

Appendix VI

BLAST Input File for Base Case Office Building

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** TYPICAL BUILDINGS FOR BUILDING ENERGY SIMULATION IN HONG KONG **
** By Sam C M Hui          Last Update: 1 Jul 1995    **
** Base Case Office Building (BCOFFICE.BIN)          **
**=====**
BEGIN INPUT;
RUN CONTROL:
  NEW ZONES,
  NEW AIR SYSTEMS,
  PLANT,
  DESIGN SYSTEM,
  DESIGN PLANT,
  REPORTS(SYSTEM LOADS,PLANT LOADS),
  UNITS(IN=METRIC, OUT=METRIC);
TEMPORARY LOCATION:
  HONG KONG = (LAT=22.30, LONG=-114.17, TZ=16);
END;
TEMPORARY DESIGN DAYS:
  SUMMER COOLING = (HIGH=32.00, LOW=27.05, WB=26.90, DATE=21 JUL,
    PRES=100530.00, WS=5.70, DIR=90.00, CLEARNESS=1.00, WEEKDAY);
  WINTER HEATING = (HIGH=9.50, LOW=4.49, WB=6.70, DATE=21 JAN,
    PRES=102020.00, WS=6.80, DIR=70.00, CLEARNESS=1.00, WEEKDAY);
END;
TEMPORARY MATERIALS:
  GLASS = (R=0.0057, SC=0.40, VERY SMOOTH, GLASS);
  GYPBORD = (L=0.0159, K=0.1602, D=801.0, CP=0.837, ABS=0.75, TABS=0.900,
    MEDIUM SMOOTH);
  HWCONC = (L=0.2032, K=1.3100, D=2243.0, CP=0.837, ABS=0.75, TABS=0.900,
    MEDIUM ROUGH);
  LWCONC = (L=0.0762, K=0.3603, D=1281.0, CP=0.837, ABS=0.75, TABS=0.900,
    MEDIUM ROUGH);
  MOSAIC = (L=0.0050, K=1.8016, D=2243.0, CP=0.335, ABS=0.75, TABS=0.900,
    MEDIUM ROUGH);
  MOTAR = (L=0.0191, K=0.7207, D=1858.0, CP=0.837, ABS=0.75, TABS=0.900,
    MEDIUM ROUGH);
  SCREED = (L=0.0500, K=0.3600, D=1281.0, CP=0.837, ABS=0.75, TABS=0.900,
    MEDIUM ROUGH);
  WALLPAPER = (R=0.0106, ABS=0.75, TABS=0.900, MEDIUM SMOOTH);
END;
TEMPORARY WALLS:
  WALL-1 = (GLASS, AR2, BB8, WALLPAPER);
  INTPART = (GYPBORD, AR2, GYPBORD);
  COREWALL = (MOSAIC, MOTAR, HWCONC, PL5, WALLPAPER);
END;
TEMPORARY ROOFS:
  ROOF-1 = (GLASS, AR2, BB8, WALLPAPER);
END;
TEMPORARY FLOORS:
  GND-FLR = (HWCONC, SCREED, FF1);
  FLOOR = (LWCONC, SCREED, FF1);
  CEILING = (LWCONC, AR5, BB17);
END;
TEMPORARY WINDOWS:
  WINDOW = (GLASS);
END;
TEMPORARY SCHEDULE (OCCUPANCY):
  MONDAY THRU FRIDAY=(0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.10,0.20,0.95,
    0.95,0.95,0.50,0.95,0.95,0.95,0.95,0.30,0.10,0.10,0.10,0.10,0.05,0.05),
  SATURDAY=(0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.10,0.20,0.90,
    0.90,0.90,0.90,0.10,0.10,0.10,0.10,0.05,0.05,0.00,0.00,0.00,0.00,0.00),
  SUNDAY=(0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.05,0.05,0.05,
    0.05,0.05,0.05,0.05,0.05,0.05,0.00,0.00,0.00,0.00,0.00,0.00),

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HOLIDAY=(0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.05,0.05,0.05,
 0.05,0.05,0.05,0.05,0.05,0.05,0.05,0.05,0.00,0.00,0.00,0.00,0.00,0.00),
 SPECIAL1=(0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.05,0.05,0.05,
 0.05,0.05,0.05,0.05,0.05,0.05,0.05,0.05,0.00,0.00,0.00,0.00,0.00,0.00),
 SPECIAL2=(0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.05,0.05,0.05,
 0.05,0.05,0.05,0.05,0.05,0.05,0.05,0.05,0.00,0.00,0.00,0.00,0.00,0.00),
 SPECIAL3=(0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.05,0.05,0.05,
 0.05,0.05,0.05,0.05,0.05,0.05,0.05,0.05,0.00,0.00,0.00,0.00,0.00,0.00),
 SPECIAL4=(0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.05,0.05,0.05,
 0.05,0.05,0.05,0.05,0.05,0.05,0.05,0.05,0.00,0.00,0.00,0.00,0.00,0.00);
 END;
 TEMPORARY SCHEDULE (LIGHTING):
 MONDAY THRU FRIDAY=(0.05,0.05,0.05,0.05,0.05,0.05,0.10,0.10,0.30,0.90,
 0.90,0.90,0.80,0.90,0.90,0.90,0.50,0.30,0.30,0.20,0.20,0.10,0.05),
 SATURDAY=(0.05,0.05,0.05,0.05,0.05,0.05,0.10,0.10,0.30,0.90,
 0.90,0.90,0.15,0.15,0.15,0.15,0.05,0.05,0.05,0.05,0.05,0.05,0.05),
 SUNDAY=(0.05,0.05,0.05,0.05,0.05,0.05,0.50,0.10,0.10,0.10,
 0.10,0.10,0.10,0.10,0.10,0.10,0.10,0.10,0.05,0.05,0.05,0.05,0.05,0.05),
 HOLIDAY=(0.05,0.05,0.05,0.05,0.05,0.05,0.10,0.10,0.10,
 0.10,0.10,0.10,0.10,0.10,0.10,0.10,0.10,0.05,0.05,0.05,0.05,0.05,0.05),
 SPECIAL1=(0.05,0.05,0.05,0.05,0.05,0.05,0.10,0.10,0.10,
 0.10,0.10,0.10,0.10,0.10,0.10,0.10,0.10,0.05,0.05,0.05,0.05,0.05,0.05),
 SPECIAL2=(0.05,0.05,0.05,0.05,0.05,0.05,0.10,0.10,0.10,
 0.10,0.10,0.10,0.10,0.10,0.10,0.10,0.10,0.05,0.05,0.05,0.05,0.05,0.05),
 SPECIAL3=(0.05,0.05,0.05,0.05,0.05,0.05,0.10,0.10,0.10,
 0.10,0.10,0.10,0.10,0.10,0.10,0.10,0.10,0.05,0.05,0.05,0.05,0.05,0.05),
 SPECIAL4=(0.05,0.05,0.05,0.05,0.05,0.05,0.10,0.10,0.10,
 0.10,0.10,0.10,0.10,0.10,0.10,0.10,0.10,0.05,0.05,0.05,0.05,0.05,0.05);
 END;
 TEMPORARY SCHEDULE (EQUIPMENT):
 MONDAY THRU FRIDAY=(0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.90,
 0.90,0.90,0.50,0.90,0.90,0.90,0.02,0.02,0.02,0.02,0.02,0.02),
 SATURDAY=(0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.90,
 0.90,0.90,0.05,0.05,0.05,0.05,0.02,0.02,0.02,0.02,0.02,0.02),
 SUNDAY=(0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,
 0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02),
 HOLIDAY=(0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,
 0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02),
 SPECIAL1=(0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,
 0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02),
 SPECIAL2=(0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,
 0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02),
 SPECIAL3=(0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,
 0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02),
 SPECIAL4=(0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,
 0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02,0.02);
 END;
 TEMPORARY SCHEDULE (INFILTRATION):
 MONDAY THRU FRIDAY=(1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,0.00,0.00,
 0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,1.00,1.00,1.00,1.00,1.00,1.00),
 SATURDAY=(1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,0.00,0.00,
 0.00,0.00,0.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00),
 SUNDAY=(1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,
 1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00),
 HOLIDAY=(1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,
 1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00),
 SPECIAL1=(1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,
 1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00),
 SPECIAL2=(1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,
 1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00),
 SPECIAL3=(1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,
 1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00),
 SPECIAL4=(1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,
 1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00);
 END;
 TEMPORARY SCHEDULE (SYSTEM FAN):
 MONDAY THRU FRIDAY=(0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,1.00,1.00,
 1.00,1.00,1.00,1.00,1.00,1.00,1.00,1.00,0.00,0.00,0.00,0.00,0.00,0.00),
 SATURDAY=(0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,1.00,1.00,
 1.00,1.00,1.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00),
 SUNDAY=(0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,
 0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00),
 HOLIDAY=(0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,
 0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00);

SPECIAL1=(0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,
 0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00,0.00),
 SPECIAL2=(0.00,0.00),
 SPECIAL3=(0.00,0.00),
 SPECIAL4=(0.00,0.00);
 END;
 TEMPORARY CONTROLS (VAV SYSTEM WITH SETBACK):
 PROFILES:
 VAV=(1.00 AT 9.5, 0.61 AT 20.5556, 0.00 AT 21.5274, -0.14 AT 21.6667,
 -0.19 AT 25, -0.70 AT 26.1111, -1.00 AT 32),
 SB=(1.00 AT 9.9, 0.00 AT 10.0);
 SCHEDULES:
 MONDAY THRU FRIDAY=(0 TO 7-SB, 7 TO 17-VAV, 17 TO 24-SB),
 SATURDAY=(0 TO 7-SB, 7 TO 12-VAV, 12 TO 24-SB),
 SUNDAY=(0 TO 24-SB),
 HOLIDAY=(0 TO 24-SB),
 SPECIAL1=(0 TO 24-SB),
 SPECIAL2=(0 TO 24-SB),
 SPECIAL3=(0 TO 24-SB),
 SPECIAL4=(0 TO 24-SB);
 END;
 PROJECT="Base Case Office Building
 Created by: Sam C M Hui";
 LOCATION=HONG KONG ;
 DESIGN DAYS=SUMMER COOLING, WINTER HEATING;
 WEATHER TAPE FROM 01JAN THRU 31DEC;
 GROUND TEMPERATURES=(18.3, 16.4, 19.1, 22.6, 26.4, 28.7, 30, 29.9,
 28.4, 24.9, 20.6, 16.5);
 BEGIN BUILDING DESCRIPTION;
 BUILDING="HK Base Case Office Building ";
 NORTH AXIS=0.00;
 SOLAR DISTRIBUTION=-1;
 ASHRAE HEATING OUTDOOR TEMPERATURE=23.50;
 ASHRAE HEATING INDOOR TEMPERATURE=22.00;
 ASHRAE HEATING INFILTRATION=0.00;
 ASHRAE HEATING GROUND TEMPERATURE=32.00;
 ZONE 1 "SP-N":
 ORIGIN:(0.00, 35.00, 0.00);
 NORTH AXIS=0.00;
 EXTERIOR WALLS :
 STARTING AT(35.00, 0.00, 0.00)
 FACING(0.00)
 TILTED(90.00)
 WALL-1 (35.00 BY 3.40)
 WITH WINDOWS OF TYPE
 WINDOW (35.00 BY 1.50)
 REVEAL(0.00)
 AT (0.01, 0.01);
 INTERZONE PARTITIONS :
 STARTING AT(0.00, 0.00, 0.00)
 FACING(225.00)
 TILTED(90.00)
 INTPART (6.46 BY 2.45)
 ADJACENT TO ZONE (4),
 STARTING AT(4.57, -4.57, 0.00)
 FACING(180.00)
 TILTED(90.00)
 INTPART (25.86 BY 2.45)
 ADJACENT TO ZONE (5),
 STARTING AT(30.43, -4.57, 0.00)
 FACING(135.00)
 TILTED(90.00)
 INTPART (6.46 BY 2.45)
 ADJACENT TO ZONE (2);
 FLOORS :
 STARTING AT(0.00, 0.00, 0.00)
 FACING(0.00)
 TILTED(180.00)
 FLOOR (30.42 BY 4.57);
 CEILINGS :
 STARTING AT(0.00, 0.00, 2.45)

FACING(0.00)
TILTED(0.00)
CEILING (30.42 BY 4.57);
PEOPLE=27.8,OCCUPANCY ,
AT ACTIVITY LEVEL 0.132, 70.00 PERCENT RADIANT,
FROM 01JAN THRU 31DEC;
LIGHTS=2.78,LIGHTING ,
0.00 PERCENT RETURN AIR, 67.00 PERCENT RADIANT,
20.00 PERCENT VISIBLE, 0.00 PERCENT REPLACEABLE,
FROM 01JAN THRU 31DEC;
ELECTRIC EQUIPMENT=2.085,EQUIPMENT ,
70.00 PERCENT RADIANT, 0.00 PERCENT LATENT, 0.00 PERCENT LOST,
FROM 01JAN THRU 31DEC;
INFILTRATION=0.0568,INFILTRATION ,
WITH COEFFICIENTS (0.606000, 0.036000, 0.117700, 0.000000),
FROM 01JAN THRU 31DEC;
CONTROLS=VAV SYSTEM WITH SETBACK ,
1000000.0 HEATING, 1000000.0 COOLING,
0.00 PERCENT MRT,
FROM 01JAN THRU 31DEC;
END ZONE;
ZONE 2 "SP-E " :
ORIGIN:(35.00, 35.00, 0.00);
NORTH AXIS=90.00;
EXTERIOR WALLS :
STARTING AT(35.00, 0.00, 0.00)
FACING(0.00)
TILTED(90.00)
WALL-1 (35.00 BY 3.40)
WITH WINDOWS OF TYPE
WINDOW (35.00 BY 1.50)
REVEAL(0.00)
AT (0.01, 0.01);
INTERZONE PARTITIONS :
STARTING AT(0.00, 0.00, 0.00)
FACING(225.00)
TILTED(90.00)
INTPART (6.46 BY 2.45)
ADJACENT TO ZONE (1),
STARTING AT(4.57, -4.57, 0.00)
FACING(180.00)
TILTED(90.00)
INTPART (25.86 BY 2.45)
ADJACENT TO ZONE (5),
STARTING AT(30.43, -4.57, 0.00)
FACING(135.00)
TILTED(90.00)
INTPART (6.46 BY 2.45)
ADJACENT TO ZONE (3);
FLOORS :
STARTING AT(0.00, 0.00, 0.00)
FACING(0.00)
TILTED(180.00)
FLOOR (30.42 BY 4.57);
CEILINGS :
STARTING AT(0.00, 0.00, 2.45)
FACING(0.00)
TILTED(0.00)
CEILING (30.42 BY 4.57);
PEOPLE=27.8,OCCUPANCY ,
AT ACTIVITY LEVEL 0.132, 70.00 PERCENT RADIANT,
FROM 01JAN THRU 31DEC;
LIGHTS=2.78,LIGHTING ,
0.00 PERCENT RETURN AIR, 67.00 PERCENT RADIANT,
20.00 PERCENT VISIBLE, 0.00 PERCENT REPLACEABLE,
FROM 01JAN THRU 31DEC;
ELECTRIC EQUIPMENT=2.085,EQUIPMENT ,
70.00 PERCENT RADIANT, 0.00 PERCENT LATENT, 0.00 PERCENT LOST,
FROM 01JAN THRU 31DEC;
INFILTRATION=0.0568,INFILTRATION ,
WITH COEFFICIENTS (0.606000, 0.036000, 0.117700, 0.000000),
FROM 01JAN THRU 31DEC;
CONTROLS=VAV SYSTEM WITH SETBACK ,
1000000.0 HEATING, 1000000.0 COOLING,

0.00 PERCENT MRT,
FROM 01JAN THRU 31DEC;
END ZONE;
ZONE 3 "SP-S " :
ORIGIN:(35.00, 0.00, 0.00);
NORTH AXIS=180.00;
EXTERIOR WALLS :
STARTING AT(35.00, 0.00, 0.00)
FACING(0.00)
TILTED(90.00)
WALL-1 (35.00 BY 3.40)
WITH WINDOWS OF TYPE
WINDOW (35.00 BY 1.50)
REVEAL(0.00)
AT (0.01, 0.01);
INTERZONE PARTITIONS :
STARTING AT(0.00, 0.00, 0.00)
FACING(225.00)
TILTED(90.00)
INTPART (6.46 BY 2.45)
ADJACENT TO ZONE (2),
STARTING AT(4.57, -4.57, 0.00)
FACING(180.00)
TILTED(90.00)
INTPART (25.86 BY 2.45)
ADJACENT TO ZONE (5),
STARTING AT(30.43, -4.57, 0.00)
FACING(135.00)
TILTED(90.00)
INTPART (6.46 BY 2.45)
ADJACENT TO ZONE (4);
FLOORS :
STARTING AT(0.00, 0.00, 0.00)
FACING(0.00)
TILTED(180.00)
FLOOR (30.42 BY 4.57);
CEILINGS :
STARTING AT(0.00, 0.00, 2.45)
FACING(0.00)
TILTED(0.00)
CEILING (30.42 BY 4.57);
PEOPLE=27.8,OCCUPANCY ,
AT ACTIVITY LEVEL 0.132, 70.00 PERCENT RADIANT,
FROM 01JAN THRU 31DEC;
LIGHTS=2.78,LIGHTING ,
0.00 PERCENT RETURN AIR, 67.00 PERCENT RADIANT,
20.00 PERCENT VISIBLE, 0.00 PERCENT REPLACEABLE,
FROM 01JAN THRU 31DEC;
ELECTRIC EQUIPMENT=2.085,EQUIPMENT ,
70.00 PERCENT RADIANT, 0.00 PERCENT LATENT, 0.00 PERCENT LOST,
FROM 01JAN THRU 31DEC;
INFILTRATION=0.0568,INFILTRATION ,
WITH COEFFICIENTS (0.606000, 0.036000, 0.117700, 0.000000),
FROM 01JAN THRU 31DEC;
CONTROLS=VAV SYSTEM WITH SETBACK ,
1000000.0 HEATING, 1000000.0 COOLING,
0.00 PERCENT MRT,
FROM 01JAN THRU 31DEC;
END ZONE;
ZONE 4 "SP-W " :
ORIGIN:(0.00, 0.00, 0.00);
NORTH AXIS=270.00;
EXTERIOR WALLS :
STARTING AT(35.00, 0.00, 0.00)
FACING(0.00)
TILTED(90.00)
WALL-1 (35.00 BY 3.40)
WITH WINDOWS OF TYPE
WINDOW (35.00 BY 1.50)
REVEAL(0.00)
AT (0.01, 0.01);
INTERZONE PARTITIONS :
STARTING AT(0.00, 0.00, 0.00)
FACING(225.00)

TILTED(90.00)
INTPART (6.46 BY 2.45)
ADJACENT TO ZONE (3),
STARTING AT(4.57, -4.57, 0.00)
FACING(180.00)
TILTED(90.00)
INTPART (25.86 BY 2.45)
ADJACENT TO ZONE (5),
STARTING AT(30.43, -4.57, 0.00)
FACING(135.00)
TILTED(90.00)
INTPART (6.46 BY 2.45)
ADJACENT TO ZONE (1);
FLOORS :
STARTING AT(0.00, 0.00, 0.00)
FACING(0.00)
TILTED(180.00)
FLOOR (30.42 BY 4.57);
CEILINGS :
STARTING AT(0.00, 0.00, 2.45)
FACING(0.00)
TILTED(0.00)
CEILING (30.42 BY 4.57);
PEOPLE=27.8,OCCUPANCY ,
AT ACTIVITY LEVEL 0.132, 70.00 PERCENT RADIANT,
FROM 01JAN THRU 31DEC;
LIGHTS=2.78,LIGHTING ,
0.00 PERCENT RETURN AIR, 67.00 PERCENT RADIANT,
20.00 PERCENT VISIBLE, 0.00 PERCENT REPLACEABLE,
FROM 01JAN THRU 31DEC;
ELECTRIC EQUIPMENT=2.085,EQUIPMENT ,
70.00 PERCENT RADIANT, 0.00 PERCENT LATENT, 0.00 PERCENT LOST,
FROM 01JAN THRU 31DEC;
INFILTRATION=0.0568,INFILTRATION ,
WITH COEFFICIENTS (0.606000, 0.036000, 0.117700, 0.000000),
FROM 01JAN THRU 31DEC;
CONTROLS=VAV SYSTEM WITH SETBACK ,
1000000.0 HEATING, 1000000.0 COOLING,
0.00 PERCENT MRT,
FROM 01JAN THRU 31DEC;
END ZONE;
ZONE 5 "SP-1":
ORIGIN:(4.57, 4.57, 0.00);
NORTH AXIS=0.00;
WALL TO UNCOOLED SPACES:
STARTING AT(5.93, 5.93, 0.00)
FACING(0.00)
TILTED(90.00)
COREWALL (56.00 BY 3.40);
INTERZONE PARTITIONS :
STARTING AT(30.43, 30.43, 0.00)
FACING(0.00)
TILTED(90.00)
INTPART (25.86 BY 2.45)
ADJACENT TO ZONE (4),
STARTING AT(0.00, 30.43, 0.00)
FACING(270.00)
TILTED(90.00)
INTPART (25.86 BY 2.45)
ADJACENT TO ZONE (3),
STARTING AT(0.00, 0.00, 0.00)
FACING(180.00)
TILTED(90.00)
INTPART (25.86 BY 2.45)
ADJACENT TO ZONE (2),
STARTING AT(30.43, 0.00, 0.00)
FACING(90.00)
TILTED(90.00)
INTPART (25.86 BY 2.45)
ADJACENT TO ZONE (1);
FLOORS :
STARTING AT(0.00, 0.00, 0.00)
FACING(0.00)
TILTED(180.00)

FLOOR (21.75 BY 21.75);
CEILINGS :
STARTING AT(0.00, 0.00, 2.45)
FACING(0.00)
TILTED(0.00)
CEILING (21.75 BY 21.75);
PEOPLE=94.6,OCCUPANCY ,
AT ACTIVITY LEVEL 0.132, 70.00 PERCENT RADIANT,
FROM 01JAN THRU 31DEC;
LIGHTS=9.46,LIGHTING ,
0.00 PERCENT RETURN AIR, 67.00 PERCENT RADIANT,
20.00 PERCENT VISIBLE, 0.00 PERCENT REPLACEABLE,
FROM 01JAN THRU 31DEC;
ELECTRIC EQUIPMENT=7.095,EQUIPMENT ,
70.00 PERCENT RADIANT, 0.00 PERCENT LATENT, 0.00 PERCENT LOST,
FROM 01JAN THRU 31DEC;
INFILTRATION=0.1932,INFILTRATION ,
WITH COEFFICIENTS (0.606000, 0.036000, 0.117700, 0.000000),
FROM 01JAN THRU 31DEC;
CONTROLS=VAV SYSTEM WITH SETBACK ,
1000000.0 HEATING, 1000000.0 COOLING,
0.00 PERCENT MRT,
FROM 01JAN THRU 31DEC;
END ZONE;
ZONE 6 "RFSP-N":
ORIGIN:(0.00, 35.00, 0.00);
NORTH AXIS=0.00;
EXTERIOR WALLS :
STARTING AT(35.00, 0.00, 0.00)
FACING(0.00)
TILTED(90.00)
WALL-1 (35.00 BY 3.40)
WITH WINDOWS OF TYPE
WINDOW (35.00 BY 1.50)
REVEAL(0.00)
AT (0.01, 0.01);
INTERZONE PARTITIONS :
STARTING AT(0.00, 0.00, 0.00)
FACING(225.00)
TILTED(90.00)
INTPART (6.46 BY 2.45)
ADJACENT TO ZONE (9),
STARTING AT(4.57, -4.57, 0.00)
FACING(180.00)
TILTED(90.00)
INTPART (25.86 BY 2.45)
ADJACENT TO ZONE (10),
STARTING AT(30.43, -4.57, 0.00)
FACING(135.00)
TILTED(90.00)
INTPART (6.46 BY 2.45)
ADJACENT TO ZONE (7);
FLOORS :
STARTING AT(0.00, 0.00, 0.00)
FACING(0.00)
TILTED(180.00)
FLOOR (30.42 BY 4.57);
ROOFS :
STARTING AT(0.00, 0.00, 2.45)
FACING(0.00)
TILTED(0.00)
ROOF-1 (30.42 BY 4.57);
PEOPLE=27.8,OCCUPANCY ,
AT ACTIVITY LEVEL 0.132, 70.00 PERCENT RADIANT,
FROM 01JAN THRU 31DEC;
LIGHTS=2.78,LIGHTING ,
0.00 PERCENT RETURN AIR, 67.00 PERCENT RADIANT,
20.00 PERCENT VISIBLE, 0.00 PERCENT REPLACEABLE,
FROM 01JAN THRU 31DEC;
ELECTRIC EQUIPMENT=2.085,EQUIPMENT ,
70.00 PERCENT RADIANT, 0.00 PERCENT LATENT, 0.00 PERCENT LOST,
FROM 01JAN THRU 31DEC;
INFILTRATION=0.0568,INFILTRATION ,
WITH COEFFICIENTS (0.606000, 0.036000, 0.117700, 0.000000),

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FROM 01JAN THRU 31DEC;
CONTROLS=VAV SYSTEM WITH SETBACK ,
  1000000.0 HEATING, 1000000.0 COOLING,
  0.00 PERCENT MRT,
FROM 01JAN THRU 31DEC;
END ZONE;
ZONE 7 "RFSP-E ":
ORIGIN:(35.00, 35.00, 0.00);
NORTH AXIS=90.00;
EXTERIOR WALLS :
  STARTING AT(35.00, 0.00, 0.00)
  FACING(0.00)
  TILTED(90.00)
  WALL-1 (35.00 BY 3.40)
  WITH WINDOWS OF TYPE
  WINDOW (35.00 BY 1.50)
  REVEAL(0.00)
  AT (0.01, 0.01);
INTERZONE PARTITIONS :
  STARTING AT(0.00, 0.00, 0.00)
  FACING(225.00)
  TILTED(90.00)
  INTPART (6.46 BY 2.45)
  ADJACENT TO ZONE (6),
  STARTING AT(4.57, -4.57, 0.00)
  FACING(180.00)
  TILTED(90.00)
  INTPART (25.86 BY 2.45)
  ADJACENT TO ZONE (10),
  STARTING AT(30.43, -4.57, 0.00)
  FACING(135.00)
  TILTED(90.00)
  INTPART (6.46 BY 2.45)
  ADJACENT TO ZONE (8);
FLOORS :
  STARTING AT(0.00, 0.00, 0.00)
  FACING(0.00)
  TILTED(180.00)
  FLOOR (30.42 BY 4.57);
ROOFS :
  STARTING AT(0.00, 0.00, 2.45)
  FACING(0.00)
  TILTED(0.00)
  ROOF-1 (30.42 BY 4.57);
PEOPLE=27.8,OCCUPANCY ,
  AT ACTIVITY LEVEL 0.132, 70.00 PERCENT RADIANT,
  FROM 01JAN THRU 31DEC;
LIGHTS=2.78,LIGHTING ,
  0.00 PERCENT RETURN AIR, 67.00 PERCENT RADIANT,
  20.00 PERCENT VISIBLE, 0.00 PERCENT REPLACEABLE,
  FROM 01JAN THRU 31DEC;
ELECTRIC EQUIPMENT=2.085,EQUIPMENT ,
  70.00 PERCENT RADIANT, 0.00 PERCENT LATENT, 0.00 PERCENT LOST,
  FROM 01JAN THRU 31DEC;
INFILTRATION=0.0568,INFILTRATION ,
  WITH COEFFICIENTS (0.606000, 0.036000, 0.117700, 0.000000),
  FROM 01JAN THRU 31DEC;
CONTROLS=VAV SYSTEM WITH SETBACK ,
  1000000.0 HEATING, 1000000.0 COOLING,
  0.00 PERCENT MRT,
FROM 01JAN THRU 31DEC;
END ZONE;
ZONE 8 "RFSP-S ":
ORIGIN:(35.00, 0.00, 0.00);
NORTH AXIS=180.00;
EXTERIOR WALLS :
  STARTING AT(35.00, 0.00, 0.00)
  FACING(0.00)
  TILTED(90.00)
  WALL-1 (35.00 BY 3.40)
  WITH WINDOWS OF TYPE
  WINDOW (35.00 BY 1.50)
  REVEAL(0.00)
  AT (0.01, 0.01);
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INTERZONE PARTITIONS :
 STARTING AT(0.00, 0.00, 0.00)
 FACING(225.00)
 TILTED(90.00)
 INTPART (6.46 BY 2.45)
 ADJACENT TO ZONE (7),
 STARTING AT(4.57, -4.57, 0.00)
 FACING(180.00)
 TILTED(90.00)
 INTPART (25.86 BY 2.45)
 ADJACENT TO ZONE (10),
 STARTING AT(30.43, -4.57, 0.00)
 FACING(135.00)
 TILTED(90.00)
 INTPART (6.46 BY 2.45)
 ADJACENT TO ZONE (9);
 FLOORS :
 STARTING AT(0.00, 0.00, 0.00)
 FACING(0.00)
 TILTED(180.00)
 FLOOR (30.42 BY 4.57);
 ROOFS :
 STARTING AT(0.00, 0.00, 2.45)
 FACING(0.00)
 TILTED(0.00)
 ROOF-1 (30.42 BY 4.57);
 PEOPLE=27.8,OCCUPANCY ,
 AT ACTIVITY LEVEL 0.132, 70.00 PERCENT RADIANT,
 FROM 01JAN THRU 31DEC;
 LIGHTS=2.78,LIGHTING ,
 0.00 PERCENT RETURN AIR, 67.00 PERCENT RADIANT,
 20.00 PERCENT VISIBLE, 0.00 PERCENT REPLACEABLE,
 FROM 01JAN THRU 31DEC;
 ELECTRIC EQUIPMENT=2.085,EQUIPMENT ,
 70.00 PERCENT RADIANT, 0.00 PERCENT LATENT, 0.00 PERCENT LOST,
 FROM 01JAN THRU 31DEC;
 INFILTRATION=0.0568,INFILTRATION ,
 WITH COEFFICIENTS (0.606000, 0.036000, 0.117700, 0.000000),
 FROM 01JAN THRU 31DEC;
 CONTROLS=VAV SYSTEM WITH SETBACK ,
 1000000.0 HEATING, 1000000.0 COOLING,
 0.00 PERCENT MRT,
 FROM 01JAN THRU 31DEC;
 END ZONE;
 ZONE 9 "RFSP-W "
 ORIGIN:(0.00, 0.00, 0.00);
 NORTH AXIS=270.00;
 EXTERIOR WALLS :
 STARTING AT(35.00, 0.00, 0.00)
 FACING(0.00)
 TILTED(90.00)
 WALL-1 (35.00 BY 3.40)
 WITH WINDOWS OF TYPE
 WINDOW (35.00 BY 1.50)
 REVEAL(0.00)
 AT (0.01, 0.01);
 INTERZONE PARTITIONS :
 STARTING AT(0.00, 0.00, 0.00)
 FACING(225.00)
 TILTED(90.00)
 INTPART (6.46 BY 2.45)
 ADJACENT TO ZONE (8),
 STARTING AT(4.57, -4.57, 0.00)
 FACING(180.00)
 TILTED(90.00)
 INTPART (25.86 BY 2.45)
 ADJACENT TO ZONE (10),
 STARTING AT(30.43, -4.57, 0.00)
 FACING(135.00)
 TILTED(90.00)
 INTPART (6.46 BY 2.45)
 ADJACENT TO ZONE (6);
 FLOORS :
 STARTING AT(0.00, 0.00, 0.00)

FACING(0.00)
TILTED(180.00)
FLOOR (30.42 BY 4.57);
ROOFS :
STARTING AT(0.00, 0.00, 2.45)
FACING(0.00)
TILTED(0.00)
ROOF-1 (30.42 BY 4.57);
PEOPLE=27.8,OCCUPANCY ,
AT ACTIVITY LEVEL 0.132, 70.00 PERCENT RADIANT,
FROM 01JAN THRU 31DEC;
LIGHTS=2.78,LIGHTING ,
0.00 PERCENT RETURN AIR, 67.00 PERCENT RADIANT,
20.00 PERCENT VISIBLE, 0.00 PERCENT REPLACEABLE,
FROM 01JAN THRU 31DEC;
ELECTRIC EQUIPMENT=2.085,EQUIPMENT ,
70.00 PERCENT RADIANT, 0.00 PERCENT LATENT, 0.00 PERCENT LOST,
FROM 01JAN THRU 31DEC;
INFILTRATION=0.0568,INFILTRATION ,
WITH COEFFICIENTS (0.606000, 0.036000, 0.117700, 0.000000),
FROM 01JAN THRU 31DEC;
CONTROLS=VAV SYSTEM WITH SETBACK ,
1000000.0 HEATING, 1000000.0 COOLING,
0.00 PERCENT MRT,
FROM 01JAN THRU 31DEC;
END ZONE;
ZONE 10 "RFSP-1 "
ORIGIN:(4.57, 4.57, 0.00);
NORTH AXIS=0.00;
WALL TO UNCOOLED SPACES:
STARTING AT(5.93, 5.93, 0.00)
FACING(0.00)
TILTED(90.00)
COREWALL (56.00 BY 3.40);
INTERZONE PARTITIONS :
STARTING AT(30.43, 30.43, 0.00)
FACING(0.00)
TILTED(90.00)
INTPART (25.86 BY 2.45)
ADJACENT TO ZONE (6),
STARTING AT(0.00, 30.43, 0.00)
FACING(270.00)
TILTED(90.00)
INTPART (25.86 BY 2.45)
ADJACENT TO ZONE (7),
STARTING AT(0.00, 0.00, 0.00)
FACING(180.00)
TILTED(90.00)
INTPART (25.86 BY 2.45)
ADJACENT TO ZONE (8),
STARTING AT(30.43, 0.00, 0.00)
FACING(90.00)
TILTED(90.00)
INTPART (25.86 BY 2.45)
ADJACENT TO ZONE (9);
FLOORS :
STARTING AT(0.00, 0.00, 0.00)
FACING(0.00)
TILTED(180.00)
FLOOR (21.75 BY 21.75);
ROOFS :
STARTING AT(0.00, 0.00, 2.45)
FACING(0.00)
TILTED(0.00)
ROOF-1 (21.75 BY 21.75);
PEOPLE=94.6,OCCUPANCY ,
AT ACTIVITY LEVEL 0.132, 70.00 PERCENT RADIANT,
FROM 01JAN THRU 31DEC;
LIGHTS=9.46,LIGHTING ,
0.00 PERCENT RETURN AIR, 67.00 PERCENT RADIANT,
20.00 PERCENT VISIBLE, 0.00 PERCENT REPLACEABLE,
FROM 01JAN THRU 31DEC;
ELECTRIC EQUIPMENT=7.095,EQUIPMENT ,
70.00 PERCENT RADIANT, 0.00 PERCENT LATENT, 0.00 PERCENT LOST,

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FROM 01JAN THRU 31DEC;
INFILTRATION=0.1932,INFILTRATION ,
WITH COEFFICIENTS (0.606000, 0.036000, 0.117700, 0.000000),
FROM 01JAN THRU 31DEC;
CONTROLS=VAV SYSTEM WITH SETBACK ,
    1000000.0 HEATING, 1000000.0 COOLING,
    0.00 PERCENT MRT,
FROM 01JAN THRU 31DEC;
END ZONE;
ZONE 11 "GFSP-N ":
ORIGIN:(0.00, 35.00, 0.00);
NORTH AXIS=0.00;
EXTERIOR WALLS :
STARTING AT(35.00, 0.00, 0.00)
FACING(0.00)
TILTED(90.00)
WALL-1 (35.00 BY 3.40)
    WITH WINDOWS OF TYPE
    WINDOW (35.00 BY 1.50)
    REVEAL(0.00)
    AT (0.01, 0.01);
INTERZONE PARTITIONS :
STARTING AT(0.00, 0.00, 0.00)
FACING(225.00)
TILTED(90.00)
INTPART (6.46 BY 2.45)
ADJACENT TO ZONE (14),
STARTING AT(4.57, -4.57, 0.00)
FACING(180.00)
TILTED(90.00)
INTPART (25.86 BY 2.45)
ADJACENT TO ZONE (15),
STARTING AT(30.43, -4.57, 0.00)
FACING(135.00)
TILTED(90.00)
INTPART (6.46 BY 2.45)
ADJACENT TO ZONE (12);
SLAB ON GRADE FLOORS :
STARTING AT(0.00, 0.00, 0.00)
FACING(0.00)
TILTED(180.00)
GND-FLR (30.42 BY 4.57);
CEILINGS :
STARTING AT(0.00, 0.00, 2.45)
FACING(0.00)
TILTED(0.00)
CEILING (30.42 BY 4.57);
PEOPLE=27.8,OCCUPANCY ,
AT ACTIVITY LEVEL 0.132, 70.00 PERCENT RADIANT,
FROM 01JAN THRU 31DEC;
LIGHTS=2.78,LIGHTING ,
    0.00 PERCENT RETURN AIR, 67.00 PERCENT RADIANT,
    20.00 PERCENT VISIBLE, 0.00 PERCENT REPLACEABLE,
FROM 01JAN THRU 31DEC;
ELECTRIC EQUIPMENT=2.085,EQUIPMENT ,
    70.00 PERCENT RADIANT, 0.00 PERCENT LATENT, 0.00 PERCENT LOST,
FROM 01JAN THRU 31DEC;
INFILTRATION=0.0568,INFILTRATION ,
WITH COEFFICIENTS (0.606000, 0.036000, 0.117700, 0.000000),
FROM 01JAN THRU 31DEC;
CONTROLS=VAV SYSTEM WITH SETBACK ,
    1000000.0 HEATING, 1000000.0 COOLING,
    0.00 PERCENT MRT,
FROM 01JAN THRU 31DEC;
END ZONE;
ZONE 12 "GFSP-E ":
ORIGIN:(35.00, 35.00, 0.00);
NORTH AXIS=90.00;
EXTERIOR WALLS :
STARTING AT(35.00, 0.00, 0.00)
FACING(0.00)
TILTED(90.00)
WALL-1 (35.00 BY 3.40)
    WITH WINDOWS OF TYPE
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WINDOW (35.00 BY 1.50)
REVEAL(0.00)
AT (0.01, 0.01);
INTERZONE PARTITIONS :
STARTING AT(0.00, 0.00, 0.00)
FACING(225.00)
TILTED(90.00)
INTPART (6.46 BY 2.45)
ADJACENT TO ZONE (11),
STARTING AT(4.57, -4.57, 0.00)
FACING(180.00)
TILTED(90.00)
INTPART (25.86 BY 2.45)
ADJACENT TO ZONE (15),
STARTING AT(30.43, -4.57, 0.00)
FACING(135.00)
TILTED(90.00)
INTPART (6.46 BY 2.45)
ADJACENT TO ZONE (13);
SLAB ON GRADE FLOORS :
STARTING AT(0.00, 0.00, 0.00)
FACING(0.00)
TILTED(180.00)
GND-FLR (30.42 BY 4.57);
CEILINGS :
STARTING AT(0.00, 0.00, 2.45)
FACING(0.00)
TILTED(0.00)
CEILING (30.42 BY 4.57);
PEOPLE=27.8,OCCUPANCY ,
AT ACTIVITY LEVEL 0.132, 70.00 PERCENT RADIANT,
FROM 01JAN THRU 31DEC;
LIGHTS=2.78,LIGHTING ,
0.00 PERCENT RETURN AIR, 67.00 PERCENT RADIANT,
20.00 PERCENT VISIBLE, 0.00 PERCENT REPLACEABLE,
FROM 01JAN THRU 31DEC;
ELECTRIC EQUIPMENT=2.085,EQUIPMENT ,
70.00 PERCENT RADIANT, 0.00 PERCENT LATENT, 0.00 PERCENT LOST,
FROM 01JAN THRU 31DEC;
INFILTRATION=0.0568,INFILTRATION ,
WITH COEFFICIENTS (0.606000, 0.036000, 0.117700, 0.000000),
FROM 01JAN THRU 31DEC;
CONTROLS=VAV SYSTEM WITH SETBACK ,
1000000.0 HEATING, 1000000.0 COOLING,
0.00 PERCENT MRT,
FROM 01JAN THRU 31DEC;
END ZONE;
ZONE 13 "GFSP-S":
ORIGIN:(35.00, 0.00, 0.00);
NORTH AXIS=180.00;
EXTERIOR WALLS :
STARTING AT(35.00, 0.00, 0.00)
FACING(0.00)
TILTED(90.00)
WALL-1 (35.00 BY 3.40)
WITH WINDOWS OF TYPE
WINDOW (35.00 BY 1.50)
REVEAL(0.00)
AT (0.01, 0.01);
INTERZONE PARTITIONS :
STARTING AT(0.00, 0.00, 0.00)
FACING(225.00)
TILTED(90.00)
INTPART (6.46 BY 2.45)
ADJACENT TO ZONE (12),
STARTING AT(4.57, -4.57, 0.00)
FACING(180.00)
TILTED(90.00)
INTPART (25.86 BY 2.45)
ADJACENT TO ZONE (15),
STARTING AT(30.43, -4.57, 0.00)
FACING(135.00)
TILTED(90.00)
INTPART (6.46 BY 2.45)

ADJACENT TO ZONE (14);
SLAB ON GRADE FLOORS :
STARTING AT(0.00, 0.00, 0.00)
FACING(0.00)
TILTED(180.00)
GND-FLR (30.42 BY 4.57);
CEILINGS :
STARTING AT(0.00, 0.00, 2.45)
FACING(0.00)
TILTED(0.00)
CEILING (30.42 BY 4.57);
PEOPLE=27.8,OCCUPANCY ,
AT ACTIVITY LEVEL 0.132, 70.00 PERCENT RADIANT,
FROM 01JAN THRU 31DEC;
LIGHTS=2.78,LIGHTING ,
0.00 PERCENT RETURN AIR, 67.00 PERCENT RADIANT,
20.00 PERCENT VISIBLE, 0.00 PERCENT REPLACEABLE,
FROM 01JAN THRU 31DEC;
ELECTRIC EQUIPMENT=2.085,EQUIPMENT ,
70.00 PERCENT RADIANT, 0.00 PERCENT LATENT, 0.00 PERCENT LOST,
FROM 01JAN THRU 31DEC;
INFILTRATION=0.0568,INFILTRATION ,
WITH COEFFICIENTS (0.606000, 0.036000, 0.117700, 0.000000),
FROM 01JAN THRU 31DEC;
CONTROLS=VAV SYSTEM WITH SETBACK ,
1000000.0 HEATING, 1000000.0 COOLING,
0.00 PERCENT MRT,
FROM 01JAN THRU 31DEC;
END ZONE;
ZONE 14 "GFSP-W "
ORIGIN:(0.00, 0.00, 0.00);
NORTH AXIS=270.00;
EXTERIOR WALLS :
STARTING AT(35.00, 0.00, 0.00)
FACING(0.00)
TILTED(90.00)
WALL-1 (35.00 BY 3.40)
WITH WINDOWS OF TYPE
WINDOW (35.00 BY 1.50)
REVEAL(0.00)
AT (0.01, 0.01);
INTERZONE PARTITIONS :
STARTING AT(0.00, 0.00, 0.00)
FACING(225.00)
TILTED(90.00)
INTPART (6.46 BY 2.45)
ADJACENT TO ZONE (13),
STARTING AT(4.57, -4.57, 0.00)
FACING(180.00)
TILTED(90.00)
INTPART (25.86 BY 2.45)
ADJACENT TO ZONE (15),
STARTING AT(30.43, -4.57, 0.00)
FACING(135.00)
TILTED(90.00)
INTPART (6.46 BY 2.45)
ADJACENT TO ZONE (11);
SLAB ON GRADE FLOORS :
STARTING AT(0.00, 0.00, 0.00)
FACING(0.00)
TILTED(180.00)
GND-FLR (30.42 BY 4.57);
CEILINGS :
STARTING AT(0.00, 0.00, 2.45)
FACING(0.00)
TILTED(0.00)
CEILING (30.42 BY 4.57);
PEOPLE=27.8,OCCUPANCY ,
AT ACTIVITY LEVEL 0.132, 70.00 PERCENT RADIANT,
FROM 01JAN THRU 31DEC;
LIGHTS=2.78,LIGHTING ,
0.00 PERCENT RETURN AIR, 67.00 PERCENT RADIANT,
20.00 PERCENT VISIBLE, 0.00 PERCENT REPLACEABLE,
FROM 01JAN THRU 31DEC;

ELECTRIC EQUIPMENT=2.085,EQUIPMENT ,
 70.00 PERCENT RADIANT, 0.00 PERCENT LATENT, 0.00 PERCENT LOST,
 FROM 01JAN THRU 31DEC;
 INFILTRATION=0.0568,INFILTRATION ,
 WITH COEFFICIENTS (0.606000, 0.036000, 0.117700, 0.000000),
 FROM 01JAN THRU 31DEC;
 CONTROLS=VAV SYSTEM WITH SETBACK ,
 1000000.0 HEATING, 1000000.0 COOLING,
 0.00 PERCENT MRT,
 FROM 01JAN THRU 31DEC;
 END ZONE;
 ZONE 15 "GFSP-1":
 ORIGIN:(4.57, 4.57, 0.00);
 NORTH AXIS=0.00;
 WALL TO UNCOOLED SPACES:
 STARTING AT(5.93, 5.93, 0.00)
 FACING(0.00)
 TILTED(90.00)
 COREWALL (56.00 BY 3.40);
 INTERZONE PARTITIONS :
 STARTING AT(30.43, 30.43, 0.00)
 FACING(0.00)
 TILTED(90.00)
 INTPART (25.86 BY 2.45)
 ADJACENT TO ZONE (11),
 STARTING AT(0.00, 30.43, 0.00)
 FACING(270.00)
 TILTED(90.00)
 INTPART (25.86 BY 2.45)
 ADJACENT TO ZONE (12),
 STARTING AT(0.00, 0.00, 0.00)
 FACING(180.00)
 TILTED(90.00)
 INTPART (25.86 BY 2.45)
 ADJACENT TO ZONE (13),
 STARTING AT(30.43, 0.00, 0.00)
 FACING(90.00)
 TILTED(90.00)
 INTPART (25.86 BY 2.45)
 ADJACENT TO ZONE (14);
 SLAB ON GRADE FLOORS :
 STARTING AT(0.00, 0.00, 0.00)
 FACING(0.00)
 TILTED(180.00)
 GND-FLR (21.75 BY 21.75);
 CEILINGS :
 STARTING AT(0.00, 0.00, 2.45)
 FACING(0.00)
 TILTED(0.00)
 CEILING (21.75 BY 21.75);
 PEOPLE=94.6,OCCUPANCY ,
 AT ACTIVITY LEVEL 0.132, 70.00 PERCENT RADIANT,
 FROM 01JAN THRU 31DEC;
 LIGHTS=9.46,LIGHTING ,
 0.00 PERCENT RETURN AIR, 67.00 PERCENT RADIANT,
 20.00 PERCENT VISIBLE, 0.00 PERCENT REPLACEABLE,
 FROM 01JAN THRU 31DEC;
 ELECTRIC EQUIPMENT=7.095,EQUIPMENT ,
 70.00 PERCENT RADIANT, 0.00 PERCENT LATENT, 0.00 PERCENT LOST,
 FROM 01JAN THRU 31DEC;
 INFILTRATION=0.1932,INFILTRATION ,
 WITH COEFFICIENTS (0.606000, 0.036000, 0.117700, 0.000000),
 FROM 01JAN THRU 31DEC;
 CONTROLS=VAV SYSTEM WITH SETBACK ,
 1000000.0 HEATING, 1000000.0 COOLING,
 0.00 PERCENT MRT,
 FROM 01JAN THRU 31DEC;
 END ZONE;
 END BUILDING DESCRIPTION;
 BEGIN FAN SYSTEM DESCRIPTION;
 VARIABLE VOLUME SYSTEM 1
 "FAN SYSTEM #1 " SERVING ZONES
 1, 2, 3, 4, 5, 6, 7, 8, 9,10,11,12,13,14,15;
 FOR ZONE 1:

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SUPPLY AIR VOLUME=2;
EXHAUST AIR VOLUME=0.1946;
MINIMUM AIR FRACTION=0.3;
REHEAT CAPACITY=0;
REHEAT ENERGY SUPPLY=ELECTRIC;
BASEBOARD HEAT CAPACITY=0.0;
BASEBOARD HEAT ENERGY SUPPLY=ELECTRIC;
ZONE MULTIPLIER=38;
END ZONE;
FOR ZONE 2:
  SUPPLY AIR VOLUME=2;
  EXHAUST AIR VOLUME=0.1946;
  MINIMUM AIR FRACTION=0.3;
  REHEAT CAPACITY=0;
  REHEAT ENERGY SUPPLY=ELECTRIC;
  BASEBOARD HEAT CAPACITY=0.0;
  BASEBOARD HEAT ENERGY SUPPLY=ELECTRIC;
  ZONE MULTIPLIER=38;
END ZONE;
FOR ZONE 3:
  SUPPLY AIR VOLUME=2;
  EXHAUST AIR VOLUME=0.1946;
  MINIMUM AIR FRACTION=0.3;
  REHEAT CAPACITY=0;
  REHEAT ENERGY SUPPLY=ELECTRIC;
  BASEBOARD HEAT CAPACITY=0.0;
  BASEBOARD HEAT ENERGY SUPPLY=ELECTRIC;
  ZONE MULTIPLIER=38;
END ZONE;
FOR ZONE 4:
  SUPPLY AIR VOLUME=2;
  EXHAUST AIR VOLUME=0.1946;
  MINIMUM AIR FRACTION=0.3;
  REHEAT CAPACITY=0;
  REHEAT ENERGY SUPPLY=ELECTRIC;
  BASEBOARD HEAT CAPACITY=0.0;
  BASEBOARD HEAT ENERGY SUPPLY=ELECTRIC;
  ZONE MULTIPLIER=38;
END ZONE;
FOR ZONE 5:
  SUPPLY AIR VOLUME=2;
  EXHAUST AIR VOLUME=0.6622;
  MINIMUM AIR FRACTION=0.3;
  REHEAT CAPACITY=0;
  REHEAT ENERGY SUPPLY=ELECTRIC;
  BASEBOARD HEAT CAPACITY=0.0;
  BASEBOARD HEAT ENERGY SUPPLY=ELECTRIC;
  ZONE MULTIPLIER=38;
END ZONE;
FOR ZONE 6:
  SUPPLY AIR VOLUME=2;
  EXHAUST AIR VOLUME=0.1946;
  MINIMUM AIR FRACTION=0.3;
  REHEAT CAPACITY=0;
  REHEAT ENERGY SUPPLY=ELECTRIC;
  BASEBOARD HEAT CAPACITY=0.0;
  BASEBOARD HEAT ENERGY SUPPLY=ELECTRIC;
  ZONE MULTIPLIER=1;
END ZONE;
FOR ZONE 7:
  SUPPLY AIR VOLUME=2;
  EXHAUST AIR VOLUME=0.1946;
  MINIMUM AIR FRACTION=0.3;
  REHEAT CAPACITY=0;
  REHEAT ENERGY SUPPLY=ELECTRIC;
  BASEBOARD HEAT CAPACITY=0.0;
  BASEBOARD HEAT ENERGY SUPPLY=ELECTRIC;
  ZONE MULTIPLIER=1;
END ZONE;
FOR ZONE 8:
  SUPPLY AIR VOLUME=2;
  EXHAUST AIR VOLUME=0.1946;
  MINIMUM AIR FRACTION=0.3;
  REHEAT CAPACITY=0;
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REHEAT ENERGY SUPPLY=ELECTRIC;
BASEBOARD HEAT CAPACITY=0.0;
BASEBOARD HEAT ENERGY SUPPLY=ELECTRIC;
ZONE MULTIPLIER=1;
END ZONE;
FOR ZONE 9:
  SUPPLY AIR VOLUME=2;
  EXHAUST AIR VOLUME=0.1946;
  MINIMUM AIR FRACTION=0.3;
  REHEAT CAPACITY=0;
  REHEAT ENERGY SUPPLY=ELECTRIC;
  BASEBOARD HEAT CAPACITY=0.0;
  BASEBOARD HEAT ENERGY SUPPLY=ELECTRIC;
  ZONE MULTIPLIER=1;
END ZONE;
FOR ZONE 10:
  SUPPLY AIR VOLUME=2;
  EXHAUST AIR VOLUME=0.6622;
  MINIMUM AIR FRACTION=0.3;
  REHEAT CAPACITY=0;
  REHEAT ENERGY SUPPLY=ELECTRIC;
  BASEBOARD HEAT CAPACITY=0.0;
  BASEBOARD HEAT ENERGY SUPPLY=ELECTRIC;
  ZONE MULTIPLIER=1;
END ZONE;
FOR ZONE 11:
  SUPPLY AIR VOLUME=2;
  EXHAUST AIR VOLUME=0.1946;
  MINIMUM AIR FRACTION=0.3;
  REHEAT CAPACITY=0;
  REHEAT ENERGY SUPPLY=ELECTRIC;
  BASEBOARD HEAT CAPACITY=0.0;
  BASEBOARD HEAT ENERGY SUPPLY=ELECTRIC;
  ZONE MULTIPLIER=1;
END ZONE;
FOR ZONE 12:
  SUPPLY AIR VOLUME=2;
  EXHAUST AIR VOLUME=0.1946;
  MINIMUM AIR FRACTION=0.3;
  REHEAT CAPACITY=0;
  REHEAT ENERGY SUPPLY=ELECTRIC;
  BASEBOARD HEAT CAPACITY=0.0;
  BASEBOARD HEAT ENERGY SUPPLY=ELECTRIC;
  ZONE MULTIPLIER=1;
END ZONE;
FOR ZONE 13:
  SUPPLY AIR VOLUME=2;
  EXHAUST AIR VOLUME=0.1946;
  MINIMUM AIR FRACTION=0.3;
  REHEAT CAPACITY=0;
  REHEAT ENERGY SUPPLY=ELECTRIC;
  BASEBOARD HEAT CAPACITY=0.0;
  BASEBOARD HEAT ENERGY SUPPLY=ELECTRIC;
  ZONE MULTIPLIER=1;
END ZONE;
FOR ZONE 14:
  SUPPLY AIR VOLUME=2;
  EXHAUST AIR VOLUME=0.1946;
  MINIMUM AIR FRACTION=0.3;
  REHEAT CAPACITY=0;
  REHEAT ENERGY SUPPLY=ELECTRIC;
  BASEBOARD HEAT CAPACITY=0.0;
  BASEBOARD HEAT ENERGY SUPPLY=ELECTRIC;
  ZONE MULTIPLIER=1;
END ZONE;
FOR ZONE 15:
  SUPPLY AIR VOLUME=2;
  EXHAUST AIR VOLUME=0.6622;
  MINIMUM AIR FRACTION=0.3;
  REHEAT CAPACITY=0;
  REHEAT ENERGY SUPPLY=ELECTRIC;
  BASEBOARD HEAT CAPACITY=0.0;
  BASEBOARD HEAT ENERGY SUPPLY=ELECTRIC;
  ZONE MULTIPLIER=1;
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END ZONE;
OTHER SYSTEM PARAMETERS:
SUPPLY FAN PRESSURE=1370;
SUPPLY FAN EFFICIENCY=0.55;
RETURN FAN PRESSURE=0;
RETURN FAN EFFICIENCY=0.7;
EXHAUST FAN PRESSURE=0;
EXHAUST FAN EFFICIENCY=0.7;
COLD DECK CONTROL=OUTSIDE AIR CONTROLLED;
COLD DECK THROTTLING RANGE=1.1;
COLD DECK CONTROL SCHEDULE=(12 AT 30,17 AT 10);
MIXED AIR CONTROL=RETURN AIR ECONOMY CYCLE;
DESIRED MIXED AIR TEMPERATURE=COLD DECK TEMPERATURE;
PREHEAT COIL LOCATION=NONE;
PREHEAT TEMPERATURE=8.0;
PREHEAT ENERGY SUPPLY=HOT WATER;
PREHEAT COIL CAPACITY=0;
GAS BURNER EFFICIENCY=0.8;
VAV MINIMUM AIR FRACTION=0.3;
VAV VOLUME CONTROL TYPE=INLET VANES;
** FAN POWER COEFFICIENTS=(0,0,0,0,0);
HUMIDIFIER TYPE=NONE;
HUMIDISTAT LOCATION=1;
HUMIDISTAT SET POINT=50;
SYSTEM ELECTRICAL DEMAND=0.0;
REHEAT TEMPERATURE CONTROL=FIXED SET POINT;
REHEAT TEMPERATURE LIMIT=60;
END OTHER SYSTEM PARAMETERS;
** BLOCK USED FOR DESIGN SYSTEM ONLY **
OTHER SYSTEM PARAMETERS:
COOLING SAT DIFFERENCE=11.1;
HEATING SAT DIFFERENCE=38.88;
AIR VOLUME COEFFICIENT=1.0;
END OTHER SYSTEM PARAMETERS;
** BLOCK USED FOR DESIGN SYSTEM ONLY **
COOLING COIL DESIGN PARAMETERS:
COIL TYPE=CHILLED WATER;
END COOLING COIL DESIGN PARAMETERS;
EQUIPMENT SCHEDULES:
SYSTEM OPERATION=SYSTEM FAN, FROM 01JAN THRU 31DEC;
EXHAUST FAN OPERATION=OFF, FROM 01JAN THRU 31DEC;
PREHEAT COIL OPERATION=OFF, FROM 01JAN THRU 31DEC;
HUMIDIFIER OPERATION=OFF, FROM 01JAN THRU 31DEC;
REHEAT COIL OPERATION=SYSTEM FAN, FROM 01JAN THRU 31DEC;
TSTAT BASEBOARD HEAT OPERATION=OFF, FROM 01JAN THRU 31DEC;
HEAT RECOVERY OPERATION=OFF, FROM 01JAN THRU 31DEC;
MINIMUM VENTILATION SCHEDULE=OFF, FROM 01JAN THRU 31DEC;
MAXIMUM VENTILATION SCHEDULE=MAXOA, FROM 01JAN THRU 31DEC;
SYSTEM ELECTRICAL DEMAND SCHEDULE=SYSTEM FAN, FROM 01JAN THRU 31DEC;
END EQUIPMENT SCHEDULES;
END SYSTEM;
END FAN SYSTEM DESCRIPTION;
BEGIN CENTRAL PLANT DESCRIPTION;
PLANT 1 "CHILLER PLANT #1 " SERVING ALL SYSTEMS;
EQUIPMENT SELECTION:
AIR COOLED CHILLER :
6 OF SIZE 1.0;
END EQUIPMENT SELECTION;
PART LOAD RATIOS:
AIR COOLED CHILLER(MIN=0.10,MAX=1.05,BEST=0.65,ELECTRICAL=0.341);
END PART LOAD RATIOS;
** BLOCK USED FOR DESIGN PLANT ONLY **
SPECIAL PARAMETERS:
PDPCCM=1;
PDPBCM=1;
PDPEGM=1;
END SPECIAL PARAMETERS;
** BLOCK USED FOR DESIGN PLANT ONLY **
FOR SYSTEM 1:
SYSTEM MULTIPLIER=1;
END SYSTEM;
END PLANT;
END CENTRAL PLANT DESCRIPTION;
END INPUT;
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