge Insulation R-Value ..... 0.00 (hr-ft²-°F)/BTU

7. Partitions:
(No partition data).

AHU 1-4

1. General Details:
Floor Area ..... 1733.0 ft²
Avg. Ceiling Height ..... 10.0 ft
Building Weight ..... 70.0 lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... OFFICE: Reception Areas
OA Requirement 1 ..... 15.0 CFM/person
OA Requirement 2 ..... 0.00 CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... Recessed (Unvented)
Wattage ..... 1.30 W/ft²
Ballast Multiplier 1.08
Schedule ..... Sample Schedule

2.2. Task Lighting:
Wattage ..... 0.00 W/ft²
Schedule ..... None

2.3. Electrical Equipment:
Wattage ..... 2000.0 Watts
Schedule ..... Sample Schedule

2.4. People:
Occupancy ..... 10 People
Activity Level ..... Office Work
Sensible ..... 245.0 BTU/hr/person
Latent ..... 205.0 BTU/hr/person
Schedule ..... Sample Schedule

2.5. Miscellaneous Loads:
Sensible ..... 0 BTU/hr
Schedule ..... None
Latent ..... 0 BTU/hr
Schedule ..... None

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	793.0	80	0	0

3.1. Construction Types for Exposure N
Wall Type ..... Face Brick + R-7 Board
1st Window Type ..... Sample Window Assembly

4. Roofs, Skylights:
(No Roof or Skylight data).

5. Infiltration:
Design Cooling ..... 0.00 CFM
Design Heating ..... 0.00 CFM
Energy Analysis ..... 0.00 CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... Slab Floor On Grade
Floor Area ..... 1733.0 ft²
Total Floor U-Value ..... 0.100 BTU/(hr-ft²-°F)
Exposed Perimeter ..... 0.0 ft
Edge Insulation R-Value ..... 0.00 (hr-ft²-°F)/BTU

7. Partitions:
(No partition data).

AHU 1-5

1. General Details:
Floor Area ..... 7514.0 ft²
Avg. Ceiling Height ..... 20.0 ft
Building Weight ..... 70.0 lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... OFFICE: Reception Areas
OA Requirement 1 ..... 15.0 CFM/person
OA Requirement 2 ..... 0.00 CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... Recessed (Unvented)
Wattage ..... 1.40 W/ft²
Ballast Multiplier 1.08
Schedule ..... Sample Schedule

2.2. Task Lighting:
Wattage ..... 0.00 W/ft²
Schedule ..... None

2.3. Electrical Equipment:
Wattage ..... 2000.0 Watts
Schedule ..... Sample Schedule

2.4. People:
Occupancy ..... 600 People
Activity Level ..... Office Work
Sensible ..... 245.0 BTU/hr/person
Latent ..... 205.0 BTU/hr/person
Schedule ..... DRILL

2.5. Miscellaneous Loads:
Sensible ..... 0 BTU/hr
Schedule ..... None
Latent ..... 0 BTU/hr
Schedule ..... None

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	2608.0	0	0	0
W	1914.0	100	0	0
E	1914.0	100	0	0

3.1. Construction Types for Exposure S
Wall Type ..... Face Brick + R-7 Board

3.2. Construction Types for Exposure W
Wall Type ..... Face Brick + R-7 Board
1st Window Type ..... Sample Window Assembly

3.3. Construction Types for Exposure E
Wall Type ..... Face Brick + R-7 Board
1st Window Type ..... Sample Window Assembly

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	7514.0	0	0

4.1. Construction Types for Exposure H
Roof Type ..... Built-up Roof + R-14 Board + Steel Deck

5. Infiltration:
Design Cooling ..... 0.00 CFM
Design Heating ..... 0.00 CFM
Energy Analysis ..... 0.00 CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... Slab Floor On Grade
Floor Area ..... 7514.0 ft²
Total Floor U-Value ..... 0.100 BTU/(hr-ft²-°F)
Exposed Perimeter ..... 0.0 ft
Edge Insulation R-Value ..... 0.00 (hr-ft²-°F)/BTU

7. Partitions:
(No partition data).

AHU 2-1

1. General Details:
Floor Area ..... **1200.0** ft²
Avg. Ceiling Height ..... **10.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... **WORKROOMS: Bank Vaults**
OA Requirement 1 ..... **15.0** CFM/person
OA Requirement 2 ..... **0.00** CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **1.40** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:
Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:
Wattage ..... **0.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:
Occupancy ..... **4** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:
Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:
(No Wall, Window, Door data).

4. Roofs, Skylights:
(No Roof or Skylight data).

5. Infiltration:
Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... **Floor Above Conditioned Space**
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 2-2

1. General Details:
Floor Area ..... **6228.0** ft²
Avg. Ceiling Height ..... **10.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:
Space Usage **PUBLIC: Locker and Dressing Rooms**
OA Requirement 1 ..... **0.0** CFM/person
OA Requirement 2 ..... **0.50** CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **0.90** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:
Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:
Wattage ..... **1000.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:
Occupancy ..... **192** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **DRILL**

2.5. Miscellaneous Loads:
Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	1494.0	307	0	0
W	816.0	0	0	0

3.1. Construction Types for Exposure S
Wall Type ..... **Face Brick + R-7 Board**
1st Window Type ..... **Sample Window Assembly**

3.2. Construction Types for Exposure W
Wall Type ..... **Face Brick + R-7 Board**

4. Roofs, Skylights:
(No Roof or Skylight data).

5. Infiltration:
Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... **Floor Above Conditioned Space**
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 2-3

1. General Details:
Floor Area ..... 6000.0 ft²
Avg. Ceiling Height ..... 10.0 ft
Building Weight ..... 70.0 lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... EDUCATION: Classroom
OA Requirement 1 ..... 15.0 CFM/person
OA Requirement 2 ..... 0.00 CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... Recessed (Unvented)
Wattage ..... 1.40 W/ft²
Ballast Multiplier 1.08
Schedule ..... Sample Schedule

2.2. Task Lighting:
Wattage ..... 0.00 W/ft²
Schedule ..... None

2.3. Electrical Equipment:
Wattage ..... 15000.0 Watts
Schedule ..... Sample Schedule

2.4. People:
Occupancy ..... 44 People
Activity Level ..... Office Work
Sensible ..... 245.0 BTU/hr/person
Latent ..... 205.0 BTU/hr/person
Schedule ..... Sample Schedule

2.5. Miscellaneous Loads:
Sensible ..... 0 BTU/hr
Schedule ..... None
Latent ..... 0 BTU/hr
Schedule ..... None

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	1996.0	360	0	0
E	776.0	0	0	0

3.1. Construction Types for Exposure N
Wall Type ..... Face Brick + R-7 Board
1st Window Type ..... Sample Window Assembly

3.2. Construction Types for Exposure E
Wall Type ..... Face Brick + R-7 Board

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	700.0	0	0

4.1. Construction Types for Exposure H
Roof Type ..... Built-up Roof + R-14 Board + Steel Deck

5. Infiltration:
Design Cooling ..... 0.00 CFM
Design Heating ..... 0.00 CFM
Energy Analysis ..... 0.00 CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... Floor Above Conditioned Space
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 2-4

1. General Details:
Floor Area ..... 7984.0 ft²
Avg. Ceiling Height ..... 10.0 ft
Building Weight ..... 70.0 lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... EDUCATION: Locker Rooms
OA Requirement 1 ..... 0.0 CFM/person
OA Requirement 2 ..... 0.50 CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... Recessed (Unvented)
Wattage ..... 0.90 W/ft²
Ballast Multiplier 1.08
Schedule ..... Sample Schedule

2.2. Task Lighting:
Wattage ..... 0.00 W/ft²
Schedule ..... None

2.3. Electrical Equipment:
Wattage ..... 0.0 Watts
Schedule ..... Sample Schedule

2.4. People:
Occupancy ..... 360 People
Activity Level ..... Office Work
Sensible ..... 245.0 BTU/hr/person
Latent ..... 205.0 BTU/hr/person
Schedule ..... Sample Schedule

2.5. Miscellaneous Loads:
Sensible ..... 0 BTU/hr
Schedule ..... None
Latent ..... 0 BTU/hr
Schedule ..... None

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	2000.0	360	0	0
W	776.0	0	0	0

3.1. Construction Types for Exposure N
Wall Type ..... Face Brick + R-7 Board
1st Window Type ..... Sample Window Assembly

3.2. Construction Types for Exposure W
Wall Type ..... Face Brick + R-7 Board

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	700.0	0	0

4.1. Construction Types for Exposure H
Roof Type ..... Built-up Roof + R-14 Board + Steel Deck

5. Infiltration:
Design Cooling ..... 0.00 CFM
Design Heating ..... 0.00 CFM
Energy Analysis ..... 0.00 CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... Floor Above Conditioned Space
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 3-1

1. General Details:
Floor Area ..... **4534.0** ft²
Avg. Ceiling Height ..... **10.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... **OFFICE: Office Space**
OA Requirement 1 ..... **20.0** CFM/person
OA Requirement 2 ..... **0.00** CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **1.10** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:
Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:
Wattage ..... **8000.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:
Occupancy ..... **42** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:
Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	622.0	0	0	0
S	1635.0	180	0	0

3.1. Construction Types for Exposure E
Wall Type ..... **Face Brick + R-7 Board**

3.2. Construction Types for Exposure S
Wall Type ..... **Face Brick + R-7 Board**
1st Window Type ..... **Sample Window Assembly**

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	3600.0	0	0

4.1. Construction Types for Exposure H
Roof Type ..... **Built-up Roof + R-14 Board + Steel Deck**

5. Infiltration:
Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... **Floor Above Conditioned Space**
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 3-2

1. General Details:
Floor Area ..... 5529.0 ft²
Avg. Ceiling Height ..... 10.0 ft
Building Weight ..... 70.0 lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... OFFICE: Office Space
OA Requirement 1 ..... 20.0 CFM/person
OA Requirement 2 ..... 0.00 CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... Recessed (Unvented)
Wattage ..... 1.10 W/ft²
Ballast Multiplier 1.08
Schedule ..... Sample Schedule

2.2. Task Lighting:
Wattage ..... 0.00 W/ft²
Schedule ..... None

2.3. Electrical Equipment:
Wattage ..... 8000.0 Watts
Schedule ..... Sample Schedule

2.4. People:
Occupancy ..... 50 People
Activity Level ..... Office Work
Sensible ..... 245.0 BTU/hr/person
Latent ..... 205.0 BTU/hr/person
Schedule ..... Sample Schedule

2.5. Miscellaneous Loads:
Sensible ..... 0 BTU/hr
Schedule ..... None
Latent ..... 0 BTU/hr
Schedule ..... None

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	622.0	0	0	0
S	1896.0	180	0	0

3.1. Construction Types for Exposure E
Wall Type ..... Face Brick + R-7 Board

3.2. Construction Types for Exposure S
Wall Type ..... Face Brick + R-7 Board
1st Window Type ..... Sample Window Assembly

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	3600.0	0	0

4.1. Construction Types for Exposure H
Roof Type ..... Built-up Roof + R-14 Board + Steel Deck

5. Infiltration:
Design Cooling ..... 0.00 CFM
Design Heating ..... 0.00 CFM
Energy Analysis ..... 0.00 CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... Floor Above Conditioned Space
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 3-3

1. General Details:
Floor Area ..... 8100.0 ft²
Avg. Ceiling Height ..... 10.0 ft
Building Weight ..... 70.0 lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... OFFICE: Office Space
OA Requirement 1 ..... 20.0 CFM/person
OA Requirement 2 ..... 0.00 CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... Recessed (Unvented)
Wattage ..... 1.10 W/ft²
Ballast Multiplier 1.08
Schedule ..... Sample Schedule

2.2. Task Lighting:
Wattage ..... 0.00 W/ft²
Schedule ..... None

2.3. Electrical Equipment:
Wattage ..... 8000.0 Watts
Schedule ..... Sample Schedule

2.4. People:
Occupancy ..... 50 People
Activity Level ..... Office Work
Sensible ..... 245.0 BTU/hr/person
Latent ..... 205.0 BTU/hr/person
Schedule ..... Sample Schedule

2.5. Miscellaneous Loads:
Sensible ..... 0 BTU/hr
Schedule ..... None
Latent ..... 0 BTU/hr
Schedule ..... None

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
W	622.0	0	0	0
N	1896.0	180	0	0

3.1. Construction Types for Exposure W
Wall Type ..... Face Brick + R-7 Board

3.2. Construction Types for Exposure N
Wall Type ..... Face Brick + R-7 Board
1st Window Type ..... Sample Window Assembly

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	3600.0	0	0

4.1. Construction Types for Exposure H
Roof Type ..... Built-up Roof + R-14 Board + Steel Deck

5. Infiltration:
Design Cooling ..... 0.00 CFM
Design Heating ..... 0.00 CFM
Energy Analysis ..... 0.00 CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... Floor Above Conditioned Space
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 3-4

1. General Details:

Floor Area ..... **4534.0** ft²
Avg. Ceiling Height ..... **10.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:

Space Usage ..... **OFFICE: Office Space**
OA Requirement 1 ..... **20.0** CFM/person
OA Requirement 2 ..... **0.00** CFM/ft²

2. Internals:

2.1. Overhead Lighting:

Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **1.10** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:

Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:

Wattage ..... **8000.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:

Occupancy ..... **42** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:

Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
W	622.0	0	0	0
S	1635.0	180	0	0

3.1. Construction Types for Exposure W

Wall Type ..... **Face Brick + R-7 Board**

3.2. Construction Types for Exposure S

Wall Type ..... **Face Brick + R-7 Board**
1st Window Type ..... **Sample Window Assembly**

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	3600.0	0	0

4.1. Construction Types for Exposure H

Roof Type ..... **Built-up Roof + R-14 Board + Steel Deck**

5. Infiltration:

Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:

Type ..... **Floor Above Conditioned Space**
(No additional input required for this floor type).

7. Partitions:

(No partition data).

AHU 4-1

1. General Details:
Floor Area ..... **5600.0** ft²
Avg. Ceiling Height ..... **10.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... **OFFICE: Office Space**
OA Requirement 1 ..... **20.0** CFM/person
OA Requirement 2 ..... **0.00** CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **1.10** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:
Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:
Wattage ..... **4000.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:
Occupancy ..... **26** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:
Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
W	834.0	0	0	0
S	1806.0	130	0	0
E	834.0	0	0	0

3.1. Construction Types for Exposure W
Wall Type ..... **Face Brick + R-7 Board**

3.2. Construction Types for Exposure S
Wall Type ..... **Face Brick + R-7 Board**
1st Window Type ..... **Sample Window Assembly**

3.3. Construction Types for Exposure E
Wall Type ..... **Face Brick + R-7 Board**

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	5600.0	0	0

4.1. Construction Types for Exposure H
Roof Type ..... **Built-up Roof + R-14 Board + Steel Deck**

5. Infiltration:
Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... **Floor Above Conditioned Space**
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 4-2

1. General Details:
Floor Area ..... 5600.0 ft²
Avg. Ceiling Height ..... 10.0 ft
Building Weight ..... 70.0 lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... OFFICE: Office Space
OA Requirement 1 ..... 20.0 CFM/person
OA Requirement 2 ..... 0.00 CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... Recessed (Unvented)
Wattage ..... 1.10 W/ft²
Ballast Multiplier 1.08
Schedule ..... Sample Schedule

2.2. Task Lighting:
Wattage ..... 0.00 W/ft²
Schedule ..... None

2.3. Electrical Equipment:
Wattage ..... 4000.0 Watts
Schedule ..... Sample Schedule

2.4. People:
Occupancy ..... 50 People
Activity Level ..... Office Work
Sensible ..... 245.0 BTU/hr/person
Latent ..... 205.0 BTU/hr/person
Schedule ..... Sample Schedule

2.5. Miscellaneous Loads:
Sensible ..... 0 BTU/hr
Schedule ..... None
Latent ..... 0 BTU/hr
Schedule ..... None

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
W	834.0	0	0	0
N	1806.0	130	0	0
E	834.0	0	0	0

3.1. Construction Types for Exposure W
Wall Type ..... Face Brick + R-7 Board

3.2. Construction Types for Exposure N
Wall Type ..... Face Brick + R-7 Board
1st Window Type ..... Sample Window Assembly

3.3. Construction Types for Exposure E
Wall Type ..... Face Brick + R-7 Board

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	5600.0	0	0

4.1. Construction Types for Exposure H
Roof Type ..... Built-up Roof + R-14 Board + Steel Deck

5. Infiltration:
Design Cooling ..... 0.00 CFM
Design Heating ..... 0.00 CFM
Energy Analysis ..... 0.00 CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... Floor Above Conditioned Space
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 1-1 Input Data

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:33PM

1. General Details:

Air System Name	**AHU 1-1**	
Equipment Class	**Chilled Water AHU**	
Air System Type	**Single Zone CAV**	
Number of zones	**1**	

2. System Components:

Ventilation Air Data:

Airflow Control	**Scheduled control**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Schedule	**Sample Schedule**	
Damper Leak Rate	**0**	%
Outdoor Air CO2 Level	**400**	ppm

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Cycled or Staged Compressor - Fan On**	

Central Heating Data:

Supply Temperature	**95.0**	°F
Heating Source	**Electric Resistance**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Cycled or Staged Compressor - Fan On**	

Supply Fan Data:

Fan Type	**Forward Curved**	
Configuration	**Draw-thru**	
Fan Performance	**2.50**	in wg
Overall Efficiency	**54**	%

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1	
AHU 1-1	x1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW
Thermostat Schedule	**thermostat**	
Unoccupied Cooling is	**Available**	

Supply Terminals Data:

Zone	**All**	
Terminal Type	**Diffuser**	
Minimum Airflow	**0.0**	CFM

Zone Heating Units:

Zone	**All**	

Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):

System Sizing Data:

Cooling Supply Temperature	**55.0**	°F
Supply Fan Airflow	**3048.3**	CFM
Ventilation Fan Airflow	**1688.3**	CFM
Heating Supply Temperature	**95.0**	°F

Hydronic Sizing Specifications:

Chilled Water Delta-T	**10.0**	°F
Hot Water Delta-T	**20.0**	°F

Safety Factors:

Cooling Sensible	**5**	%
Cooling Latent	**5**	%
Heating	**5**	%

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	3048.3	-	-	

5. Equipment Data
No Equipment Data required for this system.

AHU 1-2 Input Data

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:33PM

1. General Details:

Air System Name	**AHU 1-2**	
Equipment Class	**Chilled Water AHU**	
Air System Type	**VAV**	
Number of zones	**1**	

2. System Components:

Ventilation Air Data:

Airflow Control	**Proportional**	
Ventilation Sizing Method	**Sum of Space OA Airflows**	
Minimum Airflow	**0**	%
Unocc. Damper Position	**Closed**	
Damper Leak Rate	**0**	%
Outdoor Air CO2 Level	**400**	ppm

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Constant Temperature - Fan On**	

Supply Fan Data:

Fan Type	**Forward Curved**	
Configuration	**Draw-thru**	
Fan Performance	**4.00**	in wg
Overall Efficiency	**54**	%

% Airflow	100	90	80	70	60	50
% kW	100	91	81	72	61	54

% Airflow	40	30	20	10	0
% kW	46	40	33	27	21

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW
Thermostat Schedule	**thermostat**	
Unoccupied Cooling is	**Available**	

Supply Terminals Data:

Zone	**All**	
Terminal Type	**VAV box with RH**	
Minimum Airflow	**30**	% of supply air
Reheat Coil Source	**Electric Resistance**	
Reheat Coil Schedule	**JFMAMJJASOND**	

Zone Heating Units:
- Zone ..... **All**
- Zone Heating Unit Type ..... **None**

- Zone Unit Heat Source ..... **Hot Water**
- Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):

System Sizing Data:
- Cooling Supply Temperature ..... **55.0** °F
- Supply Fan Airflow ..... **5556.3** CFM
- Ventilation Fan Airflow ..... **4500.0** CFM

Hydronic Sizing Specifications:
- Chilled Water Delta-T ..... **10.0** °F
- Hot Water Delta-T ..... **20.0** °F

Safety Factors:
- Cooling Sensible ..... **5** %
- Cooling Latent ..... **5** %
- Heating ..... **5** %

Zone Sizing Data:
- Zone Airflow Sizing Method ..... **Peak zone sensible load**
- Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	5556.3	-	81.4	

5. Equipment Data

No Equipment Data required for this system.

AHU 1-3 Input Data

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:33PM

1. General Details:

Air System Name ..... **AHU 1-3**
Equipment Class ..... **Chilled Water AHU**
Air System Type ..... **VAV**
Number of zones **1**

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Proportional**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Minimum Airflow ..... **0** %
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %
Outdoor Air CO2 Level ..... **400** ppm

Central Cooling Data:

Supply Air Temperature ..... **55.0** °F
Coil Bypass Factor **0.050**
Cooling Source ..... **Chilled Water**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Constant Temperature - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **4.00** in wg
Overall Efficiency ..... **54** %

% Airflow	100	90	80	70	60	50
% kW	100	91	81	72	61	54

% Airflow	40	30	20	10	0
% kW	46	40	33	27	21

Duct System Data:

Supply Duct Data:

Duct Heat Gain ..... **0** %
Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Return Air Plenum**
Wall Heat Gain to Plenum ..... **0** %
Roof Heat Gain to Plenum ..... **70** %
Lighting Heat Gain to Plenum ..... **30** %

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone ..... **All**
Cooling T-stat: Occ. ..... **75.0** °F
Cooling T-stat: Unocc. ..... **85.0** °F
Heating T-stat: Occ. ..... **70.0** °F
Heating T-stat: Unocc. ..... **60.0** °F
T-stat Throttling Range ..... **3.00** °F
Diversity Factor ..... **100** %
Direct Exhaust Airflow ..... **0.0** CFM
Direct Exhaust Fan kW ..... **0.0** kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

Zone Heating Units:
- Zone ..... **All**
- Zone Heating Unit Type ..... **None**

- Zone Unit Heat Source ..... **Hot Water**
- Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):

System Sizing Data:
- Cooling Supply Temperature ..... **55.0** °F
- Supply Fan Airflow ..... **3438.4** CFM
- Ventilation Fan Airflow ..... **1700.0** CFM

Hydronic Sizing Specifications:
- Chilled Water Delta-T ..... **10.0** °F
- Hot Water Delta-T ..... **20.0** °F

Safety Factors:
- Cooling Sensible ..... **5** %
- Cooling Latent ..... **5** %
- Heating ..... **5** %

Zone Sizing Data:
- Zone Airflow Sizing Method ..... **Peak zone sensible load**
- Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	3438.4	-	45.8	

5. Equipment Data

No Equipment Data required for this system.

AHU 1-4 Input Data

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:33PM

1. General Details:

Air System Name	**AHU 1-4**	
Equipment Class	**Chilled Water AHU**	
Air System Type	**Single Zone CAV**	
Number of zones	**1**	

2. System Components:

Ventilation Air Data:

Airflow Control	**Scheduled control**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Schedule	**Sample Schedule**	
Damper Leak Rate	**0**	%
Outdoor Air CO2 Level	**400**	ppm

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Cycled or Staged Compressor - Fan On**	

Central Heating Data:

Supply Temperature	**95.0**	°F
Heating Source	**Electric Resistance**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Cycled or Staged Compressor - Fan On**	

Supply Fan Data:

Fan Type	**Forward Curved**	
Configuration	**Draw-thru**	
Fan Performance	**2.50**	in wg
Overall Efficiency	**54**	%

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1	
AHU 1-4	x1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW
Thermostat Schedule	**thermostat**	
Unoccupied Cooling is	**Available**	

Supply Terminals Data:

Zone	**All**	
Terminal Type	**Diffuser**	
Minimum Airflow	**0.0**	CFM

Zone Heating Units:

Zone	**All**	

Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):

System Sizing Data:
- Cooling Supply Temperature ..... **55.0** °F
- Supply Fan Airflow ..... **845.8** CFM
- Ventilation Fan Airflow ..... **150.0** CFM
- Heating Supply Temperature ..... **95.0** °F

Hydronic Sizing Specifications:
- Chilled Water Delta-T ..... **10.0** °F
- Hot Water Delta-T ..... **20.0** °F

Safety Factors:
- Cooling Sensible ..... **5** %
- Cooling Latent ..... **5** %
- Heating ..... **5** %

Zone Sizing Data:
- Zone Airflow Sizing Method ..... **Sum of space airflow rates**
- Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	845.8	-	-	

5. Equipment Data

No Equipment Data required for this system.

1. General Details:

Air System Name	**AHU 1-5**	
Equipment Class	**Chilled Water AHU**	
Air System Type	**Single Zone CAV**	
Number of zones	**1**	

2. System Components:

Ventilation Air Data:

Airflow Control	**Scheduled control**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Schedule	**Sample Schedule**	
Damper Leak Rate	**0**	%
Outdoor Air CO2 Level	**400**	ppm

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Cycled or Staged Compressor - Fan On**	

Central Heating Data:

Supply Temperature	**95.0**	°F
Heating Source	**Electric Resistance**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Cycled or Staged Compressor - Fan On**	

Supply Fan Data:

Fan Type	**Forward Curved**	
Configuration	**Draw-thru**	
Fan Performance	**2.50**	in wg
Overall Efficiency	**54**	%

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1	
AHU 1-5	x1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW
Thermostat Schedule	**thermostat**	
Unoccupied Cooling is	**Available**	

Supply Terminals Data:

Zone	**All**	
Terminal Type	**Diffuser**	
Minimum Airflow	**0.0**	CFM

Zone Heating Units:

Zone	**All**	

Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):

System Sizing Data:

Cooling Supply Temperature	**55.0**	°F
Supply Fan Airflow	**9218.7**	CFM
Ventilation Fan Airflow	**9000.0**	CFM
Heating Supply Temperature	**95.0**	°F

Hydronic Sizing Specifications:

Chilled Water Delta-T	**10.0**	°F
Hot Water Delta-T	**20.0**	°F

Safety Factors:

Cooling Sensible	**5**	%
Cooling Latent	**5**	%
Heating	**5**	%

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	9218.7	-	-	

5. Equipment Data
No Equipment Data required for this system.

AHU 2-1 Input Data

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:33PM

1. General Details:

Air System Name	**AHU 2-1**
Equipment Class	**Chilled Water AHU**
Air System Type	**Single Zone CAV**
Number of zones	**1**

2. System Components:

Ventilation Air Data:

Airflow Control	**Scheduled control**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Schedule	**Sample Schedule**	
Damper Leak Rate	**0**	%
Outdoor Air CO2 Level	**400**	ppm

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.100**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Cycled or Staged Compressor - Fan On**	

Central Heating Data:

Supply Temperature	**95.0**	°F
Heating Source	**Electric Resistance**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Cycled or Staged Compressor - Fan On**	

Supply Fan Data:

Fan Type	**Forward Curved**	
Configuration	**Draw-thru**	
Fan Performance	**2.50**	in wg
Overall Efficiency	**54**	%

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1	
AHU 2-1	x1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW
Thermostat Schedule	**thermostat**	
Unoccupied Cooling is	**Available**	

Supply Terminals Data:

Zone	**All**	
Terminal Type	**Diffuser**	
Minimum Airflow	**0.0**	CFM

Zone Heating Units:

Zone	**All**

Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **217.9** CFM
Ventilation Fan Airflow ..... **60.0** CFM
Heating Supply Temperature ..... **95.0** °F

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **5** %
Cooling Latent ..... **5** %
Heating ..... **5** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	217.9	-	-	

5. Equipment Data
No Equipment Data required for this system.

AHU 2-2 Input Data

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:33PM

1. General Details:

Air System Name	**AHU 2-2**
Equipment Class	**Chilled Water AHU**
Air System Type	**VAV**
Number of zones	**1**

2. System Components:

Ventilation Air Data:

Airflow Control	**Proportional**	
Ventilation Sizing Method	**Sum of Space OA Airflows**	
Minimum Airflow	**0**	%
Unocc. Damper Position	**Closed**	
Damper Leak Rate	**0**	%
Outdoor Air CO2 Level	**400**	ppm

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Constant Temperature - Fan On**	

Supply Fan Data:

Fan Type	**Forward Curved**	
Configuration	**Draw-thru**	
Fan Performance	**4.00**	in wg
Overall Efficiency	**54**	%

% Airflow	100	90	80	70	60	50
% kW	100	91	81	72	61	54

% Airflow	40	30	20	10	0
% kW	46	40	33	27	21

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW
Thermostat Schedule	**thermostat**	
Unoccupied Cooling is	**Available**	

Supply Terminals Data:

Zone	**All**	
Terminal Type	**VAV box with RH**	
Minimum Airflow	**30**	% of supply air
Reheat Coil Source	**Electric Resistance**	
Reheat Coil Schedule	**JFMAMJJASOND**	

Zone Heating Units:
- Zone ..... **All**
- Zone Heating Unit Type ..... **None**

- Zone Unit Heat Source ..... **Hot Water**
- Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):

System Sizing Data:
- Cooling Supply Temperature ..... **55.0** °F
- Supply Fan Airflow ..... **3357.4** CFM
- Ventilation Fan Airflow ..... **3114.0** CFM

Hydronic Sizing Specifications:
- Chilled Water Delta-T ..... **10.0** °F
- Hot Water Delta-T ..... **20.0** °F

Safety Factors:
- Cooling Sensible ..... **0** %
- Cooling Latent ..... **0** %
- Heating ..... **0** %

Zone Sizing Data:
- Zone Airflow Sizing Method ..... **Peak zone sensible load**
- Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	3357.4	-	41.3	

5. Equipment Data

No Equipment Data required for this system.

AHU 2-3 Input Data

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:33PM

1. General Details:

Air System Name	**AHU 2-3**	
Equipment Class	**Chilled Water AHU**	
Air System Type	**VAV**	
Number of zones	**1**	

2. System Components:

Ventilation Air Data:

Airflow Control	**Proportional**	
Ventilation Sizing Method	**Sum of Space OA Airflows**	
Minimum Airflow	**0**	%
Unocc. Damper Position	**Closed**	
Damper Leak Rate	**0**	%
Outdoor Air CO2 Level	**400**	ppm

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Constant Temperature - Fan On**	

Supply Fan Data:

Fan Type	**Forward Curved**	
Configuration	**Draw-thru**	
Fan Performance	**4.00**	in wg
Overall Efficiency	**54**	%

% Airflow	100	90	80	70	60	50
% kW	100	91	81	72	61	54

% Airflow	40	30	20	10	0
% kW	46	40	33	27	21

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW
Thermostat Schedule	**thermostat**	
Unoccupied Cooling is	**Available**	

Supply Terminals Data:

Zone	**All**	
Terminal Type	**VAV box with RH**	
Minimum Airflow	**30**	% of supply air
Reheat Coil Source	**Electric Resistance**	
Reheat Coil Schedule	**JFMAMJJASOND**	

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **2510.9** CFM
Ventilation Fan Airflow ..... **660.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **0** %
Cooling Latent ..... **0** %
Heating ..... **0** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	2510.9	-	43.6	

5. Equipment Data
No Equipment Data required for this system.

AHU 2-4 Input Data

1. General Details:

Air System Name ..... **AHU 2-4**
Equipment Class ..... **Chilled Water AHU**
Air System Type ..... **VAV**
Number of zones **1**

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Proportional**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Minimum Airflow ..... **0** %
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %
Outdoor Air CO2 Level ..... **400** ppm

Central Cooling Data:

Supply Air Temperature ..... **55.0** °F
Coil Bypass Factor **0.050**
Cooling Source ..... **Chilled Water**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Constant Temperature - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **4.00** in wg
Overall Efficiency ..... **54** %

% Airflow	100	90	80	70	60	50
% kW	100	91	81	72	61	54

% Airflow	40	30	20	10	0
% kW	46	40	33	27	21

Duct System Data:

Supply Duct Data:

Duct Heat Gain ..... **0** %
Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Return Air Plenum**
Wall Heat Gain to Plenum ..... **0** %
Roof Heat Gain to Plenum ..... **70** %
Lighting Heat Gain to Plenum ..... **30** %

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone ..... **All**
Cooling T-stat: Occ. ..... **75.0** °F
Cooling T-stat: Unocc. ..... **85.0** °F
Heating T-stat: Occ. ..... **70.0** °F
Heating T-stat: Unocc. ..... **60.0** °F
T-stat Throttling Range ..... **3.00** °F
Diversity Factor ..... **100** %
Direct Exhaust Airflow ..... **0.0** CFM
Direct Exhaust Fan kW ..... **0.0** kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

AHU 2-4 Input Data

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **4894.7** CFM
Ventilation Fan Airflow ..... **3992.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **0** %
Cooling Latent ..... **0** %
Heating ..... **0** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	4894.7	-	55.2	

5. Equipment Data
No Equipment Data required for this system.

AHU 3-1 Input Data

1. General Details:

Air System Name ..... **AHU 3-1**
Equipment Class ..... **Chilled Water AHU**
Air System Type ..... **VAV**
Number of zones **1**

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Proportional**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Minimum Airflow ..... **0** %
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %
Outdoor Air CO2 Level ..... **400** ppm

Central Cooling Data:

Supply Air Temperature ..... **55.0** °F
Coil Bypass Factor **0.050**
Cooling Source ..... **Chilled Water**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Constant Temperature - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **4.00** in wg
Overall Efficiency ..... **54** %

% Airflow	100	90	80	70	60	50
% kW	100	91	81	72	61	54

% Airflow	40	30	20	10	0
% kW	46	40	33	27	21

Duct System Data:

Supply Duct Data:

Duct Heat Gain ..... **0** %
Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Return Air Plenum**
Wall Heat Gain to Plenum ..... **0** %
Roof Heat Gain to Plenum ..... **70** %
Lighting Heat Gain to Plenum ..... **30** %

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone ..... **All**
Cooling T-stat: Occ. ..... **75.0** °F
Cooling T-stat: Unocc. ..... **85.0** °F
Heating T-stat: Occ. ..... **70.0** °F
Heating T-stat: Unocc. ..... **60.0** °F
T-stat Throttling Range ..... **3.00** °F
Diversity Factor ..... **100** %
Direct Exhaust Airflow ..... **0.0** CFM
Direct Exhaust Fan kW ..... **0.0** kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

AHU 3-1 Input Data

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **2874.5** CFM
Ventilation Fan Airflow ..... **840.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **0** %
Cooling Latent ..... **0** %
Heating ..... **0** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	2874.5	-	42.6	

5. Equipment Data
No Equipment Data required for this system.

AHU 3-2 Input Data

1. General Details:

Air System Name ..... **AHU 3-2**
Equipment Class ..... **Chilled Water AHU**
Air System Type ..... **VAV**
Number of zones **1**

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Proportional**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Minimum Airflow ..... **0** %
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %
Outdoor Air CO2 Level ..... **400** ppm

Central Cooling Data:

Supply Air Temperature ..... **55.0** °F
Coil Bypass Factor **0.050**
Cooling Source ..... **Chilled Water**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Constant Temperature - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **4.00** in wg
Overall Efficiency ..... **54** %

% Airflow	100	90	80	70	60	50
% kW	100	91	81	72	61	54

% Airflow	40	30	20	10	0
% kW	46	40	33	27	21

Duct System Data:

Supply Duct Data:

Duct Heat Gain ..... **0** %
Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Return Air Plenum**
Wall Heat Gain to Plenum ..... **0** %
Roof Heat Gain to Plenum ..... **70** %
Lighting Heat Gain to Plenum ..... **30** %

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone ..... **All**
Cooling T-stat: Occ. ..... **75.0** °F
Cooling T-stat: Unocc. ..... **85.0** °F
Heating T-stat: Occ. ..... **70.0** °F
Heating T-stat: Unocc. ..... **60.0** °F
T-stat Throttling Range ..... **3.00** °F
Diversity Factor ..... **100** %
Direct Exhaust Airflow ..... **0.0** CFM
Direct Exhaust Fan kW ..... **0.0** kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

AHU 3-2 Input Data

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **3104.9** CFM
Ventilation Fan Airflow ..... **1000.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **0** %
Cooling Latent ..... **0** %
Heating ..... **0** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	3104.9	-	45.0	

5. Equipment Data
No Equipment Data required for this system.

AHU 3-3 Input Data

1. General Details:

Air System Name ..... **AHU 3-3**
Equipment Class ..... **Chilled Water AHU**
Air System Type ..... **VAV**
Number of zones **1**

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Proportional**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Minimum Airflow ..... **0** %
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %
Outdoor Air CO2 Level ..... **400** ppm

Central Cooling Data:

Supply Air Temperature ..... **55.0** °F
Coil Bypass Factor **0.050**
Cooling Source ..... **Chilled Water**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Constant Temperature - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **4.00** in wg
Overall Efficiency ..... **54** %

% Airflow	100	90	80	70	60	50
% kW	100	91	81	72	61	54

% Airflow	40	30	20	10	0
% kW	46	40	33	27	21

Duct System Data:

Supply Duct Data:

Duct Heat Gain ..... **0** %
Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Return Air Plenum**
Wall Heat Gain to Plenum ..... **0** %
Roof Heat Gain to Plenum ..... **70** %
Lighting Heat Gain to Plenum ..... **30** %

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone ..... **All**
Cooling T-stat: Occ. ..... **75.0** °F
Cooling T-stat: Unocc. ..... **85.0** °F
Heating T-stat: Occ. ..... **70.0** °F
Heating T-stat: Unocc. ..... **60.0** °F
T-stat Throttling Range ..... **3.00** °F
Diversity Factor ..... **100** %
Direct Exhaust Airflow ..... **0.0** CFM
Direct Exhaust Fan kW ..... **0.0** kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

AHU 3-3 Input Data

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **3268.9** CFM
Ventilation Fan Airflow ..... **1000.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **0** %
Cooling Latent ..... **0** %
Heating ..... **0** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	3268.9	-	45.8	

5. Equipment Data
No Equipment Data required for this system.

AHU 3-4 Input Data

1. General Details:

Air System Name ..... **AHU 3-4**
Equipment Class ..... **Chilled Water AHU**
Air System Type ..... **VAV**
Number of zones **1**

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Proportional**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Minimum Airflow ..... **0** %
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %
Outdoor Air CO2 Level ..... **400** ppm

Central Cooling Data:

Supply Air Temperature ..... **55.0** °F
Coil Bypass Factor **0.050**
Cooling Source ..... **Chilled Water**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Constant Temperature - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **4.00** in wg
Overall Efficiency ..... **54** %

% Airflow	100	90	80	70	60	50
% kW	100	91	81	72	61	54

% Airflow	40	30	20	10	0
% kW	46	40	33	27	21

Duct System Data:

Supply Duct Data:

Duct Heat Gain ..... **0** %
Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Return Air Plenum**
Wall Heat Gain to Plenum ..... **0** %
Roof Heat Gain to Plenum ..... **70** %
Lighting Heat Gain to Plenum ..... **30** %

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone ..... **All**
Cooling T-stat: Occ. ..... **75.0** °F
Cooling T-stat: Unocc. ..... **85.0** °F
Heating T-stat: Occ. ..... **70.0** °F
Heating T-stat: Unocc. ..... **60.0** °F
T-stat Throttling Range ..... **3.00** °F
Diversity Factor ..... **100** %
Direct Exhaust Airflow ..... **0.0** CFM
Direct Exhaust Fan kW ..... **0.0** kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

AHU 3-4 Input Data

Zone Heating Units:
Zone ..... All
Zone Heating Unit Type ..... None

Zone Unit Heat Source ..... Hot Water
Zone Heating Unit Schedule ..... JFMAMJJASOND

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... 55.0 °F
Supply Fan Airflow ..... 2868.6 CFM
Ventilation Fan Airflow ..... 840.0 CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... 10.0 °F
Hot Water Delta-T ..... 20.0 °F

Safety Factors:
Cooling Sensible ..... 0 %
Cooling Latent ..... 0 %
Heating ..... 0 %

Zone Sizing Data:
Zone Airflow Sizing Method ..... Peak zone sensible load
Space Airflow Sizing Method ..... Individual peak space loads

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	2868.6	-	42.5	

5. Equipment Data
No Equipment Data required for this system.

AHU 4-1 Input Data

1. General Details:

Air System Name ..... **AHU 4-1**
Equipment Class ..... **Chilled Water AHU**
Air System Type ..... **VAV**
Number of zones **1**

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Proportional**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Minimum Airflow ..... **0** %
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %
Outdoor Air CO2 Level ..... **400** ppm

Central Cooling Data:

Supply Air Temperature ..... **55.0** °F
Coil Bypass Factor **0.050**
Cooling Source ..... **Chilled Water**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Constant Temperature - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **4.00** in wg
Overall Efficiency ..... **54** %

% Airflow	100	90	80	70	60	50
% kW	100	91	81	72	61	54

% Airflow	40	30	20	10	0
% kW	46	40	33	27	21

Duct System Data:

Supply Duct Data:

Duct Heat Gain ..... **0** %
Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Return Air Plenum**
Wall Heat Gain to Plenum ..... **0** %
Roof Heat Gain to Plenum ..... **70** %
Lighting Heat Gain to Plenum ..... **30** %

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone ..... **All**
Cooling T-stat: Occ. ..... **75.0** °F
Cooling T-stat: Unocc. ..... **85.0** °F
Heating T-stat: Occ. ..... **70.0** °F
Heating T-stat: Unocc. ..... **60.0** °F
T-stat Throttling Range ..... **3.00** °F
Diversity Factor ..... **100** %
Direct Exhaust Airflow ..... **0.0** CFM
Direct Exhaust Fan kW ..... **0.0** kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

AHU 4-1 Input Data

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **2474.8** CFM
Ventilation Fan Airflow ..... **520.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **0** %
Cooling Latent ..... **0** %
Heating ..... **0** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	2474.8	-	49.7	

5. Equipment Data
No Equipment Data required for this system.

AHU 4-2 Input Data

1. General Details:

Air System Name ..... **AHU 4-2**
Equipment Class ..... **Chilled Water AHU**
Air System Type ..... **VAV**
Number of zones **1**

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Proportional**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Minimum Airflow ..... **0** %
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %
Outdoor Air CO2 Level ..... **400** ppm

Central Cooling Data:

Supply Air Temperature ..... **55.0** °F
Coil Bypass Factor **0.050**
Cooling Source ..... **Chilled Water**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Constant Temperature - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **4.00** in wg
Overall Efficiency ..... **54** %

% Airflow	100	90	80	70	60	50
% kW	100	91	81	72	61	54

% Airflow	40	30	20	10	0
% kW	46	40	33	27	21

Duct System Data:

Supply Duct Data:

Duct Heat Gain ..... **0** %
Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Return Air Plenum**
Wall Heat Gain to Plenum ..... **0** %
Roof Heat Gain to Plenum ..... **70** %
Lighting Heat Gain to Plenum ..... **30** %

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone ..... **All**
Cooling T-stat: Occ. ..... **75.0** °F
Cooling T-stat: Unocc. ..... **85.0** °F
Heating T-stat: Occ. ..... **70.0** °F
Heating T-stat: Unocc. ..... **60.0** °F
T-stat Throttling Range ..... **3.00** °F
Diversity Factor ..... **100** %
Direct Exhaust Airflow ..... **0.0** CFM
Direct Exhaust Fan kW ..... **0.0** kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

AHU 4-2 Input Data

Zone Heating Units:
Zone ..... All
Zone Heating Unit Type ..... None

Zone Unit Heat Source ..... Hot Water
Zone Heating Unit Schedule ..... JFMAMJJASOND

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... 55.0 °F
Supply Fan Airflow ..... 2611.6 CFM
Ventilation Fan Airflow ..... 1000.0 CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... 10.0 °F
Hot Water Delta-T ..... 20.0 °F

Safety Factors:
Cooling Sensible ..... 0 %
Cooling Latent ..... 0 %
Heating ..... 0 %

Zone Sizing Data:
Zone Airflow Sizing Method ..... Peak zone sensible load
Space Airflow Sizing Method ..... Individual peak space loads

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	2611.6	-	50.4	

5. Equipment Data
No Equipment Data required for this system.

Air System Sizing Summary for AHU 1-1

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Information

Air System Name	**AHU 1-1**		Number of zones	**1**
Equipment Class	**CW AHU**		Floor Area	**11255.0** ft²
Air System Type	**SZCAV**		Location	**New Orleans IAP, Louisiana**

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Sum of space airflow rates**		Calculation Months	**Jan to Dec**
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**

Central Cooling Coil Sizing Data

Total coil load	**15.8**	Tons	Load occurs at	**Aug 1600**	
Total coil load	**189.4**	MBH	OA DB / WB	**94.5 / 79.9**	°F
Sensible coil load	**109.9**	MBH	Entering DB / WB	**88.4 / 73.6**	°F
Coil CFM at Aug 1600	**3048**	CFM	Leaving DB / WB	**55.0 / 54.5**	°F
Max block CFM	**3048**	CFM	Coil ADP	**53.2**	°F
Sum of peak zone CFM	**3048**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.580**		Resulting RH	**45**	%
ft²/Ton	**713.1**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**16.8**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**37.90**	gpm	Max zone temperature deviation	**0.0**	°F

Central Heating Coil Sizing Data

Max coil load	**119.6**	MBH	Load occurs at	**Des Htg**	
Coil CFM at Des Htg	**3048**	CFM	BTU/(hr-ft²)	**10.6**	
Max coil CFM	**3048**	CFM	Ent. DB / Lvg DB	**47.1 / 83.4**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**3048**	CFM	Fan motor BHP	**2.22**	BHP
Standard CFM	**3045**	CFM	Fan motor kW	**1.66**	kW
Actual max CFM/ft²	**0.27**	CFM/ft²	Fan static	**2.50**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**1688**	CFM	CFM/person	**168.83**	CFM/person
CFM/ft²	**0.15**	CFM/ft²			

Air System Design Load Summary for AHU 1-1

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1600 COOLING OA DB / WB 94.5 °F / 79.9 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	560 ft²	3132	-	560 ft²	-	-
Wall Transmission	5548 ft²	18832	-	5548 ft²	27680	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	560 ft²	11675	-	560 ft²	27328	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	11255 ft²	0	-	11255 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	9724 W	19490	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	2000 W	6334	-	0	0	-
People	10	1958	2050	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	3071	103	5%	2750	0
>> Total Zone Loads	-	**64493**	**2153**	-	**57759**	**0**
Zone Conditioning	-	69283	2153	-	55612	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	0	-	0	0	-
Plenum Lighting Load	30%	9954	-	0	0	-
Return Fan Load	3048 CFM	0	-	3048 CFM	0	-
Ventilation Load	1688 CFM	25050	77297	1688 CFM	69604	0
Supply Fan Load	3048 CFM	5649	-	3048 CFM	-5649	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**109936**	**79449**	-	**119567**	**0**
Central Cooling Coil	-	109936	79450	-	0	0
Central Heating Coil	-	0	-	-	119567	-
>> Total Conditioning	-	**109936**	**79450**	-	**119567**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 1-2

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Information

Air System Name	**AHU 1-2**		Number of zones	**1**
Equipment Class	**CW AHU**		Floor Area	**5824.0** ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**

Central Cooling Coil Sizing Data

Total coil load	**38.0**	Tons	Load occurs at	**Jul 1500**	
Total coil load	**455.6**	MBH	OA DB / WB	**95.0 / 80.0**	°F
Sensible coil load	**228.0**	MBH	Entering DB / WB	**92.0 / 77.7**	°F
Coil CFM at Jul 1500	**5312**	CFM	Leaving DB / WB	**52.2 / 52.0**	°F
Max block CFM at Jul 1700	**5556**	CFM	Coil ADP	**50.1**	°F
Sum of peak zone CFM	**5556**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.501**		Resulting RH	**53**	%
ft²/Ton	**153.4**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**78.2**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**91.16**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Jul 1700	**5556**	CFM	Fan motor BHP	**6.48**	BHP
Standard CFM	**5550**	CFM	Fan motor kW	**4.83**	kW
Actual max CFM/ft²	**0.95**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**4500**	CFM	CFM/person	**15.00**	CFM/person
CFM/ft²	**0.77**	CFM/ft²			

Air System Design Load Summary for AHU 1-2

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 95.0 °F / 80.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	800 ft²	6743	-	800 ft²	-	-
Wall Transmission	2562 ft²	7079	-	2562 ft²	12782	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	800 ft²	16810	-	800 ft²	39040	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	5824 ft²	0	-	5824 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	8806 W	17412	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	2000 W	6300	-	0	0	-
People	300	57696	61500	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	5602	3075	5%	2591	0
>> Total Zone Loads	-	**117641**	**64575**	-	**54414**	**0**
Zone Conditioning	-	130584	64575	-	41466	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	0	-	0	0	-
Plenum Lighting Load	30%	9014	-	0	0	-
Return Fan Load	5312 CFM	0	-	1667 CFM	0	-
Ventilation Load	4302 CFM	72600	162978	1350 CFM	46529	0
Supply Fan Load	5312 CFM	15825	-	1667 CFM	-6590	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**228023**	**227553**	-	**81405**	**0**
Central Cooling Coil	-	228023	227553	-	0	0
Terminal Reheat Coils	-	0	-	-	81388	-
>> Total Conditioning	-	**228023**	**227553**	-	**81388**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 1-3

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Information

Air System Name	**AHU 1-3**		Number of zones	**1**
Equipment Class	**CW AHU**		Floor Area	**7851.0** ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**	Calculation Months	**Jan to Dec**
Space CFM	**Individual peak space loads**	Sizing Data	**Calculated**

Central Cooling Coil Sizing Data

Total coil load	**18.0**	Tons	Load occurs at	**Aug 1500**	
Total coil load	**215.6**	MBH	OA DB / WB	**95.0 / 80.0**	°F
Sensible coil load	**124.8**	MBH	Entering DB / WB	**87.7 / 72.8**	°F
Coil CFM at Aug 1500	**3266**	CFM	Leaving DB / WB	**52.2 / 51.8**	°F
Max block CFM at Sep 1600	**3438**	CFM	Coil ADP	**50.4**	°F
Sum of peak zone CFM	**3438**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.579**		Resulting RH	**46**	%
ft²/Ton	**437.0**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**27.5**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**43.14**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Sep 1600	**3438**	CFM	Fan motor BHP	**4.01**	BHP
Standard CFM	**3435**	CFM	Fan motor kW	**2.99**	kW
Actual max CFM/ft²	**0.44**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**1700**	CFM	CFM/person	**20.00**	CFM/person
CFM/ft²	**0.22**	CFM/ft²			

Air System Design Load Summary for AHU 1-3

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1500 COOLING OA DB / WB 95.0 °F / 80.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	320 ft²	2877	-	320 ft²	-	-
Wall Transmission	2430 ft²	8661	-	2430 ft²	12124	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	320 ft²	6724	-	320 ft²	15616	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	7851 ft²	0	-	7851 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	9327 W	18442	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	5000 W	15750	-	0	0	-
People	85	16347	17425	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	3440	871	5%	1387	0
>> Total Zone Loads	-	**72240**	**18296**	-	**29127**	**0**
Zone Conditioning	-	80167	18296	-	27048	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	0	-	0	0	-
Plenum Lighting Load	30%	9547	-	0	0	-
Return Fan Load	3266 CFM	0	-	1032 CFM	0	-
Ventilation Load	1615 CFM	25318	72514	510 CFM	20446	0
Supply Fan Load	3266 CFM	9735	-	1032 CFM	-4078	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**124767**	**90810**	-	**43416**	**0**
Central Cooling Coil	-	124767	90810	-	0	0
Terminal Reheat Coils	-	0	-	-	43366	-
>> Total Conditioning	-	**124767**	**90810**	-	**43366**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 1-4

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Information

Air System Name	**AHU 1-4**		Number of zones	**1**
Equipment Class	**CW AHU**		Floor Area	**1733.0** ft²
Air System Type	**SZCAV**		Location	**New Orleans IAP, Louisiana**

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Sum of space airflow rates**		Calculation Months	**Jan to Dec**
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**

Central Cooling Coil Sizing Data

Total coil load	**2.9**	Tons	Load occurs at	**Jul 1400**	
Total coil load	**35.1**	MBH	OA DB / WB	**94.5 / 79.9**	°F
Sensible coil load	**26.1**	MBH	Entering DB / WB	**82.9 / 67.5**	°F
Coil CFM at Jul 1400	**846**	CFM	Leaving DB / WB	**54.3 / 53.6**	°F
Max block CFM	**846**	CFM	Coil ADP	**52.8**	°F
Sum of peak zone CFM	**846**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.745**		Resulting RH	**45**	%
ft²/Ton	**592.5**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**20.3**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**7.02**	gpm	Max zone temperature deviation	**0.0**	°F

Central Heating Coil Sizing Data

Max coil load	**12.3**	MBH	Load occurs at	**Des Htg**	
Coil CFM at Des Htg	**846**	CFM	BTU/(hr-ft²)	**7.1**	
Max coil CFM	**846**	CFM	Ent. DB / Lvg DB	**62.1 / 75.6**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**846**	CFM	Fan motor BHP	**0.62**	BHP
Standard CFM	**845**	CFM	Fan motor kW	**0.46**	kW
Actual max CFM/ft²	**0.49**	CFM/ft²	Fan static	**2.50**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**150**	CFM	CFM/person	**15.00**	CFM/person
CFM/ft²	**0.09**	CFM/ft²			

Air System Design Load Summary for AHU 1-4

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1400 COOLING OA DB / WB 94.5 °F / 79.9 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	80 ft²	464	-	80 ft²	-	-
Wall Transmission	713 ft²	1640	-	713 ft²	3557	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	80 ft²	1632	-	80 ft²	3904	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1733 ft²	0	-	1733 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2433 W	4741	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	2000 W	6263	-	0	0	-
People	10	1886	2050	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	831	103	5%	373	0
>> Total Zone Loads	-	**17457**	**2153**	-	**7834**	**0**
Zone Conditioning	-	19798	2153	-	7499	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	0	-	0	0	-
Plenum Lighting Load	30%	2491	-	0	0	-
Return Fan Load	846 CFM	0	-	846 CFM	0	-
Ventilation Load	150 CFM	2280	6808	150 CFM	6322	0
Supply Fan Load	846 CFM	1567	-	846 CFM	-1567	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**26136**	**8961**	-	**12254**	**0**
Central Cooling Coil	-	26136	8961	-	0	0
Central Heating Coil	-	0	-	-	12254	-
>> Total Conditioning	-	**26136**	**8961**	-	**12254**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 1-5

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Information

Air System Name	AHU 1-5		Number of zones	1
Equipment Class	CW AHU		Floor Area	7514.0 ft²
Air System Type	SZCAV		Location	New Orleans IAP, Louisiana

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	Sum of space airflow rates		Calculation Months	Jan to Dec
Space CFM	Individual peak space loads		Sizing Data	Calculated

Central Cooling Coil Sizing Data

Total coil load	69.7	Tons	Load occurs at	Aug 1500	
Total coil load	836.7	MBH	OA DB / WB	95.0 / 80.0	°F
Sensible coil load	405.5	MBH	Entering DB / WB	94.7 / 79.8	°F
Coil CFM at Aug 1500	9219	CFM	Leaving DB / WB	53.9 / 53.6	°F
Max block CFM	9219	CFM	Coil ADP	51.7	°F
Sum of peak zone CFM	9219	CFM	Bypass Factor	0.050	
Sensible heat ratio	0.485		Resulting RH	58	%
ft²/Ton	107.8		Design supply temp.	55.0	°F
BTU/(hr-ft²)	111.4		Zone T-stat Check	1 of 1	OK
Water flow @ 10.0 °F rise	167.43	gpm	Max zone temperature deviation	0.0	°F

Central Heating Coil Sizing Data

Max coil load	427.5	MBH	Load occurs at	Des Htg	
Coil CFM at Des Htg	9219	CFM	BTU/(hr-ft²)	56.9	
Max coil CFM	9219	CFM	Ent. DB / Lvg DB	30.9 / 73.9	°F
Water flow @ 20.0 °F drop	N/A				

Supply Fan Sizing Data

Actual max CFM	9219	CFM	Fan motor BHP	6.71	BHP
Standard CFM	9209	CFM	Fan motor kW	5.01	kW
Actual max CFM/ft²	1.23	CFM/ft²	Fan static	2.50	in wg

Outdoor Ventilation Air Data

Design airflow CFM	9000	CFM	CFM/person	15.00	CFM/person
CFM/ft²	1.20	CFM/ft²			

Air System Design Load Summary for AHU 1-5

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1500 COOLING OA DB / WB 95.0 °F / 80.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	200 ft²	3021	-	200 ft²	-	-
Wall Transmission	6236 ft²	21636	-	6236 ft²	31113	-
Roof Transmission	7514 ft²	9428	-	7514 ft²	19723	-
Window Transmission	200 ft²	4202	-	200 ft²	9760	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	7514 ft²	0	-	7514 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	11361 W	22464	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	2000 W	6300	-	0	0	-
People	600	119515	123000	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	9328	6150	5%	3030	0
>> Total Zone Loads	-	**195896**	**129150**	-	**63625**	**0**
Zone Conditioning	-	218066	129150	-	63191	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	22000	-	0	0	-
Plenum Lighting Load	30%	11629	-	0	0	-
Return Fan Load	9219 CFM	0	-	9219 CFM	0	-
Ventilation Load	9000 CFM	136712	302059	9000 CFM	381441	0
Supply Fan Load	9219 CFM	17085	-	9219 CFM	-17085	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**405492**	**431209**	-	**427548**	**0**
Central Cooling Coil	-	405492	431209	-	0	0
Central Heating Coil	-	0	-	-	427548	-
>> Total Conditioning	-	**405492**	**431209**	-	**427548**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 2-1

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Information

Air System Name	AHU 2-1		Number of zones	1
Equipment Class	CW AHU		Floor Area	1200.0 ft²
Air System Type	SZCAV		Location	New Orleans IAP, Louisiana

Sizing Calculation Information

Zone and Space Sizing Method:				
Zone CFM	Sum of space airflow rates		Calculation Months	Jan to Dec
Space CFM	Individual peak space loads		Sizing Data	Calculated

Central Cooling Coil Sizing Data

Total coil load	1.0	Tons	Load occurs at	Jul 1500	
Total coil load	11.8	MBH	OA DB / WB	95.0 / 80.0	°F
Sensible coil load	8.1	MBH	Entering DB / WB	88.3 / 70.1	°F
Coil CFM at Jul 1500	218	CFM	Leaving DB / WB	53.9 / 52.4	°F
Max block CFM	218	CFM	Coil ADP	50.0	°F
Sum of peak zone CFM	218	CFM	Bypass Factor	0.100	
Sensible heat ratio	0.689		Resulting RH	44	%
ft²/Ton	1224.4		Design supply temp.	55.0	°F
BTU/(hr-ft²)	9.8		Zone T-stat Check	1 of 1	OK
Water flow @ 10.0 °F rise	2.35	gpm	Max zone temperature deviation	0.0	°F

Central Heating Coil Sizing Data

Max coil load	2.2	MBH	Load occurs at	Des Htg	
Coil CFM at Des Htg	218	CFM	BTU/(hr-ft²)	1.8	
Max coil CFM	218	CFM	Ent. DB / Lvg DB	59.0 / 68.3	°F
Water flow @ 20.0 °F drop	N/A				

Supply Fan Sizing Data

Actual max CFM	218	CFM	Fan motor BHP	0.16	BHP
Standard CFM	218	CFM	Fan motor kW	0.12	kW
Actual max CFM/ft²	0.18	CFM/ft²	Fan static	2.50	in wg

Outdoor Ventilation Air Data

Design airflow CFM	60	CFM	CFM/person	15.00	CFM/person
CFM/ft²	0.05	CFM/ft²			

Air System Design Load Summary for AHU 2-1

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 95.0 °F / 80.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1814 W	3588	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	4	769	820	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	218	41	5%	0	0
>> Total Zone Loads	-	**4575**	**861**	-	**0**	**0**
Zone Conditioning	-	5246	861	-	0	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	0	-	0	0	-
Plenum Lighting Load	30%	1857	-	0	0	-
Return Fan Load	218 CFM	0	-	218 CFM	0	-
Ventilation Load	60 CFM	595	2797	60 CFM	2589	0
Supply Fan Load	218 CFM	404	-	218 CFM	-404	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**8103**	**3658**	-	**2185**	**0**
Central Cooling Coil	-	8103	3658	-	0	0
Central Heating Coil	-	0	-	-	2185	-
>> Total Conditioning	-	**8103**	**3658**	-	**2185**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 2-2

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Information

Air System Name	**AHU 2-2**		Number of zones	**1**
Equipment Class	**CW AHU**		Floor Area	**6228.0** ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**

Sizing Calculation Information

Zone and Space Sizing Method:				
Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**

Central Cooling Coil Sizing Data

Total coil load	**25.3**	Tons	Load occurs at	**Aug 1500**	
Total coil load	**303.1**	MBH	OA DB / WB	**95.0 / 80.0**	°F
Sensible coil load	**147.8**	MBH	Entering DB / WB	**93.9 / 79.1**	°F
Coil CFM at Aug 1500	**3291**	CFM	Leaving DB / WB	**52.2 / 52.0**	°F
Max block CFM at Sep 1700	**3357**	CFM	Coil ADP	**50.1**	°F
Sum of peak zone CFM	**3357**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.488**		Resulting RH	**52**	%
ft²/Ton	**246.6**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**48.7**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**60.65**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Sep 1700	**3357**	CFM	Fan motor BHP	**3.91**	BHP
Standard CFM	**3354**	CFM	Fan motor kW	**2.92**	kW
Actual max CFM/ft²	**0.54**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**3114**	CFM	CFM/person	**16.22**	CFM/person
CFM/ft²	**0.50**	CFM/ft²			

Air System Design Load Summary for AHU 2-2

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1500 COOLING OA DB / WB 95.0 °F / 80.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	307 ft²	2760	-	307 ft²	-	-
Wall Transmission	2003 ft²	6802	-	2003 ft²	9993	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	307 ft²	6451	-	307 ft²	14982	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	6054 W	11970	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	1000 W	3150	-	0	0	-
People	192	38245	39360	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**69376**	**39360**	-	**24975**	**0**
Zone Conditioning	-	81303	39360	-	14247	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	0	-	0	0	-
Plenum Lighting Load	30%	6196	-	0	0	-
Return Fan Load	3291 CFM	0	-	1007 CFM	0	-
Ventilation Load	3052 CFM	50548	115888	934 CFM	31010	0
Supply Fan Load	3291 CFM	9777	-	1007 CFM	-3982	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**147825**	**155248**	-	**41275**	**0**
Central Cooling Coil	-	147825	155247	-	0	0
Terminal Reheat Coils	-	0	-	-	41275	-
>> Total Conditioning	-	**147825**	**155247**	-	**41275**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 2-3

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Information

Air System Name	**AHU 2-3**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**6000.0**	ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**14.2**	Tons	Load occurs at	**Jul 1400**	
Total coil load	**170.8**	MBH	OA DB / WB	**94.5 / 79.9**	°F
Sensible coil load	**131.5**	MBH	Entering DB / WB	**82.6 / 66.2**	°F
Coil CFM at Jul 1400	**4020**	CFM	Leaving DB / WB	**52.2 / 51.5**	°F
Max block CFM at Jul 1700	**4281**	CFM	Coil ADP	**50.6**	°F
Sum of peak zone CFM	**4281**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.770**		Resulting RH	**42**	%
ft²/Ton	**421.5**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**28.5**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**34.18**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Jul 1700	**4281**	CFM	Fan motor BHP	**4.99**	BHP
Standard CFM	**4277**	CFM	Fan motor kW	**3.72**	kW
Actual max CFM/ft²	**0.71**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**660**	CFM	CFM/person	**15.00**	CFM/person
CFM/ft²	**0.11**	CFM/ft²			

Air System Design Load Summary for AHU 2-3

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1400 COOLING OA DB / WB 94.5 °F / 79.9 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	360 ft²	2086	-	360 ft²	-	-
Wall Transmission	2412 ft²	6700	-	2412 ft²	12034	-
Roof Transmission	700 ft²	1001	-	700 ft²	1837	-
Window Transmission	360 ft²	7344	-	360 ft²	17568	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	9072 W	17675	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	15000 W	46973	-	0	0	-
People	44	8299	9020	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**90078**	**9020**	-	**31439**	**0**
Zone Conditioning	-	98453	9020	-	29312	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	2335	-	0	0	-
Plenum Lighting Load	30%	9286	-	0	0	-
Return Fan Load	4020 CFM	0	-	1284 CFM	0	-
Ventilation Load	620 CFM	9461	30270	198 CFM	7975	0
Supply Fan Load	4020 CFM	11997	-	1284 CFM	-5078	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**131533**	**39290**	-	**32208**	**0**
Central Cooling Coil	-	131533	39292	-	-14194	0
Terminal Reheat Coils	-	0	-	-	46403	-
>> Total Conditioning	-	**131533**	**39292**	-	**32208**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 2-4

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Information

Air System Name	**AHU 2-4**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**7984.0**	ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**34.3**	Tons	Load occurs at	**Jul 1500**	
Total coil load	**411.1**	MBH	OA DB / WB	**95.0 / 80.0**	°F
Sensible coil load	**204.3**	MBH	Entering DB / WB	**92.2 / 77.9**	°F
Coil CFM at Jul 1500	**4738**	CFM	Leaving DB / WB	**52.2 / 52.0**	°F
Max block CFM at Jul 1700	**4895**	CFM	Coil ADP	**50.1**	°F
Sum of peak zone CFM	**4895**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.497**		Resulting RH	**56**	%
ft²/Ton	**233.1**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**51.5**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**82.26**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Jul 1700	**4895**	CFM	Fan motor BHP	**5.70**	BHP
Standard CFM	**4889**	CFM	Fan motor kW	**4.25**	kW
Actual max CFM/ft²	**0.61**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**3992**	CFM	CFM/person	**11.09**	CFM/person
CFM/ft²	**0.50**	CFM/ft²			

Air System Design Load Summary for AHU 2-4

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 95.0 °F / 80.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	360 ft²	2080	-	360 ft²	-	-
Wall Transmission	2416 ft²	6562	-	2416 ft²	12054	-
Roof Transmission	700 ft²	925	-	700 ft²	1837	-
Window Transmission	360 ft²	7564	-	360 ft²	17568	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	7760 W	15344	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	360	69235	73800	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**101710**	**73800**	-	**31459**	**0**
Zone Conditioning	-	116770	73800	-	19730	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	2157	-	0	0	-
Plenum Lighting Load	30%	7944	-	0	0	-
Return Fan Load	4738 CFM	0	-	1468 CFM	0	-
Ventilation Load	3864 CFM	63287	133035	1198 CFM	41305	0
Supply Fan Load	4738 CFM	14096	-	1468 CFM	-5806	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**204254**	**206835**	-	**55229**	**0**
Central Cooling Coil	-	204254	206835	-	0	0
Terminal Reheat Coils	-	0	-	-	55222	-
>> Total Conditioning	-	**204254**	**206835**	-	**55222**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 3-1

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Information

Air System Name	**AHU 3-1**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**4534.0**	ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:					
Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**12.2**	Tons	Load occurs at	**Aug 1400**	
Total coil load	**145.8**	MBH	OA DB / WB	**94.5 / 79.9**	°F
Sensible coil load	**99.8**	MBH	Entering DB / WB	**86.8 / 69.6**	°F
Coil CFM at Aug 1400	**2678**	CFM	Leaving DB / WB	**52.2 / 51.6**	°F
Max block CFM at Sep 1500	**2874**	CFM	Coil ADP	**50.4**	°F
Sum of peak zone CFM	**2874**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.684**		Resulting RH	**43**	%
ft²/Ton	**373.1**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**32.2**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**29.18**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Sep 1500	**2874**	CFM	Fan motor BHP	**3.35**	BHP
Standard CFM	**2871**	CFM	Fan motor kW	**2.50**	kW
Actual max CFM/ft²	**0.63**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**840**	CFM	CFM/person	**20.00**	CFM/person
CFM/ft²	**0.19**	CFM/ft²			

Air System Design Load Summary for AHU 3-1

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
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	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1400 COOLING OA DB / WB 94.5 °F / 79.9 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	180 ft²	1773	-	180 ft²	-	-
Wall Transmission	2077 ft²	7039	-	2077 ft²	10363	-
Roof Transmission	3600 ft²	4956	-	3600 ft²	9449	-
Window Transmission	180 ft²	3672	-	180 ft²	8784	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	5386 W	10495	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	8000 W	25052	-	0	0	-
People	42	7922	8610	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**60910**	**8610**	-	**28596**	**0**
Zone Conditioning	-	65495	8610	-	26653	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	11564	-	0	0	-
Plenum Lighting Load	30%	5514	-	0	0	-
Return Fan Load	2678 CFM	0	-	862 CFM	0	-
Ventilation Load	783 CFM	9250	37409	252 CFM	10144	0
Supply Fan Load	2678 CFM	8000	-	862 CFM	-3409	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**99823**	**46019**	-	**33388**	**0**
Central Cooling Coil	-	99823	46020	-	-4720	0
Terminal Reheat Coils	-	0	-	-	38108	-
>> Total Conditioning	-	**99823**	**46020**	-	**33388**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 3-2

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Information

Air System Name	**AHU 3-2**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**5529.0**	ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**13.6**	Tons	Load occurs at	**Aug 1400**	
Total coil load	**163.6**	MBH	OA DB / WB	**94.5 / 79.9**	°F
Sensible coil load	**109.0**	MBH	Entering DB / WB	**87.1 / 70.2**	°F
Coil CFM at Aug 1400	**2900**	CFM	Leaving DB / WB	**52.2 / 51.6**	°F
Max block CFM at Sep 1500	**3105**	CFM	Coil ADP	**50.4**	°F
Sum of peak zone CFM	**3105**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.667**		Resulting RH	**43**	%
ft²/Ton	**405.7**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**29.6**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**32.73**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Sep 1500	**3105**	CFM	Fan motor BHP	**3.62**	BHP
Standard CFM	**3102**	CFM	Fan motor kW	**2.70**	kW
Actual max CFM/ft²	**0.56**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**1000**	CFM	CFM/person	**20.00**	CFM/person
CFM/ft²	**0.18**	CFM/ft²			

Air System Design Load Summary for AHU 3-2

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1400 COOLING OA DB / WB 94.5 °F / 79.9 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	180 ft²	1773	-	180 ft²	-	-
Wall Transmission	2338 ft²	7886	-	2338 ft²	11665	-
Roof Transmission	3600 ft²	4956	-	3600 ft²	9449	-
Window Transmission	180 ft²	3672	-	180 ft²	8784	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	6568 W	12798	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	8000 W	25052	-	0	0	-
People	50	9431	10250	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**65568**	**10250**	-	**29898**	**0**
Zone Conditioning	-	70967	10250	-	27857	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	11564	-	0	0	-
Plenum Lighting Load	30%	6723	-	0	0	-
Return Fan Load	2900 CFM	0	-	931 CFM	0	-
Ventilation Load	934 CFM	11096	44291	300 CFM	12077	0
Supply Fan Load	2900 CFM	8661	-	931 CFM	-3683	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**109012**	**54541**	-	**36251**	**0**
Central Cooling Coil	-	109012	54543	-	-3982	0
Terminal Reheat Coils	-	0	-	-	40233	-
>> Total Conditioning	-	**109012**	**54543**	-	**36251**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 3-3

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Information

Air System Name	**AHU 3-3**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**8100.0**	ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**14.4**	Tons	Load occurs at	**Jul 1400**	
Total coil load	**172.3**	MBH	OA DB / WB	**94.5 / 79.9**	°F
Sensible coil load	**117.1**	MBH	Entering DB / WB	**87.4 / 70.0**	°F
Coil CFM at Jul 1400	**3084**	CFM	Leaving DB / WB	**52.2 / 51.6**	°F
Max block CFM at Jul 1700	**3269**	CFM	Coil ADP	**50.4**	°F
Sum of peak zone CFM	**3269**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.679**		Resulting RH	**43**	%
ft²/Ton	**564.0**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**21.3**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**34.49**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Jul 1700	**3269**	CFM	Fan motor BHP	**3.81**	BHP
Standard CFM	**3265**	CFM	Fan motor kW	**2.84**	kW
Actual max CFM/ft²	**0.40**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**1000**	CFM	CFM/person	**20.00**	CFM/person
CFM/ft²	**0.12**	CFM/ft²			

Air System Design Load Summary for AHU 3-3

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1400 COOLING OA DB / WB 94.5 °F / 79.9 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	180 ft²	1043	-	180 ft²	-	-
Wall Transmission	2338 ft²	5607	-	2338 ft²	11665	-
Roof Transmission	3600 ft²	5148	-	3600 ft²	9449	-
Window Transmission	180 ft²	3672	-	180 ft²	8784	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	9623 W	18749	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	8000 W	25052	-	0	0	-
People	50	9431	10250	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**68701**	**10250**	-	**29898**	**0**
Zone Conditioning	-	75607	10250	-	27791	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	12011	-	0	0	-
Plenum Lighting Load	30%	9850	-	0	0	-
Return Fan Load	3084 CFM	0	-	981 CFM	0	-
Ventilation Load	943 CFM	10422	44996	300 CFM	12080	0
Supply Fan Load	3084 CFM	9200	-	981 CFM	-3877	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**117090**	**55246**	-	**35994**	**0**
Central Cooling Coil	-	117090	55248	-	-4835	0
Terminal Reheat Coils	-	0	-	-	40829	-
>> Total Conditioning	-	**117090**	**55248**	-	**35994**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 3-4

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Information

Air System Name	**AHU 3-4**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**4534.0**	ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**12.1**	Tons	Load occurs at	**Aug 1400**	
Total coil load	**145.2**	MBH	OA DB / WB	**94.5 / 79.9**	°F
Sensible coil load	**99.3**	MBH	Entering DB / WB	**86.8 / 69.6**	°F
Coil CFM at Aug 1400	**2664**	CFM	Leaving DB / WB	**52.2 / 51.6**	°F
Max block CFM at Sep 1500	**2869**	CFM	Coil ADP	**50.4**	°F
Sum of peak zone CFM	**2869**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.684**		Resulting RH	**43**	%
ft²/Ton	**374.7**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**32.0**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**29.06**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Sep 1500	**2869**	CFM	Fan motor BHP	**3.34**	BHP
Standard CFM	**2866**	CFM	Fan motor kW	**2.49**	kW
Actual max CFM/ft²	**0.63**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**840**	CFM	CFM/person	**20.00**	CFM/person
CFM/ft²	**0.19**	CFM/ft²			

Air System Design Load Summary for AHU 3-4

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1400 COOLING OA DB / WB 94.5 °F / 79.9 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	180 ft²	1773	-	180 ft²	-	-
Wall Transmission	2077 ft²	6363	-	2077 ft²	10363	-
Roof Transmission	3600 ft²	4956	-	3600 ft²	9449	-
Window Transmission	180 ft²	3672	-	180 ft²	8784	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	5386 W	10495	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	8000 W	25052	-	0	0	-
People	42	7922	8610	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**60233**	**8610**	-	**28596**	**0**
Zone Conditioning	-	65096	8610	-	26653	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	11564	-	0	0	-
Plenum Lighting Load	30%	5514	-	0	0	-
Return Fan Load	2664 CFM	0	-	861 CFM	0	-
Ventilation Load	780 CFM	9205	37269	252 CFM	10144	0
Supply Fan Load	2664 CFM	7959	-	861 CFM	-3402	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**99338**	**45879**	-	**33395**	**0**
Central Cooling Coil	-	99338	45881	-	-4690	0
Terminal Reheat Coils	-	0	-	-	38085	-
>> Total Conditioning	-	**99338**	**45881**	-	**33395**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 4-1

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Information

Air System Name	**AHU 4-1**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**5600.0**	ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**10.1**	Tons	Load occurs at	**Aug 1400**	
Total coil load	**121.2**	MBH	OA DB / WB	**94.5 / 79.9**	°F
Sensible coil load	**92.0**	MBH	Entering DB / WB	**89.1 / 68.9**	°F
Coil CFM at Aug 1400	**2315**	CFM	Leaving DB / WB	**52.2 / 51.4**	°F
Max block CFM at Sep 1500	**2475**	CFM	Coil ADP	**50.3**	°F
Sum of peak zone CFM	**2475**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.759**		Resulting RH	**41**	%
ft²/Ton	**554.4**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**21.6**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**24.25**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Sep 1500	**2475**	CFM	Fan motor BHP	**2.88**	BHP
Standard CFM	**2472**	CFM	Fan motor kW	**2.15**	kW
Actual max CFM/ft²	**0.44**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**520**	CFM	CFM/person	**20.00**	CFM/person
CFM/ft²	**0.09**	CFM/ft²			

Air System Design Load Summary for AHU 4-1

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1400 COOLING OA DB / WB 94.5 °F / 79.9 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	130 ft²	1281	-	130 ft²	-	-
Wall Transmission	3344 ft²	10753	-	3344 ft²	16684	-
Roof Transmission	5600 ft²	7710	-	5600 ft²	14699	-
Window Transmission	130 ft²	2652	-	130 ft²	6344	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	6653 W	12962	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	4000 W	12526	-	0	0	-
People	26	4904	5330	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**52788**	**5330**	-	**37727**	**0**
Zone Conditioning	-	56645	5330	-	35137	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	17989	-	0	0	-
Plenum Lighting Load	30%	6810	-	0	0	-
Return Fan Load	2315 CFM	0	-	742 CFM	0	-
Ventilation Load	486 CFM	3630	23886	156 CFM	6275	0
Supply Fan Load	2315 CFM	6911	-	742 CFM	-2935	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**91984**	**29216**	-	**38477**	**0**
Central Cooling Coil	-	91984	29217	-	-6502	0
Terminal Reheat Coils	-	0	-	-	44979	-
>> Total Conditioning	-	**91984**	**29217**	-	**38477**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 4-2

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Information

Air System Name	**AHU 4-2**		Number of zones	**1**
Equipment Class	**CW AHU**		Floor Area	**5600.0** ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**	Calculation Months	**Jan to Dec**
Space CFM	**Individual peak space loads**	Sizing Data	**Calculated**

Central Cooling Coil Sizing Data

Total coil load	**12.9**	Tons	Load occurs at	**Jul 1400**	
Total coil load	**155.2**	MBH	OA DB / WB	**94.5 / 79.9**	°F
Sensible coil load	**100.7**	MBH	Entering DB / WB	**90.1 / 71.9**	°F
Coil CFM at Jul 1400	**2467**	CFM	Leaving DB / WB	**52.2 / 51.6**	°F
Max block CFM at Jul 1600	**2612**	CFM	Coil ADP	**50.2**	°F
Sum of peak zone CFM	**2612**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.649**		Resulting RH	**44**	%
ft²/Ton	**433.0**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**27.7**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**31.05**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Jul 1600	**2612**	CFM	Fan motor BHP	**3.04**	BHP
Standard CFM	**2609**	CFM	Fan motor kW	**2.27**	kW
Actual max CFM/ft²	**0.47**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**1000**	CFM	CFM/person	**20.00**	CFM/person
CFM/ft²	**0.18**	CFM/ft²			

Air System Design Load Summary for AHU 4-2

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1400 COOLING OA DB / WB 94.5 °F / 79.9 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	130 ft²	753	-	130 ft²	-	-
Wall Transmission	3344 ft²	9237	-	3344 ft²	16684	-
Roof Transmission	5600 ft²	8007	-	5600 ft²	14699	-
Window Transmission	130 ft²	2652	-	130 ft²	6344	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	6653 W	12962	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	4000 W	12526	-	0	0	-
People	50	9431	10250	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**55568**	**10250**	-	**37727**	**0**
Zone Conditioning	-	60483	10250	-	35141	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	18684	-	0	0	-
Plenum Lighting Load	30%	6810	-	0	0	-
Return Fan Load	2467 CFM	0	-	783 CFM	0	-
Ventilation Load	944 CFM	7362	44233	300 CFM	12069	0
Supply Fan Load	2467 CFM	7357	-	783 CFM	-3098	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**100695**	**54483**	-	**44112**	**0**
Central Cooling Coil	-	100695	54484	-	-1417	0
Terminal Reheat Coils	-	0	-	-	45529	-
>> Total Conditioning	-	**100695**	**54484**	-	**44112**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Monthly Simulation Results for AHU 1-1

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:57PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	1340	8060	2362	667	2747	565
February	601	6397	1875	603	2388	491
March	1687	2333	684	667	2508	516
April	10320	107	31	646	2627	540
May	21024	79	23	667	2627	540
June	28505	0	0	646	2508	516
July	40536	0	0	667	2747	565
August	36113	0	0	667	2508	516
September	25007	73	22	646	2627	540
October	18776	124	36	667	2747	565
November	2439	2559	750	646	2388	491
December	1239	8792	2577	667	2747	565
Total	**187586**	**28524**	**8360**	**7856**	**31167**	**6410**

Monthly Simulation Results for AHU 1-2

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:57PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	17544	4853	1422	883	2487	565
February	10080	2186	641	753	2163	491
March	21234	1329	390	911	2271	516
April	44920	237	69	1044	2379	540
May	68410	139	41	1211	2379	540
June	81892	0	0	1217	2271	516
July	111437	0	0	1364	2487	565
August	98696	0	0	1316	2271	516
September	73845	140	41	1144	2379	540
October	60479	282	83	1134	2487	565
November	21958	2024	593	869	2163	491
December	18497	2828	829	848	2487	565
Total	**628991**	**14019**	**4108**	**12692**	**28224**	**6410**

Monthly Simulation Results for AHU 1-3

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:57PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	13354	906	266	556	2634	1412
February	9841	359	105	481	2291	1228
March	15518	101	30	572	2405	1289
April	26014	0	0	647	2520	1351
May	35824	0	0	736	2520	1351
June	40633	0	0	735	2405	1289
July	52984	0	0	822	2634	1412
August	48675	0	0	809	2405	1289
September	38903	0	0	723	2520	1351
October	35025	0	0	743	2634	1412
November	15885	110	32	566	2291	1228
December	13569	268	78	532	2634	1412
Total	**346225**	**1745**	**511**	**7923**	**29894**	**16025**

Monthly Simulation Results for AHU 1-4

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:57PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	2428	129	38	185	687	565
February	1841	27	8	167	598	491
March	3060	3	1	185	627	516
April	4984	0	0	179	657	540
May	6599	1	0	185	657	540
June	7151	0	0	179	627	516
July	8803	0	0	185	687	565
August	8027	0	0	185	627	516
September	6599	1	0	179	657	540
October	6032	1	0	185	687	565
November	2881	1	0	179	598	491
December	2232	59	17	185	687	565
Total	**60636**	**221**	**65**	**2180**	**7798**	**6410**

Monthly Simulation Results for AHU 1-5

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:57PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	22138	24734	7249	2018	3209	565
February	23503	24976	7320	1823	2790	491
March	33536	11273	3304	2018	2930	516
April	43464	1678	492	1954	3069	540
May	68440	293	86	2019	3069	540
June	94632	0	0	1955	2930	516
July	126542	0	0	2020	3209	565
August	114065	0	0	2021	2930	516
September	86266	644	189	1954	3069	540
October	64844	880	258	2019	3209	565
November	34189	13453	3943	1953	2790	491
December	24517	33011	9675	2018	3209	565
Total	**736136**	**110942**	**32514**	**23771**	**36413**	**6410**

Monthly Simulation Results for AHU 2-1

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:57PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	1886	0	0	48	512	0
February	1494	0	0	43	446	0
March	1830	0	0	48	468	0
April	2158	0	0	46	490	0
May	2510	0	0	48	490	0
June	2492	0	0	46	468	0
July	2988	0	0	48	512	0
August	2725	0	0	48	468	0
September	2529	0	0	46	490	0
October	2508	0	0	48	512	0
November	1792	0	0	46	446	0
December	1784	0	0	48	512	0
Total	**26697**	**0**	**0**	**562**	**5815**	**0**

Monthly Simulation Results for AHU 2-2

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:57PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	6244	2130	624	470	1710	282
February	4696	1411	413	433	1487	246
March	9046	201	59	481	1561	258
April	19793	0	0	499	1635	270
May	28926	0	0	552	1635	270
June	39940	0	0	585	1561	258
July	50695	0	0	617	1710	282
August	48925	0	0	639	1561	258
September	34556	0	0	559	1635	270
October	27725	0	0	560	1710	282
November	11077	252	74	475	1487	246
December	8414	2135	626	475	1710	282
Total	**290036**	**6128**	**1796**	**6344**	**19402**	**3205**

Monthly Simulation Results for AHU 2-3

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:57PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	20872	1852	543	747	2562	4237
February	16874	789	231	640	2228	3684
March	22453	571	167	767	2339	3868
April	30055	100	29	865	2451	4052
May	36804	38	11	970	2451	4052
June	38782	0	0	966	2339	3868
July	46482	0	0	1072	2562	4237
August	42873	0	0	1030	2339	3868
September	36484	45	13	925	2451	4052
October	34349	114	33	929	2562	4237
November	21442	945	277	736	2228	3684
December	19950	862	253	709	2562	4237
Total	**367421**	**5317**	**1558**	**10356**	**29077**	**48076**

Monthly Simulation Results for AHU 2-4

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:57PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	19448	1377	404	909	2192	0
February	11421	340	100	790	1906	0
March	22719	164	48	939	2001	0
April	46156	0	0	1052	2097	0
May	67981	0	0	1177	2097	0
June	79127	0	0	1157	2001	0
July	106108	0	0	1278	2192	0
August	94305	0	0	1236	2001	0
September	72807	0	0	1113	2097	0
October	61403	3	1	1132	2192	0
November	23249	249	73	899	1906	0
December	20067	336	99	863	2192	0
Total	**624791**	**2470**	**724**	**12545**	**24873**	**0**

Monthly Simulation Results for AHU 3-1

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:57PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	12088	1024	300	482	1521	2260
February	9572	408	120	417	1323	1965
March	14243	144	42	495	1389	2063
April	21323	0	0	558	1455	2161
May	27725	1	0	627	1455	2161
June	30046	0	0	621	1389	2063
July	37178	0	0	690	1521	2260
August	34474	0	0	675	1389	2063
September	28428	0	0	609	1455	2161
October	26382	0	0	624	1521	2260
November	13680	317	93	485	1323	1965
December	11839	409	120	462	1521	2260
Total	**266979**	**2303**	**675**	**6745**	**17264**	**25641**

Monthly Simulation Results for AHU 3-2

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	13194	913	268	523	1855	2260
February	10372	349	102	453	1613	1965
March	15528	118	34	537	1694	2063
April	23532	0	0	606	1775	2161
May	30793	0	0	681	1775	2161
June	33518	0	0	675	1694	2063
July	41757	0	0	749	1855	2260
August	38668	0	0	734	1694	2063
September	31796	0	0	662	1775	2161
October	29405	0	0	680	1855	2260
November	14999	233	68	527	1613	1965
December	12978	324	95	500	1855	2260
Total	**296538**	**1938**	**568**	**7326**	**21052**	**25641**

Monthly Simulation Results for AHU 3-3

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	14048	708	207	540	2718	2260
February	11283	166	49	468	2363	1965
March	16784	77	23	564	2482	2063
April	25490	0	0	646	2600	2161
May	33637	0	0	740	2600	2161
June	36640	0	0	737	2482	2063
July	45117	0	0	814	2718	2260
August	41329	0	0	787	2482	2063
September	33458	0	0	697	2600	2161
October	30076	0	0	695	2718	2260
November	15661	123	36	539	2363	1965
December	13783	186	55	514	2718	2260
Total	**317306**	**1259**	**369**	**7741**	**30842**	**25641**

Monthly Simulation Results for AHU 3-4

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	12084	1020	299	482	1521	2260
February	9549	406	119	416	1323	1965
March	14210	146	43	494	1389	2063
April	21291	0	0	557	1455	2161
May	27679	1	0	625	1455	2161
June	30003	0	0	620	1389	2063
July	37049	0	0	687	1521	2260
August	34405	0	0	673	1389	2063
September	28378	0	0	608	1455	2161
October	26399	0	0	624	1521	2260
November	13693	311	91	485	1323	1965
December	11849	405	119	462	1521	2260
Total	**266588**	**2289**	**671**	**6733**	**17264**	**25641**

Monthly Simulation Results for AHU 4-1

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	8259	1797	527	362	1879	1130
February	7072	849	249	316	1634	982
March	10927	174	51	370	1716	1032
April	17033	0	0	431	1797	1081
May	23090	0	0	515	1797	1081
June	25208	0	0	522	1716	1032
July	30452	0	0	584	1879	1130
August	28844	0	0	577	1716	1032
September	22620	0	0	493	1797	1081
October	20620	0	0	491	1879	1130
November	9903	366	107	361	1634	982
December	8288	1213	355	357	1879	1130
Total	**212315**	**4399**	**1289**	**5378**	**21323**	**12820**

Monthly Simulation Results for AHU 4-2

Project Name: Jackson Barracks
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:58PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	8447	2047	600	384	1879	1130
February	6667	863	253	334	1634	982
March	11260	247	72	397	1716	1032
April	19290	2	1	465	1797	1081
May	27629	0	0	561	1797	1081
June	31280	0	0	570	1716	1032
July	39183	0	0	635	1879	1130
August	35860	0	0	616	1716	1032
September	27174	0	0	520	1797	1081
October	23146	13	4	504	1879	1130
November	10250	612	179	380	1634	982
December	8595	1429	419	378	1879	1130
Total	**248781**	**5213**	**1528**	**5742**	**21323**	**12820**

1. General Details:
   Plant Name ..... **CENTRAL PLANT**
   Plant Type ..... **Chiller Plant**

2. Air Systems served by Plant:

Air System Name	Mult.
AHU 1-1	1
AHU 1-2	1
AHU 1-3	1
AHU 1-4	1
AHU 2-1	1
AHU 2-2	1
AHU 2-3	1
AHU 2-4	1
AHU 3-1	1
AHU 3-2	1
AHU 3-3	1
AHU 1-5	1
AHU 3-4	1
AHU 4-1	1
AHU 4-2	1

3: Configuration
   Number of Chillers **3**
   Plant Control ..... **Equal Unloading**
   Design LCHWT ..... **42.0** °F
   Maximum LCHWT ..... **44.0** °F
   Cooling Tower Configuration ..... **One tower for each W/C chiller**

4: Schedule of Equipment

Sequence	Chiller Name	Full Load Capacity (Tons)	Cooler Flow Rate (gpm)	Condenser Flow Rate (gpm)	Cooling Tower Name	Tower Flow Rate (gpm)
CH-1	Sample Chiller	300.0	600.0	0.0	<none>	0.0
CH-2	Sample Chiller	300.0	600.0	0.0	<none>	0.0
CH-3	Sample Chiller	300.0	600.0	0.0	<none>	0.0
	Totals:	900.0	1800.0	0.0	Totals:	0.0

Est. Max Load ..... **288.9** Tons

5: Distribution

Distribution System
   Type ..... **Primary/Secondary, Variable Speed Secondary**
   Coil Delta-T at Design ..... **10.0** °F
   Pipe Heat Gain Factor ..... **0.0** %

Fluid Properties
   Name ..... **Fresh Water**
   Density ..... **62.4** lb/ft³
   Specific Heat ..... **1.00** BTU / (lb - °F)

Primary Loop

Pump for	Flow (gpm)	Head (ft wg)	Mechanical Efficiency (%)	Electrical Efficiency (%)
CH-1	600.0	40.0	80.0	94.0
CH-2	600.0	40.0	80.0	94.0
CH-3	600.0	40.0	80.0	94.0

Secondary Loop

	Flow (gpm)	Head (ft wg)	Mechanical Efficiency (%)	Electrical Efficiency (%)
Design	1800.0	100.0	80.0	94.0

Control Head ..... **15.0** ft wg
Minimum Pump Flow ..... **30.0** %

Cooling Plant Sizing Summary for CENTRAL PLANT

Jackson Barracks
L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
04:06PM

1. Plant Information:

Plant Name ..... **CENTRAL PLANT**
Plant Type ..... **Chiller Plant**
Design Weather ..... **New Orleans IAP, Louisiana**

2. Cooling Plant Sizing Data:

Maximum Plant Load ..... **292.8** Tons
Load occurs at ..... **Aug 1500**
ft²/Ton ..... **305.6** ft²/Ton
Floor area served by plant ..... **89486.0** ft²

3. Coincident Air System Cooling Loads for Aug 1500

Air System Name	Mult.	System Cooling Coil Load (Tons)
AHU 1-1	1	15.8
AHU 1-2	1	37.7
AHU 1-3	1	18.0
AHU 1-4	1	2.9
AHU 2-1	1	1.0
AHU 2-2	1	25.3
AHU 2-3	1	14.1
AHU 2-4	1	34.0
AHU 3-1	1	12.1
AHU 3-2	1	13.6
AHU 3-3	1	14.1
AHU 1-5	1	69.7
AHU 3-4	1	12.1
AHU 4-1	1	10.0
AHU 4-2	1	12.6

System loads are for coils whose cooling source is ' Chilled Water ' .

Chiller Input Data

Jackson Barracks
L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
03:29PM

Sample Chiller

General Details

Chiller Name ..... **Sample Chiller**
Chiller Type ..... **Air-Cooled Packaged Screw**
Data Source ..... **User Input**

Notes:

Design Inputs

Full Load LCHWT	**42.0**	°F
Full Load OAT	**95.0**	°F
Full Load Capacity	**300.0**	Tons
Full Load Power	**1.200**	kW/Ton
Minimum OAT Setpoint	**0.0**	°F
Minimum Load	**20.0**	%
Hot Gas Bypass	**No**	
Cooler Flow Rate	**600.0**	gpm
Cooler Pressure Drop	**15.0**	ft wg

Chiller Performance (kW/Ton)

OAT°F	Max Cap	100%	90%	80%	70%	60%	50%	40%	30%	20%
125.0	1.912	1.912	1.938	1.968	2.024	2.096	2.182	2.276	2.792	2.960
95.0	1.200	1.200	1.208	1.215	1.238	1.317	1.355	1.395	1.622	1.689
85.0	1.061	1.061	1.063	1.066	1.078	1.162	1.188	1.221	1.372	1.427
75.0	0.950	0.950	0.945	0.941	0.943	1.044	1.056	1.077	1.180	1.228
0.0	0.868	0.868	0.854	0.839	0.827	0.908	0.892	0.873	0.908	0.820

Performance LCHWT Factor a ..... **-0.0095** 1/F
Performance LCHWT Factor b **0.0000** 1/F²

Chiller Capacity (Tons)

OAT°F	Max Cap	100%	90%	80%	70%	60%	50%	40%	30%	20%
125.0	300.0	300.0	270.0	240.0	210.0	180.0	150.0	120.0	90.0	60.0
95.0	300.0	300.0	270.0	240.0	210.0	180.0	150.0	120.0	90.0	60.0
85.0	300.0	300.0	270.0	240.0	210.0	180.0	150.0	120.0	90.0	60.0
75.0	300.0	300.0	270.0	240.0	210.0	180.0	150.0	120.0	90.0	60.0
0.0	300.0	300.0	270.0	240.0	210.0	180.0	150.0	120.0	90.0	60.0

Capacity LCHWT Factor a **0.0000** 1/F
Capacity LCHWT Factor b **0.0000** 1/F²

Monthly Simulation Results for CENTRAL PLANT

Jackson Barracks
L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
04:01PM

Plant Simulation Results (Table 1) :

Month	Cooling Coil Load (kBTU)	Plant Load (kBTU)	Chiller Output (kBTU)	Chiller Input (kWh)	Primary Chilled Water Pump (kWh)	Secondary Chilled Water Pump (kWh)
January	173375	201357	201357	19094	7337	3142
February	134864	159958	159958	15066	6579	2818
March	214034	241741	241741	23283	7264	3112
April	355824	382843	382843	39273	7084	3034
May	507071	535055	535055	57918	7337	3143
June	599847	627273	627273	71351	7174	3084
July	777310	805854	805854	94038	7391	3232
August	707984	736411	736411	85340	7409	3204
September	548851	576029	576029	62882	7102	3058
October	467168	495116	495116	53120	7318	3141
November	213098	239980	239980	23379	7048	3019
December	177602	205309	205309	19646	7264	3112
Total	**4877026**	**5206926**	**5206926**	**564391**	**86308**	**37100**

1. General Details:
   Building Name ..... **141 ST READINESS CENTER**

2. Plants Included in this Building:

Plant Name
CENTRAL PLANT

3. Air Systems Included in this Building:

System Name	Mult.
AHU 1-1	1
AHU 1-2	1
AHU 1-3	1
AHU 1-4	1
AHU 2-1	1
AHU 2-2	1
AHU 2-3	1
AHU 2-4	1
AHU 3-1	1
AHU 3-2	1
AHU 3-3	1
AHU 1-5	1
AHU 3-4	1
AHU 4-1	1
AHU 4-2	1

4: Miscellaneous Energy

Name	Energy/Fuel Type	Peak use	Schedule
DOMESTIC HOT WATER	Natural Gas	2000.0 MBH	DRILL

5: Meters
   Electric ..... **Electric Rate**
   Natural Gas ..... **Fuel Rate**

6: Miscellaneous Data
   Average Building Power Factor ..... **90.00 %**
   Source Electric Generating Efficiency ..... **28.00 %**
   Additional Floor Area ..... **5000.0 ft²**

Electric Rate

General Details

Rate Name	**Electric Rate**	
Currency	**$**	
Rate Type	**Simple**	
Energy Units	**kWh**	
Conversion	**1.00000**	kWh/kWh
Demand Units	**kW**	
Flat Price	**0.08000**	$/kWh
Customer Charge	**0.00**	$
Minimum Charge	**0.00**	$
Tax Rate	**0.00**	%

Fuel Rate Input Data

Fuel Rate

General Details

Rate Name	**Fuel Rate**	
Currency	**$**	
Rate Type	**Simple**	
Energy Units	**Therm**	
Conversion	**100.00000**	kBTU/Therm
Demand Units	**Hourly Peak**	
Flat Price	**0.40000**	$/Therm
Customer Charge	**0.00**	$
Minimum Charge	**0.00**	$
Tax Rate	**0.00**	%

Annual Cost Summary

Jackson Barracks
L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
04:02PM

Table 1. Annual Costs

Component	141 ST READINESS CENTER ($)
Air System Fans	9,911
Cooling	45,151
Heating	4,379
Pumps	9,873
Cooling Tower Fans	0
HVAC Sub-Total	**69,314**
Lights	27,339
Electric Equipment	17,692
Misc. Electric	0
Misc. Fuel Use	11,648
Non-HVAC Sub-Total	**56,679**
Grand Total	**125,993**

Table 2. Annual Cost per Unit Floor Area

Component	141 ST READINESS CENTER ($/ft²)
Air System Fans	0.098
Cooling	0.445
Heating	0.043
Pumps	0.097
Cooling Tower Fans	0.000
HVAC Sub-Total	**0.683**
Lights	0.269
Electric Equipment	0.174
Misc. Electric	0.000
Misc. Fuel Use	0.115
Non-HVAC Sub-Total	**0.559**
Grand Total	**1.242**
Gross Floor Area (ft²)	101486.0
Conditioned Floor Area (ft²)	89486.0

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

Table 3. Component Cost as a Percentage of Total Cost

Component	141 ST READINESS CENTER (%)
Air System Fans	7.9
Cooling	35.8
Heating	3.5
Pumps	7.8
Cooling Tower Fans	0.0
HVAC Sub-Total	**55.0**
Lights	21.7
Electric Equipment	14.0
Misc. Electric	0.0
Misc. Fuel Use	9.2
Non-HVAC Sub-Total	**45.0**
Grand Total	**100.0**

Table 1. Annual Costs

Component	141 ST READINESS CENTER ($)
HVAC Components	
Electric	69,314
Natural Gas	0
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Remote CW	0
HVAC Sub-Total	**69,314**
Non-HVAC Components	
Electric	45,030
Natural Gas	11,648
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Non-HVAC Sub-Total	**56,678**
Grand Total	**125,992**

Table 2. Annual Energy Consumption

Component	141 ST READINESS CENTER
HVAC Components	
Electric (kWh)	866,423
Natural Gas (Therm)	0
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0
Non-HVAC Components	
Electric (kWh)	562,873
Natural Gas (Therm)	29,120
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Totals	
Electric (kWh)	1,429,296
Natural Gas (Therm)	29,120
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0

Table 3. Annual Emissions

Component	141 ST READINESS CENTER
CO2 (lb)	0
SO2 (kg)	0
NOx (kg)	0

Table 4. Annual Cost per Unit Floor Area

Component	141 ST READINESS CENTER ($/ft²)
HVAC Components	
Electric	0.683
Natural Gas	0.000
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Remote CW	0.000
HVAC Sub-Total	**0.683**
Non-HVAC Components	
Electric	0.444
Natural Gas	0.115
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Non-HVAC Sub-Total	**0.559**
Grand Total	**1.242**
Gross Floor Area (ft²)	101486.0
Conditioned Floor Area (ft²)	89486.0

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

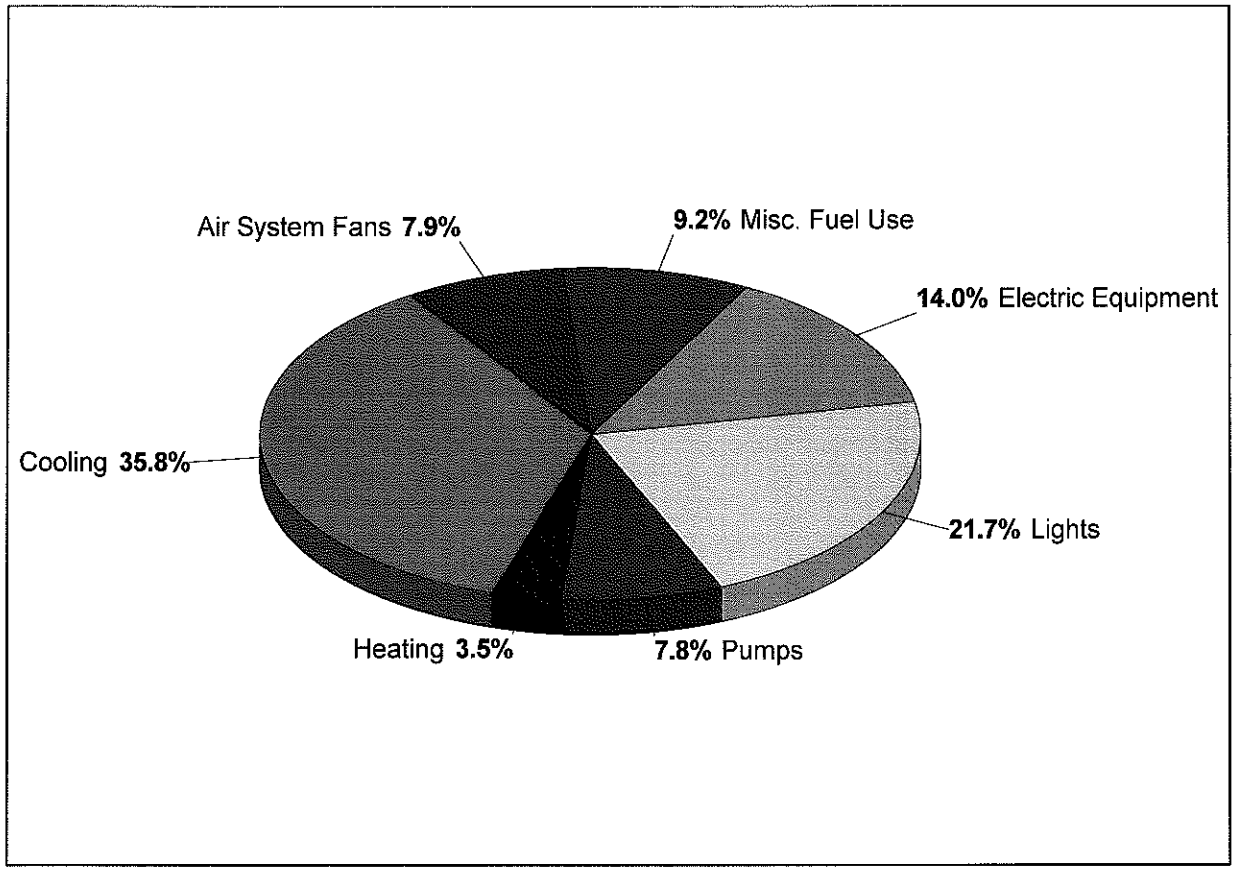
Table 5. Component Cost as a Percentage of Total Cost

Component	141 ST READINESS CENTER (%)
HVAC Components	
Electric	55.0
Natural Gas	0.0
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Remote CW	0.0
HVAC Sub-Total	**55.0**
Non-HVAC Components	
Electric	35.7
Natural Gas	9.2
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Non-HVAC Sub-Total	**45.0**
Grand Total	**100.0**

Annual Component Costs - 141 ST READINESS CENTER

Jackson Barracks
L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
04:02PM



1. Annual Costs

Component	Annual Cost ($)	($/ft²)	Percent of Total (%)
Air System Fans	9,911	0.098	7.9
Cooling	45,151	0.445	35.8
Heating	4,379	0.043	3.5
Pumps	9,873	0.097	7.8
Cooling Tower Fans	0	0.000	0.0
HVAC Sub-Total	**69,314**	**0.683**	**55.0**
Lights	27,339	0.269	21.7
Electric Equipment	17,692	0.174	14.0
Misc. Electric	0	0.000	0.0
Misc. Fuel Use	11,648	0.115	9.2
Non-HVAC Sub-Total	**56,679**	**0.559**	**45.0**
Grand Total	**125,993**	**1.242**	**100.0**

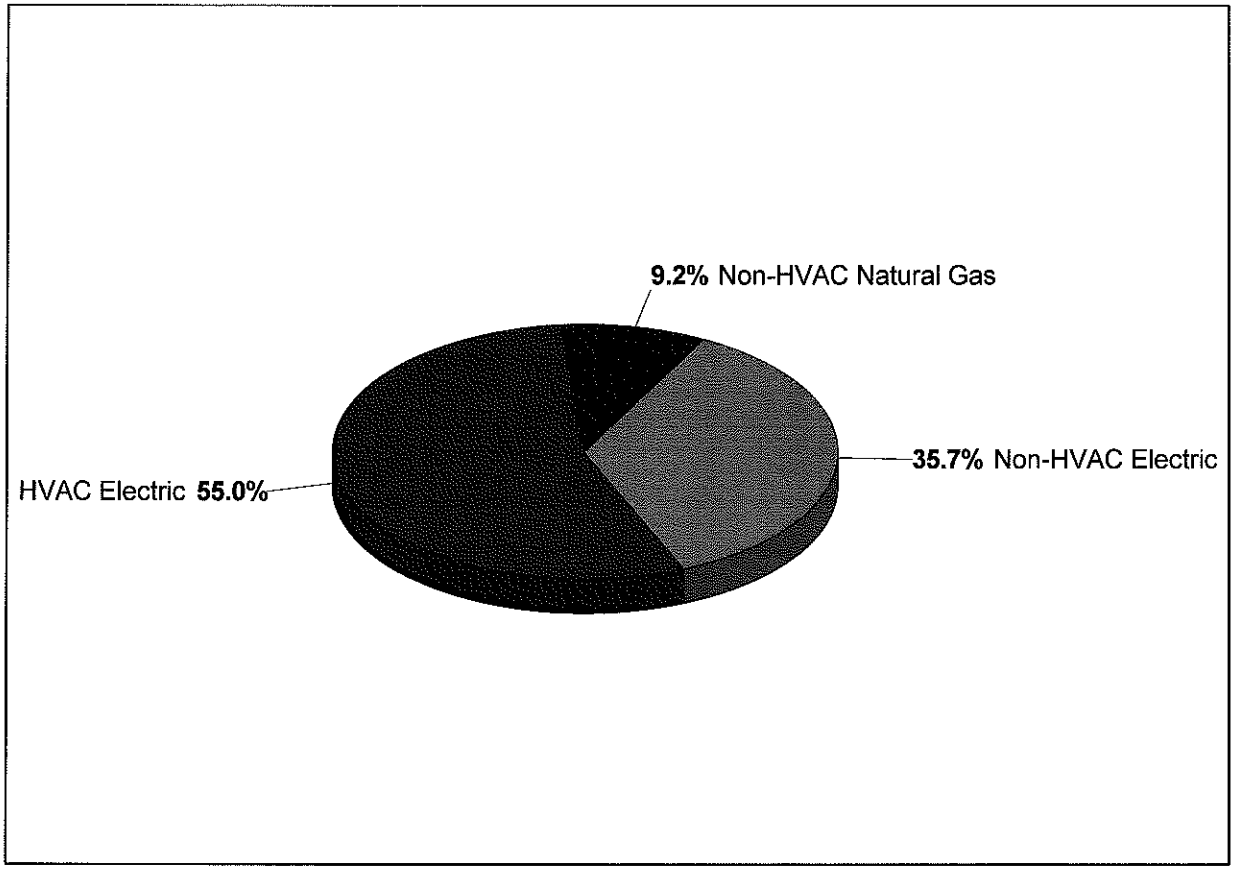
Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area ..... **101486.0** ft²
Conditioned Floor Area ..... **89486.0** ft²

Annual Energy Costs - 141 ST READINESS CENTER

Jackson Barracks
L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
04:02PM



1. Annual Costs

Component	Annual Cost ($/yr)	($/ft²)	Percent of Total (%)
HVAC Components			
Electric	69,314	0.683	55.0
Natural Gas	0	0.000	0.0
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
Remote Chilled Water	0	0.000	0.0
HVAC Sub-Total	**69,314**	**0.683**	**55.0**
Non-HVAC Components			
Electric	45,030	0.444	35.7
Natural Gas	11,648	0.115	9.2
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	**56,678**	**0.559**	**45.0**
Grand Total	**125,992**	**1.242**	**100.0**

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

Gross Floor Area ..... **101486.0** ft²
Conditioned Floor Area ..... **89486.0** ft²

Energy Budget by System Component - 141 ST READINESS CENTER

Jackson Barracks
L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
04:02PM

1. Annual Coil Loads

Component	Load (kBTU)	(kBTU/ft²)
Cooling Coil Loads	4,877,027	48.056
Heating Coil Loads	186,768	1.840
Grand Total	**5,063,794**	**49.897**

2. Energy Consumption by System Component

Component	Site Energy (kBTU)	Site Energy (kBTU/ft²)	Source Energy (kBTU)	Source Energy (kBTU/ft²)
Air System Fans	422,723	4.165	1,509,724	14.876
Cooling	1,925,703	18.975	6,877,510	67.768
Heating	186,760	1.840	666,999	6.572
Pumps	421,062	4.149	1,503,795	14.818
Cooling Towers	0	0.000	0	0.000
HVAC Sub-Total	**2,956,248**	**29.130**	**10,558,027**	**104.034**
Lights	1,165,993	11.489	4,164,259	41.033
Electric Equipment	754,561	7.435	2,694,861	26.554
Misc. Electric	0	0.000	0	0.000
Misc. Fuel Use	2,912,000	28.694	2,912,000	28.694
Non-HVAC Sub-Total	**4,832,554**	**47.618**	**9,771,120**	**96.280**
Grand Total	**7,788,801**	**76.748**	**20,329,147**	**200.315**

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 ..... **101486.0** ft²
   Conditioned Floor Area ..... **89486.0** ft²

Energy Budget by Energy Source - 141 ST READINESS CENTER

Jackson Barracks
L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
04:02PM

1. Annual Coil Loads

Component	Load (kBTU)	(kBTU/ft²)
Cooling Coil Loads	4,877,027	48.056
Heating Coil Loads	186,768	1.840
Grand Total	**5,063,794**	**49.897**

2. Energy Consumption by Energy Source

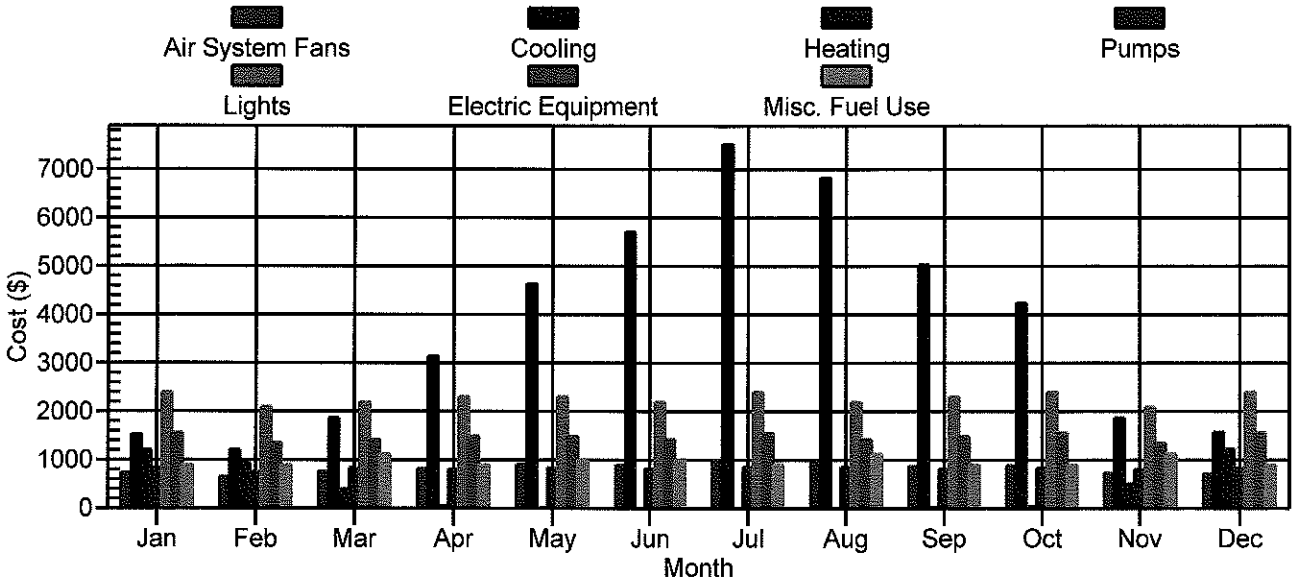
Component	Site Energy (kBTU)	Site Energy (kBTU/ft²)	Source Energy (kBTU)	Source Energy (kBTU/ft²)
HVAC Components				
Electric	2,956,234	29.130	10,557,979	104.034
Natural Gas	0	0.000	0	0.000
Fuel Oil	0	0.000	0	0.000
Propane	0	0.000	0	0.000
Remote Hot Water	0	0.000	0	0.000
Remote Steam	0	0.000	0	0.000
Remote Chilled Water	0	0.000	0	0.000
HVAC Sub-Total	**2,956,234**	**29.130**	**10,557,979**	**104.034**
Non-HVAC Components				
Electric	1,920,524	18.924	6,859,015	67.586
Natural Gas	2,912,000	28.694	2,912,000	28.694
Fuel Oil	0	0.000	0	0.000
Propane	0	0.000	0	0.000
Remote Hot Water	0	0.000	0	0.000
Remote Steam	0	0.000	0	0.000
Non-HVAC Sub-Total	**4,832,524**	**47.618**	**9,771,015**	**96.279**
Grand Total	**7,788,758**	**76.747**	**20,328,994**	**200.313**

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 ..... **101486.0** ft²
   Conditioned Floor Area ..... **89486.0** ft²

Monthly Component Costs - 141 ST READINESS CENTER

Jackson Barracks
L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
04:02PM



1. HVAC Component Costs

Month	Air System Fans ($)	Cooling ($)	Heating ($)	Pumps ($)	Cooling Towers ($)	HVAC Total ($)
January	740	1,528	1,209	838	0	4,315
February	651	1,205	927	752	0	3,535
March	756	1,863	396	830	0	3,845
April	816	3,142	50	809	0	4,817
May	905	4,633	13	838	0	6,389
June	899	5,708	0	821	0	7,428
July	978	7,523	0	850	0	9,351
August	961	6,827	0	849	0	8,637
September	870	5,031	21	813	0	6,735
October	883	4,250	33	837	0	6,003
November	732	1,870	505	805	0	3,912
December	721	1,572	1,225	830	0	4,348
Total	**9,911**	**45,151**	**4,379**	**9,873**	**0**	**69,314**

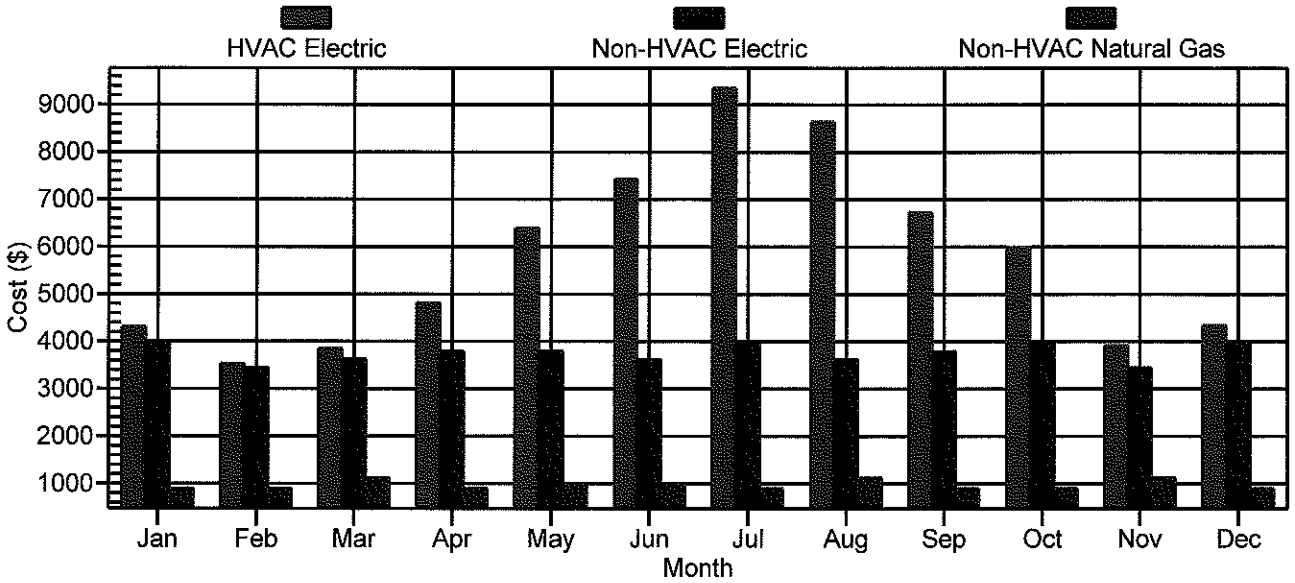
2. Non-HVAC Component Costs

Month	Lights ($)	Electric Equipment ($)	Misc. Electric ($)	Misc. Fuel Use ($)	Non-HVAC Total ($)	Grand Total ($)
January	2,409	1,559	0	896	4,864	9,179
February	2,095	1,356	0	896	4,347	7,882
March	2,200	1,423	0	1,120	4,743	8,588
April	2,304	1,491	0	896	4,692	9,509
May	2,304	1,491	0	1,008	4,804	11,193
June	2,200	1,423	0	1,008	4,631	12,059
July	2,409	1,559	0	896	4,864	14,215
August	2,200	1,423	0	1,120	4,743	13,380
September	2,304	1,491	0	896	4,692	11,427
October	2,409	1,559	0	896	4,864	10,867
November	2,095	1,356	0	1,120	4,571	8,483
December	2,409	1,559	0	896	4,864	9,212
Total	**27,339**	**17,692**	**0**	**11,648**	**56,679**	**125,993**

Monthly Energy Costs - 141 ST READINESS CENTER

Jackson Barracks
L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
04:02PM



1. HVAC Costs

Month	Electric ($)	Natural Gas ($)	Fuel Oil ($)	Propane ($)	Remote Hot Water ($)	Remote Steam ($)	Remote Chilled Water ($)
January	4,315	0	0	0	0	0	0
February	3,535	0	0	0	0	0	0
March	3,844	0	0	0	0	0	0
April	4,817	0	0	0	0	0	0
May	6,390	0	0	0	0	0	0
June	7,427	0	0	0	0	0	0
July	9,351	0	0	0	0	0	0
August	8,637	0	0	0	0	0	0
September	6,735	0	0	0	0	0	0
October	6,002	0	0	0	0	0	0
November	3,913	0	0	0	0	0	0
December	4,348	0	0	0	0	0	0
Total	**69,314**	**0**	**0**	**0**	**0**	**0**	**0**

2. Non-HVAC Costs

Month	Electric ($)	Natural Gas ($)	Fuel Oil ($)	Propane ($)	Remote Hot Water ($)	Remote Steam ($)
January	3,968	896	0	0	0	0
February	3,451	896	0	0	0	0
March	3,623	1,120	0	0	0	0
April	3,796	896	0	0	0	0
May	3,796	1,008	0	0	0	0
June	3,623	1,008	0	0	0	0
July	3,968	896	0	0	0	0
August	3,623	1,120	0	0	0	0
September	3,796	896	0	0	0	0
October	3,968	896	0	0	0	0
November	3,451	1,120	0	0	0	0
December	3,968	896	0	0	0	0
Total	**45,030**	**11,648**	**0**	**0**	**0**	**0**

Monthly Energy Use by Component - 141 ST READINESS CENTER

Jackson Barracks
L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
04:02PM

1. Monthly Energy Use by System Component

Component	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Air System Fans (kWh)	9254	8137	9445	10195	11313	11232	12230	12015	10877	11034	9145	9017
Cooling												
Electric (kWh)	19094	15066	23283	39273	57918	71351	94038	85340	62882	53120	23379	19646
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
Heating												
Electric (kWh)	15108	11584	4948	623	162	0	0	0	265	415	6317	15315
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
Pumps (kWh)	10479	9397	10376	10118	10479	10259	10622	10613	10161	10459	10067	10376
Clg. Tower Fans (kWh)	0	0	0	0	0	0	0	0	0	0	0	0
Lighting (kWh)	30114	26186	27496	28805	28805	27496	30114	27496	28805	30114	26186	30114
Electric Eqpt. (kWh)	19488	16946	17794	18641	18641	17794	19488	17794	18641	19488	16946	19488
Misc. Electric (kWh)	0	0	0	0	0	0	0	0	0	0	0	0
Misc. Fuel												
Natural Gas (Therm)	2240	2240	2800	2240	2520	2520	2240	2800	2240	2240	2800	2240
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

Monthly Energy Use by Energy Type - 141 ST READINESS CENTER

Jackson Barracks
L. T. Vivien, Jr. & Associates, Inc.

04/07/2006
04:02PM

1. HVAC Energy Use

Month	Electric (kWh)	Natural Gas (Therm)	Fuel Oil (na)	Propane (na)	Remote HW (na)	Remote Steam (na)	Remote CW (na)
Jan	53,935	0	0	0	0	0	0
Feb	44,184	0	0	0	0	0	0
Mar	48,052	0	0	0	0	0	0
Apr	60,210	0	0	0	0	0	0
May	79,873	0	0	0	0	0	0
Jun	92,839	0	0	0	0	0	0
Jul	116,889	0	0	0	0	0	0
Aug	107,967	0	0	0	0	0	0
Sep	84,183	0	0	0	0	0	0
Oct	75,030	0	0	0	0	0	0
Nov	48,908	0	0	0	0	0	0
Dec	54,354	0	0	0	0	0	0
Totals	866,423	0	0	0	0	0	0

2. Non-HVAC Energy Use

Month	Electric (kWh)	Natural Gas (Therm)	Fuel Oil (na)	Propane (na)	Remote HW (na)	Remote Steam (na)
Jan	49,602	2,240	0	0	0	0
Feb	43,132	2,240	0	0	0	0
Mar	45,289	2,800	0	0	0	0
Apr	47,445	2,240	0	0	0	0
May	47,445	2,520	0	0	0	0
Jun	45,289	2,520	0	0	0	0
Jul	49,602	2,240	0	0	0	0
Aug	45,289	2,800	0	0	0	0
Sep	47,445	2,240	0	0	0	0
Oct	49,602	2,240	0	0	0	0
Nov	43,132	2,800	0	0	0	0
Dec	49,602	2,240	0	0	0	0
Totals	562,873	29,120	0	0	0	0

Jackson Barracks 141st Field Artillery Battalion Readiness Center

Energy Analysis – Building meeting SPIRIT energy savings

May 3, 2006

35% Design Submittal

Lucien T. Vivien, Jr. & Associates, Inc.

Design Weather Parameters & MSHGs

Design Parameters:

City Name	**New Orleans IAP**	
Location	**Louisiana**	
Latitude	**30.0**	Deg.
Longitude	**90.3**	Deg.
Elevation	**30.0**	ft
Summer Design Dry-Bulb	**95.0**	°F
Summer Coincident Wet-Bulb	**80.0**	°F
Summer Daily Range	**15.5**	°F
Winter Design Dry-Bulb	**30.0**	°F
Winter Design Wet-Bulb	**25.3**	°F
Atmospheric Clearness Number	**0.90**	
Average Ground Reflectance	**0.20**	
Soil Conductivity	**0.800**	BTU/(hr-ft-°F)
Local Time Zone (GMT +/- N hours)	**6.0**	hours
Consider Daylight Savings Time	**No**	
Simulation Weather Data	**New Orleans (TMY)**	
Current Data is	**User Modified**	
Design Cooling Months	**January to December**	

Design Day Maximum Solar Heat Gains

(The MSHG values are expressed in BTU/(hr-ft²))

Month	N	NNE	NE	ENE	E	ESE	SE	SSE	S
January	21.9	21.9	24.8	102.0	162.3	206.8	227.3	224.9	217.6
February	25.3	25.3	60.7	136.4	191.4	216.2	223.3	205.7	192.3
March	28.8	32.9	106.3	161.5	205.2	217.5	199.9	168.9	149.1
April	32.1	69.8	138.8	183.1	199.5	196.0	163.8	118.4	92.6
May	35.4	98.1	156.9	190.8	196.0	176.1	135.1	81.4	57.8
June	45.7	109.5	162.5	190.7	190.3	167.0	121.4	66.8	47.8
July	36.7	100.3	155.0	185.8	189.9	173.1	130.5	78.0	56.6
August	33.6	71.5	134.9	175.4	194.1	189.5	156.9	113.5	89.8
September	29.8	29.8	100.8	156.1	192.5	207.8	191.5	163.1	145.4
October	26.0	26.0	63.8	128.8	181.3	213.1	212.5	197.7	187.1
November	22.2	22.2	30.2	94.1	162.5	203.5	223.5	220.6	214.5
December	20.3	20.3	20.3	85.6	151.0	197.2	225.2	228.2	222.4
Month	**SSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**	**HOR**	**Mult**
January	223.8	227.0	207.4	165.2	94.9	30.5	21.9	166.9	1.00
February	204.1	220.4	220.9	187.1	135.3	65.5	25.3	202.3	1.00
March	168.7	200.3	216.8	200.4	166.8	106.4	29.3	231.5	1.00
April	118.4	163.8	196.0	199.5	183.1	138.8	69.8	245.0	1.00
May	81.1	134.8	176.7	194.8	190.4	157.2	99.2	249.2	1.00
June	67.2	121.7	166.2	191.5	191.1	162.2	108.5	248.3	1.00
July	79.0	131.5	171.2	192.4	187.5	154.6	97.4	246.1	1.00
August	114.3	157.9	188.8	192.5	177.1	135.1	69.7	240.3	1.00
September	164.0	192.6	207.6	195.4	153.7	99.8	31.8	223.7	1.00
October	199.7	216.0	207.8	183.9	131.7	57.6	26.0	198.4	1.00
November	221.5	223.6	203.5	159.2	100.4	25.1	22.2	165.8	1.00
December	228.2	225.2	197.1	151.1	85.6	20.3	20.3	149.8	1.00

Mult. = User-defined solar multiplier factor.

Cooling Design Temperature Profiles

Location: New Orleans IAP, Louisiana

(Dry and Wet Bulb temperatures are expressed in °F)

Hr	January		February		March		April		May		June	
	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB
0000	64.3	63.8	66.3	65.8	71.3	70.4	74.3	72.6	78.3	74.7	81.3	76.8
0100	63.5	63.0	65.5	65.0	70.5	70.0	73.5	72.3	77.5	74.5	80.5	76.6
0200	62.7	62.2	64.7	64.2	69.7	69.2	72.7	72.1	76.7	74.3	79.7	76.4
0300	62.1	61.6	64.1	63.6	69.1	68.6	72.1	71.6	76.1	74.1	79.1	76.3
0400	61.7	61.2	63.7	63.2	68.7	68.2	71.7	71.2	75.7	74.0	78.7	76.2
0500	61.5	61.0	63.5	63.0	68.5	68.0	71.5	71.0	75.5	74.0	78.5	76.1
0600	61.8	61.3	63.8	63.3	68.8	68.3	71.8	71.3	75.8	74.0	78.8	76.2
0700	62.6	62.1	64.6	64.1	69.6	69.1	72.6	72.1	76.6	74.2	79.6	76.4
0800	64.0	63.5	66.0	65.5	71.0	70.3	74.0	72.5	78.0	74.6	81.0	76.8
0900	66.0	64.5	68.0	66.6	73.0	70.9	76.0	73.0	80.0	75.2	83.0	77.3
1000	68.3	65.2	70.3	67.3	75.3	71.6	78.3	73.7	82.3	75.8	85.3	77.9
1100	71.0	66.1	73.0	68.2	78.0	72.3	81.0	74.4	85.0	76.5	88.0	78.5
1200	73.4	66.9	75.4	68.9	80.4	73.0	83.4	75.1	87.4	77.1	90.4	79.1
1300	75.3	67.5	77.3	69.5	82.3	73.5	85.3	75.6	89.3	77.6	92.3	79.6
1400	76.5	67.9	78.5	69.9	83.5	73.9	86.5	75.9	90.5	77.9	93.5	79.9
1500	77.0	68.0	79.0	70.0	84.0	74.0	87.0	76.0	91.0	78.0	94.0	80.0
1600	76.5	67.9	78.5	69.9	83.5	73.9	86.5	75.9	90.5	77.9	93.5	79.9
1700	75.5	67.5	77.5	69.5	82.5	73.6	85.5	75.6	89.5	77.6	92.5	79.6
1800	73.7	67.0	75.7	69.0	80.7	73.1	83.7	75.1	87.7	77.2	90.7	79.2
1900	71.7	66.3	73.7	68.4	78.7	72.5	81.7	74.6	85.7	76.7	88.7	78.7
2000	69.7	65.7	71.7	67.8	76.7	72.0	79.7	74.1	83.7	76.1	86.7	78.2
2100	68.0	65.1	70.0	67.2	75.0	71.5	78.0	73.6	82.0	75.7	85.0	77.8
2200	66.5	64.6	68.5	66.8	73.5	71.0	76.5	73.2	80.5	75.3	83.5	77.4
2300	65.2	64.2	67.2	66.4	72.2	70.7	75.2	72.8	79.2	75.0	82.2	77.1

Hr	July		August		September		October		November		December	
	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB	DB	WB
0000	82.3	76.8	82.3	76.8	80.3	75.8	76.3	73.6	70.3	69.8	65.3	64.8
0100	81.5	76.6	81.5	76.6	79.5	75.6	75.5	73.4	69.5	69.0	64.5	64.0
0200	80.7	76.5	80.7	76.5	78.7	75.4	74.7	73.2	68.7	68.2	63.7	63.2
0300	80.1	76.3	80.1	76.3	78.1	75.2	74.1	73.0	68.1	67.6	63.1	62.6
0400	79.7	76.2	79.7	76.2	77.7	75.1	73.7	72.9	67.7	67.2	62.7	62.2
0500	79.5	76.1	79.5	76.1	77.5	75.0	73.5	72.9	67.5	67.0	62.5	62.0
0600	79.8	76.2	79.8	76.2	77.8	75.1	73.8	72.9	67.8	67.3	62.8	62.3
0700	80.6	76.4	80.6	76.4	78.6	75.3	74.6	73.2	68.6	68.1	63.6	63.1
0800	82.0	76.8	82.0	76.8	80.0	75.7	76.0	73.5	70.0	69.5	65.0	64.5
0900	84.0	77.3	84.0	77.3	82.0	76.2	78.0	74.1	72.0	70.9	67.0	66.5
1000	86.3	77.9	86.3	77.9	84.3	76.8	80.3	74.7	74.3	71.6	69.3	67.3
1100	89.0	78.5	89.0	78.5	87.0	77.5	83.0	75.4	77.0	72.3	72.0	68.2
1200	91.4	79.1	91.4	79.1	89.4	78.1	85.4	76.1	79.4	73.0	74.4	68.9
1300	93.3	79.6	93.3	79.6	91.3	78.6	87.3	76.6	81.3	73.5	76.3	69.5
1400	94.5	79.9	94.5	79.9	92.5	78.9	88.5	76.9	82.5	73.9	77.5	69.9
1500	95.0	80.0	95.0	80.0	93.0	79.0	89.0	77.0	83.0	74.0	78.0	70.0
1600	94.5	79.9	94.5	79.9	92.5	78.9	88.5	76.9	82.5	73.9	77.5	69.9
1700	93.5	79.6	93.5	79.6	91.5	78.6	87.5	76.6	81.5	73.6	76.5	69.6
1800	91.7	79.2	91.7	79.2	89.7	78.2	85.7	76.2	79.7	73.1	74.7	69.0
1900	89.7	78.7	89.7	78.7	87.7	77.7	83.7	75.6	77.7	72.5	72.7	68.4
2000	87.7	78.2	87.7	78.2	85.7	77.2	81.7	75.1	75.7	72.0	70.7	67.8
2100	86.0	77.8	86.0	77.8	84.0	76.7	80.0	74.6	74.0	71.5	69.0	67.3
2200	84.5	77.4	84.5	77.4	82.5	76.3	78.5	74.2	72.5	71.0	67.5	66.8
2300	83.2	77.1	83.2	77.1	81.2	76.0	77.2	73.9	71.2	70.7	66.2	65.7

DRILL (Fractional)

Hourly Profiles:

1:Profile One

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	50	100	100	100	100	100	100	100	100	100	100	100	50	0	0	0	0	0

2:Profile Two

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	2	2	2	2	2	2	2	2	2	2	2	2
Tuesday	2	2	2	2	2	2	2	2	2	2	2	2
Wednesday	2	2	2	2	2	2	2	2	2	2	2	2
Thursday	2	2	2	2	2	2	2	2	2	2	2	2
Friday	2	2	2	2	2	2	2	2	2	2	2	2
Saturday	1	1	1	1	1	1	1	1	1	1	1	1
Sunday	1	1	1	1	1	1	1	1	1	1	1	1
Holiday	2	2	2	2	2	2	2	2	2	2	2	2

Sample Schedule (Fractional)

Hourly Profiles:

1:Profile One

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	21	0	0	0	0	0

2:Profile Two

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	1	1	1	1	1	1	1	1	1	1	1	1
Tuesday	1	1	1	1	1	1	1	1	1	1	1	1
Wednesday	1	1	1	1	1	1	1	1	1	1	1	1
Thursday	1	1	1	1	1	1	1	1	1	1	1	1
Friday	1	1	1	1	1	1	1	1	1	1	1	1
Saturday	2	2	2	2	2	2	2	2	2	2	2	2
Sunday	2	2	2	2	2	2	2	2	2	2	2	2
Holiday	2	2	2	2	2	2	2	2	2	2	2	2

thermostat (Fan / Thermostat)

Hourly Profiles:

1:Profile One

Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value	U	U	U	U	U	U	U	O	O	O	O	O	O	O	O	O	O	O	U	U	U	U	U	U

O = Occupied; U = Unoccupied

Assignments:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Design	1	1	1	1	1	1	1	1	1	1	1	1
Monday	1	1	1	1	1	1	1	1	1	1	1	1
Tuesday	1	1	1	1	1	1	1	1	1	1	1	1
Wednesday	1	1	1	1	1	1	1	1	1	1	1	1
Thursday	1	1	1	1	1	1	1	1	1	1	1	1
Friday	1	1	1	1	1	1	1	1	1	1	1	1
Saturday	1	1	1	1	1	1	1	1	1	1	1	1
Sunday	1	1	1	1	1	1	1	1	1	1	1	1
Holiday	1	1	1	1	1	1	1	1	1	1	1	1

Wall Constructions

Face Brick + R-11 Batt

Wall Details

Outside Surface Color ..... **Dark**
Absorptivity **0.900**
Overall U-Value ..... **0.064** BTU/(hr-ft²-°F)

Wall Layers Details (Inside to Outside)

Layers	Thickness in	Density lb/ft³	Specific Ht. BTU / (lb - °F)	R-Value (hr-ft²-°F)/BTU	Weight lb/ft²
Inside surface resistance	0.000	0.0	0.00	0.68500	0.0
5/8-in gypsum board	0.625	50.0	0.26	0.56004	2.6
R-13 batt insulation	4.000	0.5	0.20	12.82051	0.2
Air space	0.000	0.0	0.00	0.91000	0.0
4-in face brick	4.000	125.0	0.22	0.43290	41.7
Outside surface resistance	0.000	0.0	0.00	0.33300	0.0
Totals	**8.625**	-		**15.74145**	**44.4**

Roof Constructions

Built-up Roof + R-14 Board + 4" LW Concrete

Roof Details

Outside Surface Color ..... **Dark**
Absorptivity **0.900**
Overall U-Value ..... **0.050** BTU/(hr-ft²-°F)

Roof Layers Details (Inside to Outside)

Layers	Thickness in	Density lb/ft³	Specific Ht. BTU / (lb - °F)	R-Value (hr-ft²-°F)/BTU	Weight lb/ft²
Inside surface resistance	0.000	0.0	0.00	0.68500	0.0
1/2-in gypsum board	0.500	50.0	0.26	0.44803	2.1
Air space	0.000	0.0	0.00	0.91000	0.0
4-in LW concrete	4.000	40.0	0.20	3.33333	13.3
R-14 board insulation	2.000	2.0	0.22	13.88889	0.3
Built-up roofing	0.375	70.0	0.35	0.33245	2.2
Outside surface resistance	0.000	0.0	0.00	0.33300	0.0
Totals	**6.875**	-		**19.93070**	**17.9**

Window Constructions

Sample Window Assembly

Window Details:

Detailed Input	**No**	
Height	**1.00**	ft
Width	**1.00**	ft
Overall U-Value	**0.500**	BTU/(hr-ft²-°F)
Overall Shade Coefficient	**0.250**	

Chiller Input Data

Sample Chiller

General Details

Chiller Name ..... **Sample Chiller**
Chiller Type ..... **Water-Cooled Centrifugal**
Data Source ..... **Template Data**

Notes: Performance data was generated using the Chiller Template option.

Design Inputs

Full Load LCHWT	**42.0**	°F
Full Load ECWT	**85.0**	°F
Full Load Capacity	**300.0**	Tons
Full Load Power	**0.688**	kW/Ton
Minimum ECWT Setpoint	**60.0**	°F
Minimum Load	**20.0**	%
Cooler Flow Rate	**720.0**	gpm
Cooler Pressure Drop	**0.0**	ft wg
Condenser Flow Rate	**900.0**	gpm
Condenser Pressure Drop	**0.0**	ft wg

Chiller Performance (kW/Ton)

ECWT°F	Max Cap	100%	75%	50%	25%
90.0	0.728	0.728	0.579	0.520	0.642
85.0	0.688	0.688	0.547	0.491	0.607
79.0	0.640	0.640	0.509	0.457	0.565
72.0	0.585	0.585	0.465	0.418	0.516
66.0	0.537	0.537	0.427	0.384	0.474
60.0	0.490	0.490	0.389	0.350	0.432

Performance LCHWT Factor a ..... **-0.0088** 1/F
Performance LCHWT Factor b **0.0000** 1/F²

Chiller Capacity (Tons)

ECWT°F	Max Cap	100%	75%	50%	25%
90.0	300.0	300.0	225.0	150.0	75.0
85.0	300.0	300.0	225.0	150.0	75.0
79.0	300.0	300.0	225.0	150.0	75.0
72.0	300.0	300.0	225.0	150.0	75.0
66.0	300.0	300.0	225.0	150.0	75.0
60.0	300.0	300.0	225.0	150.0	75.0

Capacity LCHWT Factor a **0.0000** 1/F
Capacity LCHWT Factor b **0.0000** 1/F²

Cooling Tower Input Data

Sample Cooling Tower

Modeling Method

Modeling Method	**Cooling Tower Model**	

General Details

Condenser Water Flow Rate	**900.0**	gpm
Condenser Pump Head	**40.0**	ft wg
Condenser Pump Mech. Efficiency	**80.0**	%
Condenser Pump Elec. Efficiency	**94.0**	%

Detailed Cooling Tower Model

Design Wet Bulb	**80.0**	°F
Range At Design	**10.0**	°F
Design Approach	**7.0**	°F
Full Load Fan kW	**0.100**	kW/Ton
Cooling Tower Control	**Variable Speed Fan**	
Fan Electrical Efficiency	**94.0**	%

Electric Rate Input Data

Electric Rate

General Details

Rate Name	**Electric Rate**	
Currency	**$**	
Rate Type	**Simple**	
Energy Units	**kWh**	
Conversion	**1.00000**	kWh/kWh
Demand Units	**kW**	
Flat Price	**0.08000**	$/kWh
Customer Charge	**0.00**	$
Minimum Charge	**0.00**	$
Tax Rate	**0.00**	%

Fuel Rate Input Data

Fuel Rate

General Details

Rate Name	**Fuel Rate**	
Currency	**$**	
Rate Type	**Simple**	
Energy Units	**Therm**	
Conversion	**100.00000**	kBTU/Therm
Demand Units	**Hourly Peak**	
Flat Price	**0.40000**	$/Therm
Customer Charge	**0.00**	$
Minimum Charge	**0.00**	$
Tax Rate	**0.00**	%

AHU 1-1

1. General Details:
Floor Area ..... **11255.0** ft²
Avg. Ceiling Height ..... **10.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... **RETAIL: Storage Rooms**
OA Requirement 1 ..... **0.0** CFM/person
OA Requirement 2 ..... **0.15** CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **0.80** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:
Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:
Wattage ..... **2000.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:
Occupancy ..... **10** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:
Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	2029.0	400	0	0
W	2238.0	0	0	0
S	1841.0	160	0	0

3.1. Construction Types for Exposure N
Wall Type ..... **Face Brick + R-11 Batt**
1st Window Type ..... **Sample Window Assembly**

3.2. Construction Types for Exposure W
Wall Type ..... **Face Brick + R-11 Batt**

3.3. Construction Types for Exposure S
Wall Type ..... **Face Brick + R-11 Batt**
1st Window Type ..... **Sample Window Assembly**

4. Roofs, Skylights:
(No Roof or Skylight data).

5. Infiltration:
Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... **Slab Floor On Grade**
Floor Area ..... **11255.0** ft²
Total Floor U-Value ..... **0.050** BTU/(hr-ft²-°F)
Exposed Perimeter ..... **0.0** ft
Edge Insulation R-Value ..... **0.00** (hr-ft²-°F)/BTU

7. Partitions:
(No partition data).

AHU 1-2

1. General Details:
Floor Area ..... **5824.0** ft²
Avg. Ceiling Height ..... **10.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... **EDUCATION: Classroom**
OA Requirement 1 ..... **15.0** CFM/person
OA Requirement 2 ..... **0.00** CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **1.20** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:
Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:
Wattage ..... **2000.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:
Occupancy ..... **300** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:
Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	2423.0	480	0	0
E	939.0	320	0	0

3.1. Construction Types for Exposure N
Wall Type ..... **Face Brick + R-11 Batt**
1st Window Type ..... **Sample Window Assembly**

3.2. Construction Types for Exposure E
Wall Type ..... **Face Brick + R-11 Batt**
1st Window Type ..... **Sample Window Assembly**

4. Roofs, Skylights:
(No Roof or Skylight data).

5. Infiltration:
Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... **Slab Floor On Grade**
Floor Area ..... **5824.0** ft²
Total Floor U-Value ..... **0.050** BTU/(hr-ft²-°F)
Exposed Perimeter ..... **0.0** ft
Edge Insulation R-Value ..... **0.00** (hr-ft²-°F)/BTU

7. Partitions:
(No partition data).

AHU 1-3

1. General Details:
Floor Area ..... **7851.0** ft²
Avg. Ceiling Height ..... **10.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... **OFFICE: Office Space**
OA Requirement 1 ..... **20.0** CFM/person
OA Requirement 2 ..... **0.00** CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **1.10** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:
Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:
Wattage ..... **5000.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:
Occupancy ..... **85** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:
Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	1100.0	0	0	0
S	1650.0	320	0	0

3.1. Construction Types for Exposure E
Wall Type ..... **Face Brick + R-11 Batt**

3.2. Construction Types for Exposure S
Wall Type ..... **Face Brick + R-11 Batt**
1st Window Type ..... **Sample Window Assembly**

4. Roofs, Skylights:
(No Roof or Skylight data).

5. Infiltration:
Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... **Slab Floor On Grade**
Floor Area ..... **7851.0** ft²
Total Floor U-Value ..... **0.050** BTU/(hr-ft²-°F)
Exposed Perimeter ..... **0.0** ft
Edge Insulation R-Value ..... **0.00** (hr-ft²-°F)/BTU

7. Partitions:
(No partition data).

AHU 1-4

1. General Details:
Floor Area ..... **1733.0** ft²
Avg. Ceiling Height ..... **10.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... **OFFICE: Reception Areas**
OA Requirement 1 ..... **15.0** CFM/person
OA Requirement 2 ..... **0.00** CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **1.20** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:
Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:
Wattage ..... **2000.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:
Occupancy ..... **10** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:
Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	793.0	80	0	0

3.1. Construction Types for Exposure N
Wall Type ..... **Face Brick + R-11 Batt**
1st Window Type ..... **Sample Window Assembly**

4. Roofs, Skylights:
(No Roof or Skylight data).

5. Infiltration:
Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... **Slab Floor On Grade**
Floor Area ..... **1733.0** ft²
Total Floor U-Value ..... **0.050** BTU/(hr-ft²-°F)
Exposed Perimeter ..... **0.0** ft
Edge Insulation R-Value ..... **0.00** (hr-ft²-°F)/BTU

7. Partitions:
(No partition data).

AHU 1-5

1. General Details:
Floor Area ..... **7514.0** ft²
Avg. Ceiling Height ..... **20.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... **OFFICE: Reception Areas**
OA Requirement 1 ..... **15.0** CFM/person
OA Requirement 2 ..... **0.00** CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **1.20** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:
Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:
Wattage ..... **2000.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:
Occupancy ..... **600** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **DRILL**

2.5. Miscellaneous Loads:
Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	2608.0	0	0	0
W	1914.0	100	0	0
E	1914.0	100	0	0

3.1. Construction Types for Exposure S
Wall Type ..... **Face Brick + R-11 Batt**

3.2. Construction Types for Exposure W
Wall Type ..... **Face Brick + R-11 Batt**
1st Window Type ..... **Sample Window Assembly**

3.3. Construction Types for Exposure E
Wall Type ..... **Face Brick + R-11 Batt**
1st Window Type ..... **Sample Window Assembly**

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	7514.0	0	0

4.1. Construction Types for Exposure H
Roof Type ... **Built-up Roof + R-14 Board + 4" LW Concrete**

5. Infiltration:
Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... **Slab Floor On Grade**
Floor Area ..... **7514.0** ft²
Total Floor U-Value ..... **0.050** BTU/(hr-ft²-°F)
Exposed Perimeter ..... **0.0** ft
Edge Insulation R-Value ..... **0.00** (hr-ft²-°F)/BTU

7. Partitions:
(No partition data).

AHU 2-1

1. General Details:

Floor Area	**1200.0**	ft²
Avg. Ceiling Height	**10.0**	ft
Building Weight	**70.0**	lb/ft²

1.1. OA Ventilation Requirements:

Space Usage	**WORKROOMS: Bank Vaults**	
OA Requirement 1	**15.0**	CFM/person
OA Requirement 2	**0.00**	CFM/ft²

2. Internals:

2.1. Overhead Lighting:

Fixture Type	**Recessed (Unvented)**	
Wattage	**1.20**	W/ft²
Ballast Multiplier	**1.08**	
Schedule	**Sample Schedule**	

2.2. Task Lighting:

Wattage	**0.00**	W/ft²
Schedule	**None**	

2.3. Electrical Equipment:

Wattage	**0.0**	Watts
Schedule	**Sample Schedule**	

2.4. People:

Occupancy	**4**	People
Activity Level	**Office Work**	
Sensible	**245.0**	BTU/hr/person
Latent	**205.0**	BTU/hr/person
Schedule	**Sample Schedule**	

2.5. Miscellaneous Loads:

Sensible	**0**	BTU/hr
Schedule	**None**	
Latent	**0**	BTU/hr
Schedule	**None**	

3. Walls, Windows, Doors:
(No Wall, Window, Door data).

4. Roofs, Skylights:
(No Roof or Skylight data).

5. Infiltration:

Design Cooling	**0.00**	CFM
Design Heating	**0.00**	CFM
Energy Analysis	**0.00**	CFM

Infiltration occurs only when the fan is off.

6. Floors:
Type **Floor Above Conditioned Space**
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 2-2

1. General Details:
Floor Area ..... **6228.0** ft²
Avg. Ceiling Height ..... **10.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:
Space Usage . **PUBLIC: Locker and Dressing Rooms**
OA Requirement 1 ..... **0.0** CFM/person
OA Requirement 2 ..... **0.50** CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **0.90** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:
Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:
Wattage ..... **1000.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:
Occupancy ..... **192** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **DRILL**

2.5. Miscellaneous Loads:
Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
S	1494.0	307	0	0
W	816.0	0	0	0

3.1. Construction Types for Exposure S
Wall Type ..... **Face Brick + R-11 Batt**
1st Window Type ..... **Sample Window Assembly**

3.2. Construction Types for Exposure W
Wall Type ..... **Face Brick + R-11 Batt**

4. Roofs, Skylights:
(No Roof or Skylight data).

5. Infiltration:
Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... **Floor Above Conditioned Space**
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 2-3

1. General Details:
Floor Area ..... **6000.0** ft²
Avg. Ceiling Height ..... **10.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... **EDUCATION: Classroom**
OA Requirement 1 ..... **15.0** CFM/person
OA Requirement 2 ..... **0.00** CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **1.20** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:
Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:
Wattage ..... **15000.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:
Occupancy ..... **44** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:
Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	1996.0	360	0	0
E	776.0	0	0	0

3.1. Construction Types for Exposure N
Wall Type ..... **Face Brick + R-11 Batt**
1st Window Type ..... **Sample Window Assembly**

3.2. Construction Types for Exposure E
Wall Type ..... **Face Brick + R-11 Batt**

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	700.0	0	0

4.1. Construction Types for Exposure H
Roof Type ... **Built-up Roof + R-14 Board + 4" LW Concrete**

5. Infiltration:
Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... **Floor Above Conditioned Space**
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 2-4

1. General Details:
Floor Area ..... **7984.0** ft²
Avg. Ceiling Height ..... **10.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... **EDUCATION: Locker Rooms**
OA Requirement 1 ..... **0.0** CFM/person
OA Requirement 2 ..... **0.50** CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **0.90** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:
Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:
Wattage ..... **0.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:
Occupancy ..... **360** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:
Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
N	2000.0	360	0	0
W	776.0	0	0	0

3.1. Construction Types for Exposure N
Wall Type ..... **Face Brick + R-11 Batt**
1st Window Type ..... **Sample Window Assembly**

3.2. Construction Types for Exposure W
Wall Type ..... **Face Brick + R-11 Batt**

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	700.0	0	0

4.1. Construction Types for Exposure H
Roof Type ... **Built-up Roof + R-14 Board + 4" LW Concrete**

5. Infiltration:
Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... **Floor Above Conditioned Space**
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 3-1

1. General Details:
Floor Area ..... 4534.0 ft²
Avg. Ceiling Height ..... 10.0 ft
Building Weight ..... 70.0 lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... OFFICE: Office Space
OA Requirement 1 ..... 20.0 CFM/person
OA Requirement 2 ..... 0.00 CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... Recessed (Unvented)
Wattage ..... 1.10 W/ft²
Ballast Multiplier 1.08
Schedule ..... Sample Schedule

2.2. Task Lighting:
Wattage ..... 0.00 W/ft²
Schedule ..... None

2.3. Electrical Equipment:
Wattage ..... 8000.0 Watts
Schedule ..... Sample Schedule

2.4. People:
Occupancy ..... 42 People
Activity Level ..... Office Work
Sensible ..... 245.0 BTU/hr/person
Latent ..... 205.0 BTU/hr/person
Schedule ..... Sample Schedule

2.5. Miscellaneous Loads:
Sensible ..... 0 BTU/hr
Schedule ..... None
Latent ..... 0 BTU/hr
Schedule ..... None

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	622.0	0	0	0
S	1635.0	180	0	0

3.1. Construction Types for Exposure E
Wall Type ..... Face Brick + R-11 Batt

3.2. Construction Types for Exposure S
Wall Type ..... Face Brick + R-11 Batt
1st Window Type ..... Sample Window Assembly

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	3600.0	0	0

4.1. Construction Types for Exposure H
Roof Type ... Built-up Roof + R-14 Board + 4" LW Concrete

5. Infiltration:
Design Cooling ..... 0.00 CFM
Design Heating ..... 0.00 CFM
Energy Analysis ..... 0.00 CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... Floor Above Conditioned Space
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 3-2

1. General Details:
Floor Area ..... **5529.0** ft²
Avg. Ceiling Height ..... **10.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... **OFFICE: Office Space**
OA Requirement 1 ..... **20.0** CFM/person
OA Requirement 2 ..... **0.00** CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **1.10** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:
Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:
Wattage ..... **8000.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:
Occupancy ..... **50** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:
Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
E	622.0	0	0	0
S	1896.0	180	0	0

3.1. Construction Types for Exposure E
Wall Type ..... **Face Brick + R-11 Batt**

3.2. Construction Types for Exposure S
Wall Type ..... **Face Brick + R-11 Batt**
1st Window Type ..... **Sample Window Assembly**

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	3600.0	0	0

4.1. Construction Types for Exposure H
Roof Type ... **Built-up Roof + R-14 Board + 4" LW Concrete**

5. Infiltration:
Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... **Floor Above Conditioned Space**
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 3-3

1. General Details:
Floor Area ..... 8100.0 ft²
Avg. Ceiling Height ..... 10.0 ft
Building Weight ..... 70.0 lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... OFFICE: Office Space
OA Requirement 1 ..... 20.0 CFM/person
OA Requirement 2 ..... 0.00 CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... Recessed (Unvented)
Wattage ..... 1.10 W/ft²
Ballast Multiplier 1.08
Schedule ..... Sample Schedule

2.2. Task Lighting:
Wattage ..... 0.00 W/ft²
Schedule ..... None

2.3. Electrical Equipment:
Wattage ..... 8000.0 Watts
Schedule ..... Sample Schedule

2.4. People:
Occupancy ..... 50 People
Activity Level ..... Office Work
Sensible ..... 245.0 BTU/hr/person
Latent ..... 205.0 BTU/hr/person
Schedule ..... Sample Schedule

2.5. Miscellaneous Loads:
Sensible ..... 0 BTU/hr
Schedule ..... None
Latent ..... 0 BTU/hr
Schedule ..... None

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
W	622.0	0	0	0
N	1896.0	180	0	0

3.1. Construction Types for Exposure W
Wall Type ..... Face Brick + R-11 Batt

3.2. Construction Types for Exposure N
Wall Type ..... Face Brick + R-11 Batt
1st Window Type ..... Sample Window Assembly

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	3600.0	0	0

4.1. Construction Types for Exposure H
Roof Type ... Built-up Roof + R-14 Board + 4" LW Concrete

5. Infiltration:
Design Cooling ..... 0.00 CFM
Design Heating ..... 0.00 CFM
Energy Analysis ..... 0.00 CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... Floor Above Conditioned Space
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 3-4

1. General Details:
Floor Area ..... 4534.0 ft²
Avg. Ceiling Height ..... 10.0 ft
Building Weight ..... 70.0 lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... OFFICE: Office Space
OA Requirement 1 ..... 20.0 CFM/person
OA Requirement 2 ..... 0.00 CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... Recessed (Unvented)
Wattage ..... 1.10 W/ft²
Ballast Multiplier 1.08
Schedule ..... Sample Schedule

2.2. Task Lighting:
Wattage ..... 0.00 W/ft²
Schedule ..... None

2.3. Electrical Equipment:
Wattage ..... 8000.0 Watts
Schedule ..... Sample Schedule

2.4. People:
Occupancy ..... 42 People
Activity Level ..... Office Work
Sensible ..... 245.0 BTU/hr/person
Latent ..... 205.0 BTU/hr/person
Schedule ..... Sample Schedule

2.5. Miscellaneous Loads:
Sensible ..... 0 BTU/hr
Schedule ..... None
Latent ..... 0 BTU/hr
Schedule ..... None

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
W	622.0	0	0	0
S	1635.0	180	0	0

3.1. Construction Types for Exposure W
Wall Type ..... Face Brick + R-11 Batt

3.2. Construction Types for Exposure S
Wall Type ..... Face Brick + R-11 Batt
1st Window Type ..... Sample Window Assembly

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	3600.0	0	0

4.1. Construction Types for Exposure H
Roof Type ... Built-up Roof + R-14 Board + 4" LW Concrete

5. Infiltration:
Design Cooling ..... 0.00 CFM
Design Heating ..... 0.00 CFM
Energy Analysis ..... 0.00 CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... Floor Above Conditioned Space
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 4-1

1. General Details:
Floor Area ..... **5600.0** ft²
Avg. Ceiling Height ..... **10.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... **OFFICE: Office Space**
OA Requirement 1 ..... **20.0** CFM/person
OA Requirement 2 ..... **0.00** CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **1.10** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:
Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:
Wattage ..... **4000.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:
Occupancy ..... **26** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:
Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
W	834.0	0	0	0
S	1806.0	130	0	0
E	834.0	0	0	0

3.1. Construction Types for Exposure W
Wall Type ..... **Face Brick + R-11 Batt**

3.2. Construction Types for Exposure S
Wall Type ..... **Face Brick + R-11 Batt**
1st Window Type ..... **Sample Window Assembly**

3.3. Construction Types for Exposure E
Wall Type ..... **Face Brick + R-11 Batt**

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	5600.0	0	0

4.1. Construction Types for Exposure H
Roof Type ... **Built-up Roof + R-14 Board + 4" LW Concrete**

5. Infiltration:
Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... **Floor Above Conditioned Space**
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 4-2

1. General Details:
Floor Area ..... **5600.0** ft²
Avg. Ceiling Height ..... **10.0** ft
Building Weight ..... **70.0** lb/ft²

1.1. OA Ventilation Requirements:
Space Usage ..... **OFFICE: Office Space**
OA Requirement 1 ..... **20.0** CFM/person
OA Requirement 2 ..... **0.00** CFM/ft²

2. Internals:

2.1. Overhead Lighting:
Fixture Type ..... **Recessed (Unvented)**
Wattage ..... **1.10** W/ft²
Ballast Multiplier **1.08**
Schedule ..... **Sample Schedule**

2.2. Task Lighting:
Wattage ..... **0.00** W/ft²
Schedule ..... **None**

2.3. Electrical Equipment:
Wattage ..... **4000.0** Watts
Schedule ..... **Sample Schedule**

2.4. People:
Occupancy ..... **50** People
Activity Level ..... **Office Work**
Sensible ..... **245.0** BTU/hr/person
Latent ..... **205.0** BTU/hr/person
Schedule ..... **Sample Schedule**

2.5. Miscellaneous Loads:
Sensible ..... **0** BTU/hr
Schedule ..... **None**
Latent ..... **0** BTU/hr
Schedule ..... **None**

3. Walls, Windows, Doors:

Exp.	Wall Gross Area (ft²)	Window 1 Qty.	Window 2 Qty.	Door 1 Qty.
W	834.0	0	0	0
N	1806.0	130	0	0
E	834.0	0	0	0

3.1. Construction Types for Exposure W
Wall Type ..... **Face Brick + R-11 Batt**

3.2. Construction Types for Exposure N
Wall Type ..... **Face Brick + R-11 Batt**
1st Window Type ..... **Sample Window Assembly**

3.3. Construction Types for Exposure E
Wall Type ..... **Face Brick + R-11 Batt**

4. Roofs, Skylights:

Exp.	Roof Gross Area (ft²)	Roof Slope (deg.)	Skylight Qty.
H	5600.0	0	0

4.1. Construction Types for Exposure H
Roof Type ... **Built-up Roof + R-14 Board + 4" LW Concrete**

5. Infiltration:
Design Cooling ..... **0.00** CFM
Design Heating ..... **0.00** CFM
Energy Analysis ..... **0.00** CFM
Infiltration occurs only when the fan is off.

6. Floors:
Type ..... **Floor Above Conditioned Space**
(No additional input required for this floor type).

7. Partitions:
(No partition data).

AHU 1-1 Input Data

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

1. General Details:

Air System Name	**AHU 1-1**
Equipment Class	**Chilled Water AHU**
Air System Type	**Single Zone CAV**
Number of zones	**1**

2. System Components:

Ventilation Air Data:

Airflow Control	**Demand Controlled Ventilation**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Minimum Airflow	**0**	%
Damper Leak Rate	**0**	%
Minimum CO2 Differential	**100**	ppm
Maximum CO2 Differential	**700**	ppm
Outdoor Air CO2 Level	**400**	ppm

Ventilation Reclaim Data:

Reclaim Type	**Sensible and Latent Heat**	
Thermal Efficiency	**60**	%
Input kW	**1.0**	kW
Schedule	**JFMAMJJASOND**	

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Cycled or Staged Compressor - Fan On**	

Central Heating Data:

Supply Temperature	**95.0**	°F
Heating Source	**Electric Resistance**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Cycled or Staged Compressor - Fan On**	

Supply Fan Data:

Fan Type	**Forward Curved**	
Configuration	**Draw-thru**	
Fan Performance	**2.50**	in wg
Overall Efficiency	**54**	%

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1	
AHU 1-1	x1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW

Thermostat Schedule	**thermostat**
Unoccupied Cooling is	**Available**

Supply Terminals Data:
Zone ..... All
Terminal Type ..... Diffuser
Minimum Airflow ..... 0.0 CFM

Zone Heating Units:
Zone ..... All
Zone Heating Unit Type ..... None

Zone Unit Heat Source ..... Hot Water
Zone Heating Unit Schedule ..... JFMAMJJASOND

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... 55.0 °F
Supply Fan Airflow ..... 2291.0 CFM
Ventilation Fan Airflow ..... 1688.3 CFM
Heating Supply Temperature ..... 95.0 °F

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... 10.0 °F
Hot Water Delta-T ..... 20.0 °F

Safety Factors:
Cooling Sensible ..... 5 %
Cooling Latent ..... 5 %
Heating ..... 5 %

Zone Sizing Data:
Zone Airflow Sizing Method ..... Sum of space airflow rates
Space Airflow Sizing Method ..... Individual peak space loads

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	2291.0	-	-	

5. Equipment Data
No Equipment Data required for this system.

AHU 1-2 Input Data

1. General Details:

Air System Name	**AHU 1-2**
Equipment Class	**Chilled Water AHU**
Air System Type	**VAV**
Number of zones	**1**

2. System Components:

Ventilation Air Data:

Airflow Control	**Demand Controlled Ventilation**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Minimum Airflow	**0**	%
Damper Leak Rate	**0**	%
Minimum CO2 Differential	**100**	ppm
Maximum CO2 Differential	**700**	ppm
Outdoor Air CO2 Level	**400**	ppm

Ventilation Reclaim Data:

Reclaim Type	**Sensible and Latent Heat**	
Thermal Efficiency	**60**	%
Input kW	**1.0**	kW
Schedule	**JFMAMJJASOND**	

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Temperature Reset by Outdoor Air Schedule**	
Max. Supply Temperature	**57.0**	°F
OAT for Min. Supply Temperature	**95.0**	°F
OAT for Max. Supply Temperature	**30.0**	°F

Supply Fan Data:

Fan Type	**BI/AF with Variable Frequency Drive**	
Configuration	**Draw-thru**	
Fan Performance	**4.00**	in wg
Overall Efficiency	**43**	%

% Airflow	100	90	80	70	60	50
% kW	100	77	57	42	30	21

% Airflow	40	30	20	10	0
% kW	15	13	10	7	5

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:
Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **4739.1** CFM
Ventilation Fan Airflow ..... **4500.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **5** %
Cooling Latent ..... **5** %
Heating ..... **5** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	4739.1	-	46.6	

5. Equipment Data
No Equipment Data required for this system.

1. General Details:
   - Air System Name ..... **AHU 1-3**
   - Equipment Class ..... **Chilled Water AHU**
   - Air System Type ..... **VAV**
   - Number of zones **1**

2. System Components:

Ventilation Air Data:
   - Airflow Control ..... **Demand Controlled Ventilation**
   - Ventilation Sizing Method ..... **ASHRAE Std 62-2001**
   - Minimum Airflow ..... **0** %
   - Damper Leak Rate ..... **0** %
   - Minimum CO2 Differential ..... **100** ppm
   - Maximum CO2 Differential ..... **700** ppm
   - Outdoor Air CO2 Level ..... **400** ppm

Ventilation Reclaim Data:
   - Reclaim Type ..... **Sensible and Latent Heat**
   - Thermal Efficiency ..... **60** %
   - Input kW ..... **1.0** kW
   - Schedule ..... **JFMAMJJASOND**

Central Cooling Data:
   - Supply Air Temperature ..... **55.0** °F
   - Coil Bypass Factor **0.050**
   - Cooling Source ..... **Chilled Water**
   - Schedule ..... **JFMAMJJASOND**
   - Capacity Control ..... **Temperature Reset by Outdoor Air Schedule**
   - Max. Supply Temperature ..... **57.0** °F
   - OAT for Min. Supply Temperature ..... **95.0** °F
   - OAT for Max. Supply Temperature ..... **30.0** °F

Supply Fan Data:
   - Fan Type ..... **BI/AF with Variable Frequency Drive**
   - Configuration ..... **Draw-thru**
   - Fan Performance ..... **4.00** in wg
   - Overall Efficiency ..... **43** %

% Airflow	100	90	80	70	60	50
% kW	100	77	57	42	30	21

% Airflow	40	30	20	10	0
% kW	15	13	10	7	5

Duct System Data:

Supply Duct Data:
   - Duct Heat Gain ..... **0** %
   - Duct Leakage ..... **0** %

Return Duct or Plenum Data:
   - Return Air Via ..... **Return Air Plenum**
   - Wall Heat Gain to Plenum ..... **0** %
   - Roof Heat Gain to Plenum ..... **70** %
   - Lighting Heat Gain to Plenum ..... **30** %

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:
   - Zone ..... **All**
   - Cooling T-stat: Occ. ..... **75.0** °F
   - Cooling T-stat: Unocc. ..... **85.0** °F
   - Heating T-stat: Occ. ..... **70.0** °F
   - Heating T-stat: Unocc. ..... **60.0** °F
   - T-stat Throttling Range ..... **3.00** °F
   - Diversity Factor ..... **100** %
   - Direct Exhaust Airflow ..... **0.0** CFM
   - Direct Exhaust Fan kW ..... **0.0** kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:
Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **3093.3** CFM
Ventilation Fan Airflow ..... **1700.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **5** %
Cooling Latent ..... **5** %
Heating ..... **5** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	3093.3	-	28.2	

5. Equipment Data
No Equipment Data required for this system.

AHU 1-4 Input Data

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

1. General Details:

Air System Name	**AHU 1-4**
Equipment Class	**Chilled Water AHU**
Air System Type	**Single Zone CAV**
Number of zones	**1**

2. System Components:

Ventilation Air Data:

Airflow Control	**Demand Controlled Ventilation**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Minimum Airflow	**0**	%
Damper Leak Rate	**0**	%
Minimum CO2 Differential	**100**	ppm
Maximum CO2 Differential	**700**	ppm
Outdoor Air CO2 Level	**400**	ppm

Ventilation Reclaim Data:

Reclaim Type	**Sensible and Latent Heat**	
Thermal Efficiency	**60**	%
Input kW	**1.0**	kW
Schedule	**JFMAMJJASOND**	

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Cycled or Staged Compressor - Fan On**	

Central Heating Data:

Supply Temperature	**95.0**	°F
Heating Source	**Electric Resistance**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Cycled or Staged Compressor - Fan On**	

Supply Fan Data:

Fan Type	**Forward Curved**	
Configuration	**Draw-thru**	
Fan Performance	**2.50**	in wg
Overall Efficiency	**54**	%

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1	
AHU 1-4	x1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW

Thermostat Schedule	**thermostat**
Unoccupied Cooling is	**Available**

Supply Terminals Data:
- Zone ..... **All**
- Terminal Type ..... **Diffuser**
- Minimum Airflow ..... **0.0** CFM

Zone Heating Units:
- Zone ..... **All**
- Zone Heating Unit Type ..... **None**

- Zone Unit Heat Source ..... **Hot Water**
- Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):

System Sizing Data:
- Cooling Supply Temperature ..... **55.0** °F
- Supply Fan Airflow ..... **733.6** CFM
- Ventilation Fan Airflow ..... **150.0** CFM
- Heating Supply Temperature ..... **95.0** °F

Hydronic Sizing Specifications:
- Chilled Water Delta-T ..... **10.0** °F
- Hot Water Delta-T ..... **20.0** °F

Safety Factors:
- Cooling Sensible ..... **5** %
- Cooling Latent ..... **5** %
- Heating ..... **5** %

Zone Sizing Data:
- Zone Airflow Sizing Method ..... **Sum of space airflow rates**
- Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	733.6	-	-	

5. Equipment Data

No Equipment Data required for this system.

AHU 1-5 Input Data

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

1. General Details:

Air System Name	**AHU 1-5**
Equipment Class	**Chilled Water AHU**
Air System Type	**Single Zone CAV**
Number of zones	**1**

2. System Components:

Ventilation Air Data:

Airflow Control	**Demand Controlled Ventilation**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Minimum Airflow	**0**	%
Damper Leak Rate	**0**	%
Minimum CO2 Differential	**100**	ppm
Maximum CO2 Differential	**700**	ppm
Outdoor Air CO2 Level	**400**	ppm

Ventilation Reclaim Data:

Reclaim Type	**Sensible and Latent Heat**	
Thermal Efficiency	**60**	%
Input kW	**1.0**	kW
Schedule	**JFMAMJJASOND**	

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Cycled or Staged Compressor - Fan On**	

Central Heating Data:

Supply Temperature	**95.0**	°F
Heating Source	**Electric Resistance**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Cycled or Staged Compressor - Fan On**	

Supply Fan Data:

Fan Type	**Forward Curved**	
Configuration	**Draw-thru**	
Fan Performance	**2.50**	in wg
Overall Efficiency	**54**	%

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1	
AHU 1-5	x1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW

Thermostat Schedule	**thermostat**
Unoccupied Cooling is	**Available**

Supply Terminals Data:
- Zone ..... **All**
- Terminal Type ..... **Diffuser**
- Minimum Airflow ..... **0.0** CFM

Zone Heating Units:
- Zone ..... **All**
- Zone Heating Unit Type ..... **None**

- Zone Unit Heat Source ..... **Hot Water**
- Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):

System Sizing Data:
- Cooling Supply Temperature ..... **55.0** °F
- Supply Fan Airflow ..... **9000.0** CFM
- Ventilation Fan Airflow ..... **9000.0** CFM
- Heating Supply Temperature ..... **95.0** °F

Hydronic Sizing Specifications:
- Chilled Water Delta-T ..... **10.0** °F
- Hot Water Delta-T ..... **20.0** °F

Safety Factors:
- Cooling Sensible ..... **5** %
- Cooling Latent ..... **5** %
- Heating ..... **5** %

Zone Sizing Data:
- Zone Airflow Sizing Method ..... **Sum of space airflow rates**
- Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	9000.0	-	-	

5. Equipment Data

No Equipment Data required for this system.

AHU 2-1 Input Data

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

1. General Details:

Air System Name	**AHU 2-1**
Equipment Class	**Chilled Water AHU**
Air System Type	**Single Zone CAV**
Number of zones	**1**

2. System Components:

Ventilation Air Data:

Airflow Control	**Demand Controlled Ventilation**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Minimum Airflow	**0**	%
Damper Leak Rate	**0**	%
Minimum CO2 Differential	**100**	ppm
Maximum CO2 Differential	**700**	ppm
Outdoor Air CO2 Level	**400**	ppm

Ventilation Reclaim Data:

Reclaim Type	**Sensible and Latent Heat**	
Thermal Efficiency	**60**	%
Input kW	**1.0**	kW
Schedule	**JFMAMJJASOND**	

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.100**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Cycled or Staged Compressor - Fan On**	

Central Heating Data:

Supply Temperature	**95.0**	°F
Heating Source	**Electric Resistance**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Cycled or Staged Compressor - Fan On**	

Supply Fan Data:

Fan Type	**Forward Curved**	
Configuration	**Draw-thru**	
Fan Performance	**2.50**	in wg
Overall Efficiency	**54**	%

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1	
AHU 2-1	x1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW

Thermostat Schedule	**thermostat**
Unoccupied Cooling is	**Available**

Supply Terminals Data:
- Zone ..... **All**
- Terminal Type ..... **Diffuser**
- Minimum Airflow ..... **0.0** CFM

Zone Heating Units:
- Zone ..... **All**
- Zone Heating Unit Type ..... **None**

- Zone Unit Heat Source ..... **Hot Water**
- Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):

System Sizing Data:
- Cooling Supply Temperature ..... **55.0** °F
- Supply Fan Airflow ..... **188.9** CFM
- Ventilation Fan Airflow ..... **60.0** CFM
- Heating Supply Temperature ..... **95.0** °F

Hydronic Sizing Specifications:
- Chilled Water Delta-T ..... **10.0** °F
- Hot Water Delta-T ..... **20.0** °F

Safety Factors:
- Cooling Sensible ..... **5** %
- Cooling Latent ..... **5** %
- Heating ..... **5** %

Zone Sizing Data:
- Zone Airflow Sizing Method ..... **Sum of space airflow rates**
- Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	188.9	-	-	

5. Equipment Data

No Equipment Data required for this system.

AHU 2-2 Input Data

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

1. General Details:

Air System Name	**AHU 2-2**	
Equipment Class	**Chilled Water AHU**	
Air System Type	**VAV**	
Number of zones	**1**	

2. System Components:

Ventilation Air Data:

Airflow Control	**Demand Controlled Ventilation**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Minimum Airflow	**0**	%
Damper Leak Rate	**0**	%
Minimum CO2 Differential	**100**	ppm
Maximum CO2 Differential	**700**	ppm
Outdoor Air CO2 Level	**400**	ppm

Ventilation Reclaim Data:

Reclaim Type	**Sensible and Latent Heat**	
Thermal Efficiency	**60**	%
Input kW	**1.0**	kW
Schedule	**JFMAMJJASOND**	

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Temperature Reset by Outdoor Air Schedule**	
Max. Supply Temperature	**57.0**	°F
OAT for Min. Supply Temperature	**95.0**	°F
OAT for Max. Supply Temperature	**30.0**	°F

Supply Fan Data:

Fan Type	**BI/AF with Variable Frequency Drive**	
Configuration	**Draw-thru**	
Fan Performance	**4.00**	in wg
Overall Efficiency	**43**	%

% Airflow	100	90	80	70	60	50
% kW	100	77	57	42	30	21

% Airflow	40	30	20	10	0
% kW	15	13	10	7	5

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:
Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **3114.0** CFM
Ventilation Fan Airflow ..... **3114.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **0** %
Cooling Latent ..... **0** %
Heating ..... **0** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	3114.0	-	25.8	

5. Equipment Data
No Equipment Data required for this system.

AHU 2-3 Input Data

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

1. General Details:

Air System Name	**AHU 2-3**
Equipment Class	**Chilled Water AHU**
Air System Type	**VAV**
Number of zones	**1**

2. System Components:

Ventilation Air Data:

Airflow Control	**Demand Controlled Ventilation**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Minimum Airflow	**0**	%
Damper Leak Rate	**0**	%
Minimum CO2 Differential	**100**	ppm
Maximum CO2 Differential	**700**	ppm
Outdoor Air CO2 Level	**400**	ppm

Ventilation Reclaim Data:

Reclaim Type	**Sensible and Latent Heat**	
Thermal Efficiency	**60**	%
Input kW	**1.0**	kW
Schedule	**JFMAMJJASOND**	

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Temperature Reset by Outdoor Air Schedule**	
Max. Supply Temperature	**57.0**	°F
OAT for Min. Supply Temperature	**95.0**	°F
OAT for Max. Supply Temperature	**30.0**	°F

Supply Fan Data:

Fan Type	**BI/AF with Variable Frequency Drive**	
Configuration	**Draw-thru**	
Fan Performance	**4.00**	in wg
Overall Efficiency	**43**	%

% Airflow	100	90	80	70	60	50
% kW	100	77	57	42	30	21

% Airflow	40	30	20	10	0
% kW	15	13	10	7	5

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:
Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **3784.0** CFM
Ventilation Fan Airflow ..... **660.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **0** %
Cooling Latent ..... **0** %
Heating ..... **0** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	3784.0	-	33.1	

5. Equipment Data
No Equipment Data required for this system.

AHU 2-4 Input Data

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

1. General Details:

Air System Name	**AHU 2-4**
Equipment Class	**Chilled Water AHU**
Air System Type	**VAV**
Number of zones	**1**

2. System Components:

Ventilation Air Data:

Airflow Control	**Demand Controlled Ventilation**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Minimum Airflow	**0**	%
Damper Leak Rate	**0**	%
Minimum CO2 Differential	**100**	ppm
Maximum CO2 Differential	**700**	ppm
Outdoor Air CO2 Level	**400**	ppm

Ventilation Reclaim Data:

Reclaim Type	**Sensible and Latent Heat**	
Thermal Efficiency	**60**	%
Input kW	**1.0**	kW
Schedule	**JFMAMJJASOND**	

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Temperature Reset by Outdoor Air Schedule**	
Max. Supply Temperature	**57.0**	°F
OAT for Min. Supply Temperature	**95.0**	°F
OAT for Max. Supply Temperature	**30.0**	°F

Supply Fan Data:

Fan Type	**BI/AF with Variable Frequency Drive**	
Configuration	**Draw-thru**	
Fan Performance	**4.00**	in wg
Overall Efficiency	**43**	%

% Airflow	100	90	80	70	60	50
% kW	100	77	57	42	30	21

% Airflow	40	30	20	10	0
% kW	15	13	10	7	5

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:
Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **4454.1** CFM
Ventilation Fan Airflow ..... **3992.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **0** %
Cooling Latent ..... **0** %
Heating ..... **0** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	4454.1	-	36.4	

5. Equipment Data
No Equipment Data required for this system.

AHU 3-1 Input Data

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

1. General Details:

Air System Name	**AHU 3-1**	
Equipment Class	**Chilled Water AHU**	
Air System Type	**VAV**	
Number of zones	**1**	

2. System Components:

Ventilation Air Data:

Airflow Control	**Demand Controlled Ventilation**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Minimum Airflow	**0**	%
Damper Leak Rate	**0**	%
Minimum CO2 Differential	**100**	ppm
Maximum CO2 Differential	**700**	ppm
Outdoor Air CO2 Level	**400**	ppm

Ventilation Reclaim Data:

Reclaim Type	**Sensible and Latent Heat**	
Thermal Efficiency	**60**	%
Input kW	**1.0**	kW
Schedule	**JFMAMJJASOND**	

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Temperature Reset by Outdoor Air Schedule**	
Max. Supply Temperature	**57.0**	°F
OAT for Min. Supply Temperature	**95.0**	°F
OAT for Max. Supply Temperature	**30.0**	°F

Supply Fan Data:

Fan Type	**BI/AF with Variable Frequency Drive**	
Configuration	**Draw-thru**	
Fan Performance	**4.00**	in wg
Overall Efficiency	**43**	%

% Airflow	100	90	80	70	60	50
% kW	100	77	57	42	30	21

% Airflow	40	30	20	10	0
% kW	15	13	10	7	5

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:
Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **2541.6** CFM
Ventilation Fan Airflow ..... **840.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **0** %
Cooling Latent ..... **0** %
Heating ..... **0** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	2541.6	-	28.4	

5. Equipment Data
No Equipment Data required for this system.

AHU 3-2 Input Data

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

1. General Details:

Air System Name	**AHU 3-2**
Equipment Class	**Chilled Water AHU**
Air System Type	**VAV**
Number of zones	**1**

2. System Components:

Ventilation Air Data:

Airflow Control	**Demand Controlled Ventilation**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Minimum Airflow	**0**	%
Damper Leak Rate	**0**	%
Minimum CO2 Differential	**100**	ppm
Maximum CO2 Differential	**700**	ppm
Outdoor Air CO2 Level	**400**	ppm

Ventilation Reclaim Data:

Reclaim Type	**Sensible and Latent Heat**	
Thermal Efficiency	**60**	%
Input kW	**1.0**	kW
Schedule	**JFMAMJJASOND**	

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Temperature Reset by Outdoor Air Schedule**	
Max. Supply Temperature	**57.0**	°F
OAT for Min. Supply Temperature	**95.0**	°F
OAT for Max. Supply Temperature	**30.0**	°F

Supply Fan Data:

Fan Type	**BI/AF with Variable Frequency Drive**	
Configuration	**Draw-thru**	
Fan Performance	**4.00**	in wg
Overall Efficiency	**43**	%

% Airflow	100	90	80	70	60	50
% kW	100	77	57	42	30	21

% Airflow	40	30	20	10	0
% kW	15	13	10	7	5

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:
Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **2754.9** CFM
Ventilation Fan Airflow ..... **1000.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **0** %
Cooling Latent ..... **0** %
Heating ..... **0** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	2754.9	-	30.1	

5. Equipment Data
No Equipment Data required for this system.

AHU 3-3 Input Data

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

1. General Details:

Air System Name	**AHU 3-3**
Equipment Class	**Chilled Water AHU**
Air System Type	**VAV**
Number of zones	**1**

2. System Components:

Ventilation Air Data:

Airflow Control	**Demand Controlled Ventilation**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Minimum Airflow	**0**	%
Damper Leak Rate	**0**	%
Minimum CO2 Differential	**100**	ppm
Maximum CO2 Differential	**700**	ppm
Outdoor Air CO2 Level	**400**	ppm

Ventilation Reclaim Data:

Reclaim Type	**Sensible and Latent Heat**	
Thermal Efficiency	**60**	%
Input kW	**1.0**	kW
Schedule	**JFMAMJJASOND**	

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Temperature Reset by Outdoor Air Schedule**	
Max. Supply Temperature	**57.0**	°F
OAT for Min. Supply Temperature	**95.0**	°F
OAT for Max. Supply Temperature	**30.0**	°F

Supply Fan Data:

Fan Type	**BI/AF with Variable Frequency Drive**	
Configuration	**Draw-thru**	
Fan Performance	**4.00**	in wg
Overall Efficiency	**43**	%

% Airflow	100	90	80	70	60	50
% kW	100	77	57	42	30	21

% Airflow	40	30	20	10	0
% kW	15	13	10	7	5

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:
Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **2963.1** CFM
Ventilation Fan Airflow ..... **1000.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **0** %
Cooling Latent ..... **0** %
Heating ..... **0** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	2963.1	-	31.2	

5. Equipment Data
No Equipment Data required for this system.

AHU 3-4 Input Data

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

1. General Details:

Air System Name	**AHU 3-4**	
Equipment Class	**Chilled Water AHU**	
Air System Type	**VAV**	
Number of zones	**1**	

2. System Components:

Ventilation Air Data:

Airflow Control	**Demand Controlled Ventilation**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Minimum Airflow	**0**	%
Damper Leak Rate	**0**	%
Minimum CO2 Differential	**100**	ppm
Maximum CO2 Differential	**700**	ppm
Outdoor Air CO2 Level	**400**	ppm

Ventilation Reclaim Data:

Reclaim Type	**Sensible and Latent Heat**	
Thermal Efficiency	**60**	%
Input kW	**1.0**	kW
Schedule	**JFMAMJJASOND**	

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Temperature Reset by Outdoor Air Schedule**	
Max. Supply Temperature	**57.0**	°F
OAT for Min. Supply Temperature	**95.0**	°F
OAT for Max. Supply Temperature	**30.0**	°F

Supply Fan Data:

Fan Type	**BI/AF with Variable Frequency Drive**	
Configuration	**Draw-thru**	
Fan Performance	**4.00**	in wg
Overall Efficiency	**43**	%

% Airflow	100	90	80	70	60	50
% kW	100	77	57	42	30	21

% Airflow	40	30	20	10	0
% kW	15	13	10	7	5

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:
Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **2561.1** CFM
Ventilation Fan Airflow ..... **840.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **0** %
Cooling Latent ..... **0** %
Heating ..... **0** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	2561.1	-	28.5	

5. Equipment Data
No Equipment Data required for this system.

AHU 4-1 Input Data

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

1. General Details:

Air System Name	**AHU 4-1**
Equipment Class	**Chilled Water AHU**
Air System Type	**VAV**
Number of zones	**1**

2. System Components:

Ventilation Air Data:

Airflow Control	**Demand Controlled Ventilation**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Minimum Airflow	**0**	%
Damper Leak Rate	**0**	%
Minimum CO2 Differential	**100**	ppm
Maximum CO2 Differential	**700**	ppm
Outdoor Air CO2 Level	**400**	ppm

Ventilation Reclaim Data:

Reclaim Type	**Sensible and Latent Heat**	
Thermal Efficiency	**60**	%
Input kW	**1.0**	kW
Schedule	**JFMAMJJASOND**	

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Temperature Reset by Outdoor Air Schedule**	
Max. Supply Temperature	**57.0**	°F
OAT for Min. Supply Temperature	**95.0**	°F
OAT for Max. Supply Temperature	**30.0**	°F

Supply Fan Data:

Fan Type	**BI/AF with Variable Frequency Drive**	
Configuration	**Draw-thru**	
Fan Performance	**4.00**	in wg
Overall Efficiency	**43**	%

% Airflow	100	90	80	70	60	50
% kW	100	77	57	42	30	21

% Airflow	40	30	20	10	0
% kW	15	13	10	7	5

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:
Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **2083.4** CFM
Ventilation Fan Airflow ..... **520.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **0** %
Cooling Latent ..... **0** %
Heating ..... **0** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	2083.4	-	32.5	

5. Equipment Data
No Equipment Data required for this system.

AHU 4-2 Input Data

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

1. General Details:

Air System Name	**AHU 4-2**	
Equipment Class	**Chilled Water AHU**	
Air System Type	**VAV**	
Number of zones	**1**	

2. System Components:

Ventilation Air Data:

Airflow Control	**Demand Controlled Ventilation**	
Ventilation Sizing Method	**ASHRAE Std 62-2001**	
Minimum Airflow	**0**	%
Damper Leak Rate	**0**	%
Minimum CO2 Differential	**100**	ppm
Maximum CO2 Differential	**700**	ppm
Outdoor Air CO2 Level	**400**	ppm

Ventilation Reclaim Data:

Reclaim Type	**Sensible and Latent Heat**	
Thermal Efficiency	**60**	%
Input kW	**1.0**	kW
Schedule	**JFMAMJJASOND**	

Central Cooling Data:

Supply Air Temperature	**55.0**	°F
Coil Bypass Factor	**0.050**	
Cooling Source	**Chilled Water**	
Schedule	**JFMAMJJASOND**	
Capacity Control	**Temperature Reset by Outdoor Air Schedule**	
Max. Supply Temperature	**57.0**	°F
OAT for Min. Supply Temperature	**95.0**	°F
OAT for Max. Supply Temperature	**30.0**	°F

Supply Fan Data:

Fan Type	**BI/AF with Variable Frequency Drive**	
Configuration	**Draw-thru**	
Fan Performance	**4.00**	in wg
Overall Efficiency	**43**	%

% Airflow	100	90	80	70	60	50
% kW	100	77	57	42	30	21

% Airflow	40	30	20	10	0
% kW	15	13	10	7	5

Duct System Data:

Supply Duct Data:

Duct Heat Gain	**0**	%
Duct Leakage	**0**	%

Return Duct or Plenum Data:

Return Air Via	**Return Air Plenum**	
Wall Heat Gain to Plenum	**0**	%
Roof Heat Gain to Plenum	**70**	%
Lighting Heat Gain to Plenum	**30**	%

3. Zone Components:

Space Assignments:

Zone 1: Zone 1

Thermostats and Zone Data:

Zone	**All**	
Cooling T-stat: Occ.	**75.0**	°F
Cooling T-stat: Unocc.	**85.0**	°F
Heating T-stat: Occ.	**70.0**	°F
Heating T-stat: Unocc.	**60.0**	°F
T-stat Throttling Range	**3.00**	°F
Diversity Factor	**100**	%
Direct Exhaust Airflow	**0.0**	CFM
Direct Exhaust Fan kW	**0.0**	kW

Thermostat Schedule ..... **thermostat**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:
Zone ..... **All**
Terminal Type ..... **VAV box with RH**
Minimum Airflow ..... **30** % of supply air

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

Zone Heating Units:
Zone ..... **All**
Zone Heating Unit Type ..... **None**

Zone Unit Heat Source ..... **Hot Water**
Zone Heating Unit Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):
System Sizing Data:
Cooling Supply Temperature ..... **55.0** °F
Supply Fan Airflow ..... **2239.6** CFM
Ventilation Fan Airflow ..... **1000.0** CFM

Hydronic Sizing Specifications:
Chilled Water Delta-T ..... **10.0** °F
Hot Water Delta-T ..... **20.0** °F

Safety Factors:
Cooling Sensible ..... **0** %
Cooling Latent ..... **0** %
Heating ..... **0** %

Zone Sizing Data:
Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	- (CFM)
1	2239.6	-	33.2	

5. Equipment Data
No Equipment Data required for this system.

Air System Sizing Summary for AHU 1-1

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

Air System Information

Air System Name	**AHU 1-1**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**11255.0**	ft²
Air System Type	**SZCAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Sum of space airflow rates**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**7.2**	Tons	Load occurs at	**Jul 1500**	
Total coil load	**86.2**	MBH	OA DB / WB	**95.0 / 80.0**	°F
Sensible coil load	**74.3**	MBH	Entering DB / WB	**83.3 / 65.5**	°F
Coil CFM at Jul 1500	**2291**	CFM	Leaving DB / WB	**53.3 / 52.5**	°F
Max block CFM	**2291**	CFM	Coil ADP	**51.7**	°F
Sum of peak zone CFM	**2291**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.861**		Resulting RH	**41**	%
ft²/Ton	**1566.7**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**7.7**		Zone T-stat Check	0 of 1	OK
Water flow @ 10.0 °F rise	**17.25**	gpm	Max zone temperature deviation	**0.2**	°F

Central Heating Coil Sizing Data

Max coil load	**49.9**	MBH	Load occurs at	**Des Htg**	
Coil CFM at Des Htg	**2291**	CFM	BTU/(hr-ft²)	**4.4**	
Max coil CFM	**2291**	CFM	Ent. DB / Lvg DB	**57.4 / 77.6**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**2291**	CFM	Fan motor BHP	**1.67**	BHP
Standard CFM	**2289**	CFM	Fan motor kW	**1.24**	kW
Actual max CFM/ft²	**0.20**	CFM/ft²	Fan static	**2.50**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**1688**	CFM	CFM/person	**168.83**	CFM/person
CFM/ft²	**0.15**	CFM/ft²			

Air System Design Load Summary for AHU 1-1

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 95.0 °F / 80.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	560 ft²	3312	-	560 ft²	-	-
Wall Transmission	5548 ft²	9159	-	5548 ft²	14098	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	560 ft²	4823	-	560 ft²	11200	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	11255 ft²	0	-	11255 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	9724 W	18845	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	2000 W	6250	-	0	0	-
People	10	1873	2050	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	2213	103	5%	1265	0
>> Total Zone Loads	-	**46475**	**2153**	-	**26563**	**0**
Zone Conditioning	-	57306	2153	-	25800	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	0	-	0	0	-
Plenum Lighting Load	30%	9954	-	0	0	-
Return Fan Load	2291 CFM	0	-	2291 CFM	0	-
Ventilation Load	499 CFM	2755	9793	1688 CFM	28326	0
Supply Fan Load	2291 CFM	4246	-	2291 CFM	-4246	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**74260**	**11946**	-	**49881**	**0**
Central Cooling Coil	-	74260	11946	-	0	0
Central Heating Coil	-	0	-	-	49881	-
>> Total Conditioning	-	**74260**	**11946**	-	**49881**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 1-2

Project Name: Jackson Barracks Spirit — 04/12/2006
Prepared by: L. T. Vivien, Jr. & Associates, Inc. — 03:05PM

Air System Information

Air System Name	**AHU 1-2**	Number of zones	**1**	
Equipment Class	**CW AHU**	Floor Area	**5824.0**	ft²
Air System Type	**VAV**	Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**	Calculation Months	**Jan to Dec**
Space CFM	**Individual peak space loads**	Sizing Data	**Calculated**

Central Cooling Coil Sizing Data

Total coil load	**25.6**	Tons	Load occurs at	**Jul 1500**	
Total coil load	**307.1**	MBH	OA DB / WB	**95.0 / 80.0**	°F
Sensible coil load	**174.4**	MBH	Entering DB / WB	**85.7 / 72.1**	°F
Coil CFM at Jul 1500	**4739**	CFM	Leaving DB / WB	**51.5 / 51.1**	°F
Max block CFM at Jun 1700	**4739**	CFM	Coil ADP	**49.8**	°F
Sum of peak zone CFM	**4739**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.568**		Resulting RH	**52**	%
ft²/Ton	**227.5**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**52.7**		Zone T-stat Check	0 of 1	OK
Water flow @ 10.0 °F rise	**61.46**	gpm	Max zone temperature deviation	**0.4**	°F

Supply Fan Sizing Data

Actual max CFM at Jun 1700	**4739**	CFM	Fan motor BHP	**6.94**	BHP
Standard CFM	**4734**	CFM	Fan motor kW	**5.17**	kW
Actual max CFM/ft²	**0.81**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**4500**	CFM	CFM/person	**15.00**	CFM/person
CFM/ft²	**0.77**	CFM/ft²			

Air System Design Load Summary for AHU 1-2

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 95.0 °F / 80.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	800 ft²	6743	-	800 ft²	-	-
Wall Transmission	2562 ft²	4093	-	2562 ft²	6510	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	800 ft²	6889	-	800 ft²	16000	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	5824 ft²	0	-	5824 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	7548 W	14628	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	2000 W	6250	-	0	0	-
People	300	56186	61500	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	4739	3075	5%	1126	0
>> Total Zone Loads	-	**99528**	**64575**	-	**23636**	**0**
Zone Conditioning	-	119789	64575	-	22051	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	0	-	0	0	-
Plenum Lighting Load	30%	7726	-	0	0	-
Return Fan Load	4739 CFM	0	-	1422 CFM	0	-
Ventilation Load	4500 CFM	29243	68152	1422 CFM	22860	0
Supply Fan Load	4739 CFM	17648	-	1422 CFM	-2294	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**174406**	**132727**	-	**42617**	**0**
Central Cooling Coil	-	174406	132731	-	0	0
Terminal Reheat Coils	-	0	-	-	42612	-
>> Total Conditioning	-	**174406**	**132731**	-	**42612**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 1-3

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

Air System Information

Air System Name	**AHU 1-3**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**7851.0**	ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**12.9**	Tons	Load occurs at	**Aug 1500**	
Total coil load	**155.0**	MBH	OA DB / WB	**95.0 / 80.0**	°F
Sensible coil load	**107.7**	MBH	Entering DB / WB	**83.8 / 68.0**	°F
Coil CFM at Aug 1500	**3093**	CFM	Leaving DB / WB	**51.5 / 50.9**	°F
Max block CFM at Oct 1500	**3093**	CFM	Coil ADP	**49.8**	°F
Sum of peak zone CFM	**3093**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.695**		Resulting RH	**44**	%
ft²/Ton	**607.6**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**19.7**		Zone T-stat Check	0 of 1	OK
Water flow @ 10.0 °F rise	**31.03**	gpm	Max zone temperature deviation	**0.1**	°F

Supply Fan Sizing Data

Actual max CFM at Oct 1500	**3093**	CFM	Fan motor BHP	**4.53**	BHP
Standard CFM	**3090**	CFM	Fan motor kW	**3.38**	kW
Actual max CFM/ft²	**0.39**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**1700**	CFM	CFM/person	**20.00**	CFM/person
CFM/ft²	**0.22**	CFM/ft²			

Air System Design Load Summary for AHU 1-3

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1500 COOLING OA DB / WB 95.0 °F / 80.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	320 ft²	2877	-	320 ft²	-	-
Wall Transmission	2430 ft²	5188	-	2430 ft²	6175	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	320 ft²	2756	-	320 ft²	6400	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	7851 ft²	0	-	7851 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	9327 W	18075	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	5000 W	15625	-	0	0	-
People	85	15919	17425	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	3022	871	5%	629	0
>> Total Zone Loads	-	**63462**	**18296**	-	**13204**	**0**
Zone Conditioning	-	77096	18296	-	12077	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	0	-	0	0	-
Plenum Lighting Load	30%	9547	-	0	0	-
Return Fan Load	3093 CFM	0	-	928 CFM	0	-
Ventilation Load	1574 CFM	9536	29048	928 CFM	14932	0
Supply Fan Load	3093 CFM	11519	-	928 CFM	-1497	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**107698**	**47344**	-	**25512**	**0**
Central Cooling Coil	-	107698	47347	-	0	0
Terminal Reheat Coils	-	0	-	-	25510	-
>> Total Conditioning	-	**107698**	**47347**	-	**25510**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 1-4

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

Air System Information

Air System Name	**AHU 1-4**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**1733.0**	ft²
Air System Type	**SZCAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Sum of space airflow rates**	Calculation Months	**Jan to Dec**
Space CFM	**Individual peak space loads**	Sizing Data	**Calculated**

Central Cooling Coil Sizing Data

Total coil load	**2.3**	Tons	Load occurs at	**Jun 1400**	
Total coil load	**27.8**	MBH	OA DB / WB	**93.5 / 79.9**	°F
Sensible coil load	**22.8**	MBH	Entering DB / WB	**82.0 / 65.6**	°F
Coil CFM at Jun 1400	**734**	CFM	Leaving DB / WB	**53.3 / 52.6**	°F
Max block CFM	**734**	CFM	Coil ADP	**51.8**	°F
Sum of peak zone CFM	**734**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.819**		Resulting RH	**43**	%
ft²/Ton	**748.2**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**16.0**		Zone T-stat Check	0 of 1	OK
Water flow @ 10.0 °F rise	**5.56**	gpm	Max zone temperature deviation	**0.1**	°F

Central Heating Coil Sizing Data

Max coil load	**4.5**	MBH	Load occurs at	**Des Htg**	
Coil CFM at Des Htg	**734**	CFM	BTU/(hr-ft²)	**2.6**	
Max coil CFM	**734**	CFM	Ent. DB / Lvg DB	**66.2 / 71.9**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**734**	CFM	Fan motor BHP	**0.53**	BHP
Standard CFM	**733**	CFM	Fan motor kW	**0.40**	kW
Actual max CFM/ft²	**0.42**	CFM/ft²	Fan static	**2.50**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**150**	CFM	CFM/person	**15.00**	CFM/person
CFM/ft²	**0.09**	CFM/ft²			

Air System Design Load Summary for AHU 1-4

Project Name: Jackson Barracks Spirit — 04/12/2006
Prepared by: L. T. Vivien, Jr. & Associates, Inc. — 03:05PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1400 COOLING OA DB / WB 93.5 °F / 79.9 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	80 ft²	503	-	80 ft²	-	-
Wall Transmission	713 ft²	925	-	713 ft²	1812	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	80 ft²	629	-	80 ft²	1600	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	1733 ft²	0	-	1733 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	2246 W	4281	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	2000 W	6210	-	0	0	-
People	10	1832	2050	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	719	103	5%	171	0
>> Total Zone Loads	-	**15100**	**2153**	-	**3582**	**0**
Zone Conditioning	-	18295	2153	-	3258	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	0	-	0	0	-
Plenum Lighting Load	30%	2299	-	0	0	-
Return Fan Load	734 CFM	0	-	734 CFM	0	-
Ventilation Load	150 CFM	810	2877	150 CFM	2554	0
Supply Fan Load	734 CFM	1360	-	734 CFM	-1360	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**22763**	**5030**	-	**4453**	**0**
Central Cooling Coil	-	22763	5030	-	0	0
Central Heating Coil	-	0	-	-	4453	-
>> Total Conditioning	-	**22763**	**5030**	-	**4453**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 1-5

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

Air System Information

Air System Name	**AHU 1-5**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**7514.0**	ft²
Air System Type	**SZCAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Sum of space airflow rates**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**45.0**	Tons	Load occurs at	**Jun 1400**	
Total coil load	**540.3**	MBH	OA DB / WB	**93.5 / 79.9**	°F
Sensible coil load	**292.4**	MBH	Entering DB / WB	**85.1 / 73.1**	°F
Coil CFM at Jun 1400	**9000**	CFM	Leaving DB / WB	**55.0 / 54.6**	°F
Max block CFM	**9000**	CFM	Coil ADP	**53.4**	°F
Sum of peak zone CFM	**9000**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.541**		Resulting RH	**60**	%
ft²/Ton	**166.9**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**71.9**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**108.11**	gpm	Max zone temperature deviation	**0.0**	°F

Central Heating Coil Sizing Data

Max coil load	**177.5**	MBH	Load occurs at	**Des Htg**	
Coil CFM at Des Htg	**9000**	CFM	BTU/(hr-ft²)	**23.6**	
Max coil CFM	**9000**	CFM	Ent. DB / Lvg DB	**53.8 / 72.1**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**9000**	CFM	Fan motor BHP	**6.56**	BHP
Standard CFM	**8990**	CFM	Fan motor kW	**4.89**	kW
Actual max CFM/ft²	**1.20**	CFM/ft²	Fan static	**2.50**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**9000**	CFM	CFM/person	**15.00**	CFM/person
CFM/ft²	**1.20**	CFM/ft²			

Air System Design Load Summary for AHU 1-5

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1400 COOLING OA DB / WB 93.5 °F / 79.9 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	200 ft²	2817	-	200 ft²	-	-
Wall Transmission	6236 ft²	10341	-	6236 ft²	15846	-
Roof Transmission	7514 ft²	4396	-	7514 ft²	15080	-
Window Transmission	200 ft²	1572	-	200 ft²	4000	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	7514 ft²	0	-	7514 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	9738 W	18564	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	2000 W	6210	-	0	0	-
People	600	112571	123000	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	7824	6150	5%	1746	0
>> Total Zone Loads	-	**164295**	**129150**	-	**36673**	**0**
Zone Conditioning	-	197974	129150	-	36567	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	10257	-	0	0	-
Plenum Lighting Load	30%	9968	-	0	0	-
Return Fan Load	9000 CFM	0	-	9000 CFM	0	-
Ventilation Load	9000 CFM	54509	118698	9000 CFM	154106	0
Supply Fan Load	9000 CFM	16680	-	9000 CFM	-16680	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**289388**	**247848**	-	**173994**	**0**
Central Cooling Coil	-	292402	247854	-	0	0
Central Heating Coil	-	0	-	-	177492	-
>> Total Conditioning	-	**292402**	**247854**	-	**177492**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 2-1

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

Air System Information

Air System Name	**AHU 2-1**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**1200.0**	ft²
Air System Type	**SZCAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Sum of space airflow rates**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**0.7**	Tons	Load occurs at	**Jul 1500**	
Total coil load	**8.9**	MBH	OA DB / WB	**95.0 / 80.0**	°F
Sensible coil load	**6.9**	MBH	Entering DB / WB	**87.2 / 67.6**	°F
Coil CFM at Jul 1500	**189**	CFM	Leaving DB / WB	**53.3 / 51.6**	°F
Max block CFM	**189**	CFM	Coil ADP	**49.5**	°F
Sum of peak zone CFM	**189**	CFM	Bypass Factor	**0.100**	
Sensible heat ratio	**0.776**		Resulting RH	**42**	%
ft²/Ton	**1615.2**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**7.4**		Zone T-stat Check	0 of 1	OK
Water flow @ 10.0 °F rise	**1.78**	gpm	Max zone temperature deviation	**0.3**	°F

Central Heating Coil Sizing Data

Max coil load	**0.7**	MBH	Load occurs at	**Des Htg**	
Coil CFM at Des Htg	**189**	CFM	BTU/(hr-ft²)	**0.6**	
Max coil CFM	**189**	CFM	Ent. DB / Lvg DB	**64.9 / 68.3**	°F
Water flow @ 20.0 °F drop	**N/A**				

Supply Fan Sizing Data

Actual max CFM	**189**	CFM	Fan motor BHP	**0.14**	BHP
Standard CFM	**189**	CFM	Fan motor kW	**0.10**	kW
Actual max CFM/ft²	**0.16**	CFM/ft²	Fan static	**2.50**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**60**	CFM	CFM/person	**15.00**	CFM/person
CFM/ft²	**0.05**	CFM/ft²			

Air System Design Load Summary for AHU 2-1

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 95.0 °F / 80.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	0 ft²	0	-	0 ft²	0	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	1555 W	3014	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	4	749	820	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	5% / 5%	188	41	5%	0	0
>> Total Zone Loads	-	**3951**	**861**	-	**0**	**0**
Zone Conditioning	-	4741	861	-	0	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	0	-	0	0	-
Plenum Lighting Load	30%	1592	-	0	0	-
Return Fan Load	189 CFM	0	-	189 CFM	0	-
Ventilation Load	60 CFM	231	1140	60 CFM	1036	0
Supply Fan Load	189 CFM	350	-	189 CFM	-350	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**6914**	**2001**	-	**686**	**0**
Central Cooling Coil	-	6914	2001	-	0	0
Central Heating Coil	-	0	-	-	686	-
>> Total Conditioning	-	**6914**	**2001**	-	**686**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 2-2

Project Name: Jackson Barracks Spirit — 04/12/2006
Prepared by: L. T. Vivien, Jr. & Associates, Inc. — 03:05PM

Air System Information

Air System Name	**AHU 2-2**		Number of zones	**1**
Equipment Class	**CW AHU**		Floor Area	**6228.0** ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**

Central Cooling Coil Sizing Data

Total coil load	**17.0**	Tons	Load occurs at	**Aug 1500**	
Total coil load	**203.9**	MBH	OA DB / WB	**95.0 / 80.0**	°F
Sensible coil load	**116.2**	MBH	Entering DB / WB	**86.1 / 72.3**	°F
Coil CFM at Aug 1500	**3114**	CFM	Leaving DB / WB	**51.5 / 51.1**	°F
Max block CFM at Oct 1700	**3114**	CFM	Coil ADP	**49.7**	°F
Sum of peak zone CFM	**3114**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.570**		Resulting RH	**51**	%
ft²/Ton	**366.5**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**32.7**		Zone T-stat Check	0 of 1	OK
Water flow @ 10.0 °F rise	**40.81**	gpm	Max zone temperature deviation	**0.4**	°F

Supply Fan Sizing Data

Actual max CFM at Oct 1700	**3114**	CFM	Fan motor BHP	**4.56**	BHP
Standard CFM	**3111**	CFM	Fan motor kW	**3.40**	kW
Actual max CFM/ft²	**0.50**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**3114**	CFM	CFM/person	**16.22**	CFM/person
CFM/ft²	**0.50**	CFM/ft²			

Air System Design Load Summary for AHU 2-2

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1500 COOLING OA DB / WB 95.0 °F / 80.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	307 ft²	2760	-	307 ft²	-	-
Wall Transmission	2003 ft²	3939	-	2003 ft²	5090	-
Roof Transmission	0 ft²	0	-	0 ft²	0	-
Window Transmission	307 ft²	2644	-	307 ft²	6140	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	6054 W	11732	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	1000 W	3125	-	0	0	-
People	192	36747	39360	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**60946**	**39360**	-	**11230**	**0**
Zone Conditioning	-	78478	39360	-	10303	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	0	-	0	0	-
Plenum Lighting Load	30%	6196	-	0	0	-
Return Fan Load	3114 CFM	0	-	902 CFM	0	-
Ventilation Load	3114 CFM	19882	48420	902 CFM	14512	0
Supply Fan Load	3114 CFM	11596	-	902 CFM	-1471	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**116152**	**87780**	-	**23344**	**0**
Central Cooling Coil	-	116152	87783	-	0	0
Terminal Reheat Coils	-	0	-	-	23342	-
>> Total Conditioning	-	**116152**	**87783**	-	**23342**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 2-3

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

Air System Information

Air System Name	**AHU 2-3**		Number of zones	**1**
Equipment Class	**CW AHU**		Floor Area	**6000.0** ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**	Calculation Months	**Jan to Dec**
Space CFM	**Individual peak space loads**	Sizing Data	**Calculated**

Central Cooling Coil Sizing Data

Total coil load	**11.9**	Tons	Load occurs at	**Jul 1300**	
Total coil load	**142.4**	MBH	OA DB / WB	**93.3 / 79.6**	°F
Sensible coil load	**120.3**	MBH	Entering DB / WB	**81.1 / 64.2**	°F
Coil CFM at Jul 1300	**3783**	CFM	Leaving DB / WB	**51.6 / 50.9**	°F
Max block CFM at Jun 1700	**3784**	CFM	Coil ADP	**50.1**	°F
Sum of peak zone CFM	**3784**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.844**		Resulting RH	**40**	%
ft²/Ton	**505.4**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**23.7**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**28.51**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Jun 1700	**3784**	CFM	Fan motor BHP	**5.54**	BHP
Standard CFM	**3780**	CFM	Fan motor kW	**4.13**	kW
Actual max CFM/ft²	**0.63**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**660**	CFM	CFM/person	**15.00**	CFM/person
CFM/ft²	**0.11**	CFM/ft²			

Air System Design Load Summary for AHU 2-3

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1300 COOLING OA DB / WB 93.3 °F / 79.6 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	360 ft²	2055	-	360 ft²	-	-
Wall Transmission	2412 ft²	3845	-	2412 ft²	6129	-
Roof Transmission	700 ft²	354	-	700 ft²	1405	-
Window Transmission	360 ft²	2827	-	360 ft²	7200	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	7776 W	14560	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	15000 W	46247	-	0	0	-
People	44	7871	9020	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**77759**	**9020**	-	**14734**	**0**
Zone Conditioning	-	93650	9020	-	13770	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	826	-	0	0	-
Plenum Lighting Load	30%	7960	-	0	0	-
Return Fan Load	3783 CFM	0	-	1135 CFM	0	-
Ventilation Load	660 CFM	3743	13166	660 CFM	14787	0
Supply Fan Load	3783 CFM	14083	-	1135 CFM	-1832	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**120262**	**22186**	-	**26725**	**0**
Central Cooling Coil	-	120262	22187	-	0	0
Terminal Reheat Coils	-	0	-	-	26725	-
>> Total Conditioning	-	**120262**	**22187**	-	**26725**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 2-4

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

Air System Information

Air System Name	**AHU 2-4**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**7984.0**	ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**24.6**	Tons	Load occurs at	**Jul 1500**	
Total coil load	**295.0**	MBH	OA DB / WB	**95.0 / 80.0**	°F
Sensible coil load	**165.5**	MBH	Entering DB / WB	**86.0 / 72.5**	°F
Coil CFM at Jul 1500	**4454**	CFM	Leaving DB / WB	**51.5 / 51.2**	°F
Max block CFM at Jun 1700	**4454**	CFM	Coil ADP	**49.7**	°F
Sum of peak zone CFM	**4454**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.561**		Resulting RH	**54**	%
ft²/Ton	**324.8**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**36.9**		Zone T-stat Check	0 of 1	OK
Water flow @ 10.0 °F rise	**59.03**	gpm	Max zone temperature deviation	**1.1**	°F

Supply Fan Sizing Data

Actual max CFM at Jun 1700	**4454**	CFM	Fan motor BHP	**6.52**	BHP
Standard CFM	**4449**	CFM	Fan motor kW	**4.86**	kW
Actual max CFM/ft²	**0.56**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**3992**	CFM	CFM/person	**11.09**	CFM/person
CFM/ft²	**0.50**	CFM/ft²			

Air System Design Load Summary for AHU 2-4

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 95.0 °F / 80.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	360 ft²	2080	-	360 ft²	-	-
Wall Transmission	2416 ft²	3698	-	2416 ft²	6139	-
Roof Transmission	700 ft²	456	-	700 ft²	1405	-
Window Transmission	360 ft²	3100	-	360 ft²	7200	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	7760 W	15040	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	360	67423	73800	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**91796**	**73800**	-	**14744**	**0**
Zone Conditioning	-	115731	73800	-	13567	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	1065	-	0	0	-
Plenum Lighting Load	30%	7944	-	0	0	-
Return Fan Load	4454 CFM	0	-	1336 CFM	0	-
Ventilation Load	3992 CFM	24188	55676	1336 CFM	21500	0
Supply Fan Load	4454 CFM	16586	-	1336 CFM	-2156	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**165514**	**129476**	-	**32911**	**0**
Central Cooling Coil	-	165514	129480	-	0	0
Terminal Reheat Coils	-	0	-	-	32907	-
>> Total Conditioning	-	**165514**	**129480**	-	**32907**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 3-1

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

Air System Information

Air System Name	**AHU 3-1**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**4534.0**	ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**9.0**	Tons	Load occurs at	**Aug 1500**	
Total coil load	**108.5**	MBH	OA DB / WB	**95.0 / 80.0**	°F
Sensible coil load	**85.2**	MBH	Entering DB / WB	**83.5 / 66.1**	°F
Coil CFM at Aug 1500	**2481**	CFM	Leaving DB / WB	**51.7 / 50.9**	°F
Max block CFM at Sep 1700	**2542**	CFM	Coil ADP	**50.0**	°F
Sum of peak zone CFM	**2542**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.785**		Resulting RH	**42**	%
ft²/Ton	**501.4**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**23.9**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**21.72**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Sep 1700	**2542**	CFM	Fan motor BHP	**3.72**	BHP
Standard CFM	**2539**	CFM	Fan motor kW	**2.77**	kW
Actual max CFM/ft²	**0.56**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**840**	CFM	CFM/person	**20.00**	CFM/person
CFM/ft²	**0.19**	CFM/ft²			

Air System Design Load Summary for AHU 3-1

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1500 COOLING OA DB / WB 95.0 °F / 80.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	180 ft²	1618	-	180 ft²	-	-
Wall Transmission	2077 ft²	4378	-	2077 ft²	5278	-
Roof Transmission	3600 ft²	2241	-	3600 ft²	7225	-
Window Transmission	180 ft²	1550	-	180 ft²	3600	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	5386 W	10439	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	8000 W	25000	-	0	0	-
People	42	7866	8610	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**53091**	**8610**	-	**16103**	**0**
Zone Conditioning	-	61239	8610	-	14947	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	5229	-	0	0	-
Plenum Lighting Load	30%	5514	-	0	0	-
Return Fan Load	2481 CFM	0	-	762 CFM	0	-
Ventilation Load	755 CFM	4272	14717	762 CFM	12260	0
Supply Fan Load	2481 CFM	8943	-	762 CFM	-1230	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**85196**	**23327**	-	**25976**	**0**
Central Cooling Coil	-	85196	23325	-	0	0
Terminal Reheat Coils	-	0	-	-	25975	-
>> Total Conditioning	-	**85196**	**23325**	-	**25975**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 3-2

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

Air System Information

Air System Name	**AHU 3-2**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**5529.0**	ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**10.1**	Tons	Load occurs at	**Aug 1500**	
Total coil load	**121.4**	MBH	OA DB / WB	**95.0 / 80.0**	°F
Sensible coil load	**93.7**	MBH	Entering DB / WB	**83.7 / 66.4**	°F
Coil CFM at Aug 1500	**2703**	CFM	Leaving DB / WB	**51.6 / 50.9**	°F
Max block CFM at Sep 1700	**2755**	CFM	Coil ADP	**49.9**	°F
Sum of peak zone CFM	**2755**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.771**		Resulting RH	**42**	%
ft²/Ton	**546.5**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**22.0**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**24.29**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Sep 1700	**2755**	CFM	Fan motor BHP	**4.03**	BHP
Standard CFM	**2752**	CFM	Fan motor kW	**3.01**	kW
Actual max CFM/ft²	**0.50**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**1000**	CFM	CFM/person	**20.00**	CFM/person
CFM/ft²	**0.18**	CFM/ft²			

Air System Design Load Summary for AHU 3-2

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1500 COOLING OA DB / WB 95.0 °F / 80.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	180 ft²	1618	-	180 ft²	-	-
Wall Transmission	2338 ft²	4914	-	2338 ft²	5941	-
Roof Transmission	3600 ft²	2241	-	3600 ft²	7225	-
Window Transmission	180 ft²	1550	-	180 ft²	3600	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	6568 W	12729	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	8000 W	25000	-	0	0	-
People	50	9364	10250	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**57417**	**10250**	-	**16766**	**0**
Zone Conditioning	-	66813	10250	-	15533	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	5229	-	0	0	-
Plenum Lighting Load	30%	6723	-	0	0	-
Return Fan Load	2703 CFM	0	-	826 CFM	0	-
Ventilation Load	904 CFM	5068	17495	826 CFM	13290	0
Supply Fan Load	2703 CFM	9818	-	826 CFM	-1334	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**93651**	**27745**	-	**27489**	**0**
Central Cooling Coil	-	93651	27743	-	0	0
Terminal Reheat Coils	-	0	-	-	27488	-
>> Total Conditioning	-	**93651**	**27743**	-	**27488**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 3-3

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

Air System Information

Air System Name	**AHU 3-3**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**8100.0**	ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**11.0**	Tons	Load occurs at	**Jun 1500**	
Total coil load	**132.2**	MBH	OA DB / WB	**94.0 / 80.0**	°F
Sensible coil load	**104.0**	MBH	Entering DB / WB	**84.2 / 66.3**	°F
Coil CFM at Jun 1500	**2959**	CFM	Leaving DB / WB	**51.6 / 50.8**	°F
Max block CFM at Jun 1700	**2963**	CFM	Coil ADP	**49.9**	°F
Sum of peak zone CFM	**2963**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.787**		Resulting RH	**41**	%
ft²/Ton	**735.3**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**16.3**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**26.45**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Jun 1700	**2963**	CFM	Fan motor BHP	**4.34**	BHP
Standard CFM	**2960**	CFM	Fan motor kW	**3.23**	kW
Actual max CFM/ft²	**0.37**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**1000**	CFM	CFM/person	**20.00**	CFM/person
CFM/ft²	**0.12**	CFM/ft²			

Air System Design Load Summary for AHU 3-3

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jun 1500 COOLING OA DB / WB 94.0 °F / 80.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	180 ft²	1149	-	180 ft²	-	-
Wall Transmission	2338 ft²	3490	-	2338 ft²	5941	-
Roof Transmission	3600 ft²	2355	-	3600 ft²	7225	-
Window Transmission	180 ft²	1460	-	180 ft²	3600	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	9623 W	18649	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	8000 W	25000	-	0	0	-
People	50	9364	10250	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**61467**	**10250**	-	**16766**	**0**
Zone Conditioning	-	73299	10250	-	15377	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	5494	-	0	0	-
Plenum Lighting Load	30%	9850	-	0	0	-
Return Fan Load	2959 CFM	0	-	889 CFM	0	-
Ventilation Load	899 CFM	4346	17960	889 CFM	14301	0
Supply Fan Load	2959 CFM	10998	-	889 CFM	-1434	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**103986**	**28210**	-	**28243**	**0**
Central Cooling Coil	-	103986	28213	-	0	0
Terminal Reheat Coils	-	0	-	-	28242	-
>> Total Conditioning	-	**103986**	**28213**	-	**28242**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 3-4

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

Air System Information

Air System Name	**AHU 3-4**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**4534.0**	ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**9.0**	Tons	Load occurs at	**Aug 1500**	
Total coil load	**108.3**	MBH	OA DB / WB	**95.0 / 80.0**	°F
Sensible coil load	**85.0**	MBH	Entering DB / WB	**83.5 / 66.1**	°F
Coil CFM at Aug 1500	**2481**	CFM	Leaving DB / WB	**51.7 / 51.0**	°F
Max block CFM at Sep 1700	**2561**	CFM	Coil ADP	**50.0**	°F
Sum of peak zone CFM	**2561**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.785**		Resulting RH	**42**	%
ft²/Ton	**502.3**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**23.9**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**21.68**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Sep 1700	**2561**	CFM	Fan motor BHP	**3.75**	BHP
Standard CFM	**2558**	CFM	Fan motor kW	**2.79**	kW
Actual max CFM/ft²	**0.56**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**840**	CFM	CFM/person	**20.00**	CFM/person
CFM/ft²	**0.19**	CFM/ft²			

Air System Design Load Summary for AHU 3-4

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1500 COOLING OA DB / WB 95.0 °F / 80.0 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	180 ft²	1618	-	180 ft²	-	-
Wall Transmission	2077 ft²	4133	-	2077 ft²	5278	-
Roof Transmission	3600 ft²	2241	-	3600 ft²	7225	-
Window Transmission	180 ft²	1550	-	180 ft²	3600	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	5386 W	10439	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	8000 W	25000	-	0	0	-
People	42	7866	8610	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**52846**	**8610**	-	**16103**	**0**
Zone Conditioning	-	61139	8610	-	14947	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	5229	-	0	0	-
Plenum Lighting Load	30%	5514	-	0	0	-
Return Fan Load	2481 CFM	0	-	768 CFM	0	-
Ventilation Load	755 CFM	4284	14701	768 CFM	12354	0
Supply Fan Load	2481 CFM	8848	-	768 CFM	-1240	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**85013**	**23311**	-	**26061**	**0**
Central Cooling Coil	-	85013	23311	-	0	0
Terminal Reheat Coils	-	0	-	-	26059	-
>> Total Conditioning	-	**85013**	**23311**	-	**26059**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 4-1

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

Air System Information

Air System Name	**AHU 4-1**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**5600.0**	ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**7.5**	Tons	Load occurs at	**Aug 1600**	
Total coil load	**90.0**	MBH	OA DB / WB	**94.5 / 79.9**	°F
Sensible coil load	**75.4**	MBH	Entering DB / WB	**85.9 / 66.1**	°F
Coil CFM at Aug 1600	**2043**	CFM	Leaving DB / WB	**51.7 / 50.8**	°F
Max block CFM at Sep 1700	**2083**	CFM	Coil ADP	**49.9**	°F
Sum of peak zone CFM	**2083**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.838**		Resulting RH	**40**	%
ft²/Ton	**746.7**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**16.1**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**18.01**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Sep 1700	**2083**	CFM	Fan motor BHP	**3.05**	BHP
Standard CFM	**2081**	CFM	Fan motor kW	**2.27**	kW
Actual max CFM/ft²	**0.37**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**520**	CFM	CFM/person	**20.00**	CFM/person
CFM/ft²	**0.09**	CFM/ft²			

Air System Design Load Summary for AHU 4-1

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1600 COOLING OA DB / WB 94.5 °F / 79.9 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	130 ft²	1057	-	130 ft²	-	-
Wall Transmission	3344 ft²	7270	-	3344 ft²	8497	-
Roof Transmission	5600 ft²	3793	-	5600 ft²	11239	-
Window Transmission	130 ft²	1111	-	130 ft²	2600	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	6653 W	13090	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	4000 W	12575	-	0	0	-
People	26	4968	5330	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**43863**	**5330**	-	**22336**	**0**
Zone Conditioning	-	50453	5330	-	20807	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	8849	-	0	0	-
Plenum Lighting Load	30%	6810	-	0	0	-
Return Fan Load	2043 CFM	0	-	625 CFM	0	-
Ventilation Load	464 CFM	1906	9243	520 CFM	8391	0
Supply Fan Load	2043 CFM	7412	-	625 CFM	-1009	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**75431**	**14573**	-	**28190**	**0**
Central Cooling Coil	-	75431	14571	-	0	0
Terminal Reheat Coils	-	0	-	-	28183	-
>> Total Conditioning	-	**75431**	**14571**	-	**28183**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Air System Sizing Summary for AHU 4-2

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

Air System Information

Air System Name	**AHU 4-2**		Number of zones	**1**	
Equipment Class	**CW AHU**		Floor Area	**5600.0**	ft²
Air System Type	**VAV**		Location	**New Orleans IAP, Louisiana**	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	**Peak zone sensible load**		Calculation Months	**Jan to Dec**	
Space CFM	**Individual peak space loads**		Sizing Data	**Calculated**	

Central Cooling Coil Sizing Data

Total coil load	**9.3**	Tons	Load occurs at	**Jul 1600**	
Total coil load	**111.7**	MBH	OA DB / WB	**94.5 / 79.9**	°F
Sensible coil load	**83.6**	MBH	Entering DB / WB	**86.3 / 67.9**	°F
Coil CFM at Jul 1600	**2231**	CFM	Leaving DB / WB	**51.6 / 50.8**	°F
Max block CFM at Jun 1700	**2240**	CFM	Coil ADP	**49.8**	°F
Sum of peak zone CFM	**2240**	CFM	Bypass Factor	**0.050**	
Sensible heat ratio	**0.748**		Resulting RH	**43**	%
ft²/Ton	**601.6**		Design supply temp.	**55.0**	°F
BTU/(hr-ft²)	**19.9**		Zone T-stat Check	**1 of 1**	OK
Water flow @ 10.0 °F rise	**22.35**	gpm	Max zone temperature deviation	**0.0**	°F

Supply Fan Sizing Data

Actual max CFM at Jun 1700	**2240**	CFM	Fan motor BHP	**3.28**	BHP
Standard CFM	**2237**	CFM	Fan motor kW	**2.44**	kW
Actual max CFM/ft²	**0.40**	CFM/ft²	Fan static	**4.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**1000**	CFM	CFM/person	**20.00**	CFM/person
CFM/ft²	**0.18**	CFM/ft²			

Air System Design Load Summary for AHU 4-2

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
03:05PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1600 COOLING OA DB / WB 94.5 °F / 79.9 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 30.0 °F / 25.3 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	130 ft²	781	-	130 ft²	-	-
Wall Transmission	3344 ft²	6159	-	3344 ft²	8497	-
Roof Transmission	5600 ft²	3966	-	5600 ft²	11239	-
Window Transmission	130 ft²	1111	-	130 ft²	2600	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	0 ft²	0	-	0 ft²	0	-
Floor Transmission	0 ft²	0	-	0 ft²	0	-
Partitions	0 ft²	0	-	0 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	6653 W	13090	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	4000 W	12575	-	0	0	-
People	50	9554	10250	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	**47237**	**10250**	-	**22336**	**0**
Zone Conditioning	-	55287	10250	-	20726	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	70%	9255	-	0	0	-
Plenum Lighting Load	30%	6810	-	0	0	-
Return Fan Load	2231 CFM	0	-	672 CFM	0	-
Ventilation Load	936 CFM	3989	17847	672 CFM	10800	0
Supply Fan Load	2231 CFM	8269	-	672 CFM	-1084	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	**83610**	**28097**	-	**30442**	**0**
Central Cooling Coil	-	83610	28095	-	0	0
Terminal Reheat Coils	-	0	-	-	30442	-
>> Total Conditioning	-	**83610**	**28095**	-	**30442**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

Monthly Simulation Results for AHU 1-1

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Vent. Reclaim Device (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	3500	5	2	424	26	2507	516
February	3026	0	0	383	20	2180	448
March	6427	0	0	424	7	2289	471
April	11723	0	0	411	134	2398	493
May	16066	0	0	424	273	2398	493
June	17366	0	0	411	297	2289	471
July	20569	0	0	424	341	2507	516
August	19667	0	0	424	341	2289	471
September	15696	0	0	411	237	2398	493
October	14618	0	0	424	209	2507	516
November	5986	0	0	411	55	2180	448
December	3362	0	0	424	63	2507	516
Total	**138007**	**5**	**2**	**4996**	**2002**	**28452**	**5852**

Monthly Simulation Results for AHU 1-2

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Vent. Reclaim Device (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	15225	386	113	553	45	1946	516
February	7250	59	17	460	57	1692	448
March	17186	13	4	605	34	1777	471
April	34087	0	0	798	153	1861	493
May	51162	0	0	979	280	1861	493
June	53282	0	0	954	294	1777	471
July	68013	0	0	1119	341	1946	516
August	60970	0	0	1040	340	1777	471
September	49190	0	0	874	249	1861	493
October	44742	0	0	856	218	1946	516
November	16200	50	15	544	79	1692	448
December	13885	51	15	487	115	1946	516
Total	**431193**	**559**	**164**	**9269**	**2205**	**22084**	**5852**

Monthly Simulation Results for AHU 1-3

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Vent. Reclaim Device (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	11701	0	0	392	52	2405	1289
February	7293	0	0	332	44	2091	1121
March	13563	0	0	397	54	2196	1177
April	21160	0	0	480	162	2300	1233
May	27635	0	0	551	296	2300	1233
June	28081	0	0	528	300	2196	1177
July	34405	0	0	620	341	2405	1289
August	31928	0	0	604	341	2196	1177
September	27943	0	0	548	251	2300	1233
October	27577	0	0	598	235	2405	1289
November	13685	0	0	406	83	2091	1121
December	10506	0	0	361	108	2405	1289
Total	**255477**	**0**	**0**	**5817**	**2268**	**27289**	**14629**

Monthly Simulation Results for AHU 1-4

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Vent. Reclaim Device (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	2980	0	0	136	33	579	516
February	2424	0	0	123	17	504	448
March	3431	0	0	136	25	529	471
April	4653	0	0	131	145	554	493
May	5664	0	0	136	285	554	493
June	5736	0	0	131	294	529	471
July	6662	0	0	136	341	579	516
August	6189	0	0	136	341	529	471
September	5419	0	0	131	240	554	493
October	5259	0	0	136	225	579	516
November	3165	0	0	131	59	504	448
December	2864	0	0	136	62	579	516
Total	**54445**	**0**	**0**	**1600**	**2067**	**6571**	**5852**

Monthly Simulation Results for AHU 1-5

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Vent. Reclaim Device (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	10219	648	190	1667	91	2511	516
February	12215	8	2	1506	43	2183	448
March	19336	102	30	1667	43	2292	471
April	34716	0	0	1613	134	2402	493
May	43055	0	0	1667	267	2402	493
June	56634	0	0	1614	310	2292	471
July	59871	0	0	1667	341	2511	516
August	63013	0	0	1668	334	2292	471
September	44103	0	0	1613	235	2402	493
October	35958	0	0	1667	196	2511	516
November	19421	49	14	1613	97	2183	448
December	14892	71	21	1667	68	2511	516
Total	**413432**	**879**	**258**	**19629**	**2160**	**28492**	**5852**

Monthly Simulation Results for AHU 2-1

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Vent. Reclaim Device (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	1448	0	0	35	33	401	0
February	1142	0	0	32	22	349	0
March	1438	0	0	35	22	366	0
April	1687	0	0	34	149	384	0
May	1943	0	0	35	279	384	0
June	1878	0	0	34	297	366	0
July	2158	0	0	35	341	401	0
August	2020	0	0	35	341	366	0
September	1884	0	0	34	240	384	0
October	1915	0	0	35	226	401	0
November	1392	0	0	34	56	349	0
December	1365	0	0	35	66	401	0
Total	**20269**	**0**	**0**	**412**	**2072**	**4550**	**0**

Monthly Simulation Results for AHU 2-2

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Vent. Reclaim Device (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	7031	0	0	165	100	1561	258
February	7721	0	0	167	16	1357	224
March	9676	0	0	208	68	1425	235
April	14217	0	0	217	188	1493	247
May	16286	0	0	239	289	1493	247
June	19875	0	0	265	312	1425	235
July	20924	0	0	270	341	1561	258
August	22273	0	0	293	340	1425	235
September	17222	0	0	257	258	1493	247
October	16007	0	0	263	236	1561	258
November	10373	0	0	208	102	1357	224
December	9250	0	0	178	74	1561	258
Total	**170855**	**0**	**0**	**2731**	**2324**	**17712**	**2926**

Monthly Simulation Results for AHU 2-3

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Vent. Reclaim Device (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	18127	117	34	514	62	2005	3867
February	14462	10	3	432	36	1743	3363
March	19824	2	1	535	85	1831	3531
April	25576	0	0	666	206	1918	3699
May	29946	0	0	779	305	1918	3699
June	29869	0	0	759	310	1831	3531
July	34478	0	0	876	341	2005	3867
August	31973	0	0	812	341	1831	3531
September	28821	0	0	714	269	1918	3699
October	28293	0	0	715	255	2005	3867
November	18583	8	2	498	100	1743	3363
December	16699	7	2	466	93	2005	3867
Total	**296651**	**144**	**42**	**7766**	**2403**	**22751**	**43887**

Monthly Simulation Results for AHU 2-4

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Vent. Reclaim Device (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	18162	0	0	789	32	2001	0
February	8906	0	0	666	54	1740	0
March	19803	0	0	792	28	1827	0
April	36714	0	0	940	148	1914	0
May	53109	0	0	1063	264	1914	0
June	54132	0	0	1002	284	1827	0
July	67963	0	0	1136	341	2001	0
August	61370	0	0	1072	334	1827	0
September	51054	0	0	969	246	1914	0
October	48086	0	0	1014	215	2001	0
November	19150	0	0	748	72	1740	0
December	16456	0	0	718	101	2001	0
Total	**454905**	**0**	**0**	**10910**	**2118**	**22706**	**0**

Monthly Simulation Results for AHU 3-1

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Vent. Reclaim Device (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	10085	20	6	318	67	1389	2063
February	7478	0	0	270	45	1208	1794
March	11990	0	0	329	76	1268	1883
April	17127	0	0	410	188	1328	1973
May	21129	0	0	477	301	1328	1973
June	21338	0	0	458	307	1268	1883
July	25289	0	0	535	341	1389	2063
August	23664	0	0	514	341	1268	1883
September	20956	0	0	462	259	1328	1973
October	20699	0	0	492	246	1389	2063
November	11541	0	0	327	97	1208	1794
December	9091	0	0	291	102	1389	2063
Total	**200387**	**20**	**6**	**4884**	**2369**	**15760**	**23406**

Monthly Simulation Results for AHU 3-2

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Vent. Reclaim Device (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	11008	1	0	351	67	1694	2063
February	8010	0	0	298	45	1473	1794
March	13077	0	0	362	69	1546	1883
April	18889	0	0	449	178	1620	1973
May	23490	0	0	522	301	1620	1973
June	23722	0	0	500	306	1546	1883
July	28225	0	0	583	341	1694	2063
August	26386	0	0	562	341	1546	1883
September	23320	0	0	506	258	1620	1973
October	23008	0	0	539	243	1694	2063
November	12638	0	0	360	90	1473	1794
December	9904	0	0	321	102	1694	2063
Total	**221676**	**1**	**0**	**5353**	**2341**	**19218**	**23406**

Monthly Simulation Results for AHU 3-3

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Vent. Reclaim Device (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	11898	0	0	355	63	2481	2063
February	8824	0	0	301	44	2157	1794
March	14388	0	0	383	66	2265	1883
April	20810	0	0	487	172	2373	1973
May	26098	0	0	590	298	2373	1973
June	26385	0	0	572	305	2265	1883
July	30995	0	0	658	341	2481	2063
August	28715	0	0	617	341	2265	1883
September	24935	0	0	529	253	2373	1973
October	23889	0	0	528	239	2481	2063
November	13306	0	0	354	86	2157	1794
December	10662	0	0	319	101	2481	2063
Total	**240903**	**0**	**0**	**5693**	**2309**	**28154**	**23406**

Monthly Simulation Results for AHU 3-4

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Vent. Reclaim Device (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	10093	22	6	317	67	1389	2063
February	7467	0	0	268	45	1208	1794
March	11968	0	0	327	77	1268	1883
April	17108	0	0	407	188	1328	1973
May	21097	0	0	472	301	1328	1973
June	21309	0	0	454	306	1268	1883
July	25210	0	0	528	341	1389	2063
August	23618	0	0	509	341	1268	1883
September	20925	0	0	458	260	1328	1973
October	20711	0	0	489	246	1389	2063
November	11569	0	0	326	97	1208	1794
December	9110	0	0	291	102	1389	2063
Total	**200185**	**22**	**7**	**4846**	**2371**	**15760**	**23406**

Monthly Simulation Results for AHU 4-1

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Vent. Reclaim Device (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	5709	92	27	156	70	1715	1031
February	4331	0	0	132	41	1492	897
March	8199	0	0	183	59	1566	942
April	12932	0	0	261	172	1641	986
May	16848	0	0	344	295	1641	986
June	17366	0	0	342	302	1566	942
July	20419	0	0	408	341	1715	1031
August	19402	0	0	396	341	1566	942
September	16263	0	0	322	257	1641	986
October	15638	0	0	325	240	1715	1031
November	7590	0	0	177	93	1492	897
December	5123	0	0	140	112	1715	1031
Total	**149819**	**92**	**27**	**3187**	**2323**	**19465**	**11703**

Monthly Simulation Results for AHU 4-2

Project Name: Jackson Barracks Spirit
Prepared by: L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:33PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)	Vent. Reclaim Device (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	5301	171	50	169	66	1715	1031
February	3247	3	1	141	55	1492	897
March	7727	0	0	202	49	1566	942
April	14277	0	0	295	161	1641	986
May	20065	0	0	399	291	1641	986
June	20951	0	0	401	299	1566	942
July	25226	0	0	472	341	1715	1031
August	23262	0	0	441	341	1566	942
September	18829	0	0	346	244	1641	986
October	17158	0	0	324	230	1715	1031
November	6817	0	0	180	87	1492	897
December	4931	3	1	149	134	1715	1031
Total	**167791**	**177**	**52**	**3519**	**2299**	**19465**	**11703**

1. General Details:

Plant Name ..... **CENTRAL PLANT**
Plant Type ..... **Chiller Plant**

2. Air Systems served by Plant:

Air System Name	Mult.
AHU 1-1	1
AHU 1-2	1
AHU 1-3	1
AHU 1-4	1
AHU 2-1	1
AHU 2-2	1
AHU 2-3	1
AHU 2-4	1
AHU 3-1	1
AHU 3-2	1
AHU 3-3	1
AHU 1-5	1
AHU 3-4	1
AHU 4-1	1
AHU 4-2	1

3: Configuration

Number of Chillers **3**
Plant Control ..... **Sequenced with Part Load Chiller: High + Low Loads**
Design LCHWT ..... **42.0** °F
Maximum LCHWT ..... **45.0** °F
Cooling Tower Configuration ..... **One tower for each W/C chiller**

4: Schedule of Equipment

Sequence	Chiller Name	Full Load Capacity (Tons)	Cooler Flow Rate (gpm)	Condenser Flow Rate (gpm)	Cooling Tower Name	Tower Flow Rate (gpm)
CH-1	Sample Chiller	300.0	720.0	900.0	Sample Cooling Tower	900.0
CH-2	Sample Chiller	300.0	720.0	900.0	Sample Cooling Tower	900.0
Part-Load	Sample Chiller	300.0	720.0	900.0	Sample Cooling Tower	900.0
	Totals:	900.0	2160.0	2700.0	Totals:	2700.0

Est. Max Load ..... **202.3** Tons

5: Distribution

Distribution System

Type ..... **Primary/Secondary, Variable Speed Secondary**
Coil Delta-T at Design ..... **14.0** °F
Pipe Heat Gain Factor ..... **0.0** %

Fluid Properties

Name ..... **Fresh Water**
Density ..... **62.4** lb/ft³
Specific Heat ..... **1.00** BTU / (lb - °F)

Primary Loop

Pump for	Flow (gpm)	Head (ft wg)	Mechanical Efficiency (%)	Electrical Efficiency (%)
CH-1	720.0	30.0	80.0	94.0
CH-2	720.0	30.0	80.0	94.0
Part-Load	720.0	30.0	80.0	94.0

Secondary Loop

	Flow (gpm)	Head (ft wg)	Mechanical Efficiency (%)	Electrical Efficiency (%)
Design	2160.0	100.0	80.0	94.0

Control Head ..... **15.0** ft wg
Minimum Pump Flow ..... **30.0** %

Cooling Plant Sizing Summary for CENTRAL PLANT

1. **Plant Information:**
   - Plant Name ..... **CENTRAL PLANT**
   - Plant Type ..... **Chiller Plant**
   - Design Weather ..... **New Orleans IAP, Louisiana**

2. **Cooling Plant Sizing Data:**
   - Maximum Plant Load ..... **202.3** Tons
   - Load occurs at ..... **Aug 1500**
   - ft²/Ton ..... **442.4** ft²/Ton
   - Floor area served by plant ..... **89486.0** ft²

3. **Coincident Air System Cooling Loads for Aug 1500**

Air System Name	Mult.	System Cooling Coil Load (Tons)
AHU 1-1	1	7.2
AHU 1-2	1	25.6
AHU 1-3	1	12.9
AHU 1-4	1	2.3
AHU 2-1	1	0.7
AHU 2-2	1	17.0
AHU 2-3	1	11.6
AHU 2-4	1	24.5
AHU 3-1	1	9.0
AHU 3-2	1	10.1
AHU 3-3	1	10.8
AHU 1-5	1	44.9
AHU 3-4	1	9.0
AHU 4-1	1	7.5
AHU 4-2	1	9.1

System loads are for coils whose cooling source is ' Chilled Water ' .

Monthly Simulation Results for CENTRAL PLANT

Jackson Barracks Spirit
L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:34PM

Plant Simulation Results (Table 1) :

Month	Cooling Coil Load (kBTU)	Plant Load (kBTU)	Chiller Output (kBTU)	Chiller Input (kWh)	Primary Chilled Water Pump (kWh)	Secondary Chilled Water Pump (kWh)	Condenser Water Pump (kWh)
January	142488	152878	152878	5946	1844	3159	1649
February	103796	113181	113181	4445	1666	2854	1389
March	178031	188421	188421	7359	1844	3159	2137
April	285678	295733	295733	11653	1785	3057	2754
May	373595	384015	384015	14933	1849	3169	2903
June	397922	408098	408098	16249	1806	3095	2972
July	470409	480951	480951	19296	1871	3206	3077
August	444448	454960	454960	18201	1866	3196	3077
September	366560	376646	376646	15060	1790	3067	2853
October	343556	353946	353946	13914	1844	3159	2860
November	171413	181468	181468	7275	1785	3057	2033
December	138101	148491	148491	5913	1844	3159	1605
Total	**3415995**	**3538788**	**3538788**	**140243**	**21793**	**37339**	**29308**

Plant Simulation Results (Table 2) :

Month	Cooling Tower Fan (kWh)
January	4528
February	2800
March	5650
April	9741
May	11286
June	11826
July	12244
August	12244
September	11164
October	10566
November	5540
December	4439
Total	**102029**

141 ST READINESS CENTER Input Data

1. General Details:
   Building Name ..... 141 ST READINESS CENTER

2. Plants Included in this Building:

Plant Name
CENTRAL PLANT

3. Air Systems Included in this Building:

System Name	Mult.
AHU 1-1	1
AHU 1-2	1
AHU 1-3	1
AHU 1-4	1
AHU 2-1	1
AHU 2-2	1
AHU 2-3	1
AHU 2-4	1
AHU 3-1	1
AHU 3-2	1
AHU 3-3	1
AHU 1-5	1
AHU 3-4	1
AHU 4-1	1
AHU 4-2	1

4: Miscellaneous Energy

Name	Energy/Fuel Type	Peak use	Schedule
DOMESTIC HOT WATER	Natural Gas	2000.0 MBH	DRILL

5: Meters
   Electric ..... Electric Rate
   Natural Gas ..... Fuel Rate

6: Miscellaneous Data
   Average Building Power Factor ..... 100.00 %
   Source Electric Generating Efficiency ..... 28.00 %
   Additional Floor Area ..... 12000.0 ft²

Table 1. Annual Costs

Component	141 ST READINESS CENTER ($)
Air System Fans	9,939
Cooling	11,219
Heating	45
Pumps	7,075
Cooling Tower Fans	8,162
HVAC Sub-Total	**36,441**
Lights	23,874
Electric Equipment	16,150
Misc. Electric	0
Misc. Fuel Use	9,984
Non-HVAC Sub-Total	**50,009**
Grand Total	**86,450**

Table 2. Annual Cost per Unit Floor Area

Component	141 ST READINESS CENTER ($/ft²)
Air System Fans	0.098
Cooling	0.111
Heating	0.000
Pumps	0.070
Cooling Tower Fans	0.080
HVAC Sub-Total	**0.359**
Lights	0.235
Electric Equipment	0.159
Misc. Electric	0.000
Misc. Fuel Use	0.098
Non-HVAC Sub-Total	**0.493**
Grand Total	**0.852**
Gross Floor Area (ft²)	101486.0
Conditioned Floor Area (ft²)	89486.0

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

Table 3. Component Cost as a Percentage of Total Cost

Component	141 ST READINESS CENTER (%)
Air System Fans	11.5
Cooling	13.0
Heating	0.1
Pumps	8.2
Cooling Tower Fans	9.4
HVAC Sub-Total	**42.2**
Lights	27.6
Electric Equipment	18.7
Misc. Electric	0.0
Misc. Fuel Use	11.5
Non-HVAC Sub-Total	**57.8**
Grand Total	**100.0**

Table 1. Annual Costs

Component	141 ST READINESS CENTER ($)
HVAC Components	
Electric	36,441
Natural Gas	0
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Remote CW	0
HVAC Sub-Total	**36,441**
Non-HVAC Components	
Electric	40,025
Natural Gas	9,984
Fuel Oil	0
Propane	0
Remote HW	0
Remote Steam	0
Non-HVAC Sub-Total	**50,009**
Grand Total	**86,450**

Table 2. Annual Energy Consumption

Component	141 ST READINESS CENTER
HVAC Components	
Electric (kWh)	455,510
Natural Gas (Therm)	0
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0
Non-HVAC Components	
Electric (kWh)	500,311
Natural Gas (Therm)	24,960
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Totals	
Electric (kWh)	955,821
Natural Gas (Therm)	24,960
Fuel Oil (na)	0
Propane (na)	0
Remote HW (na)	0
Remote Steam (na)	0
Remote CW (na)	0

Table 3. Annual Emissions

Component	141 ST READINESS CENTER
CO2 (lb)	0
SO2 (kg)	0
NOx (kg)	0

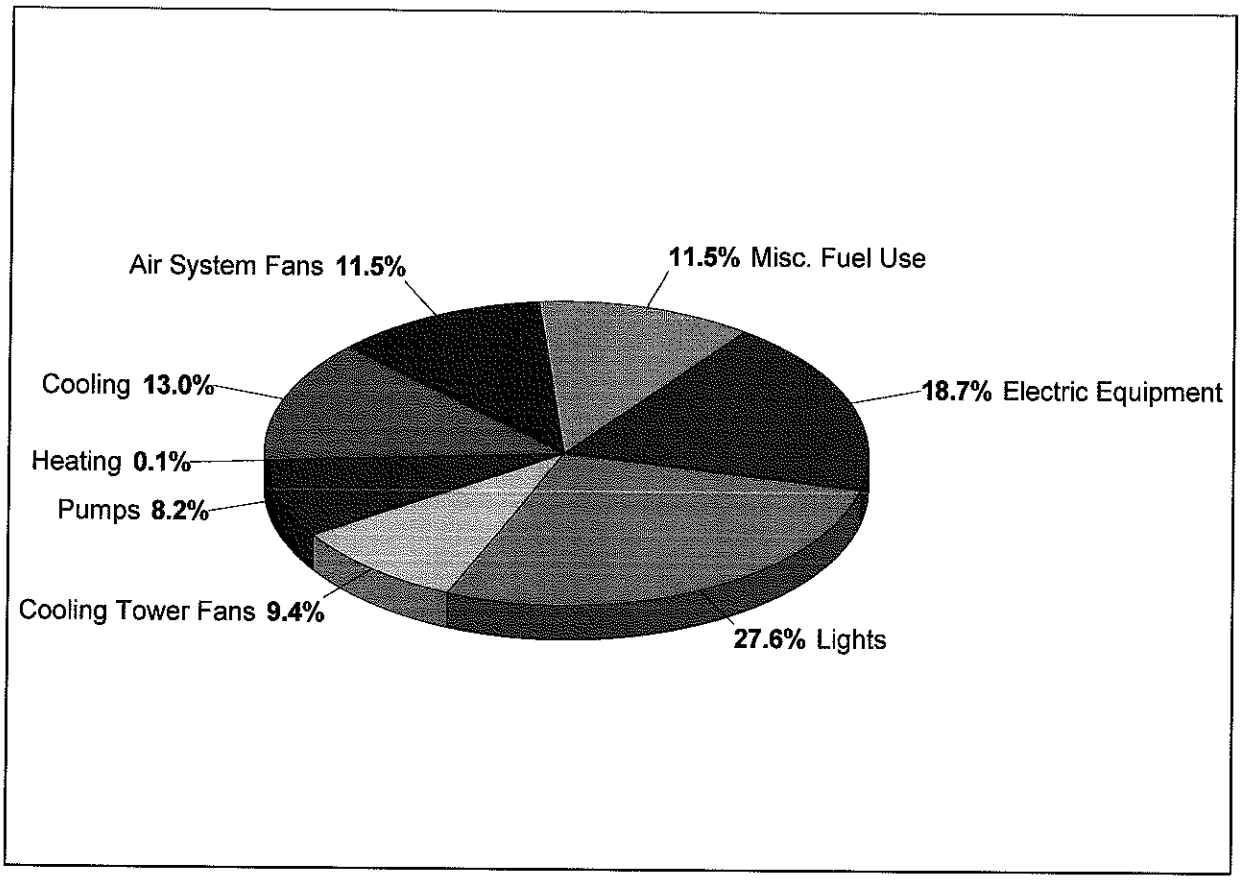
Table 4. Annual Cost per Unit Floor Area

Component	141 ST READINESS CENTER ($/ft²)
HVAC Components	
Electric	0.359
Natural Gas	0.000
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Remote CW	0.000
HVAC Sub-Total	**0.359**
Non-HVAC Components	
Electric	0.394
Natural Gas	0.098
Fuel Oil	0.000
Propane	0.000
Remote HW	0.000
Remote Steam	0.000
Non-HVAC Sub-Total	**0.493**
Grand Total	**0.852**
Gross Floor Area (ft²)	101486.0
Conditioned Floor Area (ft²)	89486.0

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

Table 5. Component Cost as a Percentage of Total Cost

Component	141 ST READINESS CENTER (%)
HVAC Components	
Electric	42.2
Natural Gas	0.0
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Remote CW	0.0
HVAC Sub-Total	**42.2**
Non-HVAC Components	
Electric	46.3
Natural Gas	11.5
Fuel Oil	0.0
Propane	0.0
Remote HW	0.0
Remote Steam	0.0
Non-HVAC Sub-Total	**57.8**
Grand Total	**100.0**



1. Annual Costs

Component	Annual Cost ($)	($/ft²)	Percent of Total (%)
Air System Fans	9,939	0.098	11.5
Cooling	11,219	0.111	13.0
Heating	45	0.000	0.1
Pumps	7,075	0.070	8.2
Cooling Tower Fans	8,162	0.080	9.4
HVAC Sub-Total	**36,441**	**0.359**	**42.2**
Lights	23,874	0.235	27.6
Electric Equipment	16,150	0.159	18.7
Misc. Electric	0	0.000	0.0
Misc. Fuel Use	9,984	0.098	11.5
Non-HVAC Sub-Total	**50,009**	**0.493**	**57.8**
Grand Total	**86,450**	**0.852**	**100.0**

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

Gross Floor Area ..... **101486.0** ft²
Conditioned Floor Area ..... **89486.0** ft²

Annual Energy Costs - 141 ST READINESS CENTER

Jackson Barracks Spirit
L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
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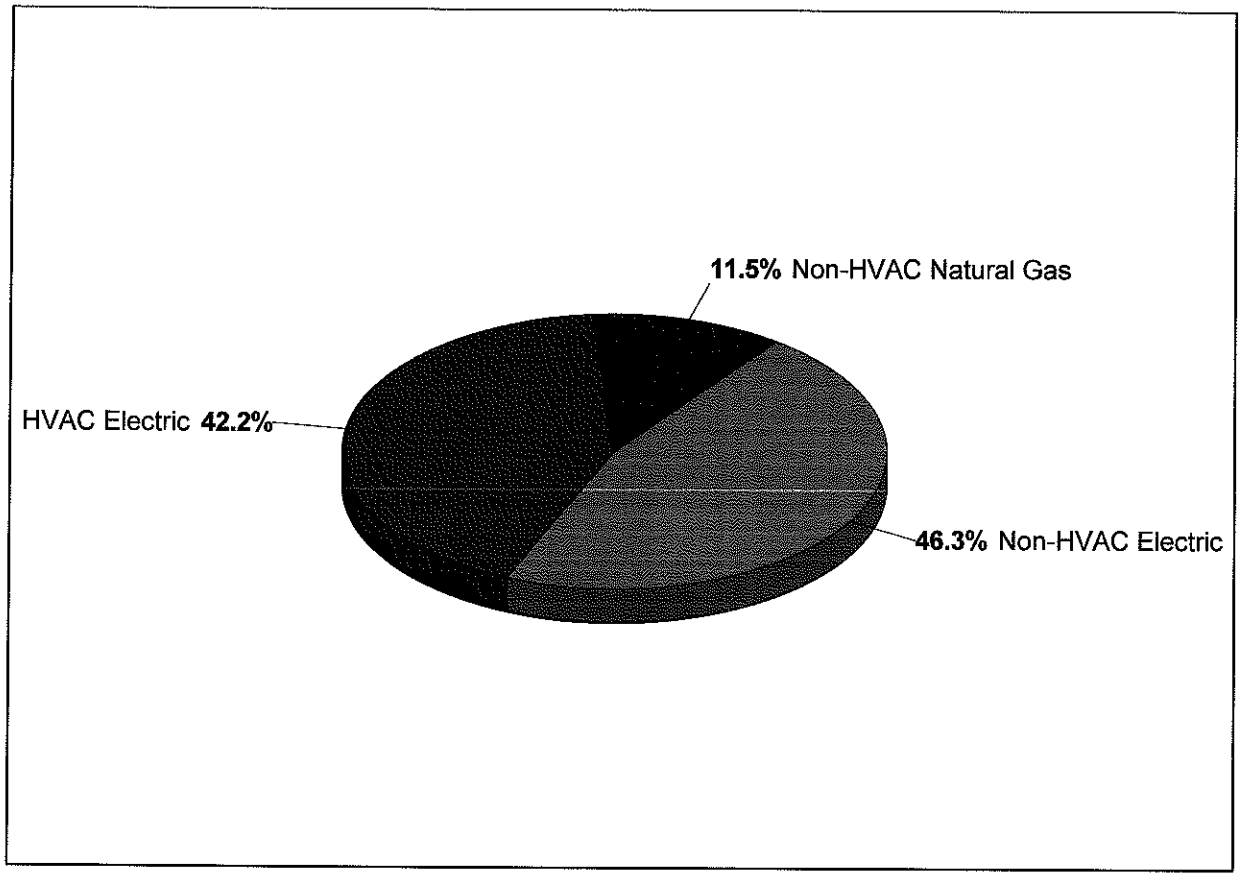

1. Annual Costs

Component	Annual Cost ($/yr)	($/ft²)	Percent of Total (%)
HVAC Components			
Electric	36,441	0.359	42.2
Natural Gas	0	0.000	0.0
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
Remote Chilled Water	0	0.000	0.0
HVAC Sub-Total	**36,441**	**0.359**	**42.2**
Non-HVAC Components			
Electric	40,025	0.394	46.3
Natural Gas	9,984	0.098	11.5
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	**50,009**	**0.493**	**57.8**
Grand Total	**86,450**	**0.852**	**100.0**

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

Gross Floor Area ..... **101486.0** ft²
Conditioned Floor Area ..... **89486.0** ft²

Energy Budget by System Component - 141 ST READINESS CENTER

Jackson Barracks Spirit
L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:34PM

1. Annual Coil Loads

Component	Load (kBTU)	(kBTU/ft²)
Cooling Coil Loads	3,415,996	33.660
Heating Coil Loads	1,900	0.019
Grand Total	**3,417,896**	**33.679**

2. Energy Consumption by System Component

Component	Site Energy (kBTU)	Site Energy (kBTU/ft²)	Source Energy (kBTU)	Source Energy (kBTU/ft²)
Air System Fans	423,912	4.177	1,513,972	14.918
Cooling	478,509	4.715	1,708,962	16.839
Heating	1,900	0.019	6,784	0.067
Pumps	301,753	2.973	1,077,691	10.619
Cooling Towers	348,121	3.430	1,243,290	12.251
HVAC Sub-Total	**1,554,196**	**15.314**	**5,550,700**	**54.694**
Lights	1,018,243	10.033	3,636,581	35.833
Electric Equipment	688,816	6.787	2,460,059	24.240
Misc. Electric	0	0.000	0	0.000
Misc. Fuel Use	2,496,000	24.595	2,496,000	24.595
Non-HVAC Sub-Total	**4,203,059**	**41.415**	**8,592,639**	**84.668**
Grand Total	**5,757,255**	**56.730**	**14,143,339**	**139.363**

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 ..... **101486.0** ft²
   Conditioned Floor Area ..... **89486.0** ft²

Energy Budget by Energy Source - 141 ST READINESS CENTER

Jackson Barracks Spirit
L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
01:34PM

1. Annual Coil Loads

Component	Load (kBTU)	(kBTU/ft²)
Cooling Coil Loads	3,415,996	33.660
Heating Coil Loads	1,900	0.019
Grand Total	**3,417,896**	**33.679**

2. Energy Consumption by Energy Source

Component	Site Energy (kBTU)	Site Energy (kBTU/ft²)	Source Energy (kBTU)	Source Energy (kBTU/ft²)
HVAC Components				
Electric	1,554,201	15.314	5,550,718	54.694
Natural Gas	0	0.000	0	0.000
Fuel Oil	0	0.000	0	0.000
Propane	0	0.000	0	0.000
Remote Hot Water	0	0.000	0	0.000
Remote Steam	0	0.000	0	0.000
Remote Chilled Water	0	0.000	0	0.000
HVAC Sub-Total	**1,554,201**	**15.314**	**5,550,718**	**54.694**
Non-HVAC Components				
Electric	1,707,060	16.821	6,096,642	60.074
Natural Gas	2,496,000	24.595	2,496,000	24.595
Fuel Oil	0	0.000	0	0.000
Propane	0	0.000	0	0.000
Remote Hot Water	0	0.000	0	0.000
Remote Steam	0	0.000	0	0.000
Non-HVAC Sub-Total	**4,203,060**	**41.415**	**8,592,642**	**84.668**
Grand Total	**5,757,261**	**56.730**	**14,143,360**	**139.363**

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 ..... **101486.0** ft²
   Conditioned Floor Area ..... **89486.0** ft²

Monthly Component Costs - 141 ST READINESS CENTER

Jackson Barracks Spirit
L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
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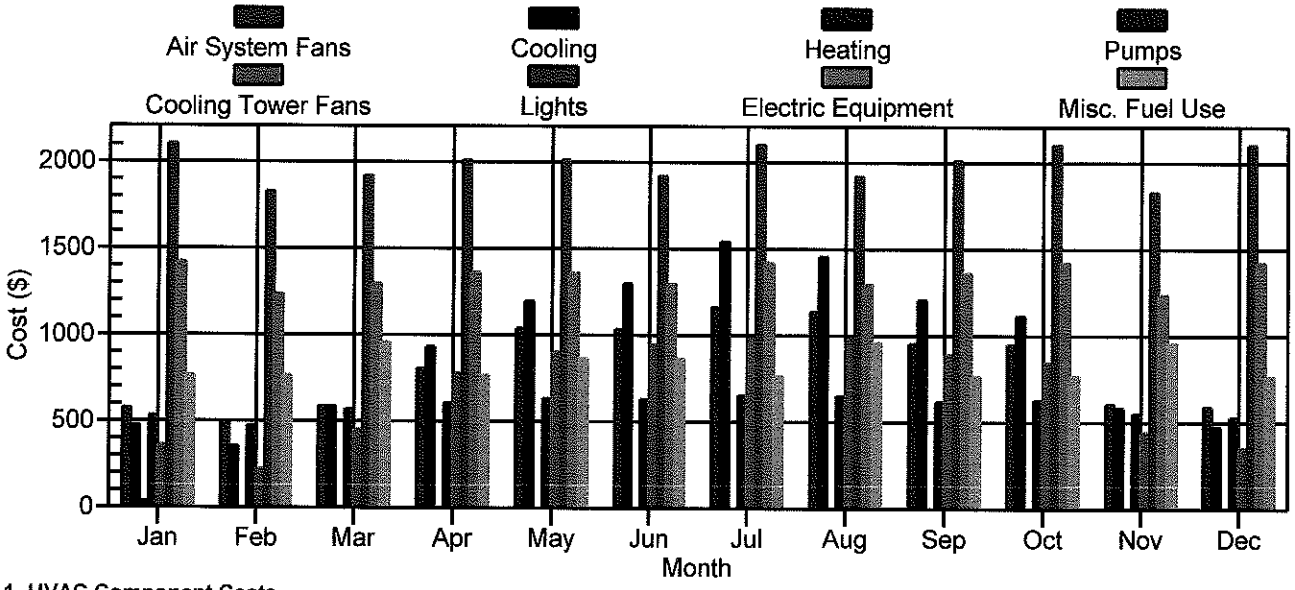

1. HVAC Component Costs

Month	Air System Fans ($)	Cooling ($)	Heating ($)	Pumps ($)	Cooling Towers ($)	HVAC Total ($)
January	577	476	34	532	362	1,981
February	488	356	2	473	224	1,543
March	588	589	3	571	452	2,203
April	806	932	0	608	779	3,125
May	1,040	1,195	0	634	903	3,772
June	1,036	1,300	0	630	946	3,912
July	1,167	1,544	0	652	980	4,343
August	1,138	1,456	0	651	980	4,225
September	954	1,205	0	617	893	3,669
October	949	1,113	0	629	845	3,536
November	606	582	2	550	443	2,183
December	591	473	3	529	355	1,951
Total	**9,939**	**11,219**	**45**	**7,075**	**8,162**	**36,441**

2. Non-HVAC Component Costs

Month	Lights ($)	Electric Equipment ($)	Misc. Electric ($)	Misc. Fuel Use ($)	Non-HVAC Total ($)	Grand Total ($)
January	2,104	1,423	0	768	4,295	6,276
February	1,829	1,238	0	768	3,835	5,378
March	1,921	1,299	0	960	4,180	6,383
April	2,012	1,361	0	768	4,142	7,267
May	2,012	1,361	0	864	4,238	8,010
June	1,921	1,299	0	864	4,084	7,996
July	2,104	1,423	0	768	4,295	8,638
August	1,921	1,299	0	960	4,180	8,405
September	2,012	1,361	0	768	4,142	7,811
October	2,104	1,423	0	768	4,295	7,831
November	1,829	1,238	0	960	4,027	6,210
December	2,104	1,423	0	768	4,295	6,246
Total	**23,874**	**16,150**	**0**	**9,984**	**50,009**	**86,450**

Monthly Energy Costs - 141 ST READINESS CENTER

Jackson Barracks Spirit
L. T. Vivien, Jr. & Associates, Inc.

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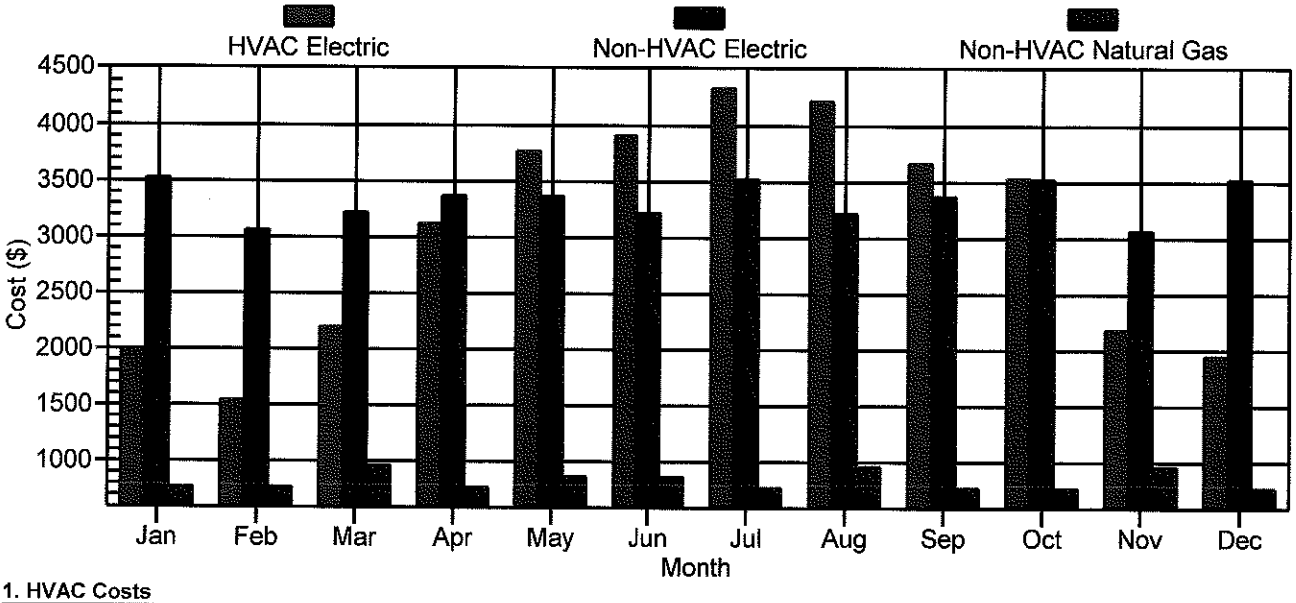

1. HVAC Costs

Month	Electric ($)	Natural Gas ($)	Fuel Oil ($)	Propane ($)	Remote Hot Water ($)	Remote Steam ($)	Remote Chilled Water ($)
January	1,982	0	0	0	0	0	0
February	1,542	0	0	0	0	0	0
March	2,203	0	0	0	0	0	0
April	3,126	0	0	0	0	0	0
May	3,771	0	0	0	0	0	0
June	3,912	0	0	0	0	0	0
July	4,342	0	0	0	0	0	0
August	4,225	0	0	0	0	0	0
September	3,669	0	0	0	0	0	0
October	3,537	0	0	0	0	0	0
November	2,183	0	0	0	0	0	0
December	1,951	0	0	0	0	0	0
Total	**36,441**	**0**	**0**	**0**	**0**	**0**	**0**

2. Non-HVAC Costs

Month	Electric ($)	Natural Gas ($)	Fuel Oil ($)	Propane ($)	Remote Hot Water ($)	Remote Steam ($)
January	3,527	768	0	0	0	0
February	3,067	768	0	0	0	0
March	3,220	960	0	0	0	0
April	3,374	768	0	0	0	0
May	3,374	864	0	0	0	0
June	3,220	864	0	0	0	0
July	3,527	768	0	0	0	0
August	3,220	960	0	0	0	0
September	3,374	768	0	0	0	0
October	3,527	768	0	0	0	0
November	3,067	960	0	0	0	0
December	3,527	768	0	0	0	0
Total	**40,025**	**9,984**	**0**	**0**	**0**	**0**

Monthly Energy Use by Component - 141 ST READINESS CENTER

Jackson Barracks Spirit
L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
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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)	7215	6094	7347	10078	13003	12949	14582	14222	11930	11864	7572	7385
Cooling												
Electric (kWh)	5946	4445	7359	11653	14933	16249	19296	18201	15060	13914	7275	5913
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
Heating												
Electric (kWh)	429	24	34	0	0	0	0	0	0	0	31	39
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
Pumps (kWh)	6653	5908	7141	7596	7921	7872	8153	8139	7709	7864	6875	6608
Clg. Tower Fans (kWh)	4528	2800	5650	9741	11286	11826	12244	12244	11164	10566	5540	4439
Lighting (kWh)	26298	22868	24012	25155	25155	24012	26298	24012	25155	26298	22868	26298
Electric Eqpt. (kWh)	17790	15470	16243	17017	17017	16243	17790	16243	17017	17790	15470	17790
Misc. Electric (kWh)	0	0	0	0	0	0	0	0	0	0	0	0
Misc. Fuel												
Natural Gas (Therm)	1920	1920	2400	1920	2160	2160	1920	2400	1920	1920	2400	1920
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

Monthly Energy Use by Energy Type - 141 ST READINESS CENTER

Jackson Barracks Spirit
L. T. Vivien, Jr. & Associates, Inc.

04/12/2006
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1. HVAC Energy Use

Month	Electric (kWh)	Natural Gas (Therm)	Fuel Oil (na)	Propane (na)	Remote HW (na)	Remote Steam (na)	Remote CW (na)
Jan	24,770	0	0	0	0	0	0
Feb	19,272	0	0	0	0	0	0
Mar	27,532	0	0	0	0	0	0
Apr	39,069	0	0	0	0	0	0
May	47,142	0	0	0	0	0	0
Jun	48,896	0	0	0	0	0	0
Jul	54,276	0	0	0	0	0	0
Aug	52,806	0	0	0	0	0	0
Sep	45,863	0	0	0	0	0	0
Oct	44,207	0	0	0	0	0	0
Nov	27,293	0	0	0	0	0	0
Dec	24,385	0	0	0	0	0	0
Totals	455,510	0	0	0	0	0	0

2. Non-HVAC Energy Use

Month	Electric (kWh)	Natural Gas (Therm)	Fuel Oil (na)	Propane (na)	Remote HW (na)	Remote Steam (na)
Jan	44,089	1,920	0	0	0	0
Feb	38,338	1,920	0	0	0	0
Mar	40,255	2,400	0	0	0	0
Apr	42,172	1,920	0	0	0	0
May	42,172	2,160	0	0	0	0
Jun	40,255	2,160	0	0	0	0
Jul	44,089	1,920	0	0	0	0
Aug	40,255	2,400	0	0	0	0
Sep	42,172	1,920	0	0	0	0
Oct	44,089	1,920	0	0	0	0
Nov	38,338	2,400	0	0	0	0
Dec	44,089	1,920	0	0	0	0
Totals	500,311	24,960	0	0	0	0