scout

SAMPLE PROBLEM

GARD, INC.
A SUBSIDIARY OF
GATX CORPORATION

Scout

THE COMPUTER PROGRAM FOR FACILITY/HVAC DESIGN AND ENERGY ANALYSIS

SAMPLE PROBLEM

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GARD, INC.

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From the Collection of
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Section 1

PURPOSE

The purpose of this SCOUT Sample Problem booklet is to illustrate one manner in which a building can be input to the SCOUT energy analysis program series for design load and energy analysis. The manner in which this sample building is to be described to SCOUT is not necessarily the only way. Variation's in use of repetative features, number of thermal zones, etc., are possible with the end results being the same. As the user becomes familiar with the input structure, he will quickly learn how to break a building into as few elements as possible in order to minimize input data and preparation time.

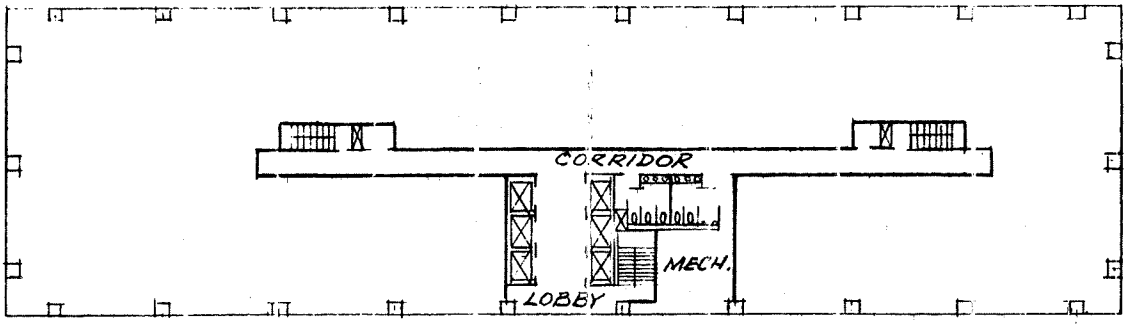
Section 2

BUILDING DESCRIPTION

A multi-story office building with the following characteristics has been chosen as the SCOUT Sample Building:

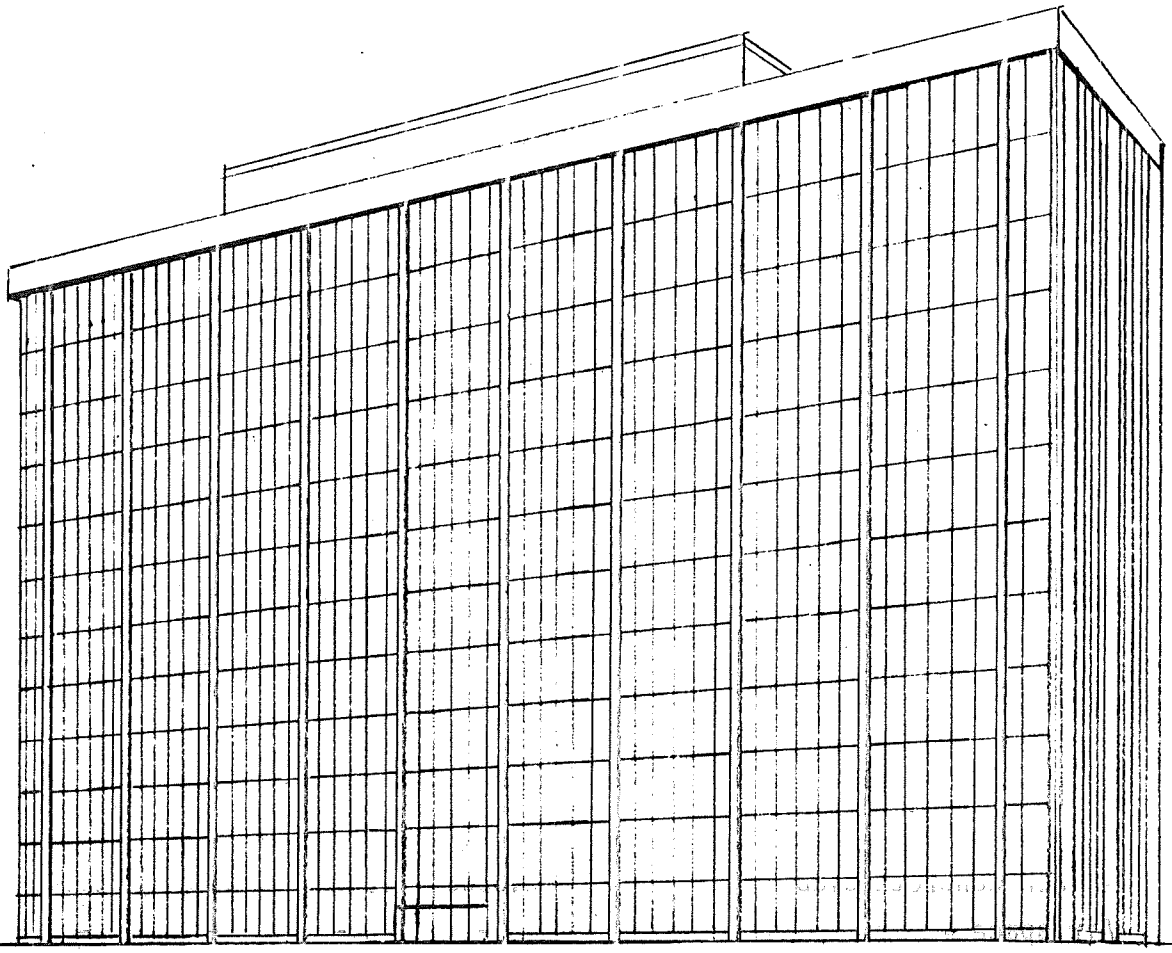
2.1 ARCHITECTURAL DATA

SHAPE:	Rectangular with north facade facing true north (See Figure 1)
HEIGHT:	12 occupied typical floors and penthouse
AREAS:	Building total of 225,500 sq. ft. excluding penthouse for 12 typical floors at 18,790 sq. ft. each
TYPICAL FLOOR:	261 ft. long and 72 ft wide, 13.5 ft. floor-to-floor and 8.5 ft ceiling heights. Include heat flux through exterior wall sections above ceilings as part of space load
WALLS:	Glass face curtain wall with 4 inches insulation on all walls (See Table 1)
INTERIOR PARTITIONS:	Gypsum board on each side of slab-to-slab metal studs (See Table 1) separating 10' exterior zone from core
FLOORS:	Linoleum on 4 inch concrete slab (See Table 1)
CEILINGS:	Suspended acoustical tile with lay-in fluorscent light fixtures on typical floors (See Table 1)
ROOF:	Insulated built-up roof on 4-inch concrete slab (See Table 1). Ignore penthouse when calculating heat flux
WINDOWS:	50% of the typical wall facade is double glazing mounted flush to outside wall face. Interior light color venetain blinds (See Table II)
PENTHOUSE:	Contains all mechanical equipment, electrical equipment, and elevator machinery.



NORTH

TYPICAL FLOOR PLAN



SOUTH ELEVATION

Figure 1 SCHEMATIC OF SCOUT SAMPLE BUILDING

TABLE I

CONSTRUCTION CHARACTERISTICS

Long Side Walls:	L*	K	D	SH	R
1/4 inch ceramic coated glass	0.0208	0.590	172	0.20	-
4 inch insulation	0.3333	0.025	2.0	0.20	-
4 inch air space	-	-	-	-	0.91
3/4 inch gypsum board	0.0625	0.420	100	0.20	-
Short Side Walls:					
Same as long side walls		See Above			
Interior Partitions:					
3/4 inch gypsum board	0.0625	0.420	100	0.20	-
4 inch air space	-	-	-	-	0.91
3/4 inch gypsum board	0.0625	0.420	100	0.20	-
Typical Floor:					
Linoleum	-	-	-	-	0.05
4 inch concrete	0.3333	1.0	140	0.20	-
Air space	-	-	-	-	1.0
3/4 inch accoustic tile ceiling	0.0625	0.033	18	0.32	-
Roof:					
Built-up roofing	0.0313	0.665	70	0.33	-
3 inch insulation	0.2500	0.025	2.0	0.20	-
4 inch concrete slab	0.3333	1.0	140	0.20	-
Air space	-	-	-	-	1.0
3/4 inch accoustic tile ceiling	0.0625	0.033	18	0.32	-

* Legend:

L = Thickness, ft.

k = Thermal conductivity, Btu/hr/ft/°F

D = Density, lb/ft^3

SH = Specific heat, Btu/lb/°F

R = Thermal resistance, hr. ft. °F/Btu

TABLE II

GLASS CHARACTERISTICS

Double Glazing

SOLARGREY TWINDOW by PPG.

1/4 inch Solargrey + 1/2 inch air space + 1/4 inch clear.

Transmittance - Normal Incidence:	0.46 Solargrey 0.77 Clear
U-Factor, Btu/Hr. ft.^{2} °F	0.54
Shade factor for glass and light color venetian blind:	0.36
ASHRAE shade coefficient for glass and blinds(.36/.92)	0.39

2.2 HVAC SYSTEMS AND EQUIPMENT DATA

INTERIOR SYSTEM: Variable air volume system with reheat. Insulated sheetmetal supply ducts extend to each floor for above ceiling ducted distribution to ceiling outlets. Minimum supply air to zone is 30%. Ducted return air, enthalpy controlled economizer cycle, fan inlet vanes for pressure control, and components arranged as shown in Figure 2(a).

PERIMETER SYSTEM: Dual duct system. Insulated sheetmetal supply ducts extend to each floor for above ceiling ducted distribution to ceiling outlets. Ducted return, enthalpy controlled economizer cycle, hot and cold deck temperature reset by hottest and coldest zone, and components arranged as shown in Figure 2(b).

SUPPLY AIR: Both systems supply air at 55°F at ceiling outlets at peak cooling; both systems operate with 4 inches of water total pressure.

RETURN AIR: Both systems operate at 1-1/2 inches of water total pressure.

EXHAUST AIR: 600 cfm toilet exhaust air at 1-1/2 inch of water total pressure from interior zones on each floor.

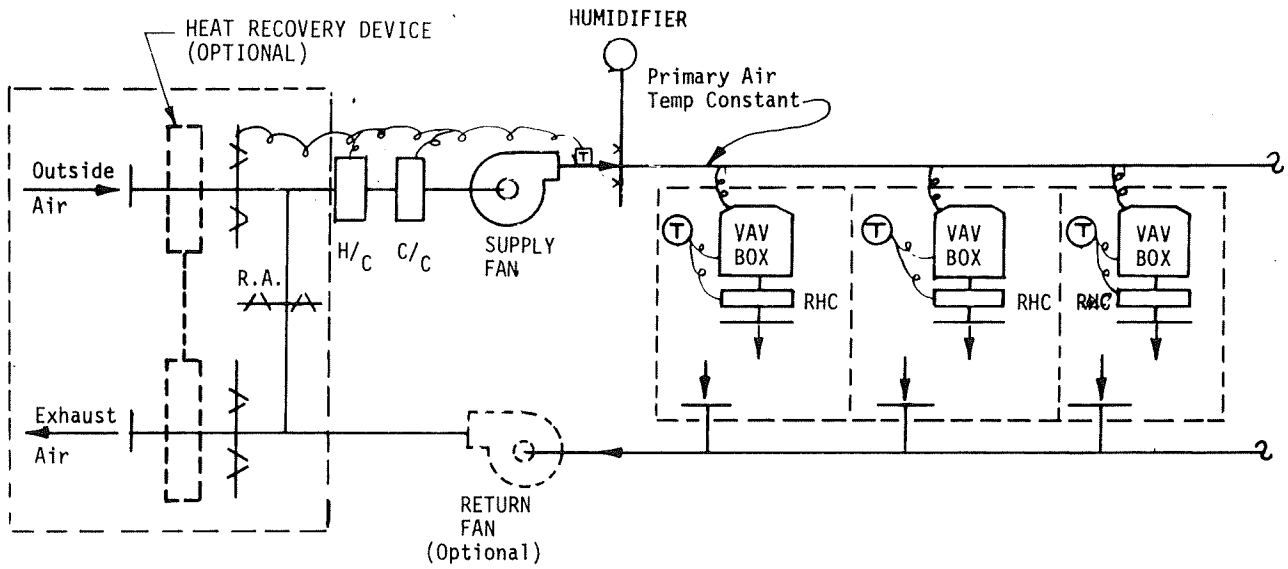
CHILLED WATER PUMP: One, sized at 60 ft. of head

CONDENSER WATER PUMP: One, sized at 60 ft. of head

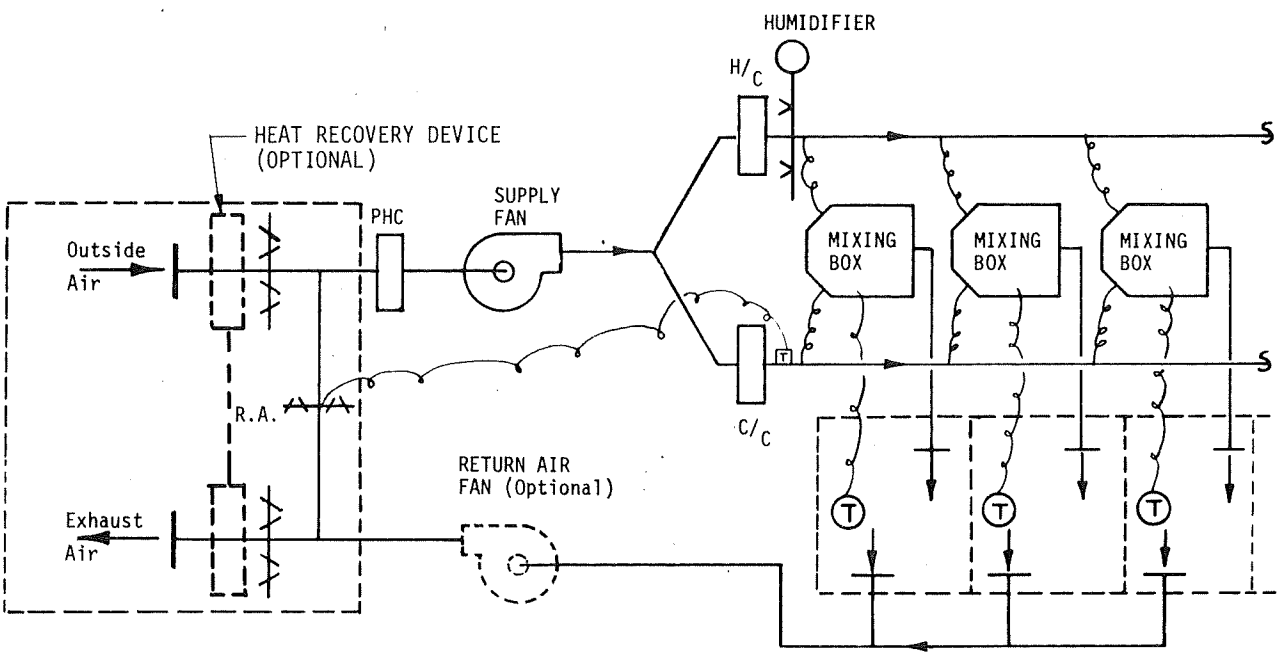
HEATING WATER PUMP: One, sized at 80 ft. of head

CHILLERS: Two electric driven hermetic centrifugal chillers connected in parallel, loaded sequentially, and each sized for 50% of peak cooling load with fixed 45°F chilled water supply temperature.

BOILERS: Two natural gas-fired hot water boilers connected in parallel, loaded sequentially, and each sized for 2/3 of the peak heating load. Each boiler has electric auxilaries totalling 3/4 HP.



(a) INTERIOR SYSTEM - VARIABLE AIR VOLUME



(b) PERIMETER SYSTEM - DUAL DUCT

Figure 2 - HVAC SYSTEM SCHEMATICS

2.3 INTERNAL + MISCELLANEOUS LOADS AND PROFILES

PEOPLE:	100 sq. ft. per person with metabolic rate of 450 BTU/hr.
LIGHTING:	Recessed fluorescent fixtures, 3.5 watts/sq. ft. with 70% of light heat to occupied space
RECEPTACLES:	95 KW
ELEVATORS:	175 KW
DOMESTIC WATER:	Hot Water Heater 48 KW
PROFILES:	For week day operation schedule internal and miscellaneous loads using profiles in Figure 3. Other days use zero loads, except for lighting and receptacle loads which are 5% continuous for emergency lighting.

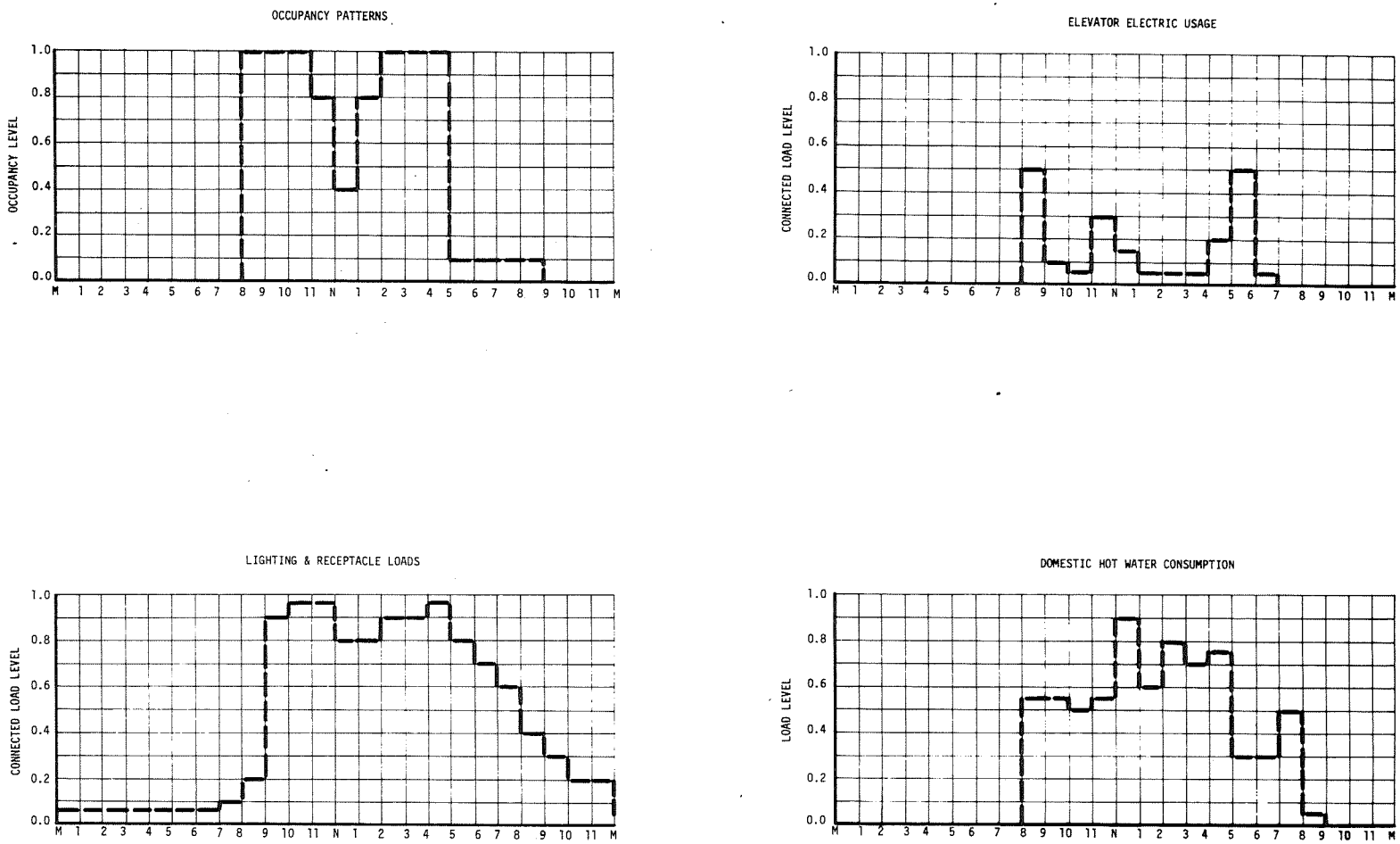


Figure 3 - INTERNAL LOAD PROFILES

2.4 DESIGN CRITERIA

LOCATION:	Chicago, Illinois	
INSIDE DESIGN:	Summer:	72°F DB
	Winter:	72°F DB, 30% R.H.
OUTSIDE DESIGN:	Summer	
		92°F DB
		76°F WB
		20°F Range
		5 mph
	Winter	
		1°F DB
		5°F Range
		15 mph

VENTILATION: 5 CFM of outside air per person minimum when supply fans are on

INFILTRATION: 1/8 air change per hour for perimeter zones based on 8.5 ft. ceiling height for typical floor

OPERATION: HVAC systems operate five days per week and are turned on at 7:00 AM (one hour before occupancy), and shut off at 5:00 PM. Nighttime setback minimum temperature is 50°F in winter, and no maximum in summer. Supply, return and exhaust fans are electrically interlocked. Thermostats have throttling range of ± 1-1/2°F

Section 3

ANALYSIS REQUIREMENTS

For the building configuration described in Section 2, perform the following analyses:

(1) Design load analysis for July and December using the design criteria

(2) Annual energy analysis for the year 1972

making use of the following programs:

- Response Factor Program (RESFAC)
- Load Analysis Data Check Program (DVPLAP)
- Load Analysis Program (LAP)
- Temperature Analysis Data Check Program (DVPTAP)
- Temperature Analysis Program (TAP)
- Systems Analysis Data Check Program (DVPSAP)
- System Analysis Program (SAP)

Section 4

BUILDING MODEL DESCRIPTION

The first step in creating the building model required for SCOUT, is the dividing of the building into thermal zones. Considering the thermal loading patterns due to external and internal loads, the building breaks itself into 3 distinct sections:

1. Top floor (#12) is distinct from other floors because of roof load
2. Bottom floor (#1) is distinct because of slab-on-grade floor loading
3. Typical intermediate floor (#2-11)

Only one of the typical intermediate floors will actually be analyzed and then the results reused as many times as required (i.e., 10) to get the proper total building load.

Each of the three floors to be modelled in turn will be broken into 5 thermal zones - 4 perimeter zones and 1 core zone. NOTE: Zones ignor mechanical core on floor plan for calculation ease. The suspended ceiling area above floor #12 will also be treated as a thermal zone since it acts as a buffer between the roof and occupied areas of floor 12. Figures 4-6 schematically depict the 16 thermal zones used to model the building.

The second step in creating the building model requires that the surfaces making up the envelope of each zone be broken out and described as to type, area, orientation and construction materials. SCOUT allows the user to classify a surface as one of the following.

1. <u>Delayed Heat Transfer Surfaces</u>

   Thick exterior aboveground surfaces (walls or roofs) that impede the flow of heat, experience hourly change in temperature and therefore have a heat storage effect.
   The ASHRAE response factor method is used to calculate this transient heat flow each hour.

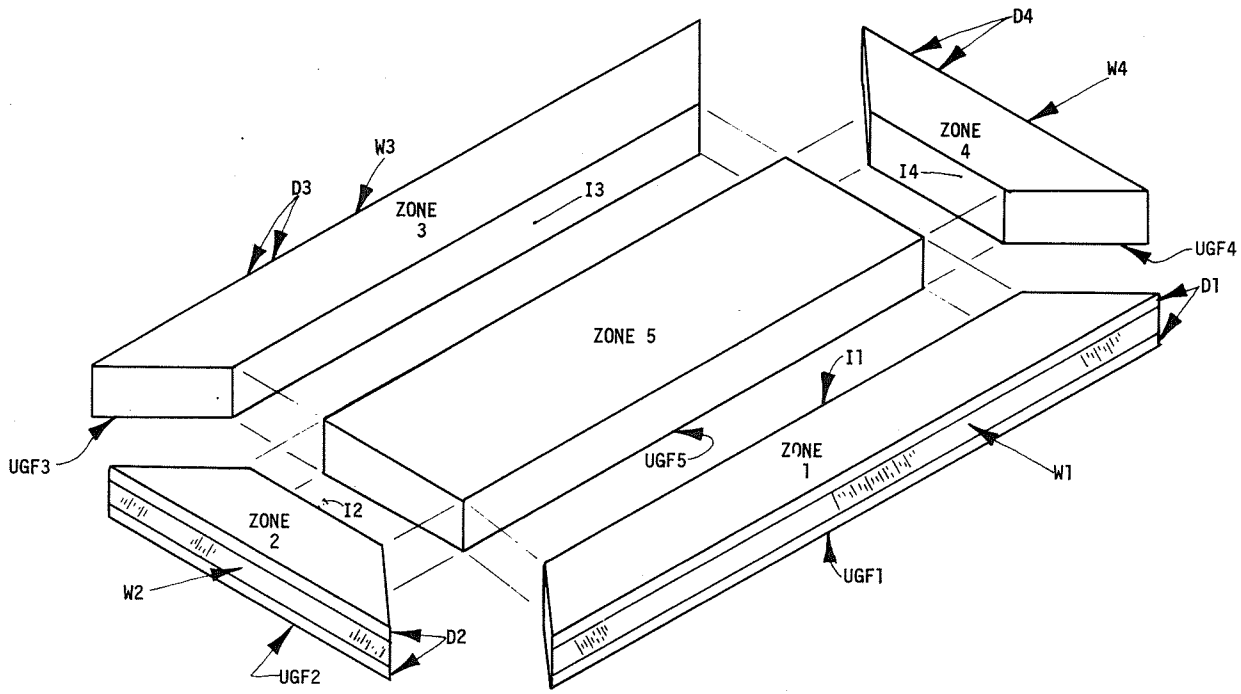


Figure 4 EXPLODED VIEW OF FLOOR 1

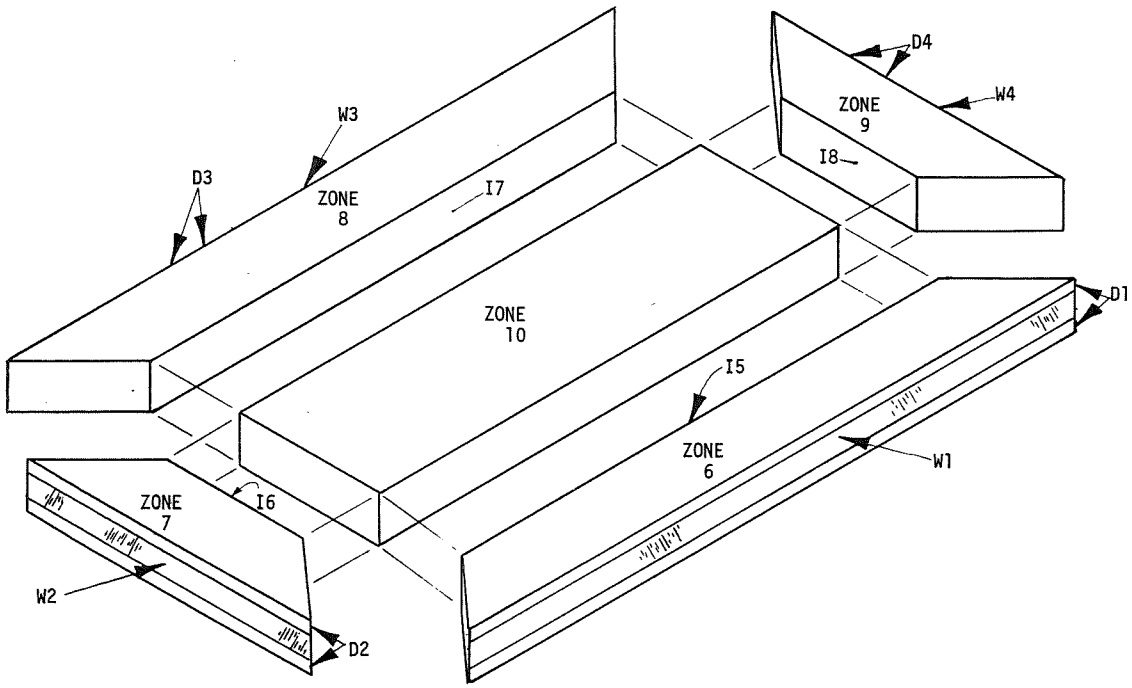


Figure 5 EXPLODED VIEW OF TYPICAL INTERMEDIATE FLOOR 2-11

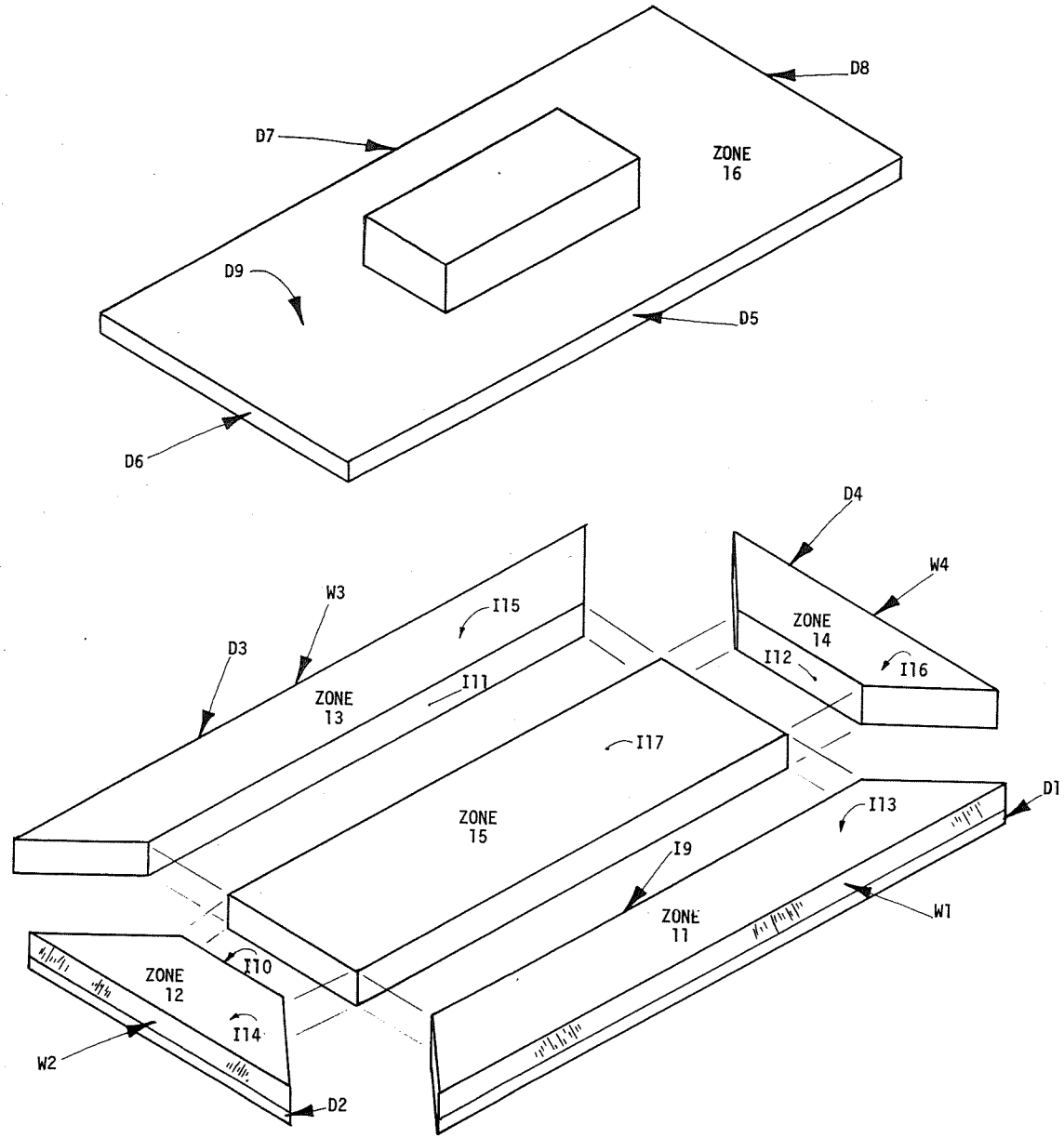


Figure 6 EXPLODED VIEW OF FLOOR 12 AND ROOF

2. Quick Heat Transfer Surfaces

   Thin exterior aboveground surfaces that experience hourly change in temperature but have little or not heat storage effect (e.g., metal doors). Uses steady state method.

3. Windows

   Clear or translucent surfaces which transfer heat through conduction as well as through transmission of solar rays.

4. Internal Heat Transfer Surfaces

   Interior walls or floors across which there is a temperature difference but that experience slow or little change in temperature and which therefore can be treated as a steady state heat transfer surface (e.g., partitioning walls).

5. Underground Walls

   Below-grade walls with exterior exposed to soil and across which there is a temperature difference but experiences slow or little change in temperature and therefore can be treated as a steady state heat transfer surface.

6. Underground Floors

   Same conditions as for Underground Walls (e.g., building foundation slab). Uses steady state method.

Since wall sections of a building are usually repetitious in area, orientation and construction, the object is to minimize the number of surfaces required by only calling out the unique ones, performing the calculations each hour for only these surfaces and reusing the results as many times as required to "build-up" the actual thermal load for each zone.

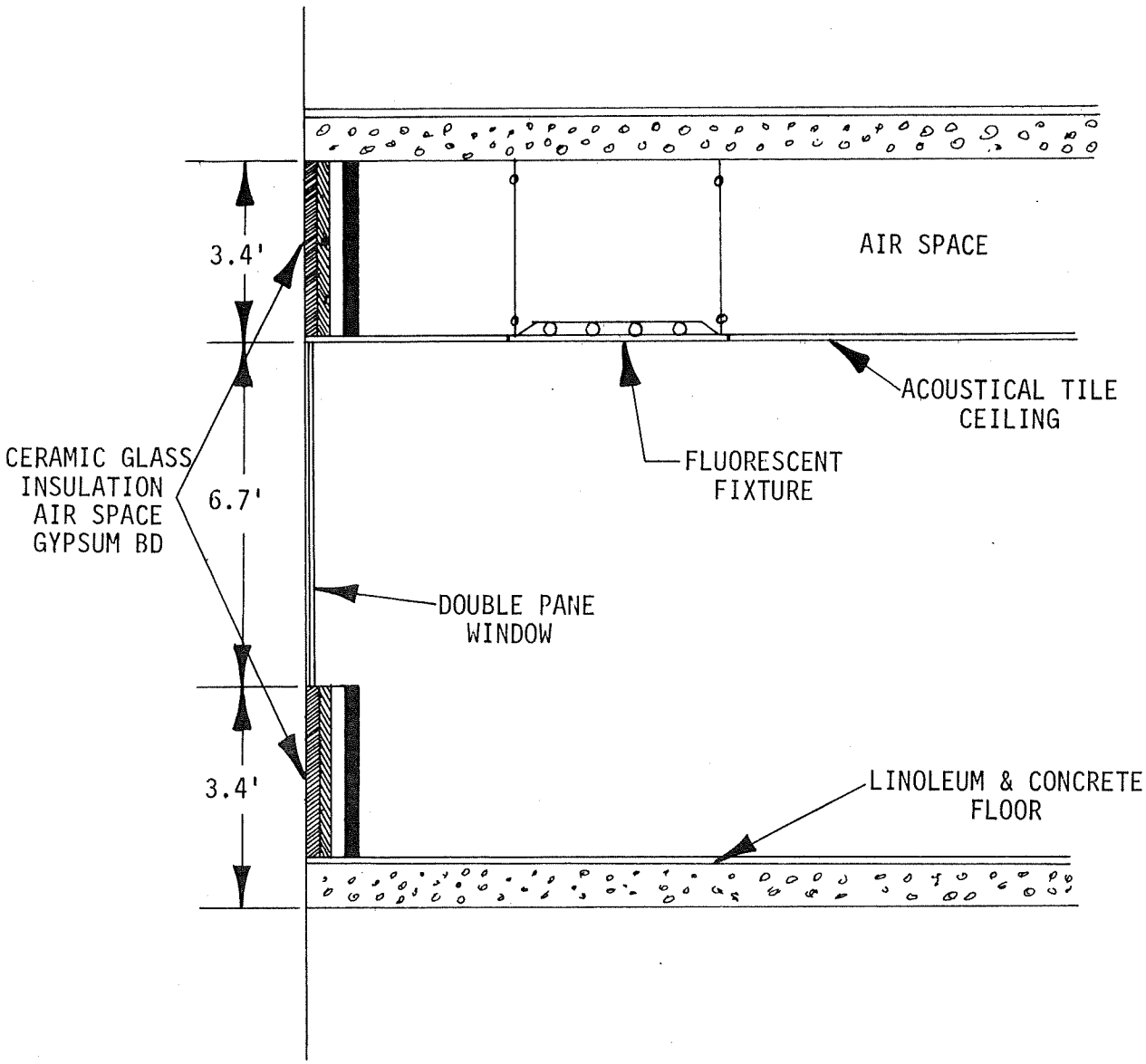


Figure 7 TYPICAL SECTION THROUGH PERIMETER WALL

Analysis of the SCOUT Sample Building required the following quantities of surfaces to be defined:

a) 9 delayed surfaces - two per exposure plus the roof (D9). The wall sections above and below the window on each floor (D1, D2, D3, D4) will be assumed identical since they are of same construction, area, orientation and will experience very similar temperature profiles (see Figure 7). The wall section above the window on the 12th floor will be interacting with the roof load, will therefore experience different temperature swings than similar wall sections on other floors, and will be treated as separate wall sections (D5, D6, D7, D8). Although the heat flux for (D1, D2, D3, D4) and (D5, D6, D7, D8) will be the same in LAP, it will be adjusted and be different in TAP.

b) 0 quick surfaces

c) 4 glazed surfaces - 1 per exposure

d) 17 internal surfaces - 4 partitioning walls on each floor separating the perimeter zones from the core zone because the perimeter zones will cool off faster than core zone in winter when thermostats are setback to 50°F at night. Also 5 ceiling sections on 12th floor separating zones 11, 12, 13, 14 and 15 from zone 16.

e) 0 underground walls

f) 5 underground floors - one for each zone on 1st floor

The third step is to build up the 16 zone using the surfaces described above and at the same time identify each zones requirement for temperature control, occupancy level, lighting level, miscellaneous load level, and infiltration. See Table III for a summary of some of these characteristics for each zone.

The assignment of the zones to the two air handling systems is indicated below.

INTERIOR SYSTEM-VAV		PERIMETER SYSTEM-DUAL DUCT	
ZONE	REPETITION FACTOR	ZONE	REPETITION FACTOR
5	1	1	1
10	10	2	1
15	1	3	1
		4	1
		6	10
		7	10
		8	10
		9	10
		11	1
		12	1
		13	1
		14	1

16

TABLE III

SUMMARY OF CHARACTERISTICS FOR SCOUT SAMPLE BUILDING

ZONE	POSITION	EXPOSURE	FLOOR* AREA	REPETITION FACTOR	SURFACE INDICES MAKING UP ZONE ENVELOPE					
					DELAYED	QUICK	WINDOW	INTERNAL	U.G. WALLS	U.G. FLOORS
1	1st Fl.	N	2510	1	1,1		1	1		1
2	"	E	620	1	2,2		2	2		2
3	"	S	2510	1	3,3		3	3		3
4	"	W	620	1	4,4		4	4		4
5	"	INTERIOR	12530	1				1,2,3,4		5
6	Int. Fl.	N	2510	10	1,1		1	5		
7	"	E	620	10	2,2		2	6		
8	"	S	2510	10	3,3		3	7		
9	"	W	620	10	4,4		4	8		
10	"	INTERIOR	12530	10				5,6,7,8		
11	12th Fl.	N	2510	1	1		1	9,13		
12	"	E	620	1	2		2	10,14		
13	"	S	2510	1	3		3	11,15		
14	"	W	620	1	4		4	12,16		
15	"	INTERIOR	12530	1				9,10,11,12,17		
16	12th Fl.	ROOF		1	5,6,7,8,9			13,14,15,16,17		

* Based on a 10 ft. deep perimeter zone

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RESPONSE FACTOR PROGRAM

job name	
date	PAGE 1 OF 2

INPUT FORM RF-01

GENERAL NOTES

1. Unless otherwise noted, all input data are real numbers requiring a decimal point. The program is designed to by-pass unneeded portions of input as indicated by notes.

2. Input cards required to execute the program are noted by an "R" at their extreme right.

DEFINITION OF RESPONSE FACTOR SURFACES

No. of Response Factor Surfaces To be Analyzed (1–10)	Card Index (71–80)	
2.	R 1	R

RESPONSE FACTOR SURFACE No. 26 LABEL CURTAIN WALL

NOTE: Repeat card set R2 and R3 number of times indicated on card type R1.

Number Of Layers (1. - 10.)	Do Not Include Outside Air Film As a Layer	Card Index (71–80)	
5.		R 2	R

LAYER NO.	Thickness (FT.) (1–10)	Thermal Conductivity (BTU/HR-SQ.FT.-F) (11–20)	Density (LB/CU.FT) (21–30)	Specific Heat (BTU/LB.-F) (31–40)	Thermal Resistivity (HR.-SQ.FT.-F/BTU) (41–50)	Label (Alphanumeric) (51–70)	Card Index (71–80)	
1	.0208	.590	172.	.2		1/4 CERAMIC COAT. GL	R 3	R
2	.3333	.025	2.	.2		4 INCH INSULATION		
3					.91	4 INCH AIR SPACE		
4	.0625	.420	100.	.2		GYPSUM BOARD		
5					.68	AIR FILM		
6								
7								
8								
9								
10								

NOTES: 1. Order of layers should be from outside surface to inside air film.
2. For layers which have no thermal mass(ie.,air space) leave columns 1-40 blank, and fill in only columns 41-70 .
3. For layers which have thermal mass, leave columns 41-50 blank.

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SCOUT

RESPONSE FACTOR PROGRAM

job name	
date	PAGE 2 OF 2

INPUT FORM RF-01

GENERAL NOTES

1. Unless otherwise noted, all input data are real numbers requiring a decimal point. The program is designed to by-pass unneeded portions of input as indicated by notes.

2. Input cards required to execute the program are noted by an "R" at their extreme right.

DEFINITION OF RESPONSE FACTOR SURFACES

No. of Response Factor Surfaces To be Analyzed (1–10)	Card Index (71–80)	
	R 1	R

RESPONSE FACTOR SURFACE No. 27 LABEL ROOF

NOTE: Repeat card set R2 and R3 number of times indicated on card type R1.

Number Of Layers (1. - 10.) (1–10)	Do Not Include Outside Air Film As a Layer (11–70)	Card Index (71–80)	
4.		R 2	R

LAYER NO.	Thickness (FT.) (1–10)	Thermal Conductivity (BTU/HR-SQ.FT.-F) (11–20)	Density (LB/CU.FT) (21–30)	Specific Heat (BTU/LB.-F) (31–40)	Thermal Resistivity (HR.-SQ.FT.-F/BTU) (41–50)	Label (Alphanumeric) (51–70)	Card Index (71–80)	
1	.0313	.665	70.	.33		BUILT-UP ROOF	R 3	R
2	.25	.025	2.	.20		3 INCH INSULATION		
3	.3333	1.	140.	.20		4 INCH CONCRETE		
4					.6	AIR FILM		
5								
6								
7								
8								
9								
10								

NOTES: 1. Order of layers should be from outside surface to inside air film.
2. For layers which have no thermal mass(ie.,air space) leave columns 1-40 blank, and fill in only columns 41-70 .
3. For layers which have thermal mass, leave columns 41-50 blank.

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LOAD ANALYSIS PROGRAM

job name	
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INPUT FORM LA-01

GENERAL NOTES

1. Unless otherwise noted, all input data are real numbers requiring a decimal point. The program is designed to by-pass unneeded portions of input as indicated by notes.
2. Input cards required to execute the program are noted by an "R" at their extreme right.

JOB IDENTIFICATION

(Alpha-numeric data may be entered on card types L1 through L5.)

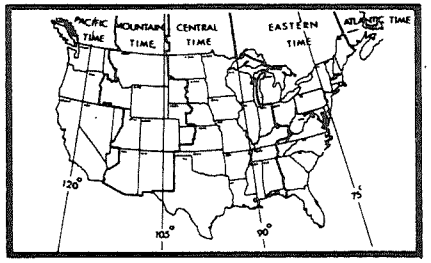
	IDENTIFICATION OF ID TERMS	Card Index	
SCOUT SAMPLE BUILDING	FACILITY NAME	L1	R
CHICAGO, ILLINOIS	FACILITY LOCATION	L2	R
GARD, INC.	USER ID	L3	R
1234	PROJECT NUMBER	L4	R
15 MAY 1977	DATE	L5	R

GEOGRAPHIC PARAMETERS

Latitude (DEG)	Longitude (DEG)	Time Zone Number	Clearness Number (summer)	Clearness Number (winter)	Bldg. Azimuth Angle (DEG)	Card Index	
42.	87.	6.	.98	.98	0.	L6	R

JOB CONTROL PARAMETERS

Job Processing Code(CODE)	Ventilation Air Rate (cfm/sq.ft.)	Estimated Total Fan Pressure (in.H_2O)	Zone Cold Air Supply Temp. - Option 1 (°F)	Zone Cold Air Supply Temp. - Option 2 (°F)	Zone Hot Air Supply Temp. - Option 1 (°F)	Zone Hot Air Supply Temp. - Option 2 (°F)	Card Index	
2.	.05	4.	55.	58.	110.	130.	L7	R



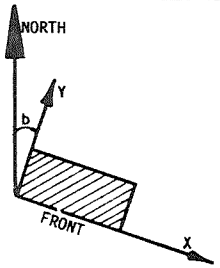
TIME ZONES IN THE UNITED STATES

TIME ZONE NUMBERS IN U.S. FOR STANDARD TIME

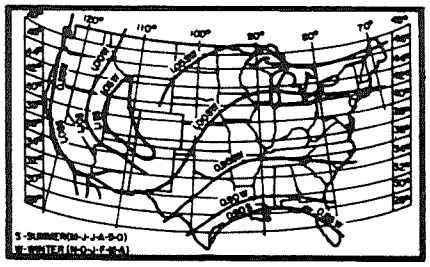
TIME ZONE	NUMBER
Atlantic	4.0
Eastern	5.0
Central	6.0
Mountain	7.0
Pacific	8.0

JOB PROCESSING CODE

1.0 - Design Load Analysis only
2.0 - Design Load & Hourly Load Analysis
3.0 - Hourly Load Analysis Only.



Building Azimuth Angle (b)



CLEARNESS NUMBERS OF NON-INDUSTRIAL ATMOSPHERE IN UNITED STATES

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LOAD ANALYSIS PROGRAM

job name	
date	PAGE 2 OF 26

INPUT FORM LA-02

DESIGN LOAD ANALYSIS PARAMETERS (IF CODE = 3., do not include cards type L8A, L8B and L8C.)

Altitude Above Sea Level (FT)	DESIGN MONTHS (M A M J J A S O N D)	In Columns 11-20, enter 1 for each month to be included in Design Load Analysis. If all are left blank, all 10 months will be used.	Card Index
600.	1 1		L 8 A

SUMMER DESIGN DAY CONDITIONS (Enter July/August weather conditions - These are adjusted by program for other cooling months.

Max. D.B Temperature (°F)	Daily D.B Temperature Range (°F)	Dew Point Temperature (°F)	Windspeed (MPH)	Card Index
92.	20.	70.	5.	L 8 B

WINTER DESIGN DAY CONDITIONS (Enter December weather conditions)

Minimum D.B Temperature (°F)	Daily D.B Temperature Range (°F)	Dew Point Temperature (°F)	Windspeed (MPH)	Card Index
1.	5.	-5.	15.	L 8 C

HOURLY LOAD ANALYSIS PARAMETERS (IF CODE = 1., do not include card type L9.)

Weather Year	First Month Of Analysis (1-12)	Length of Study (Days; 1-365)	Estimated Initial Outside Surface Temperature (°F)	Card Index
1972.	1.	365.	0.	L 9

SCHEDULED PRINTOUTS (Hourly listing of weather and space load data)

Number of Printouts (0-12)	Card Index
0.	L 1 0

R

PRINTOUT NO.	Start Date (Month/Day)	Stop Date (Month/Day)	Repeat card L10A as many times as indicated on card L10. Fill in all columns indicated. Enter zeros if necessary. NO DECIMAL POINT REQUIRED.	Card Index
1	/	/		L 1 0 A
2	/	/		
3	/	/		
4	/	/		
5	/	/		
6	/	/		
7	/	/		
8	/	/		
9	/	/		
10	/	/		
11	/	/		
12	/	/		

GATX GARD, INC.

SCOUT

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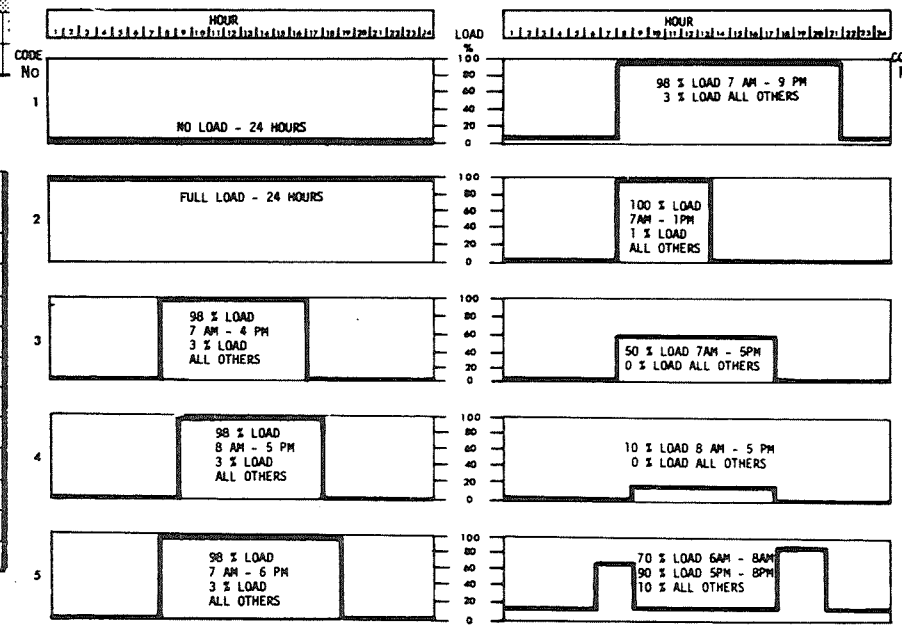
INPUT FORM LA-03

SCHEDULES

No. Operating Schedules (1-10)	
1	2.

STANDARD TWENTY-FOUR HOUR PROFILES



Card Index	
71	L
72	1
73	1
74	
75	
76	
77	
78	
79	
80	

R

OPERATING SCHEDULE DEFINITION

OPERATING SCHEDULE NO.	SUN. (1-20)	WEEK DAY (1-20)	SAT. (1-20)	HOLIDAY (1-20)	LABEL (ALPHA-NUMERIC)
1	1.	11.	1.	1.	PEOPLE
2	13.	12.	13.	13.	LIGHTS
3					
4					
5					
6					
7					
8					
9					
10					

Card Index	
71	1
72	1
73	1
74	A
75	
76	
77	
78	
79	
80	

R

NON-STANDARD TWENTY-FOUR HOUR PROFILES

CODE NO.	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 NOON	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	12 MIDNIGHT	Card Index
11	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.	.8	.4	.8	1.	1.	1.	.1	.1	.1	.1	0.	0.	0.	0.	L 1 1 B
12	.05	.05	.05	.05	.05	.05	.1	.2	.9	.95	.95	.8	.8	.9	.9	.95	.8	.7	.6	.4	.3	.2	.2	.05	
13	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	
14																									
15																									
16																									
17																									
18																									
19																									
20																									

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INPUT FORM LA-04

RESPONSE FACTOR SURFACES

Total No. Of Response Factor Surface Types	No. Of Standard Surface Types To Be Used
2.	0.

Card Index: L 1 3 R

STANDARD RESPONSE FACTOR SURFACES
NOTE: REPEAT CARD TYPE L13A NUMBER OF TIMES INDICATED ON CARD TYPE L13, COLUMNS 11-20.

Standard Surface Code (1. - 16.)	Label (Alphanumeric)

Card Index: L 1 3 A

CODE	TYPE	LAYER DESCRIPTION
1	Wall	Wood Drop Siding 3/4" Sheating Board 4" Air Space 1/2" Gypsum Board Inside Air
2	Wall	Wood Drop Siding 3/4" Sheating Board 4" Fiberglass Insulation 1/2" Gypsum Board Inside Air
3	Wall	4" Face Brick 1/2" Air Space 3/4" sheating Board 4" Fiberglass Insulation 1/2" Gypsum Board Inside Air
4	Wall	8" Concrete Block Inside Air
5	Wall	12" Solid Concrete Inside Air
6	Wall	12" Concrete Block 2" Air Space 1/2" Gypsum Board Inside Air
7	Wall	4" Face Brick 2" Air Space 6" Concrete Block Inside Air
8	Wall	4" Face Brick 2" Air Space 6" Concrete Block 2" Fiberglass Insulation 1/2" gypsum Board Inside Air
9	Wall	Sheet Metal 2" Dense Insulation Sheet Metal Inside Metal
10	Wall	Metal Sliding 1" Dense Insulation 8" Concrete Block Air Space 1/2" Gypsum Board Inside Air
11	Roof	Built-up Coating-1/2" Stone Built-up Coating-3/8" Felt 2" Fiberglass Insulation Metal Pan Inside Air
12	Roof	Built-up Coating-1/2" Stone Built-up Coating-3/8" Felt 3" Cellular Glass Metal Pan Inside Air
13	Roof	Built-up Coating-1/2" Stone Built-up Coating-3/8" Felt 3" Cellular Glass Metal Pan Ceiling Air Space Acoustical Tile Inside Air
14	Roof	Built-up Coating-1/2" Stone Built-up Coating-3/8" Felt 2" Cellular Glass 4" L.W. Concrete Metal Pan Ceiling Air Space Acoustical Tile Inside Air
15	Roof	Sheet Metal 6" Fiberglass Gypsum Board Inside Air
16	Roof	Asphalt Shingle(Pitched Roof) 1/2" Plywood Sheating Attic Air Space 6" Insulation Gypsum Board Inside Air

NON-STANDARD RESPONSE FACTOR SURFACES

NOTE: 1. REPEAT CARD SETS L13B THRU L13D FOR EACH DIFF. NON-STD. CONSTRUCTION TYPE.
2. USE RESPONSE FACTOR PROGRAM TO GENERATE CARD TYPES L13C AND L13D.
3. SURFACE CODES 17-25 RESERVED FOR ADD. STD. SURFACES TO BE ADDED LATER.

Non-standard Surface Code (26. and up)	Label (Alphanumeric)
26.	TYP. WALL

Card Index: L 1 3 B

FROM RESFAC

No. time Response Grps	Common Ratio

Integer number, right justify with no decimal point

Card Index: L 1 3 C

TIME RESPONSE GROUPS

	X	Y	Z
1			
2			
3			
4			
5			

100 MAX

Card Index: L 1 3 D

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INPUT FORM LA-04

RESPONSE FACTOR SURFACES

Total No. Of Response Factor Surface Types	No. Of Standard Surface Types To Be Used

Card Index: L 1 3 R

STANDARD RESPONSE FACTOR SURFACES

NOTE: REPEAT CARD TYPE L13A NUMBER OF TIMES INDICATED ON CARD TYPE L13, COLUMNS 11-20.

Standard Surface Code (1. - 16.)	Label (Alphanumeric)

Card Index: L 1 3 A

CODE	TYPE	LAYER DESCRIPTION
1	Wall	Wood Drop Siding 3/4" Sheating Board 4" Air Space 1/2" Gypsum Board Inside Air
2	Wall	Wood Drop Siding 3/4" Sheating Board 4" Fiberglass Insulation 1/2" Gypsum Board Inside Air
3	Wall	4" Face Brick 1/2" Air Space 3/4" sheating Board 4" Fiberglass Insulation 1/2" Gypsum Board Inside Air
4	Wall	8" Concrete Block Inside Air
5	Wall	12" Solid Concrete Inside Air
6	Wall	12" Concrete Block 2" Air Space 1/2" Gypsum Board Inside Air
7	Wall	4" Face Brick 2" Air Space 6" Concrete Block Inside Air
8	Wall	4" Face Brick 2" Air Space 6" Concrete Block 2" Fiberglass Insulation 1/2" gypsum Board Inside Air
9	Wall	Sheet Metal 2" Dense Insulation Sheet Metal Inside Metal
10	Wall	Metal Sliding 1" Dense Insulation 8" Concrete Block Air Space 1/2" Gypsum Board Inside Air
11	Roof	Built-up Coating-1/2" Stone Built-up Coating-3/8" Felt 2" Fiberglass Insulation Metal Pan Inside Air
12	Roof	Built-up Coating-1/2" Stone Built-up Coating-3/8" Felt 3" Cellular Glass Metal Pan Inside Air
13	Roof	Built-up Coating-1/2" Stone Built-up Coating-3/8" Felt 3" Cellular Glass Metal Pan Ceiling Air Space Acoustical Tile Inside Air
14	Roof	Built-up Coating-1/2" Stone Built-up Coating-3/8" Felt 2" Cellular Glass 4" L.W. Concrete Metal Pan Ceiling Air Space Acoustical Tile Inside Air
15	Roof	Sheet Metal 6" Fiberglass Gypsum Board Inside Air
16	Roof	Asphalt Shingle(Pitched Roof) 1/2" Plywood Sheating Attic Air Space 6" Insulation Gypsum Board Inside Air

NON-STANDARD RESPONSE FACTOR SURFACES

NOTE: 1. REPEAT CARD SETS L13B THRU L13D FOR EACH DIFF. NON-STD. CONSTRUCTION TYPE.
2. USE RESPONSE FACTOR PROGRAM TO GENERATE CARD TYPES L13C AND L13D.
3. SURFACE CODES 17-25 RESERVED FOR ADD. STD. SURFACES TO BE ADDED LATER.

Non-standard Surface Code (26. and up)	Label (Alphanumeric)
27.	TYP. ROOF

Card Index: L 1 3 B

FROM RESFAC

No. time Respon-se Grps	Common Ratio

Card Index: L 1 3 C

Integer number, right justify with no decimal point

TIME RESPONSE GROUPS

	X	Y	Z
1			
2			
3			
4			
5			

100 MAX

Card Index: L 1 3 D

GATX GARD, INC.

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INPUT FORM LA-05

DELAYED SURFACES

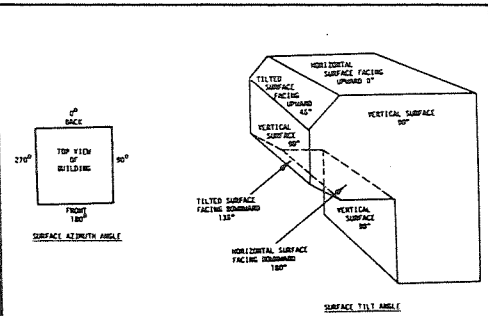
No. Delayed Surfaces (1–5)	Card Index (71–80)
9.	L14 R

NOTE: REPEAT CARD TYPE L14A FOR EACH DELAYED SURFACE.

	Similar Surface Index (1–5)	Similar Surface Properties: Surface Absorptivity (6–10)	Similar Surface Properties: Surface Roughness Index (11–15)	Similar Surface Properties: Response Factor Code (16–20)	Ground Reflectivity (21–25)	Surface Area (SQ.FT.) (26–35)	Azimuth Angle (DEG) (36–40)	Tilt Angle (DEG) (41–45)	Infil. Flow Coeff. (46–50)	Label (Alphanumeric) (51–60)	Card Index (71–80)
1		.8	6.	26.	.2	887.	180.	90.		S. WALL	L14A
2	1.					245.	270.	90.		W. WALL	
3	1.						0.	90.		N. WALL	
4	2.						90.	90.		E. WALL	
5	1.						180.	90.		S. WALL 12	
6	2.						270.	90.		W. WALL 12	
7	3.						0.	90.		N. WALL 12	
8	4.						90.	90.		E. WALL 12	
9		.9	1.	27.	.2	18790.	180.	0.		ROOF	
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

NOTES:

1. Similar surface feature can be used when a reference surface described previously has identical surface properties.
2. When using similar surface feature if any surface parameters (except for Azimuth and Tilt angles) are left blank, values entered for reference surface will be used automatically.
3. Azimuth and Tilt angles must always be entered.
4. Infiltration flow coefficient required only when using crack infiltration.



CODE FOR EXTERIOR SURFACE FINISH

CODE	SURFACE FINISH	EXAMPLE: WALL	EXAMPLE: ROOF
1	Rough	• Stucco	• Wood Shingles • Built-up Roof with Stones
2		• Brick • Plaster	
3		• Concrete	• Asphalt Shingles
4		• Clear Pine	
5		• Smooth Plaster • Metal	• Metal
6	Smooth	• Glass • Paint on Pine	

Increasing Smoothness

GATX BARD, INC.

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INPUT FORM LA-06

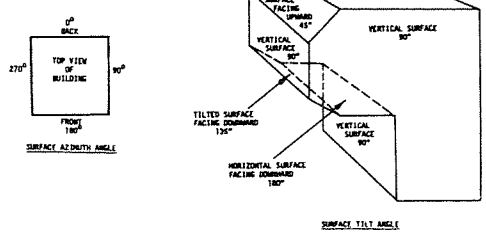
No. Quick Surfaces	Card Index
0.	L 1 5

NOTE: REPEAT CARD TYPE L15A FOR EACH QUICK SURFACE.

INDEX NO.	Similar Surface Index	SIMILAR SURFACE PROPERTIES: Surface Absorptivity	SIMILAR SURFACE PROPERTIES: Surface Roughness Index	SIMILAR SURFACE PROPERTIES: U-Factor	Ground Reflectivity	Surface Area (SQ.FT.)	Azimuth Angle (DEG.)	Tilt Angle (DEG.)	Infil. Flow Coeff.	Surface Perimeter (FT)	Label (Alphanumeric)	Card Index
1												L 1 5 A
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												

NOTES:

1. Similar surface feature can be used when a reference surface described previously has identical surface properties.
2. When using similar surface feature, if any surface parameters (Except for azimuth and tilt angles) are left blank, values entered for reference surface will be used automatically.
3. Azimuth angle must always be entered.
4. Infiltration flow coefficient and perimeter are required only when using crack infiltration.



CODE FOR EXTERIOR SURFACE FINISH

CODE	SURFACE FINISH	EXAMPLE: WALL	EXAMPLE: ROOF
1	Rough	• Stucco	• Wood Shingles • Built-up Roof with Stones
2		• Brick • Plaster	
3		• Concrete	• Asphalt Shingles
4		• Clear Pine	
5		• Smooth Plaster • Metal	• Metal
6	Smooth	• Glass • Paint on Pine	

Increasing Smoothness

GATX GARD, INC.

SCOUT
LOAD ANALYSIS PROGRAM

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date

INPUT FORM LA-07

GLAZED SURFACES

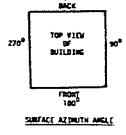
No. Glazed Surfaces (1–10)	Card Index (71–74)
4.	L 1 6

NOTE: REPEAT CARD TYPE L16A FOR EACH GLAZED SURFACE.

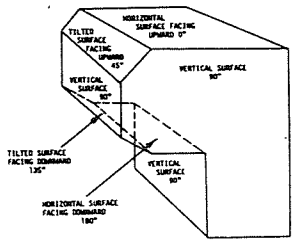
Similar Surface Index (1–5)	SIMILAR SURFACE PROPERTIES: Glass Code (6–10)	No. Panes (11–15)	Shade Coeff. (16–20)	Ground Reflectivity (21–25)	Surface Area (SQ.FT.) (26–35)	Azimuth Angle (DEG.) (36–40)	Tilt Angle (DEG) (41–45)	Win/Sky Factor (46–50)	Win/Gnd Factor (51–55)	Infil. Flow Coeff. (56–60)	Surface Perimeter (FT) (61–65)	Label (Alphanumeric) (66–75)	Card Index (76–80)
	1.	2.	.39	.2	1749.	180.	90.	.5	.5			S. WINDOW	L 1 6 A
1.	1.				482.	270.	90.	.5	.5			W. WINDOW	
1.	1.					0.	90.	.5	.5			N. WINDOW	
2.	1.					90.	90.	.5	.5			E. WINDOW	

NOTES:

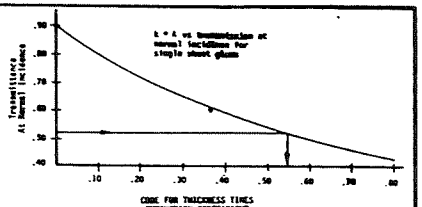
1. Similar surface feature can be used when a reference surface described previously has identical surface properties.
2. When using similar surface feature, if any surface parameters (Except for azimuth and tilt angles) are left blank, values entered for reference surface will be used automatically.
3. Azimuth angle must always be entered.
4. Infiltration flow coefficient and perimeter are required only when using crack infiltration.



SURFACE AZIMUTH ANGLE



SURFACE TILT ANGLE



CODE	MEANING
1	1/8" sheet
2	k * t = 0.10
3	k * t = 0.15
4	k * t = 0.20

CODE	MEANING
5	k * t = 0.40
6	k * t = 0.60
7	50% transparent H.A. plate
8	k * t = 1.00

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INPUT FORM LA-08

INTERNAL SURFACES

No. Internal Heat Transfer Surfaces	Card Index
17.	L17

(If there are no internal surfaces, skip card type L17A.)

Index No.	Surface Area	Heat Transfer Coefficient (BTU/HR-°F-FT²)	ADJOINING SPACES Space 1	ADJOINING SPACES Space 2	Label (Alphanumeric)	Card Index
1	2049.	.39	1.	5.	FLOOR 1 - Z 1/5	L17A
2	442.	.39	2.	5.	FLOOR 1 - Z 2/5	
3	2049.	.39	3.	5.	FLOOR 1 - Z 3/5	
4	442.	.39	4.	5.	FLOOR 1 - Z 4/5	
5	2049.	.39	6.	10.	FLOOR TYP - Z 6/10	
6	442.	.39	7.	10.	FLOOR TYP - Z 7/10	
7	2049.	.39	8.	10.	FLOOR TYP - Z 8/10	
8	442.	.39	9.	10.	FLOOR TYP - Z 9/10	
9	2049.	.39	11.	15.	FLOOR 12 - Z 11/15	
10	442.	.39	12.	15.	FLOOR 12 - Z 12/15	
11	2049.	.39	13.	15.	FLOOR 12 - Z 13/15	
12	442.	.39	14.	15.	FLOOR 12 - Z 14/15	
13	2510.	.31	11.	16.	FLOOR 12 - Z 11/16	
14	620.	.31	12.	16.	FLOOR 12 - Z 12/16	
15	2510.	.31	13.	16.	FLOOR 12 - Z 13/16	
16	620.	.31	14.	16.	FLOOR 12 - Z 14/16	
17	12530.	.31	15.	16.	FLOOR 12 - Z 15/16	
18						
19						
20						

(Heat transfer coefficient should include air film on both sides.)

GATX GARD, INC.

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INPUT FORM LA—09

UNDERGROUND SURFACES

UNDERGROUND WALLS

No. Underground Walls	Card Index
0.	L18

(If no underground walls are required, skip card type L18A.)

INDEX NO.	Wall Area	Heat Trans. Coeff. (BTU/HR-°F-FT²)	Label (Alphanumeric)	Card Index
1				L18A
2				
3				
4				
5				
6				
7				
8				
9				
10				

UNDERGROUND FLOORS

No. Underground Floors	Card Index
5.	L19

(If no underground floors are required, skip card type L19A.)

INDEX NO.	Floor Area	Heat Transf. Coeff. (BTU/HR-°F-FT²)	Label (Alphanumeric)	Card Index
1	2510.	.1	ZONE 1	L19A
2	620.	.1	ZONE 2	
3	2510.	.1	ZONE 3	
4	620.	.1	ZONE 4	
5	12530.	.1	ZONE 5	
6				
7				
8				
9				
10				

(Heat transfer coefficient should include inside air film. Exterior surface temperature is set equal to ground temperature.)

GROUND TEMPERATURE (°F) (If no underground walls or floors are required, skip card type L20.)

Jan. / July	Feb. / August	March / September	April / October	May / November	June / December	Card Index
41.	38.	39.	43.	49.	58.	L20

GATX GARD, INC.

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INPUT FORM LA-10

SPACES

Number of Spaces	Card Index
16.	L21

NOTE: CARD TYPE L21 SHOULD APPEAR ONLY ONCE.

SPACE DESCRIPTION

SPACE NO. 1 LABEL 1ST. FL-S.

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Space Floor Area (FT^2)	Space Volume (FT^3)	Weight of Floor (LB/FT^2)	Space Temperature (^oF)	Include in bldg load? (0=NO, 1=YES)	Is space a plenum?	Label (Alphanumeric)	Card Index
2510.	21335.	47.	72.	1.	0.	FLOOR 1 - SOUTH	L21A

No. People at Peak	People Activity Level (BTU/HR) (S+L)	Operating Schedule No.	Card Index
25.	450.	1.	L21B

Type of Light Fixture (1. - 4.)	Fraction of Light Heat to Space	Lighting Load ($WATTS/FT^2$)	Lighting Load (KW)	Operating Schedule No.	Card Index
1.	.7	3.5		2.	L21C

LIGHT FIXTURE CODE
1. Not vented
2. Vented to ret. air
3. Vented to sup. & ret. air
4. Incandescent

Miscellaneous Electrical and thermal loads ($WATTS/FT^2$)	(KW)	(BTU/HR-Sensible)	(BTU/HR-Latent)	Operating Schedule No.	Card Index
.42				2.	L21D

Type of Infiltration Analysis (0.-2.)	Infiltration Rate (No. of Air Changes)	Height above (-) or below Neutral Zone (FT)	Space Exhaust Air (CFM)	Card Index
1.	.125			L21E

INFILTRATION CODE
0. None
1. Air change method (columns 11-20 req'd)
2. Crack method (columns 21-40 req'd)

No. Delayed Surfaces	No. Quick Surfaces	No. Glazed Surfaces	No. Internal Surfaces	No. Underground Walls	No. Underground Floors	No. Additional Identical Spaces	Card Index
2.		1.	1.		1.		L21F

INDICES OF SPACE SURFACES
- Begin new card for each surface type.
- If a surface type is not included, skip that card index type.

- Delayed _____ L21G
- Quick _____ L21H
- Glazed _____ L21I
- Internal _____ L21J
- Underground Walls _____ L21K
- Underground Floors _____ L21L

Card Index

1.	1.								
1.									
1.									
1.									

GATX
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SCOUT
LOAD ANALYSIS PROGRAM

job name
date

SPACES

INPUT FORM LA-10

Number of Spaces	Card Index
	L21

NOTE: CARD TYPE L21 SHOULD APPEAR ONLY ONCE.

SPACE DESCRIPTION

SPACE NO. 2 LABEL 1ST. FL-W

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Space Floor Area (FT^2)	Space Volume (FT^3)	Weight of Floor (LB/FT^2)	Space Temperature (^oF)	Include in bldg load? (0=NO, 1=YES)	Is space a plenum?	Label (Alphanumeric)	Card Index
620.	5270.	47.	72.	1.	0.	FLOOR 1 - WEST	L21A

No. People at Peak	People Activity Level (BTU/HR) (S+L)	Operating Schedule No.	Card Index
6.	450.	1.	L21B

Type of Light Fixture (1. - 4.)	Fraction of Light Heat to Space	Lighting Load ($WATTS/FT^2$)	Lighting Load (KW)	Operating Schedule No.	Card Index
1.	.7	3.5		2.	L21C

LIGHT FIXTURE CODE
1. Not vented
2. Vented to ret. air
3. Vented to sup. & ret. air
4. Incandescent

Miscellaneous Electrical and thermal loads ($WATTS/FT^2$)	(KW)	(BTU/HR-Sensible)	(BTU/HR-Latent)	Operating Schedule No.	Card Index
.42				2.	L21D

Type of Infiltration Analysis (0.-2.)	Infiltration Rate (No. of Air Changes)	Height above (-) or below Neutral Zone (FT)	Space Exhaust Air (CFM)	Card Index
1.	.125			L21E

INFILTRATION CODE
0. None
1. Air change method (columns 11-20 req'd)
2. Crack method (columns 21-40 req'd)

No. Delayed Surfaces	No. Quick Surfaces	No. Glazed Surfaces	No. Internal Surfaces	No. Underground Walls	No. Underground Floors	No. Additional Identical Spaces	Card Index
2.		1.	1.		1.		L21F

INDICES OF SPACE SURFACES
- Begin new card for each surface type.
- If a surface type is not included, skip that card index type.

- Delayed _____ L21G
- Quick _____ L21H
- Glazed _____ L21I
- Internal _____ L21J
- Underground Walls _____ L21K
- Underground Floors _____ L21L

Card Index

2.	2.								
2.									
2.									
2.									

GATX GARD, INC.

SCOUT

LOAD ANALYSIS PROGRAM

job name

date

INPUT FORM LA-10

SPACES

Number of Spaces	Card Index
	L21

NOTE: CARD TYPE L21 SHOULD APPEAR ONLY ONCE.

SPACE DESCRIPTION

SPACE NO. 3 LABEL 1ST. FL-N

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Space Floor Area (FT^2)	Space Volume (FT^3)	Weight of Floor (LB/FT^2)	Space Temperature (°F)	Include in bldg load? (0=NO, 1=YES)	Is space a plenum?	Label (Alphanumeric)	Card Index
2510.	21355.	47.	72.	1.	0.	FLOOR 1 - NORTH	L21A

No. People at Peak	People Activity Level (BTU/HR) (S+L)	Operating Schedule No.	Card Index
25.	450.	1.	L21B

Type of Light Fixture (1. - 4.)	Fraction of Light Heat to Space	Lighting Load ($WATTS/FT^2$)	Lighting Load (KW)	Operating Schedule No.	Card Index
1.	.7	3.5		2.	L21C

LIGHT FIXTURE CODE
1. Not vented
2. Vented to ret. air
3. Vented to sup. & ret. air
4. Incandescent

Miscellaneous Electrical and thermal loads ($WATTS/FT^2$)	(KW)	(BTU/HR-Sensible)	(BTU/HR-Latent)	Operating Schedule No.	Card Index
.42				2.	L21D

Type of Infiltration Analysis (0.-2.)	Infiltration Rate (No. of Air Changes)	Height above (-) or below Neutral Zone (FT)	Space Exhaust Air (CFM)	Card Index
1.	.125			L21E

INFILTRATION CODE
0. None
1. Air change method (columns 11-20 req'd)
2. Crack method (columns 21-40 req'd)

No. Delayed Surfaces	No. Quick Surfaces	No. Glazed Surfaces	No. Internal Surfaces	No. Underground Walls	No. Underground Floors	No. Additional Identical Spaces	Card Index
2.		1.	1.		1.		L21F

INDICES OF SPACE SURFACES
- Begin new card for each surface type.
- If a surface type is not included, skip that card index type.

- Delayed _____ L21G
- Quick _____ L21H
- Glazed _____ L21I
- Internal _____ L21J
- Underground Walls _____ L21K
- Underground Floors _____ L21L

Card Index

3.	3.
3.	
3.	
3.	

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GARD, INC.

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date

INPUT FORM LA -10

SPACES

Number of Spaces	Card Index
	L21

NOTE: CARD TYPE L21 SHOULD APPEAR ONLY ONCE.

SPACE DESCRIPTION

SPACE NO. 4 LABEL 1ST. FL-E.

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Space Floor Area (FT^2)	Space Volume (FT^3)	Weight of Floor (LB/FT^2)	Space Temperature (^oF)	Include in bldg load? (0=NO, 1=YES)	Is space a plenum? (0=NO, 1=YES)	Label (Alphanumeric)	Card Index
620.	5270.	87.	72.	1.	0.	FLOOR 1 - EAST	L21A

No. People at Peak	People Activity Level (BTU/HR) (S+L)	Operating Schedule No.	Card Index
6.	450.	1.	L21B

Type of Light Fixture (1. - 4.)	Fraction of Light Heat to Space	Lighting Load ($WATTS/FT^2$)	Lighting Load (KW)	Operating Schedule No.	Card Index
1.	.7	3.5		2.	L21C

LIGHT FIXTURE CODE
1. Not vented
2. Vented to ret. air
3. Vented to sup. & ret. air
4. Incandescent

Miscellaneous Electrical and thermal loads ($WATTS/FT^2$)	(KW)	(BTU/HR-Sensible)	(BTU/HR-Latent)	Operating Schedule No.	Card Index
.92				2.	L21D

Type of Infiltration Analysis (0.-2.)	Infiltration Rate (No. of Air Changes)	Height above (-) or below Neutral Zone (FT)	Space Exhaust Air (CFM)	Card Index
1.	.125			L21E

INFILTRATION CODE
0. None
1. Air change method (columns 11-20 req'd)
2. Crack method (columns 21-40 req'd)

No. Delayed Surfaces	No. Quick Surfaces	No. Glazed Surfaces	No. Internal Surfaces	No. Underground Walls	No. Underground Floors	No. Additional Identical Spaces	Card Index
2.		1.	1.		1.		L21F

INDICES OF SPACE SURFACES
- Begin new card for each surface type.
- If a surface type is not included, skip that card index type.

- Delayed _____ L21G
- Quick _____ L21H
- Glazed _____ L21I
- Internal _____ L21J
- Underground Walls _____ L21K
- Underground Floors _____ L21L

Card Index

4.	4.
4.	
4.	
4.	

SPACES

INPUT FORM LA-10

Number of Spaces	Card Index
	L21

NOTE: CARD TYPE L21 SHOULD APPEAR ONLY ONCE.

SPACE DESCRIPTION

SPACE NO. 5 LABEL 1ST FLOOR - CORE

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Space Floor Area (FT^2)	Space Volume (FT^3)	Weight of Floor (LB/FT^2)	Space Temperature (°F)	Include in bldg load? (0=NO, 1=YES)	Is space a plenum?	Label (Alphanumeric)	Card Index
12530.	106505.	47.	72.	1.	0.	FLOOR 1 - CORE	L21A

No. People at Peak	People Activity Level (BTU/HR) (S+L)	Operating Schedule No.	Card Index
125.	450.	1.	L21B

Type of Light Fixture (1. - 4.)	Fraction of Light Heat to Space	Lighting Load ($WATTS/FT^2$)	Lighting Load (KW)	Operating Schedule No.	Card Index
1.	.7	3.5		2.	L21C

LIGHT FIXTURE CODE
1. Not vented
2. Vented to ret. air
3. Vented to sup. & ret. air
4. Incandescent

Miscellaneous Electrical and thermal loads ($WATTS/FT^2$)	(KW)	(BTU/HR-Sensible)	(BTU/HR-Latent)	Operating Schedule No.	Card Index
.42				2.	L21D

Type of Infiltration Analysis (0.-2.)	Infiltration Rate (No. of Air Changes)	Height above (-) or below Neutral Zone (FT)	Space Exhaust Air (CFM)	Card Index
0.				L21E

INFILTRATION CODE
0. None
1. Air change method (columns 11-20 req'd)
2. Crack method (columns 21-40 req'd)

No. Delayed Surfaces	No. Quick Surfaces	No. Glazed Surfaces	No. Internal Surfaces	No. Underground Walls	No. Underground Floors	No. Additional Identical Spaces	Card Index
			4.		1.		L21F

INDICES OF SPACE SURFACES
- Begin new card for each surface type.
- If a surface type is not included, skip that card index type.

- Delayed _____ L21G
- Quick _____ L21H
- Glazed _____ L21I
- Internal _____ L21J
- Underground Walls _____ L21K
- Underground Floors _____ L21L

Card Index

1.	2.	3.	4.	
5.				

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SPACES

INPUT FORM LA-10

Number of Spaces	Card Index
	L 2 1

NOTE: CARD TYPE L21 SHOULD APPEAR ONLY ONCE.

SPACE DESCRIPTION

SPACE NO. 6 LABEL TYP FL-S

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Space Floor Area (FT^2)	Space Volume (FT^3)	Weight of Floor (LB/FT^2)	Space Temperature (^oF)	Include in bldg load? (0=NO, 1=YES)	Is space a plenum?	Label (Alphanumeric)	Card Index
2510.	21335.	47.	72.	1.	0.	FLOOR TYP. - SOUTH	L 2 1 A

No. People at Peak	People Activity Level (BTU/HR) (S+L)	Operating Schedule No.	Card Index
25.	450.	1.	L 2 1 B

Type of Light Fixture (1. - 4.)	Fraction of Light Heat to Space	Lighting Load ($WATTS/FT^2$)	Lighting Load (KW)	Operating Schedule No.	Card Index
1.	.7	5.5		2.	L 2 1 C

LIGHT FIXTURE CODE
1. Not vented
2. Vented to ret. air
3. Vented to sup. & ret. air
4. Incandescent

Miscellaneous Electrical and thermal loads ($WATTS/FT^2$)	(KW)	(BTU/HR-Sensible)	(BTU/HR-Latent)	Operating Schedule No.	Card Index
.42				2.	L 2 1 D

Type of Infiltration Analysis (0.-2.)	Infiltration Rate (No. of Air Changes)	Height above (-) or below Neutral Zone (FT)	Space Exhaust Air (CFM)	Card Index
1.	.125			L 2 1 E

INFILTRATION CODE
0. None
1. Air change method (columns 11-20 req'd)
2. Crack method (columns 21-40 req'd)

No. Delayed Surfaces	No. Quick Surfaces	No. Glazed Surfaces	No. Internal Surfaces	No. Underground Walls	No. Underground Floors	No. Additional Identical Spaces	Card Index
2.		1.	1.			9.	L 2 1 F

INDICES OF SPACE SURFACES
- Begin new card for each surface type.
- If a surface type is not included, skip that card index type.

- Delayed _____ L21G
- Quick _____ L21H
- Glazed _____ L21I
- Internal _____ L21J
- Underground Walls _____ L21K
- Underground Floors _____ L21L

Card Index

1.	1.	
1.		
5.		

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SPACES

INPUT FORM LA -10

Number of Spaces	Card Index
	L21

NOTE: CARD TYPE L21 SHOULD APPEAR ONLY ONCE.

SPACE DESCRIPTION

SPACE NO. 7 LABEL TYP FL-W

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Space Floor Area (FT^2)	Space Volume (FT^3)	Weight of Floor (LB/FT^2)	Space Temperature (^oF)	Include in bldg load? (0=NO, 1=YES)	Is space a plenum?	Label (Alphanumeric)	Card Index
620.	5270.	47.	72.	1.	0.	FLOOR TYP - WEST	L21A

No. People at Peak	People Activity Level (BTU/HR) (S+L)	Operating Schedule No.	Card Index
6.	450.	1.	L21B

Type of Light Fixture (1. - 4.)	Fraction of Light Heat to Space	Lighting Load ($WATTS/FT^2$)	Lighting Load (KW)	Operating Schedule No.	Card Index
1.	.7	3.5		2.	L21C

LIGHT FIXTURE CODE
1. Not vented
2. Vented to ret. air
3. Vented to sup. & ret. air
4. Incandescent

Miscellaneous Electrical and thermal loads ($WATTS/FT^2$)	(KW)	(BTU/HR-Sensible)	(BTU/HR-Latent)	Operating Schedule No.	Card Index
.42				2.	L21D

Type of Infiltration Analysis (0.-2.)	Infiltration Rate (No. of Air Changes)	Height above (-) or below Neutral Zone (FT)	Space Exhaust Air (CFM)	Card Index
1.	.125			L21E

INFILTRATION CODE
0. None
1. Air change method (columns 11-20 req'd)
2. Crack method (columns 21-40 req'd)

No. Delayed Surfaces	No. Quick Surfaces	No. Glazed Surfaces	No. Internal Surfaces	No. Underground Walls	No. Underground Floors	No. Additional Identical Spaces	Card Index
2.		1.	1.			9.	L21F

INDICES OF SPACE SURFACES
- Begin new card for each surface type.
- If a surface type is not included, skip that card index type.

- Delayed _____ L21G
- Quick _____ L21H
- Glazed _____ L21I
- Internal _____ L21J
- Underground Walls _____ L21K
- Underground Floors _____ L21L

Card Index

2.	2.
2.	
6.	

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GARCO, INC.

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date

SPACES

INPUT FORM LA -10

Number of Spaces	Card Index
	L21

NOTE: CARD TYPE L21 SHOULD APPEAR ONLY ONCE.

SPACE DESCRIPTION

SPACE NO. 8 LABEL TYP FL-N

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Space Floor Area (FT^2)	Space Volume (FT^3)	Weight of Floor (LB/FT^2)	Space Temperature (^oF)	Include in bldg load? (0=NO, 1=YES)	Is space a plenum?	Label (Alphanumeric)	Card Index
2510.	21335.	47.	72.	1.	0.	FLOOR TYP - NORTH	L21A

No. People at Peak	People Activity Level (BTU/HR) (S+L)	Operating Schedule No.	Card Index
25.	450.	1.	L21B

Type of Light Fixture (1. - 4.)	Fraction of Light Heat to Space	Lighting Load ($WATTS/FT^2$)	Lighting Load (KW)	Operating Schedule No.	Card Index
1.	.7	3.5		2.	L21C

LIGHT FIXTURE CODE
1. Not vented
2. Vented to ret. air
3. Vented to sup. & ret. air
4. Incandescent

Miscellaneous Electrical and thermal loads ($WATTS/FT^2$)	(KW)	(BTU/HR-Sensible)	(BTU/HR-Latent)	Operating Schedule No.	Card Index
.42				2.	L21D

Type of Infiltration Analysis (0.-2.)	Infiltration Rate (No. of Air Changes)	Height above (-) or below Neutral Zone (FT)	Space Exhaust Air (CFM)	Card Index
1.	.125			L21E

INFILTRATION CODE
0. None
1. Air change method (columns 11-20 req'd)
2. Crack method (columns 21-40 req'd)

No. Delayed Surfaces	No. Quick Surfaces	No. Glazed Surfaces	No. Internal Surfaces	No. Underground Walls	No. Underground Floors	No. Additional Identical Spaces	Card Index
2.		1.	1.			9.	L21F

INDICES OF SPACE SURFACES
- Begin new card for each surface type.
- If a surface type is not included, skip that card index type.

- Delayed _____ L21G
- Quick _____ L21H
- Glazed _____ L21I
- Internal _____ L21J
- Underground Walls _____ L21K
- Underground Floors _____ L21L

Card Index

3.	3.	
3.		
7.		

GATX
GARD, INC.

SCOUT

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(WITH SHADOWS)

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INPUT FORM LA -10

SPACES

Number of Spaces	Card Index
	L 2 1 R

NOTE: CARD TYPE L21 SHOULD APPEAR ONLY ONCE.

SPACE DESCRIPTION

SPACE NO. 9 LABEL TYP FL-E

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Space Floor Area (FT^2)	Space Volume (FT^3)	Weight of Floor (LB/FT^2)	Space Temperature (°F)	Include in bldg load? (0=NO, 1=YES)	Is space a plenum?	Label (Alphanumeric)	Card Index
620.	5270.	47.	72.	1.	0.	FLOOR TYP - EAST	L 2 1 A R

No. People at Peak	People Activity Level (BTU/HR) (S+L)	Operating Schedule No.	Card Index
6.	450.	1.	L 2 1 B R

Type of Light Fixture (1. - 4.)	Fraction of Light Heat to Space	Lighting Load ($WATTS/FT^2$)	Lighting Load (KW)	Operating Schedule No.	Card Index
1.	.7	3.5		2.	L 2 1 C R

LIGHT FIXTURE CODE
1. Not vented
2. Vented to ret. air
3. Vented to sup. & ret. air
4. Incandescent

Miscellaneous Electrical and thermal loads ($WATTS/FT^2$)	(KW)	(BTU/HR-Sensible)	(BTU/HR-Latent)	Operating Schedule No.	Card Index
.42				2.	L 2 1 D R

Type of Infiltration Analysis (0.-2.)	Infiltration Rate (No. of Air Changes)	Height above (-) or below Neutral Zone (FT)	Space Exhaust Air (CFM)	Card Index
1.	.125			L 2 1 E R

INFILTRATION CODE
0. None
1. Air change method (columns 11-20 req'd)
2. Crack method (columns 21-40 req'd)

No. Delayed Surfaces	No. Quick Surfaces	No. Glazed Surfaces	No. Internal Surfaces	No. Underground Walls	No. Underground Floors	No. Additional Identical Spaces	Card Index
2.		1.	1.			2.	L 2 1 F R

INDICES OF SPACE SURFACES
- Begin new card for each surface type.
- If a surface type is not included, skip that card index type.

- Delayed _____ L21G
- Quick _____ L21H
- Glazed _____ L21I
- Internal _____ L21J
- Underground Walls _____ L21K
- Underground Floors _____ L21L

Card Index

4.	4.
4.	
8.	

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INPUT FORM LA-10

SPACES

Number of Spaces	Card Index
	L21

NOTE: CARD TYPE L21 SHOULD APPEAR ONLY ONCE.

SPACE DESCRIPTION

SPACE NO. 10 LABEL TYP FL-CORE

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Space Floor Area (FT^2)	Space Volume (FT^3)	Weight of Floor (LB/FT^2)	Space Temperature (^oF)	Include in bldg load? (0=NO, 1=YES)	Is space a plenum? (0=NO, 1=YES)	Label (Alphanumeric)	Card Index
12530.	106505.	47.	72.	1.	0.	FLOOR TYP - CORE	L21A

No. People at Peak	People Activity Level (BTU/HR) (S+L)	Operating Schedule No.	Card Index
125.	950.	1.	L21B

Type of Light Fixture (1. - 4.)	Fraction of Light Heat to Space	Lighting Load ($WATTS/FT^2$)	Lighting Load (KW)	Operating Schedule No.	Card Index
1.	.7	3.5		2.	L21C

LIGHT FIXTURE CODE
1. Not vented
2. Vented to ret. air
3. Vented to sup. & ret. air
4. Incandescent

Miscellaneous Electrical and thermal loads ($WATTS/FT^2$)	(KW).	(BTU/HR-Sensible)	(BTU/HR-Latent)	Operating Schedule No.	Card Index
.42				2.	L21D

Type of Infiltration Analysis (0.-2.)	Infiltration Rate (No. of Air Changes)	Height above (-) or below Neutral Zone (FT)	Space Exhaust Air (CFM)	Card Index
0.				L21E

INFILTRATION CODE
0. None
1. Air change method (columns 11-20 req'd)
2. Crack method (columns 21-40 req'd)

No. Delayed Surfaces	No. Quick Surfaces	No. Glazed Surfaces	No. Internal Surfaces	No. Underground Walls	No. Underground Floors	No. Additional Identical Spaces	Card Index
			4.			0.	L21F

INDICES OF SPACE SURFACES
- Begin new card for each surface type.
- If a surface type is not included, skip that card index type.

- Delayed _____ L21G
- Quick _____ L21H
- Glazed _____ L21I
- Internal _____ L21J
- Underground Walls _____ L21K
- Underground Floors _____ L21L

				Card Index
5.	6.	7.	8.	

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SPACES

INPUT FORM LA-10

Number of Spaces	Card Index
	L21

NOTE: CARD TYPE L21 SHOULD APPEAR ONLY ONCE.

SPACE DESCRIPTION

SPACE NO. 11 LABEL 12TH FL-S

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Space Floor Area (FT^2)	Space Volume (FT^3)	Weight of Floor (LB/FT^2)	Space Temperature (^oF)	Include in bldg load? (0=NO, 1=YES)	Is space a plenum?	Label (Alphanumeric)	Card Index
2510.	21335.	47.	72.	1.	0.	FLOOR 12 - SOUTH	L21A

No. People at Peak	People Activity Level (BTU/HR) (S+L)	Operating Schedule No.	Card Index
25.	450.	1.	L21B

Type of Light Fixture (1. - 4.)	Fraction of Light Heat to Space	Lighting Load ($WATTS/FT^2$)	Lighting Load (KW)	Operating Schedule No.	Card Index
1.	.7	3.5		2.	L21C

LIGHT FIXTURE CODE
1. Not vented
2. Vented to ret. air
3. Vented to sup. & ret. air
4. Incandescent

Miscellaneous Electrical and thermal loads ($WATTS/FT^2$)	(KW)	(BTU/HR-Sensible)	(BTU/HR-Latent)	Operating Schedule No.	Card Index
.42				2.	L21D

Type of Infiltration Analysis (0.-2.)	Infiltration Rate (No. of Air Changes)	Height above (-) or below Neutral Zone (FT)	Space Exhaust Air (CFM)	Card Index
1.	.125			L21E

INFILTRATION CODE
0. None
1. Air change method (columns 11-20 req'd)
2. Crack method (columns 21-40 req'd)

No. Delayed Surfaces	No. Quick Surfaces	No. Glazed Surfaces	No. Internal Surfaces	No. Underground Walls	No. Underground Floors	No. Additional Identical Spaces	Card Index
1.		1.	2.				L21F

INDICES OF SPACE SURFACES
- Begin new card for each surface type.
- If a surface type is not included, skip that card index type.

- Delayed _____ L21G
- Quick _____ L21H
- Glazed _____ L21I
- Internal _____ L21J
- Underground Walls _____ L21K
- Underground Floors _____ L21L

Card Index

1.		
1.		
9.	13.	

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date

INPUT FORM LA -10

SPACES

Number of Spaces	Card Index
	L21

NOTE: CARD TYPE L21 SHOULD APPEAR ONLY ONCE.

SPACE DESCRIPTION

SPACE NO. 12 LABEL 12TH FL-W

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Space Floor Area (FT^2)	Space Volume (FT^3)	Weight of Floor (LB/FT^2)	Space Temperature (^oF)	Include in bldg load? (0=NO 1=YES)	Is space a plenum?	Label (Alphanumeric)	Card Index
620.	5270.	47.	72.	1.	0.	FLOOR 12 - WEST	L21A

No. People at Peak	People Activity Level (BTU/HR) (S+L)	Operating Schedule No.	Card Index
6.	450.	1.	L21B

Type of Light Fixture (1. - 4.)	Fraction of Light Heat to Space	Lighting Load ($WATTS/FT^2$)	Lighting Load (KW)	Operating Schedule No.	Card Index
1.	.7	3.5		2.	L21C

LIGHT FIXTURE CODE
1. Not vented
2. Vented to ret. air
3. Vented to sup. & ret. air
4. Incandescent

Miscellaneous Electrical and thermal loads ($WATTS/FT^2$)	(KW)	(BTU/HR-Sensible)	(BTU/HR-Latent)	Operating Schedule No.	Card Index
.42				2.	L21D

Type of Infiltration Analysis (0.-2.)	Infiltration Rate (No. of Air Changes)	Height above (-) or below Neutral Zone (FT)	Space Exhaust Air (CFM)	Card Index
1.	.125			L21E

INFILTRATION CODE
0. None
1. Air change method (columns 11-20 req'd)
2. Crack method (columns 21-40 req'd)

No. Delayed Surfaces	No. Quick Surfaces	No. Glazed Surfaces	No. Internal Surfaces	No. Underground Walls	No. Underground Floors	No. Additional Identical Spaces	Card Index
1.		1.	2.				L21F

INDICES OF SPACE SURFACES
- Begin new card for each surface type.
- If a surface type is not included, skip that card index type.

- Delayed _____ L21G
- Quick _____ L21H
- Glazed _____ L21I
- Internal _____ L21J
- Underground Walls _____ L21K
- Underground Floors _____ L21L

							Card Index
2.							
2.							
10.	14.						

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GARD, INC.

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date

INPUT FORM LA -10

SPACES

Number of Spaces	Card Index
	L21

NOTE: CARD TYPE L21 SHOULD APPEAR ONLY ONCE.

SPACE DESCRIPTION

SPACE NO. 13 LABEL 12FL-N

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Space Floor Area (FT^2)	Space Volume (FT^3)	Weight of Floor (LB/FT^2)	Space Temperature (^oF)	Include in bldg load? (0=NO, 1=YES)	Is space a plenum?	Label (Alphanumeric)	Card Index
2510.	21335.	47.	72.	1.	0.	FLOOR 12 NORTH	L21A

No. People at Peak	People Activity Level (BTU/HR) (S+L)	Operating Schedule No.	Card Index
25.	450.	1.	L21B

Type of Light Fixture (1. - 4.)	Fraction of Light Heat to Space	Lighting Load ($WATTS/FT^2$)	Lighting Load (KW)	Operating Schedule No.	Card Index
1.	.7	3.5		2.	L21C

LIGHT FIXTURE CODE
1. Not vented
2. Vented to ret. air
3. Vented to sup. & ret. air
4. Incandescent

Miscellaneous Electrical and thermal loads ($WATTS/FT^2$)	(KW).	(BTU/HR-Sensible)	(BTU/HR-Latent)	Operating Schedule No.	Card Index
.42				2.	L21D

Type of Infiltration Analysis (0.-2.)	Infiltration Rate (No. of Air Changes)	Height above (-) or below Neutral Zone (FT)	Space Exhaust Air (CFM)	Card Index
1.	.125			L21E

INFILTRATION CODE
0. None
1. Air change method (columns 11-20 req'd)
2. Crack method (columns 21-40 req'd)

No. Delayed Surfaces	No. Quick Surfaces	No. Glazed Surfaces	No. Internal Surfaces	No. Underground Walls	No. Underground Floors	No. Additional Identical Spaces	Card Index
1.		1.	2.				L21F

INDICES OF SPACE SURFACES
- Begin new card for each surface type.
- If a surface type is not included, skip that card index type.

- Delayed _____ L21G
- Quick _____ L21H
- Glazed _____ L21I
- Internal _____ L21J
- Underground Walls _____ L21K
- Underground Floors _____ L21L

Card Index

3.		
3.		
11.	15.	

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SPACES

Number of Spaces	Card Index
	L21

NOTE: CARD TYPE L21 SHOULD APPEAR ONLY ONCE.

SPACE DESCRIPTION

SPACE NO. 14 LABEL 12TH FL-E

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Space Floor Area (FT^2)	Space Volume (FT^3)	Weight of Floor (LB/FT^2)	Space Temperature (^oF)	Include in bldg load? (0=NO, 1=YES)	Is space a plenum?	Label (Alphanumeric)	Card Index
620.	5270.	47.	72.	1.	0.	FLOOR 12 - EAST	L21A

No. People at Peak	People Activity Level (BTU/HR) (S+L)	Operating Schedule No.	Card Index
6.	450.	1.	L21B

Type of Light Fixture (1. - 4.)	Fraction of Light Heat to Space	Lighting Load ($WATTS/FT^2$)	Lighting Load (KW)	Operating Schedule No.	Card Index
1.	.7	3.5		2.	L21C

LIGHT FIXTURE CODE
1. Not vented
2. Vented to ret. air
3. Vented to sup. & ret. air
4. Incandescent

Miscellaneous Electrical and thermal loads ($WATTS/FT^2$)	(KW)	(BTU/HR-Sensible)	(BTU/HR-Latent)	Operating Schedule No.	Card Index
.42				2.	L21D

Type of Infiltration Analysis (0.-2.)	Infiltration Rate (No. of Air Changes)	Height above (-) or below Neutral Zone (FT)	Space Exhaust Air (CFM)	Card Index
1.	.125			L21E

INFILTRATION CODE
0. None
1. Air change method (columns 11-20 req'd)
2. Crack method (columns 21-40 req'd)

No. Delayed Surfaces	No. Quick Surfaces	No. Glazed Surfaces	No. Internal Surfaces	No. Underground Walls	No. Underground Floors	No. Additional Identical Spaces	Card Index
1.		1.	2.				L21F

INDICES OF SPACE SURFACES
- Begin new card for each surface type.
- If a surface type is not included, skip that card index type.

- Delayed _____ L21G
- Quick _____ L21H
- Glazed _____ L21I
- Internal _____ L21J
- Underground Walls _____ L21K
- Underground Floors _____ L21L

Card Index

4.	
4.	
12.	16.

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SPACES

INPUT FORM LA -10

Number of Spaces	Card Index
	L21

NOTE: CARD TYPE L21 SHOULD APPEAR ONLY ONCE.

SPACE DESCRIPTION

SPACE NO. 15 LABEL 12TH FL- CORE

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Space Floor Area (FT^2)	Space Volume (FT^3)	Weight of Floor (LB/FT^2)	Space Temperature (^oF)	Include in bldg load? (0=NO, 1=YES)	Is space a plenum?	Label (Alphanumeric)	Card Index
12530.	106505.	47.	72.	1.	0.	FLOOR 12 - CORE	L21A

No. People at Peak	People Activity Level (BTU/HR) (S+L)	Operating Schedule No.	Card Index
125.	450.	1.	L21B

Type of Light Fixture (1. - 4.)	Fraction of Light Heat to Space	Lighting Load ($WATTS/FT^2$)	Lighting Load (KW)	Operating Schedule No.	Card Index
1.	.7	3.5		2.	L21C

LIGHT FIXTURE CODE
1. Not vented
2. Vented to ret. air
3. Vented to sup. & ret. air
4. Incandescent

Miscellaneous Electrical and thermal loads ($WATTS/FT^2$)	(KW)	(BTU/HR-Sensible)	(BTU/HR-Latent)	Operating Schedule No.	Card Index
.42				2.	L21D

Type of Infiltration Analysis (0.-2.)	Infiltration Rate (No. of Air Changes)	Height above (-) or below Neutral Zone (FT)	Space Exhaust Air (CFM)	Card Index
0.				L21E

INFILTRATION CODE
0. None
1. Air change method (columns 11-20 req'd)
2. Crack method (columns 21-40 req'd)

No. Delayed Surfaces	No. Quick Surfaces	No. Glazed Surfaces	No. Internal Surfaces	No. Underground Walls	No. Underground Floors	No. Additional Identical Spaces	Card Index
			5.				L21F

INDICES OF SPACE SURFACES
- Begin new card for each surface type.
- If a surface type is not included, skip that card index type.

- Delayed _____ L21G
- Quick _____ L21H
- Glazed _____ L21I
- Internal _____ L21J
- Underground Walls _____ L21K
- Underground Floors _____ L21L

Card Index
9. 10. 11. 12. 17.

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INPUT FORM LA-10

SPACES

Number of Spaces	Card Index
	L21

NOTE: CARD TYPE L21 SHOULD APPEAR ONLY ONCE.

SPACE DESCRIPTION

SPACE NO. 16 LABEL ROOF

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Space Floor Area (FT^2)	Space Volume (FT^3)	Weight of Floor (LB/FT^2)	Space Temperature (^oF)	Include in bldg load? (0=NO, 1=YES)	Is space a plenum?	Label (Alphanumeric)	Card Index
18790.		24.	72.	1.	1.	FLOOR 12 - ROOF	L21A

No. People at Peak	People Activity Level (BTU/HR) (S+L)	Operating Schedule No.	Card Index
0.		1.	L21B

Type of Light Fixture (1. - 4.)	Fraction of Light Heat to Space	Lighting Load ($WATTS/FT^2$)	Lighting Load (KW)	Operating Schedule No.	Card Index
1.				2.	L21C

LIGHT FIXTURE CODE
1. Not vented
2. Vented to ret. air
3. Vented to sup. & ret. air
4. Incandescent

Miscellaneous Electrical and thermal loads ($WATTS/FT^2$)	(KW).	(BTU/HR-Sensible)	(BTU/HR-Latent)	Operating Schedule No.	Card Index
				2.	L21D

Type of Infiltration Analysis (0.-2.)	Infiltration Rate (No. of Air Changes)	Height above (-) or below Neutral Zone (FT)	Space Exhaust Air (CFM)	Card Index
0.				L21E

INFILTRATION CODE
0. None
1. Air change method (columns 11-20 req'd)
2. Crack method (columns 21-40 req'd)

No. Delayed Surfaces	No. Quick Surfaces	No. Glazed Surfaces	No. Internal Surfaces	No. Underground Walls	No. Underground Floors	No. Additional Identical Spaces	Card Index
5.			5.				L21F

INDICES OF SPACE SURFACES
- Begin new card for each surface type.
- If a surface type is not included, skip that card index type.

- Delayed _____ L21G
- Quick _____ L21H
- Glazed _____ L21I
- Internal _____ L21J
- Underground Walls _____ L21K
- Underground Floors _____ L21L

5.	6.	7.	8.	9.					
13.	14.	15.	16.	17.					

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INPUT FORM TV-01

GENERAL NOTES:

1. Unless otherwise noted, all input data are real numbers, requiring a decimal point. The program is designed to by-pass unneeded portions of input as indicated by notes.
2. Input cards required to execute the program are noted by an "R" at their extreme right.

Job Description Data (Alphanumeric)	Card Index	
SCOUT SAMPLE BUILDING - CHICAGO, ILLINOIS	V1	R

SPECIAL HOURLY PRINTOUT

Number of Print Periods (0-12)	Number of Zones on input Tape	Card Index	
0.	16.	V2	R

Start Printing Date (Month/Day)	Stop Printing Date (Month/Day)	Repeat Card V3 as many times as indicated on Card V2 (skip Card V3 if no special printouts desired).	Card Index
/	/		V3
/	/		
/	/		
/	/		
/	/		
/	/		
/	/		
/	/		
/	/		
/	/		
/	/		
/	/		

NOTE: FILL IN ALL INDICATED COLUMNS, ENTER ZERO IF NECESSARY. NO DECIMAL POINT REQUIRED.

BOILER/CHILLER SCHEDULING

Boiler/Chiller Operation Schedule Index	Card Index	
0.	V4	R

Chiller/Boiler Index Code

1.0 = Yes, Card V5 is required.
0.0 = No, Skip to Card V6, program assumes equipment continuously available.

Boiler Shutdown Date (Month/Day)	Boiler Startup Date (Month/Day)	Chiller Startup Date (Month/Day)	Chiller Shutdown Date (Month/Day)	Card Index
/	/	/	/	V5

NOTE: FILL IN ALL INDICATED COLUMNS, ENTER ZERO IF NECESSARY. NO DECIMAL POINT REQUIRED.

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INPUT FORM TV-02

Number of User-Defined Floor Types (1–10)	Number of User-Defined Ceiling Types (11–20)	Number of User-Defined Furnishing Types (21–30)	(31–70)	Card Index (71–80)
0.	0.	0.		V6

R

NOTES: 1. If number of user-defined floor types = 0.0, skip Cards V7 and V8. Program will use built-in default values which are a function of weight-of-floor entered for each space as part of load program input data.

2. If number of user-defined ceiling types = 0.0, skip Cards V9 and V10. Program will use built-in default values which are a function of weight-of-floor entered for each space as part of load program input data.

3. If number of user-defined furnishing types = 0.0, skip Cards V11 and V12. Program will use built-in default values which are a function of weight-of-furnishings entered for each space on Card V13.

OPTIONAL FLOOR RESPONSE FACTOR DATA

(If number of user-defined floor types = 0.0, skip Cards V7 and V8. Otherwise use response factor program to generate Cards V7 and V8.)

OPTIONAL FLOOR INDEX NO. _____ LABEL _____ (Index sequentially starting with 1)

No Time Response Grps (1–3)	Common Ratio (4–23)	(24–70)	Card Index (71–80)
			V7

INTEGER NUMBER, RIGTH JUSTIFY WITH NO DECIMAL POINT

	Time Response Groups X (1–20)	Y (21–40)	Z (41–60)	(61–70)	Card Index (71–80)
1					V8
2					
3					
4					
5					
6					
7					
8					
9					
10					

100 Max.

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INPUT FORM TV-03

OPTIONAL CEILING RESPONSE FACTOR DATA (If number of user-defined ceiling types = 0.0, skip Cards V9 and V10. Otherwise use response factor program to generate Cards V9 and V10.)

OPTIONAL CEILING INDEX NO. _____ LABEL _____ (Index sequentially starting with 1)

| No Time Response Grps | Common Ratio | | |

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INPUT FORM TV-04

SPACE DESCRIPTION DATA

SPACE NO. 1 LABEL _____

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Number of User-Defined Floors in Space (0-3)	Number of User-Defined Ceilings in Space (0-3)	Number of User-Defined Furnishings in Space (0-1)	Weight-of-Furnishings in Space (lbs/sq ft)		Card Index
			10.		V13

NOTE: 1. To use floor default values set number of user-defined floors = 0.0 and skip Card V14.
2. To use ceiling default values set number of user-defined ceilings = 0.0 and skip Card V15.
3. To use furnishing default values set number of user-defined furnishings = 0.0, skip Card V16, and enter value for weight-of-furnishings.

OPTIONAL FLOOR DATA (If number of user-defined floors = 0.0, skip Card V14.)

Floor No. 1		Floor No. 2		Floor No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
							V14

OPTIONAL CEILING DATA (If number of user-defined ceilings = 0.0, skip Card V15.)

Ceiling No. 1		Ceiling No. 2		Ceiling No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
							V15

OPTIONAL FURNISHING DATA (If number of user-defined furnishings = 0.0, skip Card V16.)

Furnishing No. 1			Card Index
Response Factor Index	Area (sq. ft.)		
			V16

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INPUT FORM TV-04

SPACE DESCRIPTION DATA

SPACE NO. 2 LABEL _____

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Number of User-Defined Floors in Space (0-3)	Number of User-Defined Ceilings in Space (0-3)	Number of User-Defined Furnishings in Space (0-1)	Weight-of-Furnishings in Space (lbs/sq ft)		Card Index
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			1 0.		V 1 3 R

NOTE: 1. To use floor default values set number of user-defined floors = 0.0 and skip Card V14.
2. To use ceiling default values set number of user-defined ceilings = 0.0 and skip Card V15.
3. To use furnishing default values set number of user-defined furnishings = 0.0, skip Card V16, and enter value for weight-of-furnishings.

OPTIONAL FLOOR DATA (If number of user-defined floors = 0.0, skip Card V14.)

Floor No. 1		Floor No. 2		Floor No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 4

OPTIONAL CEILING DATA (If number of user-defined ceilings = 0.0, skip Card V15.)

Ceiling No. 1		Ceiling No. 2		Ceiling No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 5

OPTIONAL FURNISHING DATA (If number of user-defined furnishings = 0.0, skip Card V16.)

Furnishing No. 1			Card Index
Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			V 1 6

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INPUT FORM TV-04

SPACE DESCRIPTION DATA

SPACE NO. 3 LABEL _____

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Number of User-Defined Floors in Space (0-3)	Number of User-Defined Ceilings in Space (0-3)	Number of User-Defined Furnishings in Space (0-1)	Weight-of-Furnishings in Space (lbs/sq ft)	Card Index
			10.	V13

NOTE: 1. To use floor default values set number of user-defined floors = 0.0 and skip Card V14.
2. To use ceiling default values set number of user-defined ceilings = 0.0 and skip Card V15.
3. To use furnishing default values set number of user-defined furnishings = 0.0, skip Card V16, and enter value for weight-of-furnishings.

OPTIONAL FLOOR DATA (If number of user-defined floors = 0.0, skip Card V14.)

Floor No. 1		Floor No. 2		Floor No. 3		Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	
						V14

OPTIONAL CEILING DATA (If number of user-defined ceilings = 0.0, skip Card V15.)

Ceiling No. 1		Ceiling No. 2		Ceiling No. 3		Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	
						V15

OPTIONAL FURNISHING DATA (If number of user-defined furnishings = 0.0, skip Card V16.)

Furnishing No. 1		Card Index
Response Factor Index	Area (sq. ft.)	
		V16

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INPUT FORM TV-04

SPACE DESCRIPTION DATA

SPACE NO. 4 LABEL _____

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Number of User-Defined Floors in Space (0-3)	Number of User-Defined Ceilings in Space (0-3)	Number of User-Defined Furnishings in Space (0-1)	Weight-of-Furnishings in Space (lbs/sq ft)		Card Index
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			1 0.		V 1 3 R

NOTE: 1. To use floor default values set number of user-defined floors = 0.0 and skip Card V14.
2. To use ceiling default values set number of user-defined ceilings = 0.0 and skip Card V15.
3. To use furnishing default values set number of user-defined furnishings = 0.0, skip Card V16, and enter value for weight-of-furnishings.

OPTIONAL FLOOR DATA (If number of user-defined floors = 0.0, skip Card V14.)

Floor No. 1		Floor No. 2		Floor No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 4

OPTIONAL CEILING DATA (If number of user-defined ceilings = 0.0, skip Card V15.)

Ceiling No. 1		Ceiling No. 2		Ceiling No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 5

OPTIONAL FURNISHING DATA (If number of user-defined furnishings = 0.0, skip Card V16.)

Furnishing No. 1			Card Index
Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			V 1 6

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INPUT FORM TV-04

SPACE DESCRIPTION DATA

SPACE NO. 5 LABEL _____

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Number of User-Defined Floors in Space (0-3)	Number of User-Defined Ceilings in Space (0-3)	Number of User-Defined Furnishings in Space (0-1)	Weight-of-Furnishings in Space (lbs/sq ft)		Card Index
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			1 0.		V 1 3 R

NOTE: 1. To use floor default values set number of user-defined floors = 0.0 and skip Card V14.
2. To use ceiling default values set number of user-defined ceilings = 0.0 and skip Card V15.
3. To use furnishing default values set number of user-defined furnishings = 0.0, skip Card V16, and enter value for weight-of-furnishings.

OPTIONAL FLOOR DATA (If number of user-defined floors = 0.0, skip Card V14.)

Floor No. 1		Floor No. 2		Floor No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 4

OPTIONAL CEILING DATA (If number of user-defined ceilings = 0.0, skip Card V15.)

Ceiling No. 1		Ceiling No. 2		Ceiling No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 5

OPTIONAL FURNISHING DATA (If number of user-defined furnishings = 0.0, skip Card V16.)

Furnishing No. 1			Card Index
Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			V 1 6

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INPUT FORM TV-04

SPACE DESCRIPTION DATA

SPACE NO. 6 LABEL _____

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Number of User-Defined Floors in Space (0-3)	Number of User-Defined Ceilings in Space (0-3)	Number of User-Defined Furnishings in Space (0-1)	Weight-of-Furnishings in Space (lbs/sq ft)		Card Index
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			1 0.		V 1 3

R

NOTE: 1. To use floor default values set number of user-defined floors = 0.0 and skip Card V14.
2. To use ceiling default values set number of user-defined ceilings = 0.0 and skip Card V15.
3. To use furnishing default values set number of user-defined furnishings = 0.0, skip Card V16, and enter value for weight-of-furnishings.

OPTIONAL FLOOR DATA (If number of user-defined floors = 0.0, skip Card V14.)

Floor No. 1		Floor No. 2		Floor No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 4

OPTIONAL CEILING DATA (If number of user-defined ceilings = 0.0, skip Card V15.)

Ceiling No. 1		Ceiling No. 2		Ceiling No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 5

OPTIONAL FURNISHING DATA (If number of user-defined furnishings = 0.0, skip Card V16.)

Furnishing No. 1			Card Index
Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			V 1 6

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INPUT FORM TV-04

SPACE DESCRIPTION DATA

SPACE NO. 7 LABEL _____

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Number of User-Defined Floors in Space (0-3)	Number of User-Defined Ceilings in Space (0-3)	Number of User-Defined Furnishings in Space (0-1)	Weight-of-Furnishings in Space (lbs/sq ft)	Card Index
			10.	V13

NOTE: 1. To use floor default values set number of user-defined floors = 0.0 and skip Card V14.
2. To use ceiling default values set number of user-defined ceilings = 0.0 and skip Card V15.
3. To use furnishing default values set number of user-defined furnishings = 0.0, skip Card V16, and enter value for weight-of-furnishings.

OPTIONAL FLOOR DATA (If number of user-defined floors = 0.0, skip Card V14.)

Floor No. 1 Response Factor Index	Floor No. 1 Area (sq. ft.)	Floor No. 2 Response Factor Index	Floor No. 2 Area (sq. ft.)	Floor No. 3 Response Factor Index	Floor No. 3 Area (sq. ft.)	Card Index
						V14

OPTIONAL CEILING DATA (If number of user-defined ceilings = 0.0, skip Card V15.)

Ceiling No. 1 Response Factor Index	Ceiling No. 1 Area (sq. ft.)	Ceiling No. 2 Response Factor Index	Ceiling No. 2 Area (sq. ft.)	Ceiling No. 3 Response Factor Index	Ceiling No. 3 Area (sq. ft.)	Card Index
						V15

OPTIONAL FURNISHING DATA (If number of user-defined furnishings = 0.0, skip Card V16.)

Furnishing No. 1 Response Factor Index	Furnishing No. 1 Area (sq. ft.)	Card Index
		V16

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INPUT FORM TV-04

SPACE DESCRIPTION DATA

SPACE NO. 8 LABEL _____

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Number of User-Defined Floors in Space (0-3)	Number of User-Defined Ceilings in Space (0-3)	Number of User-Defined Furnishings in Space (0-1)	Weight-of-Furnishings in Space (lbs/sq ft)	Card Index
			10.	V13

NOTE: 1. To use floor default values set number of user-defined floors = 0.0 and skip Card V14.
2. To use ceiling default values set number of user-defined ceilings = 0.0 and skip Card V15.
3. To use furnishing default values set number of user-defined furnishings = 0.0, skip Card V16, and enter value for weight-of-furnishings.

OPTIONAL FLOOR DATA (If number of user-defined floors = 0.0, skip Card V14.)

Floor No. 1		Floor No. 2		Floor No. 3		Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	
						V14

OPTIONAL CEILING DATA (If number of user-defined ceilings = 0.0, skip Card V15.)

Ceiling No. 1		Ceiling No. 2		Ceiling No. 3		Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	
						V15

OPTIONAL FURNISHING DATA (If number of user-defined furnishings = 0.0, skip Card V16.)

Furnishing No. 1		Card Index
Response Factor Index	Area (sq. ft.)	
		V16

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INPUT FORM TV-04

SPACE DESCRIPTION DATA

SPACE NO. 9 LABEL _____

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Number of User-Defined Floors in Space (0-3)	Number of User-Defined Ceilings in Space (0-3)	Number of User-Defined Furnishings in Space (0-1)	Weight-of-Furnishings in Space (lbs/sq ft)		Card Index
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			1 0 .		V 1 3 R

NOTE: 1. To use floor default values set number of user-defined floors = 0.0 and skip Card V14.
2. To use ceiling default values set number of user-defined ceilings = 0.0 and skip Card V15.
3. To use furnishing default values set number of user-defined furnishings = 0.0, skip Card V16, and enter value for weight-of-furnishings.

OPTIONAL FLOOR DATA (If number of user-defined floors = 0.0, skip Card V14.)

Floor No. 1		Floor No. 2		Floor No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 4

OPTIONAL CEILING DATA (If number of user-defined ceilings = 0.0, skip Card V15.)

Ceiling No. 1		Ceiling No. 2		Ceiling No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 5

OPTIONAL FURNISHING DATA (If number of user-defined furnishings = 0.0, skip Card V16.)

Furnishing No. 1			Card Index
Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			V 1 6

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INPUT FORM TV-04

SPACE DESCRIPTION DATA

SPACE NO. 10 LABEL _____

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Number of User-Defined Floors in Space (0-3)	Number of User-Defined Ceilings in Space (0-3)	Number of User-Defined Furnishings in Space (0-1)	Weight-of-Furnishings in Space (lbs/sq ft)		Card Index
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			1 0.		V 1 3 R

NOTE: 1. To use floor default values set number of user-defined floors = 0.0 and skip Card V14.
2. To use ceiling default values set number of user-defined ceilings = 0.0 and skip Card V15.
3. To use furnishing default values set number of user-defined furnishings = 0.0, skip Card V16, and enter value for weight-of-furnishings.

OPTIONAL FLOOR DATA (If number of user-defined floors = 0.0, skip Card V14.)

Floor No. 1		Floor No. 2		Floor No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 4

OPTIONAL CEILING DATA (If number of user-defined ceilings = 0.0, skip Card V15.)

Ceiling No. 1		Ceiling No. 2		Ceiling No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 5

OPTIONAL FURNISHING DATA (If number of user-defined furnishings = 0.0, skip Card V16.)

Furnishing No. 1			Card Index
Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			V 1 6

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INPUT FORM TV-04

SPACE DESCRIPTION DATA

SPACE NO. 11 LABEL _____

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Number of User-Defined Floors in Space (0-3)	Number of User-Defined Ceilings in Space (0-3)	Number of User-Defined Furnishings in Space (0-1)	Weight-of-Furnishings in Space (lbs/sq ft)		Card Index
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			1 0.		V 1 3

R

NOTE: 1. To use floor default values set number of user-defined floors = 0.0 and skip Card V14.
2. To use ceiling default values set number of user-defined ceilings = 0.0 and skip Card V15.
3. To use furnishing default values set number of user-defined furnishings = 0.0, skip Card V16, and enter value for weight-of-furnishings.

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OPTIONAL FLOOR DATA (If number of user-defined floors = 0.0, skip Card V14.)

Floor No. 1		Floor No. 2		Floor No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 4

OPTIONAL CEILING DATA (If number of user-defined ceilings = 0.0, skip Card V15.)

Ceiling No. 1		Ceiling No. 2		Ceiling No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 5

OPTIONAL FURNISHING DATA (If number of user-defined furnishings = 0.0, skip Card V16.)

Furnishing No. 1			Card Index
Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			V 1 6

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INPUT FORM TV-04

SPACE DESCRIPTION DATA

SPACE NO. 12 LABEL

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Number of User-Defined Floors in Space (0-3)	Number of User-Defined Ceilings in Space (0-3)	Number of User-Defined Furnishings in Space (0-1)	Weight-of-Furnishings in Space (lbs/sq ft)		Card Index
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			10.		V 1 3 R

NOTE: 1. To use floor default values set number of user-defined floors = 0.0 and skip Card V14.
2. To use ceiling default values set number of user-defined ceilings = 0.0 and skip Card V15.
3. To use furnishing default values set number of user-defined furnishings = 0.0, skip Card V16, and enter value for weight-of-furnishings.

OPTIONAL FLOOR DATA (If number of user-defined floors = 0.0, skip Card V14.)

Floor No. 1		Floor No. 2		Floor No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 4

OPTIONAL CEILING DATA (If number of user-defined ceilings = 0.0, skip Card V15.)

Ceiling No. 1		Ceiling No. 2		Ceiling No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 5

OPTIONAL FURNISHING DATA (If number of user-defined furnishings = 0.0, skip Card V16.)

Furnishing No. 1			Card Index
Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			V 1 6

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INPUT FORM TV-04

SPACE DESCRIPTION DATA

SPACE NO. 13 LABEL _____

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Number of User-Defined Floors in Space (0-3)	Number of User-Defined Ceilings in Space (0-3)	Number of User-Defined Furnishings in Space (0-1)	Weight-of-Furnishings in Space (lbs/sq ft)	Card Index
			10.	V 1 3

NOTE: 1. To use floor default values set number of user-defined floors = 0.0 and skip Card V14.
2. To use ceiling default values set number of user-defined ceilings = 0.0 and skip Card V15.
3. To use furnishing default values set number of user-defined furnishings = 0.0, skip Card V16, and enter value for weight-of-furnishings.

OPTIONAL FLOOR DATA (If number of user-defined floors = 0.0, skip Card V14.)

Floor No. 1		Floor No. 2		Floor No. 3		Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	
						V 1 4

OPTIONAL CEILING DATA (If number of user-defined ceilings = 0.0, skip Card V15.)

Ceiling No. 1		Ceiling No. 2		Ceiling No. 3		Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	
						V 1 5

OPTIONAL FURNISHING DATA (If number of user-defined furnishings = 0.0, skip Card V16.)

Furnishing No. 1		Card Index
Response Factor Index	Area (sq. ft.)	
		V 1 6

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INPUT FORM TV-04

SPACE DESCRIPTION DATA

SPACE NO. 14 LABEL _____

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Number of User-Defined Floors in Space (0-3)	Number of User-Defined Ceilings in Space (0-3)	Number of User-Defined Furnishings in Space (0-1)	Weight-of-Furnishings in Space (lbs/sq ft)		Card Index
			10.		V13

NOTE: 1. To use floor default values set number of user-defined floors = 0.0 and skip Card V14.
2. To use ceiling default values set number of user-defined ceilings = 0.0 and skip Card V15.
3. To use furnishing default values set number of user-defined furnishings = 0.0, skip Card V16, and enter value for weight-of-furnishings.

OPTIONAL FLOOR DATA (If number of user-defined floors = 0.0, skip Card V14.)

Floor No. 1		Floor No. 2		Floor No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
							V14

OPTIONAL CEILING DATA (If number of user-defined ceilings = 0.0, skip Card V15.)

Ceiling No. 1		Ceiling No. 2		Ceiling No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
							V15

OPTIONAL FURNISHING DATA (If number of user-defined furnishings = 0.0, skip Card V16.)

Furnishing No. 1			Card Index
Response Factor Index	Area (sq. ft.)		
			V16

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INPUT FORM TV-04

SPACE DESCRIPTION DATA

SPACE NO. 15 LABEL _____

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Number of User-Defined Floors in Space (0-3)	Number of User-Defined Ceilings in Space (0-3)	Number of User-Defined Furnishings in Space (0-1)	Weight-of-Furnishings in Space (lbs/sq ft)		Card Index
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			10.		V 1 3 R

NOTE: 1. To use floor default values set number of user-defined floors = 0.0 and skip Card V14.
2. To use ceiling default values set number of user-defined ceilings = 0.0 and skip Card V15.
3. To use furnishing default values set number of user-defined furnishings = 0.0, skip Card V16, and enter value for weight-of-furnishings.

OPTIONAL FLOOR DATA (If number of user-defined floors = 0.0, skip Card V14.)

Floor No. 1		Floor No. 2		Floor No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 4

OPTIONAL CEILING DATA (If number of user-defined ceilings = 0.0, skip Card V15.)

Ceiling No. 1		Ceiling No. 2		Ceiling No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 5

OPTIONAL FURNISHING DATA (If number of user-defined furnishings = 0.0, skip Card V16.)

Furnishing No. 1			Card Index
Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			V 1 6

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INPUT FORM TV-04

SPACE DESCRIPTION DATA

SPACE NO. 16 LABEL _____

NOTE: REPEAT THIS INPUT FORM FOR EACH SPACE.

Number of User-Defined Floors in Space (0-3)	Number of User-Defined Ceilings in Space (0-3)	Number of User-Defined Furnishings in Space (0-1)	Weight-of-Furnishings in Space (lbs/sq ft)		Card Index
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			0.		V 1 3 R

NOTE: 1. To use floor default values set number of user-defined floors = 0.0 and skip Card V14.
2. To use ceiling default values set number of user-defined ceilings = 0.0 and skip Card V15.
3. To use furnishing default values set number of user-defined furnishings = 0.0, skip Card V16, and enter value for weight-of-furnishings.

OPTIONAL FLOOR DATA (If number of user-defined floors = 0.0, skip Card V14.)

Floor No. 1		Floor No. 2		Floor No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 4

OPTIONAL CEILING DATA (If number of user-defined ceilings = 0.0, skip Card V15.)

Ceiling No. 1		Ceiling No. 2		Ceiling No. 3			Card Index
Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)	Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							V 1 5

OPTIONAL FURNISHING DATA (If number of user-defined furnishings = 0.0, skip Card V16.)

Furnishing No. 1			Card Index
Response Factor Index	Area (sq. ft.)		
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
			V 1 6

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INPUT FORM TV-05

THERMOSTAT SCHEDULES

NOTE: REPEAT THIS FORM FOR EACH THERMOSTAT SCHEDULE. CARD V17 REQUIRED ONLY ONCE.

Number of Thermostat Schedules (1-5)	CARD INDEX
1	V17

THERMOSTAT SCHEDULE NO. 1 LABEL TYPICAL

WEEK DAY SCHEDULE

HOUR OF DAY	Thermostat Type (0,1,2)	High Limit of Throttling Range (°F)	Low Limit of Throttling Range (°F)	Thermostat Type (0,1,2)	High Limit of Throttling Range (°F)	Low Limit of Throttling Range (°F)	CARD INDEX
1	2.	200.	50.	2.	200.	50.	V18
3	2.	200.	50.	2.	200.	50.	V18
5	2.	200.	50.	2.	200.	50.	V18
7	1.	73.5	70.5	1.	73.5	70.5	V18
9	1.	73.5	70.5	1.	73.5	70.5	V18
11	1.	73.5	70.5	1.	73.5	70.5	V18
13	1.	73.5	70.5	1.	73.5	70.5	V18
15	1.	73.5	70.5	1.	73.5	70.5	V18
17	2.	200.	50.	2.	200.	50.	V18
19	2.	200.	50.	2.	200.	50.	V18
21	2.	200.	50.	2.	200.	50.	V18
23	2.	200.	50.	2.	200.	50.	V18
2							V18
4							V18
6							V18
8							V18
10							V18
12							V18
14							V18
16							V18
18							V18
20							V18
22							V18
24							V18

WEEKEND AND HOLIDAY SCHEDULE

NOTE: ALL CARD TYPES V18 INDICATED ABOVE ARE REQUIRED INPUT DATA.

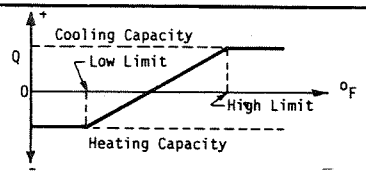
HOUR OF DAY	Thermostat Type (0,1,2)	High Limit of Throttling Range (°F)	Low Limit of Throttling Range (°F)	Thermostat Type (0,1,2)	High Limit of Throttling Range (°F)	Low Limit of Throttling Range (°F)	INDEX CARD
1	2.	200.	50.	2.	200.	50.	V18
3	2.	200.	50.	2.	200.	50.	V18
5	2.	200.	50.	2.	200.	50.	V18
7	2.	200.	50.	2.	200.	50.	V18
9	2.	200.	50.	2.	200.	50.	V18
11	2.	200.	50.	2.	200.	50.	V18
13	2.	200.	50.	2.	200.	50.	V18
15	2.	200.	50.	2.	200.	50.	V18
17	2.	200.	50.	2.	200.	50.	V18
19	2.	200.	50.	2.	200.	50.	V18
21	2.	200.	50.	2.	200.	50.	V18
23	2.	200.	50.	2.	200.	50.	V18
2							V18
4							V18
6							V18
8							V18
10							V18
12							V18
14							V18
16							V18
18							V18
20							V18
22							V18
24							V18

NOTE: ALL CARD TYPES V18 INDICATED ABOVE ARE REQUIRED INPUT DATA.

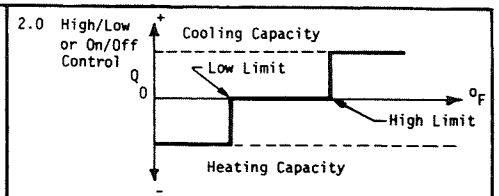
THERMOSTAT TYPES

0.0 No thermostat in space, temperature allowed to float.

1.0 Linear or Proportional Control



2.0 High/Low or On/Off Control



GATX
GARD, INC.

SCOUT

TEMPERATURE ANALYSIS PROGRAM

job name
date
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INPUT FORM TV -06

SPACE DESCRIPTION DATA

REQUIRED FOR CONDITIONED SPACE | REQUIRED FOR PLENUM SPACE

Space No.	Thermostat Schedule Index Wi. (1-2)	Sp. (3-4)	Su. (5-6)	Fa. (7-8)	(9-10)	Heating Capacity (BTU/HR) (11-20)	Cooling Capacity (BTU/HR) (21-30)	Plenum Space (0=NO,1=Yes) (31-35)	Space No. Below Plenum (36-40)	Plenum Airflow (CFM) (41-50)	Weekday Fan Schedule Hour On * (51-55)	Weekday Fan Schedule Hour Off * (56-60)	Weekend Fan Schedule Hour On * (61-65)	Weekend Fan Schedule Hour Off * (66-70)	CARD INDEX (71-80)
1	01	01	01	01		67794.	74846.	0.							
2	01	01	01	01		19035.	30308.	0.							V 1 9
3	01	01	01	01		71494.	59213.	0.							
4	01	01	01	01		19431.	26484.	0.							
5	01	01	01	01		26441.	1230076.	0.							
6	01	01	01	01		61268.	77607.	0.							
7	01	01	01	01		17423.	30990.	0.							
8	01	01	01	01		64969.	61974.	0.							
9	01	01	01	01		17819.	27166.	0.							
10	01	01	01	01		26441.	1368859.	0.							
11	01	01	01	01		57212.	74914.	0.							
12	01	01	01	01		16298.	29867.	0.							
13	01	01	01	01		60888.	60350.	0.							
14	01	01	01	01		166693.	26239.	0.							
15	01	01	01	01		26441.	1368859.	0.							
16	00	00	00	00		0.	0.	0.							
17															
18															
19															
20															
21															
22															
23															
24															
25															

If space does not have any temperature control at all, then enter a "00" to simulate floating temperature conditions. Do not use decimal points. Fill in all columns indicated. Right justify by using zeros if necessary.

* Varies from 1 to 24.

GATX BARD, INC.

SCOUT
SYSTEMS ANALYSIS PROGRAM

job name
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PAGE 1 OF 9

INPUT FORM SA - 01

Description of Run (Alpha-Numeric)	Card Index
SCOUT SAMPLE BUILDING - CHICAGO, ILLINOIS	S 1

JOB CONTROL PARAMETERS

Begin Analysis Month/Day	End Analysis Month/Day	Number of Hourly Print Periods	Number of Reset Schedules	Number of Operating Schedule Types	Number of Zones On Input Tape	Card Index
01/01	12/31	0.	0.	2.	16.	S 2

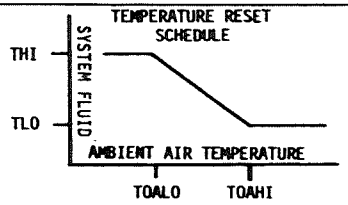
Number of Energy Distribution Systems	Number of DX and Heat Pump Types	Number of process Loads	Card Index
2.	0.	2.	S 3

HOURLY PRINT PERIODS (If number of hourly print periods=0., skip card type S-4)

	Begin Print Month/Day	Finish Print Month/Day	Print-1 (Weather & Hourly Loads) 0.=Off/1.=On	Print-2 (System Data) 0.=Off/1.=On	Print-3 (Component Data) 0.=Off/1.=On	Card Index
1	/	/				S 4
2	/	/				
3	/	/				
4	/	/				
5	/	/				
6	/	/				
7	/	/				
8	/	/				
9	/	/				
10	/	/				
11	/	/				
12	/	/				
13	/	/				
14	/	/				

TEMPERATURE RESET SCHEDULES (If number of reset schedules=0.,skip card type S-5)

Reset Schedule No.	Low Outside Air Temp.(°F) (TOALO)	High Outside Air Temp.(°F) (TOAHI)	Low System Fluid Temp.(°F) (TLO)	High System Fluid Temp.(°F) (THI)	Schedule Label (Alpha-Numeric)	Card Index
1						S 5
2						
3						
4						
5						



GATX
GARD, INC.

SCOUT

SYSTEMS ANALYSIS PROGRAM

job name
date
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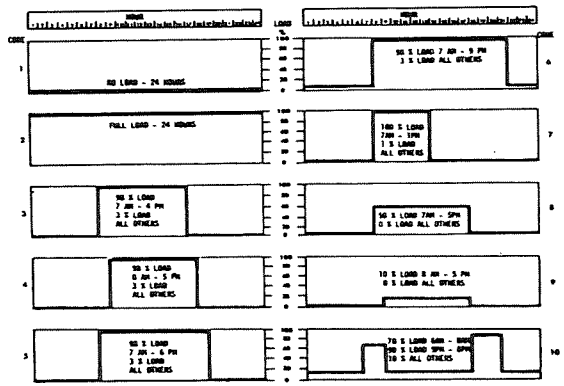
INPUT FORM SA-02

OPERATING SCHEDULES (If number of operating schedule types=0., skip card types S-6A and S-6B)

OPERATING SCHEDULE NO.	Sun. (1.-20.)	Weekday (1.-20.)	Sat. (1.-20.)	Holiday (1.-20.)	Label (Alpha-Numeric)
1	1.	11.	1.	1.	ELEVATOR
2	1.	12.	1.	1.	HW HEATER
3					
4					
5					
6					
7					
8					
9					
10					

(Operating schedules are applied to ventilation and process load scheduling.)

STANDARD TWENTY-FOUR HOUR PROFILES



Card Index	
70	
71	S
72	6
73	A
74	
75	
76	
77	
78	
79	
80	R

NON-STANDARD TWENTY-FOUR HOUR PROFILES

INDEX NO.	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 NOON	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	12 MIDNIGHT	Card Index
11								.50	.10	.05	.30	.15	.05	.05	.05	.20	.50	.06	.05	.05					S6B
12								.55	.56	.50	.55	.90	.60	.80	.70	.75	.30	.30	.50	.05					
13																									
14																									
15																									
16																									
17																									
18																									
19																									
20																									

GATX GARD, INC.

SCOUT

SYSTEMS ANALYSIS PROGRAM

job name	
date	PAGE 3 OF 9
INTERIOR SYSTEM	

INPUT FORM SA-03

ENERGY DISTRIBUTION SYSTEM DATA SYSTEM NO: 1 SYSTEM TYPE: VAVS

Type of Distribution System	No. Zones on System	Relative Humidity Set Point (R.H)	Fixed or Min. Outside Air (SCFM)	Mixed Air Option	Variable Volume Fan Control Type		Card Index
12.	3.	30.	7515.	2.	2.		S7A

TEMPERATURE CONTROL MODES: Hot Deck or AHU Discharge	TEMPERATURE CONTROL MODES: Cold Deck	TOTAL FAN PRESSURES (IN.H_2O): Supply	TOTAL FAN PRESSURES (IN.H_2O): Return	TOTAL FAN PRESSURES (IN.H_2O): Exhaust	Variable Volume Reheat Coil Option	Variable Volume Box Min. Air (%)	Card Index
		4.	1.5	1.0	1.	30.	S7B

FIXED AIR TEMPERATURES (°F): Hot Deck or AHU Discharge	FIXED AIR TEMPERATURES (°F): Cold Deck	TEMPERATURE RESET SCHEDULE INDICES: Hot Deck Schedule or AHU Discharge Schedule	TEMPERATURE RESET SCHEDULE INDICES: Cold Deck Schedule	TEMPERATURE RESET SCHEDULE INDICES: Baseboard Radiation Schedule	TEMPERATURE RESET SCHEDULE INDICES: Two-Pipe H.W Schedule	Induction Unit Induced/Primary Air Ratio	Card Index
55.							S7C

Two-pipe Fan-Coil Changeover Temp.(°F)	2-Pipe Ind.change-over or flr. panel shutoff temp. (°F)	Two-pipe System Water Volume (GALS)	Floor Heating Panel Location	Floor Heating Panel Area Covered (FT²)	Exposed Perimeter (Lin.FT.)		Card Index
							S7D

Fan System Shut-off Code	Ventilation Schedule Operating No.	HEAT RECOVERY DEVICE EFFICIENCY: Sensible Heat	HEAT RECOVERY DEVICE EFFICIENCY: Latent Heat	DX or Heat Pump Index No.		Card Index
2.						S7E

DISTRIBUTION SYSTEM TYPES

1. Single Zone Fan System With Face And By-Pass Dampers.
2. Multi-Zone Fan System.
3. Dual Duct Fan System.
4. Single Zone Fan System With Sub-Zone Reheat.
5. Unit Ventilator.
6. Unit Heater.
7. Floor Panel Heating.
8. Two-Pipe Fancoil System.
9. Four-Pipe Fancoil System.
10. Two-Pipe Induction Unit Fan System.
11. Four-Pipe Induction Unit Fan System.
12. Variable Volume Fan System With Optional Reheat.
13. Constant Volume Reheat Fan System.

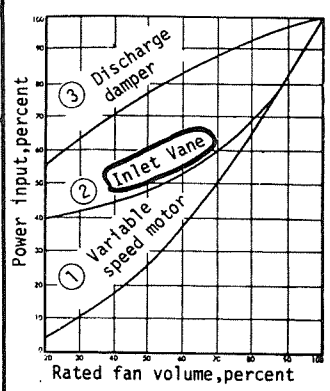
MIXED AIR OPTION CODE

1. Fixed Percent Outside Air.
2. Enth.Temp.Econo.Control.
3. Temp.Econo.Control.

TEMPERATURE CONTROL MODES

1.= Predefined constant temp.
2.= Determined by zone with coldest supply air reqmt.
3.= Reset as per reset schedule
6.= Determined by zone with warmest supply air reqmt.

VARIABLE VOLUME FAN CONTROL CODE



VARIABLE VOLUME REHEAT COIL OPTION CODE

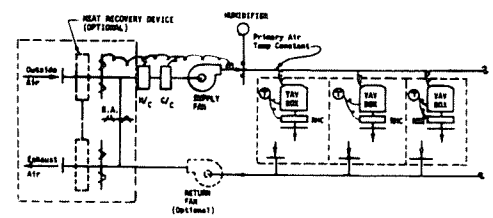
0.= No coil after vav box.
1.= Reheat coil after vav box.

FLOOR HEATING PANEL LOCATION CODE

1.= Slab on grade
2.= Intermediate floor slab.

FAN SYSTEM SHUT-OFF CODE

0.= Fan always runs
1.= Fan may be shut-off/baseboard heating may be on.
2.= Fan and baseboard heating may be shut-off.
3.= Fan always shut off, baseboard heating may be on.



GATX GARD, INC.

SCOUT

SYSTEMS ANALYSIS PROGRAM

job name	
date	PAGE 4 OF 9
INTERIOR SYSTEM	

INPUT FORM SA-04

SPACE DATA SYSTEM NO: 1 SYSTEM NAME:

SZFB SZRH VAVS ✓
MZS 2PIU RHFS
DDS 4PIU

SYSTEM SPACE NO.	Load Program Space Number (1–10)	Space Multiplication Factor (11–20)	Supply Air (SCFM) (Optional) (21–30)	Constant Volume Exhaust air (SCFM) (31–40)	BASEBOARD RADIATION: Heat Output at std. Conditions (BTU/HR-FT)* (41–50)	BASEBOARD RADIATION: Active Length (LinFT) (51–60)	Load Program Plenum Space No. (61–70)	Card Index And Space Label (71–80)
1	5.	1.		600.	0.	0.		S8 BOTTOM
2	10.	10.		600.	0.	0.		S8 INTER
3	15.	1.		600.	0.	0.		S8 TOP
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
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21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								

R ← Space Humidistat Located In System Space #1

* Standard Conditions: 65°F entering air temperature and 215°F average water temperature.

GATX GARD, INC.

SCOUT

SYSTEMS ANALYSIS PROGRAM

job name

date

PERIMETER SYSTEM

INPUT FORM SA-03

ENERGY DISTRIBUTION SYSTEM DATA SYSTEM NO: 3 SYSTEM TYPE: DDS

Type of Distribution System	No. Zones on System	Relative Humidity Set Point (R.H)	Fixed or Min. Outside Air (SCFM)	Mixed Air Option	Variable Volume Fan Control Type	Card Index
3.	12.	30.	3760.	2.		S 7 A

TEMPERATURE CONTROL MODES: Hot Deck or AHU Discharge	TEMPERATURE CONTROL MODES: Cold Deck	TOTAL FAN PRESSURES (IN.H2O): Supply	TOTAL FAN PRESSURES (IN.H2O): Return	TOTAL FAN PRESSURES (IN.H2O): Exhaust	Variable Volume Reheat Coil Option	Variable Volume Box Min. Air (%)	Card Index
6.	2.	4.	1.5	1.0			S 7 B

FIXED AIR TEMPERATURES (°F): Hot Deck or AHU Discharge	FIXED AIR TEMPERATURES (°F): Cold Deck	TEMPERATURE RESET SCHEDULE INDICES: Hot Deck Schedule or AHU Discharge Schedule	TEMPERATURE RESET SCHEDULE INDICES: Cold Deck Schedule	TEMPERATURE RESET SCHEDULE INDICES: Baseboard Radiation Schedule	Two-Pipe H.W Schedule	Induction Unit Induced/Primary Air Ratio	Card Index
							S 7 C

Two-pipe Fan-Coil Changeover temp. (°F)	2-Pipe ind. change-over or flr. panel shutoff temp. (°F)	Two-pipe System Water Volume (GALS)	Floor Heating Panel Location	Floor Heating Panel Area Covered (FT2)	Exposed Perimeter (Lin.FT.)	Card Index
						S 7 D

Fan System Shut-off Code	Ventilation Schedule Operating No.	HEAT RECOVERY DEVICE EFFICIENCY: Sensible Heat	HEAT RECOVERY DEVICE EFFICIENCY: Latent Heat	DX or Heat Pump Index No.	Card Index
2.					S 7 E

DISTRIBUTION SYSTEM TYPES

1. Single Zone Fan System With Face And By-Pass Dampers.
2. Multi-Zone Fan System.
3. Dual Duct Fan System.
4. Single Zone Fan System With Sub-Zone Reheat.
5. Unit Ventilator.
6. Unit Heater.
7. Floor Panel Heating.
8. Two-Pipe Fancoil System.
9. Four-Pipe Fancoil System.
10. Two-Pipe Induction Unit Fan System.
11. Four-Pipe Induction Unit Fan System.
12. Variable Volume Fan System With Optional Reheat.
13. Constant Volume Reheat Fan System.

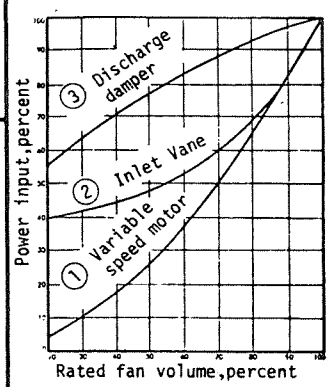
MIXED AIR OPTION CODE

1. Fixed Percent Outside Air.
2. Enth.Temp.Econo.Control.
3. Temp.Econo.Control.

TEMPERATURE CONTROL MODES

1.= Predefined constant temp.
2.= Determined by zone with coldest supply air reqmt.
3.= Reset as per reset schedule
6.= Determined by zone with warmest supply air reqmt.

VARIABLE VOLUME FAN CONTROL CODE



VARIABLE VOLUME REHEAT COIL OPTION CODE

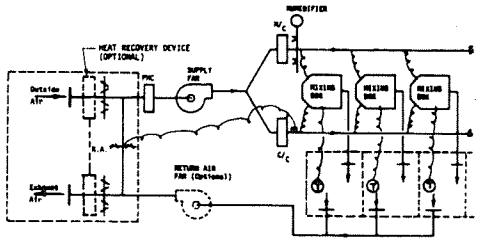
0.= No coil after vav box.
1.= Reheat coil after vav box.

FLOOR HEATING PANEL LOCATION CODE

1.= Slab on grade
2.= Intermediate floor slab.

FAN SYSTEM SHUT-OFF CODE

0.= Fan always runs
1.= Fan may be shut-off/baseboard heating may be on.
2.= Fan and baseboard heating may be shut-off.
3.= Fan always shut off, baseboard heating may be on.



GATX GARD, INC.

SCOUT

SYSTEMS ANALYSIS PROGRAM

job name	
date	PAGE 6 OF 9
PERIMETER SYSTEM	

INPUT FORM SA-04

SPACE DATA SYSTEM NO: 2 SYSTEM NAME: SZFB SZRH VAVS MZS 2PIU RHFS DDS✓ 4PIU

SYSTEM SPACE NO.	Load Program Space Number (1–10)	Space Multiplication Factor (11–20)	Supply Air (SCFM) (Optional) (21–30)	Constant Volume Exhaust air (SCFM) (31–40)	BASEBOARD RADIATION: Heat Output at std. Conditions (BTU/HR-FT)* (41–50)	BASEBOARD RADIATION: Active Length (LinFT) (51–60)	Load Program Plenum Space No. (61–70)	Card Index And Space Label (71–80)
1	1.	1.			0.	0.		S8 BOT.S
2	2.	1.			0.	0.		S8 BOT.W
3	3.	1.			0.	0.		S8 BOT.N
4	4.	1.			0.	0.		S8 BOT.E
5	6.	10.			0.	0.		S8 INT.S
6	7.	10.			0.	0.		S8 INT.W
7	8.	10.			0.	0.		S8 INT.N
8	9.	10.			0.	0.		S8 INT.E
9	11.	1.			0.	0.		S8 TOP.S
10	12.	1.			0.	0.		S8 TOP.W
11	13.	1.			0.	0.		S8 TOP.N
12	14.	1.			0.	0.		S8 TOP.E
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								

R Space Humidistat Located In System Space #1

* Standard Conditions: 65°F entering air temperature and 215°F average water temperature.

GATX BARD, INC.

SCOUT

SYSTEMS ANALYSIS PROGRAM

job name

date

INPUT FORM SA-05

PRIMARY EQUIPMENT DESCRIPTION (REPEAT CARD TYPE S9 FOR EACH PRIMARY EQUIPMENT COMBINATION.)

System Identification (Alpha-Numeric)	COOLING EQUIPMENT: Chiller Type	COOLING EQUIPMENT: Source of Chiller Energy	HEATING EQUIPMENT: Source of General Heating Energy	HEATING EQUIPMENT: Source of Reheat Coil Energy	ON-SITE POWER GENERATION: Number of Engine/ Generator Sets	ON-SITE POWER GENERATION: Type of Engine/ Generator Set	Card Index
CONV. SYS. 1	2.	4.	1.	0.	0.	0.	S9 R

BOILERS

Number of Boilers	Size of each Boiler (MBH)	Seasonal Heating Start-up Month/Day *	Seasonal Heating Shut-down Month/Day *	Heating Value Heating Oil(BTU/GAL)	Boiler Performance Type	Boiler Peak Efficiency (%)	Card Index
2.	3500.	01/01	12/31		2.	80.	S10 R

* Applies to Boilers and Heat pump heating

CHILLERS

Number of Chillers	Size of each Chiller(TONS)	Seasonal Cooling Start-up Month/Day **	Seasonal Cooling Shut-down Month/Day **	Min. Part Load Chiller Cut-off(%)	Chilled Water Set Point Temp.(°F)	Cooling Tower Water Low Limit Temp.(°F)	Card Index
2.	275.	01/01	12/31	20.	45.	75.	S11 R

** Applies to Chillers, DX, and Heat pump cooling.

PUMP HEADS

Total Boiler Water Pump Head(FT)	Total Chilled Water Pump Head (FT)	Total Condenser Water Pump Head(FT)		Card Index
80.	60.	60.		S12 R

CHILLER TYPE CODE

1. = Reciprocating
2. = Hermetic Centrifugal
3. = Open Centrifugal
4. = Steam Absorption
5. = Centrifugal/Steam Turbine

CHILLER ENERGY CODE

0. = From Steam Boiler
3. = Purchased Steam
4. = Electricity

GENERAL HEATING ENERGY CODE

1. = Gas
2. = Heating Oil
3. = Purchased Steam
4. = Electric

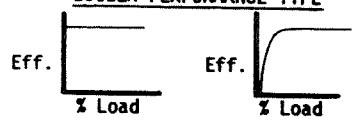
REHEAT COIL ENERGY CODE

0. = Same as Boiler
4. = Electric

ENGINE/GENERATOR SET TYPES CODE

0. = None
1. = Diesel
2. = Gas

BOILER PERFORMANCE TYPE



1.= Constant

2.= Ohio State curve

NOTES:

1. If number of E/G sets =0., it will be calculated by the program.
2. Boiler seasonal start-up and shut-down schedule applies to heat pump operation, also.
3. Chiller seasonal start-up and shut-down schedule applies to DX and heat pump cooling operation, also.

GATX
GARD, INC.

SCOUT
SYSTEMS ANALYSIS PROGRAM

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INPUT FORM SA - 06

MISCELLANEOUS

External Lighting Power (KW)	Fan & Pump Motor Efficiency (%)	Heating Value Diesel Fuel(BTU/GAL)	Peak Base Power Requirement of Bldg. (KW) *	BOILER ** AUXILIARIES(HP)		Card Index
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
0.	85.			1.5		S 1 3 R

* Required for engine/generator sizing. If blank and engine/generators are used, peak value will be calculated from load tape.

** Boiler auxiliaries operate unless turned off by Heating seasonal Shut-down term(Card S-10). If -1.0 is entered, Boiler auxiliaries will be sized by the program.

STEAM & STEAM TURBINES

GENERAL HEATING PURCHASED STEAM		CHILLER ENTERING STEAM*		STEAM TURBINE	PROCESS ENTERING STEAM		Card Index
Steam Pressure(PSIG)	Temperature(^oF)	Entering Steam Pressure(PSIG)	Entering Temp.(^oF)	Speed (RPM)	Steam Pressure(PSIG)	Temperature(F^o)	
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40	41 42 43 44 45 46 47 48 49 50	51 52 53 54 55 56 57 58 59 60	61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
							S 1 4 R

* Refers to either Absorption Chiller or Steam Turbine driven Centrifugal Chiller.

FLOOR PANEL HEATING SYSTEMS

Type of Floor Covering	Floor Insulation Conductance (BTU/HR-^oF - FT^2)	Floor Insulation Thickness (FT)		Card Index
1 2 3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20	21 22 23 24 25 26 27 28 29 30	31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	71 72 73 74 75 76 77 78 79 80
				S 1 5 R

TYPE OF FLOOR COVERING CODE

1.= Bare Concrete
2.= Tile
3.= Carpeting

GATX
GARD, INC.

SCOUT
SYSTEMS ANALYSIS PROGRAM

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date	PAGE 9 OF 9

INPUT FORM SA-08

PROCESS LOADS

	Peak Load (*)	Energy Source Code	Operating Schedule Number	Label (Alpha - Numeric)	Card Index
1	175.	4.	1.	ELEVATOR	S17
2	48.	4.	2.	HW.HEATER	
3					
4					
5					
6					
7					
8					
9					
10					

* Peak load energy units defined by energy source code used.

ENERGY SOURCE CODE DEFINITION

CODE	UNITS	DESCRIPTION
0	MBH	Indirect Process (Load to Boiler)
1	MBH	Gas
2	MBH	Heating Oil
3	MBH	Steam
4	KW	Electric

GATX
GARD, INC.

SCOUT
COST ANALYSIS PROGRAM

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date	PAGE 1 OF 11

INPUT FORM CA-01

GENERAL NOTES

1. Unless otherwise noted, all input data are real numbers, requiring a decimal point. The program is designed to by-pass unneeded portions of input as indicated by notes.
2. Input cards required to execute the program are noted by an "R" at their extreme right.

JOB IDENTIFICATION

(Alpha-numeric data may be entered on card types C1 through C5.)

EXAMPLE BUILDING	FACILITY NAME	C1 R
CHICAGO, ILL.	FACILITY LOCATION	C2 R
GARD INC	USER ID	C3 R
87119-7000	PROJECT NUMBER	C4 R
NOV 16 1975	DATE	C5 R

BUILDING LIFE AND COST ESCALATION FACTORS

Building Life (Yrs.)(1-60)	Annual Interest Rate (%)	Annual Increase Of Labor Cost (%)	Annual Increase Of Material Cost(%)	Annual Increase Of Floor Space Cost(%)	Annual Increase Of Energy Cost (%)	Card Index
40.	12.	8.	15.	10.	10.	C6 R

CASE STUDIES

No. Cases To Be Analyzed (1-5)	Card Index
2.	C7 R

NOTE: REPEAT CARD TYPES C8 THROUGH C10B FOR EACH CASE TO BE ANALYZED.

GATX
GARD, INC.

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COST ANALYSIS PROGRAM

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CASE NO. 1 LABEL

INPUT FORM CA-02

Case Description Data (Alphanumeric)	Card Index
SAMPLE PROBLEM NO. 3	C 8 R

No. Energy Catagories(1-10)	No. Equipment Catagories(1-12)	Card Index
2.	3.	C 9 R

ENERGY CATAGORY NO. 1 LABEL
(Repeat card types C9A through C9G for each energy catagory.)

Energy Type (Alphanumeric)	Consumption Units	Demand Units	No. Of Rate Schedules (1-2)	No. Of Applications (1-5)	Card Index
STEAM	K-LBS		1.	2.	C 9 A R

RATE SCHEDULE NO. 3 LABEL STEAM
Note: 1.See input form CA-03 for illustration of utility rate breakpoints and types.
2.Omit card types C9C and C9D if not required.

Rate No.	No. Break-Points	Cons(1) or Dem(2)	Breakpoint 1 Quantity	Breakpoint 1 $/Unit	Breakpoint 2 Quantity	Breakpoint 2 $/Unit	Breakpoint 3 Quantity	Breakpoint 3 $/Unit	Breakpoint 4 Quantity	Breakpoint 4 $/Unit	Card Index
3.	1.	1.	90000.	1.25							C 9 B R

Breakpoint 5 Quantity	Breakpoint 5 $/Unit	Breakpoint 6 Quantity	Breakpoint 6 $/Unit	Breakpoint 7 Quantity	Breakpoint 7 $/Unit	Breakpoint 8 Quantity	Breakpoint 8 $/Unit	Card Index
								C 9 C

Breakpoint 9 Quantity	Breakpoint 9 $/Unit	Breakpoint 10 Quantity	Breakpoint 10 $/Unit	Card Index
				C 9 D

RATE SCHEDULE NO. LABEL

Rate No.	No. Break-Points	Cons(1) or Dem(2)	Breakpoint 1 Quantity	Breakpoint 1 $/Unit	Breakpoint 2 Quantity	Breakpoint 2 $/Unit	Breakpoint 3 Quantity	Breakpoint 3 $/Unit	Breakpoint 4 Quantity	Breakpoint 4 $/Unit	Card Index
											C 9 B

Breakpoint 5 Quantity	Breakpoint 5 $/Unit	Breakpoint 6 Quantity	Breakpoint 6 $/Unit	Breakponit 7 Quantity	Breakpoint 7 $/Unit	Breakpoint 8 Quantity	Breakpoint 8 $/Unit	Card Index
								C 9 C

Breakpoint 9 Quantity	Breakpoint 9 $/Unit	Breakpoint 10 Quantity	Breakpoint 10 $/Unit	Card Index
				C 9 D

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CASE NO. 1 CONTINUED

INPUT FORM CA-03

ENERGY APPLICATION NO. 1 LABEL

NOTE: REPEAT THIS FORM FOR EACH ENERGY APPLICATION.

Energy Use Label (Alphanumeric)	Consumption Basis (1-3)	Consumption Rate No. (See Card C9B)	Demand Basis (1-3)	Demand Rate No. (See Card C9B)	Card Index
HEATING	1.	3.			C9E

MONTHLY CONSUMPTION DATA

	January	February	March	April	May	June	Card Index
	461.1	347.7	234.0	134.2	39.5	7.4	C9F

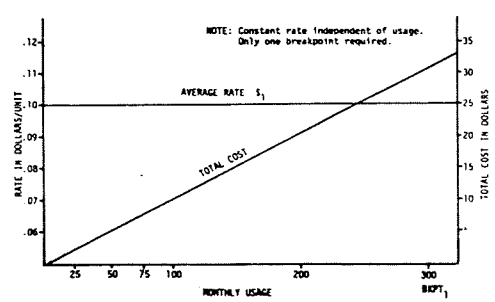
	July	August	September	October	November	December	Card Index
	0.	0.	7.4	81.5	200.8	363.5	C9G

MONTHLY DEMAND DATA(Skip if not required)

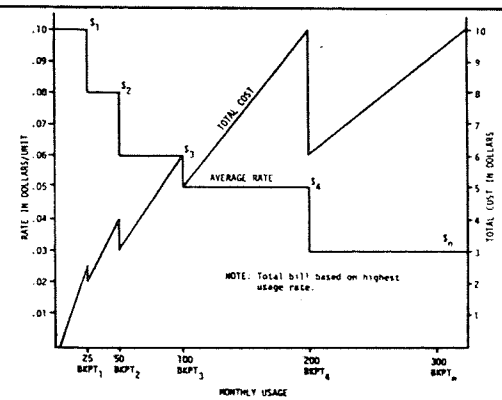
	January	February	March	April	May	June	Card Index
							C9F

	July	August	September	October	November	December	Card Index
							C9G

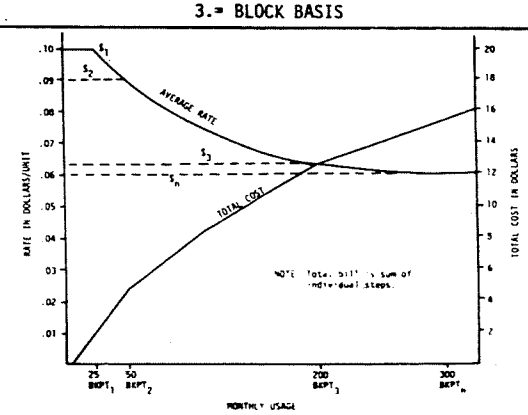
1.= STRAIGHT LINE BASIS



2.= STEP BASIS



3.= BLOCK BASIS



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INPUT FORM CA-03

CASE NO. 1 CONTINUED

ENERGY APPLICATION NO. 2 LABEL _____

NOTE: REPEAT THIS FORM FOR EACH ENERGY APPLICATION.

Energy Use Label (Alphanumeric)	Consumption Basis (1-3)	Consumption Rate No. (See Card C9B)	Demand Basis (1-3)	Demand Rate No. (See Card C9B)	Card Index
COOLING	1.	3.			C9E

MONTHLY CONSUMPTION DATA

January	February	March	April	May	June	Card Index
5.3	14.4	66.1	111.9	304.8	548.8	C9F

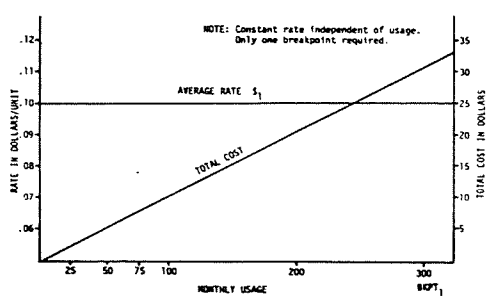
July	August	September	October	November	December	Card Index
758.7	716.5	432.9	198.6	78.1	19.3	C9G

MONTHLY DEMAND DATA(Skip if not required)

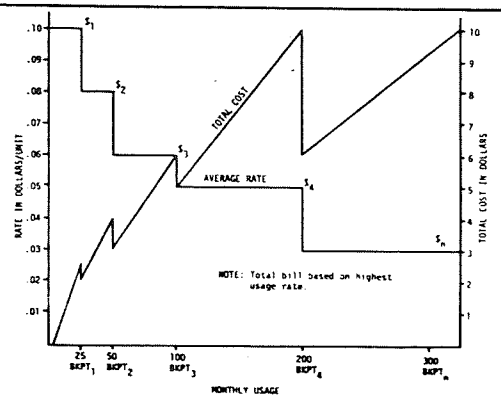
January	February	March	April	May	June	Card Index
						C9F

July	August	September	October	November	December	Card Index
						C9G

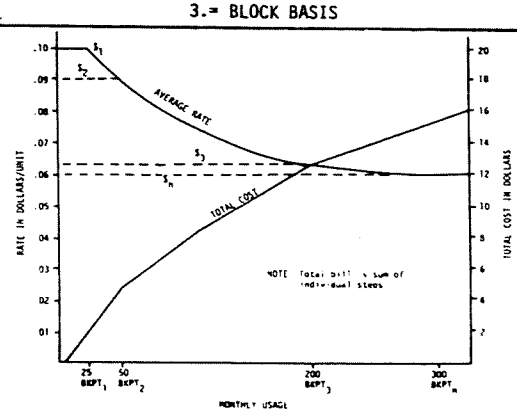
1.= STRAIGHT LINE BASIS



2.= STEP BASIS



3.= BLOCK BASIS



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INPUT FORM CA-02

CASE NO. 1 LABEL

Case Description Data (Alphanumeric)	Card Index
	C 8

R

No. Energy Catagories(1-10)	No. Equipment Catagories(1-12)	Card Index
		C 9

R

ENERGY CATAGORY NO. 2 LABEL
(Repeat card types C9A through C9G for each energy catagory.)

Energy Type (Alphanumeric)	Consumption Units	Demand Units	No. Of Rate Schedules (1-2)	No. Of Applications (1-5)	Card Index
ELECTRICITY	KW-HRS	KW	2.	1.	C 9 A

R

RATE SCHEDULE NO. 1. LABEL
Note: 1.See input form CA-03 for illustration of utility rate breakpoints and types.
2.Omit card types C9C and C9D if not required.

Rate No.	No. Break-Points	Cons(1) or Dem(2)	Breakpoint 1 Quantity	Breakpoint 1 $/Unit	Breakpoint 2 Quantity	Breakpoint 2 $/Unit	Breakpoint 3 Quantity	Breakpoint 3 $/Unit	Breakpoint 4 Quantity	Breakpoint 4 $/Unit	Card Index
1.	7.	1.	10.	.09	500.	.032	2500.	.029	6000.	.018	C 9 B

R

Breakpoint 5 Quantity	Breakpoint 5 $/Unit	Breakpoint 6 Quantity	Breakpoint 6 $/Unit	Breakpoint 7 Quantity	Breakpoint 7 $/Unit	Breakpoint 8 Quantity	Breakpoint 8 $/Unit	Card Index
30000.	.014	100000.	.01	500000.	.008			C 9 C

Breakpoint 9 Quantity	Breakpoint 9 $/Unit	Breakpoint 10 Quantity	Breakpoint 10 $/Unit	Card Index
				C 9 D

RATE SCHEDULE NO. 2. LABEL

Rate No.	No. Break-Points	Cons(1) or Dem(2)	Breakpoint 1 Quantity	Breakpoint 1 $/Unit	Breakpoint 2 Quantity	Breakpoint 2 $/Unit	Breakpoint 3 Quantity	Breakpoint 3 $/Unit	Breakpoint 4 Quantity	Breakpoint 4 $/Unit	Card Index
2.	6.	2.	25.	0.	200.	2.	1000.	1.8	3500.	1.65	C 9 B

Breakpoint 5 Quantity	Breakpoint 5 $/Unit	Breakpoint 6 Quantity	Breakpoint 6 $/Unit	Breakpoint 7 Quantity	Breakpoint 7 $/Unit	Breakpoint 8 Quantity	Breakpoint 8 $/Unit	Card Index
15000.	1.45	100000.	1.35					C 9 C

Breakpoint 9 Quantity	Breakpoint 9 $/Unit	Breakpoint 10 Quantity	Breakpoint 10 $/Unit	Card Index
				C 9 D

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INPUT FORM CA-03

CASE NO. 1 CONTINUED

ENERGY APPLICATION NO. 1 LABEL _____

NOTE: REPEAT THIS FORM FOR EACH ENERGY APPLICATION.

Energy Use Label (Alphanumeric)	Consumption Basis (1-3)	Consumption Rate No. (See Card C9B)	Demand Basis (1-3)	Demand Rate No. (See Card C9B)	Card Index
BUILDING BASE POWER	3.	1.	3.	2.	C9E

MONTHLY CONSUMPTION DATA

	January	February	March	April	May	June	Card Index
	85808.5	79158.8	89281.0	83345.1	82144.0	82143.0	C9F

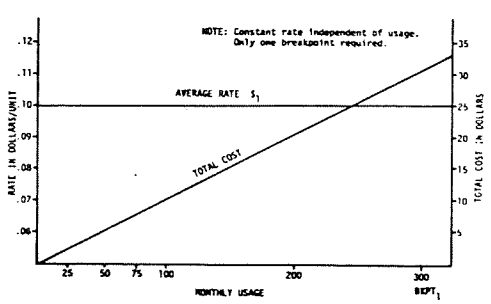
	July	August	September	October	November	December	Card Index
	79449.7	85014.3	80206.9	82844.2	84011.6	86395.8	C9G

MONTHLY DEMAND DATA(Skip if not required)

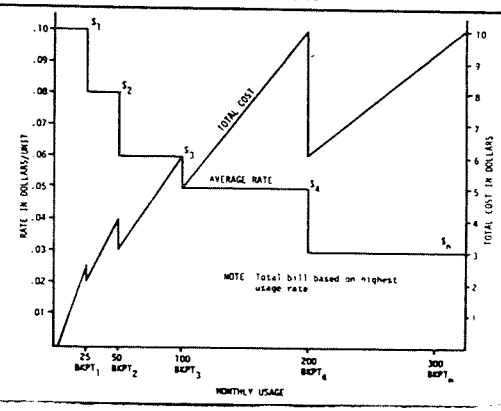
	January	February	March	April	May	June	Card Index
	524.7	524.7	524.7	524.7	524.7	524.7	C9F

	July	August	September	October	November	December	Card Index
	521.8	521.8	516.2	524.7	524.7	524.7	C9G

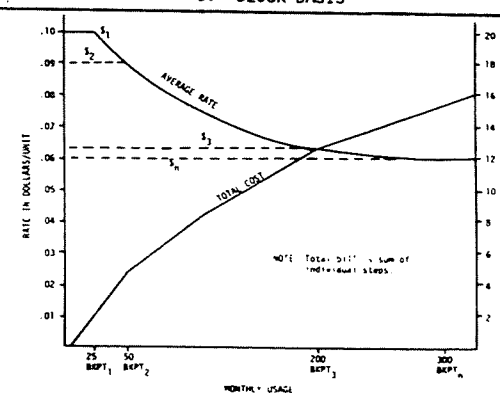
1.= STRAIGHT LINE BASIS



2.= STEP BASIS



3.= BLOCK BASIS



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INPUT FORM CA-04

CASE NO. 1 CONTINUED

EQUIPMENT CATAGORIES
NOTE: REPEAT CARD TYPES C10A AND C10B FOR EACH EQUIPMENT CATAGORY SPECIFIED ON CARD TYPE C9.

EQUIPMENT CATAGORY NO. 1

Equipment Label (Alphanumeric)	Installed Cost ($)	Expected Life (Yrs.)	Salvage Value? (0.=No, 1.=Yes)	Major Overhaul Period (Yrs.)	Card Index
COOLING SIDE EQUIP.	90000.	90.	1.	10.	C10A

ANNUAL MAINTENANCE Labor ($)	ANNUAL MAINTENANCE Material ($)	MAJOR OVERHAUL Labor ($)	MAJOR OVERHAUL Material ($)	Occupied Floor Space Cost ($)	Card Index
18000.	9000.	900.	225.	8000.	C10B

EQUIPMENT CATAGORY NO. 2

Equipment Label (Alphanumeric)	Installed Cost ($)	Expected Life (Yrs.)	Salvage Value? (0.=No, 1.=Yes)	Major Overhaul Period (Yrs.)	Card Index
HEATING SIDE EQUIP.	20000.	90.	1.	10.	C10A

ANNUAL MAINTENANCE Labor ($)	ANNUAL MAINTENANCE Material ($)	MAJOR OVERHAUL Labor ($)	MAJOR OVERHAUL Material ($)	Occupied Floor Space Cost ($)	Card Index
1000.	1000.	200.	50.	2000.	C10B

EQUIPMENT CATAGORY NO. 3

Equipment Label (Alphanumeric)	Installed Cost ($)	Expected Life (Yrs.)	Salvage Value? (0.=No., 1.=Yes)	Major Overhaul Period (Yrs.)	Card Index
AIR SIDE EQUIP.	200000.	90.	1.	10.	C10A

ANNUAL MAINTENANCE Labor ($)	ANNUAL MAINTENANCE Material ($)	MAJOR OVERHAUL Labor ($)	MAJOR OVERHAUL Material ($)	Occupied Floor Space Cost ($)	Card Index
10000.	10000.	2000.	500.	10000.	C10B

EQUIPMENT CATAGORY NO. _____

Equipment Label (Alphanumeric)	Installed Cost ($)	Expected Life (Yrs.)	Salvage Value? (0.=No.,1.=Yes)	Major Overhaul Period (Yrs.)	Card Index
					C10A

ANNUAL MAINTENANCE Labor ($)	ANNUAL MAINTENANCE Material ($)	MAJOR OVERHAUL Labor ($)	MAJOR OVERHAUL Material ($)	Occupied Floor Space Cost ($)	Card Index
					C10B

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INPUT FORM CA-02

CASE NO. 2 LABEL

Case Description Data (Alphanumeric)	Card Index
SAMPLE PROBLEM NO. 4	C 8 R

No. Energy Catagories(1-10)	No. Equipment Catagories(1-12)	Card Index
1.	3.	C 9 R

ENERGY CATAGORY NO. 1 LABEL
(Repeat card types C9A through C9G for each energy catagory.)

Energy Type (Alphanumeric)	Consumption Units	Demand Units	No. Of Rate Schedules (1-2)	No. Of Applications (1-5)	Card Index
ELECTRICITY	KW-HRS	KW	2.	1.	C 9 A R

RATE SCHEDULE NO. 1 LABEL
Note: 1.See input form CA-03 for illustration of utility rate breakpoints and types.
2.Omit card types C9C and C9D if not required.

Rate No.	No. Break-Points	Cons(1) or Dem(2)	Breakpoint 1 Quantity	Breakpoint 1 $/Unit	Breakpoint 2 Quantity	Breakpoint 2 $/Unit	Breakpoint 3 Quantity	Breakpoint 3 $/Unit	Breakpoint 4 Quantity	Breakpoint 4 $/Unit	Card Index
1.	7.	1.	10.	.09	500.	.032	2500.	.029	6000.	.018	C 9 B R

Breakpoint 5 Quantity	Breakpoint 5 $/Unit	Breakpoint 6 Quantity	Breakpoint 6 $/Unit	Breakpoint 7 Quantity	Breakpoint 7 $/Unit	Breakpoint 8 Quantity	Breakpoint 8 $/Unit	Card Index
30000.	.014	100000.	.01	50000.	.008			C 9 C

Breakpoint 9 Quantity	Breakpoint 9 $/Unit	Breakpoint 10 Quantity	Breakpoint 10 $/Unit	Card Index
				C 9 D

RATE SCHEDULE NO. 2 LABEL

Rate No.	No. Break-Points	Cons(1) or Dem(2)	Breakpoint 1 Quantity	Breakpoint 1 $/Unit	Breakpoint 2 Quantity	Breakpoint 2 $/Unit	Breakpoint 3 Quantity	Breakpoint 3 $/Unit	Breakpoint 4 Quantity	Breakpoint 4 $/Unit	Card Index
2.	6.	2.	25.	0.	200.	2.	1000.	1.8	3500.	1.65	C 9 B

Breakpoint 5 Quantity	Breakpoint 5 $/Unit	Breakpoint 6 Quantity	Breakpoint 6 $/Unit	Breakpoint 7 Quantity	Breakpoint 7 $/Unit	Breakpoint 8 Quantity	Breakpoint 8 $/Unit	Card Index
15000.	1.45	100000.	1.35					C 9 C

Breakpoint 9 Quantity	Breakpoint 9 $/Unit	Breakpoint 10 Quantity	Breakpoint 10 $/Unit	Card Index
				C 9 D

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INPUT FORM CA-03

CASE NO. 2 CONTINUED

ENERGY APPLICATION NO. 1 LABEL _____

NOTE: REPEAT THIS FORM FOR EACH ENERGY APPLICATION.

Energy Use Label (Alphanumeric)	Consumption Basis (1-3)	Consumption Rate No. (See Card C9B)	Demand Basis (1-3)	Demand Rate No. (See Card C9B)	Card Index
BASE POWER + HEATING + COOLING	3.	1.	3.	2.	C9E

MONTHLY CONSUMPTION DATA

January	February	March	April	May	June	Card Index
201356.0	163104.0	142030.1	109894.0	91842.8	93876.2	C9F

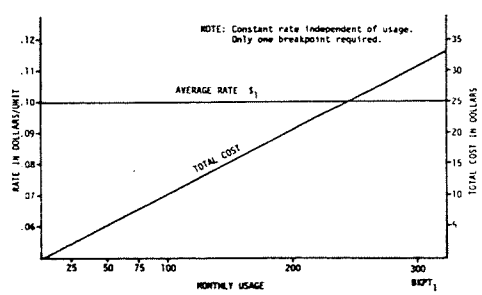
July	August	September	October	November	December	Card Index
98701.4	102745.6	87798.8	99516.1	128404.1	174440.9	C9G

MONTHLY DEMAND DATA(Skip if not required)

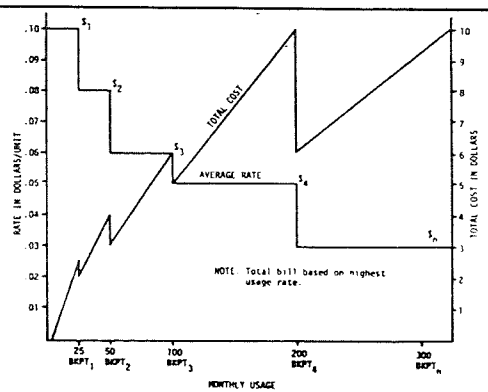
January	February	March	April	May	June	Card Index
540.1	449.6	394.4	328.8	286.0	305.2	C9F

July	August	September	October	November	December	Card Index
328.4	329.3	287.8	337.1	378.9	422.8	C9G

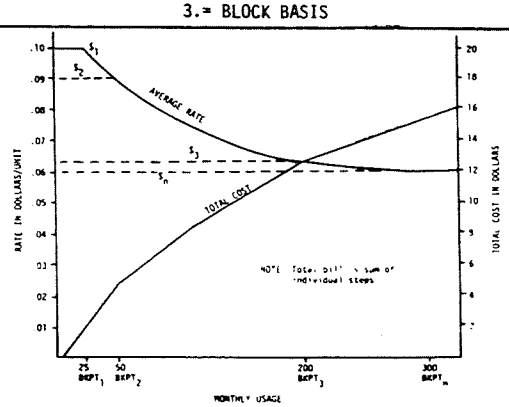
1.= STRAIGHT LINE BASIS



2.= STEP BASIS



3.= BLOCK BASIS



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INPUT FORM CA -04

CASE NO. 2 CONTINUED

EQUIPMENT CATAGORIES
NOTE: REPEAT CARD TYPES C10A AND C10B FOR EACH EQUIPMENT CATAGORY SPECIFIED ON CARD TYPE C9.

EQUIPMENT CATAGORY NO. 1

Equipment Label (Alphanumeric)	Installed Cost ($)	Expected Life (Yrs.)	Salvage Value? (0.=No, 1.=Yes)	Major Overhaul Period (Yrs.)	Card Index
COOLING SIDE EQUIP.	80000.	90.	1.	20.	C10A

ANNUAL MAINTENANCE Labor ($)	ANNUAL MAINTENANCE Material ($)	MAJOR OVERHAUL Labor ($)	MAJOR OVERHAUL Material ($)	Occupied Floor Space Cost ($)	Card Index
16000.	8000.	0.	0.	8000.	C10B

EQUIPMENT CATAGORY NO. 2

Equipment Label (Alphanumeric)	Installed Cost ($)	Expected Life (Yrs.)	Salvage Value? (0.=No, 1.=Yes)	Major Overhaul Period (Yrs.)	Card Index
HEATING SIDE EQUIP.	60000.	90.	1.	10.	C10A

ANNUAL MAINTENANCE Labor ($)	ANNUAL MAINTENANCE Material ($)	MAJOR OVERHAUL Labor ($)	MAJOR OVERHAUL Material ($)	Occupied Floor Space Cost ($)	Card Index
3000.	3000.	600.	150.	2000.	C10B

EQUIPMENT CATAGORY NO. 3

Equipment Label (Alphanumeric)	Installed Cost ($)	Expected Life (Yrs.)	Salvage Value? (0.=No., 1.=Yes)	Major Overhaul Period (Yrs.)	Card Index
AIR SIDE EQUIP.	200000.	90.	1.	10.	C10A

ANNUAL MAINTENANCE Labor ($)	ANNUAL MAINTENANCE Material ($)	MAJOR OVERHAUL Labor ($)	MAJOR OVERHAUL Material ($)	Occupied Floor Space Cost ($)	Card Index
10000.	10000.	2000.	500.	10000.	C10B

EQUIPMENT CATAGORY NO. _____

Equipment Label (Alphanumeric)	Installed Cost ($)	Expected Life (Yrs.)	Salvage Value? (0.=No.,1.=Yes)	Major Overhaul Period (Yrs.)	Card Index
					C10A

ANNUAL MAINTENANCE Labor ($)	ANNUAL MAINTENANCE Material ($)	MAJOR OVERHAUL Labor ($)	MAJOR OVERHAUL Material ($)	Occupied Floor Space Cost ($)	Card Index
					C10B

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INPUT FORM CA-05

CASH FLOW COMPARISONS
NOTE: REPEAT CARD TYPE C11 FOR EACH COMPARISON DESIRED(MAXIMUM=20)

COMPARISON NO.	Base Case No.(1-5) (1-10)	Compared To Case No.(1-5) (11-20)	(21-70)	Card Index (71-80)
1	2.	1.		C11
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

DESCRIPTION OF CONSTRUCTION

LAYER NUMBER	THICKNESS FT	CONDUCTIVITY BTU PER (HR)(FT)(F)	DENSITY LB PER CU FT	SPECIFIC HEAT BTU PER (LB)(F)	RESISTANCE (HR)(SQ FT)(F) PER BTU		
1	.0208	.590	172.0	.20	0.00	1/4 CERAMIC CT.GL.	R3
2	.3330	.025	2.0	.20	0.00	4 INCH INSULATION	R3
3	0.0000	0.000	0.0	0.00	.91	4 INCH AIR SPACE	R3
4	.0625	.420	100.0	.20	0.00	GYPSUM BOARD	R3
5	0.0000	0.000	0.0	0.00	.68	AIR FILM	R3

THERMAL CONDUCTANCE = .066 BTU PER (HR)(SQ FT)(F)

RESPONSE FACTORS

HOUR	X	Y	Z
0	.8304298924	.0125033556	.0473926729
1	-.7623059168	.0332119214	-.5250854585
2	-.0013250241	.0137476184	-.1716852308
3	-.0003677267	.0045512387	-.0565684122
4	-.0001206979	.0014998996	-.0186407464
5	-.0000397699	.0004942577	-.0061426196
6	-.0000131052	.0001628710	-.0020241559
7	-.0000043185	.0000536703	-.0006670130

NUMBER OF HOURS REQUIRED TO REACH COMMON RATIO = 7
NUMBER OF RESPONSE FACTORS PER SET = 8
COMMON RATIO = .3295265001

DESCRIPTION OF CONSTRUCTION

LAYER NUMBER	THICKNESS FT	CONDUCTIVITY BTU PER (HR)(FT)(F)	DENSITY LB PER CU FT	SPECIFIC HEAT BTU PER (LB)(F)	RESISTANCE (HR)(SQ FT)(F) PER BTU		
1	.0313	.665	70.0	.33	0.00	BUILT-UP ROOF	R3
2	.2500	.025	2.0	.20	0.00	3 INCH INSULATION	R3
3	.3333	1.000	140.0	.20	0.00	4 INCH CONCRETE	R3
4	0.0000	0.000	0.0	0.00	.60	AIR FILM	R3

THERMAL CONDUCTANCE = .091 BTU PER (HR)(SQ FT)(F)

RESPONSE FACTORS

HOUR	X	Y	Z
0	.8514929357	.0013354699	1.3403373103
1	-.7541613522	.0100479075	-.2256730001
2	-.0009524806	.0117530147	-.1637586384
3	-.0007922742	.0101304076	-.1297921446
4	-.0006735845	.0086231001	-.1103990864
5	-.0005730854	.0073368394	-.0939290199
6	-.0004875931	.0062423463	-.0799168284
7	-.0004148548	.0053111243	-.0679949776

NUMBER OF HOURS REQUIRED TO REACH COMMON RATIO = 7
NUMBER OF RESPONSE FACTORS PER SET = 8
COMMON RATIO = .8508217837

```
*****************************************************
*****************************************************
******                                         ******
******   INPUT DATA VERIFICATION RESULTS       ******
******   FOR SCOUT LOAD ANALYSIS PROGRAM       ******
******              LEVEL 3.1                  ******
******                                         ******
*****************************************************
*****************************************************
```

THE FOLLOWING FIVE LINES ARE THE PROGRAMS DESCRIPTOR INFORMATION.

```
SCOUT SAMPLE BUILDING                                   L1
CHICAGO, ILLINOIS                                       L2
GARD, INC.                                              L3
1234                                                    L4
15 MAY 1977                                             L5
```

THE FOLLOWING LINES ARE SITE CHARACTERISTIC AND STUDY PARAMETER DATA.

```
LATITUDE  LONGITUDE          CLEARNESS CLEARNESS BUILDING
DEGREE    DEGREE    TIME ZONE NO. - SUM NO. - WIN AZIMUTH
42.       87.       6.        .98       .98       0.          L6

OPTION    VENT.     FAN       COLD AIR  COLD AIR  HOT AIR   HOT AIR
CODE      AIR       PRESS.    TEMP. 1   TEMP. 2   TEMP. 3   TEMP. 4
2.        .05       4.        55.       58.       110.      130.

BUILDING  DESIGN MONTHS
ALTITUDE  MAMJJASOND
600.          1    1

SUMMER DESIGN DAY DATA
MAX.      DBT       AVG. DEW  WIND
DBT       RANGE     PT. TEMP. SPEED
92.       20.       70.       5.

WINTER DESIGN DAY DATA
MIN.      DBT       AVG. DEW  WIND
DBT       RANGE     PT. TEMP. SPEED
1.        5.        -5.       15.

WEATHER   STARTING  STUDY     INITIAL TEMP
YEAR      MONTH     LENGTH    WALL + ROOF
1972.     1.        365.      17.
```

THE FOLLOWING LINE CONTAINS THE NUMBER OF SCHEDULED PRINTOUTS DESIRED

```
0.                                                      L10
```

THE FOLLOWING LINE CONTAINS THE NO. OF TYPES OF OPERATING SCHEDULES

```
     2.                                                                                                    L11
```

THE FOLLOWING LINES INDICATE OPERATING SCHEDULE DATA

```
        SCH.
        NO.   SUN  WKDY SAT  HOL  LABEL
        1     1.   11.  1.   1.   PEOPLE                                                                  L11A
        2     13.  12.  13.  13.  LIGHTS                                                                  L11A
```

THE FOLLOWING LINE(S) ARE USER DEFINED NON-STANDARD SCHEDULES

```
        SCHEDULE
        CODE      1--2--3--4--5--6--7--8--9--10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-END OF CARD
        11        0. 0. 0. 0. 0. 0. 0. 1. 1. 1. .8 .4 .8 1. 1. 1. .1 .1 .1 .1 0. 0. 0. 0.                L11B
        12        .05.05.05.05.05.05.1 .2 .9 .95.95.8 .8 .9 .9 .95.8 .7 .6 .4 .3 .2 .2 .05               L11B
        13        .05.05.05.05.05.05.05.05.05.05.05.05.05.05.05.05.05.05.05.05.05.05.05.05               L11B
```

THE FOLLOWING LINE CONTAINS THE NUMBER OF DIFFERENT TYPES OF DELAYED SURFACES AND OF STANDARD SURFACES RESPECTIVELY.

```
     2.        0.                                                                                         L13
```

THE FOLLOWING LINE CONTAINS NON-STANDARD SURFACE CODE AND LABEL FOR DELAYED SURFACE TYPE 1

```
     26.       TYP. WALL                                                                                   L13B
```

THE FOLLOWING LINE CONTAINS THE NUMBER OF RESPONSE FACTOR TERMS AND THE COMMON RATIO FOR DELAYED SURFACE TYPE 1

```
      8        0.3295265001
```

THE FOLLOWING LINES CONTAIN THE RESPONSE FACTORS FOR DELAYED SURFACE TYPE 1

```
        0.8304298924        0.0125033556        0.8473926729
       -0.7623059168        0.0332119214       -0.5250854585
       -0.0013250241        0.0137476184       -0.1716852308
       -0.0003677267        0.0045512387       -0.0565684122
       -0.0001206979        0.0014998996       -0.0186407464
       -0.0000397699        0.0004942577       -0.0061426196
       -0.0000131052        0.0001628710       -0.0020241559
       -0.0000043185        0.0000536703       -0.0006670130
```

THE FOLLOWING LINE CONTAINS NON-STANDARD SURFACE CODE AND LABEL FOR DELAYED SURFACE TYPE 2

```
     27.       TYP. ROOF                                                                                   L13B
```

THE FOLLOWING LINE CONTAINS THE NUMBER OF RESPONSE FACTOR TERMS AND THE COMMON RATIO FOR DELAYED SURFACE TYPE 2

```
      8        0.8508217837
```

THE FOLLOWING LINES CONTAIN THE RESPONSE FACTORS FOR DELAYED SURFACE TYPE 2

```
        0.8514929357        0.0013354699        1.3403373103
       -0.7541613522        0.0100479075       -0.2256730001
       -0.0009524806        0.0117530147       -0.1537586384
       -0.0007922742        0.0101304076       -0.1297921446
       -0.0006735845        0.0086231001       -0.1103990864
       -0.0005730854        0.0073368394       -0.0939290199
       -0.0004875931        0.0062423463       -0.0799168284
       -0.0004148548        0.0053111243       -0.0679949776
```

THE FOLLOWING LINE CONTAINS THE NUMBER OF DELAYED HEAT TRANSFER SURFACES.

9. L14

THE FOLLOWING LINES DESCRIBE THE DELAYED SURFACES

SURFACE NO.	SIMILAR SURFACE INDEX	SURFACE ABSORBTIVITY	SURFACE ROUGHNESS	RESPONSE FACTOR INDEX	GROUND REFLECTIVITY	SURFACE AREA	AZIMUTH ANGLE	TILT ANGLE	INF. FLOW COEFF.	LABEL	** DERIVED DATA ** ORIENTATION	
1		.8	6.	26.	.2	887.	180.	90.		S. WALL	S	L14A
2	1.					245.	270.	90.		W. WALL	W	L14A
3	1.						0.	90.		N. WALL	N	L14A
4	2.						90.	90.		E. WALL	E	L14A
5	1.						180.	90.		S. WALL 12	S	L14A
6	2.						270.	90.		W. WALL 12	W	L14A
7	3.						0.	90.		N. WALL 12	N	L14A
8	4.						90.	90.		E. WALL 12	E	L14A
9		.9	1.	27.	.2	18790.	180.	0.		ROOF	S	L14A

THE FOLLOWING LINE CONTAINS THE NUMBER OF QUICK HEAT TRANSFER SURFACES.

0. L15

THE FOLLOWING LINE CONTAINS THE NUMBER OF WINDOWS

4. L16

THE FOLLOWING LINES DESCRIBE THE WINDOW SURFACES

SURFACE NO.	SIMILAR SURFACE INDEX	GLASS TYPE	NUMBER OF PANES	SHADE COEFFICIENT	GROUND REFLECTIVITY	SURFACE AREA	AZIMUTH ANGLE	TILT ANGLE	WIN/SKY FACTOR	WIN/GROND FACTOR	INF. FLOW COEFF.	SURFACE PERIMETER	LABEL	** DERIVED DATA ** ORIENTATION	
1		1.	2.	.39	.2	1749.	180.	90.	.5	.5			S. WINDOW	S	L16A
2	1.	1.				482.	270.	90.	.5	.5			W. WINDOW	W	L16A
3	1.	1.					0.	90.	.5	.5			N. WINDOW	N	L16A
4	2.	1.					90.	90.	.5	.5			E. WINDOW	E	L16A

THE FOLLOWING LINE CONTAINS THE NUMBER OF INTERNAL HEAT TRANSFER SURFACES.

17. L17

THE FOLLOWING LINES CONTAIN THE ATTRIBUTES OF THE INTERNAL HEAT TRANSFER SURFACES

SURFACE INDEX	SURFACE AREA	HEAT TRANS COEF	ADJOINING SPACES INDEX =1	INDEX =2	LABEL	
1	2049.	.39	1.	5.	FLOOR 1 - Z 1/5	L17A
2	442.	.39	2.	5.	FLOOR 1 - Z 2/5	L17A
3	2049.	.39	3.	5.	FLOOR 1 - Z 3/5	L17A
4	442.	.39	4.	5.	FLOOR 1 - Z 4/5	L17A
5	2049.	.39	6.	10.	FLOOR TYP - Z 6/10	L17A
6	442.	.39	7.	10.	FLOOR TYP - Z 7/10	L17A
7	2049.	.39	8.	10.	FLOOR TYP - Z 8/10	L17A
8	442.	.39	9.	10.	FLOOR TYP - Z 9/10	L17A
9	2049.	.39	11.	15.	FLOOR 12 - Z 11/15	L17A
10	442.	.39	12.	15.	FLOOR 12 - Z 12/15	L17A
11	2049.	.39	13.	15.	FLOOR 12 - Z 13/15	L17A
12	442.	.39	14.	15.	FLOOR 12 - Z 14/15	L17A
13	2510.	.31	11.	16.	FLOOR 12 - Z 11/16	L17A
14	620.	.31	12.	16.	FLOOR 12 - Z 12/16	L17A
15	2510.	.31	13.	16.	FLOOR 12 - Z 13/16	L17A
16	620.	.31	14.	16.	FLOOR 12 - Z 14/16	L17A
17	12530.	.31	15.	16.	FLOOR 12 - Z 15/16	L17A

THE FOLLOWING LINE CONTAINS THE NUMBER OF UNDERGROUND WALLS

0. L18

THE FOLLOWING LINE CONTAINS THE NUMBER OF UNDERGROUND FLOORS

5. L19

THE FOLLOWING LINES CONTAIN THE ATTRIBUTES OF THE UNDERGROUND FLOORS

SURFACE INDEX	SURFACE AREA	HEAT TRANS COEFF.	LABEL	
1	2510.	.1	ZONE 1	L19A
2	620.	.1	ZONE 2	L19A
3	2510.	.1	ZONE 3	L19A
4	620.	.1	ZONE 4	L19A
5	12530.	.1	ZONE 5	L19A

THE FOLLOWING LINES CONTAIN THE GROUND TEMPERATURE FOR SUCCESSIVE MONTHS OF THE STUDY

41.	38.	39.	43.	49.	58.	L20
61.	64.	63.	59.	53.	46.	L20

THE FOLLOWING LINE CONTAINS THE NUMBER OF SPACES IN THE BUILDING

```
     16.                                                                                                L21
```

THE FOLLOWING LINES CONTAIN DATA ON SPACE 1

```
GENERAL DATA
     FLOOR                    FLOOR     TEMPERA-   BLG. SP.
     AREA       VOLUME        WEIGHT    ATURE      LOAD TYPE LABEL
     2510.      21335.        47.       72.        1.        FLOOR 1 - SOUTH                          L21A

OCCUPANCY LOAD DATA
     NO. OF     ACTIVITY      SCHEDULE
     PEOPLE     LEVEL         INDEX
     25.        450.          1.                                                                       L21B

LIGHTING LOAD DATA
     LIGHT      FRACTION      WATTS/     KILO-      SCHEDULE
     FIX. TYPE  LITE HEAT     SQ.FT.     WATTS      INDEX
     1.         .7            3.5                   2.                                                 L21C

EQUIPMENT LOAD DATA
     WATTS/     KILO-         SENSIBLE   LATENT     SCHEDULE
     SQ.FT.     WATTS         BTU/HR     BTU/HR     INDEX
     .42                                             2.                                                 L21D

INFILTRATION LOAD DATA
     INFILTR-N  AIR           HEIGHT TO EXHAUST AIR
     CODE       CHANGES       NEU. ZONE FLOW
     1.         .125                                                                                   L21E

SPACE ENVELOPE DESCRIPTION DATA
     NO. OF     NO. OF        NO. OF     NO. OF     NO. OF UNDERGROUND  NO. OF ADDITIONAL
     DELAYEDS   QUICKS        WINDOWS    INTERNALS  WALLS  FLOORS       IDENTICAL SPACES
     2.                       1.         1.                 1.                                         L21F
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE DELAYED SURFACES OF SPACE 1

```
     1.         1.                                                                                     L21G
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE WINDOWS OF SPACE 1

```
     1.                                                                                                L21I
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE INTERNAL SURFACES OF SPACE 1

```
     1.                                                                                                L21J
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE UNDERGROUND FLOORS OF SPACE 1

```
     1.                                                                                                L21L
```

```
THE FOLLOWING LINES CONTAIN DATA ON SPACE     2

                    GENERAL DATA
                         FLOOR                    FLOOR     TEMPERA-   BLG. SP.
                         AREA        VOLUME       WEIGHT    ATURE      LOAD TYPE LABEL
                         620.        5270.        47.       72.        1.        FLOOR 1 - WEST                    L21A

                    OCCUPANCY LOAD DATA
                         NO. OF      ACTIVITY     SCHEDULE
                         PEOPLE      LEVEL        INDEX
                         6.          450.         1.                                                               L21B

                    LIGHTING LOAD DATA
                         LIGHT       FRACTION     WATTS/    KILO-      SCHEDULE
                         FIX. TYPE   LITE HEAT    SQ.FT.    WATTS      INDEX
                         1.          .7           3.5                  2.                                          L21C

                    EQUIPMENT LOAD DATA
                         WATTS/      KILO-        SENSIBLE  LATENT     SCHEDULE
                         SQ.FT.      WATTS        BTU/HR    BTU/HR     INDEX
                         .42                                           2.                                          L21D

                    INFILTRATION LOAD DATA
                         INFILTR-N   AIR          HEIGHT TO EXHAUST AIR
                         CODE        CHANGES      NEU. ZONE FLOW
                         1.          .125                                                                           L21E

                    SPACE ENVELOPE DESCRIPTION DATA
                         NO. OF      NO. OF       NO. OF    NO. OF     NO. OF UNDERGROUND  NO. OF ADDITIONAL
                         DELAYEDS    QUICKS       WINDOWS   INTERNALS  WALLS     FLOORS    IDENTICAL SPACES
                         2.                       1.        1.                  1.                                L21F

THE FOLLOWING LINE CONTAINS THE INDICES OF THE DELAYED SURFACES OF SPACE     2

     2.        2.                                                                                                  L21G

THE FOLLOWING LINE CONTAINS THE INDICES OF THE WINDOWS OF SPACE     2

     2.                                                                                                            L21I

THE FOLLOWING LINE CONTAINS THE INDICES OF THE INTERNAL SURFACES OF SPACE     2

     2.                                                                                                            L21J

THE FOLLOWING LINE CONTAINS THE INDICES OF THE UNDERGROUND FLOORS OF SPACE     2

     2.                                                                                                            L21L


THE FOLLOWING LINES CONTAIN DATA ON SPACE     3

                    GENERAL DATA
                         FLOOR                    FLOOR     TEMPERA-   BLG. SP.
                         AREA        VOLUME       WEIGHT    ATURE      LOAD TYPE LABEL
                         2510.       21335.       47.       72.        1.        FLOOR 1 - NORTH                   L21A

                    OCCUPANCY LOAD DATA
                         NO. OF      ACTIVITY     SCHEDULE
                         PEOPLE      LEVEL        INDEX
                         25.         450.         1.                                                               L21B

                    LIGHTING LOAD DATA
                         LIGHT       FRACTION     WATTS/    KILO-      SCHEDULE
                         FIX. TYPE   LITE HEAT    SQ.FT.    WATTS      INDEX
                         1.          .7           3.5                  2.                                          L21C

                    EQUIPMENT LOAD DATA
                         WATTS/      KILO-        SENSIBLE  LATENT     SCHEDULE
                         SQ.FT.      WATTS        BTU/HR    BTU/HR     INDEX
                         .42                                           2.                                          L21D

                    INFILTRATION LOAD DATA
                         INFILTR-N   AIR          HEIGHT TO EXHAUST AIR
                         CODE        CHANGES      NEU. ZONE FLOW
                         1.          .125                                                                           L21E

                    SPACE ENVELOPE DESCRIPTION DATA
                         NO. OF      NO. OF       NO. OF    NO. OF     NO. OF UNDERGROUND  NO. OF ADDITIONAL
                         DELAYEDS    QUICKS       WINDOWS   INTERNALS  WALLS     FLOORS    IDENTICAL SPACES
                         2.                       1.        1.                  1.                                L21F

THE FOLLOWING LINE CONTAINS THE INDICES OF THE DELAYED SURFACES OF SPACE     3

     3.        3.                                                                                                  L21G

THE FOLLOWING LINE CONTAINS THE INDICES OF THE WINDOWS OF SPACE     3

     3.                                                                                                            L21I

THE FOLLOWING LINE CONTAINS THE INDICES OF THE INTERNAL SURFACES OF SPACE     3

     3.                                                                                                            L21J

THE FOLLOWING LINE CONTAINS THE INDICES OF THE UNDERGROUND FLOORS OF SPACE     3

     3.                                                                                                            L21L
```

```
THE FOLLOWING LINES CONTAIN DATA ON SPACE     4

                    GENERAL DATA
                         FLOOR                    FLOOR     TEMPER-   BLG. SP.
                         AREA        VOLUME       WEIGHT    ATURE     LOAD TYPE LABEL
                         620.        5270.        47.       72.       1.        FLOOR 1 - EAST                    L21A

                    OCCUPANCY LOAD DATA
                         NO. OF      ACTIVITY     SCHEDULE
                         PEOPLE      LEVEL        INDEX
                         6.          450.         1.                                                              L21B

                    LIGHTING LOAD DATA
                         LIGHT       FRACTION     WATTS/    KILO-     SCHEDULE
                         FIX. TYPE   LITE HEAT    SQ.FT.    WATTS     INDEX
                         1.          .7           3.5                 2.                                          L21C

                    EQUIPMENT LOAD DATA
                         WATTS/      KILO-        SENSIBLE  LATENT    SCHEDULE
                         SQ.FT.      WATTS        BTU/HR    BTU/HR    INDEX
                         .42                                          2.                                          L21D

                    INFILTRATION LOAD DATA
                         INFILTR-N   AIR          HEIGHT TO EXHAUST ATR
                         CODE        CHANGES      NEU. ZONE FLOW
                         1.          .125                                                                         L21E

                    SPACE ENVELOPE DESCRIPTION DATA
                         NO. OF      NO. OF       NO. OF    NO. OF    NO. OF UNDERGROUND  NO. OF ADDITIONAL
                         DELAYEDS    QUICKS       WINDOWS   INTERNALS WALLS     FLOORS    IDENTICAL SPACES
                         2.                       1.        1.                  1.                                L21F

  THE FOLLOWING LINE CONTAINS THE INDICES OF THE DELAYED SURFACES OF SPACE     4

       4.        4.                                                                                               L21G

  THE FOLLOWING LINE CONTAINS THE INDICES OF THE WINDOWS OF SPACE     4

       4.                                                                                                         L21I

  THE FOLLOWING LINE CONTAINS THE INDICES OF THE INTERNAL SURFACES OF SPACE     4

       4.                                                                                                         L21J

  THE FOLLOWING LINE CONTAINS THE INDICES OF THE UNDERGROUND FLOORS OF SPACE     4

       4.                                                                                                         L21L


THE FOLLOWING LINES CONTAIN DATA ON SPACE     5

                    GENERAL DATA
                         FLOOR                    FLOOR     TEMPER-   BLG. SP.
                         AREA        VOLUME       WEIGHT    ATURE     LOAD TYPE LABEL
                         12530.      106505.      47.       72.       1.        FLOOR 1 - CORE                    L21A

                    OCCUPANCY LOAD DATA
                         NO. OF      ACTIVITY     SCHEDULE
                         PEOPLE      LEVEL        INDEX
                         125.        450.         1.                                                              L21B

                    LIGHTING LOAD DATA
                         LIGHT       FRACTION     WATTS/    KILO-     SCHEDULE
                         FIX. TYPE   LITE HEAT    SQ.FT.    WATTS     INDEX
                         1.          .7           3.5                 2.                                          L21C

                    EQUIPMENT LOAD DATA
                         WATTS/      KILO-        SENSIBLE  LATENT    SCHEDULE
                         SQ.FT.      WATTS        BTU/HR    BTU/HR    INDEX
                         .42                                          2.                                          L21D

                    INFILTRATION LOAD DATA
                         INFILTR-N   AIR          HEIGHT TO EXHAUST ATR
                         CODE        CHANGES      NEU. ZONE FLOW
                         0.                                                                                       L21E

                    SPACE ENVELOPE DESCRIPTION DATA
                         NO. OF      NO. OF       NO. OF    NO. OF    NO. OF UNDERGROUND  NO. OF ADDITIONAL
                         DELAYEDS    QUICKS       WINDOWS   INTERNALS WALLS     FLOORS    IDENTICAL SPACES
                                                              4.                  1.                                L21F

  THE FOLLOWING LINE CONTAINS THE INDICES OF THE INTERNAL SURFACES OF SPACE     5

       1.        2.        3.        4.                                                                           L21J

  THE FOLLOWING LINE CONTAINS THE INDICES OF THE UNDERGROUND FLOORS OF SPACE     5

       5.                                                                                                         L21L
```

```
THE FOLLOWING LINES CONTAIN DATA ON SPACE     6

                    GENERAL DATA
                         FLOOR                    FLOOR     TEMPERA-   BLG. SP.
                         AREA       VOLUME        WEIGHT    ATURE      LOAD TYPE LABEL
                         2510.      21335.        47.       72.        1.        FLOOR TYP - SOUTH          L21A

                    OCCUPANCY LOAD DATA
                         NO. OF     ACTIVITY      SCHEDULE
                         PEOPLE     LEVEL         INDEX
                         25.        450.          1.                                                       L21B

                    LIGHTING LOAD DATA
                         LIGHT      FRACTION      WATTS/    KILO-      SCHEDULE
                         FIX. TYPE  LITE HEAT     SQ.FT.    WATTS      INDEX
                         1.         .7            3.5                  2.                                  L21C

                    EQUIPMENT LOAD DATA
                         WATTS/     KILO-         SENSIBLE  LATENT     SCHEDULE
                         SQ.FT.     WATTS         BTU/HR    BTU/HR     INDEX
                         .42                                           2.                                  L21D

                    INFILTRATION LOAD DATA
                         INFILTR-N  AIR           HEIGHT TO EXHAUST AIR
                         CODE       CHANGES       NEU. ZONE FLOW
                         1.         .125                                                                   L21E

                    SPACE ENVELOPE DESCRIPTION DATA
                         NO. OF     NO. OF        NO. OF    NO. OF     NO. OF UNDERGROUND  NO. OF ADDITIONAL
                         DELAYEDS   QUICKS        WINDOWS   INTERNALS  WALLS      FLOORS   IDENTICAL SPACES
                         2.                       1.        1.                            9.                L21F

THE FOLLOWING LINE CONTAINS THE INDICES OF THE DELAYED SURFACES OF SPACE     6
                                                                                                            L21G
     1.        1.

THE FOLLOWING LINE CONTAINS THE INDICES OF THE WINDOWS OF SPACE     6
                                                                                                            L21I
     1.

THE FOLLOWING LINE CONTAINS THE INDICES OF THE INTERNAL SURFACES OF SPACE     6
                                                                                                            L21J
     5.
```

```
THE FOLLOWING LINES CONTAIN DATA ON SPACE     7

                    GENERAL DATA
                         FLOOR                    FLOOR     TEMPERA-   BLG. SP.
                         AREA       VOLUME        WEIGHT    ATURE      LOAD TYPE LABEL
                         620.       5270.         47.       72.        1.        FLOOR TYP - WEST           L21A

                    OCCUPANCY LOAD DATA
                         NO. OF     ACTIVITY      SCHEDULE
                         PEOPLE     LEVEL         INDEX
                         6.         450.          1.                                                       L21B

                    LIGHTING LOAD DATA
                         LIGHT      FRACTION      WATTS/    KILO-      SCHEDULE
                         FIX. TYPE  LITE HEAT     SQ.FT.    WATTS      INDEX
                         1.         .7            3.5                  2.                                  L21C

                    EQUIPMENT LOAD DATA
                         WATTS/     KILO-         SENSIBLE  LATENT     SCHEDULE
                         SQ.FT.     WATTS         BTU/HR    BTU/HR     INDEX
                         .42                                           2.                                  L21D

                    INFILTRATION LOAD DATA
                         INFILTR-N  AIR           HEIGHT TO EXHAUST AIR
                         CODE       CHANGES       NEU. ZONE FLOW
                         1.         .125                                                                   L21E

                    SPACE ENVELOPE DESCRIPTION DATA
                         NO. OF     NO. OF        NO. OF    NO. OF     NO. OF UNDERGROUND  NO. OF ADDITIONAL
                         DELAYEDS   QUICKS        WINDOWS   INTERNALS  WALLS      FLOORS   IDENTICAL SPACES
                         2.                       1.        1.                            9.                L21F

THE FOLLOWING LINE CONTAINS THE INDICES OF THE DELAYED SURFACES OF SPACE     7
                                                                                                            L21G
     2.        2.

THE FOLLOWING LINE CONTAINS THE INDICES OF THE WINDOWS OF SPACE     7
                                                                                                            L21I
     2.

THE FOLLOWING LINE CONTAINS THE INDICES OF THE INTERNAL SURFACES OF SPACE     7
                                                                                                            L21J
     6.
```

THE FOLLOWING LINES CONTAIN DATA ON SPACE 8

```
GENERAL DATA
     FLOOR                    FLOOR     TEMPERA-   BLG. SP.
     AREA       VOLUME        WEIGHT    ATURE      LOAD TYPE LABEL
     2510.      21335.        47.       72.        1.        FLOOR TYP - NORTH                L21A

OCCUPANCY LOAD DATA
     NO. OF     ACTIVITY      SCHEDULE
     PEOPLE     LEVEL         INDEX
     25.        450.          1.                                                               L21B

LIGHTING LOAD DATA
     LIGHT      FRACTION      WATTS/    KILO-      SCHEDULE
     FIX. TYPE  LITE HEAT     SQ.FT.    WATTS      INDEX
     1.         .7            3.5                  2.                                           L21C

EQUIPMENT LOAD DATA
     WATTS/     KILO-         SENSIBLE  LATENT     SCHEDULE
     SQ.FT.     WATTS         BTU/HR    BTU/HR     INDEX
     .42                                            2.                                           L21D

INFILTRATION LOAD DATA
     INFILTR-N  AIR           HEIGHT TO EXHAUST ATR
     CODE       CHANGES       NEU. ZONE FLOW
     1.         .125                                                                            L21E

SPACE ENVELOPE DESCRIPTION DATA
     NO. OF     NO. OF        NO. OF    NO. OF     NO. OF UNDERGROUND  NO. OF ADDITIONAL
     DELAYEDS   QUICKS        WINDOWS   INTERNALS  WALLS     FLOORS    IDENTICAL SPACES
     2.                       1.        1.                            9.                         L21F
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE DELAYED SURFACES OF SPACE 8

```
     3.        3.                                                                               L21G
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE WINDOWS OF SPACE 8

```
     3.                                                                                         L21I
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE INTERNAL SURFACES OF SPACE 8

```
     7.                                                                                         L21J
```

THE FOLLOWING LINES CONTAIN DATA ON SPACE 9

```
GENERAL DATA
     FLOOR                    FLOOR     TEMPERA-   BLG. SP.
     AREA       VOLUME        WEIGHT    ATURE      LOAD TYPE LABEL
     620.       5270.         47.       72.        1.        FLOOR TYP - EAST                 L21A

OCCUPANCY LOAD DATA
     NO. OF     ACTIVITY      SCHEDULE
     PEOPLE     LEVEL         INDEX
     6.         450.          1.                                                               L21B

LIGHTING LOAD DATA
     LIGHT      FRACTION      WATTS/    KILO-      SCHEDULE
     FIX. TYPE  LITE HEAT     SQ.FT.    WATTS      INDEX
     1.         .7            3.5                  2.                                           L21C

EQUIPMENT LOAD DATA
     WATTS/     KILO-         SENSIBLE  LATENT     SCHEDULE
     SQ.FT.     WATTS         BTU/HR    BTU/HR     INDEX
     .42                                            2.                                           L21D

INFILTRATION LOAD DATA
     INFILTR-N  AIR           HEIGHT TO EXHAUST ATR
     CODE       CHANGES       NEU. ZONE FLOW
     1.         .125                                                                            L21E

SPACE ENVELOPE DESCRIPTION DATA
     NO. OF     NO. OF        NO. OF    NO. OF     NO. OF UNDERGROUND  NO. OF ADDITIONAL
     DELAYEDS   QUICKS        WINDOWS   INTERNALS  WALLS     FLOORS    IDENTICAL SPACES
     2.                       1.        1.                            9.                         L21F
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE DELAYED SURFACES OF SPACE 9

```
     4.        4.                                                                               L21G
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE WINDOWS OF SPACE 9

```
     4.                                                                                         L21I
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE INTERNAL SURFACES OF SPACE 9

```
     8.                                                                                         L21J
```

THE FOLLOWING LINES CONTAIN DATA ON SPACE 10

```
GENERAL DATA
     FLOOR                    FLOOR     TEMPER-   BLG. SP.
     AREA       VOLUME        WEIGHT    ATURE     LOAD TYPE LABEL
     12530.     106505.       47.       72.       1.        FLOOR TYP - CORE                L21A

OCCUPANCY LOAD DATA
     NO. OF     ACTIVITY      SCHEDULE
     PEOPLE     LEVEL         INDEX
     125.       450.          1.                                                            L21B

LIGHTING LOAD DATA
     LIGHT      FRACTION      WATTS/    KILO-     SCHEDULE
     FIX. TYPE  LITE HEAT     SQ.FT.    WATTS     INDEX
     1.         .7            3.5                 2.                                        L21C

EQUIPMENT LOAD DATA
     WATTS/     KILO-         SENSIBLE  LATENT    SCHEDULE
     SQ.FT.     WATTS         BTU/HR    BTU/HR    INDEX
     .42                                          2.                                        L21D

INFILTRATION LOAD DATA
     INFILTR-N  AIR           HEIGHT TO EXHAUST AIR
     CODE       CHANGES       NEU. ZONE FLOW
     0.                                                                                     L21E

SPACE ENVELOPE DESCRIPTION DATA
     NO. OF     NO. OF        NO. OF    NO. OF    NO. OF UNDERGROUND  NO. OF ADDITIONAL
     DELAYEDS   QUICKS        WINDOWS   INTERNALS WALLS     FLOORS    IDENTICAL SPACES
                                        4.                            9.                    L21F
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE INTERNAL SURFACES OF SPACE 10

```
     5.         6.         7.         8.                                                    L21J
```

THE FOLLOWING LINES CONTAIN DATA ON SPACE 11

```
GENERAL DATA
     FLOOR                    FLOOR     TEMPER-   BLG. SP.
     AREA       VOLUME        WEIGHT    ATURE     LOAD TYPE LABEL
     2510.      21335.        47.       72.       1.        FLOOR 12 - SOUTH                L21A

OCCUPANCY LOAD DATA
     NO. OF     ACTIVITY      SCHEDULE
     PEOPLE     LEVEL         INDEX
     25.        450.          1.                                                            L21B

LIGHTING LOAD DATA
     LIGHT      FRACTION      WATTS/    KILO-     SCHEDULE
     FIX. TYPE  LITE HEAT     SQ.FT.    WATTS     INDEX
     1.         .7            3.5                 2.                                        L21C

EQUIPMENT LOAD DATA
     WATTS/     KILO-         SENSIBLE  LATENT    SCHEDULE
     SQ.FT.     WATTS         BTU/HR    BTU/HR    INDEX
     .42                                          2.                                        L21D

INFILTRATION LOAD DATA
     INFILTR-N  AIR           HEIGHT TO EXHAUST AIR
     CODE       CHANGES       NEU. ZONE FLOW
     1.         .125                                                                       L21E

SPACE ENVELOPE DESCRIPTION DATA
     NO. OF     NO. OF        NO. OF    NO. OF    NO. OF UNDERGROUND  NO. OF ADDITIONAL
     DELAYEDS   QUICKS        WINDOWS   INTERNALS WALLS     FLOORS    IDENTICAL SPACES
     1.                       1.        2.                                              L21F
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE DELAYED SURFACES OF SPACE 11

```
     1.                                                                                     L21G
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE WINDOWS OF SPACE 11

```
     1.                                                                                     L21I
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE INTERNAL SURFACES OF SPACE 11

```
     9.         13.                                                                         L21J
```

THE FOLLOWING LINES CONTAIN DATA ON SPACE 12

```
GENERAL DATA
     FLOOR                    FLOOR     TEMPERA-   BLG. SP.
     AREA      VOLUME         WEIGHT    ATURE      LOAD TYPE LABEL
     620.      5270.          47.       72.        1.        FLOOR 12 - WEST                L21A

OCCUPANCY LOAD DATA
     NO. OF    ACTIVITY       SCHEDULE
     PEOPLE    LEVEL          INDEX
     6.        450.           1.                                                            L21B

LIGHTING LOAD DATA
     LIGHT     FRACTION       WATTS/     KILO-      SCHEDULE
     FIX. TYPE LITE HEAT      SQ.FT.     WATTS      INDEX
     1.        .7             3.5                   2.                                       L21C

EQUIPMENT LOAD DATA
     WATTS/    KILO-          SENSIBLE   LATENT     SCHEDULE
     SQ.FT.    WATTS          BTU/HR     BTU/HR     INDEX
     .42                                             2.                                       L21D

INFILTRATION LOAD DATA
     INFILTR-N ATR            HEIGHT TO EXHAUST ATR
     CODE      CHANGES        NEU. ZONE FLOW
     1.        .125                                                                          L21E

SPACE ENVELOPE DESCRIPTION DATA
     NO. OF    NO. OF         NO. OF     NO. OF     NO. OF UNDERGROUND  NO. OF ADDITIONAL
     DELAYEDS  QUICKS         WINDOWS    INTERNALS  WALLS     FLOORS    IDENTICAL SPACES
     1.                       1.         2.                                                   L21F
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE DELAYED SURFACES OF SPACE 12

```
     2.                                                                                        L21G
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE WINDOWS OF SPACE 12

```
     2.                                                                                        L21I
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE INTERNAL SURFACES OF SPACE 12

```
     10.       14.                                                                             L21J
```

THE FOLLOWING LINES CONTAIN DATA ON SPACE 13

```
GENERAL DATA
     FLOOR                    FLOOR     TEMPERA-   BLG. SP.
     AREA      VOLUME         WEIGHT    ATURE      LOAD TYPE LABEL
     2510.     21335.         47.       72.        1.        FLOOR 12 - NORTH               L21A

OCCUPANCY LOAD DATA
     NO. OF    ACTIVITY       SCHEDULE
     PEOPLE    LEVEL          INDEX
     25.       450.           1.                                                            L21B

LIGHTING LOAD DATA
     LIGHT     FRACTION       WATTS/     KILO-      SCHEDULE
     FIX. TYPE LITE HEAT      SQ.FT.     WATTS      INDEX
     1.        .7             3.5                   2.                                       L21C

EQUIPMENT LOAD DATA
     WATTS/    KILO-          SENSIBLE   LATENT     SCHEDULE
     SQ.FT.    WATTS          BTU/HR     BTU/HR     INDEX
     .42                                             2.                                       L21D

INFILTRATION LOAD DATA
     INFILTR-N ATR            HEIGHT TO EXHAUST ATR
     CODE      CHANGES        NEU. ZONE FLOW
     1.        .125                                                                          L21E

SPACE ENVELOPE DESCRIPTION DATA
     NO. OF    NO. OF         NO. OF     NO. OF     NO. OF UNDERGROUND  NO. OF ADDITIONAL
     DELAYEDS  QUICKS         WINDOWS    INTERNALS  WALLS     FLOORS    IDENTICAL SPACES
     1.                       1.         2.                                                   L21F
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE DELAYED SURFACES OF SPACE 13

```
     3.                                                                                        L21G
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE WINDOWS OF SPACE 13

```
     3.                                                                                        L21I
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE INTERNAL SURFACES OF SPACE 13

```
     11.       15.                                                                             L21J
```

```
THE FOLLOWING LINES CONTAIN DATA ON SPACE    14

                    GENERAL DATA
                         FLOOR                  FLOOR     TEMPERA-   BLG. SP.
                         AREA       VOLUME      WEIGHT    ATURE      LOAD TYPE LABEL
                         620.       5270.       47.       72.        1.        FLOOR 12 - EAST                L21A

                    OCCUPANCY LOAD DATA
                         NO. OF     ACTIVITY    SCHEDULE
                         PEOPLE     LEVEL       INDEX
                         6.         450.        1.                                                            L21B

                    LIGHTING LOAD DATA
                         LIGHT      FRACTION    WATTS/    KILO-    SCHEDULE
                         FIX. TYPE  LITE HEAT   SQ.FT.    WATTS    INDEX
                         1.         .7          3.5                2.                                          L21C

                    EQUIPMENT LOAD DATA
                         WATTS/     KILO-       SENSIBLE  LATENT   SCHEDULE
                         SQ.FT.     WATTS       BTU/HR    BTU/HR   INDEX
                         .42                                        2.                                        L21D

                    INFILTRATION LOAD DATA
                         INFILTR-N  AIR         HEIGHT TO EXHAUST AIR
                         CODE       CHANGES     NEU. ZONE FLOW
                         1.         .125                                                                      L21E

                    SPACE ENVELOPE DESCRIPTION DATA
                         NO. OF     NO. OF      NO. OF    NO. OF   NO. OF UNDERGROUND  NO. OF ADDITIONAL
                         DELAYEDS   QUICKS      WINDOWS   INTERNALS WALLS    FLOORS    IDENTICAL SPACES
                         1.                     1.        2.                                                 L21F

  THE FOLLOWING LINE CONTAINS THE INDICES OF THE DELAYED SURFACES OF SPACE    14

     4.                                                                                                       L21G

  THE FOLLOWING LINE CONTAINS THE INDICES OF THE WINDOWS OF SPACE    14

     4.                                                                                                       L21I

  THE FOLLOWING LINE CONTAINS THE INDICES OF THE INTERNAL SURFACES OF SPACE    14

     12.       16.                                                                                            L21J


THE FOLLOWING LINES CONTAIN DATA ON SPACE    15

                    GENERAL DATA
                         FLOOR                  FLOOR     TEMPERA-   BLG. SP.
                         AREA       VOLUME      WEIGHT    ATURE      LOAD TYPE LABEL
                         12530.     106505.     47.       72.        1.        FLOOR 12 - CORE                L21A

                    OCCUPANCY LOAD DATA
                         NO. OF     ACTIVITY    SCHEDULE
                         PEOPLE     LEVEL       INDEX
                         125.       450.        1.                                                            L21B

                    LIGHTING LOAD DATA
                         LIGHT      FRACTION    WATTS/    KILO-    SCHEDULE
                         FIX. TYPE  LITE HEAT   SQ.FT.    WATTS    INDEX
                         1.         .7          3.5                2.                                          L21C

                    EQUIPMENT LOAD DATA
                         WATTS/     KILO-       SENSIBLE  LATENT   SCHEDULE
                         SQ.FT.     WATTS       BTU/HR    BTU/HR   INDEX
                         .42                                        2.                                        L21D

                    INFILTRATION LOAD DATA
                         INFILTR-N  AIR         HEIGHT TO EXHAUST AIR
                         CODE       CHANGES     NEU. ZONE FLOW
                         0.                                                                                   L21E

                    SPACE ENVELOPE DESCRIPTION DATA
                         NO. OF     NO. OF      NO. OF    NO. OF   NO. OF UNDERGROUND  NO. OF ADDITIONAL
                         DELAYEDS   QUICKS      WINDOWS   INTERNALS WALLS    FLOORS    IDENTICAL SPACES
                                                          5.                                                 L21F

  THE FOLLOWING LINE CONTAINS THE INDICES OF THE INTERNAL SURFACES OF SPACE    15

     9.        10.       11.       12.       17.                                                              L21J
```

THE FOLLOWING LINES CONTAIN DATA ON SPACE 16

```
GENERAL DATA
     FLOOR                    FLOOR     TEMPERA-   BLG. SP.
     AREA        VOLUME       WEIGHT    ATURE      LOAD TYPE LABEL
     18790.                   24.       72.        1.   1.   FLOOR 12 - ROOF                    L21A

OCCUPANCY LOAD DATA
     NO. OF      ACTIVITY     SCHEDULE
     PEOPLE      LEVEL        INDEX
     0.                       1.                                                                L21B

LIGHTING LOAD DATA
     LIGHT       FRACTION     WATTS/    KILO-      SCHEDULE
     FIX. TYPE   LITE HEAT    SQ.FT.    WATTS      INDEX
     1.                                            2.                                           L21C

EQUIPMENT LOAD DATA
     WATTS/      KILO-        SENSIBLE  LATENT     SCHEDULE
     SQ.FT.      WATTS        BTU/HR    BTU/HR     INDEX
                                                   2.                                           L21D

INFILTRATION LOAD DATA
     INFILTR-N   AIR          HEIGHT TO EXHAUST AIR
     CODE        CHANGES      NEU. ZONE FLOW
     0.                                                                                         L21E

SPACE ENVELOPE DESCRIPTION DATA
     NO. OF      NO. OF       NO. OF    NO. OF     NO. OF UNDERGROUND  NO. OF ADDITIONAL
     DELAYEDS    QUICKS       WINDOWS   INTERNALS  WALLS     FLOORS    IDENTICAL SPACES
     5.                                  5.                                                     L21F
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE DELAYED SURFACES OF SPACE 16

```
     5.          6.          7.          8.          9.                                         L21G
```

THE FOLLOWING LINE CONTAINS THE INDICES OF THE INTERNAL SURFACES OF SPACE 16

```
     13.         14.         15.         16.         17.                                        L21J
```

```
...THE LOAD PROGRAM DATA IS ERROR FREE...
...THE LOAD PROGRAM DATA IS ERROR FREE...
...THE LOAD PROGRAM DATA IS ERROR FREE...
```

SUMMARY OF LOAD PROGRAM DIMENSIONED VARIABLE REQUIREMENTS

A =	16		
B =	9	AB =	5
C =	1	AC =	1
D =	4	AD =	5
E =	2	AE =	1
F =	17	AF =	1
G =	1	AG =	1
H =	5	AP =	8

YOUR PROBLEM FALLS INTO THE MEDIUM BUILDING CATAGORY
AND WILL REQUIRE USE OF THE PROGRAM NAMED (LAPM).

```
*****************************************************
*****************************************************
******                                         ******
******   INPUT DATA VERIFICATION RESULTS       ******
******              FOR SCOUT                  ******
******    TEMPERATURE ANALYSIS PROGRAM         ******
******              LEVEL 3.1                  ******
******                                         ******
*****************************************************
*****************************************************
```

THE FOLLOWING LINE CONTAINS THE PROBLEM DESCRIPTOR INFORMATION.

SCOUT SAMPLE BUILDING - CHICAGO, ILLINOIS V1

THE FOLLOWING LINE CONTAINS THE NUMBER OF SCHEDULED PRINTOUTS DESIRED AND NUMBER OF ZONES ON INPUT TAPE.

0. 16. V2

THE FOLLOWING LINE INDICATES IF SCHEDULING OF CHILLER AND BOILER IS DESIRED (0.= NO, 1.= YES).

0. V4

THE FOLLOWING LINE CONTAINS THE NUMBER OF TYPES OF OPTIONAL RESPONSE FACTOR FLOORS, CEILINGS AND FURNISHINGS BEING CONSIDERED.

0. 0. 0. V6

THE FOLLOWING LINE(S) CONTAIN DATA FOR SPACE 1

NO. OF FLOORS	NO. OF CEILINGS	NO. OF FURN.	WT. OF FURN.	
			10.	V13

THE FOLLOWING LINE(S) CONTAIN DATA FOR SPACE 2

NO. OF FLOORS	NO. OF CEILINGS	NO. OF FURN.	WT. OF FURN.
			10.

V13

THE FOLLOWING LINE(S) CONTAIN DATA FOR SPACE 3

NO. OF FLOORS	NO. OF CEILINGS	NO. OF FURN.	WT. OF FURN.
			10.

V13

THE FOLLOWING LINE(S) CONTAIN DATA FOR SPACE 4

NO. OF FLOORS	NO. OF CEILINGS	NO. OF FURN.	WT. OF FURN. 10.	
				V13

THE FOLLOWING LINE(S) CONTAIN DATA FOR SPACE 5

NO. OF FLOORS	NO. OF CEILINGS	NO. OF FURN.	WT. OF FURN. 10.	
				V13

THE FOLLOWING LINE(S) CONTAIN DATA FOR SPACE 6

NO. OF FLOORS	NO. OF CEILINGS	NO. OF FURN.	WT. OF FURN. 10.	
				V13

THE FOLLOWING LINE(S) CONTAIN DATA FOR SPACE 7

NO. OF FLOORS	NO. OF CEILINGS	NO. OF FURN.	WT. OF FURN. 10.	
				V13

THE FOLLOWING LINE(S) CONTAIN DATA FOR SPACE 8

NO. OF FLOORS	NO. OF CEILINGS	NO. OF FURN.	WT. OF FURN. 10.	
				V13

THE FOLLOWING LINE(S) CONTAIN DATA FOR SPACE 9

NO. OF FLOORS	NO. OF CEILINGS	NO. OF FURN.	WT. OF FURN. 10.	
				V13

THE FOLLOWING LINE(S) CONTAIN DATA FOR SPACE 10

NO. OF FLOORS	NO. OF CEILINGS	NO. OF FURN.	WT. OF FURN. 10.	
				V13

THE FOLLOWING LINE(S) CONTAIN DATA FOR SPACE 11

NO. OF FLOORS	NO. OF CEILINGS	NO. OF FURN.	WT. OF FURN. 10.	
				V13

THE FOLLOWING LINE(S) CONTAIN DATA FOR SPACE 12

NO. OF FLOORS	NO. OF CEILINGS	NO. OF FURN.	WT. OF FURN.
			10.

V13

THE FOLLOWING LINE(S) CONTAIN DATA FOR SPACE 13

NO. OF FLOORS	NO. OF CEILINGS	NO. OF FURN.	WT. OF FURN.
			10.

V13

THE FOLLOWING LINE(S) CONTAIN DATA FOR SPACE 14

NO. OF FLOORS	NO. OF CEILINGS	NO. OF FURN.	WT. OF FURN. 10.	
				V13

THE FOLLOWING LINE(S) CONTAIN DATA FOR SPACE 15

NO. OF FLOORS	NO. OF CEILINGS	NO. OF FURN.	WT. OF FURN. 10.	
				V13

THE FOLLOWING LINE(S) CONTAIN DATA FOR SPACE 16

NO. OF FLOORS	NO. OF CEILINGS	NO. OF FURN.	WT. OF FURN.
			0.

V13

THE FOLLOWING LINE CONTAINS THE NUMBER OF THERMOSTAT SCHEDULES.
1.

V17

THE FOLLOWING LINES DESCRIBE THERMOSTAT SCHEDULE NO. 1

WEEKDAY OPERATION

HOUR	THERM. TYPE	HIGH LIMIT	LOW LIMIT	THERM. TYPE	HIGH LIMIT	LOW LIMIT	
1 - 2	2.	200.	50.	2.	200.	50.	
3 - 4	2.	200.	50.	2.	200.	50.	
5 - 6	2.	200.	50.	2.	200.	50.	
7 - 8	1.	73.5	70.5	1.	73.5	70.5	V18
9 - 10	1.	73.5	70.5	1.	73.5	70.5	V18
11 - 12	1.	73.5	70.5	1.	73.5	70.5	V18
13 - 14	1.	73.5	70.5	1.	73.5	70.5	V18
15 - 16	1.	73.5	70.5	1.	73.5	70.5	V18
17 - 18	2.	200.	50.	2.	200.	50.	
19 - 20	2.	200.	50.	2.	200.	50.	
21 - 22	2.	200.	50.	2.	200.	50.	
23 - 24	2.	200.	50.	2.	200.	50.	

WEEKEND/HOLIDAY OPERATION

HOUR	THERM. TYPE	HIGH LIMIT	LOW LIMIT	THERM. TYPE	HIGH LIMIT	LOW LIMIT
1 - 2	2.	200.	50.	2.	200.	50.
3 - 4	2.	200.	50.	2.	200.	50.
5 - 6	2.	200.	50.	2.	200.	50.
7 - 8	2.	200.	50.	2.	200.	50.
9 - 10	2.	200.	50.	2.	200.	50.
11 - 12	2.	200.	50.	2.	200.	50.
13 - 14	2.	200.	50.	2.	200.	50.
15 - 16	2.	200.	50.	2.	200.	50.
17 - 18	2.	200.	50.	2.	200.	50.
19 - 20	2.	200.	50.	2.	200.	50.
21 - 22	2.	200.	50.	2.	200.	50.
23 - 24	2.	200.	50.	2.	200.	50.

THE FOLLOWING LINES DESCRIBE SPACE CHARACTERISTICS.

SPACE NO.	THERM. SCHED. INDEX	HEATING CAPACITY	COOLING CAPACITY	---PLENUM DATA--- YES/ NO	SP. NO.	CFM	--FAN SCHEDULING-- WEEKDAY ON	OFF	WEEKEND ON	OFF
1	01010101	67794.	74846.							
2	01010101	19035.	30308.							
3	01010101	71494.	59213.							
4	01010101	19431.	26484.							
5	01010101	26441.	123076.							
6	01010101	61268.	77607.							
7	01010101	17423.	30990.							
8	01010101	64969.	61974.							
9	01010101	17819.	27166.							
10	01010101	26441.	136859.							
11	01010101	57212.	74914.							
12	01010101	16298.	29867.							
13	01010101	60888.	60350.							
14	01010101	16693.	26239.							
15	01010101	26441.	136859.							
16	00000000	0.	0.	0.						

```
...THE TEMPERATURE VARIATION PROGRAM DATA IS ERROR FREE...
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...THE TEMPERATURE VARIATION PROGRAM DATA IS ERROR FREE...
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SUMMARY OF TEMPERATURE VARIATION PROGRAM DIMENSIONED VARIABLE REQUIREMENTS

A =	16	N =	1
B =	1	O =	1
C =	1	P =	1
D =	1	Q =	1
E =	1	R =	1
F =	1	S =	1
G =	1	T =	15
H =	1	U =	15
I =	1	V =	15
J =	1		
K =	1		
L =	1		
M =	1		

```
********************************************** RECAP OF CARD INPUT DATA **********************************************

                                        ****************************************************
                                        ****************************************************
                                        ******                                        ******
                                        ******   INPUT DATA VERIFICATION RESULTS      ******
                                        ******                FOR                     ******
                                        ****** SCOUT 3. / SYSTEMS ANALYSIS PROGRAM    ******
                                        ******                                        ******
                                        ****************************************************
                                        ****************************************************
                                                                  DVPSAP LEVEL 3.1


CARD TYPE-1.
DESCRIPTION OF RUN.
        SCOUT SAMPLE BUILDING - CHICAGO,ILLINOIS                                          S1
CARD TYPES-2,3.
     01/01  - MONTH AND DAY AT WHICH SIMULATION MAY BEGIN.(F-1,3)
     12/31  - MONTH AND DAY AT WHICH SIMULATION MAY END.(F-5,7)
1.          - NUMBER OF HOURLY PRINT PERIODS (CARD TYPE S-3).(F-9)
0.          - NUMBER OF RESET SCHEDULES TO BE READ (CARD TYPE S-4). (F-10)
2.          - NUMBER OF OPERATING SCHEDULE TYPES (CARD TYPE S-5) (F-11)
16.         - NUMBER OF ZONES ON LOAD TAPE. (F-12)
S2          - CARD INDEX

2.          - NO. OF ENERGY DISTRIBUTION SYSTEMS.(F-1)
0.          - NUMBER OF DX AND HEAT PUMP TYPES. (F-3)
2.          - NUMBER OF PROCESS LOADS. (F-4)
S3          - CARD INDEX

CARD TYPE-4.
HOURLY PRINT PERIODS.
  INDEX   BEGIN PRINT    FINISH PRINT   PRINT SWITCHES   (0=OFF/1=ON)                    CARD INDEX
   NO.     (MO./DAY)      (MO./DAY)      PRINT-1   PRINT-2   PRINT-3
    1        01/01          01/03          1.        1.

CARD TYPE-5.
TEMPERATURE RESET SCHEDULES.
  SCHEDULE      TOALO      TOAHI        TLO        THI        ** LABEL **                CARD INDEX
   NUMBER


CARD TYPE 6A.
OPERATING SCHEDULES.
SCHED. SUN. WEEK SAT. HOL.   LABEL                                          CARD INDEX
 NO.

  1  1.    11. 1.   1.   ELEVATOR                                           S6A

  2  1.    12. 1.   1.   HW HEATER                                          S6A

CARD TYPE 6B.
TWENTY-FOUR HOUR PROFILES.
 1- 2- 3- 4- 5- 6- 7- 8- 9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24- CARD INDEX
                      .50,10,05,30,15,05,05,05,20,50,05,05,05             S6A
                      .55,55,50,55,90,60,80,70,75,30,30,50,05             S6B


**************************************************************************************************************************
SYSTEM NUMBER  1.
CARD TYPE-7.
                                                                  NOTE--AN "R" TO THE LEFT OF A VARIABLE INDICATES
                                                                        IT MAY BE REQUIRED TO DEFINE THE GIVEN ENERGY
                                                                        DISTRIBUTION SYSTEM.

ERROR MESSAGES, IF ANY, WHICH FOLLOW REFER TO CARD TYPE S-7A.
R  12.          - DISTRIBUTION SYSTEM TYPE NUMBER. (F-1)
R  3.           - NUMBER OF ZONES ON SYSTEM.(F-2)
R  30.          - RELATIVE HUMIDITY SET POINT (PCT). (F-3)
R  7515.        - MINIMUM OUTSIDE AIR (SCFM). (F-4)
R  2.           - MIXED AIR OPTION. (1=FIXED.O.A., 2=ENTH/TEMP.E.C., 3=TEMP.E.C.) (F-5)
R  2.           - VAR.VOL. FAN CONTROL INDEX (1=VAR.SPD.MTR., 2=INLET.DPR., 3=DISCH.DPR.) (F-6)
   S7A          - CARD INDEX.

                - TEMPERATURE CONTROL MODE-1 (HOT DECK OR AHU LVG) INDEX. (F-1)
                - TEMPERATURE CONTROL MODE-2 (COLD DECK) INDEX. (F-2)
R  4.           - SUPPLY FAN PRESSURE (IN.H2O). (F-3)
R  1.5          - RETURN FAN PRESSURE (IN.H2O). (F-4)
R  1.0          - EXHAUST FAN PRESSURE (IN.H2O). (F-5)
R  1.           - VAR.VOL. REHEAT COIL OPTION (0=NO COIL, 1=REHEAT COIL).(F-6)
R  30.          - VAR.VOL. BOX MINIMUM AIR FLOW (PCT.).(F-7)
   S7B          - CARD INDEX.

R  55.          - FIXED AIR TEMPERATURE-1 (HOT DECK OR AHU LVG). (F-1)
                - FIXED AIR TEMPERATURE-2 (COLD DECK). (F-2)
                - TEMPERATURE RESET SCHEDULE INDEX-1 (HOT DECK OR AHU LVG). (F-3)
                - TEMPERATURE RESET SCHEDULE INDEX-2 (COLD DECK). (F-4)
R               - TEMPERATURE RESET SCHEDULE INDEX-3 (BASEBOARD HEATING). (F-5)
                - TEMPERATURE RESET SCHEDULE INDEX-4 (2-PIPE H.W.). (F-6)
                - INDUCTION UNIT INDUCED/PRIMARY AIR RATIO. (F-7)
   S7C          - CARD INDEX.

                - 2-PIPE FANCOIL CHANGEOVER TEMP. (DEG.F.). (F-1)
                - 2-PIPE INDUCTION UNIT CHANGEOVER TEMP. (DEG.F.). (F-2)
                - 2-PIPE SYSTEM WATER VOLUME (GALS.). (F-3)
                - FLOOR HEATING PANEL LOCATION (1=SLAB ON GRADE, 2=INTERMEDIATE SLAB). (F-4)
                - FLOOR HEATING PANEL AREA COVERED (SQ.FT.). (F-5)
                - FLOOR HEATING PANEL EXPOSED PERIMETER (LIN.FT.). (F-6)
   S7D          - CARD INDEX.

R  2.           - FAN SYSTEM SHUT-OFF CODE  (0.=FAN ON, 1.=FAN MAY BE OFF/BBD.HTG.ON, 2.=FAN AND BBD.HTG.MAY BE OFF,
                                              3.=FAN OFF/BBD.HTG.MAY BE ON.) (F-1)
R               - VENTILATION SCHEDULE OPERATING NO. (F-2)
R               - HEAT RECOVERY DEVICE SENSIBLE HEAT EFFICIENCY (PCT.). (F-3)
R               - HEAT RECOVERY DEVICE LATENT HEAT EFFICIENCY (PCT.). (F-4)
R               - DX OR HEAT PUMP TYPE INDEX. (F-5)
   S7E          - CARD INDEX.


CARD TYPE-8.
SPACE DATA.
   SYSTEM  LOAD PGM  MULTIPLCN   SUPPLY       EXHAUST    **BASEBOARD RADIATION**   PLENUM          SPACE LABEL
   SPACE   SPACE NO.  FACTOR    AIR (SCFM)   AIR (SCFM)    HEAT OUTPUT  LENGTH    SPACE NO.
    NO.                         (OPTIONAL)                  (BTU/HR)    (FT.)
     1   5.        1.                        600.          0.          0.                          S8 BOTTOM
     2   10.       10.                       600.          0.          0.                          S8 INTER
     3   15.       1.                        600.          0.          0.                          S8 TOP
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SYSTEM NUMBER  2.
CARD TYPE-7.
                                                                    NOTE--AN "R" TO THE LEFT OF A VARIABLE INDICATES
                                                                          IT MAY BE REQUIRED TO DEFINE THE GIVEN ENERGY
                                                                          DISTRIBUTION SYSTEM.
ERROR MESSAGES, IF ANY, WHICH FOLLOW REFER TO CARD TYPE S-7A.
R  3.          - DISTRIBUTION SYSTEM TYPE NUMBER. (F-1)
R  12.         - NUMBER OF ZONES ON SYSTEM.(F-2)
R  30.         - RELATIVE HUMIDITY SET POINT (PCT). (F-3)
R  3760.       - MINIMUM OUTSIDE AIR (SCFM). (F-4)
R  2.          - MIXED AIR OPTION. (1=FIXED.O.A., 2=ENTH/TEMP.E.C., 3=TEMP.E.C.) (F-5)
               - VAR.VOL. FAN CONTROL INDEX (1=VAR.SPD.MTR., 2=INLET.DPR., 3=DISCH.DPR.) (F-6)
   S7A         - CARD INDEX.

R  6.          - TEMPERATURE CONTROL MODE-1 (HOT DECK OR AHU LVG) INDEX. (F-1)
R  2.          - TEMPERATURE CONTROL MODE-2 (COLD DECK) INDEX. (F-2)
R  4.          - SUPPLY FAN PRESSURE (IN.H2O). (F-3)
R  1.5         - RETURN FAN PRESSURE (IN.H2O). (F-4)
R  1.0         - EXHAUST FAN PRESSURE (IN.H2O). (F-5)
               - VAR.VOL. REHEAT COIL OPTION (0=NO COIL, 1=REHEAT COIL).(F-6)
               - VAR.VOL. BOX MINIMUM AIR FLOW (PCT.).(F-7)
   S7B         - CARD INDEX.

R              - FIXED AIR TEMPERATURE-1 (HOT DECK OR AHU LVG). (F-1)
R              - FIXED AIR TEMPERATURE-2 (COLD DECK). (F-2)
R              - TEMPERATURE RESET SCHEDULE INDEX-1 (HOT DECK OR AHU LVG). (F-3)
R              - TEMPERATURE RESET SCHEDULE INDEX-2 (COLD DECK). (F-4)
R              - TEMPERATURE RESET SCHEDULE INDEX-3 (BASEBOARD HEATING). (F-5)
               - TEMPERATURE RESET SCHEDULE INDEX-4 (2-PIPE H.W.). (F-6)
               - INDUCTION UNIT INDUCED/PRIMARY AIR RATIO. (F-7)
   S7C         - CARD INDEX.

               - 2-PIPE FANCOIL CHANGEOVER TEMP. (DEG.F.). (F-1)
               - 2-PIPE INDUCTION UNIT CHANGEOVER TEMP. (DEG.F.). (F-2)
               - 2-PIPE SYSTEM WATER VOLUME (GALS.). (F-3)
               - FLOOR HEATING PANEL LOCATION (1=SLAB ON GRADE, 2=INTERMEDIATE SLAB). (F-4)
               - FLOOR HEATING PANEL AREA COVERED (SQ.FT.). (F-5)
               - FLOOR HEATING PANEL EXPOSED PERIMETER (LIN.FT.). (F-6)
   S7D         - CARD INDEX.


R  2.          - FAN SYSTEM SHUT-OFF CODE  (0.=FAN ON, 1.=FAN MAY BE OFF/BBD.HTG.ON, 2.=FAN AND BBD.HTG.MAY BE OFF,
                                             3.=FAN OFF/BBD.HTG.MAY BE ON.) (F-1)
R              - VENTILATION SCHEDULE OPERATING NO. (F-2)
R              - HEAT RECOVERY DEVICE SENSIBLE HEAT EFFICIENCY (PCT.). (F-3)
R              - HEAT RECOVERY DEVICE LATENT HEAT EFFICIENCY (PCT.). (F-4)
R              - DX OR HEAT PUMP TYPE INDEX. (F-5)
   S7E         - CARD INDEX.


CARD TYPE-8.
SPACE DATA.
   SYSTEM  LOAD PGM  MULTIPLER   SUPPLY      EXHAUST    **BASEBOARD RADIATION**   PLENUM          SPACE LABEL
   SPACE   SPACE NO.  FACTOR    AIR (SCFM)  AIR (SCFM)   HEAT OUTPUT  LENGTH      SPACE NO.
    NO.                         (OPTIONAL)               (BTU/HR)    (FT.)
      1    1.         1.                                  0.          0.                          S8 BOT.S
      2    2.         1.                                  0.          0.                          S8 BOT.W
      3    3.         1.                                  0.          0.                          S8 BOT.N
      4    4.         1.                                  0.          0.                          S8 BOT.E



      5    6.         10.                                 0.          0.                          S8 INT.S
      6    7.         10.                                 0.          0.                          S8 INT.W
      7    8.         10.                                 0.          0.                          S8 INT.N
      8    9.         10.                                 0.          0.                          S8 INT.E
      9    11.        1.                                  0.          0.                          S8 TOP.S
     10    12.        1.                                  0.          0.                          S8 TOP.W
     11    13.        1.                                  0.          0.                          S8 TOP.N
     12    14.        1.                                  0.          0.                          S8 TOP.E
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PRIMARY EQUIPMENT DESCRIPTION.
CASE NUMBER  1.
CARD TYPE-9.
CONV.SYS.1   - SYSTEM IDENTIFICATION LABEL. (F-1)
2.           - CHILLER TYPE INDEX  (1=RECIP. 2=HERM.CENT., 3=OPEN.CENT., 4=STM.ABS., 5=CENT.STM.TURB.). (F-2)
4.           - SOURCE OF CHILLER ENERGY , (1=GAS, 2=OIL, 3=STM, 4=ELEC). (F-3)
1.           - SOURCE OF HEATING ENERGY , (1=GAS, 2=OIL, 3=STM, 4=ELEC). (F-4)
0.           - SOURCE OF REHEAT COIL ENERGY ,  (0=SAME AS BOILER, NE.0=ELEC).(F-5)
0.           - NUMBER OF ON-SITE GENERATOR SETS. (F-6)
0.           - E/G SET TYPE INDEX (0=NONE, 1=DIESEL, 2=GAS). (F-7)
S9           - CARD INDEX

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CARD TYPE-10.
BOILER DATA.
2.           - NUMBER OF BOILERS. (F-1)
3500.        - SIZE OF EACH BOILER (MBH). (F-2)
     01/01   - MONTH AND DAY OF SEASONAL HEATING START-UP. (F-3,-5)
     12/31   - MONTH AND DAY OF SEASONAL HEATING SHUT-DOWN. (F-7,-9)
             - HEATING VALUE HEATING OIL(BTU/GAL). (F-11)
2.           - BOILER PERFORMANCE TYPE (1=CONSTANT LOAD, OHIO STATE CURVE). (F-12)
80.          - BOILER PEAK EFFICIENCY (PCT.) (F-13)
S10          - CARD INDEX


CARD TYPE-11.
  CHILLER DATA.
2.           - NUMBER OF CHILLERS. (F-1)
275.         - SIZE OF EACH CHILLER (TONS). (F-2)
     01/01   - MONTH AND DAY OF SEASONAL COOLING START-UP. (F-3,-5)
     12/31   - MONTH AND DAY OF SEASONAL COOLING SHUT-DOWN. (F-7,-9)
20.          - MINIMUM PART LOAD CUT-OFF FOR CHILLERS (PER CENT). (F-11)
45.          - CHILLED WATER SET POINT TEMP. (DEG.F.). (F-12)
75.          - COOLING TOWER WATER LOW LIMIT TEMPERATURE (DEG.F.). (F-13)
S11          - CARD INDEX


CARD TYPE-12  PUMP HEADS.
80.          - TOTAL BOILER WATER PUMP HEAD (FT.). (F-1)
60.          - TOTAL CHILLED WATER PUMP HEAD (FT.). (F-2)
50.          - TOTAL CONDENSER WATER PUMP HEAD (FT.). (F-3)
S12          - CARD INDEX


CARD TYPE-13.
MISCELLANEOUS DATA.
0.           - EXTERNAL LIGHTING POWER (KW). (F-1)
85.          - FAN AND PUMP MOTOR EFFICIENCY (PER CENT). (F-2)
145000.      - HEATING VALUE DIESEL FUEL. (F-3)
             - PEAK BUILDING BASE POWER REQUIREMENT (KW). (F-4)
1.5          - BOILER AUXILLARIES (HP). (F-5)
S13          - CARD INDEX


CARD TYPE-14.
STEAM AND STM. TURBINE DATA.
15.          - GENERAL HEATING PURCHASED STEAM PRESSURE (PSIG)  (F-1)
250.         - GENERAL HEATING PURCHASED STEAM TEMPERATURE (DEG.F.)  (F-2)




             - CHILLER ENTERING STEAM PRESSURE (PSIG)  (F-3)
             - CHILLER ENTERING STEAM TEMPERATURE (DEG.F.)  (F-4)
3500.        - STEAM TURBINE SPEED (RPM). (F-5)
15.          - PROCESS STEAM ENTERING STEAM PRESSURE (PSIG). (F-6)
250.         - PROCESS STEAM ENTERING STEAM TEMPERATURE (DEG.F.). (F-7)
S14          - CARD INDEX


CARD TYPE-15
 FLOOR PANEL HEATING DATA.
             - FLOOR COVERING INDEX (1=BARE, 2=TILE, 3=CARPET). (F-1)
             - FLOOR INSULATION CONDUCTANCE. (F-2)
             - FLOOR INSULATION THICKNESS. (F-3)
S15          - CARD INDEX
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CARD TYPE-17  PROCESS LOADS

                ENERGY  OPERATING
PEAK LOAD       SOURCE   SCHEDULE     LABEL                                    CARD INDEX
                  CODE     NUMBER
175.        4.          1.        ELEVATOR                                     S17
48.         4.          2.        HW.HEATER                                    S17

ENERGY SOURCE CODE DEFINITION

CODE UNITS DESCRIPTION
 0   MBH  INDIRECT PROCESS
 1   MBH  GAS
 2   MBH  HEATING OIL
 3   MBH  STEAM
 4   KW   ELECTRIC

PROGRAM INPUT DATA IS ERROR FREE.
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DIMENSIONED VARIABLES ARE AS FOLLOWS...
LA=          1
LB=         15
LC=          2
LD=         12
LE=         16
LF=          1
LG=          1
LH=          1
```

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*****************************************************************************
*                                                                           *
*                                                                           *
*                                                                           *
*                        DESIGN LOAD ANALYSIS FOR                           *
*                                                                           *
*                                                                           *
*                         SCOUT SAMPLE BUILDING                             *
*                                                                           *
*                                                                           *
*                              BUILDING                                     *
*                                                                           *
*                                                                           *
*                           CHICAGO, ILLINOIS                               *
*                                                                           *
*                                                                           *
*  ENGINEER   - GARD, INC.                                                  *
*  PROJECT NO - 1234                                                        *
*  DATE       - 15 MAY 1977                                                 *
*                                                                           *
*                                                                           *
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 *****                                 *****
 ***** ECHO OF INPUT DATA FOR          *****
 *****  LOAD ANALYSIS PROGRAM          *****
 *****        LEVEL 3.1.M              *****
 *****                                 *****
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```

BASIC DATA	42.00	87.00	6.00	.98	.98	0.00	
PROCESSING DATA	2.00	.05	4.00	55.00	58.00	110.00	130.00
DESIGN LOAD DATA							
ALTITUDE, MONTHS(MAR-DEC)	600.00	0 0 0 0 1 0 0 0 0 1					
SUMMER DAY	92.00	20.00	70.00	5.00			
WINTER DAY	1.00	5.00	-5.00	15.00			
CALENDAR SPECS	1972.00	1.00	366.00	17.00			
NO. OF PRINTOUT SCHEDULES	0.00						
NO. OF SCHEDULE TYPES	2.00						

SCHEDULE TYPE 1 PEOPLE

INDICES (SUN, WKDAY, SAT, HOL) 1. 11. 1. 1.

HOUR	-- 1--	2--	3--	4--	5--	6--	7--	8--	9--	10--	11--	12--	13--	14--	15--	16--	17--	18--	19--	20--	21--	22--	23--	24
SUN	0.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.00
MON	0.000	.000	.000	.000	.000	.000	.001	.001	.001	.00	.80	.40	.801	.001	.001	.00	.10	.10	.10	.100	.000	.000	.000	.00
TUE	0.000	.000	.000	.000	.000	.000	.001	.001	.001	.00	.80	.40	.801	.001	.001	.00	.10	.10	.10	.100	.000	.000	.000	.00
WED	0.000	.000	.000	.000	.000	.000	.001	.001	.001	.00	.80	.40	.801	.001	.001	.00	.10	.10	.10	.100	.000	.000	.000	.00
THU	0.000	.000	.000	.000	.000	.000	.001	.001	.001	.00	.80	.40	.801	.001	.001	.00	.10	.10	.10	.100	.000	.000	.000	.00
FRI	0.000	.000	.000	.000	.000	.000	.001	.001	.001	.00	.80	.40	.801	.001	.001	.00	.10	.10	.10	.100	.000	.000	.000	.00
SAT	0.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.00
HOL	0.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.00

SCHEDULE TYPE 2 LIGHTS

INDICES (SUN, WKDAY, SAT, HOL) 13. 12. 13. 13.

HOUR	-- 1--	2--	3--	4--	5--	6--	7--	8--	9--	10--	11--	12--	13--	14--	15--	16--	17--	18--	19--	20--	21--	22--	23--	24
SUN	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05
MON	.05	.05	.05	.05	.05	.05	.10	.20	.90	.95	.95	.80	.30	.90	.90	.95	.80	.70	.60	.40	.30	.20	.20	.05
TUE	.05	.05	.05	.05	.05	.05	.10	.20	.90	.95	.95	.80	.30	.90	.90	.95	.80	.70	.60	.40	.30	.20	.20	.05
WED	.05	.05	.05	.05	.05	.05	.10	.20	.90	.95	.95	.80	.30	.90	.90	.95	.80	.70	.60	.40	.30	.20	.20	.05
THU	.05	.05	.05	.05	.05	.05	.10	.20	.90	.95	.95	.80	.30	.90	.90	.95	.80	.70	.60	.40	.30	.20	.20	.05
FRI	.05	.05	.05	.05	.05	.05	.10	.20	.90	.95	.95	.80	.30	.90	.90	.95	.80	.70	.60	.40	.30	.20	.20	.05
SAT	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05
HOL	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05

PROPERTIES OF WALLS AND ROOFS

THERE ARE 2 TYPES OF DELAYED SURFACES, 0 OF WHICH ARE STANDARD SURFACES

RESPONSE FACTOR SURFACE CODE NO. 26 (NON-STANDARD)
LABEL = TYP. WALL
NO. OF TERMS, COMMON RATIO = 8 .3295265001
XYZ RESPONSE FACTORS =

.8304298924	.0125033556	.8473926729
-.7623059168	.0332119214	-.5250854585
-.0013250241	.0137476184	-.1716852308
-.0003677267	.0045512387	-.0565684122
-.0001206979	.0014998996	-.0186407464
-.0000397699	.0004942577	-.0061426196
-.0000131052	.0001628710	-.0020241559
-.0000043185	.0000536703	-.0006670130

RESPONSE FACTOR SURFACE CODE NO. 27 (NON-STANDARD)
LABEL = TYP. ROOF
NO. OF TERMS, COMMON RATIO = 8 .8508217837
XYZ RESPONSE FACTORS =

.8514929357	.0013354699	1.3403373103
-.7541613522	.0100479075	-.2256730001
-.0009524806	.0117530147	-.1537586384
-.0007922742	.0101304076	-.1297921446
-.0006735845	.0086231001	-.1103990864
-.0005730854	.0073368394	-.0939290199
-.0004875931	.0062423463	-.0799168284
-.0004148548	.0053111243	-.0679949776

THERE ARE 9 DELAYED SURFACES

SURFACE NUMBER	SIM. SUR. INDEX	SURFACE ABSORPN	SURFACE ROUGHNESS	SUR. TYPE INDEX	GROUND REFLECPN	SURFACE AREA	AZIMUTH ANGLE	TILT ANGLE	INF. FLOW COEFF.	SURFACE LABEL
1	0.	.80	6.	26.	.20	887.	180.	90.	0.00	S. WALL
2	1.	.80	6.	26.	.20	245.	270.	90.	0.00	W. WALL
3	1.	.80	6.	26.	.20	887.	0.	90.	0.00	N. WALL
4	2.	.80	6.	26.	.20	245.	90.	90.	0.00	E. WALL
5	1.	.80	6.	26.	.20	887.	180.	90.	0.00	S. WALL 12
6	2.	.80	6.	26.	.20	245.	270.	90.	0.00	W. WALL 12
7	3.	.80	6.	26.	.20	887.	0.	90.	0.00	N. WALL 12
8	4.	.80	6.	26.	.20	245.	90.	90.	0.00	E. WALL 12
9	0.	.90	1.	27.	.20	18790.	180.	0.	0.00	ROOF

THERE ARE 0 QUICK SURFACES

THERE ARE 4 WINDOW SURFACES

WINDOW NUMBER	SIM. WIN. INDEX	GLASS TYPE	NO. PANES	SHADE COEFF.	GROUND REFLECTN	WINDOW AREA	AZIMUTH ANGLE	TILT ANGLE	WIN/SKY FACTOR	WIN/GRND FACTOR	INF. FLOW COEFF.	WINDOW PERIMETER
1	0.	1.	2.	.39	.20	1749.	180.	90.	.50	.50	0.00	0.
2	1.	1.	2.	.39	.20	482.	270.	90.	.50	.50	0.00	0.
3	1.	1.	2.	.39	.20	1749.	0.	90.	.50	.50	0.00	0.
4	2.	1.	2.	.39	.20	482.	90.	90.	.50	.50	0.00	0.

```
THERE ARE   17 INTERNAL H.T. SURFACES

     1 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR 1 - Z 1/5
        AREA, HEAT TRANSFER COEFFICIENT =           2049.00        .39
        CONNECTED TO SPACES                               1          5

     2 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR 1 - Z 2/5
        AREA, HEAT TRANSFER COEFFICIENT =            442.00        .39
        CONNECTED TO SPACES                               2          5

     3 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR 1 - Z 3/5
        AREA, HEAT TRANSFER COEFFICIENT =           2049.00        .39
        CONNECTED TO SPACES                               3          5

     4 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR 1 - Z 4/5
        AREA, HEAT TRANSFER COEFFICIENT =            442.00        .39
        CONNECTED TO SPACES                               4          5

     5 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR TYP - Z 6/10
        AREA, HEAT TRANSFER COEFFICIENT =           2049.00        .39
        CONNECTED TO SPACES                               6         10

     6 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR TYP - Z 7/10
        AREA, HEAT TRANSFER COEFFICIENT =            442.00        .39
        CONNECTED TO SPACES                               7         10

     7 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR TYP - Z 8/10
        AREA, HEAT TRANSFER COEFFICIENT =           2049.00        .39
        CONNECTED TO SPACES                               8         10

     8 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR TYP - Z 9/10
        AREA, HEAT TRANSFER COEFFICIENT =            442.00        .39
        CONNECTED TO SPACES                               9         10

     9 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR 12 - Z 11/15
        AREA, HEAT TRANSFER COEFFICIENT =           2049.00        .39
        CONNECTED TO SPACES                              11         15

    10 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR 12 - Z 12/15
        AREA, HEAT TRANSFER COEFFICIENT =            442.00        .39
        CONNECTED TO SPACES                              12         15

    11 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR 12 - Z 13/15
        AREA, HEAT TRANSFER COEFFICIENT =           2049.00        .39
        CONNECTED TO SPACES                              13         15


    12 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR 12 - Z 14/15
        AREA, HEAT TRANSFER COEFFICIENT =            442.00        .39
        CONNECTED TO SPACES                              14         15

    13 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR 12 - Z 11/16
        AREA, HEAT TRANSFER COEFFICIENT =           2510.00        .31
        CONNECTED TO SPACES                              11         16

    14 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR 12 - Z 12/16
        AREA, HEAT TRANSFER COEFFICIENT =            620.00        .31
        CONNECTED TO SPACES                              12         16

    15 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR 12 - Z 13/16
        AREA, HEAT TRANSFER COEFFICIENT =           2510.00        .31
        CONNECTED TO SPACES                              13         16

    16 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR 12 - Z 14/16
        AREA, HEAT TRANSFER COEFFICIENT =            620.00        .31
        CONNECTED TO SPACES                              14         16

    17 OF 17 INTERNAL HEAT TRANSFER SURFACES
        LABEL =                                  FLOOR 12 - Z 15/16
        AREA, HEAT TRANSFER COEFFICIENT =          12530.00        .31
        CONNECTED TO SPACES                              15         16
```

```
THERE ARE    0 UNDERGROUND WALLS


THERE ARE    5 UNDERGROUND FLOORS

       1 OF  5 UNDERGROUND FLOORS
          LABEL =                                  ZONE 1
          AREA, HEAT TRANSFER COEFFICIENT =          2510.00        .10

       2 OF  5 UNDERGROUND FLOORS
          LABEL =                                  ZONE 2
          AREA, HEAT TRANSFER COEFFICIENT =           620.00        .10

       3 OF  5 UNDERGROUND FLOORS
          LABEL =                                  ZONE 3
          AREA, HEAT TRANSFER COEFFICIENT =          2510.00        .10

       4 OF  5 UNDERGROUND FLOORS
          LABEL =                                  ZONE 4
          AREA, HEAT TRANSFER COEFFICIENT =           620.00        .10

       5 OF  5 UNDERGROUND FLOORS
          LABEL =                                  ZONE 5
          AREA, HEAT TRANSFER COEFFICIENT =         12530.00        .10


GROUND TEMPERATURES

     MONTH      TEMPERATURE
       1            41.00
       2            38.00
       3            39.00
       4            43.00
       5            49.00
       6            58.00
       7            61.00
       8            64.00
       9            63.00
      10            59.00
      11            53.00
      12            46.00


SPACE  1 OF   16 TOTAL SPACES          (FLOOR 1 - SOUTH      )

      2510.0  SQ FT FLOOR AREA
     21335.0  CU FT VOLUME
        47.0  LBS/SQ FT FLOOR WEIGHT
        72.0  F TEMPERATURE
         1.0 BUILDING LOAD SUMMATION OPTION,
         0.0 SPACE/PLENUM INDICATOR

     PEOPLE
        25.0  PERSONS
       450.0  BTU/HR ACTIVITY LEVEL
         1.0  SCHEDULE INDEX

     LIGHTING
        1.00  TYPE OF LIGHTING FIXTURE
         .76  FRACTION OF LIGHT HEAT TO SPACE
        3.50  WATTS/SQ FT
        0.00  KW
        2.00  SCHEDULE INDEX

     EQUIPMENT
         .42  WATTS/SQ FT
        0.00  KW
        0.00  BTU/HR SENSIBLE
        0.00  BTU/HR LATENT
        2.00  SCHEDULE INDEX

     INFILTRATION
        1.00  INFILTRATION CODE
         .13  INFILTRATION RATE
        0.00  HEIGHT FROM NEUTRAL ZONE
        0.00  EXHAUST AIR FLOW

     SPACE ENVELOPE INCLUDES
           2  DELAYED H.T.S.
           0  QUICK H.T.S.
           1  WINDOW H.T.S.
           1  INTERNAL H.T.S.
           0  UNDERGROUND WALLS
           1  UNDERGROUND FLOORS
           0  ADDITIONAL IDENTICAL SPACES

     INDICES OF DELAYED SURFACE
                  1    1

     INDICES OF WINDOW SURFACE
                  1

     INDICES OF INTERNAL H.T. SURFACES
                  1

     INDICES OF UNDERGROUND FLOORS
                  1
```

```
SPACE  2 OF   16 TOTAL SPACES          (FLOOR 1 - WEST      )

      620.0  SQ FT FLOOR AREA
     5270.0  CU FT VOLUME
       47.0  LBS/SQ FT FLOOR WEIGHT
       72.0  F TEMPERATURE
        1.0 BUILDING LOAD SUMMATION OPTION,
        0.0 SPACE/PLENUM INDICATOR

    PEOPLE
        6.0  PERSONS
      450.0  BTU/HR ACTIVITY LEVEL
        1.0  SCHEDULE INDEX

    LIGHTING
       1.00  TYPE OF LIGHTING FIXTURE
        .70  FRACTION OF LIGHT HEAT TO SPACE
       3.50  WATTS/SQ FT
       0.00  KW
       2.00  SCHEDULE INDEX

    EQUIPMENT
        .42  WATTS/SQ FT
       0.00  KW
       0.00  BTU/HR SENSIBLE
       0.00  BTU/HR LATENT
       2.00  SCHEDULE INDEX

    INFILTRATION
       1.00  INFILTRATION CODE
        .13  INFILTRATION RATE
       0.00  HEIGHT FROM NEUTRAL ZONE
       0.00  EXHAUST AIR FLOW

    SPACE ENVELOPE INCLUDES
          2  DELAYED H.T.S.
          0  QUICK H.T.S.
          1  WINDOW H.T.S.
          1  INTERNAL H.T.S.
          0  UNDERGROUND WALLS
          1  UNDERGROUND FLOORS
          0  ADDITIONAL IDENTICAL SPACES

    INDICES OF DELAYED SURFACE
                  2    2

    INDICES OF WINDOW SURFACE
                  2

    INDICES OF INTERNAL H.T. SURFACES
                  2

    INDICES OF UNDERGROUND FLOORS
                  2
```

```
SPACE  3 OF   16 TOTAL SPACES          (FLOOR 1 - NORTH     )

     2510.0  SQ FT FLOOR AREA
    21335.0  CU FT VOLUME
       47.0  LBS/SQ FT FLOOR WEIGHT
       72.0  F TEMPERATURE
        1.0 BUILDING LOAD SUMMATION OPTION,
        0.0 SPACE/PLENUM INDICATOR

    PEOPLE
       25.0  PERSONS
      450.0  BTU/HR ACTIVITY LEVEL
        1.0  SCHEDULE INDEX

    LIGHTING
       1.00  TYPE OF LIGHTING FIXTURE
        .70  FRACTION OF LIGHT HEAT TO SPACE
       3.50  WATTS/SQ FT
       0.00  KW
       2.00  SCHEDULE INDEX

    EQUIPMENT
        .42  WATTS/SQ FT
       0.00  KW
       0.00  BTU/HR SENSIBLE
       0.00  BTU/HR LATENT
       2.00  SCHEDULE INDEX

    INFILTRATION
       1.00  INFILTRATION CODE
        .13  INFILTRATION RATE
       0.00  HEIGHT FROM NEUTRAL ZONE
       0.00  EXHAUST AIR FLOW

    SPACE ENVELOPE INCLUDES
          2  DELAYED H.T.S.
          0  QUICK H.T.S.
          1  WINDOW H.T.S.
          1  INTERNAL H.T.S.
          0  UNDERGROUND WALLS
          1  UNDERGROUND FLOORS
          0  ADDITIONAL IDENTICAL SPACES

    INDICES OF DELAYED SURFACE
                  3    3

    INDICES OF WINDOW SURFACE
                  3

    INDICES OF INTERNAL H.T. SURFACES
                  3

    INDICES OF UNDERGROUND FLOORS
                  3
```

```
SPACE  4 OF   16 TOTAL SPACES          (FLOOR 1 - EAST      )

       620.0  SQ FT FLOOR AREA
      5270.0  CU FT VOLUME
        47.0  LBS/SQ FT FLOOR WEIGHT
        72.0  F TEMPERATURE
         1.0 BUILDING LOAD SUMMATION OPTION,
         0.0 SPACE/PLENUM INDICATOR

     PEOPLE
         6.0  PERSONS
       450.0  BTU/HR ACTIVITY LEVEL
         1.0  SCHEDULE INDEX

     LIGHTING
        1.00  TYPE OF LIGHTING FIXTURE
         .70  FRACTION OF LIGHT HEAT TO SPACE
        3.50  WATTS/SQ FT
        0.00  KW
        2.00  SCHEDULE INDEX

     EQUIPMENT
         .42  WATTS/SQ FT
        0.00  KW
        0.00  BTU/HR SENSIBLE
        0.00  BTU/HR LATENT
        2.00  SCHEDULE INDEX

     INFILTRATION
        1.00  INFILTRATION CODE
         .13  INFILTRATION RATE
        0.00  HEIGHT FROM NEUTRAL ZONE
        0.00  EXHAUST AIR FLOW

     SPACE ENVELOPE INCLUDES
           2  DELAYED H.T.S.
           0  QUICK H.T.S.
           1  WINDOW H.T.S.
           1  INTERNAL H.T.S.
           0  UNDERGROUND WALLS
           1  UNDERGROUND FLOORS
           0  ADDITIONAL IDENTICAL SPACES

     INDICES OF DELAYED SURFACE
                 4     4

     INDICES OF WINDOW SURFACE
                 4

     INDICES OF INTERNAL H.T. SURFACES
                 4

     INDICES OF UNDERGROUND FLOORS
                 4
```

```
SPACE  5 OF   16 TOTAL SPACES          (FLOOR 1 - CORE      )

     12530.0  SQ FT FLOOR AREA
    106505.0  CU FT VOLUME
        47.0  LBS/SQ FT FLOOR WEIGHT
        72.0  F TEMPERATURE
         1.0 BUILDING LOAD SUMMATION OPTION,
         0.0 SPACE/PLENUM INDICATOR

     PEOPLE
       125.0  PERSONS
       450.0  BTU/HR ACTIVITY LEVEL
         1.0  SCHEDULE INDEX

     LIGHTING
        1.00  TYPE OF LIGHTING FIXTURE
         .70  FRACTION OF LIGHT HEAT TO SPACE
        3.50  WATTS/SQ FT
        0.00  KW
        2.00  SCHEDULE INDEX

     EQUIPMENT
         .42  WATTS/SQ FT
        0.00  KW
        0.00  BTU/HR SENSIBLE
        0.00  BTU/HR LATENT
        2.00  SCHEDULE INDEX

     INFILTRATION
        0.00  INFILTRATION CODE
        0.00  INFILTRATION RATE
        0.00  HEIGHT FROM NEUTRAL ZONE
        0.00  EXHAUST AIR FLOW

     SPACE ENVELOPE INCLUDES
           0  DELAYED H.T.S.
           0  QUICK H.T.S.
           0  WINDOW H.T.S.
           4  INTERNAL H.T.S.
           0  UNDERGROUND WALLS
           1  UNDERGROUND FLOORS
           0  ADDITIONAL IDENTICAL SPACES

     INDICES OF INTERNAL H.T. SURFACES
                 1     2     3     4

     INDICES OF UNDERGROUND FLOORS
                 5
```

```
SPACE  6 OF   16 TOTAL SPACES          (FLOOR TYP - SOUTH    )

     2510.0  SQ FT FLOOR AREA
    21335.0  CU FT VOLUME
       47.0  LBS/SQ FT FLOOR WEIGHT
       72.0  F TEMPERATURE
        1.0 BUILDING LOAD SUMMATION OPTION,
        0.0 SPACE/PLENUM INDICATOR

    PEOPLE
       25.0  PERSONS
      450.0  BTU/HR ACTIVITY LEVEL
        1.0  SCHEDULE INDEX

    LIGHTING
       1.00  TYPE OF LIGHTING FIXTURE
        .70  FRACTION OF LIGHT HEAT TO SPACE
       3.50  WATTS/SQ FT
       0.00  KW
       2.00  SCHEDULE INDEX

    EQUIPMENT
        .42  WATTS/SQ FT
       0.00  KW
       0.00  BTU/HR SENSIBLE
       0.00  BTU/HR LATENT
       2.00  SCHEDULE INDEX

    INFILTRATION
       1.00  INFILTRATION CODE
        .13  INFILTRATION RATE
       0.00  HEIGHT FROM NEUTRAL ZONE
       0.00  EXHAUST AIR FLOW

    SPACE ENVELOPE INCLUDES
          2  DELAYED H.T.S.
          0  QUICK H.T.S.
          1  WINDOW H.T.S.
          1  INTERNAL H.T.S.
          0  UNDERGROUND WALLS
          0  UNDERGROUND FLOORS
          9  ADDITIONAL IDENTICAL SPACES

    INDICES OF DELAYED SURFACE
                1    1

    INDICES OF WINDOW SURFACE
                1

    INDICES OF INTERNAL H.T. SURFACES
                5
```

```
SPACE  7 OF   16 TOTAL SPACES          (FLOOR TYP - WEST     )

      620.0  SQ FT FLOOR AREA
     5270.0  CU FT VOLUME
       47.0  LBS/SQ FT FLOOR WEIGHT
       72.0  F TEMPERATURE
        1.0 BUILDING LOAD SUMMATION OPTION,
        0.0 SPACE/PLENUM INDICATOR

    PEOPLE
        6.0  PERSONS
      450.0  BTU/HR ACTIVITY LEVEL
        1.0  SCHEDULE INDEX

    LIGHTING
       1.00  TYPE OF LIGHTING FIXTURE
        .70  FRACTION OF LIGHT HEAT TO SPACE
       3.50  WATTS/SQ FT
       0.00  KW
       2.00  SCHEDULE INDEX

    EQUIPMENT
        .42  WATTS/SQ FT
       0.00  KW
       0.00  BTU/HR SENSIBLE
       0.00  BTU/HR LATENT
       2.00  SCHEDULE INDEX

    INFILTRATION
       1.00  INFILTRATION CODE
        .13  INFILTRATION RATE
       0.00  HEIGHT FROM NEUTRAL ZONE
       0.00  EXHAUST AIR FLOW

    SPACE ENVELOPE INCLUDES
          2  DELAYED H.T.S.
          0  QUICK H.T.S.
          1  WINDOW H.T.S.
          1  INTERNAL H.T.S.
          0  UNDERGROUND WALLS
          0  UNDERGROUND FLOORS
          9  ADDITIONAL IDENTICAL SPACES

    INDICES OF DELAYED SURFACE
                2    2

    INDICES OF WINDOW SURFACE
                2

    INDICES OF INTERNAL H.T. SURFACES
                6
```

```
SPACE  8 OF   16 TOTAL SPACES          (FLOOR TYP - NORTH    )

      2510.0  SQ FT FLOOR AREA
     21335.0  CU FT VOLUME
        47.0  LBS/SQ FT FLOOR WEIGHT
        72.0  F TEMPERATURE
         1.0 BUILDING LOAD SUMMATION OPTION,
         0.0 SPACE/PLENUM INDICATOR

     PEOPLE
        25.0  PERSONS
       450.0  BTU/HR ACTIVITY LEVEL
         1.0  SCHEDULE INDEX

     LIGHTING
        1.00  TYPE OF LIGHTING FIXTURE
         .70  FRACTION OF LIGHT HEAT TO SPACE
        3.50  WATTS/SQ FT
        0.00  KW
        2.00  SCHEDULE INDEX

     EQUIPMENT
         .42  WATTS/SQ FT
        0.00  KW
        0.00  BTU/HR SENSIBLE
        0.00  BTU/HR LATENT
        2.00  SCHEDULE INDEX

     INFILTRATION
        1.00  INFILTRATION CODE
         .13  INFILTRATION RATE
        0.00  HEIGHT FROM NEUTRAL ZONE
        0.00  EXHAUST AIR FLOW

     SPACE ENVELOPE INCLUDES
           2  DELAYED H.T.S.
           0  QUICK H.T.S.
           1  WINDOW H.T.S.
           1  INTERNAL H.T.S.
           0  UNDERGROUND WALLS
           0  UNDERGROUND FLOORS
           9  ADDITIONAL IDENTICAL SPACES

     INDICES OF DELAYED SURFACE
                 3    3

     INDICES OF WINDOW SURFACE
                 3

     INDICES OF INTERNAL H.T. SURFACES
                 7
```

```
SPACE  9 OF   16 TOTAL SPACES          (FLOOR TYP - EAST     )

       620.0  SQ FT FLOOR AREA
      5270.0  CU FT VOLUME
        47.0  LBS/SQ FT FLOOR WEIGHT
        72.0  F TEMPERATURE
         1.0 BUILDING LOAD SUMMATION OPTION,
         0.0 SPACE/PLENUM INDICATOR

     PEOPLE
         6.0  PERSONS
       450.0  BTU/HR ACTIVITY LEVEL
         1.0  SCHEDULE INDEX

     LIGHTING
        1.00  TYPE OF LIGHTING FIXTURE
         .70  FRACTION OF LIGHT HEAT TO SPACE
        3.50  WATTS/SQ FT
        0.00  KW
        2.00  SCHEDULE INDEX

     EQUIPMENT
         .42  WATTS/SQ FT
        0.00  KW
        0.00  BTU/HR SENSIBLE
        0.00  BTU/HR LATENT
        2.00  SCHEDULE INDEX

     INFILTRATION
        1.00  INFILTRATION CODE
         .13  INFILTRATION RATE
        0.00  HEIGHT FROM NEUTRAL ZONE
        0.00  EXHAUST AIR FLOW

     SPACE ENVELOPE INCLUDES
           2  DELAYED H.T.S.
           0  QUICK H.T.S.
           1  WINDOW H.T.S.
           1  INTERNAL H.T.S.
           0  UNDERGROUND WALLS
           0  UNDERGROUND FLOORS
           9  ADDITIONAL IDENTICAL SPACES

     INDICES OF DELAYED SURFACE
                 4    4

     INDICES OF WINDOW SURFACE
                 4

     INDICES OF INTERNAL H.T. SURFACES
                 8
```

```
SPACE 10 OF   16 TOTAL SPACES          (FLOOR TYP - CORE     )

    12530.0  SQ FT FLOOR AREA
   106505.0  CU FT VOLUME
      47.0  LBS/SQ FT FLOOR WEIGHT
      72.0  F TEMPERATURE
       1.0 BUILDING LOAD SUMMATION OPTION,
       0.0 SPACE/PLENUM INDICATOR

    PEOPLE
      125.0  PERSONS
      450.0  BTU/HR ACTIVITY LEVEL
        1.0  SCHEDULE INDEX

    LIGHTING
       1.00  TYPE OF LIGHTING FIXTURE
        .70  FRACTION OF LIGHT HEAT TO SPACE
       3.50  WATTS/SQ FT
       0.00  KW
       2.00  SCHEDULE INDEX

    EQUIPMENT
        .42  WATTS/SQ FT
       0.00  KW
       0.00  BTU/HR SENSIBLE
       0.00  BTU/HR LATENT
       2.00  SCHEDULE INDEX

    INFILTRATION
       0.00  INFILTRATION CODE
       0.00  INFILTRATION RATE
       0.00  HEIGHT FROM NEUTRAL ZONE
       0.00  EXHAUST AIR FLOW

    SPACE ENVELOPE INCLUDES
          0  DELAYED H.T.S.
          0  QUICK H.T.S.
          0  WINDOW H.T.S.
          4  INTERNAL H.T.S.
          0  UNDERGROUND WALLS
          0  UNDERGROUND FLOORS
          9  ADDITIONAL IDENTICAL SPACES

    INDICES OF INTERNAL H.T. SURFACES
                 5    6    7    8
```

```
SPACE 11 OF   16 TOTAL SPACES          (FLOOR 12 - SOUTH     )

     2510.0  SQ FT FLOOR AREA
    21335.0  CU FT VOLUME
       47.0  LBS/SQ FT FLOOR WEIGHT
       72.0  F TEMPERATURE
        1.0 BUILDING LOAD SUMMATION OPTION,
        0.0 SPACE/PLENUM INDICATOR

    PEOPLE
       25.0  PERSONS
      450.0  BTU/HR ACTIVITY LEVEL
        1.0  SCHEDULE INDEX

    LIGHTING
       1.00  TYPE OF LIGHTING FIXTURE
        .70  FRACTION OF LIGHT HEAT TO SPACE
       3.50  WATTS/SQ FT
       0.00  KW
       2.00  SCHEDULE INDEX

    EQUIPMENT
        .42  WATTS/SQ FT
       0.00  KW
       0.00  BTU/HR SENSIBLE
       0.00  BTU/HR LATENT
       2.00  SCHEDULE INDEX

    INFILTRATION
       1.00  INFILTRATION CODE
        .13  INFILTRATION RATE
       0.00  HEIGHT FROM NEUTRAL ZONE
       0.00  EXHAUST AIR FLOW

    SPACE ENVELOPE INCLUDES
          1  DELAYED H.T.S.
          0  QUICK H.T.S.
          1  WINDOW H.T.S.
          2  INTERNAL H.T.S.
          0  UNDERGROUND WALLS
          0  UNDERGROUND FLOORS
          0  ADDITIONAL IDENTICAL SPACES

    INDICES OF DELAYED SURFACE
                 1

    INDICES OF WINDOW SURFACE
                 1

    INDICES OF INTERNAL H.T. SURFACES
                 9   13
```

```
SPACE 12 OF   16 TOTAL SPACES          (FLOOR 12 - WEST      )

      620.0  SQ FT FLOOR AREA
     5270.0  CU FT VOLUME
       47.0  LBS/SQ FT FLOOR WEIGHT
       72.0  F TEMPERATURE
        1.0 BUILDING LOAD SUMMATION OPTION,
        0.0 SPACE/PLENUM INDICATOR

     PEOPLE
        6.0  PERSONS
      450.0  BTU/HR ACTIVITY LEVEL
        1.0  SCHEDULE INDEX

     LIGHTING
       1.00  TYPE OF LIGHTING FIXTURE
        .70  FRACTION OF LIGHT HEAT TO SPACE
       3.50  WATTS/SQ FT
       0.00  KW
       2.00  SCHEDULE INDEX

     EQUIPMENT
        .42  WATTS/SQ FT
       0.00  KW
       0.00  BTU/HR SENSIBLE
       0.00  BTU/HR LATENT
       2.00  SCHEDULE INDEX

     INFILTRATION
       1.00  INFILTRATION CODE
        .13  INFILTRATION RATE
       0.00  HEIGHT FROM NEUTRAL ZONE
       0.00  EXHAUST AIR FLOW

     SPACE ENVELOPE INCLUDES
           1  DELAYED H.T.S.
           0  QUICK H.T.S.
           1  WINDOW H.T.S.
           2  INTERNAL H.T.S.
           0  UNDERGROUND WALLS
           0  UNDERGROUND FLOORS
           0  ADDITIONAL IDENTICAL SPACES

     INDICES OF DELAYED SURFACE
                 2

     INDICES OF WINDOW SURFACE
                 2

     INDICES OF INTERNAL H.T. SURFACES
                10   14
```

```
SPACE 13 OF   16 TOTAL SPACES          (FLOOR 12 - NORTH     )

     2510.0  SQ FT FLOOR AREA
    21335.0  CU FT VOLUME
       47.0  LBS/SQ FT FLOOR WEIGHT
       72.0  F TEMPERATURE
        1.0 BUILDING LOAD SUMMATION OPTION,
        0.0 SPACE/PLENUM INDICATOR

     PEOPLE
       25.0  PERSONS
      450.0  BTU/HR ACTIVITY LEVEL
        1.0  SCHEDULE INDEX

     LIGHTING
       1.00  TYPE OF LIGHTING FIXTURE
        .70  FRACTION OF LIGHT HEAT TO SPACE
       3.50  WATTS/SQ FT
       0.00  KW
       2.00  SCHEDULE INDEX

     EQUIPMENT
        .42  WATTS/SQ FT
       0.00  KW
       0.00  BTU/HR SENSIBLE
       0.00  BTU/HR LATENT
       2.00  SCHEDULE INDEX

     INFILTRATION
       1.00  INFILTRATION CODE
        .13  INFILTRATION RATE
       0.00  HEIGHT FROM NEUTRAL ZONE
       0.00  EXHAUST AIR FLOW

     SPACE ENVELOPE INCLUDES
           1  DELAYED H.T.S.
           0  QUICK H.T.S.
           1  WINDOW H.T.S.
           2  INTERNAL H.T.S.
           0  UNDERGROUND WALLS
           0  UNDERGROUND FLOORS
           0  ADDITIONAL IDENTICAL SPACES

     INDICES OF DELAYED SURFACE
                 3

     INDICES OF WINDOW SURFACE
                 3

     INDICES OF INTERNAL H.T. SURFACES
                11   15
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SPACE 14 OF   16 TOTAL SPACES          (FLOOR 12 - EAST      )

      620.0  SQ FT FLOOR AREA
     5270.0  CU FT VOLUME
       47.0  LBS/SQ FT FLOOR WEIGHT
       72.0  F TEMPERATURE
        1.0 BUILDING LOAD SUMMATION OPTION,
        0.0 SPACE/PLENUM INDICATOR

    PEOPLE
        6.0  PERSONS
      450.0  BTU/HR ACTIVITY LEVEL
        1.0  SCHEDULE INDEX

    LIGHTING
       1.00  TYPE OF LIGHTING FIXTURE
        .70  FRACTION OF LIGHT HEAT TO SPACE
       3.50  WATTS/SQ FT
       0.00  KW
       2.00  SCHEDULE INDEX

    EQUIPMENT
        .42  WATTS/SQ FT
       0.00  KW
       0.00  BTU/HR SENSIBLE
       0.00  BTU/HR LATENT
       2.00  SCHEDULE INDEX

    INFILTRATION
       1.00  INFILTRATION CODE
        .13  INFILTRATION RATE
       0.00  HEIGHT FROM NEUTRAL ZONE
       0.00  EXHAUST AIR FLOW

    SPACE ENVELOPE INCLUDES
          1  DELAYED H.T.S.
          0  QUICK H.T.S.
          1  WINDOW H.T.S.
          2  INTERNAL H.T.S.
          0  UNDERGROUND WALLS
          0  UNDERGROUND FLOORS
          0  ADDITIONAL IDENTICAL SPACES

    INDICES OF DELAYED SURFACE
                4

    INDICES OF WINDOW SURFACE
                4

    INDICES OF INTERNAL H.T. SURFACES
               12   16
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```
SPACE 15 OF   16 TOTAL SPACES          (FLOOR 12 - CORE      )

    12530.0  SQ FT FLOOR AREA
   106505.0  CU FT VOLUME
       47.0  LBS/SQ FT FLOOR WEIGHT
       72.0  F TEMPERATURE
        1.0 BUILDING LOAD SUMMATION OPTION,
        0.0 SPACE/PLENUM INDICATOR

    PEOPLE
      125.0  PERSONS
      450.0  BTU/HR ACTIVITY LEVEL
        1.0  SCHEDULE INDEX

    LIGHTING
       1.00  TYPE OF LIGHTING FIXTURE
        .70  FRACTION OF LIGHT HEAT TO SPACE
       3.50  WATTS/SQ FT
       0.00  KW
       2.00  SCHEDULE INDEX

    EQUIPMENT
        .42  WATTS/SQ FT
       0.00  KW
       0.00  BTU/HR SENSIBLE
       0.00  BTU/HR LATENT
       2.00  SCHEDULE INDEX

    INFILTRATION
       0.00  INFILTRATION CODE
       0.00  INFILTRATION RATE
       0.00  HEIGHT FROM NEUTRAL ZONE
       0.00  EXHAUST AIR FLOW

    SPACE ENVELOPE INCLUDES
          0  DELAYED H.T.S.
          0  QUICK H.T.S.
          0  WINDOW H.T.S.
          5  INTERNAL H.T.S.
          0  UNDERGROUND WALLS
          0  UNDERGROUND FLOORS
          0  ADDITIONAL IDENTICAL SPACES

    INDICES OF INTERNAL H.T. SURFACES
                9   10   11   12   17
```

SPACE 16 OF 16 TOTAL SPACES (FLOOR 12 - ROOF)

18790.0 SQ FT FLOOR AREA
0.0 CU FT VOLUME
24.0 LBS/SQ FT FLOOR WEIGHT
72.0 F TEMPERATURE
1.0 BUILDING LOAD SUMMATION OPTION.
1.0 SPACE/PLENUM INDICATOR

PEOPLE
0.0 PERSONS
0.0 BTU/HR ACTIVITY LEVEL
1.0 SCHEDULE INDEX

LIGHTING
1.00 TYPE OF LIGHTING FIXTURE
0.00 FRACTION OF LIGHT HEAT TO SPACE
0.00 WATTS/SQ FT
0.00 KW
2.00 SCHEDULE INDEX

EQUIPMENT
0.00 WATTS/SQ FT
0.00 KW
0.00 BTU/HR SENSIBLE
0.00 BTU/HR LATENT
2.00 SCHEDULE INDEX

INFILTRATION
0.00 INFILTRATION CODE
0.00 INFILTRATION RATE
0.00 HEIGHT FROM NEUTRAL ZONE
0.00 EXHAUST AIR FLOW

SPACE ENVELOPE INCLUDES
5 DELAYED H.T.S.
0 QUICK H.T.S.
0 WINDOW H.T.S.
5 INTERNAL H.T.S.
0 UNDERGROUND WALLS
0 UNDERGROUND FLOORS
0 ADDITIONAL IDENTICAL SPACES

INDICES OF DELAYED SURFACE
5 6 7 8 9

INDICES OF INTERNAL H.T. SURFACES
13 14 15 16 17

SUMMARY BY MONTH OF DESIGN DAY WEATHER GENERATED FOR USE IN HEATING AND COOLING CALCULATIONS

SUMMER DAY INPUT PARAMETERS
1. MONTH ASSUMED TO BE JULY OR AUGUST
2. MAXIMUM DRY-BULB TEMPERATURE = 92.
3. DAILY SWING OF DRY-BULB TEMPERATURE = 20.
4. AVERAGE DEW-POINT TEMPERATURE = 70.
5. AVERAGE WIND SPEED = 5.

WINTER DAY INPUT PARAMETERS
1. MONTH ASSUMED TO BE DECEMBER
2. MINIMUM DRY-BULB TEMPERATURE = 1.
3. DAILY SWING OF DRY-BULB TEMPERATURE = 5.
4. AVERAGE DEW-POINT TEMPERATURE = -5.
5. AVERAGE WIND SPEED = 15.

	A.M. 1	2	3	4	5	6	7	8	9	10	11	12	P.M. 1	2	3	4	5	6	7	8	9	10	11	12
MARCH																								
DBT	45.	44.	43.	43.	43.	45.	47.	49.	51.	53.	55.	58.	60.	62.	63.	62.	61.	60.	58.	56.	54.	52.	49.	47.
WBT	42.	41.	40.	40.	40.	42.	44.	46.	48.	50.	52.	55.	57.	59.	60.	59.	58.	57.	55.	53.	51.	49.	46.	44.
APRIL																								
DBT	55.	54.	53.	53.	53.	55.	57.	59.	61.	63.	65.	68.	70.	72.	73.	72.	71.	70.	68.	66.	64.	62.	59.	57.
WBT	52.	51.	50.	50.	50.	52.	54.	56.	58.	60.	62.	64.	65.	65.	66.	65.	65.	65.	64.	63.	61.	59.	56.	54.
MAY																								
DBT	64.	63.	62.	62.	62.	64.	66.	68.	70.	72.	74.	77.	79.	81.	82.	81.	80.	79.	77.	75.	73.	71.	68.	66.
WBT	61.	60.	59.	59.	59.	61.	63.	65.	67.	68.	68.	69.	70.	70.	71.	70.	70.	70.	69.	69.	68.	67.	65.	63.
JUNE																								
DBT	71.	70.	69.	69.	69.	71.	73.	75.	77.	79.	81.	84.	86.	88.	89.	88.	87.	86.	84.	82.	80.	78.	75.	73.
WBT	68.	67.	66.	66.	66.	68.	69.	70.	70.	71.	71.	72.	73.	73.	74.	73.	73.	73.	72.	72.	71.	71.	70.	69.
JULY																								
DBT	74.	73.	72.	72.	72.	74.	76.	78.	80.	82.	84.	87.	89.	91.	92.	91.	90.	89.	87.	85.	83.	81.	78.	76.
WBT	71.	70.	69.	69.	69.	71.	71.	72.	72.	73.	73.	74.	75.	75.	76.	75.	75.	75.	74.	74.	73.	73.	72.	71.
AUGUST																								
DBT	74.	73.	72.	72.	72.	74.	76.	78.	80.	82.	84.	87.	89.	91.	92.	91.	90.	89.	87.	85.	83.	81.	78.	76.
WBT	71.	70.	69.	69.	69.	71.	71.	72.	72.	73.	73.	74.	75.	75.	76.	75.	75.	75.	74.	74.	73.	73.	72.	71.
SEPTEMBER																								
DBT	69.	67.	66.	66.	66.	68.	70.	72.	74.	76.	78.	81.	83.	85.	86.	85.	84.	83.	81.	79.	77.	75.	72.	70.
WBT	65.	64.	63.	63.	63.	65.	67.	69.	69.	70.	70.	71.	72.	72.	73.	72.	72.	72.	71.	71.	70.	70.	69.	67.
OCTOBER																								
DBT	59.	57.	56.	56.	56.	58.	60.	62.	64.	66.	68.	71.	73.	75.	76.	75.	74.	73.	71.	69.	67.	65.	62.	60.
WBT	55.	54.	53.	53.	53.	55.	57.	59.	61.	63.	65.	66.	67.	67.	68.	67.	67.	67.	66.	65.	64.	62.	59.	57.
NOVEMBER																								
DBT	48.	47.	46.	46.	46.	48.	50.	52.	54.	56.	58.	61.	63.	65.	66.	65.	64.	63.	61.	59.	57.	55.	52.	50.
WBT	45.	44.	43.	43.	43.	45.	47.	49.	51.	53.	55.	58.	60.	61.	62.	61.	61.	60.	58.	56.	54.	52.	49.	47.
DECEMBER																								
DBT	2.	2.	1.	1.	1.	1.	1.	2.	3.	4.	4.	5.	6.	6.	6.	6.	6.	5.	5.	4.	4.	4.	3.	3.
WBT	-1.	-1.	-2.	-2.	-2.	-2.	-2.	-1.	-0.	1.	1.	2.	3.	3.	3.	3.	3.	2.	2.	1.	1.	1.	0.	-0.

NOTE - TEMPERATURE CORRECTION FACTORS BASED ON
CARRIER SYSTEM DESIGN MANUAL PGS. 1-18,19.
WBT IS SET AT LEAST 3 DEG. F BELOW DBT.

DESIGN LOAD CALCULATION RESULTS FOR
SCOUT SAMPLE BUILDING
CHICAGO, ILLINOIS

SPACE NO. 1

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 2510.

VOLUME (CU.FT.) 21335.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 91 / 75 / 14 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 1 / -1 / 7 / DEC. 5

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	5386.	0.	-8111.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	11562.	0.	-53598.
WINDOW SOLAR	35009.	0.	3497.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	-2761.	0.	-6526.
OCCUPANTS	6469.	3772.	0.
LIGHT TO SPACE	15947.	0.	1049.
EQUIPMENT TO SPACE	2919.	0.	180.
INFILTRATION	314.	495.	-4284.
TOTAL	74846.	4267.	-67794.

TOTAL SPACE COOLING 79113. BTUH
TOTAL SPACE HEATING -67794. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	4448. CFM	1.77 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	5402. CFM	2.15 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	1474. CFM	.59 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	965. CFM	.38 CFM/SQ.FT.

DESIGN LOAD CALCULATION RESULTS FOR
SCOUT SAMPLE BUILDING
CHICAGO, ILLINOIS

SPACE NO. 2

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 620.

VOLUME (CU.FT.) 5270.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 90 / 75 / 17 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 1 / -1 / 7 / DEC. 5

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	2246.	0.	-2251.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	3294.	0.	-14771.
WINDOW SOLAR	20141.	0.	353.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	-682.	0.	-1612.
OCCUPANTS	527.	91.	0.
LIGHT TO SPACE	4012.	0.	259.
EQUIPMENT TO SPACE	696.	0.	44.
INFILTRATION	74.	123.	-1058.
TOTAL	30308.	214.	-19035.

TOTAL SPACE COOLING 30522. BTUH
TOTAL SPACE HEATING -19035. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	1801. CFM	2.91 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	2187. CFM	3.53 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	414. CFM	.67 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	271. CFM	.44 CFM/SQ.FT.

SPACE NO. 3

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 2510.

VOLUME (CU.FT.) 21335.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 91 / 75 / 16 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 1 / -1 / 6 / DEC. 5

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	3248.	0.	-8163.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	12226.	0.	-53728.
WINDOW SOLAR	18781.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	-2761.	0.	-6526.
OCCUPANTS	6787.	3772.	0.
LIGHT TO SPACE	17467.	0.	1049.
EQUIPMENT TO SPACE	3150.	0.	180.
INFILTRATION	314.	495.	-4308.
TOTAL	59213.	4267.	-71495.

TOTAL SPACE COOLING 63480. BTUH
TOTAL SPACE HEATING -71495. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	3519. CFM	1.40 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	4273. CFM	1.70 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	1554. CFM	.62 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	1018. CFM	.41 CFM/SQ.FT.

SPACE NO. 4

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 620.

VOLUME (CU.FT.) 5270.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 82 / 72 / 10 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 1 / -1 / 6 / DEC. 5

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	1853.	0.	-2252.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	1657.	0.	-14807.
WINDOW SOLAR	18187.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	-682.	0.	-1612.
OCCUPANTS	1445.	905.	0.
LIGHT TO SPACE	3313.	0.	259.
EQUIPMENT TO SPACE	670.	0.	44.
INFILTRATION	42.	131.	-1064.
TOTAL	26484.	1036.	-19431.

TOTAL SPACE COOLING 27520. BTUH
TOTAL SPACE HEATING -19431. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	1574. CFM	2.54 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	1911. CFM	3.08 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	422. CFM	.68 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	277. CFM	.45 CFM/SQ.FT.

SPACE NO. 5

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 12530.

VOLUME (CU.FT.) 106505.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 91 / 75 / 16 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 2 / 0 / 24 / DEC. 5

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	0.	0.	0.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	0.	0.	0.
WINDOW SOLAR	0.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	-13783.	0.	-32578.
OCCUPANTS	33935.	18861.	0.
LIGHT TO SPACE	87198.	0.	5239.
EQUIPMENT TO SPACE	15727.	0.	898.
INFILTRATION	0.	0.	0.
TOTAL	123077.	18861.	-26441.

TOTAL SPACE COOLING 141937. BTUH
TOTAL SPACE HEATING -26441. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	7315. CFM	.58 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	8883. CFM	.71 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	575. CFM	.05 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	377. CFM	.03 CFM/SQ.FT.

SPACE NO. 6

SPACE REPETITION FACTOR 10

AREA (SQ.FT.) 2510.

VOLUME (CU.FT.) 21335.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 91 / 75 / 14 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 1 / -1 / 7 / DEC. 5

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	5386.	0.	-8111.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	11562.	0.	-53598.
WINDOW SOLAR	35009.	0.	3497.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	6469.	3772.	0.
LIGHT TO SPACE	15947.	0.	1049.
EQUIPMENT TO SPACE	2919.	0.	180.
INFILTRATION	314.	495.	-14284.
TOTAL	77607.	4267.	-61268.

TOTAL SPACE COOLING 81874. BTUH
TOTAL SPACE HEATING -61268. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	4613. CFM	1.84 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	5601. CFM	2.23 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	1332. CFM	.53 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	873. CFM	.35 CFM/SQ.FT.

SCOUT SAMPLE BUILDING
CHICAGO, ILLINOIS

SPACE NO. 7

SPACE REPETITION FACTOR 10

AREA (SQ.FT.) 620.

VOLUME (CU.FT.) 5270.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 90 / 75 / 17 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 1 / -1 / 7 / DEC. 5

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	2246.	0.	-2251.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	3294.	0.	-14771.
WINDOW SOLAR	20141.	0.	353.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	527.	91.	0.
LIGHT TO SPACE	4012.	0.	259.
EQUIPMENT TO SPACE	696.	0.	44.
INFILTRATION	74.	123.	-1058.
TOTAL	30990.	214.	-17423.

TOTAL SPACE COOLING 31204. BTUH
TOTAL SPACE HEATING -17423. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	1842. CFM	2.97 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	2237. CFM	3.61 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	379. CFM	.61 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	248. CFM	.40 CFM/SQ.FT.

SCOUT SAMPLE BUILDING
CHICAGO, ILLINOIS

SPACE NO. 8

SPACE REPETITION FACTOR 10

AREA (SQ.FT.) 2510.

VOLUME (CU.FT.) 21335.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 91 / 75 / 16 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 1 / -1 / 6 / DEC. 5

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	3248.	0.	-8163.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	12226.	0.	-53728.
WINDOW SOLAR	18781.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	6787.	3772.	0.
LIGHT TO SPACE	17467.	0.	1049.
EQUIPMENT TO SPACE	3150.	0.	180.
INFILTRATION	314.	495.	-4308.
TOTAL	61974.	4267.	-64969.

TOTAL SPACE COOLING 66241. BTUH
TOTAL SPACE HEATING -64969. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	3683. CFM	1.47 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	4473. CFM	1.78 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	1412. CFM	.56 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	925. CFM	.37 CFM/SQ.FT.

SCOUT SAMPLE BUILDING
CHICAGO, ILLINOIS

SPACE NO. 9

SPACE REPETITION FACTOR 10

AREA (SQ.FT.) 620.

VOLUME (CU.FT.) 5270.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 82 / 72 / 10 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 1 / -1 / 6 / DEC. 5

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	1853.	0.	-2252.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	1657.	0.	-14807.
WINDOW SOLAR	18187.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	1445.	905.	0.
LIGHT TO SPACE	3313.	0.	259.
EQUIPMENT TO SPACE	670.	0.	44.
INFILTRATION	42.	131.	-1064.
TOTAL	27166.	1036.	-17819.

TOTAL SPACE COOLING 28202. BTUH
TOTAL SPACE HEATING -17819. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	1615. CFM	2.60 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	1961. CFM	3.16 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	387. CFM	.62 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	254. CFM	.41 CFM/SQ.FT.

SCOUT SAMPLE BUILDING
CHICAGO, ILLINOIS

SPACE NO. 10

SPACE REPETITION FACTOR 10

AREA (SQ.FT.) 12530.

VOLUME (CU.FT.) 106505.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 91 / 75 / 16 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 0 / 0 / 0 / 0

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	0.	0.	0.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	0.	0.	0.
WINDOW SOLAR	0.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	33935.	18861.	0.
LIGHT TO SPACE	87198.	0.	0.
EQUIPMENT TO SPACE	15727.	0.	0.
INFILTRATION	0.	0.	0.
TOTAL	136860.	18861.	0.

TOTAL SPACE COOLING 155720. BTUH
TOTAL SPACE HEATING 0. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	8134. CFM	.65 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	9877. CFM	.79 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	0. CFM	0.00 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	0. CFM	0.00 CFM/SQ.FT.

SPACE NO. 11

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 2510.

VOLUME (CU.FT.) 21335.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 91 / 75 / 14 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 1 / -1 / 7 / DEC. 5

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	2693.	0.	-4056.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	11562.	0.	-33598.
WINDOW SOLAR	35009.	0.	3497.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	6469.	3772.	0.
LIGHT TO SPACE	15947.	0.	1049.
EQUIPMENT TO SPACE	2919.	0.	180.
INFILTRATION	314.	495.	-4284.
TOTAL	74914.	4267.	-57212.

TOTAL SPACE COOLING 79181. BTUH
TOTAL SPACE HEATING -57212. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	4452. CFM	1.77 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	5407. CFM	2.15 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	1244. CFM	.50 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	815. CFM	.32 CFM/SQ.FT.

SPACE NO. 12

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 620.

VOLUME (CU.FT.) 5270.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 90 / 75 / 17 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 1 / -1 / 7 / DEC. 5

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	1123.	0.	-1125.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	3294.	0.	-14771.
WINDOW SOLAR	20141.	0.	353.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	527.	91.	0.
LIGHT TO SPACE	4012.	0.	259.
EQUIPMENT TO SPACE	696.	0.	44.
INFILTRATION	74.	123.	-1058.
TOTAL	29867.	214.	-16298.

TOTAL SPACE COOLING 30081. BTUH
TOTAL SPACE HEATING -16298. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	1775. CFM	2.86 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	2156. CFM	3.48 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	354. CFM	.57 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	232. CFM	.37 CFM/SQ.FT.

DESIGN LOAD CALCULATION RESULTS FOR
SCOUT SAMPLE BUILDING
CHICAGO, ILLINOIS

SPACE NO. 13

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 2510.

VOLUME (CU.FT.) 21335.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 91 / 75 / 16 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 1 / -1 / 6 / DEC. 5

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	1624.	0.	-4081.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	12226.	0.	-53728.
WINDOW SOLAR	18781.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	6787.	3772.	0.
LIGHT TO SPACE	17467.	0.	1049.
EQUIPMENT TO SPACE	3150.	0.	180.
INFILTRATION	314.	495.	-4308.
TOTAL	60350.	4267.	-60888.

TOTAL SPACE COOLING 64617. BTUH
TOTAL SPACE HEATING -60888. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	3587. CFM	1.43 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	4356. CFM	1.74 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	1323. CFM	.53 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	867. CFM	.35 CFM/SQ.FT.

DESIGN LOAD CALCULATION RESULTS FOR
SCOUT SAMPLE BUILDING
CHICAGO, ILLINOIS

SPACE NO. 14

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 620.

VOLUME (CU.FT.) 5270.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 82 / 72 / 10 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 1 / -1 / 6 / DEC. 5

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	926.	0.	-1126.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	1657.	0.	-14807.
WINDOW SOLAR	18187.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	1445.	905.	0.
LIGHT TO SPACE	3313.	0.	259.
EQUIPMENT TO SPACE	670.	0.	44.
INFILTRATION	42.	131.	-1064.
TOTAL	26239.	1036.	-16693.

TOTAL SPACE COOLING 27276. BTUH
TOTAL SPACE HEATING -16693. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	1560. CFM	2.52 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	1894. CFM	3.05 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	363. CFM	.59 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	238. CFM	.38 CFM/SQ.FT.

SPACE NO. 15

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 12530.

VOLUME (CU.FT.) 106505.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 91 / 75 / 16 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 0 / 0 / 0 / 0

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	0.	0.	0.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	0.	0.	0.
WINDOW SOLAR	0.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	33935.	18861.	0.
LIGHT TO SPACE	87198.	0.	0.
EQUIPMENT TO SPACE	15727.	0.	0.
INFILTRATION	0.	0.	0.
TOTAL	136860.	18861.	0.

TOTAL SPACE COOLING 155720. BTUH
TOTAL SPACE HEATING 0. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	8134. CFM	.65 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	9877. CFM	.79 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	0. CFM	0.00 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	0. CFM	0.00 CFM/SQ.FT.

SPACE NO. 16

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 18790.

VOLUME (CU.FT.) 0.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 90 / 75 / 17 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 1 / -1 / 8 / DEC. 5

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	5409.	0.	-10240.
CEILINGS	73325.	0.	-119930.
WINDOW CONDUCTANCE	0.	0.	0.
WINDOW SOLAR	0.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	0.	0.	0.
LIGHT TO SPACE	0.	0.	0.
EQUIPMENT TO SPACE	0.	0.	0.
INFILTRATION	0.	0.	0.
TOTAL	78734.	0.	-130170.

TOTAL SPACE COOLING 78734. BTUH
TOTAL SPACE HEATING -130170. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	4680. CFM	.25 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	5682. CFM	.30 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	2829. CFM	.15 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	1854. CFM	.10 CFM/SQ.FT.

BUILDING LOAD SUMMARY FOR
SCOUT SAMPLE BUILDING
CHICAGO, ILLINOIS

SPACE NOS. 1 THRU 16

TOTAL FLOOR AREA (SQ.FT.) 225480.

TOTAL VOLUME (CU.FT.) 1916580.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 91 / 75 / 16 / JULY 5

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 1 / -1 / 7 / DEC. 5

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	134732.	0.	-249442.
CEILINGS	70758.	0.	-119486.
WINDOW CONDUCTANCE	374283.	0.	-1640863.
WINDOW SOLAR	905837.	0.	51378.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	-20669.	0.	-48854.
OCCUPANTS	609209.	338584.	0.
LIGHT TO SPACE	1569140.	0.	36646.
EQUIPMENT TO SPACE	283005.	0.	6282.
INFILTRATION	9408.	14806.	-198217.
SUBTOTAL	3935702.	353390.	-2092557.
RETURN AIR	672488.	0.	15705.
FAN HEAT	388094.	0.	388094.
VENTILATION AIR	212003.	320706.	-963073.
TOTAL	5208288.	674096.	-2651830.

TOTAL BUILDING COOLING 5882384. BTUH 490.2 TONS
TOTAL BUILDING HEATING -2651830. BTUH 2651.8 MBH

	******* VARIABLE VOLUME SYSTEM *******		******* CONSTANT VOLUME SYSTEM *******	
SUPPLY AIR AT 55 F AT DIFFUSER	233917. CFM	1.04 CFM/SQ.FT. MAX.	241713. CFM	1.07 CFM/SQ.FT. CONST.
SUPPLY AIR AT 58 F AT DIFFUSER	284042. CFM	1.26 CFM/SQ.FT. MAX.	293509. CFM	1.30 CFM/SQ.FT. CONST.
SUPPLY AIR AT 110 F AT DIFFUSER	45484. CFM	.20 CFM/SQ.FT. MAX.	45651. CFM	.20 CFM/SQ.FT. CONST.
SUPPLY AIR AT 130 F AT DIFFUSER	29800. CFM	.13 CFM/SQ.FT. MAX.	29909. CFM	.13 CFM/SQ.FT. CONST.

SUMMARY OF RECOMMENDED HEATING AND COOLING EXTRACTION RATES TO BE USED AS INPUT TO VARIABLE TEMPERATURE PROGRAM

SPACE NO.	HEATING EXTRACTION RATE (BTU/HR)	COOLING EXTRACTION RATE (BTU/HR)
1	-67794.	74846.
2	-19035.	30308.
3	-71495.	59213.
4	-19431.	26484.
5	-26441.	123077.
6	-61268.	77607.
7	-17423.	30990.
8	-64969.	61974.
9	-17819.	27166.
10	0.	136860.
11	-57212.	74914.
12	-16298.	29867.
13	-60888.	60350.
14	-16693.	26239.
15	0.	136860.
16	-130170.	78734.

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*                        HOURLY LOAD ANALYSIS FOR                           *
*                                                                           *
*                        SCOUT SAMPLE BUILDING                              *
*                                                                           *
*                                BUILDING                                   *
*                                                                           *
*                          CHICAGO, ILLINOIS                                *
*                                                                           *
*                                                                           *
*  ENGINEER    - GARD, INC.                                                 *
*  PROJECT NO  - 1234                                                       *
*  DATE        - 15 MAY 1977                                                *
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*                              IN THIS RUN                                  *
*                                                                           *
*                                                                           *
* - U. S. WEATHER BUREAU 1440 WEATHER TAPE OF STATION 14819 IS USED.        *
*                                                                           *
*                                                                           *
* - THE FIRST DATA OBTAINED FROM WEATHER TAPE IS FOR 0TH HOUR OF  1/ 1/1972. *
*                                                                           *
*                                                                           *
* - THE LENGTH OF THIS STUDY IS 366 DAYS.                                   *
*                                                                           *
*                                                                           *
* - THE INITIAL OUTSIDE SURFACE TEMPERATURE IS 34 DEGREES FAHRENHEIT.       *
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SPACE NO. 1

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 2510.

VOLUME (CU.FT.) 21335.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 89 / 72 / 14 / AUG. 29

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE -13 / -13 / 7 / JAN. 15

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	5628.	0.	-9455.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	10540.	0.	-63439.
WINDOW SOLAR	55881.	0.	2768.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	-2008.	0.	-7781.
OCCUPANTS	5307.	3018.	121.
LIGHT TO SPACE	14403.	0.	2074.
EQUIPMENT TO SPACE	2620.	0.	291.
INFILTRATION	525.	600.	-5469.
TOTAL	92896.	3617.	-80892.

TOTAL SPACE COOLING 96514. BTUH
TOTAL SPACE HEATING -80892. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER 5558. CFM 2.21 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER 6749. CFM 2.69 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER 1658. CFM .66 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER 1086. CFM .43 CFM/SQ.FT.

SPACE NO. 2

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 620.

VOLUME (CU.FT.) 5270.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 95 / 81 / 17 / JULY 21

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE -15 / -15 / 10 / JAN. 15

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	1554.	0.	-2692.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	4410.	0.	-18079.
WINDOW SOLAR	15877.	0.	811.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	-682.	0.	-1922.
OCCUPANTS	1629.	905.	16.
LIGHT TO SPACE	4315.	0.	399.
EQUIPMENT TO SPACE	778.	0.	60.
INFILTRATION	172.	363.	-1606.
TOTAL	28054.	1268.	-23014.

TOTAL SPACE COOLING 29322. BTUH
TOTAL SPACE HEATING -23014. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER 1678. CFM 2.71 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER 2038. CFM 3.29 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER 472. CFM .76 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER 309. CFM .50 CFM/SQ.FT.

SPACE NO. 3

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 2510.

VOLUME (CU.FT.) 21335.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 95 / 80 / 15 / JULY 21

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE -15 / -15 / 10 / JAN. 15

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	3141.	0.	-9755.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	15836.	0.	-45602.
WINDOW SOLAR	17119.	0.	2426.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	-2761.	0.	-7781.
OCCUPANTS	6469.	3772.	67.
LIGHT TO SPACE	15947.	0.	1614.
EQUIPMENT TO SPACE	2919.	0.	241.
INFILTRATION	960.	1839.	-6504.
TOTAL	59630.	5611.	-85293.

TOTAL SPACE COOLING 65241. BTUH
TOTAL SPACE HEATING -85293. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	3568. CFM	1.42 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	4332. CFM	1.73 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	1748. CFM	.70 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	1145. CFM	.45 CFM/SQ.FT.

SPACE NO. 4

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 620.

VOLUME (CU.FT.) 5270.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 89 / 78 / 10 / JULY 21

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE -13 / -13 / 7 / JAN. 15

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	1471.	0.	-2622.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	2983.	0.	-17483.
WINDOW SOLAR	15051.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	-682.	0.	-1922.
OCCUPANTS	1370.	905.	29.
LIGHT TO SPACE	2849.	0.	512.
EQUIPMENT TO SPACE	603.	0.	72.
INFILTRATION	81.	202.	-1351.
TOTAL	23725.	1107.	-22765.

TOTAL SPACE COOLING 24832. BTUH
TOTAL SPACE HEATING -22765. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	1420. CFM	2.29 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	1724. CFM	2.78 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	467. CFM	.75 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	306. CFM	.49 CFM/SQ.FT.

SPACE NO. 5

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 12530.

VOLUME (CU.FT.) 106505.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 71 / 68 / 17 / AUG. 11

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 34 / 32 / 6 / FEB. 28

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	0.	0.	0.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	0.	0.	0.
WINDOW SOLAR	0.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	-10024.	0.	-42602.
OCCUPANTS	33935.	18861.	0.
LIGHT TO SPACE	87198.	0.	5239.
EQUIPMENT TO SPACE	15727.	0.	898.
INFILTRATION	0.	0.	0.
TOTAL	126836.	18861.	-36465.

TOTAL SPACE COOLING 145696. BTUH
TOTAL SPACE HEATING -36465. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER 7589. CFM .61 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER 9215. CFM .74 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER 747. CFM .06 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER 490. CFM .04 CFM/SQ.FT.

SPACE NO. 6

SPACE REPETITION FACTOR 10

AREA (SQ.FT.) 2510.

VOLUME (CU.FT.) 21335.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 89 / 72 / 14 / AUG. 29

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE -13 / -13 / 7 / JAN. 15

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	5628.	0.	-9455.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	10540.	0.	-63439.
WINDOW SOLAR	55881.	0.	2768.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	5307.	3018.	121.
LIGHT TO SPACE	14403.	0.	2074.
EQUIPMENT TO SPACE	2620.	0.	291.
INFILTRATION	525.	600.	-5469.
TOTAL	94904.	3617.	-73111.

TOTAL SPACE COOLING 98522. BTUH
TOTAL SPACE HEATING -73111. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER 5678. CFM 2.26 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER 6895. CFM 2.75 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER 1498. CFM .60 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER 982. CFM .39 CFM/SQ.FT.

SPACE NO. 7

SPACE REPETITION FACTOR 10

AREA (SQ.FT.) 620.

VOLUME (CU.FT.) 5270.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 95 / 81 / 17 / JULY 21

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE -15 / -15 / 10 / JAN. 15

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	1554.	0.	-2692.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	4410.	0.	-18079.
WINDOW SOLAR	15877.	0.	811.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	1629.	905.	16.
LIGHT TO SPACE	4315.	0.	399.
EQUIPMENT TO SPACE	778.	0.	60.
INFILTRATION	172.	363.	-1606.
TOTAL	28736.	1268.	-21092.

TOTAL SPACE COOLING 30004. BTUH
TOTAL SPACE HEATING -21092. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	1719. CFM	2.77 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	2088. CFM	3.37 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	432. CFM	.70 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	283. CFM	.46 CFM/SQ.FT.

SPACE NO. 8

SPACE REPETITION FACTOR 10

AREA (SQ.FT.) 2510.

VOLUME (CU.FT.) 21335.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 95 / 80 / 15 / JULY 21

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE -15 / -15 / 10 / JAN. 15

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	3141.	0.	-9755.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	15036.	0.	-65602.
WINDOW SOLAR	17119.	0.	2426.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	6469.	3772.	67.
LIGHT TO SPACE	15947.	0.	1614.
EQUIPMENT TO SPACE	2919.	0.	241.
INFILTRATION	960.	1839.	-6504.
TOTAL	62391.	5611.	-77512.

TOTAL SPACE COOLING 68002. BTUH
TOTAL SPACE HEATING -77512. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	3733. CFM	1.49 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	4533. CFM	1.81 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	1589. CFM	.63 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	1041. CFM	.41 CFM/SQ.FT.

HOURLY LOAD ANALYSIS RESULTS FOR
SCOUT SAMPLE BUILDING
CHICAGO, ILLINOIS

SPACE NO. 9

SPACE REPETITION FACTOR 10

AREA (SQ.FT.) 620.

VOLUME (CU.FT.) 5270.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 89 / 78 / 10 / JULY 21

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE -13 / -13 / 7 / JAN. 15

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	1471.	0.	-2622.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	2983.	0.	-17483.
WINDOW SOLAR	15051.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	1370.	905.	29.
LIGHT TO SPACE	2849.	0.	512.
EQUIPMENT TO SPACE	603.	0.	72.
INFILTRATION	81.	202.	-1351.
TOTAL	24407.	1107.	-20843.

TOTAL SPACE COOLING 25514. BTUH
TOTAL SPACE HEATING -20843. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	1460. CFM	2.35 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	1773. CFM	2.86 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	427. CFM	.69 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	280. CFM	.45 CFM/SQ.FT.

HOURLY LOAD ANALYSIS RESULTS FOR
SCOUT SAMPLE BUILDING
CHICAGO, ILLINOIS

SPACE NO. 10

SPACE REPETITION FACTOR 10

AREA (SQ.FT.) 12530.

VOLUME (CU.FT.) 106505.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 0 / 0 / 16 / JAN. 14

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 0 / 0 / 0 / 0

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	0.	0.	0.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	0.	0.	0.
WINDOW SOLAR	0.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	33935.	18861.	0.
LIGHT TO SPACE	87198.	0.	0.
EQUIPMENT TO SPACE	15727.	0.	0.
INFILTRATION	0.	0.	0.
TOTAL	136860.	18861.	0.

TOTAL SPACE COOLING 155720. BTUH
TOTAL SPACE HEATING 0. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	8189. CFM	.65 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	9943. CFM	.79 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	0. CFM	0.00 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	0. CFM	0.00 CFM/SQ.FT.

SPACE NO. 11

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 2510.

VOLUME (CU.FT.) 21335.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 89 / 72 / 14 / AUG. 29

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE -13 / -13 / 7 / JAN. 15

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	2814.	0.	-4727.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	10540.	0.	-63439.
WINDOW SOLAR	55081.	0.	2768.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	5307.	3018.	121.
LIGHT TO SPACE	14403.	0.	2074.
EQUIPMENT TO SPACE	2620.	0.	291.
INFILTRATION	525.	600.	-5469.
TOTAL	92090.	3617.	-68383.

TOTAL SPACE COOLING 95707. BTUH
TOTAL SPACE HEATING -68383. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	5510. CFM	2.23 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	6691. CFM	2.67 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	1402. CFM	.56 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	918. CFM	.37 CFM/SQ.FT.

SPACE NO. 12

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 620.

VOLUME (CU.FT.) 5270.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 95 / 81 / 17 / JULY 21

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE -15 / -15 / 10 / JAN. 15

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	777.	0.	-1346.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	4410.	0.	-18079.
WINDOW SOLAR	15877.	0.	811.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	1629.	905.	16.
LIGHT TO SPACE	4315.	0.	399.
EQUIPMENT TO SPACE	770.	0.	60.
INFILTRATION	172.	363.	-1606.
TOTAL	27959.	1268.	-19746.

TOTAL SPACE COOLING 29227. BTUH
TOTAL SPACE HEATING -19746. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	1673. CFM	2.70 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	2031. CFM	3.28 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	405. CFM	.65 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	265. CFM	.43 CFM/SQ.FT.

SPACE NO. 13

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 2510.

VOLUME (CU.FT.) 21335.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 95 / 80 / 15 / JULY 21

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE -15 / -15 / 10 / JAN. 15

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	1570.	0.	-4877.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	15836.	0.	-65602.
WINDOW SOLAR	17119.	0.	2426.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	6469.	3772.	67.
LIGHT TO SPACE	15947.	0.	1614.
EQUIPMENT TO SPACE	2919.	0.	241.
INFILTRATION	960.	1839.	-6504.
TOTAL	60821.	5611.	-72635.

TOTAL SPACE COOLING 66432. BTUH
TOTAL SPACE HEATING -72635. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	3639. CFM	1.45 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	4419. CFM	1.76 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	1489. CFM	.59 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	975. CFM	.39 CFM/SQ.FT.

SPACE NO. 14

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 620.

VOLUME (CU.FT.) 5270.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 89 / 78 / 10 / JULY 21

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE -13 / -13 / 7 / JAN. 15

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	736.	0.	-1311.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	2983.	0.	-17483.
WINDOW SOLAR	15051.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	1370.	905.	29.
LIGHT TO SPACE	2849.	0.	512.
EQUIPMENT TO SPACE	603.	0.	72.
INFILTRATION	81.	202.	-1351.
TOTAL	23672.	1107.	-19532.

TOTAL SPACE COOLING 24779. BTUH
TOTAL SPACE HEATING -19532. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	1416. CFM	2.28 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	1720. CFM	2.77 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	400. CFM	.65 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	262. CFM	.42 CFM/SQ.FT.

SPACE NO. 15

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 12530.

VOLUME (CU.FT.) 106505.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 0 / 0 / 16 / JAN. 14

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE 0 / 0 / 0 / 0

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	0.	0.	0.
CEILINGS	0.	0.	0.
WINDOW CONDUCTANCE	0.	0.	0.
WINDOW SOLAR	0.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	33935.	18861.	0.
LIGHT TO SPACE	87198.	0.	0.
EQUIPMENT TO SPACE	15727.	0.	0.
INFILTRATION	0.	0.	0.
TOTAL	136860.	18861.	0.

TOTAL SPACE COOLING 155720. BTUH
TOTAL SPACE HEATING 0. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	8189. CFM	.65 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	9943. CFM	.79 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	0. CFM	0.00 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	0. CFM	0.00 CFM/SQ.FT.

SPACE NO. 16

SPACE REPETITION FACTOR 1

AREA (SQ.FT.) 18790.

VOLUME (CU.FT.) 0.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 90 / 70 / 17 / JUNE 3

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE -10 / -10 / 8 / JAN. 16

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	4766.	0.	-12208.
CEILINGS	64805.	0.	-143812.
WINDOW CONDUCTANCE	0.	0.	0.
WINDOW SOLAR	0.	0.	0.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	0.	0.	0.
OCCUPANTS	0.	0.	0.
LIGHT TO SPACE	0.	0.	0.
EQUIPMENT TO SPACE	0.	0.	0.
INFILTRATION	0.	0.	0.
TOTAL	69571.	0.	-156020.

TOTAL SPACE COOLING 69571. BTUH
TOTAL SPACE HEATING -156020. BTUH

SUPPLY AIR AT 55 F AT DIFFUSER	4163. CFM	.22 CFM/SQ.FT.
SUPPLY AIR AT 58 F AT DIFFUSER	5055. CFM	.27 CFM/SQ.FT.
SUPPLY AIR AT 110 F AT DIFFUSER	3198. CFM	.17 CFM/SQ.FT.
SUPPLY AIR AT 130 F AT DIFFUSER	2095. CFM	.11 CFM/SQ.FT.

BUILDING LOAD SUMMARY FOR
SCOUT SAMPLE BUILDING
CHICAGO, ILLINOIS

SPACE NOS. 1 THRU 16

TOTAL FLOOR AREA (SQ.FT.) 225480.

TOTAL VOLUME (CU.FT.) 1916580.

SUMMER COOLING PEAK
DBT/WBT/HR OF DAY/DATE 95 / 81 / 17 / JULY 21

WINTER HEATING PEAK
DBT/WBT/HR OF DAY/DATE -13 / -13 / 7 / JAN. 15

	***** SUMMER LOAD ***** SENSIBLE (BTUH)	LATENT (BTUH)	WINTER LOAD (BTUH)
WALLS	113312.	0.	-290329.
CEILINGS	60068.	0.	-132287.
WINDOW CONDUCTANCE	489893.	0.	-1942131.
WINDOW SOLAR	757806.	0.	41006.
QUICK SURFACES	0.	0.	0.
INTERNAL SURFACES	0.	0.	0.
UNDERGROUND WALLS	0.	0.	0.
UNDERGROUND FLOORS	-20669.	0.	-58249.
OCCUPANTS	609209.	338584.	4196.
LIGHT TO SPACE	1569140.	0.	72407.
EQUIPMENT TO SPACE	283005.	0.	10156.
INFILTRATION	20871.	43993.	-163688.
SUBTOTAL	3082634.	382577.	-2458919.
RETURN AIR	672488.	0.	31032.
FAN HEAT	404925.	0.	404925.
VENTILATION AIR	254934.	531301.	-1230400.
TOTAL	5214981.	913878.	-3253362.

TOTAL BUILDING COOLING 6128859. BTUH 510.7 TONS
TOTAL BUILDING HEATING -3253362. BTUH 3253.4 MBH

	******* VARIABLE VOLUME SYSTEM *******		******* CONSTANT VOLUME SYSTEM *******	
SUPPLY AIR AT 55 F AT DIFFUSER	232304. CFM	1.03 CFM/SQ.FT. MAX.	252195. CFM	1.12 CFM/SQ.FT. CONST.
SUPPLY AIR AT 58 F AT DIFFUSER	282083. CFM	1.25 CFM/SQ.FT. MAX.	306237. CFM	1.36 CFM/SQ.FT. CONST.
SUPPLY AIR AT 110 F AT DIFFUSER	50398. CFM	.22 CFM/SQ.FT. MAX.	51451. CFM	.23 CFM/SQ.FT. CONST.
SUPPLY AIR AT 130 F AT DIFFUSER	33019. CFM	.15 CFM/SQ.FT. MAX.	33709. CFM	.15 CFM/SQ.FT. CONST.

SUMMARY OF RECOMMENDED HEATING AND COOLING EXTRACTION RATES TO BE USED AS INPUT TO VARIABLE TEMPERATURE PROGRAM

SPACE NO.	HEATING EXTRACTION RATE (BTU/HR)	COOLING EXTRACTION RATE (BTU/HR)
1	-80892.	92896.
2	-23014.	28054.
3	-85293.	59630.
4	-22765.	23725.
5	-36465.	126836.
6	-73111.	94904.
7	-21092.	28736.
8	-77512.	62391.
9	-20843.	24407.
10	0.	136860.
11	-68383.	92090.
12	-19746.	27959.
13	-72635.	60821.
14	-19532.	23672.
15	0.	136860.
16	-156020.	69571.

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*************************************
*************************************
*****                           *****
*****   ECHO OF INPUT DATA      *****
*****    FOR  TEMPERATURE       *****
*****   VARIATION  PROGRAM      *****
*****       LEVEL 3.1           *****
*****                           *****
*************************************
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*****ECHO OF BUILDING DESCRIPTION DATA READ FROM INPUT TAPE*****

     IDEN1=        SCOUT SAMPLE BUILDING
     IDEN2=          CHICAGO, ILLINOIS
     IDEN3=GARD, INC.
     IDEN4=1234
     IDEN5=15 MAY 1977

     NO. OF TYPES OF RESPONSE FACTOR SURFACES NRF=  2

     RESPONSE FACTOR INDEX=  1   NRFT=  8      RATIO= .329527
                .830430          .012503         .847393
               -.762306          .033212        -.525085
               -.001325          .013748        -.171685
               -.000368          .004551        -.056568
               -.000121          .001500        -.018641
               -.000040          .000494        -.006143
               -.000013          .000163        -.002024
               -.000004          .000054        -.000667

     RESPONSE FACTOR INDEX=  2   NRFT=  8      RATIO= .850822
                .851493          .001335        1.340337
               -.754161          .010048        -.225673
               -.000952          .011753        -.153759
               -.000792          .010130        -.129792
               -.000674          .008623        -.110399
               -.000573          .007337        -.093929
               -.000448          .006242        -.079917
               -.000415          .005311        -.067995

     NO. OF DELAYED SURFACES NDB=  9
          SURFACE INDEX=  1      RESPONSE FACTOR TYPE=  1      AREA AD=    887.00
          SURFACE INDEX=  2      RESPONSE FACTOR TYPE=  1      AREA AD=    245.00
          SURFACE INDEX=  3      RESPONSE FACTOR TYPE=  1      AREA AD=    887.00
          SURFACE INDEX=  4      RESPONSE FACTOR TYPE=  1      AREA AD=    245.00
          SURFACE INDEX=  5      RESPONSE FACTOR TYPE=  1      AREA AD=    887.00
          SURFACE INDEX=  6      RESPONSE FACTOR TYPE=  1      AREA AD=    245.00
          SURFACE INDEX=  7      RESPONSE FACTOR TYPE=  1      AREA AD=    887.00
          SURFACE INDEX=  8      RESPONSE FACTOR TYPE=  1      AREA AD=    245.00
          SURFACE INDEX=  9      RESPONSE FACTOR TYPE=  2      AREA AD=  18790.00

     NO. OF QUICK SURFACES NQB=  0

     NO. OF WINDOWS NWB=  4
          WINDOW INDEX=  1      NO. OF PANES NPW= 2      AREA AW= 1749.00      U-FACTOR UGW=  .47619
          WINDOW INDEX=  2      NO. OF PANES NPW= 2      AREA AW=  482.00      U-FACTOR UGW=  .47619
          WINDOW INDEX=  3      NO. OF PANES NPW= 2      AREA AW= 1749.00      U-FACTOR UGW=  .47619
          WINDOW INDEX=  4      NO. OF PANES NPW= 2      AREA AW=  482.00      U-FACTOR UGW=  .47619

     NO. INTERNAL HEAT TRANSFER SURFACES NIHT= 17
          INDEX=  1      ISPC1=  1      ISPC2=  5      UA FIHTS=      793.110
          INDEX=  2      ISPC1=  2      ISPC2=  5      UA FIHTS=      172.380
          INDEX=  3      ISPC1=  3      ISPC2=  5      UA FIHTS=      793.110
          INDEX=  4      ISPC1=  4      ISPC2=  5      UA FIHTS=      172.380
          INDEX=  5      ISPC1=  6      ISPC2= 10      UA FIHTS=      793.110
          INDEX=  6      ISPC1=  7      ISPC2= 10      UA FIHTS=      172.380
          INDEX=  7      ISPC1=  8      ISPC2= 10      UA FIHTS=      793.110
          INDEX=  8      ISPC1=  9      ISPC2= 10      UA FIHTS=      172.380
          INDEX=  9      ISPC1= 11      ISPC2= 15      UA FIHTS=      793.110
          INDEX= 10      ISPC1= 12      ISPC2= 15      UA FIHTS=      172.380
          INDEX= 11      ISPC1= 13      ISPC2= 15      UA FIHTS=      793.110
          INDEX= 12      ISPC1= 14      ISPC2= 15      UA FIHTS=      172.380
          INDEX= 13      ISPC1= 11      ISPC2= 16      UA FIHTS=      775.100
          INDEX= 14      ISPC1= 12      ISPC2= 16      UA FIHTS=      192.200
          INDEX= 15      ISPC1= 13      ISPC2= 16      UA FIHTS=      775.100
          INDEX= 16      ISPC1= 14      ISPC2= 16      UA FIHTS=      192.200
          INDEX= 17      ISPC1= 15      ISPC2= 16      UA FIHTS=     3984.300

     NO. OF UNDERGROUND WALLS NUWB=  0

     NO. OF UNDERGROUND FLOORS NUFB=  5
          INDEX=  1      AREA AUF= 2510.00      U-FACTOR FUF=        .1000
          INDEX=  2      AREA AUF=  620.00      U-FACTOR FUF=        .1000
          INDEX=  3      AREA AUF= 2510.00      U-FACTOR FUF=        .1000
          INDEX=  4      AREA AUF=  620.00      U-FACTOR FUF=        .1000
          INDEX=  5      AREA AUF=12530.00      U-FACTOR FUF=        .1000

     NO. OF SPACES NS= 16

          SPACE INDEX=  1      ND=  2      NQ=  0      NW=  1      NIHTS=  1      NUW=  0      NUF=  1      MULT=  1
          FLORA=   2510.      VOL=    21335.      TSPAC= 72.00      WOF=     47.00
          DELAYED SURFACE INDICES  =    1    1
          WINDOW INDICES           =    1
          INTERNAL H.T.S. INDICES  =    1
          UNDERGROUND FLOOR INDICES=    1

          SPACE INDEX=  2      ND=  2      NQ=  0      NW=  1      NIHTS=  1      NUW=  0      NUF=  1      MULT=  1
          FLORA=    620.      VOL=     5270.      TSPAC= 72.00      WOF=     47.00
          DELAYED SURFACE INDICES  =    2    2
          WINDOW INDICES           =    2
          INTERNAL H.T.S. INDICES  =    2
          UNDERGROUND FLOOR INDICES=    2
```

```
SPACE INDEX=  3      ND=  2      NO=  0      NW=  1      NIHTS=  1      NUW=  0      NUF=  1      MULT=  1
FLORA=   2510.      VOL=    21335.      TSPAC= 72.00      WOF=     47.00
DELAYED SURFACE INDICES  =    3    3
WINDOW INDICES           =    3
INTERNAL H.T.S. INDICES  =    3
UNDERGROUND FLOOR INDICES=    3

SPACE INDEX=  4      ND=  2      NO=  0      NW=  1      NIHTS=  1      NUW=  0      NUF=  1      MULT=  1
FLORA=    620.      VOL=     5270.      TSPAC= 72.00      WOF=     47.00
DELAYED SURFACE INDICES  =    4    4
WINDOW INDICES           =    4
INTERNAL H.T.S. INDICES  =    4
UNDERGROUND FLOOR INDICES=    4

SPACE INDEX=  5      ND=  0      NO=  0      NW=  0      NIHTS=  4      NUW=  0      NUF=  1      MULT=  1
FLORA=  12530.      VOL=   106505.      TSPAC= 72.00      WOF=     47.00
INTERNAL H.T.S. INDICES  =    1    2    3    4
UNDERGROUND FLOOR INDICES=    5

SPACE INDEX=  6      ND=  2      NO=  0      NW=  1      NIHTS=  1      NUW=  0      NUF=  0      MULT= 10
FLORA=   2510.      VOL=    21335.      TSPAC= 72.00      WOF=     47.00
DELAYED SURFACE INDICES  =    1    1
WINDOW INDICES           =    1
INTERNAL H.T.S. INDICES  =    5

SPACE INDEX=  7      ND=  2      NO=  0      NW=  1      NIHTS=  1      NUW=  0      NUF=  0      MULT= 10
FLORA=    620.      VOL=     5270.      TSPAC= 72.00      WOF=     47.00
DELAYED SURFACE INDICES  =    2    2
WINDOW INDICES           =    2
INTERNAL H.T.S. INDICES  =    6

SPACE INDEX=  8      ND=  2      NO=  0      NW=  1      NIHTS=  1      NUW=  0      NUF=  0      MULT= 10
FLORA=   2510.      VOL=    21335.      TSPAC= 72.00      WOF=     47.00
DELAYED SURFACE INDICES  =    3    3
WINDOW INDICES           =    3
INTERNAL H.T.S. INDICES  =    7

SPACE INDEX=  9      ND=  2      NO=  0      NW=  1      NIHTS=  1      NUW=  0      NUF=  0      MULT= 10
FLORA=    620.      VOL=     5270.      TSPAC= 72.00      WOF=     47.00
DELAYED SURFACE INDICES  =    4    4
WINDOW INDICES           =    4
INTERNAL H.T.S. INDICES  =    8

SPACE INDEX= 10      ND=  0      NO=  0      NW=  0      NIHTS=  4      NUW=  0      NUF=  0      MULT= 10
FLORA=  12530.      VOL=   106505.      TSPAC= 72.00      WOF=     47.00
INTERNAL H.T.S. INDICES  =    5    6    7    8

SPACE INDEX= 11      ND=  1      NO=  0      NW=  1      NIHTS=  2      NUW=  0      NUF=  0      MULT=  1
FLORA=   2510.      VOL=    21335.      TSPAC= 72.00      WOF=     47.00
DELAYED SURFACE INDICES  =    1
WINDOW INDICES           =    1
INTERNAL H.T.S. INDICES  =    9   13

SPACE INDEX= 12      ND=  1      NO=  0      NW=  1      NIHTS=  2      NUW=  0      NUF=  0      MULT=  1
FLORA=    620.      VOL=     5270.      TSPAC= 72.00      WOF=     47.00
DELAYED SURFACE INDICES  =    2
WINDOW INDICES           =    2
INTERNAL H.T.S. INDICES  =   10   14

SPACE INDEX= 13      ND=  1      NO=  0      NW=  1      NIHTS=  2      NUW=  0      NUF=  0      MULT=  1
FLORA=   2510.      VOL=    21335.      TSPAC= 72.00      WOF=     47.00
DELAYED SURFACE INDICES  =    3
WINDOW INDICES           =    3
INTERNAL H.T.S. INDICES  =   11   15

SPACE INDEX= 14      ND=  1      NO=  0      NW=  1      NIHTS=  2      NUW=  0      NUF=  0      MULT=  1
FLORA=    620.      VOL=     5270.      TSPAC= 72.00      WOF=     47.00
DELAYED SURFACE INDICES  =    4
WINDOW INDICES           =    4
INTERNAL H.T.S. INDICES  =   12   16

SPACE INDEX= 15      ND=  0      NO=  0      NW=  0      NIHTS=  5      NUW=  0      NUF=  0      MULT=  1
FLORA=  12530.      VOL=   106505.      TSPAC= 72.00      WOF=     47.00
INTERNAL H.T.S. INDICES  =    9   10   11   12   17

SPACE INDEX= 16      ND=  5      NO=  0      NW=  0      NIHTS=  5      NUW=  0      NUF=  0      MULT=  1
FLORA=  18790.      VOL=        0.      TSPAC= 72.00      WOF=     24.00
DELAYED SURFACE INDICES  =    5    6    7    8    9
INTERNAL H.T.S. INDICES  =   13   14   15   16   17

STUDY START JMONT=   1      LENGH=  366
          NOHTE=   744   696   744   720   744   720   744   744   720   744   720   744
          ISTRT=     1      IEND= 8784
```

*****ECHO OF CARD INPUT DATA*****

SCOUT SAMPLE BUILDING - CHICAGO, ILLINOIS

PRINTOUT OPTION= 0

NO. OF USER-DEFINED FLOOR TYPES NDF= 0
NO. OF USER-DEFINED CEILING TYPES NDC= 0
NO. OF USER-DEFINED FURNISHING TYPES NDFU= 0

ADDITIONAL SPACE DESCRIPTION DATA

SPACE NO.	NO. OF ADDITIONAL USER-DEFINED SURFACES FLOORS	CEILINGS	FURNISHINGS	WEIGHT OF FURNISHINGS	FLOOR DATA	CEILING DATA	FURNISHING DATA
1	0	0	0	10.0			
2	0	0	0	10.0			
3	0	0	0	10.0			
4	0	0	0	10.0			
5	0	0	0	10.0			
6	0	0	0	10.0			
7	0	0	0	10.0			
8	0	0	0	10.0			
9	0	0	0	10.0			
10	0	0	0	10.0			
11	0	0	0	10.0			
12	0	0	0	10.0			
13	0	0	0	10.0			
14	0	0	0	10.0			
15	0	0	0	10.0			
16	0	0	0	0.0			

NO. OF THERMOSTAT SCHEDULES= 1

SCHD. TYPE	DAY TYPE	HOUR OF DAY	THERM TYPE	HI LIMIT	LOW LIMIT
1	WEEKDAY				
		1	2	200.0	50.0
		2	2	200.0	50.0
		3	2	200.0	50.0
		4	2	200.0	50.0
		5	2	200.0	50.0
		6	2	200.0	50.0
		7	1	73.5	70.5
		8	1	73.5	70.5
		9	1	73.5	70.5
		10	1	73.5	70.5
		11	1	73.5	70.5
		12	1	73.5	70.5
		13	1	73.5	70.5
		14	1	73.5	70.5
		15	1	73.5	70.5
		16	1	73.5	70.5
		17	2	200.0	50.0
		18	2	200.0	50.0
		19	2	200.0	50.0
		20	2	200.0	50.0
		21	2	200.0	50.0
		22	2	200.0	50.0
		23	2	200.0	50.0
		24	2	200.0	50.0
1	SAT./SUN./HOL.				
		1	2	200.0	50.0
		2	2	200.0	50.0
		3	2	200.0	50.0
		4	2	200.0	50.0
		5	2	200.0	50.0
		6	2	200.0	50.0
		7	2	200.0	50.0
		8	2	200.0	50.0
		9	2	200.0	50.0
		10	2	200.0	50.0
		11	2	200.0	50.0
		12	2	200.0	50.0
		13	2	200.0	50.0
		14	2	200.0	50.0
		15	2	200.0	50.0
		16	2	200.0	50.0
		17	2	200.0	50.0
		18	2	200.0	50.0
		19	2	200.0	50.0
		20	2	200.0	50.0
		21	2	200.0	50.0
		22	2	200.0	50.0
		23	2	200.0	50.0
		24	2	200.0	50.0

SPACE DESCRIPTION DATA

SPACE INDEX	THER. SCH. TYPE WI.	SP.	SU.	FA.	HEATING CAPACITY	COOLING CAPACITY	PLENUM	OVER SPACE	CFM	SCHEDULES			
1	1	1	1	1	-67794.	74846.	0	0	0.	0	0	0	0
2	1	1	1	1	-19035.	30308.	0	0	0.	0	0	0	0
3	1	1	1	1	-71494.	59213.	0	0	0.	0	0	0	0
4	1	1	1	1	-19431.	26484.	0	0	0.	0	0	0	0
5	1	1	1	1	-26441.	123076.	0	0	0.	0	0	0	0
6	1	1	1	1	-61268.	77607.	0	0	0.	0	0	0	0
7	1	1	1	1	-17423.	30990.	0	0	0.	0	0	0	0
8	1	1	1	1	-64969.	61974.	0	0	0.	0	0	0	0
9	1	1	1	1	-17819.	27166.	0	0	0.	0	0	0	0
10	1	1	1	1	-26441.	136859.	0	0	0.	0	0	0	0
11	1	1	1	1	-57212.	74914.	0	0	0.	0	0	0	0
12	1	1	1	1	-16298.	29867.	0	0	0.	0	0	0	0
13	1	1	1	1	-60888.	60350.	0	0	0.	0	0	0	0
14	1	1	1	1	-16693.	26239.	0	0	0.	0	0	0	0
15	1	1	1	1	-26441.	136859.	0	0	0.	0	0	0	0
16	0	0	0	0	0.	0.	0	0	0.	0	0	0	0

SPACE TEMPERATURE FREQUENCY DISTRIBUTION SUMMARY

SPACE NO.	BELOW 50	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90-94	95-99	100-104	105-109	110-114	115-119	120-124	ABOVE 124
	* * * * * * * * * * * * * * TEMPERATURE OCCURRANCE BANDS (F) * * * * * * * * * * * * *																
1	0	138	326	916	1295	3902	1650	502	51	4	0	0	0	0	0	0	0
2	0	401	678	938	1106	3352	1174	880	230	23	2	0	0	0	0	0	0
3	0	443	783	1054	1321	3700	1344	139	0	0	0	0	0	0	0	0	0
4	0	416	700	1020	1184	3480	1342	475	142	25	0	0	0	0	0	0	0
5	0	0	0	443	1118	5026	2197	0	0	0	0	0	0	0	0	0	0
6	0	44	111	403	1187	4247	2018	665	103	6	0	0	0	0	0	0	0
7	0	206	315	822	1256	3517	1267	1065	275	56	5	0	0	0	0	0	0
8	0	223	307	991	1445	3068	1679	264	7	0	0	0	0	0	0	0	0
9	0	217	330	894	1330	3670	1495	578	210	60	0	0	0	0	0	0	0
10	0	0	0	0	127	4062	4595	0	0	0	0	0	0	0	0	0	0
11	0	43	135	505	1383	4188	1945	538	47	0	0	0	0	0	0	0	0
12	0	172	284	943	1355	3516	1361	958	176	19	0	0	0	0	0	0	0
13	0	186	314	1081	1515	3816	1667	205	0	0	0	0	0	0	0	0	0
14	0	166	313	991	1431	3653	1548	524	141	17	0	0	0	0	0	0	0
15	0	0	0	84	764	4943	2993	0	0	0	0	0	0	0	0	0	0
16	0	25	250	1414	2808	2347	1905	35	0	0	0	0	0	0	0	0	0

NOTE - ACTUAL SPACE TEMPERATURES ARE ROUNDED TO NEAREST WHOLE DEGREE BEFORE BEING PLACED INTO PROPER TEMPERATURE OCCURRANCE BAND.

SUMMARY OF VARIABLE TEMPERATURE LOAD CALULATIONS

SCOUT SAMPLE BUILDING - CHICAGO, ILLINOIS

SPACE NO.	*******HEATING******** MAX. HEAT ADDITION (BTU/HR)	HOUR/DAY/MO	********COOLING******** MAX. HEAT EXTRACTED (BTU/HR)	HOUR/DAY/MO	***LOWEST SPACE TEMP.*** TEMP. (F)	HOUR/DAY/MO	***HIGHEST SPACE TEMP.*** TEMP. (F)	HOUR/DAY/MO
1	-67734.	7/ 3/ 1	74846.	13/21/ 7	50.0	7/15/ 1	91.0	14/17/ 9
2	-19035.	7/ 3/ 1	27409.	16/21/ 7	50.0	4/15/ 1	95.4	17/22/ 7
3	-71494.	7/ 3/ 1	57864.	14/21/ 7	50.0	4/15/ 1	83.8	17/22/ 7
4	-19431.	7/ 3/ 1	26484.	7/11/ 7	50.0	6/ 5/ 1	92.5	13/22/ 7
5	-26441.	7/ 3/ 1	128033.	16/18/ 8	61.1	6/ 7/ 2	78.4	20/18/ 8
6	-61268.	7/ 3/ 1	77607.	7/21/ 7	50.0	6/16/ 1	91.9	15/17/ 9
7	-17423.	7/ 3/ 1	30990.	7/21/ 7	50.0	7/15/ 1	95.9	17/22/ 7
8	-64969.	7/ 3/ 1	61974.	7/11/ 7	50.0	9/15/ 1	85.4	17/22/ 7
9	-17814.	7/ 3/ 1	27166.	7/22/ 5	50.0	7/15/ 1	93.8	11/23/ 7
10	-26441.	7/17/ 1	136859.	7/13/ 4	67.0	6/17/ 1	78.4	23/18/ 8
11	-57212.	7/ 3/ 1	74914.	13/20/ 7	50.0	7/16/ 1	88.7	14/17/ 9
12	-16296.	7/ 3/ 1	28259.	16/21/ 7	50.0	9/15/ 1	93.5	17/22/ 7
13	-60888.	7/ 3/ 1	60350.	7/11/ 7	50.0	12/15/ 1	84.4	17/22/ 7
14	-16693.	7/ 3/ 1	26239.	7/11/ 7	50.0	16/15/ 1	91.2	11/23/ 7
15	-26441.	7/ 3/ 1	136859.	7/19/ 5	61.8	6/17/ 1	78.9	23/21/ 7
16	0.	1/ 1/ 1	0.	1/ 1/ 1	53.7	18/16/ 1	80.4	17/23/ 7

TOTAL BUILDING SENSIBLE HEAT EXTRACTIONS AND ADDITIONS FOR VARIABLE TEMPERATURE ANALYSIS
HEATING = -873237694.
COOLING = 5103200283.

NOTE - THE ABOVE HEAT EXTRACTIONS AND ADDITIONS DO NOT INCLUDE THE EFFECTS OF OUTSIDE VENTILATION AIR.

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*****************************************************************************
*                                                                           *
*                                                                           *
*                                                                           *
*                      SCOUT SYSTEM SIMULATION RUN OF                       *
*                                                                           *
*                                                                           *
*                           SCOUT SAMPLE BUILDING                           *
*                                                                           *
*                                                                           *
*                             CHICAGO, ILLINOIS                             *
*                                                                           *
*                                                                           *
*  USER ID    - GARD, INC.                                                  *
*  PROJECT NO - 1234                                                        *
*  DATE       - 15 MAY 1977                                                 *
*                                                                           *
*                                                                           *
*****************************************************************************
                                                          SCOUT  LEVEL 3.1.2
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********************************************** RECAP OF CARD INPUT DATA ***********************************************
                                                                    NOTE--ALTHOUGH SOME VARIABLES APPEAR
                                                                          AS INTEGERS IN THIS LISTING,
                                                                          NUMERIC CARD INPUT DATA WITH
                                                                          FEW EXCEPTIONS ARE READ AS REAL
                                                                          NUMBERS.
                                                                          DEFAULT VALUES FOR CERTAIN VARIABLES
                                                                          ARE SUBSTITUTED AS REQUIRED
                                                                          AND APPEAR IN THIS LISTING.

CARD TYPE-1.
DESCRIPTION OF RUN.
        SCOUT SAMPLE BUILDING - CHICAGO,ILLINOIS                                S1


CARD TYPE-2,3.
      1/ 1  - MONTH AND DAY AT WHICH SIMULATION MAY BEGIN.
     12/31  - MONTH AND DAY AT WHICH SIMULATION MAY END.
         0  - NUMBER OF HOURLY PRINT PERIODS (CARD TYPE S-4).
         0  - NUMBER OF RESET SCHEDULES TO BE READ (CARD TYPE S-5).
         2  - NUMBER OF VENTILATION SCHEDULE TYPES (CARD TYPE S-6A).

         2  - NO. OF ENERGY DISTRIBUTION SYSTEMS.
         0  - NUMBER OF DX AND HEATPUMP TYPES.
         2  - NUMBER OF PROCESS LOADS.

CARD TYPE-4.
HOURLY PRINT PERIODS.
  INDEX    BEGIN PRINT     FINISH PRINT    PRINT SWITCHES   (0=OFF/1=ON)
   NO.      (MO./DAY)       (MO./DAY)       PRINT-1   PRINT-2   PRINT-3

CARD TYPE-5.
TEMPERATURE RESET SCHEDULES.
  SCHEDULE       TOALO       TOAHI        TLO         THI         ** LABEL **
   NUMBER
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CARD TYPE-6A.
VENTILATION SCHEDULES.

SCHEDULE TYPE  1

     INDICES (SUN, WKDAY, SAT, HOL)        1.        11.        1.        1.ELEVATOR

                HOUR   -- 1-- 2-- 3-- 4-- 5-- 6-- 7-- 8-- 9--10--11--12--13--14--15--16--17--18--19--20--21--22--23--24
                SUN    0.000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,00
                MON    0.000,000,000,000,000,000,00 ,50 ,10 ,05 ,30 ,15 ,05 ,05 ,05 ,20 ,50 ,05 ,05 ,050,000,000,000,00
                TUE    0.000,000,000,000,000,000,00 ,50 ,10 ,05 ,30 ,15 ,05 ,05 ,05 ,20 ,50 ,05 ,05 ,050,000,000,000,00
                WED    0.000,000,000,000,000,000,00 ,50 ,10 ,05 ,30 ,15 ,05 ,05 ,05 ,20 ,50 ,05 ,05 ,050,000,000,000,00
                THU    0.000,000,000,000,000,000,00 ,50 ,10 ,05 ,30 ,15 ,05 ,05 ,05 ,20 ,50 ,05 ,05 ,050,000,000,000,00
                FRI    0.000,000,000,000,000,000,00 ,50 ,10 ,05 ,30 ,15 ,05 ,05 ,05 ,20 ,50 ,05 ,05 ,050,000,000,000,00
                SAT    0.000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,00
                HOL    0.000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,00
SCHEDULE TYPE  2

     INDICES (SUN, WKDAY, SAT, HOL)        1.        12.        1.        1.HW HEATER

                HOUR   -- 1-- 2-- 3-- 4-- 5-- 6-- 7-- 8-- 9--10--11--12--13--14--15--16--17--18--19--20--21--22--23--24
                SUN    0.000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,00
                MON    0.000,000,000,000,000,000,00 ,55 ,55 ,50 ,55 ,90 ,60 ,80 ,70 ,75 ,30 ,30 ,50 ,050,000,000,000,00
                TUE    0.000,000,000,000,000,000,00 ,55 ,55 ,50 ,55 ,90 ,60 ,80 ,70 ,75 ,30 ,30 ,50 ,050,000,000,000,00
                WED    0.000,000,000,000,000,000,00 ,55 ,55 ,50 ,55 ,90 ,60 ,80 ,70 ,75 ,30 ,30 ,50 ,050,000,000,000,00
                THU    0.000,000,000,000,000,000,00 ,55 ,55 ,50 ,55 ,90 ,60 ,80 ,70 ,75 ,30 ,30 ,50 ,050,000,000,000,00
                FRI    0.000,000,000,000,000,000,00 ,55 ,55 ,50 ,55 ,90 ,60 ,80 ,70 ,75 ,30 ,30 ,50 ,050,000,000,000,00
                SAT    0.000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,00
                HOL    0.000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,000,00
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SYSTEM NUMBER  1.      (VAVS)
CARD TYPE-7.
                                                                    NOTE--AN "R" TO THE LEFT OF A VARIABLE INDICATES
                                                                          IT MAY BE REQUIRED TO DEFINE THE GIVEN ENERGY
                                                                          DISTRIBUTION SYSTEM.
R          12  - DISTRIBUTION SYSTEM TYPE NUMBER.
R           3  - NUMBER OF ZONES ON SYSTEM.
R         30.  - RELATIVE HUMIDITY SET POINT (PCT).
R       7515.  - MINIMUM OUTSIDE AIR (SCFM).
R           2  - MIXED AIR OPTION. (1=FIXED.C.A., 2=ENTH/TEMP.E.C., 3=TEMP.E.C.)
R           2  - VAR.VOL. FAN CONTROL INDEX (1=VAR.SPD.MTR., 2=INLET.DPR., 3=DISCH.DPR.)

            1  - TEMPERATURE CONTROL MODE-1 (HOT DECK OR AHU LVG) INDEX.
            0  - TEMPERATURE CONTROL MODE-2 (COLD DECK) INDEX.
R       4.000  - SUPPLY FAN PRESSURE (IN.H20).
R       1.500  - RETURN FAN PRESSURE (IN.H20).
R       1.000  - EXHAUST FAN PRESSURE (IN.H20).
R           1  - VAR.VOL. REHEAT COIL OPTION (0=NO COIL, 1=REHEAT COIL).
R         30.  - VAR.VOL. BOX MINIMUM AIR FLOW (PCT.).

R        55.0  - FIXED AIR TEMPERATURE-1 (HOT DECK OR AHU LVG).
          0.0  - FIXED AIR TEMPERATURE-2 (COLD DECK).
            0  - TEMPERATURE RESET SCHEDULE INDEX-1 (HOT DECK OR AHU LVG).
            0  - TEMPERATURE RESET SCHEDULE INDEX-2 (COLD DECK).
R           0  - TEMPERATURE RESET SCHEDULE INDEX-3 (BASEBOARD HEATING).
            0  - TEMPERATURE RESET SCHEDULE INDEX-4 (2-PIPE H.W.).
          0.0  - INDUCTION UNIT INDUCED/PRIMARY AIR RATIO.

          0.0  - 2-PIPE FANCOIL CHANGEOVER TEMP. (DEG.F.).
          0.0  - 2-PIPE INDUCTION UNIT CHANGEOVER TEMP. (DEG.F.).
          0.0  - 2-PIPE SYSTEM WATER VOLUME (GALS.).
           0.  - FLOOR HEATING PANEL LOCATION (1=SLAB ON GRADE, 2=INTERMEDIATE SLAB).
          0.0  - FLOOR HEATING PANEL AREA COVERED (SQ.FT.).
          0.0  - FLOOR HEATING PANEL EXPOSED PERIMETER (LIN.FT.).

R           2  - FAN SYSTEM SHUT-OFF INDEX (0.=FAN ON, 1.=FAN MAY BE OFF/BBD.HTG.ON, 2.=FAN AND BBD.HTG.MAY BE OFF,
                                                 3.=FAN OFF/BBD.HTG.MAY BE ON.)
R           0  - VENTILATION SCHEDULE INDEX.
R         0.0  - HEAT RECOVERY DEVICE SENSIBLE HEAT EFFICIENCY (PCT.).
R         0.0  - HEAT RECOVERY DEVICE LATENT HEAT EFFICIENCY (PCT.).
R           0  - DX OR HEAT PUMP TYPE INDEX.

CARD TYPE-8.
SPACE DATA.
   SYSTEM  LOAD DGM  MULTIPLER   SUPPLY        EXHAUST    **BASEBOARD RADIATION**   PLENUM          SPACE LABEL
   SPACE   SPACE NO.  FACTOR     AIR (SCFM)   AIR (SCFM)    HEAT OUTPUT  LENGTH     SPACE NO.
    NO.                          (OPTIONAL)                  (BTU/HR)    (FT.)
     1          5.        1         0.          600.          0.         0.          0        S8 BOTTOM
     2         10.       10         0.          600.          0.         0.          0        S8 INTER
     3         15.        1         0.          600.          0.         0.          0        S8 TOP
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SYSTEM NUMBER  2.      (DDS )
CARD TYPE-7.
                                                                                NOTE--AN "R" TO THE LEFT OF A VARIABLE INDICATES
                                                                                      IT MAY BE REQUIRED TO DEFINE THE GIVEN ENERGY
                                                                                      DISTRIBUTION SYSTEM.
R            3  - DISTRIBUTION SYSTEM TYPE NUMBER.
R           12  - NUMBER OF ZONES ON SYSTEM.
R          30.  - RELATIVE HUMIDITY SET POINT (PCT).
R        3760.  - MINIMUM OUTSIDE AIR (SCFM).
R            2  - MIXED AIR OPTION. (1=FIXED.O.A., 2=ENTH/TEMP.E.C., 3=TEMP.E.C.)
             0  - VAR.VOL. FAN CONTROL INDEX (1=VAR.SPD.MTR., 2=INLET.DPR., 3=DISCH.DPR.)

R            6  - TEMPERATURE CONTROL MODE-1 (HOT DECK OR AHU LVG) INDEX.
R            2  - TEMPERATURE CONTROL MODE-2 (COLD DECK) INDEX.
R        4.000  - SUPPLY FAN PRESSURE (IN.H20).
R        1.500  - RETURN FAN PRESSURE (IN.H20).
R        1.000  - EXHAUST FAN PRESSURE (IN.H20).
             0  - VAR.VOL. REHEAT COIL OPTION (0=NO COIL, 1=REHEAT COIL).
            0.  - VAR.VOL. BOX MINIMUM AIR FLOW (PCT.).

R          0.0  - FIXED AIR TEMPERATURE-1 (HOT DECK OR AHU LVG).
R          0.0  - FIXED AIR TEMPERATURE-2 (COLD DECK).
R            0  - TEMPERATURE RESET SCHEDULE INDEX-1 (HOT DECK OR AHU LVG).
R            0  - TEMPERATURE RESET SCHEDULE INDEX-2 (COLD DECK).
R            0  - TEMPERATURE RESET SCHEDULE INDEX-3 (BASEBOARD HEATING).
             0  - TEMPERATURE RESET SCHEDULE INDEX-4 (2-PIPE H.W.).
          0.0   - INDUCTION UNIT INDUCED/PRIMARY AIR RATIO.

          0.0   - 2-PIPE FANCOIL CHANGEOVER TEMP. (DEG.F.).
          0.0   - 2-PIPE INDUCTION UNIT CHANGEOVER TEMP. (DEG.F.).
          0.0   - 2-PIPE SYSTEM WATER VOLUME (GALS.).
           0.   - FLOOR HEATING PANEL LOCATION (1=SLAB ON GRADE, 2=INTERMEDIATE SLAB).
          0.0   - FLOOR HEATING PANEL AREA COVERED (SQ.FT.).
          0.0   - FLOOR HEATING PANEL EXPOSED PERIMETER (LIN.FT.).

R            2  - FAN SYSTEM SHUT-OFF INDEX (0.=FAN ON, 1.=FAN MAY BE OFF/BBD.HTG.ON, 2.=FAN AND BBD.HTG.MAY BE OFF,
                                                 3.=FAN OFF/BBD.HTG.MAY BE ON.)
R            0  - VENTILATION SCHEDULE INDEX.
R          0.0  - HEAT RECOVERY DEVICE SENSIBLE HEAT EFFICIENCY (PCT.).
R          0.0  - HEAT RECOVERY DEVICE LATENT HEAT EFFICIENCY (PCT.).
R            0  - DX OR HEAT PUMP TYPE INDEX.

CARD TYPE-8.
SPACE DATA.
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SYSTEM SPACE NO.	LOAD DGM SPACE NO.	MULTIPLCN FACTOR	SUPPLY AIR (SCFM) (OPTIONAL)	EXHAUST AIR (SCFM)	**BASEBOARD RADIATION** HEAT OUTPUT (BTU/HR)	LENGTH (FT.)	PLENUM SPACE NO.	SPACE LABEL
1	1.	1	0.	0.	0.	0.	0	S8 BOT.S
2	2.	1	0.	0.	0.	0.	0	S8 BOT.W
3	3.	1	0.	0.	0.	0.	0	S8 BOT.N
4	4.	1	0.	0.	0.	0.	0	S8 BOT.E
5	6.	10	0.	0.	0.	0.	0	S8 INT.S
6	7.	10	0.	0.	0.	0.	0	S8 INT.W
7	8.	10	0.	0.	0.	0.	0	S8 INT.N
8	9.	10	0.	0.	0.	0.	0	S8 INT.E
9	11.	1	0.	0.	0.	0.	0	S8 TOP.S
10	12.	1	0.	0.	0.	0.	0	S8 TOP.W
11	13.	1	0.	0.	0.	0.	0	S8 TOP.N
12	14.	1	0.	0.	0.	0.	0	S8 TOP.E

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PRIMARY EQUIPMENT DESCRIPTION.
CASE NUMBER  1.
CARD TYPE-9.
CONV.SYS.1  - SYSTEM IDENTIFICATION LABEL.
        2.  - CHILLER TYPE INDEX  (1=RECIP, 2=HERM.CENT., 3=OPEN.CENT., 4=STM.ABS., 5=CENT.STM.TURB.).
        4.  - SOURCE OF CHILLER ENERGY , (1=GAS, 2=OIL, 3=STM, 4=ELEC).
        1.  - SOURCE OF HEATING ENERGY , (1=GAS, 2=OIL, 3=STM, 4=ELEC).
        0.  - SOURCE OF REHEAT COIL ENERGY ,  (0=SAME AS BOILER, NE.0=ELEC).
        0.  - NUMBER OF ON-SITE GENERATOR SETS.
        0.  - E/G SET TYPE INDEX (0=NONE, 1=DIESEL, 2=GAS).
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CARD TYPE-10.
BOILER DATA.
        2  - NUMBER OF BOILERS.
   3500.0  - SIZE OF EACH BOILER (MBH).
     1/ 1  - MONTH AND DAY OF SEASONAL BOILER START-UP.
    12/31  - MONTH AND DAY OF SEASONAL BOILER SHUT-DOWN.
 150000.0  - HEATING VALUE HEATING OIL.
        2 - BOILER PERFORMANCE TYPE (1=LINEAR, 2=OHIO STATE CURVE).
    80.00 - BOILER PEAK EFFICIENCY (PCT).

CARD TYPE-11.
  CHILLER DATA.
        2  - NUMBER OF CHILLERS.
    275.0  - SIZE OF EACH CHILLER (TONS).
     1/ 1  - MONTH AND DAY OF SEASONAL CHILLER START-UP.
    12/31  - MONTH AND DAY OF SEASONAL CHILLER SHUT-DOWN.
     20.0  - MINIMUM PART LOAD CUT-OFF FOR CHILLERS (PER CENT).
     45.0  - CHILLED WATER SET POINT TEMP. (DEG.F.).
     75.0  - COOLING TOWER WATER LOW LIMIT TEMPERATURE (DEG.F.).

CARD TYPE-12  PUMP HEADS.
     80.0  - TOTAL BOILER WATER PUMP HEAD (FT.).
     60.0  - TOTAL CHILLED WATER PUMP HEAD (FT.).
     60.0  - TOTAL CONDENSER WATER PUMP HEAD (FT.).

CARD TYPE-13.
MISCELLANEOUS DATA.
      0.0  - EXTERNAL LIGHTING POWER (KW).
     85.0  - FAN AND PUMP MOTOR EFFICIENCY (PER CENT).
 145000.0  - HEATING VALUE DIESEL FUEL.
           - PEAK BUILDING BASE POWER TO BE CALCULATED BY PROGRAM.
    1.500  - BOILER AUXILIARIES (HP)
     12.0  - ABSORPTION CHILLER ENTERING STEAM PRESSURE (PSIG)
    245.0  - ABSORPTION CHILLER ENTERING STEAM TEMPERATURE (DEG.F.)

CARD TYPE-14.
STEAM AND STM. TURBINE DATA.
     15.0  - GENERAL HEATING PURCHASED STEAM PRESSURE (PSIG)
    250.0  - GENERAL HEATING PURCHASED STEAM TEMPERATURE (DEG.F.)
     12.0  - STEAM TURBINE ENTERING STEAM PRESSURE (PSIG).
    245.0  - STEAM TURBINE ENTERING STEAM TEMPERATURE (DEG.F.).
   3500.0  - STEAM TURBINE SPEED (RPM).
     15.0  - PROCESS STEAM ENTERING STEAM PRESSURE (PSIG)
    250.0  - PROCESS STEAM ENTERING STEAM TEMPERATURE (DEG.F.)

CARD TYPE-15
 FLOOR PANEL HEATING DATA.



        0  - FLOOR COVERING INDEX (1=BARE, 2=TILE, 3=CARPET).
   0.0000  - FLOOR INSULATION CONDUCTANCE.
   0.0000  - FLOOR INSULATION THICKNESS.
CARD TYPE-17.
PROCESS LOADS.
             ENERGY   OPERATING
             SOURCE   SCHEDULE
 PEAK LOAD    CODE       NO.      LABEL

    175.0      4          1   ELEVATOR
     40.0      4          2   HOT.HEATER
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SUMMARY OF ENERGY DISTRIBUTION SYSTEM CHARACTERISTICS.

SYSTEM NO.	TYPE	****** TOTAL FAN HP ****** SUPPLY	RETURN	EXHAUST	NO. OF ZONES	**TOTAL SYSTEM AIR FLOWS (CFM)** SUPPLY	MIN.O.A.	EXH.SYSTEM	PER-CENT MIN.O.A.
1	VAVS	64.3	22.1	1.3	3	86727.	7515.	7200.	8.7
2	DDS	93.1	34.9	0.0	12	125583.	3760.	0.	3.0

SUMMARY OF ZONE AIR FLOWS

FAN SYSTEM	ZONE NUMBER	LOAD SPACE NUMBER	MULT FACTOR	SUPPLY CFM	EXHAUST CFM	SET POINT TEMP.
1	1	5	1	6404.	600.	72.
1	2	10	10	7302.	600.	72.
1	3	15	1	7302.	600.	72.
2	1	1	1	3993.	0.	72.
2	2	2	1	1462.	0.	72.
2	3	3	1	3087.	0.	72.
2	4	4	1	1413.	0.	72.
2	5	6	10	4141.	0.	72.
2	6	7	10	1653.	0.	72.
2	7	8	10	3307.	0.	72.
2	8	9	10	1449.	0.	72.
2	9	11	1	3997.	0.	72.
2	10	12	1	1508.	0.	72.
2	11	13	1	3220.	0.	72.
2	12	14	1	1400.	0.	72.

********** L O A D N O T M E T S U M M A R Y **********

MONTH	SYSTEM	SYSTEM ZONE NO.	MULTIPLICATION FACTOR	****** COOLING NOT MET ******* LOAD(MBTU)	PEAK(MBH)	HOURS	****** HEATING NOT MET ******* LOAD(MBTU)	PEAK(MBH)	HOURS
JAN	1	1	1	0.	0.	0	0.	0.	0
JAN	1	2	10	0.	0.	0	0.	0.	0
JAN	1	3	1	0.	0.	0	0.	0.	0
JAN	2	1	1	0.	0.	0	0.	0.	0
JAN	2	2	1	0.	0.	0	0.	0.	0
JAN	2	3	1	0.	0.	0	0.	0.	0
JAN	2	4	1	0.	0.	0	0.	0.	0
JAN	2	5	10	0.	0.	0	0.	0.	0
JAN	2	6	10	0.	0.	0	0.	0.	0
JAN	2	7	10	0.	0.	0	0.	0.	0
JAN	2	8	10	0.	0.	0	0.	0.	0
JAN	2	9	1	0.	0.	0	0.	0.	0
JAN	2	10	1	0.	0.	0	0.	0.	0
JAN	2	11	1	0.	0.	0	0.	0.	0
JAN	2	12	1	0.	0.	0	0.	0.	0
JAN		CHILLERS AND BOILERS		0.	0.	0	-2261.	-2261.	1
FEB	1	1	1	0.	0.	0	0.	0.	0
FEB	1	2	10	0.	0.	0	0.	0.	0
FEB	1	3	1	0.	0.	0	0.	0.	0
FEB	2	1	1	0.	0.	0	0.	0.	0
FEB	2	2	1	0.	0.	0	0.	0.	0
FEB	2	3	1	0.	0.	0	0.	0.	0
FEB	2	4	1	0.	0.	0	0.	0.	0
FEB	2	5	10	0.	0.	0	0.	0.	0
FEB	2	6	10	0.	0.	0	0.	0.	0
FEB	2	7	10	0.	0.	0	0.	0.	0
FEB	2	8	10	0.	0.	0	0.	0.	0
FEB	2	9	1	0.	0.	0	0.	0.	0
FEB	2	10	1	0.	0.	0	0.	0.	0
FEB	2	11	1	0.	0.	0	0.	0.	0
FEB	2	12	1	0.	0.	0	0.	0.	0
FEB		CHILLERS AND BOILERS		0.	0.	0	-234.	-234.	1
MAR	1	1	1	0.	0.	0	0.	0.	0
MAR	1	2	10	0.	0.	0	0.	0.	0
MAR	1	3	1	0.	0.	0	0.	0.	0
MAR	2	1	1	0.	0.	0	0.	0.	0
MAR	2	2	1	0.	0.	0	0.	0.	0
MAR	2	3	1	0.	0.	0	0.	0.	0
MAR	2	4	1	0.	0.	0	0.	0.	0
MAR	2	5	10	0.	0.	0	0.	0.	0
MAR	2	6	10	0.	0.	0	0.	0.	0
MAR	2	7	10	0.	0.	0	0.	0.	0
MAR	2	8	10	0.	0.	0	0.	0.	0
MAR	2	9	1	0.	0.	0	0.	0.	0
MAR	2	10	1	0.	0.	0	0.	0.	0
MAR	2	11	1	0.	0.	0	0.	0.	0
MAR	2	12	1	0.	0.	0	0.	0.	0
MAR		CHILLERS AND BOILERS		0.	0.	0	-1042.	-1042.	1
APR	1	1	1	0.	0.	0	0.	0.	0
APR	1	2	10	0.	0.	0	0.	0.	0
APR	1	3	1	0.	0.	0	0.	0.	0
APR	2	1	1	0.	0.	0	0.	0.	0
APR	2	2	1	0.	0.	0	0.	0.	0
APR	2	3	1	0.	0.	0	0.	0.	0
APR	2	4	1	0.	0.	0	0.	0.	0
APR	2	5	10	0.	0.	0	0.	0.	0
APR	2	6	10	0.	0.	0	0.	0.	0
APR	2	7	10	0.	0.	0	0.	0.	0
APR	2	8	10	0.	0.	0	0.	0.	0
APR	2	9	1	0.	0.	0	0.	0.	0
APR	2	10	1	0.	0.	0	0.	0.	0
APR	2	11	1	0.	0.	0	0.	0.	0
APR	2	12	1	0.	0.	0	0.	0.	0
APR		CHILLERS AND BOILERS		0.	0.	0	-6754.	-4593.	2
MAY	1	1	1	0.	0.	0	0.	0.	0
MAY	1	2	10	0.	0.	0	0.	0.	0
MAY	1	3	1	0.	0.	0	0.	0.	0
MAY	2	1	1	0.	0.	0	0.	0.	0
MAY	2	2	1	0.	0.	0	0.	0.	0
MAY	2	3	1	0.	0.	0	0.	0.	0
MAY	2	4	1	0.	0.	0	0.	0.	0
MAY	2	5	10	0.	0.	0	0.	0.	0
MAY	2	6	10	0.	0.	0	0.	0.	0
MAY	2	7	10	0.	0.	0	0.	0.	0
MAY	2	8	10	0.	0.	0	0.	0.	0
MAY	2	9	1	0.	0.	0	0.	0.	0
MAY	2	10	1	0.	0.	0	0.	0.	0
MAY	2	11	1	0.	0.	0	0.	0.	0
MAY	2	12	1	0.	0.	0	0.	0.	0
MAY		CHILLERS AND BOILERS		0.	0.	0	0.	0.	0
JUNE	1	1	1	0.	0.	0	0.	0.	0
JUNE	1	2	10	0.	0.	0	0.	0.	0
JUNE	1	3	1	0.	0.	0	0.	0.	0
JUNE	2	1	1	0.	0.	0	0.	0.	0
JUNE	2	2	1	0.	0.	0	0.	0.	0
JUNE	2	3	1	0.	0.	0	0.	0.	0
JUNE	2	4	1	24.	7.	4	0.	0.	0
JUNE	2	5	10	180.	7.	5	0.	0.	0
JUNE	2	6	10	122.	4.	5	0.	0.	0
JUNE	2	7	10	365.	11.	5	0.	0.	0
JUNE	2	8	10	514.	13.	9	0.	0.	0
JUNE	2	9	1	16.	7.	4	0.	0.	0
JUNE	2	10	1	9.	3.	5	0.	0.	0
JUNE	2	11	1	32.	11.	5	0.	0.	0
JUNE	2	12	1	48.	11.	9	0.	0.	0
JUNE		CHILLERS AND BOILERS		0.	0.	0	0.	0.	0
JULY	1	1	1	0.	0.	0	0.	0.	0
JULY	1	2	10	0.	0.	0	0.	0.	0
JULY	1	3	1	0.	0.	0	0.	0.	0
JULY	2	1	1	0.	0.	0	0.	0.	0
JULY	2	2	1	0.	0.	0	0.	0.	0
JULY	2	3	1	0.	0.	0	0.	0.	0
JULY	2	4	1	9.	8.	2	0.	0.	0
JULY	2	5	10	4.	0.	1	0.	0.	0
JULY	2	6	10	7.	1.	1	0.	0.	0
JULY	2	7	10	37.	2.	2	0.	0.	0
JULY	2	8	10	186.	10.	4	0.	0.	0
JULY	2	9	1	0.	0.	0	0.	0.	0
JULY	2	10	1	0.	0.	1	0.	0.	0
JULY	2	11	1	1.	1.	1	0.	0.	0
JULY	2	12	1	15.	9.	4	0.	0.	0
JULY		CHILLERS AND BOILERS		0.	0.	0	0.	0.	0
AUG	1	1	1	0.	0.	0	0.	0.	0
AUG	1	2	10	0.	0.	0	0.	0.	0
AUG	1	3	1	0.	0.	0	0.	0.	0

AUG	2	1	1	0.	0.	0	0.	0.	0
AUG	2	2	1	0.	0.	0	0.	0.	0
AUG	2	3	1	0.	0.	0	0.	0.	0
AUG	2	4	1	0.	0.	0	0.	0.	0
AUG	2	5	10	0.	0.	0	0.	0.	0
AUG	2	6	10	0.	0.	0	0.	0.	0
AUG	2	7	10	0.	0.	0	0.	0.	0
AUG	2	8	10	0.	0.	0	0.	0.	0
AUG	2	9	1	0.	0.	0	0.	0.	0
AUG	2	10	1	0.	0.	0	0.	0.	0
AUG	2	11	1	0.	0.	0	0.	0.	0
AUG	2	12	1	0.	0.	0	0.	0.	0
AUG		CHILLERS AND BOILERS		0.	0.	0	0.	0.	0
SEPT	1	1	1	0.	0.	0	0.	0.	0
SEPT	1	2	10	0.	0.	0	0.	0.	0
SEPT	1	3	1	0.	0.	0	0.	0.	0
SEPT	2	1	1	0.	0.	0	0.	0.	0
SEPT	2	2	1	0.	0.	0	0.	0.	0
SEPT	2	3	1	0.	0.	0	0.	0.	0
SEPT	2	4	1	0.	0.	0	0.	0.	0
SEPT	2	5	10	0.	0.	0	0.	0.	0
SEPT	2	6	10	0.	0.	0	0.	0.	0
SEPT	2	7	10	0.	0.	0	0.	0.	0
SEPT	2	8	10	0.	0.	0	0.	0.	0
SEPT	2	9	1	0.	0.	0	0.	0.	0
SEPT	2	10	1	0.	0.	0	0.	0.	0
SEPT	2	11	1	0.	0.	0	0.	0.	0
SEPT	2	12	1	0.	0.	0	0.	0.	0
SEPT		CHILLERS AND BOILERS		0.	0.	0	0.	0.	0
OCT	1	1	1	0.	0.	0	0.	0.	0
OCT	1	2	10	0.	0.	0	0.	0.	0
OCT	1	3	1	0.	0.	0	0.	0.	0
OCT	2	1	1	0.	0.	0	0.	0.	0
OCT	2	2	1	0.	0.	0	0.	0.	0
OCT	2	3	1	0.	0.	0	0.	0.	0
OCT	2	4	1	0.	0.	0	0.	0.	0
OCT	2	5	10	0.	0.	0	0.	0.	0
OCT	2	6	10	0.	0.	0	0.	0.	0
OCT	2	7	10	0.	0.	0	0.	0.	0
OCT	2	8	10	0.	0.	0	0.	0.	0
OCT	2	9	1	0.	0.	0	0.	0.	0
OCT	2	10	1	0.	0.	0	0.	0.	0
OCT	2	11	1	0.	0.	0	0.	0.	0
OCT	2	12	1	0.	0.	0	0.	0.	0
OCT		CHILLERS AND BOILERS		0.	0.	0	0.	0.	0
NOV	1	1	1	0.	0.	0	0.	0.	0
NOV	1	2	10	0.	0.	0	0.	0.	0
NOV	1	3	1	0.	0.	0	0.	0.	0
NOV	2	1	1	0.	0.	0	0.	0.	0
NOV	2	2	1	0.	0.	0	0.	0.	0
NOV	2	3	1	0.	0.	0	0.	0.	0
NOV	2	4	1	0.	0.	0	0.	0.	0
NOV	2	5	10	0.	0.	0	0.	0.	0
NOV	2	6	10	0.	0.	0	0.	0.	0
NOV	2	7	10	0.	0.	0	0.	0.	0
NOV	2	8	10	0.	0.	0	0.	0.	0
NOV	2	9	1	0.	0.	0	0.	0.	0
NOV	2	10	1	0.	0.	0	0.	0.	0
NOV	2	11	1	0.	0.	0	0.	0.	0
NOV	2	12	1	0.	0.	0	0.	0.	0
NOV		CHILLERS AND BOILERS		0.	0.	0	-1558.	-931.	2
DEC	1	1	1	0.	0.	0	0.	0.	0
DEC	1	2	10	0.	0.	0	0.	0.	0
DEC	1	3	1	0.	0.	0	0.	0.	0
DEC	2	1	1	0.	0.	0	0.	0.	0
DEC	2	2	1	0.	0.	0	0.	0.	0
DEC	2	3	1	0.	0.	0	0.	0.	0
DEC	2	4	1	0.	0.	0	0.	0.	0
DEC	2	5	10	0.	0.	0	0.	0.	0
DEC	2	6	10	0.	0.	0	0.	0.	0
DEC	2	7	10	0.	0.	0	0.	0.	0
DEC	2	8	10	0.	0.	0	0.	0.	0
DEC	2	9	1	0.	0.	0	0.	0.	0
DEC	2	10	1	0.	0.	0	0.	0.	0
DEC	2	11	1	0.	0.	0	0.	0.	0
DEC	2	12	1	0.	0.	0	0.	0.	0
DEC		CHILLERS AND BOILERS		0.	0.	0	-2426.	-1118.	3
ANN	1	1	1	0.		0	0.		0
ANN	1	2	10	0.		0	0.		0
ANN	1	3	1	0.		0	0.		0
ANN	2	1	1	0.		0	0.		0
ANN	2	2	1	0.		0	0.		0
ANN	2	3	1	0.		0	0.		0
ANN	2	4	1	33.		6	0.		0
ANN	2	5	10	104.		6	0.		0
ANN	2	6	10	130.		6	0.		0
ANN	2	7	10	403.		7	0.		0
ANN	2	8	10	700.		13	0.		0
ANN	2	9	1	16.		4	0.		0
ANN	2	10	1	10.		6	0.		0
ANN	2	11	1	34.		6	0.		0
ANN	2	12	1	63.		13	0.		0
ANN		CHILLERS AND BOILERS		0.		0	-14275.		10

SUMMARY OF EQUIPMENT SIZES

TYPE OF CHILLER = HERMETIC CENTRIFUGAL
NO. OF CHILLERS = 2
SIZE OF CHILLERS = 275.0 TONS

TYPE OF BOILER = GAS
NO. OF BOILERS = 2
SIZE OF BOILERS = 3500.0 MBTU

TOTAL HEATING CAPACITY = 7000.0 MBTU
TOTAL COOLING CAPACITY = 550.0 TONS

IF USED, TERMINAL REHEAT ENERGY SAME SOURCE AS BOILER.

COOLING TOWER FAN REQUIREMENT 165000. CFM 1.0 IN. S.P. 30.6 HP

BOILER AUXILIARY HORSEPOWER REQUIREMENT (FAN,BLOWER,PUMP) 1.5 HP

TOTAL EAT PLANT HORSEPOWER FOR BUILDING 215.8 HP

SUMMARY OF PUMP SIZES

LOCATION	TOTAL GPM	TOTAL HEAD (FT)	TOTAL HP
CHILLED WATER	1320.	60.0	39.2
CONDENSER WATER	1650.	60.0	49.0
HEATING WATER	700.	80.0	27.7

***** MONTHLY AND ANNUAL ENERGY AND UTILITY USE SUMMARY *****

FACILITY - SCOUT SAMPLE BUILDING
CITY - CHICAGO, ILLINOIS
USER - GARD, INC.

DATE - 15 MAY 1977
PROJECT - 1234
SYS. LABEL - CONV.SYS.1

ENERGY CONSUMPTION

	JAN.	FEB.	MARCH	APRIL	MAY	JUNE
HEATING LOADS						
BLDG.HTG. - FROM CENTRAL PLANT (INCL. AIR SYSTEMS, BASEBD.HTG., AND STM.HUMIDIFIERS)						
DEMAND (MBH)	-9261.3	-7233.6	-8041.6	-11593.3	-4794.5	-4091.2
CONS. (MBTU)	-652233.0	-511672.6	-468411.8	-295396.5	-142401.2	-55974.2
NET CENTRAL PLANT HEATING LOAD (BLDG.HT + IND.PROC + CHLLR.HT - E/G.HT.)						
DEMAND (MBH)	-7000.0	-7000.0	-7000.0	-7000.0	-4794.5	-4091.2
CONS. (MBTU)	-649971.7	-511439.0	-467370.2	-288643.3	-142401.2	-55974.2
COOLING LOADS						
BLDG. CLG. - FROM CENTRAL CHILLER						
DEMAND (MBH)	0.0	0.0	1460.6	2436.2	3092.4	3447.1
CONS. (MBTU)	0.0	0.0	9762.2	55258.0	297496.3	441889.4
ELECTRICITY						
LIGHTS AND BUILDING EQUIPMENT						
INTERNAL						
DEMAND(KW)	839.7	839.7	839.7	839.7	839.7	839.7
CONS.(KWH)	214743.2	203999.9	232107.3	205060.5	223445.3	222384.6
HEAT (INCL. CENT.PLT.HTG. LOAD, BLR.AUXIL., HOT WATER PUMPS, AND HEATPUMPS)						
DEMAND(KW)	21.8	21.8	21.8	21.8	21.8	21.8
CONS.(KWH)	16208.1	15162.4	16208.1	15685.3	16208.1	15685.3
COOL (INCL. CHILLERS, WATER PUMPS, COOLING TOWER FAN, DX, AND HEATPUMPS)						
DEMAND(KW)	88.6	88.6	146.0	194.5	240.9	284.8
CONS.(KWH)	65899.1	61647.5	66281.1	65851.7	79286.8	85595.2
FANS						
DEMAND(KW)	160.9	160.9	160.9	160.9	160.9	160.9
CONS.(KWH)	35851.1	28408.4	30474.4	25208.8	27862.8	28021.4
PROCESS ELECTRICITY						
DEMAND(KW)	113.9	113.9	113.9	113.9	113.9	113.9
CONS.(KWH)	14823.9	14118.0	16235.7	14118.0	15529.8	15529.8
TOTAL						
DEMAND(KW)	1155.0	1155.1	1206.2	1266.0	1303.9	1345.8
CONS.(KWH)	347565.4	323337.2	361306.6	325928.2	362332.8	367216.3

***** MONTHLY AND ANNUAL ENERGY AND UTILITY USE SUMMARY *****

FACILITY - SCOUT SAMPLE BUILDING
CITY - CHICAGO, ILLINOIS
USER - GARD, INC.

DATE - 15 MAY 1977
PROJECT - 1234
SYS. LABEL - CONV.SYS.1

ENERGY CONSUMPTION

	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
HEATING LOADS							
BLDG.HTG. - FROM CENTRAL PLANT (INCL. AIR SYSTEMS, BASEBD.HTG., AND STM.HUMIDIFIERS)							
DEMAND (MBH)	-4130.5	-1226.2	-1724.5	-4643.3	-7930.9	-8118.4	
CONS. (MBTU)	-13041.4	-19141.0	-41565.8	-236300.4	-338227.5	-522417.1	-3297382.4
NET CENTRAL PLANT HEATING LOAD (BLDG.HT + IND.PROC + CHLLR.HT - E/G.HT.)							
DEMAND (MBH)	-3130.5	-1226.2	-1724.5	-4643.3	-7000.0	-7000.0	
CONS. (MBTU)	-13041.4	-19141.0	-41565.8	-236300.4	-336669.4	-519990.9	-3283107.4
COOLING LOADS							
BLDG. CLG. - FROM CENTRAL CHILLER							
DEMAND (MBH)	3746.9	3651.7	3396.7	2780.7	826.3	0.0	
CONS. (MBTU)	524351.3	586990.5	415006.0	108334.6	826.3	0.0	2440514.6
ELECTRICITY							
LIGHTS AND BUILDING EQUIPMENT							
INTERNAL							
DEMAND(KW)	839.7	839.7	839.7	839.7	839.7	839.7	
CONS.(KWH)	206121.2	232107.3	205060.5	223445.3	213722.6	205060.5	2587298.2
HEAT (INCL. CENT.PLT.HTG. LOAD, BLR.AUXIL., HOT WATER PUMPS, AND HEATPUMPS)							
DEMAND(KW)	21.8	21.8	21.8	21.8	21.8	21.8	
CONS.(KWH)	16208.1	16208.1	15685.3	16208.1	15685.3	16208.1	191360.1
COOL (INCL. CHILLERS, WATER PUMPS, COOLING TOWER FAN, DX, AND HEATPUMPS)							
DEMAND(KW)	313.5	303.5	284.3	224.5	126.6	88.6	
CONS.(KWH)	93576.9	97085.0	84719.2	70706.2	63810.3	65899.1	900357.2
FANS							
DEMAND(KW)	160.9	160.9	160.9	160.9	160.9	160.9	
CONS.(KWH)	25530.7	29407.2	25468.5	27769.7	26354.2	31499.9	341864.1
PROCESS ELECTRICITY							
DEMAND(KW)	113.9	113.9	113.9	113.9	113.9	113.9	
CONS.(KWH)	14118.0	16235.7	14118.0	15529.8	14823.9	14118.0	179298.6
TOTAL							
DEMAND(KW)	1375.1	1368.1	1345.3	1286.3	1155.8	1155.1	
CONS.(KWH)	355563.0	391043.3	345051.4	353556.1	334396.3	332785.6	4200178.3

***** MONTHLY AND ANNUAL ENERGY AND UTILITY USE SUMMARY *****

FACILITY - SCOUT SAMPLE BUILDING
CITY - CHICAGO, ILLINOIS
USER - GARD, INC.

DATE - 15 MAY 1977
PROJECT - 1234
SYS. LABEL - CONV.SYS.1

ENERGY CONSUMPTION

	JAN.	FEB.	MARCH	APRIL	MAY	JUNE
GAS						
HEAT						
DEMAND (THERMS/HR)	87.5	87.5	87.5	87.5	61.7	53.6
CONS.(THERMS)	8671.2	6767.9	6292.4	4051.1	2060.1	858.3
TOTAL						
DEMAND (THERMS/HR)	87.5	87.5	87.5	87.5	61.7	53.6
CONS.(THERMS)	8671.2	6767.9	6292.4	4051.1	2060.1	858.3
PURCHASED STEAM						
OIL						
CITY WATER						
DEMAND (K-GALS/HR)	.8	.5	.6	1.2	.6	.5
CONS. (K-GALS)	16.8	11.6	13.0	18.6	52.3	71.7

***** MONTHLY AND ANNUAL ENERGY AND UTILITY USE SUMMARY *****

FACILITY - SCOUT SAMPLE BUILDING
CITY - CHICAGO, ILLINOIS
USER - GARD, INC.

DATE - 15 MAY 1977
PROJECT - 1234
SYS. LABEL - CONV.SYS.1

ENERGY CONSUMPTION

	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
GAS							
HEAT							
DEMAND (THERMS/HR)	39.4	18.2	23.4	59.9	87.5	87.5	
CONS.(THERMS)	203.5	346.1	715.9	3494.6	4739.2	7027.5	45227.8
TOTAL							
DEMAND (THERMS/HR)	39.4	18.2	23.4	59.9	87.5	87.5	
CONS.(THERMS)	203.5	346.1	715.9	3494.6	4739.2	7027.5	45227.8
PURCHASED STEAM							
OIL							
CITY WATER							
DEMAND (K-GALS/HR)	.6	.6	.5	.4	.6	.7	
CONS. (K-GALS)	92.5	91.9	65.0	21.1	6.5	12.8	463.8

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*                                                               *
*                                                               *
*                OWNING AND OPERATING COST ANALYSIS FOR         *
*                                                               *
*                        EXAMPLE BUILDING                       *
*                                                               *
*                           BUILDING                            *
*                                                               *
*                          CHICAGO, ILL.                        *
*                                                               *
*                                                               *
*  ENGINEER    - GARD INC                                       *
*  PROJECT NO  - A7119-7000                                     *
*  DATE        - NOV 16 1975                                    *
*                                                               *
*                                                               *
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SAMPLE PROBLEM NO. 3

UTILITY RATE SCHEDULE FOR STEAM

RATE NO. 3.

STEP NO.	1	2	3	4	5	6	7	8	9	10
BREAKPOINT	90000.									
$/K-LBS	1.250									

SAMPLE PROBLEM NO. 3

OPERATING COST CALCULATION

ENERGY FORM - STEAM
CATAGORY - HEATING

	******** CONSUMPTION ********* RATE NO. 3 BASIS - ST. LINE		********** DEMAND ********** RATE NO. 0 BASIS -		*** TOTAL ***
	USEAGE (K-LBS)	COST ($)	USEAGE (K-LBS)	COST ($)	COST ($)
JAN.	461.1	576.	0.0	0.	576.
FEB.	347.7	434.	0.0	0.	434.
MAR.	234.0	292.	0.0	0.	292.
APR.	134.2	167.	0.0	0.	167.
MAY	39.5	49.	0.0	0.	49.
JUNE	7.4	9.	0.0	0.	9.
JULY	0.0	0.	0.0	0.	0.
AUG.	0.0	0.	0.0	0.	0.
SEPT	7.4	9.	0.0	0.	9.
OCT.	81.5	101.	0.0	0.	101.
NOV.	200.8	251.	0.0	0.	251.
DEC.	363.5	454.	0.0	0.	454.
	1877.0	2346.		0.	2346.

AVERAGE ANNUAL UNIT COST = $ 1.250/K-LBS

SAMPLE PROBLEM NO. 3

OPERATING COST CALCULATION

ENERGY FORM - STEAM
CATAGORY - COOLING

	******** CONSUMPTION ********* RATE NO. 3 BASIS - ST. LINE		********** DEMAND ********** RATE NO. 0 BASIS -		*** TOTAL ***
	USEAGE (K-LBS)	COST ($)	USEAGE (K-LBS)	COST ($)	COST ($)
JAN.	5.3	6.	0.0	0.	6.
FEB.	14.4	18.	0.0	0.	18.
MAR.	66.1	82.	0.0	0.	82.
APR.	111.9	139.	0.0	0.	139.
MAY	304.8	381.	0.0	0.	381.
JUNE	548.8	686.	0.0	0.	686.
JULY	758.7	948.	0.0	0.	948.
AUG.	716.5	895.	0.0	0.	895.
SEPT	432.9	541.	0.0	0.	541.
OCT.	198.6	248.	0.0	0.	248.
NOV.	78.1	97.	0.0	0.	97.
DEC.	19.3	24.	0.0	0.	24.
	3255.3	4069.		0.	4069.

AVERAGE ANNUAL UNIT COST = $ 1.250/K-LBS

UTILITY RATE SCHEDULE FOR ELECTRICITY

RATE NO 1.

STEP NO.	1	2	3	4	5	6	7	8	9	10
BREAKPOINT	10.	500.	2500.	6000.	30000.	100000.	50000.			
$/KW-HRS	0.090	0.032	0.029	0.018	0.014	0.010	0.008			

RATE NO 2.

STEP NO.	1	2	3	4	5	6	7	8	9	10
BREAKPOINT	25.	200.	1000.	3500.	15000.	100000.				
$/KW	0.000	2.000	1.800	1.650	1.450	1.350				

SAMPLE PROBLEM NO. 3

O P E R A T I N G C O S T C A L C U L A T I O N

ENERGY FORM - ELECTRICITY
CATAGORY - BUILDING BASE POWER

	******** CONSUMPTION ******** RATE NO. 1 BASIS - BLOCK		********** DEMAND ********** RATE NO. 2 BASIS - BLOCK		*** TOTAL ***
	USEAGE (KW-HRS)	COST ($)	USEAGE (KW)	COST ($)	COST ($)
JAN.	85608.5	1031.	524.7	934.	1966.
FEB.	79159.0	965.	524.7	934.	1899.
MAR.	89281.6	1066.	524.7	934.	2000.
APR.	83345.1	1007.	524.7	934.	1941.
MAY	82144.0	995.	524.7	934.	1929.
JUNE	82143.0	995.	524.7	934.	1929.
JULY	79449.7	968.	521.8	929.	1897.
AUG.	85014.3	1023.	521.8	929.	1952.
SEPT	80206.9	975.	516.2	919.	1894.
OCT.	82844.2	1002.	524.7	934.	1936.
NOV.	84011.6	1013.	524.7	934.	1948.
DEC.	86395.8	1037.	524.7	934.	1971.
	999802.6	12080.		11187.	23268.

AVERAGE ANNUAL UNIT COST = $ 0.023/KW-HRS

SAMPLE PROBLEM NO. 3

***** INPUT PARAMETERS USED IN LIFE CYCLE COST CALCULATIONS *****

BUILDING LIFE	40.00 YEARS
ANNUAL INTEREST RATE	12.00 PERCENT
ESTIMATED LABOR WAGE ANNUAL INCREASE	8.00 PERCENT
ESTIMATED MATERIAL COST ANNUAL INCREASE	15.00 PERCENT
ESTIMATED FLOOR SPACE COST ANNUAL INCREASE	10.00 PERCENT
ESTIMATED ENERGY COST ANNUAL INCREASE	10.00 PERCENT

SAMPLE PROBLEM NO. 3

OPERATING COST SUMMARY

	CONSUMPTION ($)	DEMAND ($)	TOTAL COST ($)	ANNUITY ($)
STEAM				
HEATING	2346.	0.	2346.	
COOLING	4069.	0.	4069.	
	6415.		6415.	21984.
ELECTRICITY				
BUILDING BASE POWER	12080.	11187.	23268.	79733.
GRAND TOTALS			29684.	101717.

TOTAL ENERGY PRESENT WORTH 838537.

OWNING AND MAINTENANCE COST SUMMARY

	INITIAL COST	ANTICIPATED LIFE	SALVAGE CONSID.	MAJOR OVERHAUL PERIOD	LABOR	MATERIAL	ANNUAL MAINTENANCE LABOR	MATERIAL	FLOOR SPACE COST	ANNUITY
COOLING SIDE EQUIP.	90000.	90	YES	10	900.	225.	18000.	9000.	8000.	145094.
HEATING SIDE EQUIP.	20000.	90	YES	10	200.	50.	1000.	1000.	2000.	16737.
AIR SIDE EQUIP.	200000.	90	YES	10	2000.	500.	10000.	10000.	10000.	133105.
TOTAL SYSTEMS AND EQUIPMENT ANNUITY										294936.

TOTAL SYSTEMS AND EQUIPMENT PRESENT WORTH 2431394.

TOTAL OWNING AND OPERATING ANNUITY 396654. DOLLARS

NOTE -- ANNUITY IS CONSTRUED TO MEAN THE UNIFORM ANNUAL COST, CONSIDERING ALL THE LISTED COSTS, TO THE OWNER DURING THE LIFE TIME OF THE BUILDING.

UTILITY RATE SCHEDULE FOR ELECTRICITY

RATE NO 1.

STEP NO.	1	2	3	4	5	6	7	8	9	10
BREAKPOINT	10.	500.	2500.	6000.	30000.	100000.	50000.			
$/KW-HRS	0.090	0.032	0.029	0.018	0.014	0.010	0.008			

RATE NO 2.

STEP NO.	1	2	3	4	5	6	7	8	9	10
BREAKPOINT	25.	200.	1000.	3500.	15000.	100000.				
$/KW	0.000	2.000	1.800	1.650	1.450	1.350				

SAMPLE PROBLEM NO. 4

OPERATING COST CALCULATION

ENERGY FORM - ELECTRICITY
CATAGORY - BASE POWER + HEATING + COOLING

	******** CONSUMPTION ********* RATE NO. 1 BASIS - BLOCK		********** DEMAND ********** RATE NO. 2 BASIS - BLOCK		*** TOTAL ***
	USEAGE (KW-HRS)	COST ($)	USEAGE (KW)	COST ($)	COST ($)
JAN.	201356.0	1984.	540.1	962.	2946.
FEB.	163104.0	1678.	449.6	799.	2477.
MAR.	142030.1	1509.	394.4	699.	2209.
APR.	109894.0	1252.	328.8	581.	1834.
MAY	91842.8	1092.	286.0	504.	1596.
JUNE	93876.2	1112.	305.2	539.	1651.
JULY	98701.4	1160.	328.4	581.	1741.
AUG.	102745.6	1195.	329.3	582.	1778.
SEPT	87798.6	1051.	287.8	508.	1559.
OCT.	99516.1	1168.	337.1	596.	1765.
NOV.	128404.1	1400.	378.9	672.	2072.
DEC.	174440.9	1769.	422.8	751.	2520.
	1493709.9	16376.		7779.	24155.

AVERAGE ANNUAL UNIT COST = $ 0.016/KW-HRS

SAMPLE PROBLEM NO. 4

OPERATING COST SUMMARY

	CONSUMPTION ($)	DEMAND ($)	TOTAL COST ($)	ANNUITY ($)
ELECTRICITY				
BASE POWER + HEATING + COOLING	16376.	7779.	24155.	82771.
GRAND TOTALS			24155.	82771.

TOTAL ENERGY PRESENT WORTH 682347.

OWNING AND MAINTENANCE COST SUMMARY

	INITIAL COST	ANTICIPATED LIFE	SALVAGE CONSID.	MAJOR OVERHAUL PERIOD	LABOR	MATERIAL	ANNUAL MAINTENANCE LABOR	MATERIAL	FLOOR SPACE COST	ANNUITY
COOLING SIDE EQUIP.	80000.	90	YES	20	0.	0.	16000.	8000.	8000.	131653.
HEATING SIDE EQUIP.	60000.	90	YES	10	600.	150.	3000.	3000.	2000.	36505.
AIR SIDE EQUIP.	200000.	90	YES	10	2000.	500.	10000.	10000.	10000.	133105.
TOTAL SYSTEMS AND EQUIPMENT ANNUITY										301263.

TOTAL SYSTEMS AND EQUIPMENT PRESENT WORTH 2483550.

TOTAL OWNING AND OPERATING ANNUITY 384034. DOLLARS

NOTE -- ANNUITY IS CONSTRUED TO MEAN THE UNIFORM ANNUAL COST, CONSIDERING ALL THE LISTED COSTS, TO THE OWNER DURING THE LIFE TIME OF THE BUILDING.

C A S H F L O W A N A L S I S
COMPARISON NO. 1

BASE SYSTEM (NO. 1)
SAMPLE PROBLEM NO. 3

COMPARED SYSTEM (NO. 2)
SAMPLE PROBLEM NO. 4

****** ANNUAL CASH FLOW ******

	BASE SYSTEM ($)	COMPARED SYSTEM ($)	NET DIFFERENCE ($)	CUMULATIVE DIFFERENCE ($)	
0	-310000.	-340000.	-30000.	-30000.	
1	-108972.	-104040.	4932.	-25067.	
2	-120393.	-115025.	5367.	-19700.	
3	-133079.	-127240.	5838.	-13861.	
4	-147177.	-140831.	6346.	-7515.	
5	-162854.	-155961.	6893.	-622.	
5.0				0.	***BREAKEVEN POINT***
6	-180299.	-172817.	7482.	6859.	
7	-199722.	-191607.	8114.	14974.	
8	-221360.	-212567.	8793.	23767.	
9	-245401.	-235962.	9519.	33286.	
10	-282216.	-270335.	11880.	45167.	
11	-302420.	-291298.	11122.	56290.	
12	-335962.	-323960.	12002.	68292.	
13	-373448.	-360513.	12935.	81227.	
14	-415369.	-401448.	13920.	95148.	
15	-462278.	-447319.	14959.	110107.	
16	-514803.	-498755.	16048.	126155.	
17	-573654.	-556468.	17185.	143341.	
18	-639634.	-621269.	18365.	161706.	
19	-713656.	-694072.	19583.	181290.	
20	-823883.	-798677.	25206.	206496.	
21	-890088.	-867993.	22094.	228591.	
22	-994999.	-971636.	23363.	251954.	
23	-1112990.	-1088373.	24617.	276571.	
24	-1245776.	-1219941.	25834.	302405.	
25	-1395300.	-1368314.	26986.	329391.	
26	-1563777.	-1535739.	28038.	357430.	
27	-1753722.	-1724772.	28949.	386380.	
28	-1967997.	-1938329.	29667.	416048.	
29	-2209858.	-2179727.	30131.	446179.	
30	-2565524.	-2521951.	43573.	489753.	
31	-2791693.	-2761711.	29981.	519734.	
32	-3140702.	-3111530.	29172.	548906.	
33	-3535530.	-3507819.	27710.	576617.	
34	-3982431.	-3956984.	25446.	602064.	
35	-4488539.	-4466338.	22200.	624264.	
36	-5061993.	-5044231.	17761.	642026.	
37	-5712083.	-5700203.	11879.	653906.	
38	-6449413.	-6445152.	4261.	658167.	
39	-7286095.	-7291536.	-5440.	652727.	
40	-8510903.	-8484189.	26713.	679441.	

NOTE... BREAKEVEN POINTS ARE INDICATORS OF PAYBACK OF INVESTED CAPITAL. HOWEVER, COSTS OF CAPITAL AND TAX EFFECTS ARE NOT INCLUDED.

C A S H F L O W A N A L S I S
COMPARISON NO. 2

BASE SYSTEM (NO. 2)
SAMPLE PROBLEM NO. 4

COMPARED SYSTEM (NO. 1)
SAMPLE PROBLEM NO. 3

****** ANNUAL CASH FLOW ******

	BASE SYSTEM ($)	COMPARED SYSTEM ($)	NET DIFFERENCE ($)	CUMULATIVE DIFFERENCE ($)	
0	-340000.	-310000.	30000.	30000.	
1	-104040.	-108972.	-4932.	25067.	
2	-115025.	-120393.	-5367.	19700.	
3	-127240.	-133079.	-5838.	13861.	
4	-140831.	-147177.	-6346.	7515.	
5	-155961.	-162854.	-6893.	622.	
5.0				0.	***BREAKEVEN POINT***
6	-172817.	-180299.	-7482.	-6859.	
7	-191607.	-199722.	-8114.	-14974.	
8	-212567.	-221360.	-8793.	-23767.	
9	-235962.	-245481.	-9519.	-33286.	
10	-270335.	-282216.	-11880.	-45167.	
11	-291298.	-302420.	-11122.	-56290.	
12	-323960.	-335962.	-12002.	-68292.	
13	-360513.	-373448.	-12935.	-81227.	
14	-401448.	-415369.	-13920.	-95148.	
15	-447319.	-462278.	-14959.	-110107.	
16	-498755.	-514803.	-16048.	-126155.	
17	-556468.	-573654.	-17185.	-143341.	
18	-621269.	-639634.	-18365.	-161706.	
19	-694072.	-713656.	-19583.	-181290.	
20	-798677.	-823883.	-25206.	-206496.	
21	-867993.	-890088.	-22094.	-228591.	
22	-971636.	-994999.	-23363.	-251954.	
23	-1088373.	-1112990.	-24617.	-276571.	
24	-1219941.	-1245776.	-25834.	-302405.	
25	-1368314.	-1395300.	-26986.	-329391.	
26	-1535739.	-1563777.	-28038.	-357430.	
27	-1724772.	-1753722.	-28949.	-386380.	
28	-1938329.	-1967997.	-29667.	-416048.	
29	-2179727.	-2209858.	-30131.	-446179.	
30	-2521951.	-2565524.	-43573.	-489753.	
31	-2761711.	-2791693.	-29981.	-519734.	
32	-3111530.	-3140702.	-29172.	-548906.	
33	-3507819.	-3535530.	-27710.	-576617.	
34	-3956984.	-3982431.	-25446.	-602064.	
35	-4466338.	-4488539.	-22200.	-624264.	
36	-5044231.	-5061993.	-17761.	-642026.	
37	-5700203.	-5712083.	-11879.	-653906.	
38	-6445152.	-6449413.	-4261.	-658167.	
39	-7291536.	-7286095.	5440.	-652727.	
40	-8484189.	-8510903.	-26713.	-679441.	

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