ESL-TR-87/03-01

AN ENERGY AND PEAK LOADS ANALYSIS OF THE TYC/TRC BUILDING

Final

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Submitted by

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Prepared For

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SUMMARY

The energy use of the Texas Youth Commission/Texas Rehabilitation Commission (TYC/TRC) Building at Austin, Texas, was analyzed using the DOE 2.1B building energy simulation program. An analysis was made for the building as specified in the building plans and the specifications provided by the State Purchasing and General Services Commission. Operating schedules for occupancy, lighting, office equipment, and infiltration were assumed. The energy consumption of the TYC/TRC Building can be reduced with certain modifications.

Three options for reducing the building energy use were studied: (i) a variable air volume system (VAV) with a variable speed fan and economiser cycle instead of dual duct variable volume (DDV) system, (ii) modifying the building to comply with the ASHRAE standards and (iii) modifying the building to comply with the California standards. These options not only reduce the peak loads but also reduce the total energy use.

The energy consumption of the TYC/TRC Building was compared with the energy consumption of the building modified to comply with the ASHRAE and California standards. A net reduction of 38% and 44% was obtained using the ASHRAE and California standards, respectively. The California standards are more stringent and are a better choice for state owned buildings which have a life of 30 to 40 years. The net effects are summarized in the table below.

Percent Reduction of Energy Use for the Building Modification Over the Base Case.

Modification Over the Base	Peak Cooling	Peak Heating	Total Cooling	Total Heating	Total Energy
VAV with Variable Speed Fan & Econo. Cycle	0.0	0.0	0.5	52	28
ASHRAE Standard	18	0.0	13	80	38
California Standard	21	0.0	18	83	44

ABSTRACT

The energy use of the Texas Youth Commission/Texas Rehabilitation Commission (TYC/TRC) Building at Austin, Texas, was analyzed using the DOE 2.1B building energy simulation program. An analysis was made for the building as specified in the building plans and by the State Purchasing and General Services Commission. The base energy consumption of the building was compared with four alternatives. The alternatives include: a VAV system instead of DDV system, and modifying the building to conform to both the ASHRAE and California energy standards.

All the alternatives reduced energy consumption of the building. The ASHRAE and California standards had a reductions of more than 38% and 44%, respectively.

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CHAPTER I

INTRODUCTION

The cost of comfort heating and cooling is typically the largest single component of the annual energy costs in commercial buildings. The electrical costs in Texas are continuing to increase even though gas prices have decreased. In Texas, 63% of the total energy use in the commercial sector is used for heating, ventilation and air-conditioning (HVAC), which is about 8.5% of the total energy consumption [1].

The Energy Management Group at Texas A&M University is working with the Public Utility Commission of Texas (PUCT) and the State Purchasing and General Services Commission (SPGSC) to analyze the energy use for new state buildings. The proposed TYC/TRC Building at Austin, Texas was one of the buildings chosen for analysis by SPGSC.

The United States Department of Energy (DOE) and the American Society of Heating Refrigerating and Air Conditioning Engineers (ASHRAE) have been developing energy standards for new buildings. DOE involvement in the development of energy standards for the new buildings is primarily a result of public laws which have mandated the development of building standards [2]. The proposed ASHRAE Standards (1985) 90.1P are prescriptive. These prescriptive standards identify the thermal, electrical or physical parameters which should lead to the development of energy efficient designs.

The State of California has both prescriptive and performance standards for 16 different weather zones located in California [3]. The California Energy Standards are similar to the proposed ASHRAE Standards in

many respects, except that the California Standards are more stringent.

The purpose of both standards is to encourage innovative design of new buildings which use less energy without constraining the necessary building functions. The energy use of buildings designed with the proposed ASHRAE or existing California Standards should be far less than the energy use of most existing buildings in Texas.

This study examines the energy use of the TYC/TRC Building as proposed in preliminary plan designs. Possible alternatives to reduce the energy use are investigated. In addition, the effects of the ASHRAE and California Standards on the energy use of the TYC/TRC Building are studied.

CHAPTER II

DESCRIPTION OF BUILDING

The operational schedules and their profiles are required to estimate the energy use of the TYC/TRC Building using the DOE 2.1B computer program. This chapter provides a description of the TYC/TRC Building operating schedules and their profiles, and various building zones. Many profiles had to be assumed because they were not known.

A. ZONES

The TYC/TRC Building is a seven story office building. The first five floors are each divided into two separate conditioned zones. The sixth and seventh floors are divided into one zone each. The loads for the first, second, fifth and seventh floors are calculated separately. The zones in the third and fourth floors are identical. The schematic of the zones is shown in Figure 2.1. The total exterior surface is 104,360 square feet, of which 25,662 square feet is glazed surface. The gross floor area of the TYC/TRC Building is 259,272 square feet.

B. SCHEDULES

The TYC/TRC Building is assumed to have two operating schedules: one schedule for Monday through Friday and another for the holidays and weekends. Each operating schedule consists of four profiles : (1) occupancy, (2) lighting, (3) office equipment, and (4) infiltration.

Occupancy

The number of people occupying each zone was estimated from figures obtained from the SPGSC. The occupancy schedules are shown in

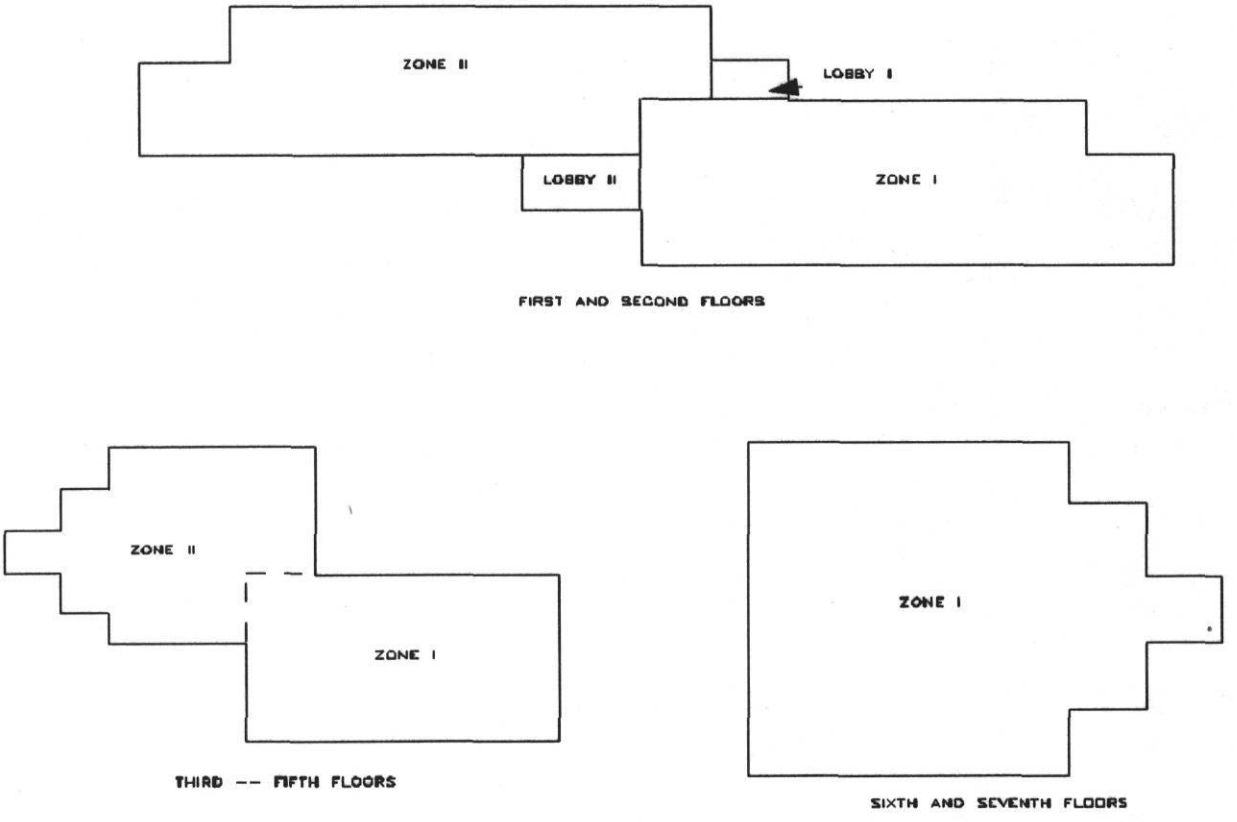

Figure 2.1 - Schematic of TYC/TRC Building.

Table 2.1. The estimated maximum number of people in the building is 1100.

Table 2.1–Assumed Occupancy Schedule for the TYC/TRC Building.+

Time	Monday-Friday	Holidays & Weekends
12am-8am	0.1	0.1
8am-11am	0.9	0.2
11am-2pm	0.5	0.2
2pm-6pm	0.8	0.2
6pm-12am	0.1	0.1

+where 1.0 = 160 people/floor

Lighting

The peak lighting levels were estimated to be 2.5 w/sf from the floor plan specifications given by SPGSC. This value is higher than the 1.8 w/sf recommended in the proposed ASHRAE Standards [2] and the 1.5 w/sf in the California Standards [3]. The lighting schedules are shown in Table 2.2.

Table 2.2–Assumed Lighting Schedule for the TYC/TRC Building.+

Time	Monday-Friday	Holidays & Weekends
12am-8am	0.2	0.2
8am-5pm	0.9	0.2
5pm-12am	0.3	0.2

+ where 1.0 = 2.5 w/sf

Equipment

The peak office equipment wattage (excluding the main computers) for was estimated to be 0.7 w/sf. The main computers in the TYC/TRC

Building were assumed to use 1.0 w/sf. The office equipment and computer wattage was estimated from the information provided in the specifications. The office and computer equipment included: computer terminals, copying machines, typewriters, table lamps, coffee pots, microcomputers etc.. The office and computer equipment schedules are shown in Table 2.3. During weekends and holidays, 20% of the equipment is assumed to remain on, since the main computers, the security lighting and some miscellaneous equipment are never shut down.

Table 2.3–Assumed Equipment Schedule for the TYC/TRC Building. +

Time	Monday-Friday	Holidays & Weekends
12am-8am	0.2	0.2
8am-12pm	0.5	0.2
12pm-2pm	0.4	0.2
2pm-6pm	0.5	0.2
6pm-12am	0.2	0.2

+ where 1.0 = 1.7 w/sf

Infiltration

Infiltration in air-changes is required for DOE 2.1B when simulating loads, so it was assumed to be 0.42 air-changes/hr. This corresponds to about 20 cfm/person/hr, when the building is fully occupied. The ASHRAE and California Standards recommend a fresh air requirement of 6 to 10 cfm/person/hr. The infiltration schedules are shown in Table 2.4. During week nights, weekends and holidays, the infiltration is decreased to 20% of peak infiltration. The movement of people into and out of the building is reduced, which reduces, the infiltration through door.

Table 2.4–Assumed Infiltration Schedule for the TYC/TRC Building+

Time	Monday-Friday	Holidays & Weekends
12am-8am	0.2	0.2
8am-6pm	1.0	0.2
6pm-12am	0.2	0.2

+ where 1.0 = 0.42 Air-Changes/hr

CHAPTER III

SYSTEM DESCRIPTION

A dual duct variable air volume system (DDV) without an economizer cycle is proposed in the building specification for the TYC/TRC Building. The DDV system provides both hot and cold air, each at a constant temperature. Each zone is served by two ducts, one carrying the hot air, the other carrying the cold air. The ducts feed into a mixing box in each zone which, by means of dampers, mixes the two air streams to achieve an air temperature required to meet load conditions in the zone. Since the air stream is simultaneously heated and cooled the system efficiency is quiet low. Both the proposed ASHRAE Standards and the California Standards do not recommend the DDV system. Conversely, the variable volume systems (VAV) are more efficient than other systems (dual duct, multi-zone, etc). A VAV system varies the quantity of air to match the system load requirements. Thus, the energy consumption closely parallels the load on the air conditioning systems.

The temperature for cooling was set at 74^{o}F during the day and allowed to float to 85^{o}F during the week nights, weekends and holidays. The temperature for heating was set at 74^{o}F during day and 65^{o}F during week nights, weekends and holidays. The maximum humidity was set to 70 % and minimum at 40 %. The temperature set points are from the specifications provided by the SPGSC. Each zone, described earlier, was assigned a separate fan. The fresh air requirements per person is specified as 20 cfm/hr.

CHAPTER IV

RESULTS & ANALYSIS

The energy consumption of the TYC/TRC Building at Austin was analyzed using the DOE 2.1B building energy simulation program [4]. The program simulates hourly loads profiles and hourly system performance of HVAC equipment in the building. It also has a provision to output various data, such as, peak loads for each zone, peak loads for the entire building, and total energy use for each zone, total energy use for the entire building, etc.. A sample output of the base run for the TYC/TRC Building is found in Appendix A.

The energy consumption of the TYC/TRC Building was estimated for Austin weather data. The energy consumption of a modified building which had a VAV system was also studied. Also, the energy consumption of the building modified to conform to the ASHRAE and California Standards were studied.

A. BASE BUILDING RESULTS

Peak Cooling Loads

Figure 4.1 shows the distribution of the peak cooling loads for the base building. The internal loads from equipment and the lights constitute about 51% of the peak load. Infiltration and ventilation constitute about 31% of the peak cooling load. This load increases as the fresh air requirements increase. The glass solar and glass conduction loads represent 8% of the peak cooling load. Internal loads represent about 55 % as compared to 45 % from external loads.

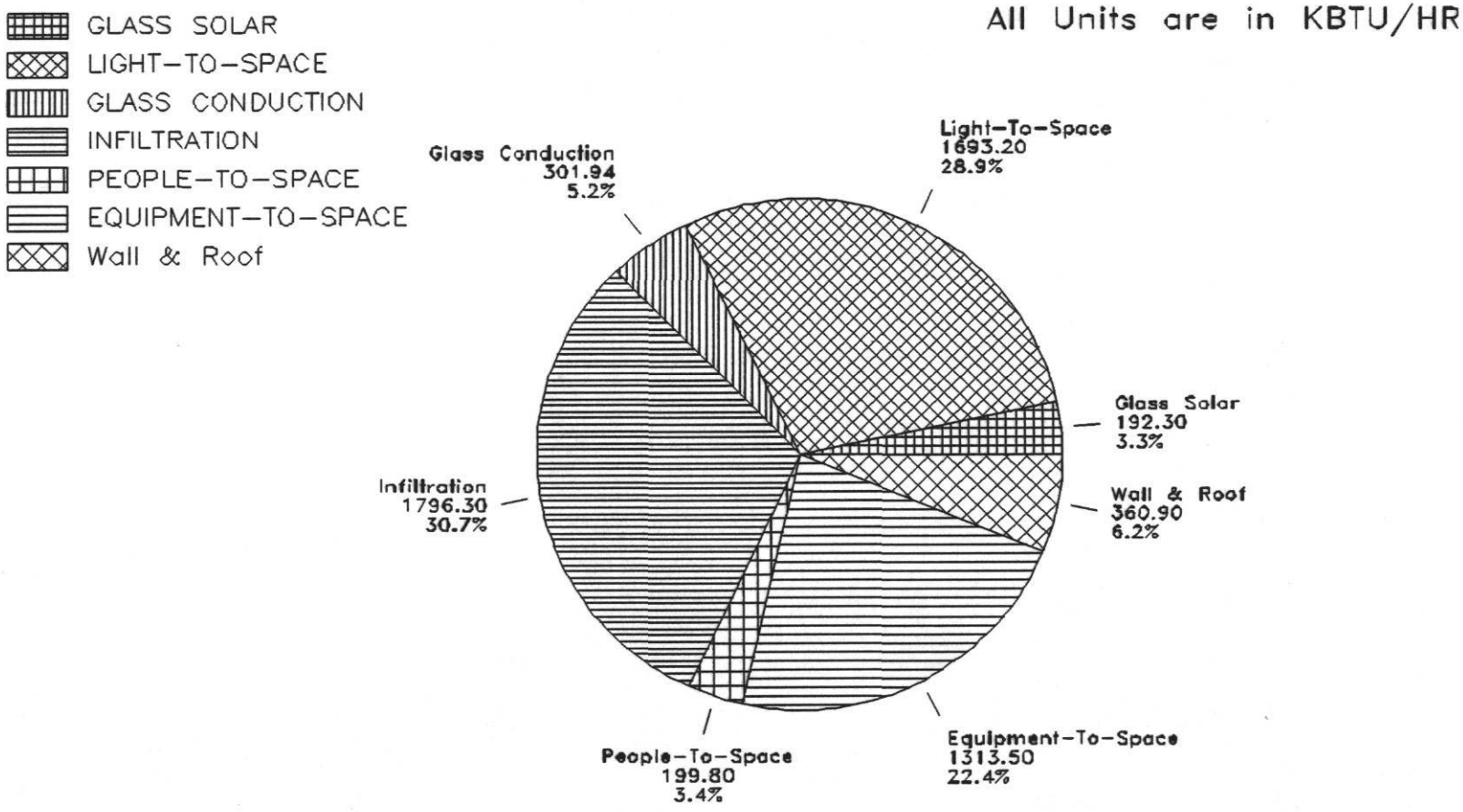

Figure 4.1--Peak Cooling of the Base Case TYC/TRC Building.

Peak Heating Loads

Figure 4.2 shows the distribution of the peak heating loads for the building. The walls and glass conduction loads make up about 72% of the peak heating load. Although, the building has more wall area than glass area, the glass conduction loss constitutes 43% of the peak heating load, as compared to 29% from wall conduction losses. Infiltration and ventilation loads are 14% of the peak heating load. The underground and roof loads constitute 14% of the peak.

Total Cooling Energy

Figure 4.3 shows the total cooling energy for the TYC/TRC Building. The internal loads from equipment and lighting constitute the major portion of the total cooling energy use (82%). Glass solar and people each contribute 7%. Over 80 % of the cooling energy was caused by internal loads. Much of the load is unavoidable (people and equipment). Lighting is the only internal load offering potential for savings.

Total Heating Energy

Figure 4.4 shows the total heating energy for the TYC/TRC Building. The heat loss from the roof and walls is 45%. The loss due to glass conduction is about 34%. The loss from ventilation and underground surfaces are 8% and 13%, respectively, of the total heating energy.

B. ANALYSIS OF CONSERVATION OPTIONS FOR TYC/TRC BUILDING

VAV System with Economizer Cycle

The HVAC system was changed from DDV to VAV with variable speed

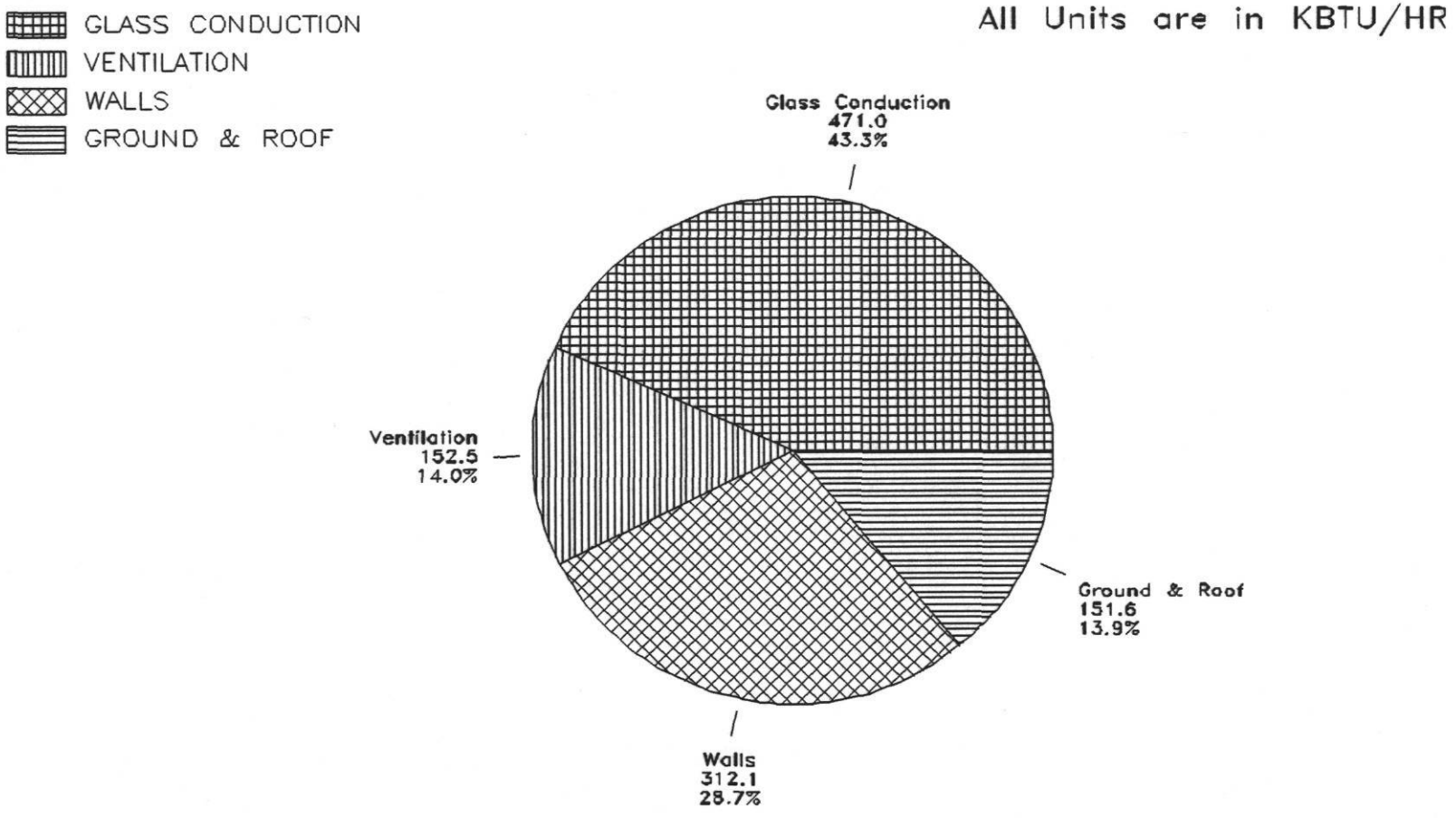

Figure 4.2—Peak Heating of the Base Case TYC/TRC Building.

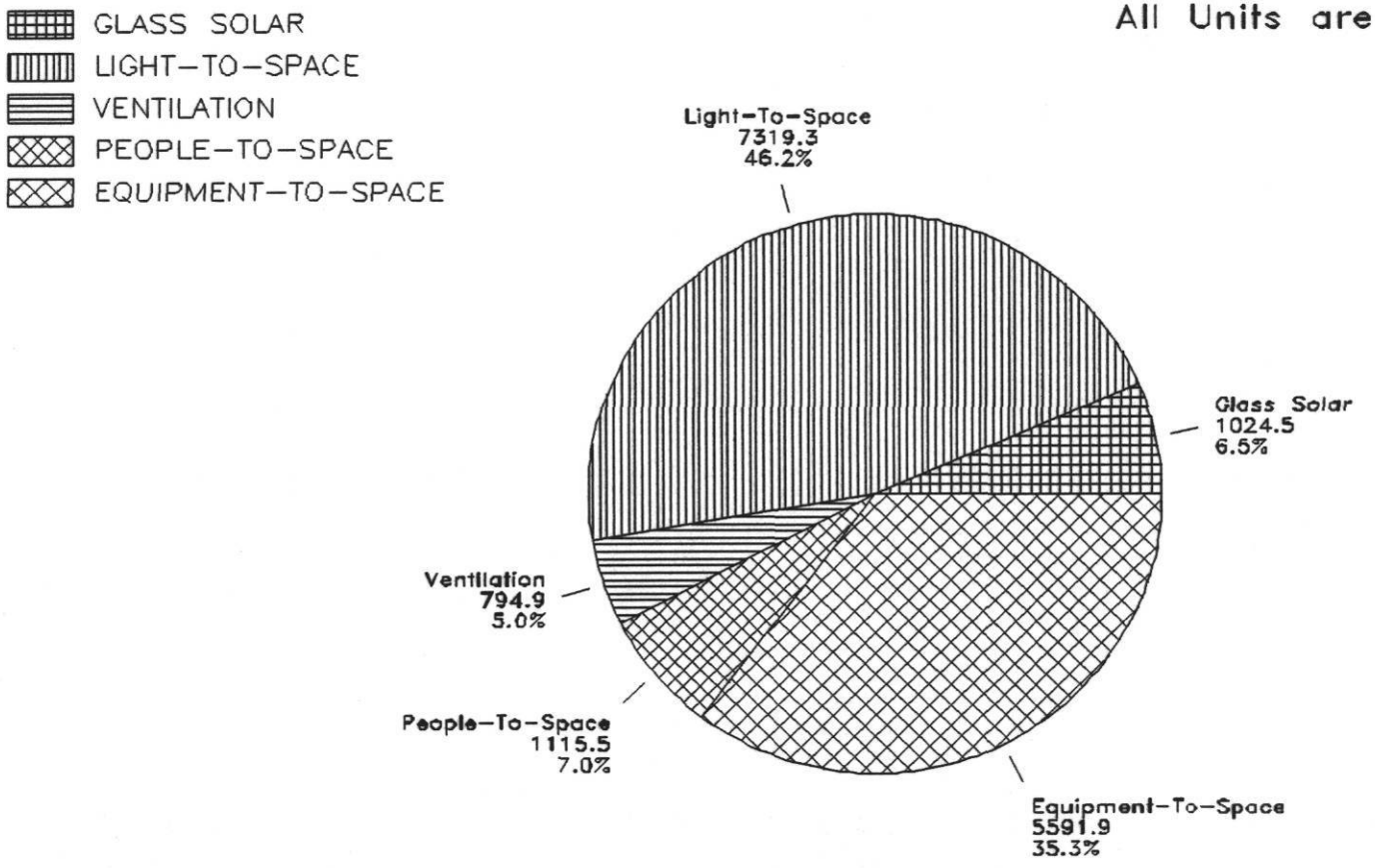

Figure 4.3–Total Cooling of the Base Case TYC/TRC Building.

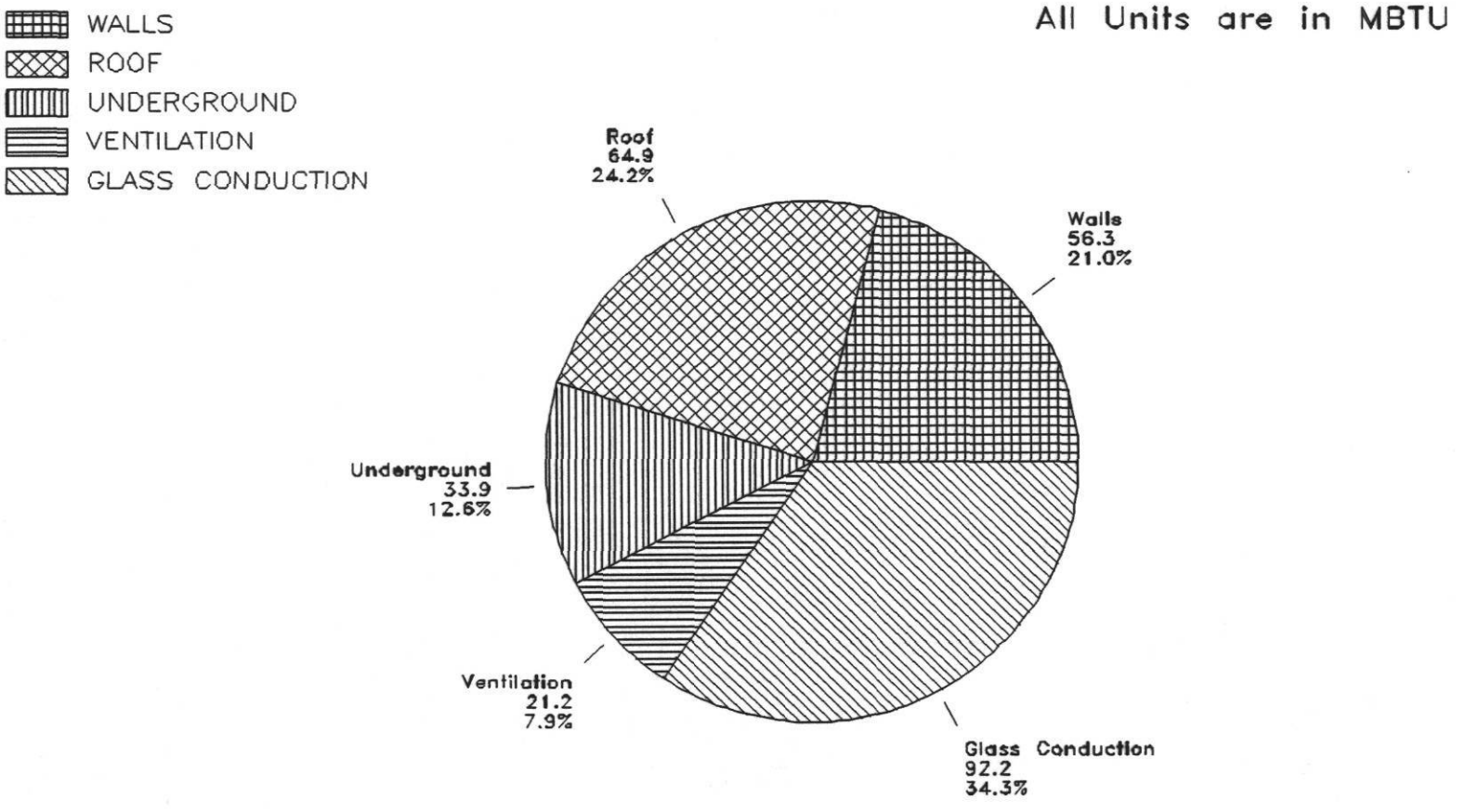

Figure 4.4—Total Heating of the Base Case TYC/TRC Building.

Table 4.1–Comparison of Energy Use of the Base TYC/TRC Building with VAV System with an Economizer Cycle.

	Cooling [cop=3] MBTU	Heating MBTU	Lighting & Equipment MBTU(MWH)	Fan MBTU(MWH)	Total MBTU	EUI+ KBTU/SF/YR	% Change In EUI
Base	3593	8748	16369(4796)	6459(1890)	35169	136	–
VAV + Economizer Cycle	3575	4179	16369(4796)	3331(976)	27454	106	28.3

+Energy Use Index

fan and temperature based economizer cycle. The breakup of various loads and also the Energy Use Index (EUI Btu/yr/sf) for the base case and the VAV option are shown in Table 4.1. The change in cooling energy is 0.5% and the change in heating energy is 52%. Although the reduction in total cooling energy was not significant, there is a net reduction of 28% in the total energy use.

California & ASHRAE Standards

California has had strict energy requirements for the past few years [3]. California Standards were used to evaluate their impact on the EUI for the TYC/TRC Buildings. Table 4.2 shows the major differences between the base building and the California Standards.

Table 4.2–Comparison of Base TYC/TRC Building and With the Building conformed to the California Standard Requirements

Item	Base	Standards
Lighting	2.5 w/sf	1.5 w/sf
Design Heating	75°F	70°F
Design Cooling	75°F	78°F
Maximum Glazing	25% *	less than 50%
Cooling System	DDV	VAV
Heating	Electrical	Non-Electrical or Heat pump
Ventilation per Person	20 cfm/hr	10 cfm/hr

*Percent of the total exterior surface area.

There are three major differences between ASHRAE and California Standards: (i) the California Standards restrict the use of electric resistance heating while the ASHRAE Standards do not; (ii) the ASHRAE Standards do not restrict the amount of glazing (glass area) while the

California Standards do; and (iii) the ASHRAE Stadards require maximum lighting levels of 1.8 w/sf compared to 1.5 w/sf by California Standards.

The comparison of peak heating and cooling loads of the base building and the modified building which conformed to the California Standards and ASHRAE Standards are shown in Table 4.3. The reduction in the peak cooling load with the California Standards is 18%. The principle reasons for the reduction of the peak cooling load are due to the reduction of fresh air requirement from 20 cfm/hr to 10 cfm/hr per person, and the reduction of the lighting by 1.0 w/sf (from 2.5 to 1.5 W/sf). The peak heating load with the California Standards is the same as with the base case. Although, there is on change in the peak heating load the peak cooling load reduced by 18% for the ASHRAE Standards. The principle reasons for the reduction of the peak cooling load are due to the reduction of fresh air requirement from 20 cfm/hr to 10 cfm/hr per person, and the reduction of the lighting by 0.7 w/sf (from 2.5 to 1.8 W/sf).

The comparison of total cooling, heating and electric energy for the base building and building with the California and ASHRAE Standards are shown in Table 4.4. Because the California Standards restrict the zone design temperatures, lighting levels, and requires a heat pump for heating, the total energy consumption has dropped by 44%. The major reduction in cooling energy is due to reduced heat gains from lights and also because of an increase in design cooling temperature. The reduction of total heating energy is basically from the use of more efficient air handling systems, use of heat pump and decreasing the design heating temperature. For ASHRAE Standards the reduction in the energy required for lighting is 15%. The reduction in total cooling and total heating energy is 13%

Table 4.3–Comparison of Peak Loads For the TYC/TRC Building with the Building with the ASHRAE and the California Standards. (MBtu/H)

Option	Cooling Load	Heating Load
BASE	5.6	1.1
ASHRAE STAND.	4.6	1.1
CAL. STAND.	4.4	1.1

Table 4.4–Comparison of Energy Use of the Base TYC/TRC Building With the ASHRAE and the California Standards.

	Cooling [cop=3] MBTU	Heating MBTU	Lighting & Equipment MBTU(MWH)	Fan MBTU(MWH)	Total MBTU	EUI+ KBTU/SF/YR	% Change In EUI
Base	3593	8748	16369(4796)	6459(1890)	35169	136	–
ASHRAE Stand.	3126	1740	13910(4076)	2867(840)	21643	84	38
Cal. Stand.	2961	1506	12852(3367)	2320(699)	19639	76	44

+ Energy Use Index

and 80%, respectively. The total energy use reduced by 38%. The major reduction in cooling energy is due to reduced heat gains from lights and also because of an increase in design cooling temperature. The reduction of total heating energy is basically from the use of more efficient air handling systems and decreasing the design heating temperature.

Although implementing the California Standards shows a substantial reduction in both peak loads and total energy use, the economics must still be determined. The use of VAV system in place of the proposed DDV system will reduce the total energy use substantially. The use of a heat pumps for heating may increase the initial cost of the building significantly. More expensive direct expansion coils would have to be used as compared to relatively inexpensive electric resistance heaters. However, it would also be possible to use water source heat pumps to move heat from one section of the building to another. Thus, the heat extracted from an area needing cooling could be rejected in an area needing heating. This operation would also reduce the chiller power in the winter months.

CHAPTER V

CONCLUSIONS & RECOMMENDATIONS

The energy use of the TYC/TRC Building at Austin, Texas was analyzed using the DOE 2.1B building energy simulation program. An analysis was made for the building as specified in the building plans and by the State Purchasing and General Services Commission. The assumed parameters include the operating schedules for occupancy, lighting, office equipment, and infiltration. The energy consumption of the TYC/TRC Building can be reduced with certain modifications to the proposed design.

Several options for reducing the building energy use were evaluated (i) employing a VAV system with a variable speed fan and a temperature based economizer cycle and (ii) implementing ASHRAE Energy Standards and (iii) implementing the California Energy Standards.

A net reduction of 44% was obtained using the California Standards. The parameters which caused the reduction in the energy consumption with the use of California Standards include: (i) reducing the lighting levels from 2.5 w/sf to 1.5 w/sf, (ii) reducing the ventilation levels from 20 to 10 cfm/hr/person and (iii) using an high efficiency air handling system (VAV) in place of the exiting DDV system. The California Standards are more stringent and is a better choice for state owned buildings which have a life of 30 to 40 years.

REFERENCES

[1] "Energy Conservation Procedures for HVAC," Bywaters & Associates Consulting Engineers, Public Utilities Commission of Texas, Austin, TX, 1984.

[2] "Energy Efficient Design of New Non-Residential Buildings and New High- Rise Residential Buildings," ANSI/ASHRAE/IES 90.1P, public review draft june 10, 1985, The American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc. (ASHRAE), 1791 Tullie Circle NE, Atlanta, GA 30329.

[3] "Energy Efficiency Standards for New Buildings," California Energy Commission, September, 1984.

[4] PC–DOE, Version–2.1B, CA Systems International Inc., Dec. 1985.

APPENDIX A

BUILDING ENERGY ANALYSIS PROGRAM

ORIGINALLY DEVELOPED BY:
LAWRENCE BERKELEY LABORATORY/UNIVERSITY OF CALIFORNIA

MODIFIED AND ENHANCED FOR THE PERSONAL COMPUTER BY:
CA SYSTEMS INTERNATIONAL, INC./LAKEWOOD, COLORADO

REPORT- LV-A GENERAL PROJECT AND BUILDING INPUT

PERIOD OF STUDY

STARTING DATE	ENDING DATE	NUMBER OF DAYS
1 JAN 1986	31 DEC 1986	365

SITE CHARACTERISTIC DATA

STATION NAME		LATITUDE (DEG)	LONGITUDE (DEG)	ALTITUDE (FT)	TIME ZONE	BUILDING AZIMUTH (DEG)
TMY AUSTIN	TX	30.3	97.8	597.	6 CST	0.0

REPORT- LS-B SPACE PEAK LOAD COMPONENTS FIRST-1

SPACE FIRST-1

MULTIPLIER 1.0 FLOOR MULTIPLIER 1.0

FLOOR AREA 27568 SQFT 2561 SQMT
VOLUME 514603 CUFT 14574 CUMT

	COOLING LOAD		HEATING LOAD	
TIME	AUG 11 4PM		JAN 19 6AM	
DRY-BULB TEMP	104F	40C	28F	-2C
WET-BULB TEMP	75F	24C	26F	-3C

	SENSIBLE (KBTU/H)	SENSIBLE (KW)	LATENT (KBTU/H)	LATENT (KW)	SENSIBLE (KBTU/H)	SENSIBLE (KW)
WALLS	26.047	7.629	0.000	0.000	-35.325	-10.346
ROOFS	0.000	0.000	0.000	0.000	0.000	0.000
GLASS CONDUCTION	31.778	9.307	0.000	0.000	-53.722	-15.734
GLASS SOLAR	17.899	5.242	0.000	0.000	2.038	0.597
DOOR	0.000	0.000	0.000	0.000	0.000	0.000
INTERNAL SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
UNDERGROUND SURFACES	6.330	1.854	0.000	0.000	-35.431	-10.377
OCCUPANTS TO SPACE	14.271	4.180	10.107	2.960	3.343	0.979
LIGHT TO SPACE	213.197	62.440	0.000	0.000	47.462	13.900
EQUIPMENT TO SPACE	139.665	40.904	0.000	0.000	32.208	9.433
PROCESS TO SPACE	0.000	0.000	0.000	0.000	0.000	0.000
INFILTRATION	77.468	22.688	33.973	9.950	-10.800	-3.163
TOTAL	526.654	154.244	44.080	12.910	-50.227	-14.710
TOTAL LOAD	570.734 KBTU/H		167.154 KW		-50.227 KBTU/H	-14.710 KW
TOTAL LOAD / AREA	20.70BTU/H.SQFT		65.265 W /SQMT		1.822BTU/H.SQFT	5.744 W /SQMT

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*****************************************************************
*                                                               *
*  NOTE  1)THE ABOVE LOADS EXCLUDE OUTSIDE VENTILATION AIR      *
*  ----    LOADS                                                *
*        2)TIMES GIVEN IN STANDARD TIME FOR THE LOCATION        *
*          IN CONSIDERATION                                     *
*                                                               *
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REPORT- LS-B SPACE PEAK LOAD COMPONENTS LOBBY-1

SPACE LOBBY-1

MULTIPLIER 1.0 FLOOR MULTIPLIER 1.0

FLOOR AREA 2500 SQFT 232 SQMT
VOLUME 46675 CUFT 1322 CUMT

	COOLING LOAD		HEATING LOAD	
TIME	AUG 11 5PM		JAN 19 6AM	
DRY-BULB TEMP	103F	39C	28F	-2C
WET-BULB TEMP	75F	24C	26F	-3C

	SENSIBLE (KBTU/H)	SENSIBLE (KW)	LATENT (KBTU/H)	LATENT (KW)	SENSIBLE (KBTU/H)	SENSIBLE (KW)
WALLS	5.308	1.555	0.000	0.000	-6.213	-1.819
ROOFS	0.000	0.000	0.000	0.000	0.000	0.000
GLASS CONDUCTION	5.251	1.538	0.000	0.000	-8.954	-2.622
GLASS SOLAR	4.170	1.221	0.000	0.000	0.363	0.106
DOOR	0.000	0.000	0.000	0.000	0.000	0.000
INTERNAL SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
UNDERGROUND SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
OCCUPANTS TO SPACE	14.580	4.270	10.107	2.960	3.343	0.979
LIGHT TO SPACE	19.593	5.738	0.000	0.000	4.304	1.261
EQUIPMENT TO SPACE	12.905	3.779	0.000	0.000	2.921	0.855
PROCESS TO SPACE	0.000	0.000	0.000	0.000	0.000	0.000
INFILTRATION	6.092	1.784	2.980	0.873	-0.980	-0.287
TOTAL	67.899	19.886	13.087	3.833	-5.214	-1.527
TOTAL LOAD	80.986 KBTU/H		23.719 KW		-5.214 KBTU/H	-1.527 KW
TOTAL LOAD / AREA	32.39BTU/H.SQFT		102.123 W /SQMT		2.086BTU/H.SQFT	6.575 W /SQMT

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*****************************************************************
*                                                               *
*  NOTE  1)THE ABOVE LOADS EXCLUDE OUTSIDE VENTILATION AIR      *
*  ----    LOADS                                                *
*        2)TIMES GIVEN IN STANDARD TIME FOR THE LOCATION        *
*          IN CONSIDERATION                                     *
*                                                               *
*****************************************************************
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REPORT- LS-B SPACE PEAK LOAD COMPONENTS LOBBY-2

SPACE LOBBY-2

MULTIPLIER 1.0 FLOOR MULTIPLIER 1.0

FLOOR AREA 1024 SQFT 95 SQMT
VOLUME 19118 CUFT 541 CUMT

	COOLING LOAD		HEATING LOAD	
TIME	AUG 11 4PM		JAN 20 6AM	
DRY-BULB TEMP	104F	40C	30F	-1C
WET-BULB TEMP	75F	24C	29F	-2C

	SENSIBLE (KBTU/H)	SENSIBLE (KW)	LATENT (KBTU/H)	LATENT (KW)	SENSIBLE (KBTU/H)	SENSIBLE (KW)
WALLS	2.761	0.809	0.000	0.000	-3.718	-1.089
ROOFS	0.000	0.000	0.000	0.000	0.000	0.000
GLASS CONDUCTION	3.384	0.991	0.000	0.000	-5.058	-1.481
GLASS SOLAR	2.525	0.740	0.000	0.000	0.197	0.058
DOOR	0.000	0.000	0.000	0.000	0.000	0.000
INTERNAL SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
UNDERGROUND SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
OCCUPANTS TO SPACE	14.271	4.180	10.107	2.960	0.530	0.155
LIGHT TO SPACE	6.335	1.855	0.000	0.000	1.398	0.410
EQUIPMENT TO SPACE	5.188	1.519	0.000	0.000	1.189	0.348
PROCESS TO SPACE	0.000	0.000	0.000	0.000	0.000	0.000
INFILTRATION	2.878	0.843	1.262	0.370	0.000	0.000
TOTAL	37.342	10.937	11.369	3.330	-5.463	-1.600
TOTAL LOAD	48.711 KBTU/H		14.266 KW		-5.463 KBTU/H	-1.600 KW
TOTAL LOAD / AREA	47.57BTU/H.SQFT		149.963 W /SQMT		5.334BTU/H.SQFT	16.817 W /SQMT

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*                                                               *
*  NOTE  1)THE ABOVE LOADS EXCLUDE OUTSIDE VENTILATION AIR      *
*  ----    LOADS                                                *
*        2)TIMES GIVEN IN STANDARD TIME FOR THE LOCATION        *
*          IN CONSIDERATION                                     *
*                                                               *
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REPORT- LS-B SPACE PEAK LOAD COMPONENTS FIRST-2

SPACE FIRST-2

MULTIPLIER 1.0 FLOOR MULTIPLIER 1.0

FLOOR AREA 26113 SQFT 2426 SQMT
VOLUME 487530 CUFT 13807 CUMT

	COOLING LOAD		HEATING LOAD	
TIME	AUG 11 4PM		JAN 19 6AM	
DRY-BULB TEMP	104F	40C	28F	-2C
WET-BULB TEMP	75F	24C	26F	-3C

	SENSIBLE (KBTU/H)	SENSIBLE (KW)	LATENT (KBTU/H)	LATENT (KW)	SENSIBLE (KBTU/H)	SENSIBLE (KW)
WALLS	25.928	7.594	0.000	0.000	-33.866	-9.918
ROOFS	0.000	0.000	0.000	0.000	0.000	0.000
GLASS CONDUCTION	33.011	9.668	0.000	0.000	-55.871	-16.363
GLASS SOLAR	18.621	5.454	0.000	0.000	1.923	0.563
DOOR	0.000	0.000	0.000	0.000	0.000	0.000
INTERNAL SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
UNDERGROUND SURFACES	6.000	1.757	0.000	0.000	-33.583	-9.836
OCCUPANTS TO SPACE	14.271	4.180	10.107	2.960	3.343	0.979
LIGHT TO SPACE	161.556	47.316	0.000	0.000	35.965	10.533
EQUIPMENT TO SPACE	132.294	38.746	0.000	0.000	30.508	8.935
PROCESS TO SPACE	0.000	0.000	0.000	0.000	0.000	0.000
INFILTRATION	73.392	21.495	32.186	9.426	-10.232	-2.997
TOTAL	465.071	136.208	42.293	12.386	-61.813	-18.103
TOTAL LOAD	507.364 KBTU/H		148.594 KW		-61.813 KBTU/H	-18.103 KW
TOTAL LOAD / AREA	19.43BTU/H.SQFT		61.251 W /SQMT		2.367BTU/H.SQFT	7.462 W /SQMT

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*                                                            *
*  NOTE  1)THE ABOVE LOADS EXCLUDE OUTSIDE VENTILATION AIR   *
*  ----    LOADS                                             *
*        2)TIMES GIVEN IN STANDARD TIME FOR THE LOCATION     *
*          IN CONSIDERATION                                  *
*                                                            *
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REPORT- LS-B SPACE PEAK LOAD COMPONENTS SECOND-1

SPACE SECOND-1

MULTIPLIER 1.0 FLOOR MULTIPLIER 1.0

FLOOR AREA 27568 SQFT 2561 SQMT
VOLUME 514603 CUFT 14574 CUMT

	COOLING LOAD		HEATING LOAD	
TIME	JUN 12 4PM			
DRY-BULB TEMP	94F	34C		
WET-BULB TEMP	75F	24C		

	SENSIBLE (KBTU/H)	SENSIBLE (KW)	LATENT (KBTU/H)	LATENT (KW)	SENSIBLE (KBTU/H)	SENSIBLE (KW)
WALLS	16.445	4.816	0.000	0.000	0.000	0.000
ROOFS	0.000	0.000	0.000	0.000	0.000	0.000
GLASS CONDUCTION	15.824	4.635	0.000	0.000	0.000	0.000
GLASS SOLAR	16.945	4.963	0.000	0.000	0.000	0.000
DOOR	0.000	0.000	0.000	0.000	0.000	0.000
INTERNAL SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
UNDERGROUND SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
OCCUPANTS TO SPACE	14.342	4.200	10.107	2.960	0.000	0.000
LIGHT TO SPACE	216.122	63.297	0.000	0.000	0.000	0.000
EQUIPMENT TO SPACE	141.191	41.351	0.000	0.000	0.000	0.000
PROCESS TO SPACE	0.000	0.000	0.000	0.000	0.000	0.000
INFILTRATION	87.797	25.713	106.730	31.259	0.000	0.000
TOTAL	508.666	148.976	116.837	34.219	0.000	0.000

TOTAL LOAD	625.503 KBTU/H	183.194 KW	0.000 KBTU/H	0.000 KW
TOTAL LOAD / AREA	22.69BTU/H.SQFT	71.528 W /SQMT	0.000BTU/H.SQFT	0.000 W /SQMT

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*                                                           *
*  NOTE  1)THE ABOVE LOADS EXCLUDE OUTSIDE VENTILATION AIR  *
*  ----    LOADS                                            *
*        2)TIMES GIVEN IN STANDARD TIME FOR THE LOCATION    *
*          IN CONSIDERATION                                 *
*                                                           *
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REPORT- LS-B SPACE PEAK LOAD COMPONENTS SECOND-2

SPACE SECOND-2

MULTIPLIER 1.0 FLOOR MULTIPLIER 1.0

FLOOR AREA 26113 SQFT 2426 SQMT
VOLUME 487530 CUFT 13807 CUMT

	COOLING LOAD		HEATING LOAD	
TIME	JUN 12 4PM		JAN 19 6AM	
DRY-BULB TEMP	94F	34C	28F	-2C
WET-BULB TEMP	75F	24C	26F	-3C

	SENSIBLE (KBTU/H)	SENSIBLE (KW)	LATENT (KBTU/H)	LATENT (KW)	SENSIBLE (KBTU/H)	SENSIBLE (KW)
WALLS	14.715	4.310	0.000	0.000	-29.316	-8.586
ROOFS	0.000	0.000	0.000	0.000	0.000	0.000
GLASS CONDUCTION	14.878	4.357	0.000	0.000	-37.247	-10.909
GLASS SOLAR	15.963	4.675	0.000	0.000	1.354	0.396
DOOR	0.000	0.000	0.000	0.000	0.000	0.000
INTERNAL SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
UNDERGROUND SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
OCCUPANTS TO SPACE	14.342	4.200	10.107	2.960	3.343	0.979
LIGHT TO SPACE	163.772	47.965	0.000	0.000	35.965	10.533
EQUIPMENT TO SPACE	133.740	39.169	0.000	0.000	30.508	8.935
PROCESS TO SPACE	0.000	0.000	0.000	0.000	0.000	0.000
INFILTRATION	83.178	24.361	101.115	29.614	-10.232	-2.997
TOTAL	440.588	129.037	111.222	32.574	-5.625	-1.647
TOTAL LOAD	551.810 KBTU/H		161.611 KW		-5.625 KBTU/H	-1.647 KW
TOTAL LOAD / AREA	21.13BTU/H.SQFT		66.617 W /SQMT		0.215BTU/H.SQFT	0.679 W /SQMT

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*                                                               *
*  NOTE  1)THE ABOVE LOADS EXCLUDE OUTSIDE VENTILATION AIR      *
*  ----    LOADS                                                *
*        2)TIMES GIVEN IN STANDARD TIME FOR THE LOCATION        *
*          IN CONSIDERATION                                     *
*                                                               *
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REPORT- LS-B SPACE PEAK LOAD COMPONENTS THIRD-1

SPACE THIRD-1

MULTIPLIER 3.0 FLOOR MULTIPLIER 1.0

FLOOR AREA 21476 SQFT 1995 SQMT
VOLUME 300664 CUFT 8515 CUMT

	COOLING LOAD		HEATING LOAD	
TIME	AUG 11 4PM		JAN 19 6AM	
DRY-BULB TEMP	104F	40C	28F	-2C
WET-BULB TEMP	75F	24C	26F	-3C

	SENSIBLE (KBTU/H)	SENSIBLE (KW)	LATENT (KBTU/H)	LATENT (KW)	SENSIBLE (KBTU/H)	SENSIBLE (KW)
WALLS	17.487	5.121	0.000	0.000	-23.183	-6.790
ROOFS	0.000	0.000	0.000	0.000	0.000	0.000
GLASS CONDUCTION	24.274	7.109	0.000	0.000	-41.068	-12.028
GLASS SOLAR	16.919	4.955	0.000	0.000	1.469	0.430
DOOR	0.000	0.000	0.000	0.000	0.000	0.000
INTERNAL SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
UNDERGROUND SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
OCCUPANTS TO SPACE	14.271	4.180	10.107	2.960	3.343	0.979
LIGHT TO SPACE	132.868	38.914	0.000	0.000	29.579	8.663
EQUIPMENT TO SPACE	108.802	31.865	0.000	0.000	25.091	7.348
PROCESS TO SPACE	0.000	0.000	0.000	0.000	0.000	0.000
INFILTRATION	45.261	13.256	19.849	5.813	-6.310	-1.848
TOTAL	359.881	105.400	29.956	8.773	-11.079	-3.245
TOTAL LOAD	389.837 KBTU/H		114.174 KW		-11.079 KBTU/H	-3.245 KW
TOTAL LOAD / AREA	18.15BTU/H.SQFT		57.225 W /SQMT		0.516BTU/H.SQFT	1.626 W /SQMT

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*                                                               *
*  NOTE  1)THE ABOVE LOADS EXCLUDE OUTSIDE VENTILATION AIR      *
*  ----    LOADS                                                *
*        2)TIMES GIVEN IN STANDARD TIME FOR THE LOCATION        *
*          IN CONSIDERATION                                     *
*                                                               *
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REPORT- LS-B SPACE PEAK LOAD COMPONENTS THIRD-2

SPACE THIRD-2

MULTIPLIER 3.0 FLOOR MULTIPLIER 1.0

FLOOR AREA 16150 SQFT 1500 SQMT
VOLUME 226100 CUFT 6403 CUMT

	COOLING LOAD		HEATING LOAD	
TIME	AUG 11 4PM		JAN 19 6AM	
DRY-BULB TEMP	104F	40C	28F	-2C
WET-BULB TEMP	75F	24C	26F	-3C

	SENSIBLE (KBTU/H)	SENSIBLE (KW)	LATENT (KBTU/H)	LATENT (KW)	SENSIBLE (KBTU/H)	SENSIBLE (KW)
WALLS	20.363	5.964	0.000	0.000	-26.949	-7.893
ROOFS	0.000	0.000	0.000	0.000	0.000	0.000
GLASS CONDUCTION	18.639	5.459	0.000	0.000	-31.517	-9.231
GLASS SOLAR	11.795	3.454	0.000	0.000	1.136	0.333
DOOR	0.000	0.000	0.000	0.000	0.000	0.000
INTERNAL SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
UNDERGROUND SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
OCCUPANTS TO SPACE	14.271	4.180	10.107	2.960	3.343	0.979
LIGHT TO SPACE	99.917	29.263	0.000	0.000	22.243	6.515
EQUIPMENT TO SPACE	81.819	23.963	0.000	0.000	18.868	5.526
PROCESS TO SPACE	0.000	0.000	0.000	0.000	0.000	0.000
INFILTRATION	34.037	9.969	14.927	4.372	-4.745	-1.390
TOTAL	280.841	82.251	25.034	7.332	-17.620	-5.161
TOTAL LOAD	305.875 KBTU/H		89.583 KW		-17.620 KBTU/H	-5.161 KW
TOTAL LOAD / AREA	18.94BTU/H.SQFT		59.707 W /SQMT		1.091BTU/H.SQFT	3.439 W /SQMT

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*  NOTE  1)THE ABOVE LOADS EXCLUDE OUTSIDE VENTILATION AIR   *
*  ----    LOADS                                             *
*        2)TIMES GIVEN IN STANDARD TIME FOR THE LOCATION     *
*          IN CONSIDERATION                                  *
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REPORT- LS-B SPACE PEAK LOAD COMPONENTS SIXTH-1

SPACE SIXTH-1

MULTIPLIER 1.0 FLOOR MULTIPLIER 1.0

FLOOR AREA 17754 SQFT 1649 SQMT
VOLUME 248556 CUFT 7039 CUMT

	COOLING LOAD		HEATING LOAD	
TIME	AUG 11 5PM		JAN 19 6AM	
DRY-BULB TEMP	103F	39C	28F	-2C
WET-BULB TEMP	75F	24C	26F	-3C

	SENSIBLE (KBTU/H)	SENSIBLE (KW)	LATENT (KBTU/H)	LATENT (KW)	SENSIBLE (KBTU/H)	SENSIBLE (KW)
WALLS	19.404	5.683	0.000	0.000	-26.491	-7.759
ROOFS	0.000	0.000	0.000	0.000	0.000	0.000
GLASS CONDUCTION	26.855	7.865	0.000	0.000	-45.843	-13.426
GLASS SOLAR	21.334	6.248	0.000	0.000	1.688	0.494
DOOR	0.000	0.000	0.000	0.000	0.000	0.000
INTERNAL SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
UNDERGROUND SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
OCCUPANTS TO SPACE	14.580	4.270	10.107	2.960	3.343	0.979
LIGHT TO SPACE	111.316	32.602	0.000	0.000	24.453	7.162
EQUIPMENT TO SPACE	91.644	26.840	0.000	0.000	20.742	6.075
PROCESS TO SPACE	0.000	0.000	0.000	0.000	0.000	0.000
INFILTRATION	32.442	9.501	15.868	4.647	-5.217	-1.528
TOTAL	317.574	93.009	25.975	7.607	-27.325	-8.003

TOTAL LOAD	343.549 KBTU/H	100.617 KW	-27.325 KBTU/H	-8.003 KW
TOTAL LOAD / AREA	19.35BTU/H.SQFT	61.002 W /SQMT	1.539BTU/H.SQFT	4.852 W /SQMT

NOTE 1)THE ABOVE LOADS EXCLUDE OUTSIDE VENTILATION AIR LOADS
2)TIMES GIVEN IN STANDARD TIME FOR THE LOCATION IN CONSIDERATION

REPORT- LS-B SPACE PEAK LOAD COMPONENTS SEVENTH-1

SPACE SEVENTH-1

MULTIPLIER 1.0 FLOOR MULTIPLIER 1.0

FLOOR AREA 17754 SQFT 1649 SQMT
VOLUME 248556 CUFT 7039 CUMT

	COOLING LOAD		HEATING LOAD	
TIME	AUG 11 4PM		JAN 19 6AM	
DRY-BULB TEMP	104F	40C	28F	-2C
WET-BULB TEMP	75F	24C	26F	-3C

	SENSIBLE (KBTU/H)	SENSIBLE (KW)	LATENT (KBTU/H)	LATENT (KW)	SENSIBLE (KBTU/H)	SENSIBLE (KW)
WALLS	19.759	5.787	0.000	0.000	-26.491	-7.759
ROOFS	88.756	25.994	0.000	0.000	-82.608	-24.194
GLASS CONDUCTION	27.149	7.951	0.000	0.000	-45.843	-13.426
GLASS SOLAR	18.855	5.522	0.000	0.000	1.688	0.494
DOOR	0.000	0.000	0.000	0.000	0.000	0.000
INTERNAL SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
UNDERGROUND SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
OCCUPANTS TO SPACE	14.271	4.180	10.107	2.960	3.343	0.979
LIGHT TO SPACE	109.840	32.170	0.000	0.000	24.453	7.162
EQUIPMENT TO SPACE	89.945	26.343	0.000	0.000	20.742	6.075
PROCESS TO SPACE	0.000	0.000	0.000	0.000	0.000	0.000
INFILTRATION	37.417	10.959	16.409	4.806	-5.217	-1.528
TOTAL	405.993	118.905	26.516	7.766	-109.933	-32.197
TOTAL LOAD	432.509 KBTU/H		126.671 KW		-109.933 KBTU/H	-32.197 KW
TOTAL LOAD / AREA	24.36BTU/H.SQFT		76.798 W /SQMT		6.192BTU/H.SQFT	19.520 W /SQMT

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* *
* NOTE 1)THE ABOVE LOADS EXCLUDE OUTSIDE VENTILATION AIR *
* ---- LOADS *
* 2)TIMES GIVEN IN STANDARD TIME FOR THE LOCATION *
* IN CONSIDERATION *
* *
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REPORT- LS-C BUILDING PEAK LOAD COMPONENTS

*** BUILDING ***

FLOOR AREA	259272 SQFT	24086 SQMT
VOLUME	4147463 CUFT	117456 CUMT

	COOLING LOAD		HEATING LOAD	
TIME	AUG 11 4PM		JAN 19 6AM	
DRY-BULB TEMP	104F	40C	28F	-2C
WET-BULB TEMP	75F	24C	26F	-3C

	SENSIBLE (KBTU/H)	SENSIBLE (KW)	LATENT (KBTU/H)	LATENT (KW)	SENSIBLE (KBTU/H)	SENSIBLE (KW)
WALLS	259.870	76.110	0.000	0.000	-312.078	-91.400
ROOFS	88.756	25.994	0.000	0.000	-82.608	-24.194
GLASS CONDUCTION	301.946	88.432	0.000	0.000	-470.963	-137.933
GLASS SOLAR	192.280	56.314	0.000	0.000	17.052	4.994
DOOR	0.000	0.000	0.000	0.000	0.000	0.000
INTERNAL SURFACES	0.000	0.000	0.000	0.000	0.000	0.000
UNDERGROUND SURFACES	12.329	3.611	0.000	0.000	-69.014	-20.213
OCCUPANTS TO SPACE	199.792	58.514	141.501	41.442	43.463	12.729
LIGHT TO SPACE	1693.209	495.899	0.000	0.000	329.478	96.496
EQUIPMENT TO SPACE	1313.525	384.698	0.000	0.000	270.702	79.282
PROCESS TO SPACE	0.000	0.000	0.000	0.000	0.000	0.000
INFILTRATION	624.353	182.857	273.805	80.191	-76.246	-22.330
TOTAL	4686.061	1372.430	415.306	121.633	-350.213	-102.569
TOTAL LOAD	5101.367 KBTU/H		1494.063 KW		-350.213 KBTU/H	-102.569 KW
TOTAL LOAD / AREA	19.68BTU/H.SQFT		62.027 W /SQMT		1.351BTU/H.SQFT	4.258 W /SQMT

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*  NOTE  1)THE ABOVE LOADS EXCLUDE OUTSIDE VENTILATION AIR      *
*  ----    LOADS                                                *
*        2)TIMES GIVEN IN STANDARD TIME FOR THE LOCATION        *
*          IN CONSIDERATION                                     *
*                                                               *
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REPORT- LS-D BUILDING MONTHLY LOADS SUMMARY

	COOLING						HEATING						ELEC	
MONTH	COOLING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM COOLING LOAD (KBTU/HR)	HEATING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM HEATING LOAD (KBTU/HR)	ELEC-TRICAL ENERGY (KWH)	MAXIMUM ELEC LOAD (KW)
JAN	782.91364	6	16	82.F	62.F	3745.827	-19.290	19	6	28.F	26.F	-350.213	413341.	1228.953
FEB	734.72888	5	16	80.F	60.F	3679.606	-13.574	22	7	31.F	27.F	-207.897	364568.	1228.953
MAR	904.31573	20	16	81.F	54.F	3845.750	-10.880	1	7	24.F	21.F	-278.512	403270.	1228.953
APR	1145.31702	7	17	89.F	65.F	4090.145	-0.203	4	6	46.F	41.F	-34.570	407153.	1228.953
MAY	1268.43701	12	16	95.F	73.F	4508.129	-0.001	16	5	55.F	50.F	-1.296	403271.	1228.953
JUN	1400.14807	12	15	94.F	75.F	4588.838	-0.001	2	5	58.F	54.F	-0.723	397083.	1228.953
JUL	1538.18420	18	16	95.F	74.F	4408.354	0.000					0.000	413341.	1228.953
AUG	1499.11316	11	15	104.F	75.F	4686.060	0.000					0.000	403270.	1228.953
SEP	1371.32617	16	16	90.F	75.F	4408.582	0.000					0.000	397083.	1228.953
OCT	1228.31775	2	15	93.F	76.F	4382.883	-0.804	28	6	43.F	41.F	-49.322	413341.	1228.953
NOV	840.79547	7	15	82.F	63.F	3811.956	-7.150	20	6	31.F	28.F	-98.413	366872.	1228.953
DEC	830.78851	10	15	74.F	56.F	3434.150	-12.246	1	6	30.F	26.F	-182.693	413341.	1228.953
TOTAL	13544.385						-64.150						4795933.	
MAX						4686.060						-350.213		1229.0

REPORT- LS-F BUILDING MONTHLY LOAD COMPONENTS IN MBTU

(UNITS=MBTU)		WALLS	ROOFS	INT SUR	UND SUR	INFIL	GL CON	GL SOL	OCCUP	LIGHTS	EQUIP	SOURCE	TOTAL
	HEATNG	-18.030	-16.620	0.000	-9.473	-3.767	-29.053	4.178	2.727	28.207	22.541	0.000	-19.290
JAN	SEN CL	-100.586	-10.455	0.000	-41.874	-103.614	-168.286	75.028	57.529	610.004	465.169	0.000	782.915
	LAT CL					16.060			35.305		0.000	0.000	51.366
	HEATNG	-12.475	-11.916	0.000	-11.837	-2.121	-20.228	3.322	1.946	22.237	17.498	0.000	-13.574
FEB	SEN CL	-78.294	-7.265	0.000	-43.801	-78.118	-135.815	71.950	51.534	541.198	413.340	0.000	734.730
	LAT CL					22.044			31.513		0.000	0.000	53.557
	HEATNG	-9.749	-8.466	0.000	-9.008	-2.600	-16.001	2.943	1.564	17.161	13.276	0.000	-10.880
MAR	SEN CL	-65.017	-5.255	0.000	-53.450	-68.268	-121.557	90.827	57.607	606.106	463.324	0.000	904.318
	LAT CL					8.674			35.124		0.000	0.000	43.798
	HEATNG	-0.250	-0.772	0.000	-0.038	-0.004	-0.425	0.090	0.042	0.637	0.515	0.000	-0.203
APR	SEN CL	-9.765	2.255	0.000	-55.700	-10.911	-38.197	87.300	59.195	630.189	480.952	0.000	1145.317
	LAT CL					81.087			35.928		0.000	0.000	117.015
	HEATNG	-0.010	-0.036	0.000	0.000	0.000	-0.016	0.004	0.001	0.030	0.025	0.000	-0.001
MAY	SEN CL	21.818	11.335	0.000	-38.038	17.698	3.284	91.430	59.219	624.398	477.294	0.000	1268.438
	LAT CL					95.861			35.913		0.000	0.000	131.775
	HEATNG	-0.016	-0.060	0.000	0.000	-0.001	-0.027	0.009	0.004	0.049	0.041	0.000	-0.001
JUN	SEN CL	55.930	19.007	0.000	-17.929	54.412	53.556	95.560	57.995	613.032	468.584	0.000	1400.148
	LAT CL					136.374			35.232		0.000	0.000	171.606
	HEATNG	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
JUL	SEN CL	80.831	25.482	0.000	-1.599	62.909	84.427	97.615	60.332	639.612	488.576	0.000	1538.185
	LAT CL					129.095			36.621		0.000	0.000	165.716
	HEATNG	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
AUG	SEN CL	80.786	24.755	0.000	9.138	51.808	83.734	87.856	59.222	624.472	477.344	0.000	1499.114
	LAT CL					110.345			35.913		0.000	0.000	146.259
	HEATNG	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SEP	SEN CL	51.983	15.973	0.000	9.755	29.328	39.339	85.387	57.996	612.996	468.573	0.000	1371.329
	LAT CL					93.580			35.235		0.000	0.000	128.815
	HEATNG	-0.537	-1.810	0.000	0.000	-0.029	-0.913	0.188	0.104	1.207	0.986	0.000	-0.804
OCT	SEN CL	-5.065	1.812	0.000	1.396	-4.158	-39.458	87.829	60.204	638.260	487.500	0.000	1228.320
	LAT CL					71.781			36.581		0.000	0.000	108.362
	HEATNG	-5.072	-10.331	0.000	-0.356	-0.585	-8.726	1.307	0.903	8.643	7.068	0.000	-7.150
NOV	SEN CL	-67.434	-5.987	0.000	-14.220	-63.308	-124.335	77.553	53.729	557.731	427.068	0.000	840.798
	LAT CL					14.591			32.715		0.000	0.000	47.306
	HEATNG	-10.165	-14.879	0.000	-3.168	-1.471	-16.824	2.544	1.452	16.797	13.469	0.000	-12.246
DEC	SEN CL	-100.018	-10.281	0.000	-30.802	-89.234	-169.510	76.174	58.803	621.417	474.242	0.000	830.791
	LAT CL					15.292			36.051		0.000	0.000	51.343
	HEATNG	-56.304	-64.889	0.000	-33.880	-10.579	-92.213	14.586	8.743	94.967	75.419	0.000	-64.149
TOT	SEN CL	-134.829	61.376	0.000	-277.135	-201.455	-532.816	1024.511	693.311	7319.311	5591.886	0.000	13544.161
	LAT CL					794.786			422.207		0.000	0.000	1216.994

REPORT- SV-A SYSTEM DESIGN PARAMETERS FIRST

SYSTEM NAME	ALTITUDE MULTIPLIER
FIRST	1.020

SUPPLY FAN (CFM)	ELEC (KW)	DELTA-T (F)	RETURN FAN (CFM)	ELEC (KW)	DELTA-T (F)	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)
62179.	66.446	3.3	0.	0.000	0.0	0.035	682.759	1.000	-472.290	0.00	0.00

ZONE NAME	SUPPLY FLOW	EXHAUST FLOW	FAN (KW)	MINIMUM FLOW RATIO	OUTSIDE AIR FLOW	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	MULTIPLIER
FIRST-1	62179.	0.	0.000	1.000	2193.	0.00	0.00	537.23	0.00	-604.38	1.0

REPORT- SV-A SYSTEM DESIGN PARAMETERS FIRST2

SYSTEM NAME	ALTITUDE MULTIPLIER
FIRST2	1.020

SUPPLY FAN (CFM)	ELEC (KW)	DELTA-T (F)	RETURN FAN (CFM)	ELEC (KW)	DELTA-T (F)	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)
54907.	58.675	3.3	0.	0.000	0.0	0.038	632.313	1.000	-415.035	0.00	0.00

ZONE NAME	SUPPLY FLOW	EXHAUST FLOW	FAN (KW)	MINIMUM FLOW RATIO	OUTSIDE AIR FLOW	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	MULTIPLIER
FIRST-2	54907.	0.	0.000	1.000	2081.	0.00	0.00	474.39	0.00	-533.69	1.0

REPORT- SV-A SYSTEM DESIGN PARAMETERS SECOND

SYSTEM NAME	ALTITUDE MULTIPLIER
SECOND	1.020

SUPPLY FAN (CFM)	ELEC (KW)	DELTA-T (F)	RETURN FAN (CFM)	ELEC (KW)	DELTA-T (F)	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)
60058.	64.179	3.3	0.	0.000	0.0	0.037	665.417	1.000	-459.546	0.00	0.00

ZONE NAME	SUPPLY FLOW	EXHAUST FLOW	FAN (KW)	MINIMUM FLOW RATIO	OUTSIDE AIR FLOW	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	MULTIPLIER
SECOND-1	60058.	0.	0.000	1.000	2193.	0.00	0.00	518.90	0.00	-583.76	1.0

REPORT- SV-A SYSTEM DESIGN PARAMETERS SECOND2

SYSTEM NAME	ALTITUDE MULTIPLIER
SECOND2	1.020

SUPPLY FAN (CFM)	ELEC (KW)	DELTA-T (F)	RETURN FAN (CFM)	ELEC (KW)	DELTA-T (F)	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)
52020.	55.590	3.3	0.	0.000	0.0	0.040	606.701	1.000	-397.714	0.00	0.00

ZONE NAME	SUPPLY FLOW	EXHAUST FLOW	FAN (KW)	MINIMUM FLOW RATIO	OUTSIDE AIR FLOW	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	MULTIPLIER
SECOND-2	52020.	0.	0.000	1.000	2081.	0.00	0.00	449.45	0.00	-505.63	1.0

REPORT- SV-A SYSTEM DESIGN PARAMETERS THIRD

SYSTEM NAME	ALTITUDE MULTIPLIER
THIRD	1.020

SUPPLY FAN (CFM)	ELEC (KW)	DELTA-T (F)	RETURN FAN (CFM)	ELEC (KW)	DELTA-T (F)	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)
127480.	136.228	3.3	0.	0.000	0.0	0.030	1431.475	1.000	-918.288	0.00	0.00

ZONE NAME	SUPPLY FLOW	EXHAUST FLOW	FAN (KW)	MINIMUM FLOW RATIO	OUTSIDE AIR FLOW	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	MULTIPLIER
THIRD-1	42493.	0.	0.000	1.000	1285.	0.00	0.00	367.14	0.00	-413.03	3.0

REPORT- SV-A SYSTEM DESIGN PARAMETERS THIRD2

SYSTEM NAME	ALTITUDE MULTIPLIER
THIRD2	1.020

SUPPLY FAN (CFM)	ELEC (KW)	DELTA-T (F)	RETURN FAN (CFM)	ELEC (KW)	DELTA-T (F)	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)
99481.	106.308	3.3	0.	0.000	0.0	0.037	1118.489	1.000	-747.163	0.00	0.00

ZONE NAME	SUPPLY FLOW	EXHAUST FLOW	FAN (KW)	MINIMUM FLOW RATIO	OUTSIDE AIR FLOW	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	MULTIPLIER
THIRD-2	33160.	0.	0.000	1.000	1224.	0.00	0.00	286.50	0.00	-322.32	3.0

REPORT- SV-A SYSTEM DESIGN PARAMETERS SIX

SYSTEM NAME	ALTITUDE MULTIPLIER
SIX	1.020

SUPPLY FAN (CFM)	ELEC (KW)	DELTA-T (F)	RETURN FAN (CFM)	ELEC (KW)	DELTA-T (F)	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)
37495.	40.068	3.3	0.	0.000	0.0	0.033	418.119	1.000	-274.549	0.00	0.00

ZONE NAME	SUPPLY FLOW	EXHAUST FLOW	FAN (KW)	MINIMUM FLOW RATIO	OUTSIDE AIR FLOW	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	MULTIPLIER
SIXTH-1	37495.	0.	0.000	1.000	1224.	0.00	0.00	323.96	0.00	-364.45	1.0

REPORT- SV-A SYSTEM DESIGN PARAMETERS SEVEN

SYSTEM NAME	ALTITUDE MULTIPLIER
SEVEN	1.020

SUPPLY FAN (CFM)	ELEC (KW)	DELTA-T (F)	RETURN FAN (CFM)	ELEC (KW)	DELTA-T (F)	OUTSIDE AIR RATIO	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	HEATING CAPACITY (KBTU/HR)	COOLING EIR (BTU/BTU)	HEATING EIR (BTU/BTU)
47930.	51.219	3.3	0.	0.000	0.0	0.026	524.518	1.000	-337.205	0.00	0.00

ZONE NAME	SUPPLY FLOW	EXHAUST FLOW	FAN (KW)	MINIMUM FLOW RATIO	OUTSIDE AIR FLOW	COOLING CAPACITY (KBTU/HR)	SENSIBLE (SHR)	EXTRACTION RATE (KBTU/HR)	HEATING CAPACITY (KBTU/HR)	ADDITION RATE (KBTU/HR)	MULTIPLIER
SEVENTH-1	47930.	0.	0.000	1.000	1224.	0.00	0.00	414.11	0.00	-465.88	1.0

REPORT- SS-A SYSTEM MONTHLY LOADS SUMMARY FOR FIRST

	COOLING						HEATING						ELEC	
MONTH	COOLING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM COOLING LOAD (KBTU/HR)	HEATING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM HEATING LOAD (KBTU/HR)	ELEC-TRICAL ENERGY (KWH)	MAXIMUM ELEC LOAD (KW)
JAN	11.09860	29	15	75.F	67.F	634.529	-190.087	10	16	64.F	46.F	-1892.201	63713.	182.167
FEB	12.27767	19	15	75.F	66.F	624.139	-123.719	6	16	63.F	49.F	-1203.112	56115.	182.167
MAR	17.31956	20	13	75.F	61.F	624.208	-208.762	12	16	64.F	44.F	-2118.930	62068.	182.167
APR	63.57460	22	11	78.F	68.F	690.601	-84.346	3	13	65.F	47.F	-1701.454	62826.	182.167
MAY	115.93037	30	8	75.F	72.F	744.645	-29.427	2	10	64.F	50.F	-1281.954	62068.	182.167
JUN	197.99696	11	8	77.F	76.F	1261.372	-0.091	2	7	58.F	54.F	-70.467	61180.	182.167
JUL	226.83525	7	7	77.F	75.F	949.767	0.000					0.000	63713.	182.167
AUG	222.83966	21	8	77.F	75.F	1131.729	0.000					0.000	62068.	182.167
SEP	180.79604	2	7	77.F	76.F	1191.122	0.000					0.000	61180.	182.167
OCT	88.36676	2	9	77.F	75.F	938.212	-42.877	24	14	74.F	54.F	-1312.338	63713.	182.167
NOV	19.40836	10	16	78.F	65.F	679.970	-125.594	21	13	63.F	45.F	-1689.732	56245.	182.167
DEC	2.32597	12	14	75.F	65.F	646.412	-185.506	2	13	65.F	47.F	-1516.109	63713.	182.167
TOTAL	1158.769						-990.409						738651.	
MAX						1261.372						-2118.930		182.2

REPORT- SS-J SYSTEM PEAK HEATING AND COOLING DAYS FOR FIRST

	- - - - - C O O L I N G - - - - -				- - - H E A T I N G - - -		
	JUN 11				MAR 12		
HOUR	HOURLY COOLING LOAD (KBTU)	SENSIBLE HEAT RATIO	DRY-BULB TEMP	WET-BULB TEMP	HOURLY HEATING LOAD (KBTU)	DRY-BULB TEMP	WET-BULB TEMP
1	0.000	0.000	78.F	74.F	0.000	53.F	40.F
2	0.000	0.000	77.F	74.F	0.000	50.F	40.F
3	0.000	0.000	77.F	75.F	0.000	50.F	39.F
4	0.000	0.000	77.F	75.F	0.000	49.F	38.F
5	0.000	0.000	77.F	75.F	0.000	48.F	38.F
6	606.415	0.996	78.F	75.F	0.000	47.F	38.F
7	1261.372	0.467	77.F	76.F	-458.096	45.F	36.F
8	653.712	0.937	80.F	76.F	-943.686	49.F	38.F
9	631.615	0.999	81.F	74.F	-993.946	53.F	40.F
10	649.198	1.000	86.F	75.F	-1193.848	57.F	41.F
11	649.591	1.000	86.F	74.F	-1440.365	59.F	41.F
12	641.298	1.000	89.F	75.F	-1570.498	60.F	41.F
13	633.962	1.000	90.F	75.F	-1871.840	62.F	42.F
14	662.765	1.000	90.F	75.F	-1945.366	63.F	43.F
15	671.178	1.000	92.F	75.F	-1709.374	64.F	44.F
16	673.193	1.000	90.F	76.F	-2118.930	64.F	44.F
17	623.389	1.000	90.F	76.F	-1815.703	63.F	44.F
18	575.341	1.000	89.F	75.F	-1503.397	62.F	45.F
19	536.184	1.000	88.F	74.F	-961.688	56.F	42.F
20	527.045	1.000	85.F	74.F	-812.419	53.F	41.F
21	0.000	0.000	83.F	74.F	-709.758	50.F	40.F
22	0.000	0.000	81.F	74.F	0.000	48.F	38.F
23	0.000	0.000	79.F	75.F	0.000	47.F	38.F
24	0.000	0.000	78.F	74.F	0.000	46.F	38.F
MAX	1261.372				-2118.930		

REPORT- SS-A SYSTEM MONTHLY LOADS SUMMARY FOR FIRST2

	COOLING						HEATING						ELEC	
MONTH	COOLING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM COOLING LOAD (KBTU/HR)	HEATING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM HEATING LOAD (KBTU/HR)	ELEC-TRICAL ENERGY (KWH)	MAXIMUM ELEC LOAD (KW)
JAN	10.02343	29	15	75.F	67.F	587.647	-172.288	10	16	64.F	46.F	-1715.693	58753.	168.292
FEB	11.28163	10	14	75.F	71.F	629.369	-112.927	6	16	63.F	49.F	-1106.691	51747.	168.292
MAR	15.81326	20	13	75.F	61.F	578.089	-189.482	12	16	64.F	44.F	-1919.041	57237.	168.292
APR	58.08414	28	12	75.F	71.F	648.252	-76.612	3	13	65.F	47.F	-1574.980	57933.	168.292
MAY	106.62141	30	8	75.F	72.F	742.468	-26.795	2	10	64.F	50.F	-1180.163	57237.	168.292
JUN	182.88571	16	13	75.F	74.F	1146.326	-0.140	2	7	58.F	54.F	-100.390	56417.	168.292
JUL	210.03914	7	7	77.F	75.F	838.652	0.000					0.000	58753.	168.292
AUG	206.30478	21	8	77.F	75.F	1048.328	0.000					0.000	57237.	168.292
SEP	166.43314	2	7	77.F	76.F	1051.874	0.000					0.000	56417.	168.292
OCT	80.65414	2	9	77.F	75.F	852.172	-36.081	24	14	74.F	54.F	-1164.972	58753.	168.292
NOV	17.60759	10	16	78.F	65.F	609.014	-113.761	21	13	63.F	45.F	-1534.910	51870.	168.292
DEC	2.13296	12	14	75.F	65.F	598.240	-168.487	2	13	65.F	47.F	-1412.387	58753.	168.292
TOTAL	1067.882						-896.572						681124.	
MAX						1146.326						-1919.041		168.3

REPORT- SS-J SYSTEM PEAK HEATING AND COOLING DAYS FOR FIRST2

	- - - - - C O O L I N G - - - - -				- - - H E A T I N G - - -		
	JUN 16				MAR 12		
HOUR	HOURLY COOLING LOAD (KBTU)	SENSIBLE HEAT RATIO	DRY-BULB TEMP	WET-BULB TEMP	HOURLY HEATING LOAD (KBTU)	DRY-BULB TEMP	WET-BULB TEMP
1	0.000	0.000	74.F	74.F	0.000	53.F	40.F
2	0.000	0.000	75.F	75.F	0.000	50.F	40.F
3	0.000	0.000	75.F	75.F	0.000	50.F	39.F
4	0.000	0.000	75.F	75.F	0.000	49.F	38.F
5	0.000	0.000	75.F	75.F	0.000	48.F	38.F
6	834.234	0.463	75.F	75.F	0.000	47.F	38.F
7	0.000	0.000	72.F	71.F	-434.519	45.F	36.F
8	0.000	0.000	72.F	71.F	-829.021	49.F	38.F
9	0.000	0.000	71.F	70.F	-924.485	53.F	40.F
10	0.000	0.000	71.F	70.F	-1098.541	57.F	41.F
11	0.000	0.000	73.F	72.F	-1321.992	59.F	41.F
12	1146.326	0.475	75.F	74.F	-1437.650	60.F	41.F
13	998.712	0.485	77.F	76.F	-1704.072	62.F	42.F
14	684.848	0.667	76.F	74.F	-1765.066	63.F	43.F
15	659.627	0.916	78.F	76.F	-1578.508	64.F	44.F
16	611.981	0.955	79.F	75.F	-1919.041	64.F	44.F
17	581.482	0.956	79.F	75.F	-1651.279	63.F	44.F
18	520.633	0.946	79.F	77.F	-1330.427	62.F	45.F
19	504.084	0.941	79.F	77.F	-849.854	56.F	42.F
20	466.500	0.986	78.F	74.F	-717.899	53.F	41.F
21	0.000	0.000	76.F	73.F	-627.041	50.F	40.F
22	0.000	0.000	75.F	73.F	0.000	48.F	38.F
23	0.000	0.000	75.F	73.F	0.000	47.F	38.F
24	0.000	0.000	75.F	74.F	0.000	46.F	38.F
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MAX	1146.326				-1919.041		

REPORT- SS-A SYSTEM MONTHLY LOADS SUMMARY FOR SECOND

	COOLING						HEATING						ELEC	
MONTH	COOLING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM COOLING LOAD (KBTU/HR)	HEATING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM HEATING LOAD (KBTU/HR)	ELEC-TRICAL ENERGY (KWH)	MAXIMUM ELEC LOAD (KW)
JAN	11.33804	29	15	75.F	67.F	618.412	-189.839	10	16	64.F	46.F	-1847.986	62864.	179.902
FEB	12.29387	10	14	75.F	71.F	611.376	-126.604	6	16	63.F	49.F	-1188.371	55367.	179.902
MAR	17.72403	24	15	78.F	53.F	685.379	-207.958	11	14	71.F	47.F	-2125.827	61241.	179.902
APR	66.95870	22	11	78.F	68.F	769.361	-81.579	3	12	64.F	47.F	-1734.681	61987.	179.902
MAY	121.91109	19	11	78.F	70.F	805.380	-28.692	2	10	64.F	50.F	-1268.671	61241.	179.902
JUN	203.26349	16	13	75.F	74.F	1178.683	-0.369	2	7	58.F	54.F	-220.213	60365.	179.902
JUL	230.01753	7	7	77.F	75.F	918.627	0.000					0.000	62864.	179.902
AUG	221.92043	21	8	77.F	75.F	1100.333	0.000					0.000	61241.	179.902
SEP	179.81784	2	7	77.F	76.F	1151.121	0.000					0.000	60365.	179.902
OCT	87.79121	2	9	77.F	75.F	911.115	-37.828	24	14	74.F	54.F	-1294.455	62864.	179.902
NOV	19.31357	10	16	78.F	65.F	737.771	-125.426	21	13	63.F	45.F	-1650.181	55497.	179.902
DEC	2.26266	12	14	75.F	65.F	629.994	-183.174	2	15	70.F	50.F	-1462.552	62864.	179.902
TOTAL	1174.613						-981.469						728780.	
MAX						1178.683						-2125.827		179.9

REPORT- SS-J SYSTEM PEAK HEATING AND COOLING DAYS FOR SECOND

	-----COOLING-----				---HEATING---		
	JUN 16				MAR 11		
HOUR	HOURLY COOLING LOAD (KBTU)	SENSIBLE HEAT RATIO	DRY-BULB TEMP	WET-BULB TEMP	HOURLY HEATING LOAD (KBTU)	DRY-BULB TEMP	WET-BULB TEMP
1	0.000	0.000	74.F	74.F	0.000	70.F	55.F
2	0.000	0.000	75.F	75.F	0.000	57.F	54.F
3	0.000	0.000	75.F	75.F	0.000	56.F	54.F
4	0.000	0.000	75.F	75.F	0.000	55.F	53.F
5	0.000	0.000	75.F	75.F	0.000	55.F	52.F
6	913.020	0.463	75.F	75.F	0.000	59.F	47.F
7	0.000	0.000	72.F	71.F	-739.112	56.F	44.F
8	0.000	0.000	72.F	71.F	-627.406	57.F	45.F
9	0.000	0.000	71.F	70.F	-870.732	60.F	46.F
10	0.000	0.000	71.F	70.F	-1169.730	61.F	44.F
11	0.000	0.000	73.F	72.F	-1767.002	66.F	46.F
12	1178.683	0.486	75.F	74.F	-1866.507	67.F	46.F
13	1093.568	0.485	77.F	76.F	-1791.836	69.F	47.F
14	716.287	0.684	76.F	74.F	-2125.827	71.F	47.F
15	744.141	0.928	78.F	76.F	-2087.169	70.F	47.F
16	682.081	0.968	79.F	75.F	-2105.243	71.F	47.F
17	628.872	0.976	79.F	75.F	-2096.125	70.F	47.F
18	601.454	0.956	79.F	77.F	-2024.520	67.F	45.F
19	585.847	0.949	79.F	77.F	-1993.218	64.F	44.F
20	540.364	0.990	78.F	74.F	-1631.899	62.F	43.F
21	0.000	0.000	76.F	73.F	-1205.751	59.F	42.F
22	0.000	0.000	75.F	73.F	0.000	56.F	41.F
23	0.000	0.000	75.F	73.F	0.000	53.F	40.F
24	0.000	0.000	75.F	74.F	0.000	54.F	40.F
MAX	1178.683				-2125.827		

REPORT- SS-A SYSTEM MONTHLY LOADS SUMMARY FOR SECOND2

	COOLING						HEATING						ELEC	
MONTH	COOLING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM COOLING LOAD (KBTU/HR)	HEATING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM HEATING LOAD (KBTU/HR)	ELEC-TRICAL ENERGY (KWH)	MAXIMUM ELEC LOAD (KW)
JAN	10.13585	29	15	75.F	67.F	563.844	-170.415	10	16	64.F	46.F	-1656.192	57597.	165.210
FEB	11.13027	10	14	75.F	71.F	618.693	-113.917	6	16	63.F	49.F	-1083.385	50730.	165.210
MAR	16.09555	24	15	78.F	53.F	634.116	-183.969	11	14	71.F	47.F	-1874.870	56112.	165.210
APR	60.66566	22	11	78.F	68.F	715.006	-70.574	3	12	64.F	47.F	-1563.050	56793.	165.210
MAY	111.23175	19	11	78.F	70.F	733.636	-23.430	2	19	74.F	55.F	-941.704	56112.	165.210
JUN	185.66782	16	13	75.F	74.F	1107.612	-0.474	2	7	58.F	54.F	-254.396	55308.	165.210
JUL	210.15599	10	8	76.F	73.F	816.351	0.000					0.000	57597.	165.210
AUG	202.57843	21	8	77.F	75.F	1000.173	0.000					0.000	56112.	165.210
SEP	163.81596	2	7	77.F	76.F	997.079	0.000					0.000	55308.	165.210
OCT	79.71032	2	9	77.F	75.F	813.441	-32.392	24	14	74.F	54.F	-1141.530	57597.	165.210
NOV	17.39467	10	16	78.F	65.F	664.918	-112.388	21	13	63.F	45.F	-1483.998	50853.	165.210
DEC	2.03687	12	14	75.F	65.F	566.789	-164.439	2	13	65.F	47.F	-1313.518	57597.	165.210
TOTAL	1070.620						-871.999						667725.	
MAX						1107.612						-1874.870		165.2

REPORT- SS-J SYSTEM PEAK HEATING AND COOLING DAYS FOR SECOND2

	- - - - - C O O L I N G - - - - -				- - - H E A T I N G - - -		
	JUN 16				MAR 11		
HOUR	HOURLY COOLING LOAD (KBTU)	SENSIBLE HEAT RATIO	DRY-BULB TEMP	WET-BULB TEMP	HOURLY HEATING LOAD (KBTU)	DRY-BULB TEMP	WET-BULB TEMP
1	0.000	0.000	74.F	74.F	0.000	70.F	55.F
2	0.000	0.000	75.F	75.F	0.000	57.F	54.F
3	0.000	0.000	75.F	75.F	0.000	56.F	54.F
4	0.000	0.000	75.F	75.F	0.000	55.F	53.F
5	0.000	0.000	75.F	75.F	0.000	55.F	52.F
6	790.875	0.463	75.F	75.F	0.000	59.F	47.F
7	0.000	0.000	72.F	71.F	-698.333	56.F	44.F
8	0.000	0.000	72.F	71.F	-563.651	57.F	45.F
9	0.000	0.000	71.F	70.F	-794.405	60.F	46.F
10	0.000	0.000	71.F	70.F	-1051.643	61.F	44.F
11	0.000	0.000	73.F	72.F	-1570.342	66.F	46.F
12	1107.612	0.472	75.F	74.F	-1660.246	67.F	46.F
13	945.907	0.485	77.F	76.F	-1585.954	69.F	47.F
14	657.897	0.662	76.F	74.F	-1874.870	71.F	47.F
15	696.177	0.920	78.F	76.F	-1845.165	70.F	47.F
16	635.554	0.961	79.F	75.F	-1861.537	71.F	47.F
17	583.138	0.968	79.F	75.F	-1854.583	70.F	47.F
18	557.934	0.950	79.F	77.F	-1786.451	67.F	45.F
19	523.386	0.946	79.F	77.F	-1737.239	64.F	44.F
20	492.743	0.988	78.F	74.F	-1429.668	62.F	43.F
21	0.000	0.000	76.F	73.F	-1060.779	59.F	42.F
22	0.000	0.000	75.F	73.F	0.000	56.F	41.F
23	0.000	0.000	75.F	73.F	0.000	53.F	40.F
24	0.000	0.000	75.F	74.F	0.000	54.F	40.F
MAX	1107.612				-1874.870		

REPORT- SS-A SYSTEM MONTHLY LOADS SUMMARY FOR THIRD

	COOLING						HEATING						ELEC	
MONTH	COOLING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM COOLING LOAD (KBTU/HR)	HEATING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM HEATING LOAD (KBTU/HR)	ELEC-TRICAL ENERGY (KWH)	MAXIMUM ELEC LOAD (KW)
JAN	24.43032	29	15	75.F	67.F	1330.357	-397.848	10	14	64.F	45.F	-4214.107	141760.	406.693
FEB	26.62800	10	14	75.F	71.F	1353.704	-264.406	6	16	63.F	49.F	-2573.245	124858.	406.693
MAR	37.95124	24	15	78.F	53.F	1320.334	-440.066	24	12	75.F	49.F	-4573.884	138106.	406.693
APR	146.48045	21	15	84.F	70.F	1596.784	-170.906	3	12	64.F	47.F	-3725.158	139781.	406.693
MAY	268.74823	27	12	80.F	69.F	1774.016	-57.719	2	19	74.F	55.F	-2342.315	138106.	406.693
JUN	454.75107	16	16	78.F	76.F	2593.506	-1.359	2	7	58.F	54.F	-651.922	136126.	406.693
JUL	513.94073	7	8	78.F	75.F	2008.665	0.000					0.000	141760.	406.693
AUG	495.55392	21	8	77.F	75.F	2394.354	0.000					0.000	138106.	406.693
SEP	400.30585	2	7	77.F	76.F	2444.431	0.000					0.000	136126.	406.693
OCT	195.19926	3	8	78.F	75.F	1958.945	-79.980	24	14	74.F	54.F	-2821.854	141760.	406.693
NOV	41.58619	10	15	80.F	65.F	1415.974	-264.241	21	14	64.F	46.F	-3905.588	125163.	406.693
DEC	4.85413	12	14	75.F	65.F	1355.272	-386.782	2	15	70.F	50.F	-3187.504	141760.	406.693
TOTAL	2610.429						-2063.308						1643495.	
MAX						2593.506						-4573.884		406.7

REPORT- SS-J SYSTEM PEAK HEATING AND COOLING DAYS FOR THIRD

	-----COOLING-----				---HEATING---		
	JUN 16				MAR 24		
HOUR	HOURLY COOLING LOAD (KBTU)	SENSIBLE HEAT RATIO	DRY-BULB TEMP	WET-BULB TEMP	HOURLY HEATING LOAD (KBTU)	DRY-BULB TEMP	WET-BULB TEMP
1	0.000	0.000	74.F	74.F	0.000	60.F	57.F
2	0.000	0.000	75.F	75.F	0.000	60.F	58.F
3	0.000	0.000	75.F	75.F	0.000	60.F	58.F
4	0.000	0.000	75.F	75.F	0.000	61.F	58.F
5	0.000	0.000	75.F	75.F	0.000	61.F	58.F
6	1933.781	0.462	75.F	75.F	0.000	59.F	58.F
7	0.000	0.000	72.F	71.F	0.000	60.F	58.F
8	0.000	0.000	72.F	71.F	0.000	60.F	58.F
9	0.000	0.000	71.F	70.F	0.000	64.F	60.F
10	0.000	0.000	71.F	70.F	-2341.769	70.F	53.F
11	0.000	0.000	73.F	72.F	-3225.382	73.F	53.F
12	2556.885	0.482	75.F	74.F	-4573.884	75.F	49.F
13	2320.343	0.485	77.F	76.F	0.000	77.F	51.F
14	1544.874	0.678	76.F	74.F	0.000	80.F	51.F
15	2593.506	0.517	78.F	76.F	0.000	78.F	53.F
16	1477.369	0.976	79.F	75.F	0.000	77.F	51.F
17	1375.246	0.982	79.F	75.F	0.000	76.F	52.F
18	1307.247	0.969	79.F	77.F	-3198.151	74.F	53.F
19	1317.625	0.960	79.F	77.F	-2682.826	70.F	52.F
20	1210.643	0.992	78.F	74.F	-2339.293	68.F	51.F
21	0.000	0.000	76.F	73.F	-2031.378	65.F	50.F
22	0.000	0.000	75.F	73.F	0.000	63.F	48.F
23	0.000	0.000	75.F	73.F	0.000	61.F	48.F
24	0.000	0.000	75.F	74.F	0.000	59.F	47.F
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MAX	2593.506				-4573.884		

REPORT- SS-A SYSTEM MONTHLY LOADS SUMMARY FOR THIRD2

	COOLING						HEATING						ELEC	
MONTH	COOLING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM COOLING LOAD (KBTU/HR)	HEATING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM HEATING LOAD (KBTU/HR)	ELEC-TRICAL ENERGY (KWH)	MAXIMUM ELEC LOAD (KW)
JAN	19.03408	29	15	75.F	67.F	1039.479	-315.013	10	16	64.F	46.F	-3098.570	108052.	309.694
FEB	20.76590	10	14	75.F	71.F	1060.543	-210.042	6	16	63.F	49.F	-2019.892	95168.	309.694
MAR	29.70965	20	13	75.F	61.F	1022.572	-343.349	24	12	75.F	49.F	-3519.259	105265.	309.694
APR	113.91417	21	15	84.F	70.F	1240.603	-132.388	3	12	64.F	47.F	-2917.005	106544.	309.694
MAY	209.72725	27	12	80.F	69.F	1377.965	-43.827	2	19	74.F	55.F	-1814.414	105265.	309.694
JUN	351.77423	16	13	75.F	74.F	1999.391	-0.858	2	7	58.F	54.F	-455.487	103757.	309.694
JUL	400.27530	7	7	77.F	75.F	1522.590	0.000					0.000	108052.	309.694
AUG	384.97342	21	8	77.F	75.F	1872.371	0.000					0.000	105265.	309.694
SEP	310.37946	2	7	77.F	76.F	1907.421	0.000					0.000	103757.	309.694
OCT	150.37598	2	9	77.F	75.F	1522.526	-61.959	24	14	74.F	54.F	-2167.437	108052.	309.694
NOV	32.62277	10	16	78.F	65.F	1157.020	-208.070	21	13	63.F	45.F	-2766.137	95396.	309.694
DEC	3.79181	12	14	75.F	65.F	1058.947	-304.879	2	13	65.F	47.F	-2496.595	108052.	309.694
TOTAL	2027.344						-1620.385						1252627.	
MAX						1999.391						-3519.259		309.7

REPORT- SS-J SYSTEM PEAK HEATING AND COOLING DAYS FOR THIRD2

	-----COOLING-----				---HEATING---		
	JUN 16				MAR 24		
HOUR	HOURLY COOLING LOAD (KBTU)	SENSIBLE HEAT RATIO	DRY-BULB TEMP	WET-BULB TEMP	HOURLY HEATING LOAD (KBTU)	DRY-BULB TEMP	WET-BULB TEMP
1	0.000	0.000	74.F	74.F	0.000	60.F	57.F
2	0.000	0.000	75.F	75.F	0.000	60.F	58.F
3	0.000	0.000	75.F	75.F	0.000	60.F	58.F
4	0.000	0.000	75.F	75.F	0.000	61.F	58.F
5	0.000	0.000	75.F	75.F	0.000	61.F	58.F
6	1513.734	0.464	75.F	75.F	0.000	59.F	58.F
7	0.000	0.000	72.F	71.F	0.000	60.F	58.F
8	0.000	0.000	72.F	71.F	0.000	60.F	58.F
9	0.000	0.000	71.F	70.F	0.000	64.F	60.F
10	0.000	0.000	71.F	70.F	-1781.662	70.F	53.F
11	0.000	0.000	73.F	72.F	-2472.562	73.F	53.F
12	1999.391	0.482	75.F	74.F	-3519.259	75.F	49.F
13	1810.647	0.485	77.F	76.F	0.000	77.F	51.F
14	1207.358	0.677	76.F	74.F	0.000	80.F	51.F
15	1216.517	0.938	78.F	76.F	0.000	78.F	53.F
16	1163.436	0.974	79.F	75.F	0.000	77.F	51.F
17	1076.420	0.976	79.F	75.F	0.000	76.F	52.F
18	1025.144	0.961	79.F	77.F	-2511.938	74.F	53.F
19	1035.520	0.951	79.F	77.F	-2063.236	70.F	52.F
20	936.265	0.990	78.F	74.F	-1804.953	68.F	51.F
21	0.000	0.000	76.F	73.F	-1571.153	65.F	50.F
22	0.000	0.000	75.F	73.F	0.000	63.F	48.F
23	0.000	0.000	75.F	73.F	0.000	61.F	48.F
24	0.000	0.000	75.F	74.F	0.000	59.F	47.F
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MAX	1999.391				-3519.259		

REPORT- SS-A SYSTEM MONTHLY LOADS SUMMARY FOR SIX

	COOLING						HEATING						ELEC	
MONTH	COOLING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM COOLING LOAD (KBTU/HR)	HEATING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM HEATING LOAD (KBTU/HR)	ELEC-TRICAL ENERGY (KWH)	MAXIMUM ELEC LOAD (KW)
JAN	7.12058	29	15	75.F	67.F	388.583	-116.647	10	16	64.F	46.F	-1157.959	40011.	114.596
FEB	7.75560	10	14	75.F	71.F	389.589	-77.968	6	16	63.F	49.F	-751.733	35240.	114.596
MAR	11.28578	24	15	78.F	53.F	445.086	-130.044	11	14	71.F	47.F	-1315.340	38979.	114.596
APR	42.61194	22	11	78.F	68.F	498.290	-50.772	3	12	64.F	47.F	-1087.054	39453.	114.596
MAY	78.43143	19	11	78.F	70.F	523.671	-16.538	2	19	74.F	55.F	-684.578	38979.	114.596
JUN	131.62144	16	13	75.F	74.F	743.630	-0.301	2	7	58.F	54.F	-165.148	38421.	114.596
JUL	149.77759	7	7	77.F	75.F	573.769	0.000					0.000	40011.	114.596
AUG	144.07843	21	8	77.F	75.F	695.235	0.000					0.000	38979.	114.596
SEP	115.95998	2	7	77.F	76.F	718.946	0.000					0.000	38421.	114.596
OCT	56.12529	2	9	77.F	75.F	571.058	-23.703	24	14	74.F	54.F	-813.494	40011.	114.596
NOV	12.21273	10	16	78.F	65.F	472.564	-77.280	21	13	63.F	45.F	-1029.481	35324.	114.596
DEC	1.41987	12	14	75.F	65.F	395.861	-112.824	2	13	65.F	47.F	-942.717	40011.	114.596
TOTAL	758.400						-606.078						463811.	
MAX						743.630						-1315.340		114.6

REPORT- SS-J SYSTEM PEAK HEATING AND COOLING DAYS FOR SIX

	-----COOLING-----				---HEATING---		
	JUN 16				MAR 11		
HOUR	HOURLY COOLING LOAD (KBTU)	SENSIBLE HEAT RATIO	DRY-BULB TEMP	WET-BULB TEMP	HOURLY HEATING LOAD (KBTU)	DRY-BULB TEMP	WET-BULB TEMP
1	0.000	0.000	74.F	74.F	0.000	70.F	55.F
2	0.000	0.000	75.F	75.F	0.000	57.F	54.F
3	0.000	0.000	75.F	75.F	0.000	56.F	54.F
4	0.000	0.000	75.F	75.F	0.000	55.F	53.F
5	0.000	0.000	75.F	75.F	0.000	55.F	52.F
6	570.119	0.463	75.F	75.F	0.000	59.F	47.F
7	0.000	0.000	72.F	71.F	-482.353	56.F	44.F
8	0.000	0.000	72.F	71.F	-389.916	57.F	45.F
9	0.000	0.000	71.F	70.F	-545.363	60.F	46.F
10	0.000	0.000	71.F	70.F	-725.423	61.F	44.F
11	0.000	0.000	73.F	72.F	-1092.267	66.F	46.F
12	743.630	0.484	75.F	74.F	-1155.160	67.F	46.F
13	682.611	0.485	77.F	76.F	-1113.071	69.F	47.F
14	450.669	0.681	76.F	74.F	-1315.340	71.F	47.F
15	484.571	0.931	78.F	76.F	-1292.022	70.F	47.F
16	439.684	0.967	79.F	75.F	-1309.800	71.F	47.F
17	401.259	0.974	79.F	75.F	-1307.086	70.F	47.F
18	379.366	0.963	79.F	77.F	-1261.112	67.F	45.F
19	377.469	0.955	79.F	77.F	-1237.967	64.F	44.F
20	345.371	0.991	78.F	74.F	-1013.738	62.F	43.F
21	0.000	0.000	76.F	73.F	-745.297	59.F	42.F
22	0.000	0.000	75.F	73.F	0.000	56.F	41.F
23	0.000	0.000	75.F	73.F	0.000	53.F	40.F
24	0.000	0.000	75.F	74.F	0.000	54.F	40.F
MAX	743.630				-1315.340		

REPORT- SS-A SYSTEM MONTHLY LOADS SUMMARY FOR SEVEN

	COOLING						HEATING						ELEC	
MONTH	COOLING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM COOLING LOAD (KBTU/HR)	HEATING ENERGY (MBTU)	TIME OF MAX DY	TIME OF MAX HR	DRY-BULB TEMP	WET-BULB TEMP	MAXIMUM HEATING LOAD (KBTU/HR)	ELECTRICAL ENERGY (KWH)	MAXIMUM ELEC LOAD (KW)
JAN	8.50236	29	15	75.F	67.F	487.466	-133.590	10	15	65.F	45.F	-1446.328	44189.	125.736
FEB	9.51843	19	15	75.F	66.F	479.483	-88.763	6	16	63.F	49.F	-907.959	38916.	125.736
MAR	13.56851	20	13	75.F	61.F	479.537	-157.359	12	16	64.F	44.F	-1615.330	43045.	125.736
APR	50.80260	21	16	86.F	71.F	546.270	-64.729	3	13	65.F	47.F	-1322.964	43575.	125.736
MAY	93.83600	27	15	86.F	68.F	597.663	-22.843	2	10	64.F	50.F	-966.371	43045.	125.736
JUN	158.46538	16	13	75.F	74.F	921.816	-0.148	2	7	58.F	54.F	-97.689	42431.	125.736
JUL	180.74722	7	7	77.F	75.F	733.734	0.000					0.000	44189.	125.736
AUG	174.81779	21	8	77.F	75.F	887.917	0.000					0.000	43045.	125.736
SEP	139.32649	2	7	77.F	76.F	918.969	0.000					0.000	42431.	125.736
OCT	66.23609	2	9	77.F	75.F	757.791	-35.074	24	14	74.F	54.F	-995.315	44189.	125.736
NOV	14.66525	10	16	78.F	65.F	510.063	-87.570	21	15	65.F	46.F	-1323.998	39000.	125.736
DEC	1.78815	12	14	75.F	65.F	496.595	-128.487	2	13	65.F	47.F	-1218.650	44189.	125.736
TOTAL	912.274						-718.564						512242.	
MAX						921.816						-1615.330		125.7

REPORT- SS-J SYSTEM PEAK HEATING AND COOLING DAYS FOR SEVEN

	COOLING				HEATING		
	JUN 16				MAR 12		
HOUR	HOURLY COOLING LOAD (KBTU)	SENSIBLE HEAT RATIO	DRY-BULB TEMP	WET-BULB TEMP	HOURLY HEATING LOAD (KBTU)	DRY-BULB TEMP	WET-BULB TEMP
1	0.000	0.000	74.F	74.F	0.000	53.F	40.F
2	0.000	0.000	75.F	75.F	0.000	50.F	40.F
3	0.000	0.000	75.F	75.F	0.000	50.F	39.F
4	0.000	0.000	75.F	75.F	0.000	49.F	38.F
5	0.000	0.000	75.F	75.F	0.000	48.F	38.F
6	729.149	0.463	75.F	75.F	0.000	47.F	38.F
7	0.000	0.000	72.F	71.F	-495.720	45.F	36.F
8	0.000	0.000	72.F	71.F	-694.953	49.F	38.F
9	0.000	0.000	71.F	70.F	-724.814	53.F	40.F
10	0.000	0.000	71.F	70.F	-883.505	57.F	41.F
11	0.000	0.000	73.F	72.F	-1076.960	59.F	41.F
12	921.816	0.490	75.F	74.F	-1181.038	60.F	41.F
13	873.053	0.485	77.F	76.F	-1406.350	62.F	42.F
14	563.033	0.690	76.F	74.F	-1472.485	63.F	43.F
15	527.686	0.941	78.F	76.F	-1555.035	64.F	44.F
16	514.357	0.966	79.F	75.F	-1615.330	64.F	44.F
17	475.347	0.966	79.F	75.F	-1384.051	63.F	44.F
18	440.183	0.962	79.F	77.F	-1104.588	62.F	45.F
19	415.073	0.959	79.F	77.F	-702.275	56.F	42.F
20	393.025	0.990	78.F	74.F	-582.799	53.F	41.F
21	0.000	0.000	76.F	73.F	-498.176	50.F	40.F
22	0.000	0.000	75.F	73.F	0.000	48.F	38.F
23	0.000	0.000	75.F	73.F	0.000	47.F	38.F
24	0.000	0.000	75.F	74.F	0.000	46.F	38.F
MAX	921.816				-1615.330		