Solar radiation gain at Beliveau house
(Base design but without direct solar radiation control)
Air Temperature at Beliveau house
(Base design but direct solar radiation controlled at 10w/m²)
Solar radiation gain at Beliveau house
(Base design but direct solar radiation controlled at 10w/m2)
Air Temperature at Beliveau house
(Base design but solar radiation controled at 5w/m²)
Solar Radiation Gain
(Base design but solar radiation controled at 5w/m2)

Date/Time
01/01  24:00:00
02/01  24:00:00
03/01  24:00:00
04/01  24:00:00
05/01  24:00:00
06/01  24:00:00
07/01  24:00:00
08/01  24:00:00
09/01  24:00:00
10/01  24:00:00
11/01  24:00:00

W/Hourly
0.00E+00
1.00E+03
2.00E+03
3.00E+03
4.00E+03
5.00E+03
6.00E+03
7.00E+03
8.00E+03

ZN001:WALL001:WIN001:Window Transmitted Solar[W](Hourly:REPORTSCH)
ZN002:WALL002:WIN001:Window Transmitted Solar[W](Hourly:REPORTSCH)
ZN002:WALL003:WIN001:Window Transmitted Solar[W](Hourly:REPORTSCH)
Air Temperature at Beliveau house
(Base design but insulation thickness in walls and roof =20mm)
Relative Humidity
(Base design but insulation thickness in walls and roof is 10mm)
Air Temperature at Beliveau house
(Base design but insulation thickness in walls and roof is 10mm)
Relative Humidity at Beliveau House
(Base design but insulation thickness in walls and roof is 40mm and no floor mass)
Air Temperature at Beliveau house

(Base design but insulation thickness in walls and roof is 40mm and no floor mass)
Air Temperature at Beliveau house
(Base design but solar radiation control at 30w/m²)
Solar Radiation Gain at Beliveau house
(Base design but solar radiation control at 30w/m2)
Relative Humidity at Beliveau House
(Base design but with night ventilation rate = 1m3/sec)
Air Temperature at Beliveau house
(Base design but with night ventilation rate = 1m3/sec)
Air Temperature at Beliveau house
(Base design but with nighttime ventilation rate = 2m³/sec)
Solar Radiation Gain at Beilieve House
(Base design but with nighttime ventilation rate = 2m³/sec)
Air Temperature at Beliveau house
(Base design but insulation thickness of walls and roof = 100mm)
Solar Radiation Gain
(Base design but insulation thickness of walls and roof = 100mm)
Appendix 2: Beliveau house Input File

-Generator IDFEditor 1.02

-NOTE: All comments with '!-' are ignored by the IDFEditor and are generated automatically.
- Use '!' comments if they need to be retained when using the IDFEditor.

- =========== ALL OBJECTS IN CLASS: RUNPERIOD ===========

RunPeriod,
  8,        !- Begin Month
  1,        !- Begin Day Of Month
  8,        !- End Month
  30;       !- End Day Of Month

- =========== ALL OBJECTS IN CLASS: GROUNDTEMPERATURES ===========

GROUNDTEMPERATURES,
  12.2222233,       !- Jan {C}
  12.7777786,       !- Feb {C}
  14.4444447,       !- Mar {C}
  16.6666679,       !- Apr {C}
  19.4444447,       !- May {C}
  23.333334,        !- Jun {C}
  22.2222233,       !- Jul {C}
  20,               !- Aug {C}
  17.7777786,       !- Sep {C}
  16.6666679,       !- Oct {C}
  14.4444447,       !- Nov {C}
  12.7777786;       !- Dec {C}

- =========== ALL OBJECTS IN CLASS: BUILDING ===========

BUILDING,

- Building Name
  Beliveau House,        !- Building Name

- Building Azimuth
  0,        !- North Axis {deg}

- Building Terrain
  Suburbs,        !- Terrain

- Loads Convergence Tolerance
  0.039999999,       !- Loads Convergence Tolerance Value

- Temperature Convergence Tolerance
  0.4,       !- Temperature Convergence Tolerance Value

- Solar Distribution
FullInteriorAndExterior; !- Solar Distribution

!- =========== ALL OBJECTS IN CLASS: TIMESTEP IN HOUR ===========
TIMESTEP IN HOUR,
  6;                  !- Time Step in Hour

!- =========== ALL OBJECTS IN CLASS: INSIDE CONVECTION ALGORITHM
              ========
INSIDE CONVECTION ALGORITHM,
  !
Inside Convection Algorithm
       Detailed;                !- InsideConvectionValue

!- =========== ALL OBJECTS IN CLASS: OUTSIDE CONVECTION ALGORITHM
               =========
OUTSIDE CONVECTION ALGORITHM,
  !
Outside Convection Algorithm
       Detailed;                !- OutsideConvectionValue

!- =========== ALL OBJECTS IN CLASS: SKY RADIANCE DISTRIBUTION
              =========
SKY RADIANCE DISTRIBUTION,
     1;                        !- SkyRadianceValue

!- =========== ALL OBJECTS IN CLASS: SOLUTION ALGORITHM ===========
SOLUTION ALGORITHM,
  !
Solution Algorithm
       MTF;                     !- SolutionAlgo

!- =========== ALL OBJECTS IN CLASS: AIRFLOW MODEL ===========
Airflow Model,
     Simple;                    !- AirFlowModelValue

!- =========== ALL OBJECTS IN CLASS: DEBUG OUTPUT ===========
DEBUG OUTPUT,
     0;                          !- YesNo

!- =========== ALL OBJECTS IN CLASS: ZONE VOLUME CAPACITANCE
MULTIPLIER ===========
ZONE VOLUME CAPACITANCE MULTIPLIER,
1;                       !- Capacitance Multiplier

!- ==================== ALL OBJECTS IN CLASS: MATERIAL:REGULAR ====================

MATERIAL:REGULAR,
A1 - 1 IN STUCCO,        !- Name
Smooth,                  !- Roughness
0.025389841,             !- Thickness {m}
0.6918309,               !- Conductivity {W/m-K}
1858.142,                !- Density {kg/m^3}
836.8,                   !- Specific Heat {J/kg-K}
0.9,                     !- Absorptance:Thermal
0.92,                    !- Absorptance:Solar
0.92;                    !- Absorptance:Visible

MATERIAL:REGULAR,
C4 - internal mass,      !- Name
Rough,                   !- Roughness
0.075,                   !- Thickness {m}
0.7264224,               !- Conductivity {W/m-K}
1922.216,                !- Density {kg/m^3}
836.8,                   !- Specific Heat {J/kg-K}
0.9,                     !- Absorptance:Thermal
0.76,                    !- Absorptance:Solar
0.76;                    !- Absorptance:Visible

MATERIAL:REGULAR,
E1 - 3 / 4 IN PLASTER OR GYP BOARD,  !- Name
Smooth,                  !- Roughness
0.01905,                 !- Thickness {m}
0.7264224,               !- Conductivity {W/m-K}
1601.846,                !- Density {kg/m^3}
836.8,                   !- Specific Heat {J/kg-K}
0.9,                     !- Absorptance:Thermal
0.92,                    !- Absorptance:Solar
0.92;                    !- Absorptance:Visible

MATERIAL:REGULAR,
8 IN Concrete Block,     !- Name
Smooth,                  !- Roughness
0.2033016,               !- Thickness {m}
1.113,                   !- Conductivity {W/m-K}
849,                     !- Density {kg/m^3}
921.1,                   !- Specific Heat {J/kg-K}
0.9,                     !- Absorptance:Thermal
0.82,                    !- Absorptance:Solar
0.82;                    !- Absorptance:Visible

MATERIAL:REGULAR,
DIRT 12 IN,              !- Name
Rough,                   !- Roughness
0.3048,                  !- Thickness {m}
0.1729577,               !- Conductivity {W/m-K}
1041.2,                  !- Density {kg/m^3}
836.8,  
0.9,  
0.7,  
0.7;  

MATERIAL: REGULAR,  
C10 - 8 IN HW CONCRETE,  
MediumRough,  
0.2033016,  
1.729577,  
2242.585,  
836.8,  
0.9,  
0.65,  
0.65;  

MATERIAL: REGULAR,  
E3 - 3/8 IN FELT AND MEMBRANE,  
Rough,  
0.0095402403,  
0.1902535,  
1121.292,  
1673.6,  
0.9,  
0.75,  
0.75;  

MATERIAL: REGULAR,  
B5 - 1 IN DENSE INSULATION,  
VeryRough,  
0.1,  
0.04323943,  
91.30524,  
836.8,  
0.9,  
0.5,  
0.5;  

MATERIAL: REGULAR,  
C12 - 2 IN HW CONCRETE,  
MediumRough,  
0.050901599,  
1.729577,  
2242.585,  
836.8,  
0.9,  
0.65,  
0.65;  

MATERIAL: REGULAR,  
PARTICLEBOARD,  
Rough,  
0.3,  
0.1729577,  
120,
836.8,  !- Specific Heat (J/kg-K)
0.9,    !- Absorptance:Thermal
0.7,    !- Absorptance:Solar
0.7;    !- Absorptance:Visible

!- =========== ALL OBJECTS IN CLASS: MATERIAL:WINDOWGLASS
===========

MATERIAL:WINDOWGLASS,
!
Material name
  WIN-LAY-GLASS-LIGHT,  !- Name
!
Optical data type {SpectralAverage or Spectral}
  SpectralAverage,       !- Optical Data Type
!
Name of spectral data set when Optical Data Type = Spectral
  ,                     !- Name of Window Glass Spectral Data Set
!
Thickness (m)
  0.003,                !- Thickness (m)
!
Solar transmittance at normal incidence
  0.9,                  !- Solar Transmittance at Normal Incidence
!
Solar reflectance at normal incidence: front side
  0.031,                !- Solar Reflectance at Normal Incidence: Front Side
!
Solar reflectance at normal incidence: back side
  0.031,                !- Solar Reflectance at Normal Incidence: Back Side
!
Visible transmittance at normal incidence
  0.9,                  !- Visible Transmittance at Normal Incidence
!
Visible reflectance at normal incidence: front side
  0.05,                 !- Visible Reflectance at Normal Incidence: Front Side
!
Visible reflectance at normal incidence: back side
  0.05,                 !- Visible Reflectance at Normal Incidence: Back Side
!
IR transmittance at normal incidence
  0,                    !- IR Transmittance at Normal Incidence
!
IR emissivity: front side
  0.84,                 !- IR Hemispherical Emissivity: Front Side
!
IR emissivity: back side
  0.84,                 !- IR Hemispherical Emissivity: Back Side
!
Conductivity (W/m-K)
  0.9;                  !- Conductivity (W/m-K)
MATERIAL: WINDOWGLASS,
  WIN-dark glass,    !- Name
  SpectralAverage,  !- Optical Data Type
  ,                  !- Name of Window Glass Spectral Data Set
  0.006,            !- Thickness (m)
  0.6,              !- Solar Transmittance at Normal Incidence
  0.1,              !- Solar Reflectance at Normal Incidence:
  Front Side 0.1,   !- Solar Reflectance at Normal Incidence:
  Back Side 0.6,    !- Visible Transmittance at Normal Incidence
  0.1,              !- Visible Reflectance at Normal Incidence: Front Side
  0.1,              !- Visible Reflectance at Normal Incidence: Back Side
  0.6,              !- IR Transmittance at Normal Incidence
  0.1,              !- IR Hemispherical Emissivity: Front Side
  0.1,              !- IR Hemispherical Emissivity: Back Side
  0.9;              !- Conductivity (W/m-K)

!- =========== ALL OBJECTS IN CLASS: MATERIAL: WINDOWGLASS ===========

MATERIAL: WINDOWGAS,
  gaz layer,        !- Name
  Air,              !- Gas Type
  0.02,             !- Thickness (m)
  1,                !- Density (kg/m3)
  0.1,              !- Density Temperature Derivative (kg/m3-K)
                 1, !- Conductivity (W/m-K)
                 1, !- Conductivity Temperature Derivative
                 {W/m-K2} 1, !- Viscosity (kg/m-s)
                 1, !- Viscosity Temperature Derivative (kg/m-s-K)
                 1, !- Prandtl Number
                 0; !- Prandtl Number Temperature Derivative

!- =========== ALL OBJECTS IN CLASS: MATERIAL: WINDOWSHADE ===========

MATERIAL: WINDOWSHADE,
  winshadematerial, !- Name
  0.05,             !- Solar transmittance
  0.3,              !- Solar Reflectance
  0.05,             !- Visible transmittance
  0.3,              !- Visible reflectance
  0.9,              !- Thermal hemispherical emissivity
  0.05,             !- Thermal transmittance
  0.001,            !- Thickness (m)
  1;                !- Conductivity (W/m-K)
MATERIALPROPERTY:MOISTURE:MTF,
 A1 - 1 IN STUCCO,  
 0.00000100766,  
 0.5,  
 0.0004655,  
 Capacity (kg/kg-K) 0.41951504;  
 Isothermal moisture capacity {m3/kg}

MATERIALPROPERTY:MOISTURE:MTF,
 C4 - internal mass,  
 0.00000487362,  
 0.5,  
 0.00013022,  
 Capacity (kg/kg-K) 0.13165985;  
 Isothermal moisture capacity {m3/kg}

MATERIALPROPERTY:MOISTURE:MTF,
 E1 - 3 / 4 IN PLASTER OR GYP BOARD,  
 0.00000526351,  
 0.7,  
 0.0008794,  
 Capacity (kg/kg-K) 1.1602;  
 Isothermal moisture capacity {m3/kg}

MATERIALPROPERTY:MOISTURE:MTF,
 8 IN Concrete Block,  
 0.0000056234,  
 0.5,  
 0.00057034,  
 Capacity (kg/kg-K) 0.58603225;  
 Isothermal moisture capacity {m3/kg}

MATERIALPROPERTY:MOISTURE:MTF,
 DIRT 12 IN,  
 0.000015051,  
 0.8,  
 0.00089686,  
 Capacity (kg/kg-K) 0.94256147;  
 Isothermal moisture capacity {m3/kg}

MATERIALPROPERTY:MOISTURE:MTF,
 C10 - 8 IN HW CONCRETE,  
 0.00000232898,  
 0.5,  
 0.00050548,  
 Capacity (kg/kg-K) 0.52702561;  
 Isothermal moisture capacity {m3/kg}

MATERIALPROPERTY:MOISTURE:MTF,
 E3 - 3 / 8 IN FELT AND MEMBRANE,  
 0.0000000024419,  
 Vapor Diffusivity {m2/s}
Porosity \( \frac{m^3}{m^3} \)
Thermal-Gradient Coeff for Moisture Capacity \( \frac{kg}{kg-K} \)
Isothermal moisture capacity \( \frac{m^3}{kg} \)

MATERIALPROPERTY:MOISTURE:MTF,
B5 - 1 IN DENSE INSULATION,

\[
\begin{align*}
0.00000078477, & \quad \text{Vapor Diffusivity} \quad \{m^2/s\} \\
0.9, & \quad \text{Porosity} \quad \{m^3/m^3\} \\
0.0007671, & \quad \text{Thermal-Gradient Coeff for Moisture Capacity} \quad \{kg/kg-K\} \\
0.84124418; & \quad \text{Isothermal moisture capacity} \quad \{m^3/kg\}
\end{align*}
\]

MATERIALPROPERTY:MOISTURE:MTF,
C12 - 2 IN HW CONCRETE,

\[
\begin{align*}
0.00000232898, & \quad \text{Vapor Diffusivity} \quad \{m^2/s\} \\
0.5, & \quad \text{Porosity} \quad \{m^3/m^3\} \\
0.00050548, & \quad \text{Thermal-Gradient Coeff for Moisture Capacity} \quad \{kg/kg-K\} \\
0.52702561; & \quad \text{Isothermal moisture capacity} \quad \{m^3/kg\}
\end{align*}
\]

MATERIALPROPERTY:MOISTURE:MTF,
PARTICLEBOARD,

\[
\begin{align*}
0.000095051, & \quad \text{Vapor Diffusivity} \quad \{m^2/s\} \\
0.8, & \quad \text{Porosity} \quad \{m^3/m^3\} \\
0.00089686, & \quad \text{Thermal-Gradient Coeff for Moisture Capacity} \quad \{kg/kg-K\} \\
1.942562; & \quad \text{Isothermal moisture capacity} \quad \{m^3/kg\}
\end{align*}
\]

MATERIALPROPERTY:MOISTURE:EMPD,
E1 - 3 / 4 IN PLASTER OR GYP BOARD,

\[
\begin{align*}
0.004, & \quad \text{EMPD Value} \quad \{m\} \\
\{\text{dimensionless}\} 0.072549, & \quad \text{Constant to define equilibrium equation} \\
\text{equation (dimensionless)} & \quad \text{"a", coefficient to define equilibrium equation} \\
\{\text{dimensionless}\} 0.397173, & \quad \text{Constant to define equilibrium equation} \\
\text{equation (dimensionless)} & \quad \text{"b", coefficient to define equilibrium equation} \\
\{\text{dimensionless}\} 0.007774, & \quad \text{Constant to define equilibrium equation} \\
\text{equation (dimensionless)} & \quad \text{"c", coefficient to define equilibrium equation} \\
\{\text{dimensionless}\} 11.7057; & \quad \text{Constant to define equilibrium equation} \\
\text{equation (dimensionless)} & \quad \text{"d", coefficient to define equilibrium equation}
\end{align*}
\]
C10 - 8 IN HW CONCRETE,  !- Name
  EMPD Value
  0.004,                          !- EMPD value (m)
  !                           Constant to define equilibrium equation
  {dimensionless}  
  0.018062,                      !- "a", coefficient to define equilibrium equation
  equation (dimensionless)       !- Constant to define equilibrium equation
  {dimensionless}  
  0.451879,                      !- "b", coefficient to define equilibrium equation
  equation (dimensionless)       !- Constant to define equilibrium equation
  {dimensionless}  
  0.026178,                      !- "c", coefficient to define equilibrium equation
  equation (dimensionless)       !- Constant to define equilibrium equation
  {dimensionless}  
  10.8356;                       !- "d", coefficient to define equilibrium equation
  equation (dimensionless)       

MATERIALPROPERTY:MOISTURE:EMPD,

C12 - 2 IN HW CONCRETE,  !- Name
  EMPD Value
  0.004,                          !- EMPD value (m)
  !                           Constant to define equilibrium equation
  {dimensionless}  
  0.018062,                      !- "a", coefficient to define equilibrium equation
  equation (dimensionless)       !- Constant to define equilibrium equation
  {dimensionless}  
  0.451879,                      !- "b", coefficient to define equilibrium equation
  equation (dimensionless)       !- Constant to define equilibrium equation
  {dimensionless}  
  0.026178,                      !- "c", coefficient to define equilibrium equation
  equation (dimensionless)       !- Constant to define equilibrium equation
  {dimensionless}  
  10.8356;                       !- "d", coefficient to define equilibrium equation
  equation (dimensionless)       

MATERIALPROPERTY:MOISTURE:EMPD,

E3 - 3 / 8 IN FELT AND MEMBRANE,  
  !- Name
  0.004,                          !- EMPD value (m)
  0.018062,                      !- "a", coefficient to define equilibrium equation
  equation (dimensionless)       !- Constant to define equilibrium equation
  0.451879,                      !- "b", coefficient to define equilibrium equation
  equation (dimensionless)       !- Constant to define equilibrium equation
  0.026178,                      !- "c", coefficient to define equilibrium equation
  equation (dimensionless)       !- Constant to define equilibrium equation
  10.8356;                       !- "d", coefficient to define equilibrium equation
  equation (dimensionless)       

MATERIALPROPERTY:MOISTURE:EMPD,

C4 - 4 IN COMMON BRICK,  !- Name
  0.004,                          !- EMPD value (m)
0.018062,                !- "a", coefficient to define equilibrium equation (dimensionless)
0.451879,                !- "b", coefficient to define equilibrium equation (dimensionless)
0.026178,                !- "c", coefficient to define equilibrium equation (dimensionless)
10.8356;                 !- "d", coefficient to define equilibrium equation (dimensionless)

!- =========== ALL OBJECTS IN CLASS: CONSTRUCTION ===========

CONSTRUCTION,

Material layer names follow:
EXTWALL80,               !- Name
A1 - 1 IN STUCCO,        !- Outside Layer
B5 - 1 IN DENSE INSULATION,
                        !- Layer #2
E1 - 3 / 4 IN PLASTER OR GYP BOARD,
                        !- Layer #3
E1 - 3 / 4 IN PLASTER OR GYP BOARD;
                        !- Layer #4

CONSTRUCTION,

Material layer names follow:
PARTITION06,             !- Name
E1 - 3 / 4 IN PLASTER OR GYP BOARD,
                        !- Outside Layer
gaz layer,              !- Layer #2
E1 - 3 / 4 IN PLASTER OR GYP BOARD;
                        !- Layer #3

CONSTRUCTION,

Material layer names follow:
FLOOR ,                  !- Name
DIRT 12 IN,              !- Outside Layer
C10 - 8 IN HW CONCRETE;  !- Layer #2

CONSTRUCTION,

Material layer names follow:
ROOF34,                  !- Name
E2 - 1 / 2 IN SLAG OR STONE,
                        !- Outside Layer
E3 - 3 / 8 IN FELT AND MEMBRANE,
                        !- Layer #2
B5 - 1 IN DENSE INSULATION,
                        !- Layer #3
E1 - 3 / 4 IN PLASTER OR GYP BOARD;
                        !- Layer #4

CONSTRUCTION,
WIN-CON-LIGHT,           !- Name
WIN-dark glass,          !- Outside Layer
CONSTRUCTION,
  EXTWALL80-earth,       !- Name
  DIRT 12 IN,            !- Outside Layer
  C4 - 4 IN COMMON BRICK, !- Layer #2
  E3 - 3 / 8 IN FELT AND MEMBRANE;          !- Layer #3

CONSTRUCTION,
  winshadeconst,        !- Name
  winshadematerial,     !- Outside Layer
  WIN-dark glass,       !- Layer #2
  gaz layer,            !- Layer #3
  WIN-dark glass;       !- Layer #4

CONSTRUCTION,
  floor mass,           !- Name
  C4 - internal mass;   !- Outside Layer

CONSTRUCTION,
  floor MIDLR,          !- Name
  A1 - 1 IN STUCCO,     !- Outside Layer
  B5 - 1 IN DENSE INSULATION,
    !- Layer #2
  E1 - 3 / 4 IN PLASTER OR GYP BOARD;          !- Layer #3

CONSTRUCTION,
  ROOFSingle,           !- Name
  E2 - 1 / 2 IN SLAG OR STONE,
    !- Outside Layer
  E3 - 3 / 8 IN FELT AND MEMBRANE,
    !- Layer #2
  A1 - 1 IN STUCCO,     !- Layer #3
  E1 - 3 / 4 IN PLASTER OR GYP BOARD;          !- Layer #4

!- =========== ALL OBJECTS IN CLASS: ZONE ===========

ZONE,
!
Zone Name
  RESISTIVE ZONE,       !- Zone Name
  !
Zone North Axis (relative to Building)
  0,                   !- Relative North (to building) (deg)
  !
Zone X Origin (m)
  0,                   !- X Origin (m)
  !
Zone Y Origin (m)
  0,                   !- Y Origin (m)
  !
Zone Z Origin (m)

206
0,                   !- Z Origin {m}
!
Zone Type
  1,                   !- Type
!
Zone Multiplier
  1,                   !- Multiplier
!
Zone Ceiling Height {m}
  -100,                !- Ceiling Height {m}
!
Zone Volume {m**3}
  0;                   !- Volume {m^3}
ZONE,
!
Zone Name
    EAST ZONE,         !- Zone Name
!
Zone North Axis (relative to Building)
  0,                   !- Relative North (to building) {deg}
!
Zone X Origin {m}
  6.096,               !- X Origin {m}
!
Zone Y Origin {m}
  0,                   !- Y Origin {m}
!
Zone Z Origin {m}
  0,                   !- Z Origin {m}
!
Zone Type
  1,                   !- Type
!
Zone Multiplier
  1,                   !- Multiplier
!
Zone Ceiling Height {m}
  -100,                !- Ceiling Height {m}
!
Zone Volume {m**3}
  0;                   !- Volume {m^3}
ZONE,
!
Zone Name
    NORTH ZONE,        !- Zone Name
!
Zone North Axis (relative to Building)
  0,                   !- Relative North (to building) {deg}
!
Zone X Origin {m}
  0,                   !- X Origin {m}
!
Zone Y Origin {m}
  6.096,               !- Y Origin {m}
Zone Z Origin {m}
  0,  !- Z Origin {m}
!
Zone Type
  1,  !- Type
!
Zone Multiplier
  1,  !- Multiplier
!
Zone Ceiling Height {m}
  -100,  !- Ceiling Height {m}
!
Zone Volume {m**3}
  0;  !- Volume {m3}

!- =========== ALL OBJECTS IN CLASS: SURFACEGEOMETRY ===========

SurfaceGeometry,
!
BLAST Translator units, UpperLeftCorner, Counter Clock-Wise, World Coordinate System
!
Note original Building and Zone Origins are retained
  UpperLeftCorner,  !- SurfaceStartingPosition
  CounterClockWise,  !- VertexEntry
  WorldCoordinateSystem;  !- SurfaceGeometryKey

!- =========== ALL OBJECTS IN CLASS: SURFACE:HEATTRANSFER ===========

Surface:HeatTransfer,
  Zn001:Wall001,  !- User Supplied Surface Name
  Wall,  !- Surface Type
  EXTWALL80,  !- Construction Name of the Surface
  RESISTIVE ZONE,  !- InsideFaceEnvironment
  ExteriorEnvironment,  !- OutsideFaceEnvironment
  ,  !- OutsideFaceEnvironment Object
  SunExposed,  !- Sun Exposure
  WindExposed,  !- Wind Exposure
  0.5,  !- View Factor to Ground
  4,  !- Number of Surface Vertex Groups --

Number of (X,Y,Z) groups in this surface
  0,  !- Vertex 1 X-coordinate {m}
  0,  !- Vertex 1 Y-coordinate {m}
  6,  !- Vertex 1 Z-coordinate {m}
  0,  !- Vertex 2 X-coordinate {m}
  0,  !- Vertex 2 Y-coordinate {m}
  0,  !- Vertex 2 Z-coordinate {m}
  10,  !- Vertex 3 X-coordinate {m}
  0,  !- Vertex 3 Y-coordinate {m}
  0,  !- Vertex 3 Z-coordinate {m}
  10,  !- Vertex 4 X-coordinate {m}
  0,  !- Vertex 4 Y-coordinate {m}
  6;  !- Vertex 4 Z-coordinate {m}
Surface: HeatTransfer,
Zn001: Wall002, !- User Supplied Surface Name
Wall, !- Surface Type
EXTWALL80, !- Construction Name of the Surface
RESISTIVE ZONE, !- InsideFaceEnvironment
ExteriorEnvironment, !- OutsideFaceEnvironment
, !- OutsideFaceEnvironment Object
SunExposed, !- Sun Exposure
WindExposed, !- Wind Exposure
0.5, !- View Factor to Ground
4, !- Number of Surface Vertex Groups --
Number of (X,Y,Z) groups in this surface
0, !- Vertex 1 X-coordinate {m}
8, !- Vertex 1 Y-coordinate {m}
6, !- Vertex 1 Z-coordinate {m}
0, !- Vertex 2 X-coordinate {m}
8, !- Vertex 2 Y-coordinate {m}
0, !- Vertex 2 Z-coordinate {m}
0, !- Vertex 3 X-coordinate {m}
0, !- Vertex 3 Y-coordinate {m}
0, !- Vertex 3 Z-coordinate {m}
0, !- Vertex 4 X-coordinate {m}
0, !- Vertex 4 Y-coordinate {m}
6; !- Vertex 4 Z-coordinate {m}

Surface: HeatTransfer,
Zn001: Wall003, !- User Supplied Surface Name
Wall, !- Surface Type
PARTITION06, !- Construction Name of the Surface
RESISTIVE ZONE, !- InsideFaceEnvironment
ExteriorEnvironment, !- OutsideFaceEnvironment
, !- OutsideFaceEnvironment Object
NoSun, !- Sun Exposure
NoWind, !- Wind Exposure
0.5, !- View Factor to Ground
4, !- Number of Surface Vertex Groups --
Number of (X,Y,Z) groups in this surface
10, !- Vertex 1 X-coordinate {m}
8, !- Vertex 1 Y-coordinate {m}
6, !- Vertex 1 Z-coordinate {m}
10, !- Vertex 2 X-coordinate {m}
8, !- Vertex 2 Y-coordinate {m}
0, !- Vertex 2 Z-coordinate {m}
0, !- Vertex 3 X-coordinate {m}
8, !- Vertex 3 Y-coordinate {m}
0, !- Vertex 3 Z-coordinate {m}
0, !- Vertex 4 X-coordinate {m}
0, !- Vertex 4 Y-coordinate {m}
8, !- Vertex 4 Z-coordinate {m}
6; !- Vertex 4 Z-coordinate {m}

Surface: HeatTransfer,
Zn001: Wall004, !- User Supplied Surface Name
Wall, !- Surface Type
PARTITION06, !- Construction Name of the Surface
RESISTIVE ZONE, !- InsideFaceEnvironment
ExteriorEnvironment, !- OutsideFaceEnvironment
OutsideFaceEnvironment Object
NoSun,
NoWind,
0.5,
4,

Number of (X,Y,Z) groups in this surface
10,
0,
6,
10,
0,
0,
10,
8,
0,
10,
8,
6;

Surface:HeatTransfer,
Zn001:Flr001,
Floor,
FLOOR SLAB 8 IN,
RESISTIVE ZONE,
OtherZone,
Zn001:Flr001,
NoSun,
NoWind,
1,
4,

Number of (X,Y,Z) groups in this surface
0,
0,
0,
8,
0,
0,
10,
8,
0,
10,
0,
0;

Surface:HeatTransfer,
Zn001:Roof001,
Roof,
floor MIDLR,
RESISTIVE ZONE,
OtherZone,
Zn002:Flr001,
SunExposed,
WindExposed,
0,
4,

Number of (X,Y,Z) groups in this surface
0,
Surface:HeatTransfer,           ! User Supplied Surface Name
Zn002:Wall001,                ! Surface Type
Wall,                        ! Construction Name of the Surface
ROOFsingle,                  ! InsideFaceEnvironment
EAST ZONE,                   ! OutsideFaceEnvironment
,                            ! OutsideFaceEnvironment Object
SunExposed,                  ! Sun Exposure
WindExposed,                 ! Wind Exposure
0.5,                        ! View Factor to Ground
4,                           ! Number of Surface Vertex Groups --

Number of (X,Y,Z) groups in this surface
10,                          ! Vertex 1 X-coordinate [m]
8,                           ! Vertex 1 Y-coordinate [m]
9,                           ! Vertex 1 Z-coordinate [m]
10,                          ! Vertex 2 X-coordinate [m]
8,                           ! Vertex 2 Y-coordinate [m]
6,                           ! Vertex 2 Z-coordinate [m]
0,                           ! Vertex 3 X-coordinate [m]
8,                           ! Vertex 3 Y-coordinate [m]
6,                           ! Vertex 3 Z-coordinate [m]
0,                           ! Vertex 4 X-coordinate [m]
8,                           ! Vertex 4 Y-coordinate [m]
9;                           ! Vertex 4 Z-coordinate [m]

Surface:HeatTransfer,           ! User Supplied Surface Name
Zn002:Wall002,                ! Surface Type
Wall,                        ! Construction Name of the Surface
ROOFsingle,                  ! InsideFaceEnvironment
EAST ZONE,                   ! OutsideFaceEnvironment
,                            ! OutsideFaceEnvironment Object
SunExposed,                  ! Sun Exposure
WindExposed,                 ! Wind Exposure
0.5,                        ! View Factor to Ground
4,                           ! Number of Surface Vertex Groups --

Number of (X,Y,Z) groups in this surface
0,                           ! Vertex 1 X-coordinate [m]
0,                           ! Vertex 1 Y-coordinate [m]
9,                           ! Vertex 1 Z-coordinate [m]
0,                           ! Vertex 2 X-coordinate [m]
0,                           ! Vertex 2 Y-coordinate [m]
6,                           ! Vertex 2 Z-coordinate [m]
0,                           ! Vertex 3 X-coordinate [m]
10,                          ! Vertex 3 Y-coordinate [m]
0,                           ! Vertex 3 Z-coordinate [m]
0,                           ! Vertex 4 X-coordinate [m]

Surface:HeatTransfer,
Zn002:Wall003,  !- User Supplied Surface Name
Wall,  !- Surface Type
ROOFsingle,  !- Construction Name of the Surface
EAST ZONE,  !- InsideFaceEnvironment
ExteriorEnvironment,  !- OutsideFaceEnvironment Object
SunExposed,  !- Sun Exposure
WindExposed,  !- Wind Exposure
0.5,  !- View Factor to Ground
4,  !- Number of Surface Vertex Groups --

Number of (X,Y,Z) groups in this surface
10,  !- Vertex 1 X-coordinate {m}
0,  !- Vertex 1 Y-coordinate {m}
9,  !- Vertex 1 Z-coordinate {m}
10,  !- Vertex 2 X-coordinate {m}
0,  !- Vertex 2 Y-coordinate {m}
6,  !- Vertex 2 Z-coordinate {m}
10,  !- Vertex 3 X-coordinate {m}
8,  !- Vertex 3 Y-coordinate {m}
6,  !- Vertex 3 Z-coordinate {m}
10,  !- Vertex 4 X-coordinate {m}
8,  !- Vertex 4 Y-coordinate {m}
9;  !- Vertex 4 Z-coordinate {m}

Surface:HeatTransfer,
Zn002:Wall004,  !- User Supplied Surface Name
Wall,  !- Surface Type
ROOFsingle,  !- Construction Name of the Surface
EAST ZONE,  !- InsideFaceEnvironment
ExteriorEnvironment,  !- OutsideFaceEnvironment Object
NoSun,  !- Sun Exposure
NoWind,  !- Wind Exposure
0.5,  !- View Factor to Ground
4,  !- Number of Surface Vertex Groups --

Number of (X,Y,Z) groups in this surface
0,  !- Vertex 1 X-coordinate {m}
8,  !- Vertex 1 Y-coordinate {m}
9,  !- Vertex 1 Z-coordinate {m}
0,  !- Vertex 2 X-coordinate {m}
8,  !- Vertex 2 Y-coordinate {m}
6,  !- Vertex 2 Z-coordinate {m}
0,  !- Vertex 3 X-coordinate {m}
0,  !- Vertex 3 Y-coordinate {m}
0,  !- Vertex 3 Z-coordinate {m}
0,  !- Vertex 4 X-coordinate {m}
0,  !- Vertex 4 Y-coordinate {m}
9;  !- Vertex 4 Z-coordinate {m}

Surface:HeatTransfer,
Zn002:Flr001,  !- User Supplied Surface Name
Floor,                     !- Surface Type
floor MIDLR,            !- Construction Name of the Surface
RESISTIVE ZONE,        !- InsideFaceEnvironment
OtherZone,             !- OutsideFaceEnvironment
Zn001:Roof001,          !- OutsideFaceEnvironment Object
NoSun,                 !- Sun Exposure
NoWind,                !- Wind Exposure
1,                     !- View Factor to Ground
4,                     !- Number of Surface Vertice Groups --
Number of (X,Y,Z) groups in this surface
0,                     !- Vertex 1 X-coordinate {m}
0,                     !- Vertex 1 Y-coordinate {m}
6,                     !- Vertex 1 Z-coordinate {m}
0,                     !- Vertex 2 X-coordinate {m}
8,                     !- Vertex 2 Y-coordinate {m}
6,                     !- Vertex 2 Z-coordinate {m}
10,                    !- Vertex 3 X-coordinate {m}
8,                     !- Vertex 3 Y-coordinate {m}
6,                     !- Vertex 3 Z-coordinate {m}
10,                    !- Vertex 4 X-coordinate {m}
0,                     !- Vertex 4 Y-coordinate {m}
6;                     !- Vertex 4 Z-coordinate {m}

Surface:HeatTransfer,
Zn002:Roof001,          !- User Supplied Surface Name
Roof,                  !- Surface Type
ROOFsingle,            !- Construction Name of the Surface
EAST ZONE,             !- InsideFaceEnvironment
ExteriorEnvironment,   !- OutsideFaceEnvironment
,                      !- OutsideFaceEnvironment Object
SunExposed,            !- Sun Exposure
WindExposed,           !- Wind Exposure
0,                     !- View Factor to Ground
4,                     !- Number of Surface Vertice Groups --
Number of (X,Y,Z) groups in this surface
0,                     !- Vertex 1 X-coordinate {m}
8,                     !- Vertex 1 Y-coordinate {m}
9,                     !- Vertex 1 Z-coordinate {m}
0,                     !- Vertex 2 X-coordinate {m}
0,                     !- Vertex 2 Y-coordinate {m}
9,                     !- Vertex 2 Z-coordinate {m}
10,                    !- Vertex 3 X-coordinate {m}
0,                     !- Vertex 3 Y-coordinate {m}
9,                     !- Vertex 3 Z-coordinate {m}
10,                    !- Vertex 4 X-coordinate {m}
10,                    !- Vertex 4 Y-coordinate {m}
8;                     !- Vertex 4 Z-coordinate {m}

Surface:HeatTransfer,
Zn003:Wall001,          !- User Supplied Surface Name
Wall,                  !- Surface Type
EXTWALL80,             !- Construction Name of the Surface
NORTH ZONE,            !- InsideFaceEnvironment
ExteriorEnvironment,   !- OutsideFaceEnvironment
,                      !- OutsideFaceEnvironment Object
SunExposed,            !- Sun Exposure
WindExposed,           !- Wind Exposure

0.5, !- View Factor to Ground
4, !- Number of Surface Vertice Groups --

Number of (X,Y,Z) groups in this surface
0, !- Vertex 1 X-coordinate {m}
14, !- Vertex 1 Y-coordinate {m}
6, !- Vertex 1 Z-coordinate {m}
0, !- Vertex 2 X-coordinate {m}
14, !- Vertex 2 Y-coordinate {m}
0, !- Vertex 2 Z-coordinate {m}
0, !- Vertex 3 X-coordinate {m}
8, !- Vertex 3 Y-coordinate {m}
0, !- Vertex 3 Z-coordinate {m}
0, !- Vertex 4 X-coordinate {m}
8, !- Vertex 4 Y-coordinate {m}
6; !- Vertex 4 Z-coordinate {m}

Surface: HeatTransfer,
Zn003:Wall002, !- User Supplied Surface Name
Wall, !- Surface Type
EXTWALL80, !- Construction Name of the Surface
NORTH ZONE, !- InsideFaceEnvironment
ExteriorEnvironment, !- OutsideFaceEnvironment
, !- OutsideFaceEnvironment Object
SunExposed, !- Sun Exposure
WindExposed, !- Wind Exposure
0.5, !- View Factor to Ground
4, !- Number of Surface Vertice Groups --

Number of (X,Y,Z) groups in this surface
17, !- Vertex 1 X-coordinate {m}
14, !- Vertex 1 Y-coordinate {m}
6, !- Vertex 1 Z-coordinate {m}
17, !- Vertex 2 X-coordinate {m}
14, !- Vertex 2 Y-coordinate {m}
3, !- Vertex 2 Z-coordinate {m}
0, !- Vertex 3 X-coordinate {m}
14, !- Vertex 3 Y-coordinate {m}
3, !- Vertex 3 Z-coordinate {m}
0, !- Vertex 4 X-coordinate {m}
14, !- Vertex 4 Y-coordinate {m}
6; !- Vertex 4 Z-coordinate {m}

Surface: HeatTransfer,
Zn003:Wall003, !- User Supplied Surface Name
Wall, !- Surface Type
EXTWALL80, !- Construction Name of the Surface
NORTH ZONE, !- InsideFaceEnvironment
ExteriorEnvironment, !- OutsideFaceEnvironment
, !- OutsideFaceEnvironment Object
NoSun, !- Sun Exposure
NoWind, !- Wind Exposure
0.5, !- View Factor to Ground
4, !- Number of Surface Vertice Groups --

Number of (X,Y,Z) groups in this surface
17, !- Vertex 1 X-coordinate {m}
8, !- Vertex 1 Y-coordinate {m}
6, !- Vertex 1 Z-coordinate {m}
17, !- Vertex 2 X-coordinate {m}
Surface:HeatTransfer,
Zn003:Wall004, !- User Supplied Surface Name
Wall, !- Surface Type
PARTITION06, !- Construction Name of the Surface
NORTH ZONE, !- InsideFaceEnvironment
OtherZone, !- OutsideFaceEnvironment
Zn003:Wall003, !- OutsideFaceEnvironment Object
NoSun, !- Sun Exposure
NoWind, !- Wind Exposure
0.5, !- View Factor to Ground
4, !- Number of Surface Vertex Groups --

Number of (X,Y,Z) groups in this surface
0, !- Vertex 1 X-coordinate {m}
8, !- Vertex 1 Y-coordinate {m}
6, !- Vertex 1 Z-coordinate {m}
0, !- Vertex 2 X-coordinate {m}
8, !- Vertex 2 Y-coordinate {m}
0, !- Vertex 2 Z-coordinate {m}
10, !- Vertex 3 X-coordinate {m}
8, !- Vertex 3 Y-coordinate {m}
0, !- Vertex 3 Z-coordinate {m}
10, !- Vertex 4 X-coordinate {m}
8, !- Vertex 4 Y-coordinate {m}
6; !- Vertex 4 Z-coordinate {m}

Surface:HeatTransfer,
Zn003:Wall005, !- User Supplied Surface Name
Wall, !- Surface Type
PARTITION06, !- Construction Name of the Surface
NORTH ZONE, !- InsideFaceEnvironment
ExteriorEnvironment, !- OutsideFaceEnvironment
Zn003:Wall003, !- OutsideFaceEnvironment Object
NoSun, !- Sun Exposure
NoWind, !- Wind Exposure
0.5, !- View Factor to Ground
4, !- Number of Surface Vertex Groups --

Number of (X,Y,Z) groups in this surface
10, !- Vertex 1 X-coordinate {m}
8, !- Vertex 1 Y-coordinate {m}
6, !- Vertex 1 Z-coordinate {m}
10, !- Vertex 2 X-coordinate {m}
8, !- Vertex 2 Y-coordinate {m}
0, !- Vertex 2 Z-coordinate {m}
17, !- Vertex 3 X-coordinate {m}
8, !- Vertex 3 Y-coordinate {m}
0, !- Vertex 3 Z-coordinate {m}
17, !- Vertex 4 X-coordinate {m}
8, !- Vertex 4 Y-coordinate {m}

Surface:HeatTransfer,
  Zn003:F1r001, !- User Supplied Surface Name
Floor, !- Surface Type
FLOOR SLAB 8 IN, !- Construction Name of the Surface
NORTH ZONE, !- InsideFaceEnvironment
OtherZone, !- OutsideFaceEnvironment
Zn003:F1r001, !- OutsideFaceEnvironment Object
NoSun, !- Sun Exposure
NoWind, !- Wind Exposure
1, !- View Factor to Ground
4, !- Number of Surface Vertice Groups --

Number of (X,Y,Z) groups in this surface
0, !- Vertex 1 X-coordinate {m}
8, !- Vertex 1 Y-coordinate {m}
0, !- Vertex 1 Z-coordinate {m}
0, !- Vertex 2 X-coordinate {m}
14, !- Vertex 2 Y-coordinate {m}
0, !- Vertex 2 Z-coordinate {m}
0, !- Vertex 3 X-coordinate {m}
17, !- Vertex 3 Y-coordinate {m}
0, !- Vertex 3 Z-coordinate {m}
17, !- Vertex 4 X-coordinate {m}
8, !- Vertex 4 Y-coordinate {m}
0; !- Vertex 4 Z-coordinate {m}

Surface:HeatTransfer,
  Zn003:Roof001, !- User Supplied Surface Name
Roof, !- Surface Type
ROOF34, !- Construction Name of the Surface
NORTH ZONE, !- InsideFaceEnvironment
ExteriorEnvironment, !- OutsideFaceEnvironment
SunExposed, !- Sun Exposure
WindExposed, !- Wind Exposure
0, !- View Factor to Ground
4, !- Number of Surface Vertice Groups --

Number of (X,Y,Z) groups in this surface
0, !- Vertex 1 X-coordinate {m}
14, !- Vertex 1 Y-coordinate {m}
6, !- Vertex 1 Z-coordinate {m}
0, !- Vertex 2 X-coordinate {m}
8, !- Vertex 2 Y-coordinate {m}
6, !- Vertex 2 Z-coordinate {m}
6, !- Vertex 3 X-coordinate {m}
8, !- Vertex 3 Y-coordinate {m}
6, !- Vertex 3 Z-coordinate {m}
17, !- Vertex 4 X-coordinate {m}
14, !- Vertex 4 Y-coordinate {m}
6; !- Vertex 4 Z-coordinate {m}

Surface:HeatTransfer,
  Zn003:Wall003a, !- User Supplied Surface Name
Wall, !- Surface Type
EXTWALL80-earth, !- Construction Name of the Surface
NORTH ZONE, !- InsideFaceEnvironment
ExteriorEnvironment,  !- OutsideFaceEnvironment
  ,  !- OutsideFaceEnvironment Object
NoSun,  !- Sun Exposure
NoWind,  !- Wind Exposure
0.5,  !- View Factor to Ground
4,  !- Number of Surface Vertex Groups --

Number of (X,Y,Z) groups in this surface
17,  !- Vertex 1 X-coordinate {m}
8,  !- Vertex 1 Y-coordinate {m}
3,  !- Vertex 1 Z-coordinate {m}
17,  !- Vertex 2 X-coordinate {m}
8,  !- Vertex 2 Y-coordinate {m}
0,  !- Vertex 2 Z-coordinate {m}
17,  !- Vertex 3 X-coordinate {m}
14,  !- Vertex 3 Y-coordinate {m}
0,  !- Vertex 3 Z-coordinate {m}
17,  !- Vertex 4 X-coordinate {m}
14,  !- Vertex 4 Y-coordinate {m}
3;  !- Vertex 4 Z-coordinate {m}

Surface:HeatTransfer,
  Zn003:Wall002a,  !- User Supplied Surface Name
Wall,  !- Surface Type
EXTWALL80-earth,  !- Construction Name of the Surface
NORTH ZONE,  !- InsideFaceEnvironment
ExteriorEnvironment,  !- OutsideFaceEnvironment Object
NoSun,  !- Sun Exposure
WindExposed,  !- Wind Exposure
0.5,  !- View Factor to Ground
4,  !- Number of Surface Vertex Groups --

Number of (X,Y,Z) groups in this surface
17,  !- Vertex 1 X-coordinate {m}
14,  !- Vertex 1 Y-coordinate {m}
3,  !- Vertex 1 Z-coordinate {m}
17,  !- Vertex 2 X-coordinate {m}
14,  !- Vertex 2 Y-coordinate {m}
0,  !- Vertex 2 Z-coordinate {m}
0,  !- Vertex 3 X-coordinate {m}
14,  !- Vertex 3 Y-coordinate {m}
0,  !- Vertex 3 Z-coordinate {m}
14,  !- Vertex 4 X-coordinate {m}
0,  !- Vertex 4 Y-coordinate {m}
3;  !- Vertex 4 Z-coordinate {m}

!- ======== ALL OBJECTS IN CLASS: SURFACE:HEATTRANSFER:SUB

==========

Surface:HeatTransfer:Sub,
  Zn001:Wall001:Win001,  !- User Supplied Surface Name
WINDOW,  !- Surface Type
WIN-CON-LIGHT,  !- Construction Name of the Surface
Zn001:Wall001,  !- Base Surface Name
,  !- OutsideFaceEnvironment Object
0.5,  !- View Factor to Ground
winshadecontrol,  !- Name of shading control (windows only)
Number of (X,Y,Z) groups in this surface
0.548,                  !- Vertex 1 X-coordinate {m}
0,                      !- Vertex 1 Y-coordinate {m}
4.5,                    !- Vertex 1 Z-coordinate {m}
0.548,                  !- Vertex 2 X-coordinate {m}
0,                      !- Vertex 2 Y-coordinate {m}
0.5,                    !- Vertex 2 Z-coordinate {m}
6.548,                  !- Vertex 3 X-coordinate {m}
0,                      !- Vertex 3 Y-coordinate {m}
0.5,                    !- Vertex 3 Z-coordinate {m}
6.548,                  !- Vertex 4 X-coordinate {m}
0,                      !- Vertex 4 Y-coordinate {m}
4.5;                     !- Vertex 4 Z-coordinate {m}

Surface:HeatTransfer:Sub,
Zn003:Wall002:Win001,     !- User Supplied Surface Name
Window,                  !- Surface Type
WIN-CON-LIGHT,            !- Construction Name of the Surface
Zn003:Wall002,            !- Base Surface Name
,                          !- OutsideFaceEnvironment Object
0.5,                      !- View Factor to Ground
winshadecontrol,          !- Name of shading control (windows only)
,                          !- WindowFrameAndDivider Name
1,                        !- Multiplier
4,                        !- Number of Surface Vertice Groups --
Number of (X,Y,Z) groups in this surface
10.548,                  !- Vertex 1 X-coordinate {m}
14,                      !- Vertex 1 Y-coordinate {m}
5,                       !- Vertex 1 Z-coordinate {m}
10.548,                  !- Vertex 2 X-coordinate {m}
14,                      !- Vertex 2 Y-coordinate {m}
3.5,                     !- Vertex 2 Z-coordinate {m}
5.548,                   !- Vertex 3 X-coordinate {m}
14,                      !- Vertex 3 Y-coordinate {m}
3.5,                     !- Vertex 3 Z-coordinate {m}
5.548,                   !- Vertex 4 X-coordinate {m}
14,                      !- Vertex 4 Y-coordinate {m}
5;                       !- Vertex 4 Z-coordinate {m}

!- =========== ALL OBJECTS IN CLASS:
SURFACE:HEATTRANSFER:INTERNALMASS ===========

Surface:HeatTransfer:InternalMass,
mass floor,               !- User Supplied Surface Name
floor mass,               !- Construction Name of the Surface
RESISTIVE ZONE,           !- Interior Environment
900;                      !- Surface area (m2)

Surface:HeatTransfer:InternalMass,
mass floornorth,          !- User Supplied Surface Name
floor mass,               !- Construction Name of the Surface
NORTH ZONE,               !- Interior Environment
900;                      !- Surface area (m2)
!-  ===========  ALL OBJECTS IN CLASS: SURFACE:SHADING:ATTACHED  ===========

Surface:Shading:Attached,
  Zn001:Wall001:Shade001,  !- User Supplied Surface Name
  Zn001:Wall001,           !- Base Surface Name
  ,                        !- TransSchedShadowSurf
  4,                       !- Number of Surface Vertice Groups --
Number of (X,Y,Z) groups in this surface
  0.5,                     !- Vertex 1 X-coordinate {m}
  -1.1,                    !- Vertex 1 Y-coordinate {m}
  3,                       !- Vertex 1 Z-coordinate {m}
  0.5,                     !- Vertex 2 X-coordinate {m}
  0,                       !- Vertex 2 Y-coordinate {m}
  3,                       !- Vertex 2 Z-coordinate {m}
  10,                      !- Vertex 3 X-coordinate {m}
  0,                       !- Vertex 3 Y-coordinate {m}
  3,                       !- Vertex 3 Z-coordinate {m}
  10,                      !- Vertex 4 X-coordinate {m}
  -1.1,                    !- Vertex 4 Y-coordinate {m}
  3;                       !- Vertex 4 Z-coordinate {m}

!-  ===========  ALL OBJECTS IN CLASS: WINDOWSHADINGCONTROL  ===========

WINDOWSHADINGCONTROL,
  winshadecontrol,         !- User Supplied Shading Control Name
  ExteriorNonInsulatingShade,
    !- Control type
  winshadecost,            !- Name of construction with shading
  OutsideAirTemp,          !- Trigger
  Cooling Setpoints,       !- Schedule name
  15;                      !- SetPoint {W/m2, W or deg C}

!-  ===========  ALL OBJECTS IN CLASS: SCHEDULETYPE  ===========

ScheduleType,
  !
  Not limited
  Any Number;               !- ScheduleType Name
ScheduleType,
  Fraction,                !- ScheduleType Name
  0.0 : 1.0 ,              !- range
  CONTINUOUS;              !- Numeric Type
ScheduleType,
  Temperature,            !- ScheduleType Name
  -60:200,                 !- range
  CONTINUOUS;              !- Numeric Type
ScheduleType,
  Control Type,            !- ScheduleType Name
0:4, !- range
DISCRETE; !- Numeric Type

ScheduleType,
On/Off, !- ScheduleType Name
0:1, !- range
DISCRETE; !- Numeric Type

!- =========== ALL OBJECTS IN CLASS: DAYSCHEDULE ===========

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</tbody>
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| DAYSCHEDULE,                  |
| WorkEffDay,                   |
| Any Number,                  |
| 0, !- Hour 1                 |
| 0, !- Hour 2                 |
| 0, !- Hour 3                 |
| 0, !- Hour 4                 |
| 0, !- Hour 5                 |
| 0, !- Hour 6                 |
| 0, !- Hour 7                 |
| 0, !- Hour 8                 |
| 0, !- Hour 9                 |
| 0, !- Hour 10                |
| 0, !- Hour 11                |
| 0, !- Hour 12                |
| 0, !- Hour 13                |
| 0, !- Hour 14                |
| 0, !- Hour 15                |
DAYSCHEDULE,
CloInsDay,  !- Name
Any Number,  !- ScheduleType
1,  !- Hour 1
1,  !- Hour 2
1,  !- Hour 3
1,  !- Hour 4
1,  !- Hour 5
1,  !- Hour 6
1,  !- Hour 7
1,  !- Hour 8
1,  !- Hour 9
1,  !- Hour 10
1,  !- Hour 11
1,  !- Hour 12
1,  !- Hour 13
1,  !- Hour 14
1,  !- Hour 15
1,  !- Hour 16
1,  !- Hour 17
1,  !- Hour 18
1,  !- Hour 19
1,  !- Hour 20
1,  !- Hour 21
1,  !- Hour 22
1,  !- Hour 23
1;  !- Hour 24

DAYSCHEDULE,
AirVelDay,  !- Name
Any Number,  !- ScheduleType
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0.137,  !- Hour 2
0.137,  !- Hour 3
0.137,  !- Hour 4
0.137,  !- Hour 5
0.137,  !- Hour 6
0.137,  !- Hour 7
0.137,  !- Hour 8
0.137,  !- Hour 9
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0.137,  !- Hour 11
0.137,  !- Hour 12
0.137,  !- Hour 13
0.137,  !- Hour 14
0.137,  !- Hour 15
0.137,  !- Hour 16
0.137,                   !- Hour 17
0.137,                   !- Hour 18
0.137,                   !- Hour 19
0.137,                   !- Hour 20
0.137,                   !- Hour 21
0.137,                   !- Hour 22
0.137,                   !- Hour 23
0.137;                   !- Hour 24

DAYSCHEDULE,
  BLDG Day 1,            !- Name
  Any Number,              !- ScheduleType
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  0,                       !- Hour 2
  0,                       !- Hour 3
  0,                       !- Hour 4
  0,                       !- Hour 5
  0.1,                     !- Hour 7
  0.5,                     !- Hour 8
  1,                       !- Hour 9
  1,                       !- Hour 10
  1,                       !- Hour 11
  1,                       !- Hour 12
  0.5,                     !- Hour 13
  1,                       !- Hour 14
  1,                       !- Hour 15
  1,                       !- Hour 16
  0.5,                     !- Hour 17
  0.1,                     !- Hour 18
  0,                       !- Hour 19
  0,                       !- Hour 20
  0,                       !- Hour 21
  0,                       !- Hour 22
  0,                       !- Hour 23
  0;                       !- Hour 24

DAYSCHEDULE,
  BLDG Day 2,            !- Name
  Any Number,              !- ScheduleType
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  0,                       !- Hour 2
  0,                       !- Hour 3
  0,                       !- Hour 4
  0,                       !- Hour 5
  0,                       !- Hour 6
  0,                       !- Hour 7
  0,                       !- Hour 8
  0,                       !- Hour 9
  0,                       !- Hour 10
  0,                       !- Hour 11
  0,                       !- Hour 12
  0,                       !- Hour 13
  0,                       !- Hour 14
  0,                       !- Hour 15
  0,                       !- Hour 16

0,                       !- Hour 17  0.137,                   !-
Hour 17
  0.137,                   !- Hour 18
  0.137,                   !- Hour 19
  0.137,                   !- Hour 20
  0.137,                   !- Hour 21
  0.137,                   !- Hour 22
  0.137,                   !- Hour 23
  0.137;                   !- Hour 24

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  BLDG Day   1,            !- Name
  Any Number,              !- ScheduleType
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  0,                       !- Hour 2
  0,                       !- Hour 3
  0,                       !- Hour 4
  0,                       !- Hour 5
  0,                       !- Hour 6
  0.1,                     !- Hour 7
  0.5,                     !- Hour 8
  1,                       !- Hour 9
  1,                       !- Hour 10
  1,                       !- Hour 11
  1,                       !- Hour 12
  0.5,                     !- Hour 13
  1,                       !- Hour 14
  1,                       !- Hour 15
  1,                       !- Hour 16
  0.5,                     !- Hour 17
  0.1,                     !- Hour 18
  0,                       !- Hour 19
  0,                       !- Hour 20
  0,                       !- Hour 21
  0,                       !- Hour 22
  0,                       !- Hour 23
  0;                       !- Hour 24

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  BLDG Day   2,            !- Name
  Any Number,              !- ScheduleType
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  0,                       !- Hour 2
  0,                       !- Hour 3
  0,                       !- Hour 4
  0,                       !- Hour 5
  0,                       !- Hour 6
  0,                       !- Hour 7
  0,                       !- Hour 8
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  0,                       !- Hour 10
  0,                       !- Hour 11
  0,                       !- Hour 12
  0,                       !- Hour 13
  0,                       !- Hour 14
  0,                       !- Hour 15
  0,                       !- Hour 16
DAYSCHEDULE,
BLDG Day 5, !- Name
Any Number, !- ScheduleType
0, !- Hour 1
0, !- Hour 2
0, !- Hour 3
0, !- Hour 4
0, !- Hour 5
0, !- Hour 6
0, !- Hour 7
0, !- Hour 8
1, !- Hour 9
1, !- Hour 10
1, !- Hour 11
1, !- Hour 12
1, !- Hour 13
1, !- Hour 14
1, !- Hour 15
1, !- Hour 16
1, !- Hour 17
1, !- Hour 18
0, !- Hour 19
0, !- Hour 20
0, !- Hour 21
0, !- Hour 22
0, !- Hour 23
0; !- Hour 24

DAYSCHEDULE,
BLDG Day 6, !- Name
Any Number, !- ScheduleType
0.05, !- Hour 1
0.05, !- Hour 2
0.05, !- Hour 3
0.05, !- Hour 4
0.05, !- Hour 5
0.05, !- Hour 6
0.2, !- Hour 7
1, !- Hour 8
1, !- Hour 9
1, !- Hour 10
1, !- Hour 11
1, !- Hour 12
1, !- Hour 13
1, !- Hour 14
1, !- Hour 15
1, !- Hour 16
1, !- Hour 17
0.5,  !- Hour 18  
0.05,  !- Hour 19  
0.05,  !- Hour 20  
0.05,  !- Hour 21  
0.05,  !- Hour 22  
0.05,  !- Hour 23  
0.05;  !- Hour 24  

DAYSCHEDULE,  
  BLDG Day 7,  !- Name  
  Any Number,  !- ScheduleType  
  0.05,  !- Hour 1  
  0.05,  !- Hour 2  
  0.05,  !- Hour 3  
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  0.05,  !- Hour 9  
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  0.05,  !- Hour 12  
  0.05,  !- Hour 13  
  0.05,  !- Hour 14  
  0.05,  !- Hour 15  
  0.05,  !- Hour 16  
  0.05,  !- Hour 17  
  0.05,  !- Hour 18  
  0.05,  !- Hour 19  
  0.05,  !- Hour 20  
  0.05,  !- Hour 21  
  0.05,  !- Hour 22  
  0.05,  !- Hour 23  
  0.05;  !- Hour 24  

DAYSCHEDULE,  
  SYS Day 1,  !- Name  
  Any Number,  !- ScheduleType  
  1,  !- Hour 1  
  1,  !- Hour 2  
  1,  !- Hour 3  
  1,  !- Hour 4  
  1,  !- Hour 5  
  1,  !- Hour 6  
  1,  !- Hour 7  
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  1,  !- Hour 13  
  1,  !- Hour 14  
  1,  !- Hour 15  
  1,  !- Hour 16  
  1,  !- Hour 17  
  1,  !- Hour 18
DAYSCHEDULE,
SYS Day 2, !- Name
Any Number, !- ScheduleType
0, !- Hour 1
0, !- Hour 2
0, !- Hour 3
0, !- Hour 4
0, !- Hour 5
0, !- Hour 6
0, !- Hour 7
0, !- Hour 8
0, !- Hour 9
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0, !- Hour 11
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0, !- Hour 15
0, !- Hour 16
0, !- Hour 17
0, !- Hour 18
0, !- Hour 19
0, !- Hour 20
0, !- Hour 21
0, !- Hour 22
0, !- Hour 23
0; !- Hour 24

DAYSCHEDULE,
SYS Day 3, !- Name
Any Number, !- ScheduleType
0.05, !- Hour 1
0.05, !- Hour 2
0.05, !- Hour 3
0.05, !- Hour 4
0.05, !- Hour 5
0.05, !- Hour 6
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0.05, !- Hour 15
0.05, !- Hour 16
0.05, !- Hour 17
0.05, !- Hour 18
0.05, !- Hour 19
0.05, !- Hour 20
0.05, !- Hour 21
0.05, !- Hour 22
0.05, !- Hour 23
0.05, !- Hour 24
DAYSCHEDULE,
    SYS Day 4,             !- Name
    Any Number,              !- ScheduleType
    0.15,                   !- Hour 1
    0.15,                   !- Hour 2
    0.15,                   !- Hour 3
    0.15,                   !- Hour 4
    0.15,                   !- Hour 5
    0.15,                   !- Hour 6
    0.15,                   !- Hour 7
    0.15,                   !- Hour 8
    0.15,                   !- Hour 9
    0.15,                   !- Hour 10
    0.15,                   !- Hour 11
    0.15,                   !- Hour 12
    0.15,                   !- Hour 13
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    0.15,                   !- Hour 16
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    0.15,                   !- Hour 18
    0.15,                   !- Hour 19
    0.15,                   !- Hour 20
    0.15;                   !- Hour 21
    0.15;                   !- Hour 22
    0.15;                   !- Hour 23
    0.15;                   !- Hour 24

DAYSCHEDULE,
    SYS Day 5,             !- Name
    Any Number,              !- ScheduleType
    0.5,                     !- Hour 1
    0.5,                     !- Hour 2
    0.5,                     !- Hour 3
    0.5,                     !- Hour 4
    0.5,                     !- Hour 5
    0.5,                     !- Hour 6
    0.5,                     !- Hour 7
    1,                       !- Hour 8
    1,                       !- Hour 9
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    1,                       !- Hour 14
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    1,                       !- Hour 17
    0.5,                     !- Hour 18
    0.5,                     !- Hour 19
    0.5,                     !- Hour 20
DAYSCHEDULE,
    SYS Day 6,        !- Name
    Any Number,      !- ScheduleType
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    0.5,             !- Hour 18
    0.5,             !- Hour 19
    0.5,             !- Hour 20
    0.5,             !- Hour 21
    0.5;             !- Hour 22

DAYSCHEDULE,
    PLT Day 1,       !- Name
    Any Number,      !- ScheduleType
    0,               !- Hour 1
    0,               !- Hour 2
    0,               !- Hour 3
    0,               !- Hour 4
    0,               !- Hour 5
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    0.1,             !- Hour 7
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    0.1,             !- Hour 18
    0,               !- Hour 19
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DAYSCHEDULE,
   PLT Day 2,                   !- Name
   Any Number,                 !- ScheduleType
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DAYSCHEDULE,
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   on/off,                     !- ScheduleType
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   1,                          !- Hour 18
   1,                          !- Hour 19
   1,                          !- Hour 20
   1,                          !- Hour 21
   1,                          !- Hour 22
DAYSCHEDULE,  
DayAllOFF,                           !- Name  
on/off,                               !- ScheduleType  
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0,                                     !- Hour 10  
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0,                                     !- Hour 18  
0,                                     !- Hour 19  
0,                                     !- Hour 20  
0,                                     !- Hour 21  
0,                                     !- Hour 22  
0,                                     !- Hour 23  
0;                                     !- Hour 24  

DAYSCHEDULE,  
TransDayOn,                              !- Name  
Fraction,                                !- ScheduleType  
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1,                                       !- Hour 2  
1,                                       !- Hour 3  
1,                                       !- Hour 4  
1,                                       !- Hour 5  
1,                                       !- Hour 6  
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DAYSCHEDULE,

TransDayOff,  !- Name
Fraction,    !- ScheduleType
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DAYSCHEDULE,

Day On Peak,     !- Name
Fraction,        !- ScheduleType
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0,    !- Hour 2
0,    !- Hour 3
0,    !- Hour 4
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   13;        !- Hour 24

DAYSCHEDULE,
Winter Supply Air Temp Day Sch,
   !- Name
   Temperature, !- ScheduleType
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16,                      !- Hour 21
16,                      !- Hour 22
16,                      !- Hour 23
16;                      !- Hour 24

DAYSCHEDULE,
Chilled Water Loop Daily, !- Name
Temperature,             !- ScheduleType
6.67,                    !- Hour 1
6.67,                    !- Hour 2
6.67,                    !- Hour 3
6.67,                    !- Hour 4
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6.67,                    !- Hour 14
6.67,                    !- Hour 15
6.67,                    !- Hour 16
6.67,                    !- Hour 17
6.67,                    !- Hour 18
6.67,                    !- Hour 19
6.67,                    !- Hour 20
6.67,                    !- Hour 21
6.67,                    !- Hour 22
6.67,                    !- Hour 23
6.67;                    !- Hour 24

DAYSCHEDULE,
Hot Water Loop Daily,    !- Name
Temperature,             !- ScheduleType
60,                      !- Hour 1
60,                      !- Hour 2
60,                      !- Hour 3
60,                      !- Hour 4
60,                      !- Hour 5
60,                      !- Hour 6
60,                      !- Hour 7
60,                      !- Hour 8
60,                      !- Hour 9
60,                      !- Hour 10
60,                      !- Hour 11
60,                      !- Hour 12
60,                      !- Hour 13
60,                      !- Hour 14
60,                      !- Hour 15
60,                      !- Hour 16
60,                      !- Hour 17
60,                      !- Hour 18
60,                      !- Hour 19
60,                      !- Hour 20
60,                      !- Hour 21
DAYSCHEDULE,
    SystemOperatingDaySched,      !- Name
    Fraction,                    !- ScheduleType
    0,                           !- Hour 1
    0,                           !- Hour 2
    0,                           !- Hour 3
    0,                           !- Hour 4
    0,                           !- Hour 5
    1,                           !- Hour 6
    1,                           !- Hour 7
    1,                           !- Hour 8
    1,                           !- Hour 9
    1,                           !- Hour 10
    1,                           !- Hour 11
    1,                           !- Hour 12
    1,                           !- Hour 13
    1,                           !- Hour 14
    1,                           !- Hour 15
    1,                           !- Hour 16
    1,                           !- Hour 17
    1,                           !- Hour 18
    1,                           !- Hour 19
    1,                           !- Hour 20
    1,                           !- Hour 21
    0,                           !- Hour 22
    0,                           !- Hour 23
    0;                           !- Hour 24

DAYSCHEDULE,
    SystemOffDaySched,          !- Name
    Fraction,                   !- ScheduleType
    0,                           !- Hour 1
    0,                           !- Hour 2
    0,                           !- Hour 3
    0,                           !- Hour 4
    0,                           !- Hour 5
    0,                           !- Hour 6
    0,                           !- Hour 7
    0,                           !- Hour 8
    0,                           !- Hour 9
    0,                           !- Hour 10
    0,                           !- Hour 11
    0,                           !- Hour 12
    0,                           !- Hour 13
    0,                           !- Hour 14
    0,                           !- Hour 15
    0,                           !- Hour 16
    0,                           !- Hour 17
    0,                           !- Hour 18
    0,                           !- Hour 19
    0,                           !- Hour 20
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    0,                           !- Hour 22
0,                       !- Hour 23
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DAYSCHEDULE,
SystemOnDaySched,        !- Name
Fraction,                !- ScheduleType
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1,                       !- Hour 2
1,                       !- Hour 3
1,                       !- Hour 4
1,                       !- Hour 5
1,                       !- Hour 6
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1,                       !- Hour 19
1,                       !- Hour 20
1,                       !- Hour 21
1,                       !- Hour 22
1,                       !- Hour 23
1;                       !- Hour 24

DAYSCHEDULE,       
Summer Zone Temp Lo Day Sch,  
                      !- Name
Temperature,         !- ScheduleType
15,                  !- Hour 1
15,                  !- Hour 2
15,                  !- Hour 3
15,                  !- Hour 4
15,                  !- Hour 5
15,                  !- Hour 6
15,                  !- Hour 7
20,                  !- Hour 8
20,                  !- Hour 9
20,                  !- Hour 10
20,                  !- Hour 11
20,                  !- Hour 12
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20,                  !- Hour 14
20,                  !- Hour 15
20,                  !- Hour 16
20,                  !- Hour 17
20,                  !- Hour 18
20,                  !- Hour 19
20,                  !- Hour 20
20,                  !- Hour 21
20,                  !- Hour 22
20,  !- Hour 23
25,  !- Hour 23
25;  !- Hour 24

DAYSCHEDULE,
Winter Zone Temp Hi Day Sch,
  !- Name
Temperature,  !- ScheduleType
50,  !- Hour 1
50,  !- Hour 2
50,  !- Hour 3
50,  !- Hour 4
50,  !- Hour 5
50,  !- Hour 6
50,  !- Hour 7
50,  !- Hour 8
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50,  !- Hour 14
50,  !- Hour 15
50,  !- Hour 16
50,  !- Hour 17
50,  !- Hour 18
50,  !- Hour 19
50,  !- Hour 20
50,  !- Hour 21
50,  !- Hour 22
50,  !- Hour 23
50;  !- Hour 24

DAYSCHEDULE,
Summer Control Type Day Sch,
  !- Name
Control Type,  !- ScheduleType
2,  !- Hour 1
2,  !- Hour 2
2,  !- Hour 3
2,  !- Hour 4
2,  !- Hour 5
2,  !- Hour 6
2,  !- Hour 7
2,  !- Hour 8
2,  !- Hour 9
2,  !- Hour 10
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2,  !- Hour 12
2,  !- Hour 13
2,  !- Hour 14
2,  !- Hour 15
2,  !- Hour 16
2,  !- Hour 17
2,  !- Hour 18
2,  !- Hour 19
2,  !- Hour 20
DAYSCHEDULE,
Winter Control Type Day Sch,
    !- Name
Control Type,
    !- ScheduleType
1,     !- Hour 1
1,     !- Hour 2
1,     !- Hour 3
1,     !- Hour 4
1,     !- Hour 5
1,     !- Hour 6
1,     !- Hour 7
1,     !- Hour 8
1,     !- Hour 9
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1,     !- Hour 16
1,     !- Hour 17
1,     !- Hour 18
1,     !- Hour 19
1,     !- Hour 20
1,     !- Hour 21
1,     !- Hour 22
1,     !- Hour 23
1;     !- Hour 24

DAYSCHEDULE,
lightday,            !- Name
Any Number,         !- ScheduleType
0,     !- Hour 1
0,     !- Hour 2
0,     !- Hour 3
0,     !- Hour 4
0,     !- Hour 5
0.5,    !- Hour 6
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**DAYSCHEDULE,**

- **nightventilday,**
  - **Name**
  - **Control Type,**
    - **ScheduleType**
      - **Hour 1**
      - **Hour 2**
      - **Hour 3**
      - **Hour 4**
      - **Hour 5**
      - **Hour 6**
      - **Hour 7**
      - **Hour 8**
      - **Hour 9**
      - **Hour 10**
      - **Hour 11**
      - **Hour 12**
      - **Hour 13**
      - **Hour 14**
      - **Hour 15**
      - **Hour 16**
      - **Hour 17**
      - **Hour 18**
      - **Hour 19**
      - **Hour 20**
      - **Hour 21**
      - **Hour 22**
      - **Hour 23**
      - **Hour 24**
0, !- Hour 22
0, !- Hour 23
0; !- Hour 24

DAYSCHEDULE,
  dayvent, !- Name
  Control Type, !- ScheduleType
  0, !- Hour 1
  0, !- Hour 2
  0, !- Hour 3
  0, !- Hour 4
  0, !- Hour 5
  0, !- Hour 6
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  0, !- Hour 10
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  1, !- Hour 17
  1, !- Hour 18
  1, !- Hour 19
  1, !- Hour 20
  0, !- Hour 21
  0, !- Hour 22
  0, !- Hour 23
  0; !- Hour 24

!- =========== ALL OBJECTS IN CLASS: WEEKSCHEDULE ===========

WEEKSCHEDULE,
  ActLevWeek, !- Name
  ActLevDay, !- Sunday DAYSCHEDULE Name
  ActLevDay, !- Monday DAYSCHEDULE Name
  ActLevDay, !- Tuesday DAYSCHEDULE Name
  ActLevDay, !- Wednesday DAYSCHEDULE Name
  ActLevDay, !- Thursday DAYSCHEDULE Name
  ActLevDay, !- Friday DAYSCHEDULE Name
  ActLevDay, !- Saturday DAYSCHEDULE Name
  ActLevDay, !- Holiday DAYSCHEDULE Name
  ActLevDay, !- SummerDesignDay DAYSCHEDULE Name
  ActLevDay, !- WinterDesignDay DAYSCHEDULE Name
  ActLevDay, !- CustomDay1 DAYSCHEDULE Name
  ActLevDay; !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
  WorkEffWeek, !- Name
  WorkEffDay, !- Sunday DAYSCHEDULE Name
  WorkEffDay, !- Monday DAYSCHEDULE Name
  WorkEffDay, !- Tuesday DAYSCHEDULE Name
  WorkEffDay, !- Wednesday DAYSCHEDULE Name
  WorkEffDay, !- Thursday DAYSCHEDULE Name

240
WorkEffDay,              !- Friday DAYSCHEDULE Name
WorkEffDay,              !- Saturday DAYSCHEDULE Name
WorkEffDay,              !- Holiday DAYSCHEDULE Name
WorkEffDay,              !- SummerDesignDay DAYSCHEDULE Name
WorkEffDay,              !- WinterDesignDay DAYSCHEDULE Name
WorkEffDay,              !- CustomDay1 DAYSCHEDULE Name
WorkEffDay;              !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
CloInsWeek,              !- Name
CloInsDay,               !- Sunday DAYSCHEDULE Name
CloInsDay,               !- Monday DAYSCHEDULE Name
CloInsDay,               !- Tuesday DAYSCHEDULE Name
CloInsDay,               !- Wednesday DAYSCHEDULE Name
CloInsDay,               !- Thursday DAYSCHEDULE Name
CloInsDay,               !- Friday DAYSCHEDULE Name
CloInsDay,               !- Saturday DAYSCHEDULE Name
CloInsDay,               !- Holiday DAYSCHEDULE Name
CloInsDay,               !- SummerDesignDay DAYSCHEDULE Name
CloInsDay,               !- WinterDesignDay DAYSCHEDULE Name
CloInsDay,               !- CustomDay1 DAYSCHEDULE Name
CloInsDay;               !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
AirVelWeek,              !- Name
AirVelDay,               !- Sunday DAYSCHEDULE Name
AirVelDay,               !- Monday DAYSCHEDULE Name
AirVelDay,               !- Tuesday DAYSCHEDULE Name
AirVelDay,               !- Wednesday DAYSCHEDULE Name
AirVelDay,               !- Thursday DAYSCHEDULE Name
AirVelDay,               !- Friday DAYSCHEDULE Name
AirVelDay,               !- Saturday DAYSCHEDULE Name
AirVelDay,               !- Holiday DAYSCHEDULE Name
AirVelDay,               !- SummerDesignDay DAYSCHEDULE Name
AirVelDay,               !- WinterDesignDay DAYSCHEDULE Name
AirVelDay,               !- CustomDay1 DAYSCHEDULE Name
AirVelDay;               !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
OFFICE OCCUPANCY,        !- Name
BLDG Day   2,            !- Sunday DAYSCHEDULE Name
BLDG Day   1,            !- Monday DAYSCHEDULE Name
BLDG Day   1,            !- Tuesday DAYSCHEDULE Name
BLDG Day   1,            !- Wednesday DAYSCHEDULE Name
BLDG Day   1,            !- Thursday DAYSCHEDULE Name
BLDG Day   1,            !- Friday DAYSCHEDULE Name
BLDG Day   1,            !- Holiday DAYSCHEDULE Name
BLDG Day   2,            !- SummerDesignDay DAYSCHEDULE Name
BLDG Day   2,            !- WinterDesignDay DAYSCHEDULE Name
BLDG Day   2,            !- CustomDay1 DAYSCHEDULE Name
BLDG Day   2;            !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
INTERMITTENT,            !- Name
BLDG Day   2,            !- Sunday DAYSCHEDULE Name
BLDG Day   5,            !- Monday DAYSCHEDULE Name
BLDG Day 5,  !- Tuesday DAYSCHEDULE Name
BLDG Day 5,  !- Wednesday DAYSCHEDULE Name
BLDG Day 5,  !- Thursday DAYSCHEDULE Name
BLDG Day 5,  !- Friday DAYSCHEDULE Name
BLDG Day 2,  !- Saturday DAYSCHEDULE Name
BLDG Day 2,  !- Holiday DAYSCHEDULE Name
BLDG Day 2,  !- SummerDesignDay DAYSCHEDULE Name
BLDG Day 2,  !- WinterDesignDay DAYSCHEDULE Name
BLDG Day 2,  !- CustomDay1 DAYSCHEDULE Name
BLDG Day 2;  !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
OFFICE LIGHTING,  !- Name
BLDG Day 7,  !- Sunday DAYSCHEDULE Name
BLDG Day 6,  !- Monday DAYSCHEDULE Name
BLDG Day 6,  !- Tuesday DAYSCHEDULE Name
BLDG Day 6,  !- Wednesday DAYSCHEDULE Name
BLDG Day 6,  !- Thursday DAYSCHEDULE Name
BLDG Day 6,  !- Friday DAYSCHEDULE Name
BLDG Day 7,  !- Saturday DAYSCHEDULE Name
BLDG Day 7,  !- Holiday DAYSCHEDULE Name
BLDG Day 7,  !- SummerDesignDay DAYSCHEDULE Name
BLDG Day 7,  !- WinterDesignDay DAYSCHEDULE Name
BLDG Day 7,  !- CustomDay1 DAYSCHEDULE Name
BLDG Day 7;  !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
SYS-ON,  !- Name
SYS Day 1,  !- Sunday DAYSCHEDULE Name
SYS Day 1,  !- Monday DAYSCHEDULE Name
SYS Day 1,  !- Tuesday DAYSCHEDULE Name
SYS Day 1,  !- Wednesday DAYSCHEDULE Name
SYS Day 1,  !- Thursday DAYSCHEDULE Name
SYS Day 1,  !- Friday DAYSCHEDULE Name
SYS Day 1,  !- Saturday DAYSCHEDULE Name
SYS Day 1,  !- Holiday DAYSCHEDULE Name
SYS Day 1,  !- SummerDesignDay DAYSCHEDULE Name
SYS Day 1,  !- WinterDesignDay DAYSCHEDULE Name
SYS Day 1,  !- CustomDay1 DAYSCHEDULE Name
SYS Day 1;  !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
SYS-OFF,  !- Name
SYS Day 2,  !- Sunday DAYSCHEDULE Name
SYS Day 2,  !- Monday DAYSCHEDULE Name
SYS Day 2,  !- Tuesday DAYSCHEDULE Name
SYS Day 2,  !- Wednesday DAYSCHEDULE Name
SYS Day 2,  !- Thursday DAYSCHEDULE Name
SYS Day 2,  !- Friday DAYSCHEDULE Name
SYS Day 2,  !- Saturday DAYSCHEDULE Name
SYS Day 2,  !- Holiday DAYSCHEDULE Name
SYS Day 2,  !- SummerDesignDay DAYSCHEDULE Name
SYS Day 2,  !- WinterDesignDay DAYSCHEDULE Name
SYS Day 2,  !- CustomDay1 DAYSCHEDULE Name
SYS Day 2;  !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
WEEKSCHEDULE,
SYS-MINIMUM OUTSIDE AIR, !- Name
SYS Day 3, !- Sunday DAYSCHEDULE Name
SYS Day 4, !- Monday DAYSCHEDULE Name
SYS Day 4, !- Tuesday DAYSCHEDULE Name
SYS Day 4, !- Wednesday DAYSCHEDULE Name
SYS Day 4, !- Thursday DAYSCHEDULE Name
SYS Day 4, !- Friday DAYSCHEDULE Name
SYS Day 3, !- Saturday DAYSCHEDULE Name
SYS Day 3, !- Holiday DAYSCHEDULE Name
SYS Day 3, !- SummerDesignDay DAYSCHEDULE Name
SYS Day 3, !- WinterDesignDay DAYSCHEDULE Name
SYS Day 3, !- CustomDay1 DAYSCHEDULE Name
SYS Day 3; !- CustomDay2 DAYSCHEDULE Name
WEEKSCHEDULE,
SYS-HOSPITAL EQUIPMENT, !- Name
SYS Day 6, !- Sunday DAYSCHEDULE Name
SYS Day 5, !- Monday DAYSCHEDULE Name
SYS Day 5, !- Tuesday DAYSCHEDULE Name
SYS Day 5, !- Wednesday DAYSCHEDULE Name
SYS Day 5, !- Thursday DAYSCHEDULE Name
SYS Day 5, !- Friday DAYSCHEDULE Name
SYS Day 6, !- Saturday DAYSCHEDULE Name
SYS Day 6, !- Holiday DAYSCHEDULE Name
SYS Day 6, !- SummerDesignDay DAYSCHEDULE Name
SYS Day 6, !- WinterDesignDay DAYSCHEDULE Name
SYS Day 6, !- CustomDay1 DAYSCHEDULE Name
SYS Day 6; !- CustomDay2 DAYSCHEDULE Name
WEEKSCHEDULE,
PLT-OFFICE OCCUPANCY, !- Name
PLT Day 2, !- Sunday DAYSCHEDULE Name
PLT Day 1, !- Monday DAYSCHEDULE Name
PLT Day 1, !- Tuesday DAYSCHEDULE Name
PLT Day 1, !- Wednesday DAYSCHEDULE Name
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PLT Day 2, !- Saturday DAYSCHEDULE Name
PLT Day 2, !- Holiday DAYSCHEDULE Name
PLT Day 2, !- SummerDesignDay DAYSCHEDULE Name
PLT Day 2, !- WinterDesignDay DAYSCHEDULE Name
PLT Day 2, !- CustomDay1 DAYSCHEDULE Name
PLT Day 2; !- CustomDay2 DAYSCHEDULE Name
WEEKSCHEDULE,
WeekAllON, !- Name
DayAllON, !- Sunday DAYSCHEDULE Name
DayAllON, !- Monday DAYSCHEDULE Name
DayAllON, !- Tuesday DAYSCHEDULE Name
DayAllON, !- Wednesday DAYSCHEDULE Name
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DayAllON, !- SummerDesignDay DAYSCHEDULE Name
DayAllON, !- WinterDesignDay DAYSCHEDULE Name
DayAllON, !- CustomDay1 DAYSCHEDULE Name
DayAllON; !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
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    DayAllOFF, !- Saturday DAYSCHEDULE Name
    DayAllOFF, !- Holiday DAYSCHEDULE Name
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    DayAllOFF, !- WinterDesignDay DAYSCHEDULE Name
    DayAllOFF, !- CustomDay1 DAYSCHEDULE Name
    DayAllOFF; !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
    TransWeekOn, !- Name
    TransDayOn, !- Sunday DAYSCHEDULE Name
    TransDayOn, !- Monday DAYSCHEDULE Name
    TransDayOn, !- Tuesday DAYSCHEDULE Name
    TransDayOn, !- Wednesday DAYSCHEDULE Name
    TransDayOn, !- Thursday DAYSCHEDULE Name
    TransDayOn, !- Friday DAYSCHEDULE Name
    TransDayOn, !- Saturday DAYSCHEDULE Name
    TransDayOn, !- Holiday DAYSCHEDULE Name
    TransDayOn, !- SummerDesignDay DAYSCHEDULE Name
    TransDayOn, !- WinterDesignDay DAYSCHEDULE Name
    TransDayOn, !- CustomDay1 DAYSCHEDULE Name
    TransDayOn; !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
    TransWeekOff, !- Name
    TransDayOff, !- Sunday DAYSCHEDULE Name
    TransDayOff, !- Monday DAYSCHEDULE Name
    TransDayOff, !- Tuesday DAYSCHEDULE Name
    TransDayOff, !- Wednesday DAYSCHEDULE Name
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    TransDayOff, !- Friday DAYSCHEDULE Name
    TransDayOff, !- Saturday DAYSCHEDULE Name
    TransDayOff, !- Holiday DAYSCHEDULE Name
    TransDayOff, !- SummerDesignDay DAYSCHEDULE Name
    TransDayOff, !- WinterDesignDay DAYSCHEDULE Name
    TransDayOff, !- CustomDay1 DAYSCHEDULE Name
    TransDayOff; !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
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    Day On Peak, !- Sunday DAYSCHEDULE Name
    Day On Peak, !- Monday DAYSCHEDULE Name
    Day On Peak, !- Tuesday DAYSCHEDULE Name
    Day On Peak, !- Wednesday DAYSCHEDULE Name
    Day On Peak, !- Thursday DAYSCHEDULE Name
    Day On Peak, !- Friday DAYSCHEDULE Name
    Day On Peak, !- Saturday DAYSCHEDULE Name
    Day On Peak, !- Holiday DAYSCHEDULE Name
Day On Peak,  !- SummerDesignDay DAYSCHEDULE Name
Day On Peak,  !- WinterDesignDay DAYSCHEDULE Name
Day On Peak,  !- CustomDay1 DAYSCHEDULE Name
Day On Peak;  !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
Week Off Peak,  !- Name
Day Off Peak,  !- Sunday DAYSCHEDULE Name
Day Off Peak,  !- Monday DAYSCHEDULE Name
Day Off Peak,  !- Tuesday DAYSCHEDULE Name
Day Off Peak,  !- Wednesday DAYSCHEDULE Name
Day Off Peak,  !- Thursday DAYSCHEDULE Name
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Day Off Peak,  !- Holiday DAYSCHEDULE Name
Day Off Peak,  !- SummerDesignDay DAYSCHEDULE Name
Day Off Peak,  !- WinterDesignDay DAYSCHEDULE Name
Day Off Peak,  !- CustomDay1 DAYSCHEDULE Name
Day Off Peak;  !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
WeekON,  !- Name
DayON,  !- Sunday DAYSCHEDULE Name
DayON,  !- Monday DAYSCHEDULE Name
DayON,  !- Tuesday DAYSCHEDULE Name
DayON,  !- Wednesday DAYSCHEDULE Name
DayON,  !- Thursday DAYSCHEDULE Name
DayON,  !- Friday DAYSCHEDULE Name
DayON,  !- Saturday DAYSCHEDULE Name
DayON,  !- Holiday DAYSCHEDULE Name
DayON,  !- SummerDesignDay DAYSCHEDULE Name
DayON,  !- WinterDesignDay DAYSCHEDULE Name
DayON,  !- CustomDay1 DAYSCHEDULE Name
DayON;  !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
Summer Supply Air Temp Week Sch,  !- Name
Summer Supply Air Temp Day Sch,  !- Sunday DAYSCHEDULE Name
Summer Supply Air Temp Day Sch,  !- Monday DAYSCHEDULE Name
Summer Supply Air Temp Day Sch,  !- Tuesday DAYSCHEDULE Name
Summer Supply Air Temp Day Sch,  !- Wednesday DAYSCHEDULE Name
Summer Supply Air Temp Day Sch,  !- Thursday DAYSCHEDULE Name
Summer Supply Air Temp Day Sch,  !- Friday DAYSCHEDULE Name
Summer Supply Air Temp Day Sch,  !- Saturday DAYSCHEDULE Name
Summer Supply Air Temp Day Sch,  !- Holiday DAYSCHEDULE Name
Summer Supply Air Temp Day Sch,  !- SummerDesignDay DAYSCHEDULE Name
Summer Supply Air Temp Day Sch,
WEEKSCHEDULE,
Summer Supply Air Temp Day Sch,
    !- CustomDay1 DAYSCHEDULE Name
Summer Supply Air Temp Day Sch;
    !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
    Winter Supply Air Temp Week Sch,
        !- Name
Winter Supply Air Temp Day Sch,
    !- Sunday DAYSCHEDULE Name
Winter Supply Air Temp Day Sch,
    !- Monday DAYSCHEDULE Name
Winter Supply Air Temp Day Sch,
    !- Tuesday DAYSCHEDULE Name
Winter Supply Air Temp Day Sch,
    !- Wednesday DAYSCHEDULE Name
Winter Supply Air Temp Day Sch,
    !- Thursday DAYSCHEDULE Name
Winter Supply Air Temp Day Sch,
    !- Friday DAYSCHEDULE Name
Winter Supply Air Temp Day Sch,
    !- Saturday DAYSCHEDULE Name
Winter Supply Air Temp Day Sch,
    !- Holiday DAYSCHEDULE Name
Winter Supply Air Temp Day Sch,
    !- SummerDesignDay DAYSCHEDULE Name
Winter Supply Air Temp Day Sch,
    !- WinterDesignDay DAYSCHEDULE Name
Winter Supply Air Temp Day Sch,
    !- CustomDay1 DAYSCHEDULE Name
Winter Supply Air Temp Day Sch;
    !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
    Chilled Water Loop Weekly,
        !- Name
    Chilled Water Loop Daily, !- Sunday DAYSCHEDULE Name
    Chilled Water Loop Daily, !- Monday DAYSCHEDULE Name
    Chilled Water Loop Daily, !- Tuesday DAYSCHEDULE Name
    Chilled Water Loop Daily, !- Wednesday DAYSCHEDULE Name
    Chilled Water Loop Daily, !- Thursday DAYSCHEDULE Name
    Chilled Water Loop Daily, !- Friday DAYSCHEDULE Name
    Chilled Water Loop Daily, !- Saturday DAYSCHEDULE Name
    Chilled Water Loop Daily, !- Holiday DAYSCHEDULE Name
    Chilled Water Loop Daily, !- SummerDesignDay DAYSCHEDULE Name
    Chilled Water Loop Daily, !- WinterDesignDay DAYSCHEDULE Name
    Chilled Water Loop Daily, !- CustomDay1 DAYSCHEDULE Name
    Chilled Water Loop Daily; !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
    Hot Water Loop Weekly, !- Name
    Hot Water Loop Daily, !- Sunday DAYSCHEDULE Name
    Hot Water Loop Daily, !- Monday DAYSCHEDULE Name
    Hot Water Loop Daily, !- Tuesday DAYSCHEDULE Name
    Hot Water Loop Daily, !- Wednesday DAYSCHEDULE Name
    Hot Water Loop Daily, !- Thursday DAYSCHEDULE Name
Hot Water Loop Daily, !- Friday DAYSCHEDULE Name
Hot Water Loop Daily, !- Saturday DAYSCHEDULE Name
Hot Water Loop Daily, !- Holiday DAYSCHEDULE Name
Hot Water Loop Daily, !- SummerDesignDay DAYSCHEDULE Name
Hot Water Loop Daily, !- WinterDesignDay DAYSCHEDULE Name
Hot Water Loop Daily, !- CustomDay1 DAYSCHEDULE Name
Hot Water Loop Daily; !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
FanAndCoilWinterWeekSched,
   !- Name
SystemOnDaySched, !- Sunday DAYSCHEDULE Name
SystemOnDaySched, !- Monday DAYSCHEDULE Name
SystemOnDaySched, !- Tuesday DAYSCHEDULE Name
SystemOnDaySched, !- Wednesday DAYSCHEDULE Name
SystemOnDaySched, !- Thursday DAYSCHEDULE Name
SystemOnDaySched, !- Friday DAYSCHEDULE Name
SystemOnDaySched, !- Saturday DAYSCHEDULE Name
SystemOnDaySched, !- Holiday DAYSCHEDULE Name
SystemOnDaySched, !- SummerDesignDay DAYSCHEDULE Name
SystemOnDaySched, !- WinterDesignDay DAYSCHEDULE Name
SystemOnDaySched, !- CustomDay1 DAYSCHEDULE Name
SystemOnDaySched; !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
FanAndCoilSummerWeekSched,
   !- Name
SystemOffDaySched, !- Sunday DAYSCHEDULE Name
SystemOffDaySched, !- Monday DAYSCHEDULE Name
SystemOffDaySched, !- Tuesday DAYSCHEDULE Name
SystemOffDaySched, !- Wednesday DAYSCHEDULE Name
SystemOffDaySched, !- Thursday DAYSCHEDULE Name
SystemOffDaySched, !- Friday DAYSCHEDULE Name
SystemOffDaySched, !- Saturday DAYSCHEDULE Name
SystemOffDaySched, !- Holiday DAYSCHEDULE Name
SystemOffDaySched, !- SummerDesignDay DAYSCHEDULE Name
SystemOffDaySched, !- WinterDesignDay DAYSCHEDULE Name
SystemOffDaySched, !- CustomDay1 DAYSCHEDULE Name
SystemOffDaySched; !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
FanAndCoilAllOffWeekSched,
   !- Name
SystemOffDaySched, !- Sunday DAYSCHEDULE Name
SystemOffDaySched, !- Monday DAYSCHEDULE Name
SystemOffDaySched, !- Tuesday DAYSCHEDULE Name
SystemOffDaySched, !- Wednesday DAYSCHEDULE Name
SystemOffDaySched, !- Thursday DAYSCHEDULE Name
SystemOffDaySched, !- Friday DAYSCHEDULE Name
SystemOffDaySched, !- Saturday DAYSCHEDULE Name
SystemOffDaySched, !- Holiday DAYSCHEDULE Name
SystemOffDaySched, !- SummerDesignDay DAYSCHEDULE Name
SystemOffDaySched, !- WinterDesignDay DAYSCHEDULE Name
SystemOffDaySched, !- CustomDay1 DAYSCHEDULE Name
SystemOffDaySched; !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
Summer Zone Temp Hi Day Sch,
  !- Name
Summer Zone Temp Hi Day Sch,
  !- Sunday DAYSCHEDULE Name
Summer Zone Temp Hi Day Sch,
  !- Monday DAYSCHEDULE Name
Summer Zone Temp Hi Day Sch,
  !- Tuesday DAYSCHEDULE Name
Summer Zone Temp Hi Day Sch,
  !- Wednesday DAYSCHEDULE Name
Summer Zone Temp Hi Day Sch,
  !- Thursday DAYSCHEDULE Name
Summer Zone Temp Hi Day Sch,
  !- Friday DAYSCHEDULE Name
Summer Zone Temp Hi Day Sch,
  !- Saturday DAYSCHEDULE Name
Summer Zone Temp Hi Day Sch,
  !- Holiday DAYSCHEDULE Name
Summer Zone Temp Hi Day Sch,
  !- SummerDesignDay DAYSCHEDULE Name
Summer Zone Temp Hi Day Sch,
  !- WinterDesignDay DAYSCHEDULE Name
Summer Zone Temp Hi Day Sch,
  !- CustomDay1 DAYSCHEDULE Name
Summer Zone Temp Hi Day Sch;
  !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
  Winter Zone Temp Hi Week Sch,
    !- Name
Winter Zone Temp Hi Day Sch,
    !- Sunday DAYSCHEDULE Name
Winter Zone Temp Hi Day Sch,
    !- Monday DAYSCHEDULE Name
Winter Zone Temp Hi Day Sch,
    !- Tuesday DAYSCHEDULE Name
Winter Zone Temp Hi Day Sch,
    !- Wednesday DAYSCHEDULE Name
Winter Zone Temp Hi Day Sch,
    !- Thursday DAYSCHEDULE Name
Winter Zone Temp Hi Day Sch,
    !- Friday DAYSCHEDULE Name
Winter Zone Temp Hi Day Sch,
    !- Saturday DAYSCHEDULE Name
Winter Zone Temp Hi Day Sch,
    !- Holiday DAYSCHEDULE Name
Winter Zone Temp Hi Day Sch,
    !- SummerDesignDay DAYSCHEDULE Name
Winter Zone Temp Hi Day Sch,
    !- WinterDesignDay DAYSCHEDULE Name
Winter Zone Temp Hi Day Sch,
    !- CustomDay1 DAYSCHEDULE Name
Winter Zone Temp Hi Day Sch;
    !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
  Summer Control Type Week Sch,
    !- Name
Summer Control Type Day Sch,
  !- Sunday DAYSCHEDULE Name
Summer Control Type Day Sch,
  !- Monday DAYSCHEDULE Name
Summer Control Type Day Sch,
  !- Tuesday DAYSCHEDULE Name
Summer Control Type Day Sch,
  !- Wednesday DAYSCHEDULE Name
Summer Control Type Day Sch,
  !- Thursday DAYSCHEDULE Name
Summer Control Type Day Sch,
  !- Friday DAYSCHEDULE Name
Summer Control Type Day Sch,
  !- Saturday DAYSCHEDULE Name
Summer Control Type Day Sch,
  !- Holiday DAYSCHEDULE Name
Summer Control Type Day Sch,
  !- SummerDesignDay DAYSCHEDULE Name
Summer Control Type Day Sch,
  !- WinterDesignDay DAYSCHEDULE Name
Summer Control Type Day Sch,
  !- CustomDay1 DAYSCHEDULE Name
Summer Control Type Day Sch;
  !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
  Winter Control Type Week Sch,
    !- Name
Winter Control Type Day Sch,
  !- Sunday DAYSCHEDULE Name
Winter Control Type Day Sch,
  !- Monday DAYSCHEDULE Name
Winter Control Type Day Sch,
  !- Tuesday DAYSCHEDULE Name
Winter Control Type Day Sch,
  !- Wednesday DAYSCHEDULE Name
Winter Control Type Day Sch,
  !- Thursday DAYSCHEDULE Name
Winter Control Type Day Sch,
  !- Friday DAYSCHEDULE Name
Winter Control Type Day Sch,
  !- Saturday DAYSCHEDULE Name
Winter Control Type Day Sch,
  !- Holiday DAYSCHEDULE Name
Winter Control Type Day Sch,
  !- SummerDesignDay DAYSCHEDULE Name
Winter Control Type Day Sch,
  !- WinterDesignDay DAYSCHEDULE Name
Winter Control Type Day Sch,
  !- CustomDay1 DAYSCHEDULE Name
Winter Control Type Day Sch;
  !- CustomDay2 DAYSCHEDULE Name

WEEKSCHEDULE,
  nighttimeventweek,
    !- Name
nightventilday,
  !- Sunday DAYSCHEDULE Name
nightventilday,
  !- Monday DAYSCHEDULE Name
!-   ===========  ALL OBJECTS IN CLASS: SCHEDULE ===========

SCHEDULE,
  Activity Sch,                  !- Name
  Any Number,                   !- ScheduleType
  ActLevWeek,                   !- Name of WEEKSCHEDULE 1
    1,                          !- Start Month 1
    1,                          !- Start Day 1
    12,                         !- End Month 1
    31;                         !- End Day 1

SCHEDULE,
  Work Eff Sch,                 !- Name
  Any Number,                   !- ScheduleType
  WorkEffWeek,                  !- Name of WEEKSCHEDULE 1
    1,                          !- Start Month 1
    1,                          !- Start Day 1
    12,                         !- End Month 1
    31;                         !- End Day 1

SCHEDULE,
  Clothing Sch,                 !- Name
  Any Number,                   !- ScheduleType
  CloInsWeek,                   !- Name of WEEKSCHEDULE 1
    1,                          !- Start Month 1
    1,                          !- Start Day 1
    12,                         !- End Month 1
    31;                         !- End Day 1

SCHEDULE,
  Air Velo Sch,                 !- Name
  Any Number,                   !- ScheduleType
  AirVelWeek,                   !- Name of WEEKSCHEDULE 1
    1,                          !- Start Month 1
    1,                          !- Start Day 1
    12,                         !- End Month 1
    31;                         !- End Day 1

SCHEDULE,
  BLDG Sch 1,                   !- Name
  Any Number,                   !- ScheduleType
  OFFICE OCCUPANCY,             !- Name of WEEKSCHEDULE 1
    1,                          !- Start Month 1
    1,                          !- Start Day 1
    12,                         !- End Month 1
    31;                         !- End Day 1

SCHEDULE,
  BLDG Sch 2,                   !- Name
  Any Number,                   !- ScheduleType
  INTERMITTENT,                 !- Name of WEEKSCHEDULE 1
    1,                          !- Start Month 1
    1,                          !- Start Day 1
    12,                         !- End Month 1
    31;                         !- End Day 1

SCHEDULE,
BLDG Sch 3,                    !- Name
Any Number,                    !- ScheduleType
OFFICE LIGHTING,              !- Name of WEEKSCHEDULE 1
  1,                        !- Start Month 1
  1,                        !- Start Day 1
  12,                       !- End Month 1
  31;                       !- End Day 1

SCHEDULE, ReportSch,          !- Name
  on/off,                   !- ScheduleType
  WeekAllON,                !- Name of WEEKSCHEDULE 1
    1,                      !- Start Month 1
    1,                      !- Start Day 1
    5,                      !- End Month 1
    5;                      !- End Day 1

SCHEDULE, TransOn,            !- Name
  Fraction,                 !- ScheduleType
  TransWeekOn,              !- Name of WEEKSCHEDULE 1
    1,                      !- Start Month 1
    1,                      !- Start Day 1
    12,                     !- End Month 1
    31;                     !- End Day 1

SCHEDULE, On Peak,            !- Name
  Fraction,                 !- ScheduleType
  Week On Peak,             !- Name of WEEKSCHEDULE 1
    1,                      !- Start Month 1
    1,                      !- Start Day 1
    12,                     !- End Month 1
    31;                     !- End Day 1

SCHEDULE, Off Peak,           !- Name
  Fraction,                 !- ScheduleType
  Week Off Peak,            !- Name of WEEKSCHEDULE 1
    1,                      !- Start Month 1
    1,                      !- Start Day 1
    12,                     !- End Month 1
    31;                     !- End Day 1

SCHEDULE, ON,                 !- Name
  Fraction,                 !- ScheduleType

253
WeekON, !- Name of WEEKSCHEDULE 1
1, !- Start Month 1
1, !- Start Day 1
12, !- End Month 1
31; !- End Day 1

SCHEDULE,
Seasonal Reset Supply Air Temp Sch,
!- Name
Temperature, !- ScheduleType
Winter Supply Air Temp Week Sch,
!- Name of WEEKSCHEDULE 1
1, !- Start Month 1
1, !- Start Day 1
3, !- End Month 1
31, !- End Day 1
Summer Supply Air Temp Week Sch,
!- Name of WEEKSCHEDULE 2
4, !- Start Month 2
1, !- Start Day 2
9, !- End Month 2
30, !- End Day 2
Winter Supply Air Temp Week Sch,
!- Name of WEEKSCHEDULE 3
10, !- Start Month 3
1, !- Start Day 3
12, !- End Month 3
31; !- End Day 3

SCHEDULE,
CW Loop Temp Schedule, !- Name
Temperature, !- ScheduleType
Chilled Water Loop Weekly,
!- Name of WEEKSCHEDULE 1
1, !- Start Month 1
1, !- Start Day 1
12, !- End Month 1
31; !- End Day 1

SCHEDULE,
HW Loop Temp Schedule, !- Name
Temperature, !- ScheduleType
Hot Water Loop Weekly, !- Name of WEEKSCHEDULE 1
1, !- Start Month 1
1, !- Start Day 1
12, !- End Month 1
31; !- End Day 1

SCHEDULE,
FanAndCoilAvailSched, !- Name
Fraction, !- ScheduleType
FanAndCoilWinterWeekSched,
!- Name of WEEKSCHEDULE 1
1, !- Start Month 1
1, !- Start Day 1
3, !- End Month 1
31, !- End Day 1
FanAndCoilSummerWeekSched,
    !- Name of WEEKSCHEDULE 2
4,      !- Start Month 2
1,      !- Start Day 2
9,      !- End Month 2
30,     !- End Day 2
FanAndCoilWinterWeekSched,
    !- Name of WEEKSCHEDULE 3
10,     !- Start Month 3
1,      !- Start Day 3
12,     !- End Month 3
31;     !- End Day 3

SCHEDULE,
CoolingCoilAvailSched, !- Name
Fraction,          !- ScheduleType
FanAndCoilAllOffWeekSched,
    !- Name of WEEKSCHEDULE 1
1,      !- Start Month 1
1,      !- Start Day 1
3,      !- End Month 1
31,     !- End Day 1
FanAndCoilSummerWeekSched,
    !- Name of WEEKSCHEDULE 2
4,      !- Start Month 2
1,      !- Start Day 2
9,      !- End Month 2
30,     !- End Day 2
FanAndCoilAllOffWeekSched,
    !- Name of WEEKSCHEDULE 3
10,     !- Start Month 3
1,      !- Start Day 3
12,     !- End Month 3
31;     !- End Day 3

SCHEDULE,
Heating Setpoints,  !- Name
Temperature,        !- ScheduleType
Winter Zone Temp Lo Week Sch,
    !- Name of WEEKSCHEDULE 1
1,      !- Start Month 1
1,      !- Start Day 1
3,      !- End Month 1
31,     !- End Day 1
Summer Zone Temp Lo Week Sch,
    !- Name of WEEKSCHEDULE 2
4,      !- Start Month 2
1,      !- Start Day 2
9,      !- End Month 2
30,     !- End Day 2
Winter Zone Temp Lo Week Sch,
    !- Name of WEEKSCHEDULE 3
10,     !- Start Month 3
1,      !- Start Day 3
12,     !- End Month 3
31;     !- End Day 3
SCHEDULE,
  Cooling Setpoints, !- Name
  Temperature, !- ScheduleType
  Winter Zone Temp Hi Week Sch,
    !- Name of WEEKSCHEDULE 1
    1, !- Start Month 1
    1, !- Start Day 1
    3, !- End Month 1
    31, !- End Day 1
  Summer Zone Temp Hi Week Sch,
    !- Name of WEEKSCHEDULE 2
    4, !- Start Month 2
    1, !- Start Day 2
    9, !- End Month 2
    30, !- End Day 2
  Winter Zone Temp Hi Week Sch,
    !- Name of WEEKSCHEDULE 3
    10, !- Start Month 3
    1, !- Start Day 3
    12, !- End Month 3
    31; !- End Day 3

SCHEDULE,
  Zone Control Type Sched, !- Name
  Control Type, !- ScheduleType
  Winter Control Type Week Sch,
    !- Name of WEEKSCHEDULE 1
    1, !- Start Month 1
    1, !- Start Day 1
    3, !- End Month 1
    31, !- End Day 1
  Summer Control Type Week Sch,
    !- Name of WEEKSCHEDULE 2
    4, !- Start Month 2
    1, !- Start Day 2
    9, !- End Month 2
    30, !- End Day 2
  Winter Control Type Week Sch,
    !- Name of WEEKSCHEDULE 3
    10, !- Start Month 3
    1, !- Start Day 3
    12, !- End Month 3
    31; !- End Day 3

SCHEDULE,
  FanSched1, !- Name
  ON/OFF, !- ScheduleType
  SYS-HOSPITAL EQUIPMENT, !- Name of WEEKSCHEDULE 1
  1, !- Start Month 1
  1, !- Start Day 1
  12, !- End Month 1
  31; !- End Day 1

SCHEDULE,
  ReheatSched1, !- Name
  ON/OFF, !- ScheduleType
  SYS-ON, !- Name of WEEKSCHEDULE 1
SCHEDULE,
    nighttimeventweek, !- Name of WEEKSCHEDULE 1
  6, !- Start Month 1
  1, !- Start Day 1
 10, !- End Month 1
 31, !- End Day 1
WeekAllOFF, !- Name of WEEKSCHEDULE 2
  1, !- Start Month 2
  1, !- Start Day 2
  5, !- End Month 2
  31, !- End Day 2
WeekAllOFF, !- Name of WEEKSCHEDULE 3
 11, !- Start Month 3
  1, !- Start Day 3
 12, !- End Month 3
 31; !- End Day 3

SCHEDULE,
    nighttimeventweekh, !- Name of WEEKSCHEDULE 1
  6, !- Start Month 1
  1, !- Start Day 1
 10, !- End Month 1
 31, !- End Day 1
WeekAllOFF, !- Name of WEEKSCHEDULE 2
  1, !- Start Month 2
  1, !- Start Day 2
  5, !- End Month 2
  31, !- End Day 2
WeekAllOFF, !- Name of WEEKSCHEDULE 3
 11, !- Start Month 3
  1, !- Start Day 3
 12, !- End Month 3
 31; !- End Day 3

SCHEDULE,
    dayeventweekh, !- Name of WEEKSCHEDULE 1
  6, !- Start Month 1
  1, !- Start Day 1
 10, !- End Month 1
 31, !- End Day 1
WeekAllOFF, !- Name of WEEKSCHEDULE 2
  1, !- Start Month 2
  1, !- Start Day 2
  5, !- End Month 2
  31, !- End Day 2
WeekAllOFF, !- Name of WEEKSCHEDULE 3
11, !- Start Month 3
1, !- Start Day 3
12, !- End Month 3
31; !- End Day 3

!- =========== ALL OBJECTS IN CLASS: PEOPLE ===========

PEOPLE,
!
Int Gain Type and Zone
   RESISTIVE ZONE, !- Zone Name
!
"Maximum" Number of People
   0, !- Number of People
!
Occupancy Schedule
   ON, !- Number of People SCHEDULE Name (real--fraction)
!
Fraction Radiant
   0.3, !- Fraction Radiant
!
Activity Level Schedule Name
   Activity Sch, !- Activity level SCHEDULE Name (units W/person, real)
!
Take default name for people (Zone Name)
,
!- PEOPLE Group Name
!
MRT calculation type
   zoneaveraged, !- MRT Calculation Type
!
Surface name
,
!- Surface Name
!
Work Efficiency Schedule Name
   Work Eff Sch, !- Work Efficiency SCHEDULE Name (0.0-1.0,real)
!
Clothing Insulation Schedule
   Clothing Sch, !- Clothing Insulation SCHEDULE Name (real)
!
Air Velocity Schedule
   Air Velo Sch, !- Air Velocity SCHEDULE Name (units m/s, real)
!
Calculate Thermal Comfort Using Fanger Model
   FANGER , !- Thermal Comfort Report Type
!
Calculate Thermal Comfort Using Pierce Model
   PIERCE , !- Thermal Comfort Report Type
!
Calculate Thermal Comfort Using KSU Model
   KSU ; !- Thermal Comfort Report Type
PEOPLE,
!
Int Gain Type and Zone
   EAST ZONE,
   !  Zone Name
!
"Maximum" Number of People
   0,
   !  Number of People
!
Occupancy Schedule
   ON,
   !  Number of People SCHEDULE Name (real--fraction)
!
Fraction Radiant
   0.3,
   !  Fraction Radiant
!
Activity Level Schedule Name
   Activity Sch,
   !  Activity level SCHEDULE Name (units W/person, real)
!
Take default name for people (Zone Name)
   ,
   !  PEOPLE Group Name
!
MRT calculation type
   zoneaveraged,
   !  MRT Calculation Type
!
Surface name
   ,
   !  Surface Name
!
Work Efficiency Schedule Name
   Work Eff Sch,
   !  Work Efficiency SCHEDULE Name (0.0-1.0,real)
!
Clothing Insulation Schedule
   Clothing Sch,
   !  Clothing Insulation SCHEDULE Name (real)
!
Air Velocity Schedule
   Air Velo Sch,
   !  Air Velocity SCHEDULE Name (units m/s, real)
!
Calculate Thermal Comfort Using Fanger Model
   FANGER ,
   !  Thermal Comfort Report Type
!
Calculate Thermal Comfort Using KSU Model
   KSU ;
   !  Thermal Comfort Report Type

PEOPLE,
!
Int Gain Type and Zone
   NORTH ZONE,
   !  Zone Name
!
"Maximum" Number of People
   0,
   !  Number of People
!
Occupancy Schedule
   ON,
   !  Number of People SCHEDULE Name (real--fraction)
! Fraction Radiant
  0.3,            !- Fraction Radiant
!
Activity Level Schedule Name
  Activity Sch,     !- Activity level SCHEDULE Name (units
W/person, real)
!
Take default name for people (Zone Name)
  ,                !- PEOPLE Group Name
!
MRT calculation type
  zoneaveraged,     !- MRT Calculation Type
!
Surface name
  ,                !- Surface Name
!
Work Efficiency Schedule Name
  Work Eff Sch,     !- Work Efficiency SCHEDULE Name (0.0-
1.0,real)
!
Clothing Insulation Schedule
  Clothing Sch,     !- Clothing Insulation SCHEDULE Name
(real)
!
Air Velocity Schedule
  Air Velo Sch,     !- Air Velocity SCHEDULE Name (units m/s,
real)
!
Calculate Thermal Comfort Using Fanger Model
  FANGER ;          !- Thermal Comfort Report Type

!- =========== ALL OBJECTS IN CLASS: LIGHTS ===========

LIGHTS,
!
Int Gain Type, Zone, and Schedule
  EAST ZONE,       !- Zone Name
    BLDG Sch 1,    !- SCHEDULE Name
!
Design Level (w)
  150,            !- Design Level (W)
!
Return Air Fraction
  0,              !- Return Air Fraction
!
Fraction Radiant
  0.2,            !- Fraction Radiant
!
Fraction Visible
  0.2,            !- Fraction Visible
!
Fraction Replaceable
  0;              !- Fraction Replaceable

LIGHTS,
! Int Gain Type, Zone, and Schedule
EAST ZONE,       !- Zone Name
   BLDG Sch 1,    !- SCHEDULE Name
!
Design Level {w}  150,        !- Design Level {W}
!
Return Air Fraction 0,        !- Return Air Fraction
!
Fraction Radiant 0.2,         !- Fraction Radiant
!
Fraction Visible 0.2,         !- Fraction Visible
!
Fraction Replaceable 0;       !- Fraction Replaceable

LIGHTS,
NORTH ZONE,     !- Zone Name
   BLDG Sch 1,    !- SCHEDULE Name
   150,           !- Design Level {W}
   0,             !- Return Air Fraction
   0.2,           !- Fraction Radiant
   0.2,           !- Fraction Visible
   0;             !- Fraction Replaceable

!- =========== ALL OBJECTS IN CLASS: ELECTRIC EQUIPMENT ===========

ELECTRIC EQUIPMENT,
!
Int Gain Type, Zone, and Schedule
RESISTIVE ZONE,    !- Zone Name
   ON,             !- SCHEDULE Name
!
Design Level {w}  1,        !- Design Level {W}
!
Fraction Latent 0.8,        !- Fraction Latent
!
Fraction Radiant 0.1,       !- Fraction Radiant
!
Fraction Lost 0;            !- Fraction Lost

ELECTRIC EQUIPMENT,
!
Int Gain Type, Zone, and Schedule
EAST ZONE,        !- Zone Name
   ON,             !- SCHEDULE Name
!
Design Level {w}
ELECTRIC EQUIPMENT,

Int Gain Type, Zone, and Schedule
NORTH ZONE,

ON,

Design Level (W)
1,

Fraction Latent
0.8,

Fraction Radiant
0.1,

Fraction Lost
0;

INFILTRATION,
RESISTIVE ZONE,
Work Eff Sch, 1.866,
0.606,
0.0363599,
0.1177716,
0;

INFILTRATION,
EAST ZONE, daynetsch, 0.1,
0.606,
0.0363599,
0.1177716,
0;

INFILTRATION,
NORTH ZONE, Work Eff Sch, 1.86666,
0.606,
0.0363599,
0.1177716,
0;                        !- Velocity Squared Term Coefficient

!- =========== ALL OBJECTS IN CLASS: MIXING ===========

MIXING,
  RESISTIVE ZONE,        !- Zone Name
  nightventilation,     !- SCHEDULE Name
  1,                    !- Design Level
  EAST ZONE;            !- Source Zone Name

MIXING,
  EAST ZONE,            !- Zone Name
  nightventilation,     !- SCHEDULE Name
  1,                    !- Design Level
  RESISTIVE ZONE;       !- Source Zone Name

!- =========== ALL OBJECTS IN CLASS: NODE LIST ===========

NODE LIST,
  OutsideAirInletNodes, !- Node List Name
  Outside Air Inlet Node, !- Node_ID_1
  Outside Air Inlet Node 2; !- Node_ID_2

NODE LIST,
  Zone1Inlets,         !- Node List Name
  Zone 1 Reheat Air Outlet Node; !- Node_ID_1

NODE LIST,
  Zone2Inlets,         !- Node List Name
  Zone 2 Reheat Air Outlet Node; !- Node_ID_1

NODE LIST,
  Zone3Inlets,         !- Node List Name
  Zone 3 Reheat Air Outlet Node; !- Node_ID_1

NODE LIST,
  Supply Air Temp Nodes, !- Node List Name
  !
  Set Point Node
  Air Loop Outlet Node; !- Node_ID_1

NODE LIST,
  Mixed Air Nodes,      !- Node List Name
  Mixed Air Node;       !- Node_ID_1

!- =========== ALL OBJECTS IN CLASS: BRANCH LIST ===========

BRANCH LIST,
  Air Loop Branches,    !- Branch List Name
  Air Loop Main Branch; !- Branch Name 1
BRANCH LIST,  
Cooling Supply Side Branches,                 !- Branch List Name  
   CW Pump Branch,                           !- Branch Name 1  
   Little Chiller Branch,                    !- Branch Name 2  
   Big Chiller Branch,                       !- Branch Name 3  
   Purchased Cooling Branch,                 !- Branch Name 4  
   Supply Bypass Branch,                     !- Branch Name 5  
   Cooling Supply Outlet;                    !- Branch Name 6  

BRANCH LIST,  
Cooling Demand Side Branches,                 !- Branch List Name  
   Cooling Demand Inlet,                     !- Branch Name 1  
   Cooling Coil Branch,                      !- Branch Name 2  
   Demand Bypass Branch,                     !- Branch Name 3  
   Cooling Demand Outlet;                    !- Branch Name 4  

BRANCH LIST,  
Condenser Supply Side Branches,               !- Branch List Name  
   Condenser Supply Inlet Branch,            !- Branch Name 1  
   Condenser Supply Tower Branch,            !- Branch Name 2  
   Condenser Supply Bypass Branch,           !- Branch Name 3  
   Condenser Supply Outlet Branch;           !- Branch Name 4  

BRANCH LIST,  
Condenser Demand Side Branches,               !- Branch List Name  
   Condenser Demand Inlet Branch,            !- Branch Name 1  
   Little Chiller Condenser Branch,           !- Branch Name 2  
   Big Chiller Condenser Branch,              !- Branch Name 3  
   Condenser Demand Bypass Branch,            !- Branch Name 3  
   Condenser Demand Outlet Branch;            !- Branch Name 4  

BRANCH LIST,  
Heating Supply Side Branches,                 !- Branch List Name  
   Heating Supply Inlet Branch,              !- Branch Name 1  
   Heating Purchased Hot Water Branch,       !- Branch Name 2  
   Heating Supply Bypass Branch,              !- Branch Name 3  
   Heating Supply Outlet Branch;              !- Branch Name 4  

BRANCH LIST,
Heating Demand Side Branches,  !- Branch List Name
  Reheat Inlet Branch,      !- Branch Name 1
  Zone 1 Reheat Branch,     !- Branch Name 2
  Zone 2 Reheat Branch,     !- Branch Name 3
  Zone 3 Reheat Branch,     !- Branch Name 4
  Reheat Bypass Branch,     !- Branch Name 5
  Reheat Outlet Branch;     !- Branch Name 6

========     ALL OBJECTS IN CLASS: CONNECTOR LIST ========

CONNECTOR LIST,
  Cooling Supply Side Connectors,  !- Connector List Name
    SPLITTER,                       !- Type of Connector 1
    CW Loop Splitter,              !- Name of Connector 1
    MIXER,                         !- Type of Connector 2
    CW Loop Mixer;                 !- Name of Connector 2

CONNECTOR LIST,
  Cooling Demand Side Connectors,  !- Connector List Name
    SPLITTER,                      !- Type of Connector 1
    CW Demand Splitter,            !- Name of Connector 1
    MIXER,                         !- Type of Connector 2
    CW Demand Mixer;               !- Name of Connector 2

CONNECTOR LIST,
  Condenser Supply Side Connectors, !- Connector List Name
    SPLITTER,                      !- Type of Connector 1
    Condenser Supply Splitter,     !- Name of Connector 1
    MIXER,                         !- Type of Connector 2
    Condenser Supply Mixer;        !- Name of Connector 2

CONNECTOR LIST,
  Condenser Demand Side Connectors, !- Connector List Name
    SPLITTER,                      !- Type of Connector 1
    Condenser Demand Splitter,     !- Name of Connector 1
    MIXER,                         !- Type of Connector 2
    Condenser Demand Mixer;        !- Name of Connector 2

CONNECTOR LIST,
  Heating Supply Side Connectors,  !- Connector List Name
    SPLITTER,                      !- Type of Connector 1
    Heating Supply Splitter,       !- Name of Connector 1
    MIXER,                         !- Type of Connector 2
    Heating Supply Mixer;          !- Name of Connector 2

CONNECTOR LIST,
  Heating Demand Side Connectors,  !- Connector List Name
SPLITTER,                    !- Type of Connector 1
Reheat Splitter,            !- Name of Connector 1
MIXER,                     !- Type of Connector 2
Reheat Mixer;              !- Name of Connector 2

!- =========== ALL OBJECTS IN CLASS: BRANCH ===========

BRANCH,
!
BRANCH, Air Loop Main Branch,
!
1.3,
!
OUTSIDE AIR SYSTEM, OA Sys 1,
!
Air Loop Inlet Node, Mixed Air Node,PASSIVE,
!
FAN:SIMPLE:ConstVolume, Supply Fan 1,
!
Mixed Air Node, Cooling Coil Air Inlet Node, ACTIVE,
!
COIL:Water:DetailedFlatCooling, Detailed Cooling Coil,
!
Cooling Coil Air Inlet Node, Air Loop Outlet Node, PASSIVE;
!
!
FAN:SIMPLE:ConstVolume,
!
Supply Fan 1, !Fan Name
!
FanAndCoilAvailSched,       !Fan Schedule
!
0.7,                        !Fan Efficiency
!
600.0,                      !Delta Pressure [N/M^2]
!
1.3,                        !Max Vol Flow Rate [m^3/Sec]
!
0.9,                        !motor efficiency
!
1.0,                        !motor in air stream fraction
!
Mixed Air Node,
!
Cooling Coil Air Inlet Node;  !Inlet Node, Outlet Node
!
Air Loop Main Branch,       !- Branch Name
6,                         !- Maximum Branch Flow Rate (m3/s)
OUTSIDE AIR SYSTEM,         !- Comp1 Type
OA Sys 1,                   !- Comp1 Name
Air Loop Inlet Node,        !- Comp1 Inlet Node Name
Mixed Air Node,             !- Comp1 Outlet Node Name
PASSIVE,                    !- Comp1 Branch Control Type
FAN:SIMPLE:ConstVolume,     !- Comp2 Type
Supply Fan 1,               !- Comp2 Name
Mixed Air Node,             !- Comp2 Inlet Node Name
Cooling Coil Air Inlet Node 1,
! Comp2 Outlet Node Name
ACTIVE,
! Comp2 Branch Control Type
EvapCooler:Indirect:CelDekPad,
! Comp3 Type
evaporative 1,
! Comp3 Name
Cooling Coil Air Inlet Node 1,
! Comp3 Inlet Node Name
Cooling Coil Air Inlet Node,
! Comp3 Outlet Node Name
ACTIVE,
! Comp3 Branch Control Type
COIL:Water:DetailedFlatCooling,
! Comp4 Type
detailed Cooling Coil,
! Comp4 Name
Cooling Coil Air Inlet Node,
Air Loop Outlet Node,
! Comp4 Inlet Node Name
PASSIVE;
! Comp4 Outlet Node Name
! Comp4 Branch Control Type

BRANCH,
Cooling Demand Inlet, ! Branch Name
0.001,
! Maximum Branch Flow Rate (m3/s)
PIPE,
! Comp1 Type
Demand Side Inlet Pipe,
! Comp1 Name
CW Demand Inlet Node,
! Comp1 Inlet Node Name
CW Demand Entrance Pipe Outlet Node,
! Comp1 Outlet Node Name

inlet to loop
PASSIVE;
! Comp1 Branch Control Type

BRANCH,
Cooling Coil Branch, ! Branch Name
0.001,
! Maximum Branch Flow Rate (m3/s)
COIL:Water:DetailedFlatCooling,
! Comp1 Type
detailed Cooling Coil,
! Comp1 Name
Cooling Coil Water Inlet Node,
Cooling Coil Water Outlet Node,
! Comp1 Outlet Node Name
Active;
! Comp1 Branch Control Type

BRANCH,
Demand Bypass Branch, ! Branch Name
0.001,
! Maximum Branch Flow Rate (m3/s)
PIPE,
! Comp1 Type
Demand Side Bypass,
! Comp1 Name
CW Demand Bypass Inlet Node,
CW Demand Bypass Outlet Node,
! Comp1 Outlet Node Name

inlet to loop
BYPASS;
! Comp1 Branch Control Type

BRANCH,
Cooling Demand Outlet, ! Branch Name
0.001, !- Maximum Branch Flow Rate (m3/s)
PIPE, !- Compl Type
CW Demand Side Outlet Pipe, !- Compl Name
CW Demand Exit Pipe Inlet Node, !- Compl Inlet Node Name
CW Demand Outlet Node, !- Compl Outlet Node Name
!
outlet to loop
PASSIVE; !- Compl Branch Control Type

BRANCH,
Cooling Supply Outlet, !- Branch Name
0.001, !- Maximum Branch Flow Rate (m3/s)
PIPE, !- Compl Type
Supply Side Outlet Pipe, !- Compl Name
Supply Side Exit Pipe Inlet Node, !- Compl Inlet Node Name
cw Supply Outlet Node, !- Compl Outlet Node Name
!
Bypass
PASSIVE; !- Compl Branch Control Type

BRANCH,
CW Pump Branch, !- Branch Name
0.001, !- Maximum Branch Flow Rate (m3/s)
PUMP:VARIABLE SPEED, !- Compl Type
Circ Pump, !- Compl Name
cw Supply Inlet Node, !- Compl Inlet Node Name
cw Pump Outlet Node, !- Compl Outlet Node Name
Active; !- Compl Branch Control Type

BRANCH,
Little Chiller Branch, !- Branch Name
0.001, !- Maximum Branch Flow Rate (m3/s)
CHILLER:CONST COP, !- Compl Type
Little Chiller, !- Compl Name
Little Chiller Inlet Node, !- Compl Inlet Node Name
Little Chiller Outlet Node, !- Compl Outlet Node Name
Active; !- Compl Branch Control Type

BRANCH,
Big Chiller Branch, !- Branch Name
0.001, !- Maximum Branch Flow Rate (m3/s)
CHILLER:BLAST, !- Compl Type
Big Chiller, !- Compl Name
Big Chiller Inlet Node, !- Compl Inlet Node Name
Big Chiller Outlet Node, !- Compl Outlet Node Name
Active; !- Compl Branch Control Type

BRANCH,
Purchased Cooling Branch, !- Branch Name
0.001, !- Maximum Branch Flow Rate (m3/s)
PURCHASED:CHILLED WATER, !- Compl Type
Purchased Cooling, !- Compl Name
Purchased Cooling Inlet Node,  
!- Compl Inlet Node Name
Purchased Cooling Outlet Node,  
!- Compl Outlet Node Name
Active;  
!- Compl Branch Control Type

BRANCH,
Supply Bypass Branch,  
!- Branch Name
0.001,  
!- Maximum Branch Flow Rate (m3/s)
PIPE,  
!- Compl Type
Supply Side Bypass,  
!- Compl Name
CW Supply Bypass Inlet Node,  
!- Compl Inlet Node Name
CW Supply Bypass Outlet Node,  
!- Compl Outlet Node Name
!
inlet to loop
BYPASS;  
!- Compl Branch Control Type

BRANCH,
Condenser Supply Inlet Branch,  
!- Branch Name
0.001,  
!- Maximum Branch Flow Rate (m3/s)
PUMP:VARIABLE SPEED,  
!- Compl Type
Cond Circ Pump,  
!- Compl Name
Condenser Supply Inlet Node,  
!- Compl Inlet Node Name
Condenser Pump Outlet Node,  
!- Compl Outlet Node Name
ACTIVE;  
!- Compl Branch Control Type

BRANCH,
Condenser Supply Tower Branch,  
!- Branch Name
0.001,  
!- Maximum Branch Flow Rate (m3/s)
COOLING TOWER:SINGLE SPEED,  
!- Compl Type
Big Tower,  
!- Compl Name
Condenser Tower Inlet Node,  
!- Compl Inlet Node Name
Condenser Tower Outlet Node,  
!- Compl Outlet Node Name
ACTIVE;  
!- Compl Branch Control Type

BRANCH,
Condenser Supply Bypass Branch,  
!- Branch Name
0.001,  
!- Maximum Branch Flow Rate (m3/s)
PIPE,  
!- Compl Type
Condenser Supply Side Bypass,  
!- Compl Name
Cond Supply Bypass Inlet Node,  
!- Compl Inlet Node Name
Cond Supply Bypass Outlet Node,  
!- Compl Outlet Node Name
BYPASS;  
!- Compl Branch Control Type
BRANCH,
Condenser Supply Outlet Branch,
   !- Branch Name
0.001,                        !- Maximum Branch Flow Rate (m3/s)
PIPE,                        !- Comp1 Type
Condenser Supply Outlet, !- Comp1 Name
Condenser Supply Exit Pipe Inlet Node,
   !- Comp1 Inlet Node Name
Condenser Supply Outlet Node,
   !- Comp1 Outlet Node Name
PASSIVE;                     !- Comp1 Branch Control Type

BRANCH,
Condenser Demand Inlet Branch,
   !- Branch Name
0.001,                        !- Maximum Branch Flow Rate (m3/s)
PIPE,                        !- Comp1 Type
Condenser Demand Inlet Pipe,
   !- Comp1 Name
Condenser Demand Inlet Node,
   !- Comp1 Inlet Node Name
Condenser Demand Entrance Pipe Outlet Node,
   !- Comp1 Outlet Node Name

! Condenser Entrance pipe
PASSIVE;                     !- Comp1 Branch Control Type

BRANCH,
Little Chiller Condenser Branch,
   !- Branch Name
0.001,                        !- Maximum Branch Flow Rate (m3/s)
CHILLER:CONST COP,            !- Comp1 Type
Little Chiller,               !- Comp1 Name
Little Chiller Condenser Inlet Node,
   !- Comp1 Inlet Node Name
Little Chiller Condenser Outlet Node,
   !- Comp1 Outlet Node Name
PASSIVE;                     !- Comp1 Branch Control Type

BRANCH,
Big Chiller Condenser Branch,
   !- Branch Name
0.001,                        !- Maximum Branch Flow Rate (m3/s)
CHILLER:BLAST,               !- Comp1 Type
Big Chiller,                  !- Comp1 Name
Big Chiller Condenser Inlet Node,
   !- Comp1 Inlet Node Name
Big Chiller Condenser Outlet Node,
   !- Comp1 Outlet Node Name
ACTIVE;                      !- Comp1 Branch Control Type

BRANCH,
Condenser Demand Bypass Branch,
   !- Branch Name
0.001,                        !- Maximum Branch Flow Rate (m3/s)
PIPE,                        !- Comp1 Type
Condenser Demand Side Bypass,
!- Compl Name
Cond Demand Bypass Inlet Node,
!- Compl Inlet Node Name
Cond Demand Bypass Outlet Node,
!- Compl Outlet Node Name
!
inlet to loop
BYPASS;
!- Compl Branch Control Type

BRANCH,
Condenser Demand Outlet Branch,
!- Branch Name
0.001,
!- Maximum Branch Flow Rate (m3/s)
PIPE,
!- Compl Type
Condenser Demand Outlet Pipe,
!- Compl Name
Condenser Demand Exit Pipe Inlet Node,
!- Compl Inlet Node Name
Condenser Demand Outlet Node,
!- Compl Outlet Node Name
!
exit to loop
PASSIVE;
!- Compl Branch Control Type

BRANCH,
Heating Supply Inlet Branch,
!- Branch Name
0.001,
!- Maximum Branch Flow Rate (m3/s)
PUMP:VARIABLE SPEED,
!- Compl Type
HW Circ Pump,
!- Compl Name
HW Supply Inlet Node,
!- Compl Inlet Node Name
HW Pump Outlet Node,
!- Compl Outlet Node Name
ACTIVE;
!- Compl Branch Control Type

BRANCH,
Heating Purchased Hot Water Branch,
!- Branch Name
0.001,
!- Maximum Branch Flow Rate (m3/s)
PURCHASED:HOT WATER,
!- Compl Type
Purchased Heating,
!- Compl Name
Purchased Heat Inlet Node,
!- Compl Inlet Node Name
Purchased Heat Outlet Node,
!- Compl Outlet Node Name
ACTIVE;
!- Compl Branch Control Type

BRANCH,
Heating Supply Bypass Branch,
!- Branch Name
0.001,
!- Maximum Branch Flow Rate (m3/s)
PIPE,
!- Compl Type
Heating Supply Side Bypass,
!- Compl Name
Heating Supply Bypass Inlet Node,
!- Compl Inlet Node Name
Heating Supply Bypass Outlet Node,
!- Compl Outlet Node Name
BYPASS;  

BRANCH,  
Heating Supply Outlet Branch,  
  !- Branch Name  
0.001,  
  !- Maximum Branch Flow Rate (m3/s)  
PIPE,  
  !- Comp1 Type  
Heating Supply Outlet,  
  !- Comp1 Name  
Heating Supply Exit Pipe Inlet Node,  
  !- Comp1 Inlet Node Name  
HW Supply Outlet Node,  
  !- Comp1 Outlet Node Name  
PASSIVE;  
  !- Comp1 Branch Control Type  

BRANCH,  
Reheat Inlet Branch,  
  !- Branch Name  
0.001,  
  !- Maximum Branch Flow Rate (m3/s)  
PIPE,  
  !- Comp1 Type  
Reheat Inlet Pipe,  
  !- Comp1 Name  
HW Demand Inlet Node,  
  !- Comp1 Inlet Node Name  
HW Demand Entrance Pipe Outlet Node,  
  !- Comp1 Outlet Node Name  

! loop inlet  
PASSIVE;  
  !- Comp1 Branch Control Type  

BRANCH,  
Reheat Outlet Branch,  
  !- Branch Name  
0.001,  
  !- Maximum Branch Flow Rate (m3/s)  
PIPE,  
  !- Comp1 Type  
Reheat Outlet Pipe,  
  !- Comp1 Name  
HW Demand Exit Pipe Inlet Node,  
  !- Comp1 Inlet Node Name  
HW Demand Outlet Node,  
  !- Comp1 Outlet Node Name  
PASSIVE;  
  !- Comp1 Branch Control Type  

BRANCH,  
Zone 1 Reheat Branch,  
  !- Branch Name  
0.001,  
  !- Maximum Branch Flow Rate (m3/s)  
COIL:Water:SimpleHeating,  
  !- Comp1 Type  
Reheat Coil Zone 1,  
  !- Comp1 Name  
Zone 1 Reheat Water Inlet Node,  
  !- Comp1 Inlet Node Name  
Zone 1 Reheat Water Outlet Node,  
  !- Comp1 Outlet Node Name  
ACTIVE;  
  !- Comp1 Branch Control Type  

BRANCH,  
Zone 2 Reheat Branch,  
  !- Branch Name  
0.001,  
  !- Maximum Branch Flow Rate (m3/s)  
COIL:Water:SimpleHeating,  
  !- Comp1 Type  
Reheat Coil Zone 2,  
  !- Comp1 Name  
Zone 2 Reheat Water Inlet Node,  
  !- Comp1 Inlet Node Name  
Zone 2 Reheat Water Outlet Node,  
  !- Comp1 Outlet Node Name  
ACTIVE;  
  !- Comp1 Branch Control Type
BRANCH,
Zone 3 Reheat Branch, !- Branch Name
0.001, !- Maximum Branch Flow Rate (m3/s)
COIL:Water:SimpleHeating, !- Comp1 Type
Reheat Coil Zone 3, !- Comp1 Name
Zone 3 Reheat Water Inlet Node,
!- Comp1 Inlet Node Name
Zone 3 Reheat Water Outlet Node,
!- Comp1 Outlet Node Name
ACTIVE;
!- Comp1 Branch Control Type

BRANCH,
Reheat Bypass Branch, !- Branch Name
0.001, !- Maximum Branch Flow Rate (m3/s)
PIPE, !- Comp1 Type
Reheat Bypass, !- Comp1 Name
Reheat Bypass Inlet Node, !- Comp1 Inlet Node Name
Reheat Bypass Outlet Node,
!- Comp1 Outlet Node Name

! inlet to loop
BYPASS; !- Comp1 Branch Control Type

!- =========== ALL OBJECTS IN CLASS: PIPE ===========

PIPE,
Demand Side Inlet Pipe, !- PipeName
CW Demand Inlet Node, !- Inlet Node Name
CW Demand Entrance Pipe Outlet Node;
!- Outlet Node Name

PIPE,
Demand Side Bypass, !- PipeName
CW Demand Bypass Inlet Node,
!- Inlet Node Name
CW Demand Bypass Outlet Node;
!- Outlet Node Name

PIPE,
CW Demand Side Outlet Pipe,
!- PipeName
CW Demand Exit Pipe Inlet Node,
!- Inlet Node Name
CW Demand Outlet Node; !- Outlet Node Name

PIPE,
Supply Side Outlet Pipe, !- PipeName
Supply Side Exit Pipe Inlet Node,
!- Inlet Node Name
CW Supply Outlet Node; !- Outlet Node Name

PIPE,
Supply Side Bypass, !- PipeName
CW Supply Bypass Inlet Node,
!- Inlet Node Name
CW Supply Bypass Outlet Node;
PIPE,
    Condenser Supply Side Bypass,
        !- PipeName
    Cond Supply Bypass Inlet Node,
        !- Inlet Node Name
    Cond Supply Bypass Outlet Node;
        !- Outlet Node Name

PIPE,
    Condenser Supply Outlet, !- PipeName
    Condenser Supply Exit Pipe Inlet Node,
        !- Inlet Node Name
    Condenser Supply Outlet Node;
        !- Outlet Node Name

PIPE,
    Condenser Demand Inlet Pipe,
        !- PipeName
    Condenser Demand Inlet Node,
        !- Inlet Node Name
    Condenser Demand Entrance Pipe Outlet Node;
        !- Outlet Node Name

PIPE,
    Condenser Demand Side Bypass,
        !- PipeName
    Cond Demand Bypass Inlet Node,
        !- Inlet Node Name
    Cond Demand Bypass Outlet Node;
        !- Outlet Node Name

PIPE,
    Condenser Demand Outlet Pipe,
        !- PipeName
    Condenser Demand Exit Pipe Inlet Node,
        !- Inlet Node Name
    Condenser Demand Outlet Node;
        !- Outlet Node Name

PIPE,
    Heating Supply Side Bypass,
        !- PipeName
    Heating Supply Bypass Inlet Node,
        !- Inlet Node Name
    Heating Supply Bypass Outlet Node;
        !- Outlet Node Name

PIPE,
    Heating Supply Outlet, !- PipeName
    Heating Supply Exit Pipe Inlet Node,
        !- Inlet Node Name
    HW Supply Outlet Node;      !- Outlet Node Name

PIPE,
    Reheat Inlet Pipe,       !- PipeName
HW Demand Inlet Node,   !- Inlet Node Name
HW Demand Entrance Pipe Outlet Node;  
   !- Outlet Node Name

PIPE,
Reheat Outlet Pipe,     !- PipeName
HW Demand Exit Pipe Inlet Node,      
   !- Inlet Node Name
HW Demand Outlet Node;       !- Outlet Node Name

!---  =========== ALL OBJECTS IN CLASS: PLANT LOOP ===========

PLANT LOOP,
!
******************************************************************************
***************PLANT SPECIFICATION************************************************
******************************************************************************
***************Chilled Water Loop************************************************
******************************************************************************

Chilled Water Loop,      !- Plant Loop Name
Water,                   !- Fluid Type
CW Loop Operation,       !- Plant Operation Scheme List Name
Work Eff Sch,            !- Loop Temperature Setpoint Schedule Name

[Maximum Loop Temperature] 
98,                      !- Maximum Loop Temperature {C}
!
[Minimum Loop Temperature] 
1,                       !- Minimum Loop Temperature {C}
!
[Loop Volumetric Flow Rate Setpoint ] 
0.001,                   !- Loop Volumetric Flow Rate Setpoint
{m3/s}
!
[Maximum Loop Volumetric Flow Rate]
0.001,                   !- Maximum Loop Volumetric Flow Rate
{m3/s}
!
[Minimum Loop Volumetric Flow Rate]
0,                       !- Minimum Loop Volumetric Flow Rate
{m3/s}
!

plant supply side inlet/outlet
   CW Supply Inlet Node,    !- Plant Side Inlet Node Name
   CW Supply Outlet Node,   !- Plant Side Outlet Node Name
   Cooling Supply Side Branches,
      !- Plant Side Branch List Name
         Cooling Supply Side Connectors,
            !- Plant Side Connector List Name
!

plant demand side inlet/outlet
   CW Demand Inlet Node,    !- Demand Side Inlet Node Name
   CW Demand Outlet Node,   !- Demand Side Outlet Nodes Name
   Cooling Demand Side Branches,
      !- Demand Side Branch List Name
         Cooling Demand Side Connectors,
--- Demand Side Connector List Name

Optimal;

--- Load Distribution Scheme

PLANT LOOP,
!
**********************************Hot Water
Loop**********************************

  Hot Water Loop,  !- Plant Loop Name
         Water,  !- Fluid Type
         Hot Loop Operation,  !- Plant Operation Scheme List Name
         Work Eff Sch,  !- Loop Temperature Setpoint Schedule Name

  [Maximum Loop Temperature]
    100,  !- Maximum Loop Temperature {C}

  [Minimum Loop Temperature]
    10,  !- Minimum Loop Temperature {C}

  [Loop Volumetric Flow Rate Setpoint ]
    0.004,  !- Loop Volumetric Flow Rate Setpoint {m3/s}

  [Maximum Loop Volumetric Flow Rate]
    0.005,  !- Maximum Loop Volumetric Flow Rate {m3/s}

  [Minimum Loop Volumetric Flow Rate]
    0,  !- Minimum Loop Volumetric Flow Rate {m3/s}

  plant supply side inlet/outlet
    HW Supply Inlet Node,  !- Plant Side Inlet Node Name
    HW Supply Outlet Node,  !- Plant Side Outlet Node Name
    Heating Supply Side Branches,
      !- Plant Side Branch List Name
    Heating Supply Side Connectors,
      !- Plant Side Connector List Name

  plant demand side inlet/outlet
    HW Demand Inlet Node,  !- Demand Side Inlet Node Name
    HW Demand Outlet Node,  !- Demand Side Outlet Nodes Name
    Heating Demand Side Branches,
      !- Demand Side Branch List Name
    Heating Demand Side Connectors,
      !- Demand Side Connector List Name

  Optimal;

--- Load Distribution Scheme

--- ===========  ALL OBJECTS IN CLASS: CONDENSER LOOP ===========

CONDENSER LOOP,
!
**************************Condenser
Loop**************************

  Chilled Water Condenser Loop,
    !- Condenser Loop Name
         Water,  !- Fluid Type
Tower Loop Operation,  !- Condenser Operation Scheme List Name
  Work Eff Sch,        !- Loop Temperature Setpoint Schedule Name

Maximum Loop Temperature]
  80,                !- Maximum Loop Temperature {C}

Minimum Loop Temperature]
  0.5,              !- Minimum Loop Temperature {C}

[Loop Volumetric Flow Rate Setpoint ]
  0.001,            !- Loop Volumetric Flow Rate Setpoint {m3/s}

Maximum Loop Volumetric Flow Rate]
  0.001,           !- Maximum Loop Volumetric Flow Rate {m3/s}

Minimum Loop Volumetric Flow Rate]
  0,              !- Minimum Loop Volumetric Flow Rate {m3/s}

condenser supply side inlet/outlet
  Condenser Supply Inlet Node,  !- Condenser Side Inlet Node Name
  Condenser Supply Outlet Node, !- Condenser Side Outlet Node Name
  Condenser Supply Side Branches, !- Condenser Side Branch List Name
  Condenser Supply Side Connectors, !- Condenser Side Connector List Name

plant demand side inlet/outlet
  Condenser Demand Inlet Node,  !- Demand Side Inlet Node Name
  Condenser Demand Outlet Node, !- Demand Side Outlet Nodes Name
  Condenser Demand Side Branches, !- Condenser Demand Side Branch List Name
  Condenser Demand Side Connectors; !- Condenser Demand Side Connector List Name

!- ===========  ALL OBJECTS IN CLASS: PLANT OPERATION SCHEMES ===========

PLANT OPERATION SCHEMES,
  CW Loop Operation,    !- PlantOperationSchemeName
  LOAD RANGE BASED OPERATION,
    !- KEY--Control Scheme 1
  Peak Operation,      !- Control Scheme Name 1
    Work Eff Sch,      !- Control Scheme Schedule 1
  LOAD RANGE BASED OPERATION,
    !- KEY--Control Scheme 2
  Off Peak Operation, !- Control Scheme Name 2
    Work Eff Sch;     !- Control Scheme Schedule 2
PLANT OPERATION SCHEMES,
  Hot Loop Operation,   !- PlantOperationSchemeName
  LOAD RANGE BASED OPERATION,
    !- KEY--Control Scheme 1
  Purchased Only,       !- Control Scheme Name 1
  Work Eff Sch;         !- Control Scheme Schedule 1

!-  ===========  ALL OBJECTS IN CLASS: CONDENSER OPERATION SCHEMES
===========

CONDENSER OPERATION SCHEMES,
  Tower Loop Operation,  !- CondenserOperationSchemeName
  LOAD RANGE BASED OPERATION,
    !- KEY--Control Scheme 1
  Year Round Tower Operation,
    !- Control Scheme Name 1
  Work Eff Sch;          !- Control Scheme Schedule 1

!-  ===========  ALL OBJECTS IN CLASS: LOAD RANGE BASED OPERATION
===========

LOAD RANGE BASED OPERATION,
  Peak Operation,   !- Name
    0,                  !- Load Range Lower Limit 1 {W}
    -1,                 !- Load Range Upper Limit 1 {W}
  Chiller Plant,     !- Priority Control Equip List Name 1
    -1,                 !- Load Range Lower Limit 2 {W}
    -1,                 !- Load Range Upper Limit 2 {W}
  Chiller Plant and Purchased,
    -1,                 !- Priority Control Equip List Name 2
    -1,                 !- Priority Control Equip List Name 3
  Purchased Only;

LOAD RANGE BASED OPERATION,
  Off Peak Operation,  !- Name
    0,                  !- Load Range Lower Limit 1 {W}
    -1,                 !- Load Range Upper Limit 1 {W}
  All Chillers;

LOAD RANGE BASED OPERATION,
  Year Round Tower Operation,
    !- Name
    0,                  !- Load Range Lower Limit 1 {W}
    -1,                 !- Load Range Upper Limit 1 {W}
  All Towers;

LOAD RANGE BASED OPERATION,
  Purchased Only,     !- Name
    0,                  !- Load Range Lower Limit 1 {W}
    1,                  !- Load Range Upper Limit 1 {W}
  heating plant;

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LOAD RANGE EQUIPMENT LIST,
    Chiller Plant,       !- Equip List Name
    CHILLER:CONST COP, !- KEY--Plant Equip 1
    Little Chiller;     !- Equip Name 1

LOAD RANGE EQUIPMENT LIST,
    Chiller Plant and Purchased,
    CHILLER:BLAST,     !- KEY--Plant Equip 1
    Big Chiller,       !- Equip Name 1
    PURCHASED:CHILLED WATER, !- KEY--Plant Equip 2
    Purchased Cooling; !- Equip Name 2

LOAD RANGE EQUIPMENT LIST,
    Purchased Only,    !- Equip List Name
    PURCHASED:CHILLED WATER, !- KEY--Plant Equip 1
    Purchased Cooling; !- Equip Name 1

LOAD RANGE EQUIPMENT LIST,
    All Chillers,      !- Equip List Name
    CHILLER:BLAST,     !- KEY--Plant Equip 1
    Big Chiller,       !- Equip Name 1
    CHILLER:CONST COP, !- KEY--Plant Equip 2
    Little Chiller;    !- Equip Name 2

LOAD RANGE EQUIPMENT LIST,
    All Towers,        !- Equip List Name
    COOLING TOWER:SINGLE SPEED, !- KEY--Plant Equip 1
    Big Tower;         !- Equip Name 1

LOAD RANGE EQUIPMENT LIST,
    heating plant,    !- Equip List Name
    PURCHASED:HOT WATER, !- KEY--Plant Equip 1
    Purchased Heating; !- Equip Name 1

SPLITTER,
    CW Loop Splitter,  !- SplitterName
    CW Pump Branch,    !- Inlet Branch Name
    Little Chiller Branch, !- Outlet Branch Name 1
    Big Chiller Branch, !- Outlet Branch Name 2
    Purchased Cooling Branch, !- Outlet Branch Name 3
    Supply Bypass Branch; !- Outlet Branch Name 4

SPLITTER,
    CW Demand Splitter,  !- SplitterName
    Cooling Demand Inlet, !- Inlet Branch Name
    Demand Bypass Branch, !- Outlet Branch Name 1
    Cooling Coil Branch; !- Outlet Branch Name 2

SPLITTER,
Condenser Demand Splitter,
!- SplitterName
Condenser Demand Inlet Branch,
!- Inlet Branch Name
Big Chiller Condenser Branch,
!- Outlet Branch Name 1
Little Chiller Condenser Branch,
!- Outlet Branch Name 2
Condenser Demand Bypass Branch;
!- Outlet Branch Name 3

SPLITTER,
Condenser Supply Splitter,
!- SplitterName
Condenser Supply Inlet Branch,
!- Inlet Branch Name
Condenser Supply Tower Branch,
!- Outlet Branch Name 1
Condenser Supply Bypass Branch;
!- Outlet Branch Name 2

SPLITTER,
Reheat Splitter,
!- SplitterName
Reheat Inlet Branch,
!- Inlet Branch Name
Zone 1 Reheat Branch,
!- Outlet Branch Name 1
Zone 2 Reheat Branch,
!- Outlet Branch Name 2
Zone 3 Reheat Branch,
!- Outlet Branch Name 3
Reheat Bypass Branch;
!- Outlet Branch Name 4

SPLITTER,
Heating Supply Splitter,
!- SplitterName
Heating Supply Inlet Branch,
!- Inlet Branch Name
Heating Purchased Hot Water Branch,
!- Outlet Branch Name 1
Heating Supply Bypass Branch;
!- Outlet Branch Name 2

!=* ============  ALL OBJECTS IN CLASS: MIXER ============*

MIXER,
CW Loop Mixer,
!- MixerName
Cooling Supply Outlet,
!- Outlet Branch Name
Little Chiller Branch,
!- Inlet Branch Name 1
Big Chiller Branch,
!- Inlet Branch Name 2
Purchased Cooling Branch,
!- Inlet Branch Name 3
Supply Bypass Branch;
!- Inlet Branch Name 4

MIXER,
CW Demand Mixer,
!- MixerName
Cooling Demand Outlet,
!- Outlet Branch Name
Cooling Coil Branch,
!- Inlet Branch Name 1
Demand Bypass Branch;
!- Inlet Branch Name 2

MIXER,
Condenser Demand Mixer,
!- MixerName
Condenser Demand Outlet Branch,
  !- Outlet Branch Name
Big Chiller Condenser Branch,
  !- Inlet Branch Name 1
Little Chiller Condenser Branch,
  !- Inlet Branch Name 2
Condenser Demand Bypass Branch;
  !- Inlet Branch Name 3

MIXER,
  Condenser Supply Mixer,  !- MixerName
Condenser Supply Outlet Branch,
  !- Outlet Branch Name
Condenser Supply Tower Branch,
  !- Inlet Branch Name 1
Condenser Supply Bypass Branch;
  !- Inlet Branch Name 2

MIXER,
  Reheat Mixer,  !- MixerName
Reheat Outlet Branch,  !- Outlet Branch Name
Zone 1 Reheat Branch,  !- Inlet Branch Name 1
Zone 2 Reheat Branch,  !- Inlet Branch Name 2
Zone 3 Reheat Branch,  !- Inlet Branch Name 3
Reheat Bypass Branch;  !- Inlet Branch Name 4

MIXER,
  Heating Supply Mixer,  !- MixerName
Heating Supply Outlet Branch,
  !- Outlet Branch Name
Heating Purchased Hot Water Branch,
  !- Inlet Branch Name 1
Heating Supply Bypass Branch;
  !- Inlet Branch Name 2

!- ========== ALL OBJECTS IN CLASS: AIR PRIMARY LOOP ==========

AIR PRIMARY LOOP,
!
First Air Loop in the system
  Typical Terminal Reheat 1,
    !- Primary Air Loop Name
Reheat System 1 Controllers,
    !- Name: Controller List
Reheat System 1 Avail List,
    !- Name: System Availability Manager List
6,
  {m3/s}
Air Loop Branches,  !- Air Loop Branch List Name
  ,
Air Loop Inlet Node,  !- ReturnAir AirLoop Inlet Node
Return Air Mixer Outlet,  !- ZoneEquipGroup Outlet Node
Zone Equipment Inlet Node,
  !- SupplyAirPath ZoneEquipGroup Inlet
Nodes
Air Loop Outlet Node;  !- AirLoop Outlet Nodes
--- ALL OBJECTS IN CLASS: CONTROLLER LIST ---

CONTROLLER LIST,
Reheat System 1 Controllers,
   !- Name
Controller:Simple, !- KEY--Controller 1
Main Cooling Coil Controller;
   !- Controller Name 1

CONTROLLER LIST,
OA Sys 1 Controllers, !- Name
CONTROLLER:OUTSIDE AIR, !- KEY--Controller 1
OA Controller 1; !- Controller Name 1

--- ALL OBJECTS IN CLASS: AIR LOOP EQUIPMENT LIST ---

AIR LOOP EQUIPMENT LIST,
OA Sys 1 Equipment, !- Name
DESiCCANT DEHUMIDIFIER:SOLID,
   !- KEY--System Component 1
Desiccant 1, !- Component Name 1
HEAT EXCHANGER:AIR TO AIR:FLAT PLATE,
   !- KEY--System Component 2
OA Heat Recovery 1, !- Component Name 2
OUTSIDE AIR MIXER, !- KEY--System Component 3
OA Mixing Box 1; !- Component Name 3

AIR LOOP EQUIPMENT LIST,
OA Sys 2 Equipment, !- Name
HEAT EXCHANGER:AIR TO AIR:FLAT PLATE,
   !- KEY--System Component 1
OA Heat Recovery 2, !- Component Name 1
OUTSIDE AIR MIXER, !- KEY--System Component 2
OA Mixing Box 2; !- Component Name 2

--- ALL OBJECTS IN CLASS: SYSTEM AVAILABILITY MANAGER LIST ---

SYSTEM AVAILABILITY MANAGER LIST,
Reheat System 1 Avail List,
   !- Name
SYSTEM AVAILABILITY MANAGER:SCHEDULED,
   !- KEY--System Availability Manager 1
Reheat System 1 Avail; !- System Availability Manager name 1

--- ALL OBJECTS IN CLASS: SYSTEM AVAILABILITY MANAGER:SCHEDULED ---

SYSTEM AVAILABILITY MANAGER:SCHEDULED,
Reheat System 1 Avail, !- Name
ON; !- Schedule name
OUTSIDE AIR SYSTEM,
   OA Sys 1,    !- Name
   OA Sys 1 Controllers,  !- Name: Controller List
   OA Sys 1 Equipment,   !- Name of an Air Loop Equipment List
   Reheat System 1 Avail List;
       !- Name of a System Availability Manager List

OUTSIDE AIR SYSTEM,
   OA Sys 2,    !- Name
   OA Sys 2 Controllers,  !- Name: Controller List
   OA Sys 2 Equipment,   !- Name of an Air Loop Equipment List
   Reheat System 1 Avail List;
       !- Name of a System Availability Manager List

OUTSIDE AIR INLET NODE LIST,

**********************AIR LOOP*******************************
   OutsideAirInletNodes,  !- 1st Node name or node list name
   Outside Air Inlet Node 2;!- 2nd Node name or node list name

OUTSIDE AIR MIXER,
   OA Mixing Box 1,    !- Name
   mixed air node,     !- Mixed_Air_Node
   Heat Recovery Outlet Node,  !- Outside_Air_Stream_Node
   Relief Air Outlet Node,  !- Relief_Air_Stream_Node
   Air Loop Inlet Node;   !- Return_Air_Stream_Node

CONTROLLED ZONE EQUIP CONFIGURATION

CONTROLLED ZONE EQUIP CONFIGURATION,
   RESISTIVE ZONE,     !- Zone Name
   Zone1Equipment,     !- List Name: Zone Equipment
   Zone1Inlets,        !- List Name: Zone Inlet Nodes
   Zone 1 Node,        !- Zone Air Node Name
   Zone 1 Outlet Node;  !- Zone Return Air Node Name

CONTROLLED ZONE EQUIP CONFIGURATION,
   EAST ZONE,         !- Zone Name
   Zone2Equipment,    !- List Name: Zone Equipment
   Zone2Inlets,       !- List Name: Zone Inlet Nodes
CONTROLLED ZONE EQUIP CONFIGURATION,
NORTH ZONE, !- Zone Name
Zone3Equipment, !- List Name: Zone Equipment
Zone3Inlets, !- List Name: Zone Inlet Nodes
Zone 3 Node, !- Zone Air Node Name
Zone 3 Outlet Node; !- Zone Return Air Node Name

ZONE CONTROL:THERMOSTATIC,

ZONE CONTROL:THERMOSTATIC,

ZONE EQUIPMENT SPECIFICATION
Valid Control Types are 1 - Single Heating Setpoint 2 - Single Cooling Setpoint
3 - Single Heating/Cooling Setpoint 4 - Dual Setpoint
(Heating and Cooling) with deadband

ZONE CONTROL:THERMOSTATIC,

ZONE CONTROL:THERMOSTATIC,
ZONE EQUIPMENT LIST,
Zone1Equipment, !- Name
AIR DISTRIBUTION UNIT, !- KEY--Zone Equipment Type 1
Zone1TermReheat, !- Type Name 1
1, !- Cooling Priority
1; !- Heating Priority

ZONE EQUIPMENT LIST,
Zone2Equipment, !- Name
AIR DISTRIBUTION UNIT, !- KEY--Zone Equipment Type 1
Zone2TermReheat, !- Type Name 1
1, !- Cooling Priority
1; !- Heating Priority

ZONE EQUIPMENT LIST,
Zone3Equipment, !- Name
AIR DISTRIBUTION UNIT, !- KEY--Zone Equipment Type 1
Zone3TermReheat, !- Type Name 1
1, !- Cooling Priority
1; !- Heating Priority

!- =========== ALL OBJECTS IN CLASS: AIR DISTRIBUTION UNIT
===========

AIR DISTRIBUTION UNIT,
Zone1TermReheat, !- Air Distribution Unit Name
Zone 1 Reheat Air Outlet Node,
!- Air Dist Unit Outlet Node Name
SINGLE DUCT:CONST VOLUME:REHEAT,
!- KEY--System Component Type 1
Reheat Zone 1; !- Component Name 1

AIR DISTRIBUTION UNIT,
Zone2TermReheat, !- Air Distribution Unit Name
Zone 2 Reheat Air Outlet Node,
!- Air Dist Unit Outlet Node Name
SINGLE DUCT:CONST VOLUME:REHEAT,
!- KEY--System Component Type 1
Reheat Zone 2; !- Component Name 1

AIR DISTRIBUTION UNIT,
Zone3TermReheat, !- Air Distribution Unit Name
Zone 3 Reheat Air Outlet Node,
!- Air Dist Unit Outlet Node Name
SINGLE DUCT:CONST VOLUME:REHEAT,
!- KEY--System Component Type 1
Reheat Zone 3; !- Component Name 1

!- =========== ALL OBJECTS IN CLASS: ZONE SUPPLY AIR PATH
===========

ZONE SUPPLY AIR PATH,
!
Zone Heating and Cooling Equipment are attached to zones by the following statements:
TermReheatSupplyPath, !- Supply Air Path Name
Zone Equipment Inlet Node,
ZONE RETURN AIR PATH,
   TermReheatReturnPath, !- Return Air Path Name
   Return Air Mixer Outlet, !- Return Air Path Outlet Node
   Zone Mixer, !- KEY--System Component Type 1
   Zone Return Air Mixer; !- Component Name 1

ZONE SPLITTER,
!
Specify the Components in the Zone Equipment Group
   Zone Supply Air Splitter,!-- Splitter Name
!
inlet node
   Zone Equipment Inlet Node,
      !- Inlet_Node
!
outlet Nodes
   Zone 1 Reheat Air Inlet Node,
      !- Outlet_Node_1
   Zone 2 Reheat Air Inlet Node,
      !- Outlet_Node_2
   Zone 3 Reheat Air Inlet Node;
      !- Outlet_Node_3

ZONE MIXER,
   Zone Return Air Mixer, !- Mixer Name
!
outlet Node
   Return Air Mixer Outlet, !- Outlet_Node
!
inlet nodes
   Zone 1 Outlet Node, !- Inlet_Node_1
   Zone 2 Outlet Node, !- Inlet_Node_2
   Zone 3 Outlet Node; !- Inlet_Node_3

SINGLE DUCT:CONST VOLUME:REHEAT,
*
*******ZONE TERMINAL UNIT ONLY AIR LOOP COMPONENTS************
*
Name of System
Reheat Zone 1, !- Name of System

Availability schedule for System
  ON, !- Availability schedule for VAV System

Air distribution Unit outlet & inlet nodes
  Zone 1 Reheat Air Outlet Node, !- Damper Outlet Node
  Zone 1 Reheat Air Inlet Node, !- Damper Inlet Node

Maximum air flow rate m^3/s
  2, !- Maximum air flow rate {m3/s}

Control node
  Zone 1 Reheat Water Inlet Node, !- Control node

Reheat Component Object
  COIL:Water:SimpleHeating, !- Reheat Component Object

Name of Reheat Component
  Reheat Coil Zone 1, !- Name of Reheat Component

Max Reheat Water Flow (Flow: kg/sec)
  1.3, !- Max Reheat Water Flow {kg/s}

Min Reheat Water Flow (Flow: kg/sec)
  0, !- Min Reheat Water Flow {kg/s}

Convergence Tolerance
  0.001; !- Convergence Tolerance

SINGLE DUCT:CONST VOLUME:REHEAT,

Name of System
  Reheat Zone 2, !- Name of System

Availability schedule for System
  Work Eff Sch, !- Availability schedule for VAV System

Air distribution Unit outlet & inlet nodes
  Zone 2 Reheat Air Outlet Node, !- Damper Outlet Node
  Zone 2 Reheat Air Inlet Node, !- Damper Inlet Node

Maximum air flow rate m^3/s
  2, !- Maximum air flow rate {m3/s}

Control node
  Zone 2 Reheat Water Inlet Node, !- Control node

Reheat Component Object
  COIL:Water:SimpleHeating, !- Reheat Component Object
Name of Reheat Component
Reheat Coil Zone 2,

Max Reheat Water Flow (Flow: kg/sec)
1.4,

Min Reheat Water Flow (Flow: kg/sec)
0,

Convergence Tolerance
0.001;

SINGLE DUCT:CONST VOLUME:REHEAT,

Name of System
Reheat Zone 3,

Availability schedule for System
ON,

Air distribution Unit outlet & inlet nodes
Zone 3 Reheat Air Outlet Node,

Zone 3 Reheat Air Inlet Node,

Maximum air flow rate m^3/s
2,

Control node
Zone 3 Reheat Water Inlet Node,

Reheat Component Object
COIL:Water:SimpleHeating,

Name of Reheat Component
Reheat Coil Zone 3,

Max Reheat Water Flow (Flow: kg/sec)
1.3,

Min Reheat Water Flow (Flow: kg/sec)
0,

Convergence Tolerance
0.001;

-------------- ALL OBJECTS IN CLASS: CHILLER:BLAST --------------

CHILLER:BLAST,

Big Chiller,

45000, !-- Nominal Capacity {W}

2.75, !-- COP

Big Chiller Inlet Node, !-- Plant_Side_Inlet_Node
Big Chiller Outlet Node, !- Plant_Side_Outlet_Node
Big Chiller Condenser Inlet Node, !- Condenser_Side_Inlet_Node
Big Chiller Condenser Outlet Node, !- Condenser_Side_Outlet_Node

0.15, !- Minimum Part Load Ratio
1, !- Maximum Part Load Ratio
0.65, !- Opt Part Load Ratio
35, !- Temp Design Condenser Inlet (C)
2.778, !- Temp Rise Coefficient
7.2222, !- Temp Design Evaporator Outlet (C)
0.0011, !- Design Evaporator Volumetric Water Flow Rate (m3/s)

Not Used
0.0005, !- Design Condenser Volumetric Water Flow Rate (m3/s)
0.9949, !- Coefficient1 of the capacity ratio curve
-0.045954, !- Coefficient2 of the capacity ratio curve
-0.0013543, !- Coefficient3 of the capacity ratio curve
2.333, !- Coefficient1 of the power ratio curve
-1.975, !- Coefficient2 of the power ratio curve
0.6121, !- Coefficient3 of the power ratio curve
0.03303, !- Coefficient1 of the full load ratio curve
0.6852, !- Coefficient2 of the full load ratio curve
0.2818, !- Coefficient3 of the full load ratio curve
5; !- Temp Lower Limit Evaporator Outlet (C)

!- =========== ALL OBJECTS IN CLASS: CHILLER:CONST COP ===========

CHILLER:CONST COP,
Little Chiller, !- Chiller Name
25000, !- Nominal Capacity (W)
2.5, !- COP
0.0011, !- Design Condenser Volumetric Water Flow Rate (m3/s)

Little Chiller Inlet Node, !- Plant_Side_Inlet_Node
Little Chiller Outlet Node, !- Plant_Side_Outlet_Node
Little Chiller Condenser Inlet Node, !- Condenser_Side_Inlet_Node
Little Chiller Condenser Outlet Node; !- Condenser_Side_Outlet_Node

!- =========== ALL OBJECTS IN CLASS: PURCHASED:CHILLED WATER ===========

PURCHASED:CHILLED WATER,
Plant Components

Purchased Cooling,  !- Purchased ID
Purchased Cooling Inlet Node,
  !- Plant_Loop_Inlet_Node
Purchased Cooling Outlet Node,
  !- Plant_Loop_Outlet_Node
680000;  !- Nominal Capacity (W)

Purchased Heating,  !- Purchased ID
Purchased Heat Inlet Node,
  !- Plant_Loop_Inlet_Node
Purchased Heat Outlet Node,
  !- Plant_Loop_Outlet_Node
1000000;  !- Nominal Capacity (W)

PUMP:VARIABLE SPEED,

Circ Pump,
  !- Pump Name
CW Supply Inlet Node,
  !- Inlet_Node
CW Pump Outlet Node,
  !- Outlet_Node
0.0011,  !- Rated Volumetric Flow Rate (m³/s)
300000,  !- Rated Pump Head (Pa)
500,  !- Rated Power Consumption (W)
0.87,  !- Motor Efficiency
0,  !- Fraction of Motor Inefficiencies to Fluid Stream
1,  !- Coefficient1 of the Part Load
Performance Curve
0,  !- Coefficient2 of the Part Load
Performance Curve
0,  !- Coefficient3 of the Part Load
Performance Curve
0;  !- Coefficient4 of the Part Load
Performance Curve

Cond Circ Pump,
  !- Pump Name
Condenser Supply Inlet Node,
  !- Inlet_Node
Condenser Pump Outlet Node,
  !- Outlet_Node
0.0011,  !- Rated Volumetric Flow Rate (m³/s)
300000,  !- Rated Pump Head (Pa)
500,  !- Rated Power Consumption (W)
0.87,  !- Motor Efficiency
0,  !- Fraction of Motor Inefficiencies to Fluid Stream
1,  !- Coefficient1 of the Part Load
Performance Curve

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PUMP: VARIABLE SPEED,
   HW Circ Pump,                   !- Pump Name
       HW Supply Inlet Node,       !- Inlet_Node
       HW Pump Outlet Node,       !- Outlet_Node
   0.0011,                          !- Rated Volumetric Flow Rate {m3/s}
   300000,                         !- Rated Pump Head {Pa}
   500,                            !- Rated Power Consumption {W}
   0.87,                           !- Motor Efficiency
   0,                               !- Fraction of Motor Inefficiencies to Fluid Stream
   1,                               !- Coefficient1 of the Part Load
   Performance Curve
   0,                               !- Coefficient2 of the Part Load
   Performance Curve
   0,                               !- Coefficient3 of the Part Load
   Performance Curve
   0;                               !- Coefficient4 of the Part Load
   Performance Curve

COOLING TOWER: SINGLE SPEED,
   Big Tower,                      !- Tower ID
       Condenser Tower Inlet Node, !- Inlet_Node
       Condenser Tower Outlet Node, !- Outlet_Node
   0.001,                          !- Design Water Flow Rate {m3/s}
   16,                             !- Design Air Flow Rate {m3/s}
   1000,                           !- Fan Power at Design Air Flow Rate {W}
   1750,                           !- Tower UA value at Design Air Flow Rate
   0,                              !- Air Flow Rate in Free Convection Regime
   {m3/s}
   0;                              !- Tower UA value at Free Convection Air Flow Rate

SINGLE HEATING SETPOINT,
   Heating Setpoint with SB,      !- Name
       Heating Setpoints;          !- Setpoint Temperature SCHEDULE Name

SINGLE COOLING SETPOINT


SINGLE COOLING SETPOINT,
    Cooling Setpoint with SB!,- Name
    Cooling Setpoints;      !- Setpoint Temperature SCHEDULE Name

!- =========== ALL OBJECTS IN CLASS: COIL:WATER:SIMPLEHEATING ===========

COIL:Water:SimpleHeating,
! Demand Heating Components
! Name of cooling coil
    Reheat Coil Zone 1,      !- Coil Name
! Cooling Coil Schedule
    Work Eff Sch,            !- Available Schedule
! UA of the Coil
    400,                     !- UA of the Coil {W/K}
! Max Water Flow Rate of Coil kg/sec
    1.3,                     !- Max Water Flow Rate of Coil {kg/s}
! Coil Water Side Inlet & Outlet Node
    Zone 1 Reheat Water Inlet Node,
        !- Coil_Water_Inlet_Node
    Zone 1 Reheat Water Outlet Node,
        !- Coil_Water_Outlet_Node
!
Coil Air Side Inlet & Outlet Node
    Zone 1 Reheat Air Inlet Node,
        !- Coil_Air_Inlet_Node
    Zone 1 Reheat Air Outlet Node;
        !- Coil_Air_Outlet_Node

COIL:Water:SimpleHeating,
! Name of cooling coil
    Reheat Coil Zone 2,      !- Coil Name
! Cooling Coil Schedule
    Work Eff Sch,            !- Available Schedule
! UA of the Coil
    400,                     !- UA of the Coil {W/K}
! Max Water Flow Rate of Coil kg/sec
    1.3,                     !- Max Water Flow Rate of Coil {kg/s}
! Coil Water Side Inlet & Outlet Node
    Zone 2 Reheat Water Inlet Node,
        !- Coil_Water_Inlet_Node
    Zone 2 Reheat Water Outlet Node,
        !- Coil_Water_Outlet_Node
!
Coil Air Side Inlet & Outlet Node
    Zone 2 Reheat Air Inlet Node,
        !- Coil_Air_Inlet_Node
    Zone 2 Reheat Air Outlet Node;
        !- Coil_Air_Outlet_Node

Coil Air Side Inlet & Outlet Node
Zone 2 Reheat Air Inlet Node,                            !- Coil_Air_Inlet_Node
Zone 2 Reheat Air Outlet Node;                           !- Coil_Air_Outlet_Node

COIL:Water:SimpleHeating,                               !
Name of cooling coil                                     !- Coil Name
    Reheat Coil Zone 3,                                  !
Cooling Coil Schedule                                    !
    Work Eff Sch,                                        !- Available Schedule
    !
UA of the Coil                                           !- UA of the Coil (W/K)
400,                                                     !
Max Water Flow Rate of Coil kg/sec                       !
1.8,                                                     !- Max Water Flow Rate of Coil (kg/s)
!
Coil Side Inlet & Outlet Node                            !
    Zone 3 Reheat Water Inlet Node,                      !- Coil_Water_Inlet_Node
    Zone 3 Reheat Water Outlet Node,                     !- Coil_Water_Outlet_Node
    !
    !
Coil Side Inlet & Outlet Node                            !
    Zone 3 Reheat Air Inlet Node,                         !- Coil_Air_Inlet_Node
    Zone 3 Reheat Air Outlet Node;                        !- Coil_Air_Outlet_Node
    !

!- =========== ALL OBJECTS IN CLASS: COIL:GAS:HEATING ===========

COIL:Gas:Heating,                                       !
Coil Name                                               !- Coil Name
    Desiccant Regen Coil ,                               !
! Available Schedule                                    !- Available Schedule
    Work Eff Sch,                                        !
    !
Gas Burner Efficiency of the Coil                        !- Gas Burner Efficiency of the Coil
0.8,                                                     !
Nominal Capacity of the Coil                             !- Nominal Capacity of the Coil (W)
10000,                                                   !
!
Coil_Air_Inlet_Node                                     !
    Regen Coil Inlet Node,                               !- Coil_Air_Inlet_Node
    !
Coil_Air_Outlet_Node                                    !
    Regen Coil Out Node ;                                !- Coil_Air_Outlet_Node

!- =========== ALL OBJECTS IN CLASS: COIL:WATER:DETAILEDFLATCOOLING ===========
COIL:Water:DetailedFlatCooling,
!
Name of cooling coil
   Detailed Cooling Coil,   !- Coil Name
!
Cooling Coil Schedule
   Work Eff Sch,            !- Available Schedule
!
Max Water Flow Rate of Coil kg/sec
   1.1,                     !- Max Water Flow Rate of Coil (kg/s)
!
Tube Outside Surf Area
   6.23816,                 !- Tube Outside Surf Area (m²)
!
Tube Inside Surf Area
   6.20007018,              !- Total Tube Inside Area (m²)
!
Fin Surf Area
   101.7158224,             !- Fin Surface Area (m²)
!
Min Air Flow Area
   0.300606367,             !- Minimum Air Flow Area (m²)
!
Coil Depth
   0.165097968,             !- Coil Depth (m)
!
Coil Height
   0.43507152,              !- Fin Diameter (m)
!
Fin Thickness
   0.001499982,             !- Fin Thickness (m)
!
Tube Inside Diameter
   0.014449958,             !- Tube Inside Diameter (m)
!
Tube Outside Diameter
   0.015879775,             !- Tube Outside Diameter (m)
!
Tube Thermal Conductivity
   0.385764854,             !- Tube Thermal Conductivity (W/m-K)
!
Fin Thermal Conductivity
   0.203882537,             !- Fin Thermal Conductivity (W/m-K)
!
Fin Spacing
   0.001814292,             !- Fin Spacing (m)
!
Tube Depth
   0.02589977,              !- Tube Depth Spacing (m)
!
Number of Tube Rows
   6,                       !- Number of Tube Rows
!
Number of Tubes per Row
   16,                      !- Number of Tubes per Row
Coil Water Side Inlet & Outlet Node
  Cooling Coil Water Inlet Node,
    !- Coil_Water_Inlet_Node
  Cooling Coil Water Outlet Node,
    !- Coil_Water_Outlet_Node

Coil Air Side Inlet & Outlet Node
  Cooling Coil Air Inlet Node,
    !- Coil_Air_Inlet_Node
  Air Loop Outlet Node;    !- Coil_Air_Outlet_Node

  ===========  ALL OBJECTS IN CLASS: FAN:SIMPLe:CONStVOLUME
  ===========
FAN:SIMPLe:ConStVolume,
  !
Fan Name
  Supply Fan 1,            !- Fan Name
  !
Fan Schedule
  ON,                      !- Available Schedule
  !
Fan Efficiency
  0.95,                    !- Fan Total Efficiency
  !
Delta Pressure [N/M^2]
  1,                       !- Delta Pressure [Pa]
  !
Max Vol Flow Rate [m^3/Sec]
  6,                       !- Max Flow Rate [m^3/s]
  !
motor efficiency
  0.9,                     !- Motor Efficiency
  !
motor in air stream fraction
  0,                       !- Motor In Airstream Fraction
    Mixed Air Node,        !- Fan_Inlet_Node

  !
Inlet Node, Outlet Node
  Cooling Coil Air Inlet Node 1;
    !- Fan_Outlet_Node

FAN:SIMPLe:ConStVolume,
  !
A5 ; \field Coil_Temp_Setpoint_Node
  !
\note optional if coil is temp and not load controlled
  !
Fan Name
  Desiccant Regen Fan,     !- Fan Name
      !
Fan Schedule
  Work Eff Sch,            !- Available Schedule
      !
Fan Efficiency
0.7,                        !- Fan Total Efficiency

Delta Pressure [N/M^2]
600,                        !- Delta Pressure (Pa)

Max Vol Flow Rate [m^3/Sec]
1,                           !- Max Flow Rate (m3/s)

motor efficiency
0.9,                        !- Motor Efficiency

motor in air stream fraction
0,                           !- Motor In Airstream Fraction
Outside Air Inlet Node 2,    !- Fan_Inlet_Node

Inlet Node, Outlet Node
Regen Coil Inlet Node;      !- Fan_Outlet_Node

FAN:SIMPLE:ConstVolume,
Supply Fan 2,               !- Fan Name
Work Eff Sch,               !- Available Schedule
0.7,                        !- Fan Total Efficiency
600,                        !- Delta Pressure (Pa)
1,                           !- Max Flow Rate (m3/s)
0.9,                        !- Motor Efficiency
0,                           !- Motor In Airstream Fraction
Outside Air Inlet Node 2,    !- Fan_Inlet_Node
fan heat recovery outlet node;
                             !- Fan_Outlet_Node

!- =========== ALL OBJECTS IN CLASS: EVAPCOOLER:INDIRECT:CELDEKPAD
==============

EvapCooler:InDirect:CelDekPad,
!                                     EvapCooler Name
    evaporative 1,                     !- EvapCooler Name
    nightventilation,                  !- Available Schedule
    1.6,                               !- Direct Pad Area (m2)
    0.4,                               !- Direct Pad Depth (m)
    225,                               !- Recirc Water Pump Power Consumption (W)
    Flow Rate in m^3/s
    10,                                !- Secondary Fan Flow Rate (m3/s)
    Efficiency
    0.9,                               !- Secondary Fan Efficiency
    Delta Pressure in Pa
    200,                               !- Secondary Fan Delta Pressure (Pa)
    Exchanger Effectiveness
    0.9,                               !- Indirect Heat Exchanger Effectiveness

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Cooling Coil Air Inlet Node 1,
   !- Evap_Air_Inlet_Node
Cooling Coil Air Inlet Node ,
   !- Evap_Air_Outlet_Node
Constant ;
   !- Control Type

!- ========== ALL OBJECTS IN CLASS: DESICCANT DEHUMIDIFIER:SOLID
==========

DESICCANT DEHUMIDIFIER:SOLID,
Desiccant 1,        !- Name
Work Eff Sch,       !- Availability Schedule
Outside Air Inlet Node, !- Process Air Inlet Node
Desiccant Process Outlet Node,
   !- Process Air Outlet Node
Regen Coil Out Node, !- Regen Air Inlet Node
Outside Air Inlet Node 2, !- Regen Fan Inlet Node
LEAVING HUMRAT:BYPASS, !- Control Type
0 ,
0.007,           !- Nominal Process Air Flow Rate {m3/s}
1 ,
3.556,           !- Nominal Process Air Entering Dry Bulb
{C}
1,              !- Nominal Process Air Entering Humidity Ratio (kgWater/kgAir)
1,              !- Nominal Water Removal Capacity {kg/m3}
1,              !- Nominal Regen Energy {J/kg}
1,              !- Rotor Power {W}
Desiccant Regen Coil , !- Regen Coil Name
Desiccant Regen fan, !- Regen Fan Name
Desiccant Regen Fan, !- Performance Model
 ,
Desiccant DryBulb fTW Curve,
   !- Leaving Dry Bulb fTW Curve
Desiccant DryBulb fV Curve,
   !- Leaving Dry Bulb fV Curve
Desiccant HumRat fTW Curve,
   !- Leaving Humidity Ratio fTW Curve
Desiccant HumRat fV Curve,
   !- Leaving Humidity Ratio fV Curve
Desiccant RegenEnergy fTW Curve,
   !- Regen Energy fTW Curve
Desiccant RegenEnergy fV Curve,
   !- Regen Energy fV Curve
Desiccant RegenEnergy fV Curve,
   !- Regen Velocity fTW Curve
Desiccant RegenVel fV Curve,
   !- Regen Velocity fV Curve
80;               !- Nominal Regen Temperature {C}

!- ========== ALL OBJECTS IN CLASS: HEAT EXCHANGER:AIR TO AIR:FLAT PLATE
==========

HEAT EXCHANGER:AIR TO AIR:FLAT PLATE,
OA Heat Recovery 1,  !- Name
nightventilationh,   !- Available Schedule
flow arrangement: Counter Flow,

primary air volume flow rate: 5 m³/s

primary air inlet temperature: 19 °C

primary air outlet temperature: 19 °C

secondary air volume flow rate: 5 m³/s

secondary air inlet temperature: 19 °C

nominal power consumption: 0 W

primary inlet node: outside air inlet node

primary outlet node: Heat Recovery Outlet Node

secondary inlet node: Relief Air Outlet Node

secondary outlet node: Heat Recovery Secondary Outlet Node

HEAT EXCHANGER: AIR TO AIR: FLAT PLATE,

Name: OA Heat Recovery 2

Available Schedule: ON

flow arrangement: Counter Flow

Economizer lockout: yes

hA ratio: 1

Nominal supply air flow rate: 0.6 m³/s

Nominal supply air inlet temperature: 5 °C

Nominal supply air outlet temperature: 19 °C

Nominal secondary air flow rate: 0.6 m³/s
20,                      !- Nominal secondary air inlet temperature
{C}
0,                       !- Nominal electric power (W)
outside air inlet node,   !- Supply air inlet node
Heat Recovery Outlet Node,
                          !- Supply air outlet node
Relief Air Outlet Node,   !- Secondary air inlet node
Heat Recovery Secondary Outlet Node;
                          !- Secondary air outlet node

!--- ===========  ALL OBJECTS IN CLASS: SET POINT MANAGER:SCHEDULED
=========

SET POINT MANAGER:SCHEDULED,
!
******************************************************************************
Set Point Manager Specification
Supply Air Temp Manager, !- Name
TEMP,                    !- Control variable
Seasonal Reset Supply Air Temp Sch,
                          !- Schedule Name
Supply Air Temp Nodes;   !- Name of the set point Node List

SET POINT MANAGER:SCHEDULED,
    Mixed Air Temp Manager, !- Name
TEMP,                    !- Control variable
Seasonal Reset Supply Air Temp Sch,
                          !- Schedule Name
Mixed Air Nodes;         !- Name of the set point Node List

!--- ===========  ALL OBJECTS IN CLASS: CONTROLLER:SIMPLE ===========

CONTROLLER:SIMPLE,
!
******************************************************************************
Controller Specification
!
Controller Name
    Main Cooling Coil Controller,
                        !- Name

! Control Variable
    TEMP,              !- Control variable

! Action
    Reverse,          !- Action

! Actuator variable
    FLOW,             !- Actuator variable

! Control node name
    Air Loop Outlet Node, !- Control_Node
Actuator Node name
  Cooling Coil Water Inlet Node,
  !- Actuator_Node

Convergence Tolerance
  0.1,                     !- Controller Convergence Tolerance: delta
  temp from setpoint temp {C}
  !
Throttling Range
  6,                       !- Throttling Range: maximum controlled
  temperature range {C}
  !
Max Actuated (Flow: kg/sec)
  1.1,                     !- Max Actuated Flow {kg/s}
  !
Min Actuated (Flow: kg/sec)
  0;                       !- Min Actuated Flow {kg/s}

----------- ALL OBJECTS IN CLASS: CONTROLLER:OUTSIDE AIR -----------

CONTROLLER:OUTSIDE AIR,
  OA Controller 1,         !- Name
  NO ECONOMIZER,           !- EconomizerChoice
  RETURN AIR TEMP LIMIT,   !- ReturnAirTempLimit
  RETURN AIR ENTHALPY LIMIT,
  !- ReturnAirEnthalpyLimit
  LOCKOUT,                 !- Lockout
  FIXED MINIMUM,           !- MinimumLimit
  Mixed Air Node,          !- Control_Node
  Outside Air Inlet Node,  !- Actuated_Node
  0.1,                     !- minimum outside air flow rate {m3/s}
  3,                       !- maximum outside air flow rate {m3/s}
  19,                      !- temperature limit {C}
  4,                       !- temperature lower limit {C}
  47000,                   !- enthalpy limit {J/kg}
  Relief Air Outlet Node,  !- Relief_Air_Outlet_Node
  Air Loop Inlet Node,     !- Return_Air_Node
  nightventilation;        !- Minimum Outside Air Schedule Name

----------- ALL OBJECTS IN CLASS: FLUIDNAMES -----------

FluidNames,

These are report variables Linda uses to trace changes
Please leave them in!!!!!

report variable,,outdoor dry bulb,timestep;
report variable,,mean air temperature,timestep;
report variable,,zone latent load,timestep;
! report variable,,lights return air load,timestep;
! report variable,,electric load,timestep;
! report variable dictionary;
! report,surfaces,dxf;

***************************************************

FLUID PROPERTIES DATA

***************************************************

unique list of fluid names which are valid for EnergyPlus (specifically fluid property routines)
  Water,                   !- fluid name 1
  GLYCOL;                  !- type of fluid for fluid name 1

!- =========== ALL OBJECTS IN CLASS: FLUIDPROPERTYTEMPERATURES ===========

FluidPropertyTemperatures,
  GlycolTemperatures,       !- temperature list name
-35,                      !- temperature 1
-30,                      !- temperature 2
-25,                      !- temperature 3
-20,                      !- temperature 4
-15,                      !- temperature 5
-10,                      !- temperature 6
-5,                       !- temperature 7
0,                        !- temperature 8
5,                        !- temperature 9
10,                       !- temperature 10
15,                       !- temperature 11
20,                       !- temperature 12
25,                       !- temperature 13
30,                       !- temperature 14
35,                       !- temperature 15
40,                       !- temperature 16
45,                       !- temperature 17
50,                       !- temperature 18
55,                       !- temperature 19
60,                       !- temperature 20
65,                       !- temperature 21
70,                       !- temperature 22
75,                       !- temperature 23
80,                       !- temperature 24
85,                       !- temperature 25
90,                       !- temperature 26
95,                       !- temperature 27
100,                      !- temperature 28
105,                      !- temperature 29
110,                      !- temperature 30
115,                      !- temperature 31
120, !- temperature 32
125; !- temperature 33

=-=-=-=-=-=-=-=- ALL OBJECTS IN CLASS: FLUIDPROPERTYCONCENTRATION
=-=-=-=-=-=-=-=-

FluidPropertyConcentration,
!
Specific heat in J/kg-K
   Water,                       !- fluid name (ethylene glycol, etc.)
   SPECIFICHEAT ,               !- fluid property type
   GlycolTemperatures,         !- temperatures list name
!
Concentration
   0,                           !- concentration (percentage (as a real
decimal))
   0,                           !- property value 1
   0,                           !- property value 2
   0,                           !- property value 3
   0,                           !- property value 4
   0,                           !- property value 5
   0,                           !- property value 6
   0,                           !- property value 7
   4217,                        !- property value 8
   4198,                        !- property value 9
   4191,                        !- property value 10
   4185,                        !- property value 11
   4181,                        !- property value 12
   4179,                        !- property value 13
   4180,                        !- property value 14
   4180,                        !- property value 15
   4180,                        !- property value 16
   4180,                        !- property value 17
   4181,                        !- property value 18
   4183,                        !- property value 19
   4185,                        !- property value 20
   4188,                        !- property value 21
   4192,                        !- property value 22
   4196,                        !- property value 23
   4200,                        !- property value 24
   4203,                        !- property value 25
   4208,                        !- property value 26
   4213,                        !- property value 27
   4218,                        !- property value 28
   4223,                        !- property value 29
   4228,                        !- property value 30
   4233,                        !- property value 31
   4238,                        !- property value 32
   4243;                        !- property value 33

FluidPropertyConcentration,
!
Specific heat in J/kg-K
   Water,                       !- fluid name (ethylene glycol, etc.)
   SPECIFICHEAT ,               !- fluid property type
   GlycolTemperatures,         !- temperatures list name
Concentration

1,
0,
0,
0,
0,
0,
0,
0,
0,
0,
4217,
4198,
4191,
4185,
4181,
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Report Variable,
  *,                       !- Key_Value
  Outdoor Wet Bulb,        !- Variable_Name
  hourly;                  !- Reporting_Frequency

Report Variable,
  *,                       !- Key_Value
  Outdoor Humidity Ratio,  !- Variable_Name
  hourly;                  !- Reporting_Frequency

Report Variable,
  *,                       !- Key_Value
  Total Latent Gain,       !- Variable_Name
  hourly;                  !- Reporting_Frequency

Report Variable,
  ,                        !- Key_Value
  Zone/Sys Air Temp,       !- Variable_Name
  hourly;                  !- Reporting_Frequency

Report Variable,
  ,                        !- Key_Value
  Zone Air Humidity Ratio, !- Variable_Name
  hourly;                  !- Reporting_Frequency

Report Variable,
  ,                        !- Key_Value
  outdoor dry bulb,        !- Variable_Name
  hourly;                  !- Reporting_Frequency

Report Variable,
  *,                       !- Key_Value
  Outdoor Relative Humidity,
  hourly;                  !- Reporting_Frequency

Report Variable,
  *,                       !- Key_Value
  Zone Air Relative Humidity,
  hourly;                  !- Reporting_Frequency

Report Variable,
  *,                       !- Key_Value
  Average,                 !- Variable_Name
  hourly;                  !- Reporting_Frequency

Report Variable,
  *,                       !- Key_Value
  FangerPMV,               !- Variable_Name
  hourly;                  !- Reporting_Frequency

Report Variable,
  ,                        !- Key_Value
  Inside Surface Mass Flux, !- Variable_Name
  hourly;                  !- Reporting_Frequency
Report Variable,
,                       !- Key_Value
  Inside Surface Humidity Ratio,
    !- Variable_Name
  hourly;               !- Reporting_Frequency
Report Variable,
,                       !- Key_Value
  Outside Surface Mass Flux,
    !- Variable_Name
  hourly;               !- Reporting_Frequency
Report Variable,
,                       !- Key_Value
  Mixing-Volume,
    !- Variable_Name
  hourly;               !- Reporting_Frequency
Report Variable,
,                       !- Key_Value
  Infiltration-Volume,
    !- Variable_Name
  hourly;               !- Reporting_Frequency

!- =========== ALL OBJECTS IN CLASS: REPORT METER ===========

Report Meter,
  ExteriorEquipment*,    !- Meter_Name
    hourly;             !- Reporting_Frequency
Report Meter,
  Electricity:*         !- Meter_Name
    hourly;            !- Reporting_Frequency

!- =========== ALL OBJECTS IN CLASS: REPORT ===========

Report,
  Variable Dictionary;  !- Type_of_Report
Report,
  surfaces,            !- Type_of_Report
dxf;
  !- Name_of_Report
Report,
  construction;        !- Type_of_Report
Report,
  Variable Dictionary; !- Type_of_Report
Abaza. Hussein F.

Business Phone (703) 5509755
Home Phone (703) 498-3084
Email: habaza@vt.edu

SUMMARY OF QUALIFICATIONS;

- Taught several building systems, environment, lighting, acoustics, and CAD courses.
- Conducted much research related to energy conservation, simulation, and construction means and methods.
- Experience in simulating energy, lighting and acoustics performance in buildings, and experience in building instrumentation and monitoring.
- Experience in advanced CAD for different engineering disciplines, and integrating Auto CAD with several other modelling and analysis software.
- Experience in diverse building design, construction, and design integration in the United States and overseas.
- Outstanding student, and received distinguish scholarships for undergraduate and graduate degrees.

EDUCATION

Ph.D. Environmental Design and Planning; College of Architecture, Virginia Tech.
Blackburg, Virginia The research topic is “An Integrated Design and Control Strategy for Energy Efficient Buildings” (Expect to graduate on April 2002).
Maintained up to 17 credit hours course load per semester, and enrolled in many diverse courses. PhD plan of study has a total of 160 hours of courses and research hours.

MA.Sc. Architecture; Jordan University, Amman, Jordan. The research topic was” Assessment of Site and Service Housing Policy in Jordan”, 1991
Proposed new strategies for cooperative site and service housing projects for the private sector.

BA Architecture; King Faisal University, Dammam, Saudi Arabia, 1987
Maintained excellent GPA and graduated with the second highest GPA in the college of architecture history at that time, and enrolled in up to 22 Credit hours course work per semester along with a part-time job.

TEACHING AREAS;

RESEARCH INTEREST;
PROFESSIONAL AND INDUSTRIAL CONSULTING;

- Developed advanced electronic spreadsheets to carryout HVAC and the lighting calculations in compliance with the Jordan Building Code.
- Introduced 3D CAD Intelligent Technology to survey and document historic buildings, in Washington DC.
- Member of the Engineers Association magazine “Al-Muhandes” editorial board.
- Co-founder and coordinator of the “Jordan Engineers Association Housing Committee”, which carried outs several large and successful site and service housing projects.

WORK HISTORY

  Coordinates and follow up different project activities, (Still in position).

Instructor, (Part-time), Maryland Drafting Institute, Washington DC, 2001-2001.
  CAD drafting for architecture and engineering drafting students,(Still in position).

  Introduced computer software related to, lighting, acoustic, and electrical systems in buildings.

Lecturer, Jordan University Of Science And Technology, Irbid, Jordan 1995-1997
  Taught Design studio for third and fourth year architecture students, Heat transfer in Buildings course, and Lighting and Acoustics course.
  Maintained high score in the students rating, which reached 82%, and improved the Lighting and Acoustic course to incorporate new computer software.

  Worked as consultant and partner in rush housing projects.

Editor, Jordan Engineers Association, Amman, Jordan, 1991-1995
  Inspected, edited and approved building designs in compliance with the building codes, and created new forms and checklists to assist architecture and engineering firms in complying with codes.

  Worked on Muta University Headquarter and other large-scale projects.

Research Assistant, (part-time) College of architecture, Jordan University, 1991.
  Assisted in publishing a book on Principles of landscape architecture.

Site Engineer, International Contracting and Investment Co., Irbid Jordan. 1987-1990
  Site engineer in a 100 bed hospital project, was responsible for the architectural finishing.

Design Architect (part-time); Nababteh Consulting Engineer, 1987-1991
  Designed small and medium size residential and commercial buildings.

RESEARCH GRANTS;

- National Team to Research And Improve Al-Badia Area In Jordan, a multi million research to propose strategies to improve Jordan eastern province (team member). 1996
Design and field test double envelop window, a team member with Prof. J. Jones, Virginia Tech, 1999.

**COMPUTER SKILLS**

*Building simulation*: EnergyPlus; Building Energy Simulation, BEANS; building service simulation Package (ARUP company building simulation software), Adeline lighting analysis software, Building Design Advisor energy analysis software, DOE-2 Energy simulation, Akabak 2.1 sound calculation software, MOIST moisture simulation software, WINDOW.4 window performance analysis software.

*Drafting*: Auto CAD R14, Auto CAD R2000, Adobe Photoshop.

*Programming*: Primavera. Primavera/Primavision.

*Data Management*: Microsoft Excel.

*Programming Languages*: Visual Basic, Fortran, Java, C++

*3D-I Technology*: VULCAN© Technology Software: A 3D-I spatial measurement and modelling system.

**SCHOLARSHIPS AND AWARDS**;

- ARCC King Medal for Excellence In Architectural and Environmental Research, Architectural Research Centres Consortium, USA.
- Ministry of Higher Education Scholarship; a scholarship honoured to the student who ranked the first in southern province of Jordan in the general secondary school examination, 1982.
- Excellent Academic Achievement Award; a financial award for excellent academic achievements from King Faisal University, Saudi Arabia. I received the award five years in a row, 1982-1987.
- Jordan University of Science and Technology Scholarship; a scholarship towards obtaining the PhD degree from American university, 1997.
- Jordan Architects Association logo competition; a competition to design new JAA logo, 1997.

**MEMBERSHIPS**;

- Registered Engineer; Jordan Engineers Association.
- Registered Architect; Jordan Architects Association.
- ASHRAE student member.

**PUBLICATIONS**;


Abaza, H. 2001 “Building energy conservation evaluation model based on computer-designer interaction”, a paper submitted for publication”.