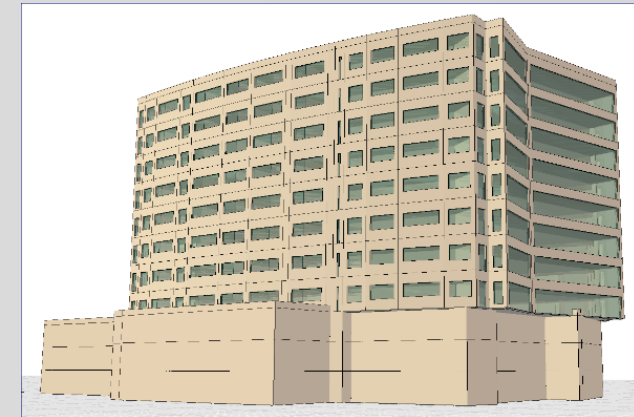
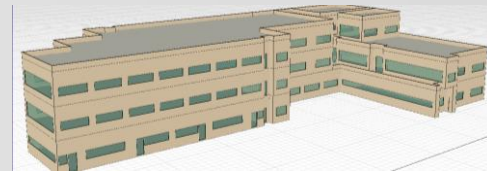
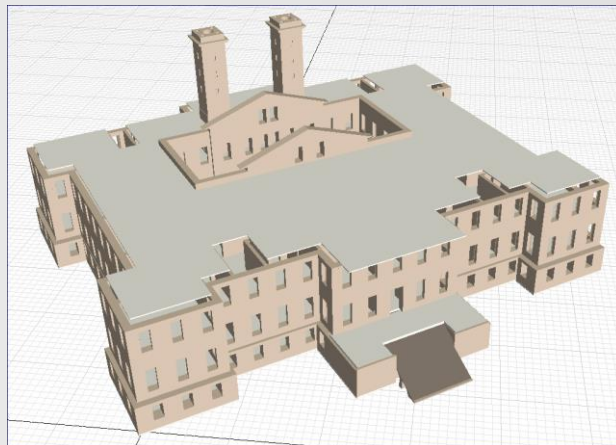
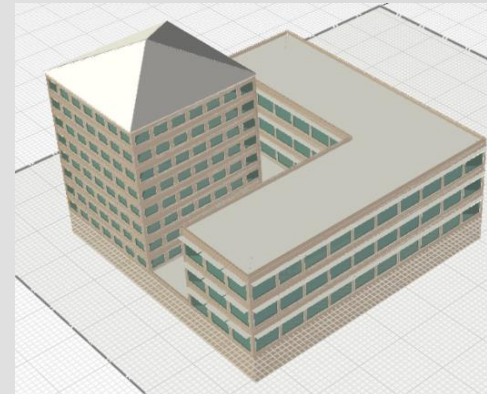
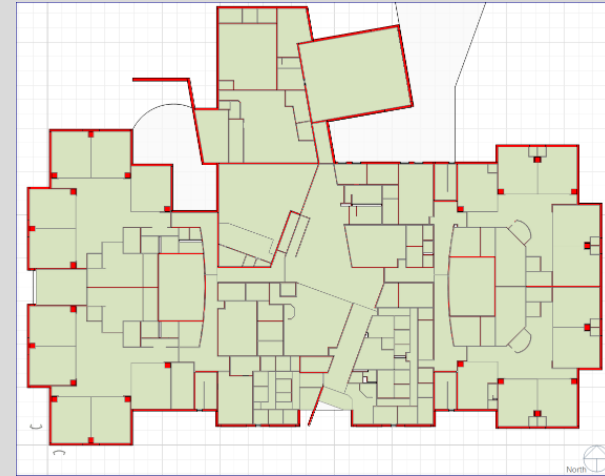
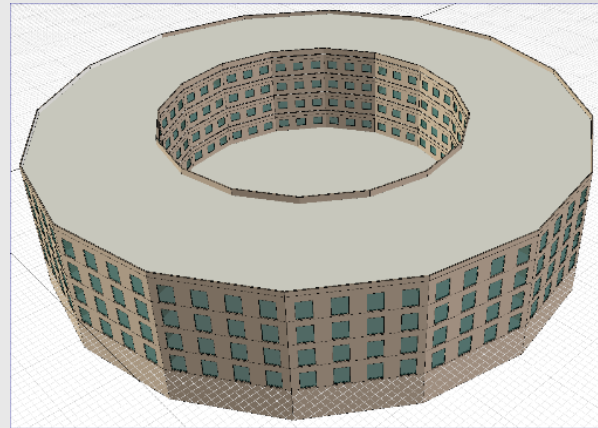
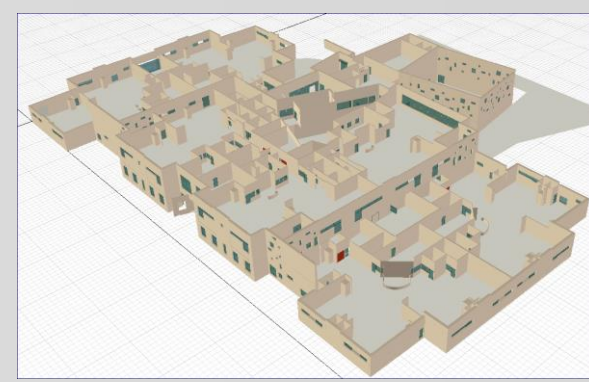
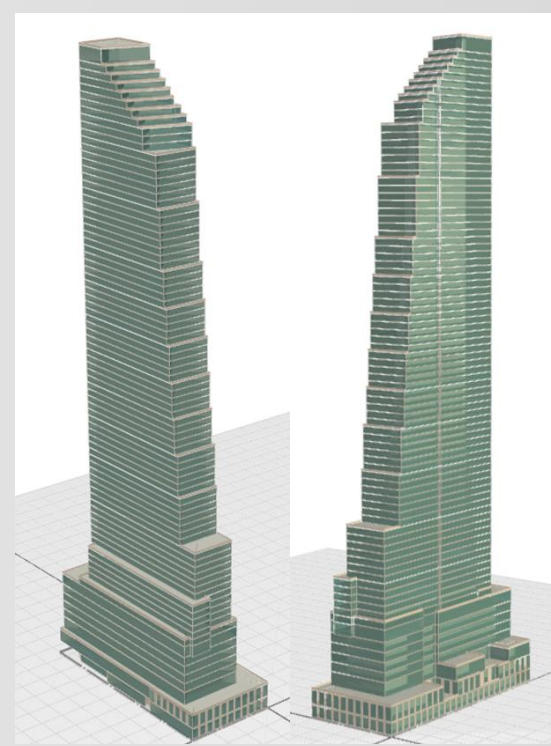


Simergy 101

*Building your
first Simergy
model*



Agenda

- Simergy Professional installation
- How this training works
- Introduction to basic Simergy workspaces and concepts
- Design questions?
- Lesson 1a & 1b: Using the **Building and System Model Creator™**
- Lesson 2: Change window fenestration with a Measure
- Lesson 3: Define Heat Pump System
- Lesson 4: Define ASHRAE-7 system
- Q&A

How this training works!

1. Step by step instructions to create this model
 - in this video
 - in the related script
2. Please ask questions
 - via email: Support@D-Alchemy.com
 - at our periodic **Coaching Sessions** (<http://d-alchemy.com/events>)

What is Simergy™

Simergy (application framework)

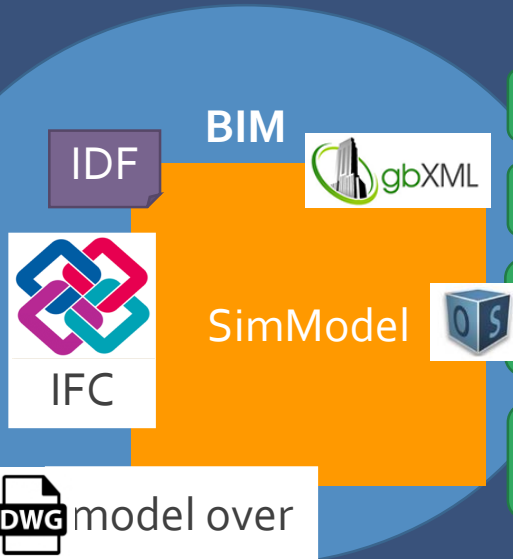
Parametric model creation with

Building Model Creator™

Multiple Buildings

Occupancy templ.

Building Systems Creator™



Schedule editor

MLS editor

Scripting via Measures

Results Visualization

predicting building performance through



Energy simulation



Daylighting simulation

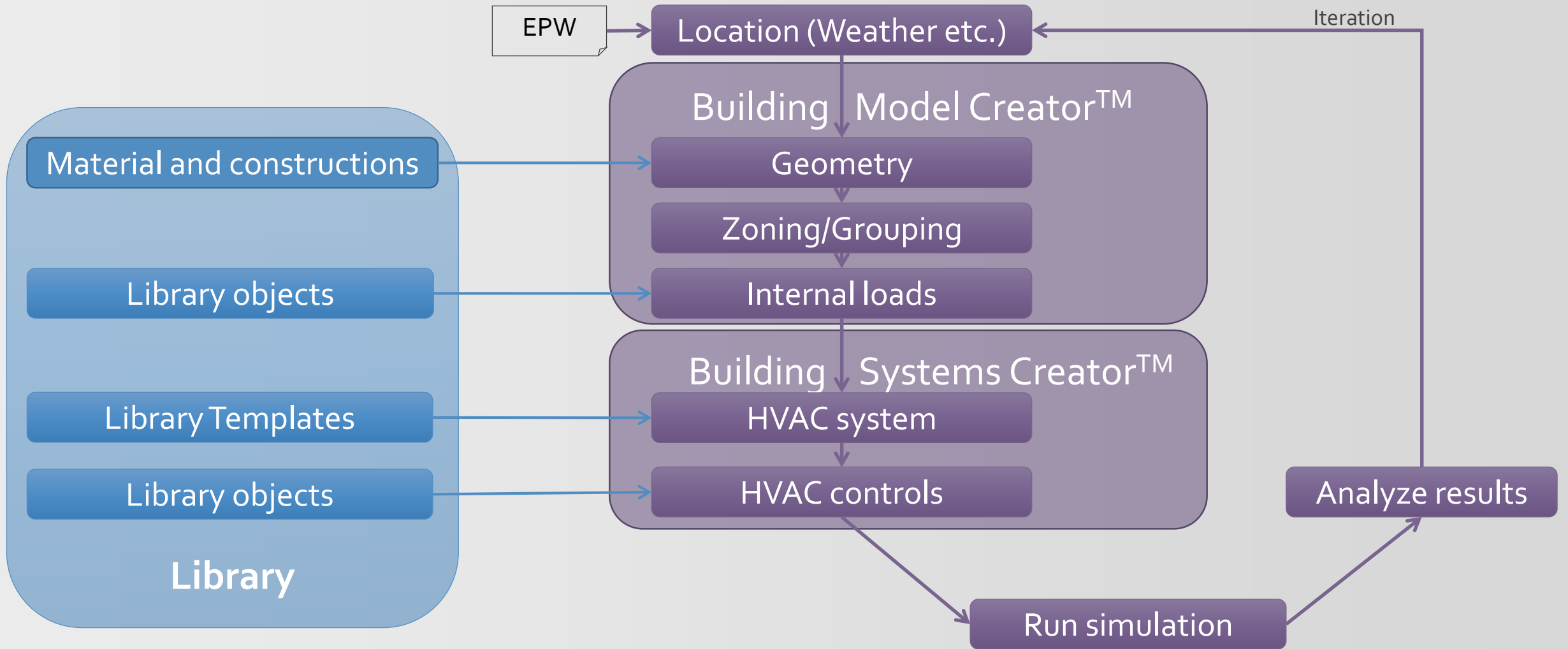


Title24 certification

Simergy is a Building Information Model (BIM) based application framework for predicting the performance of buildings before they are built or retrofit.



Generic model generation workflow



Basic Simergy Layout

File Menu

Dropdown to change Design Alternative

Workspaces

Ribbon Menu

Project Tree

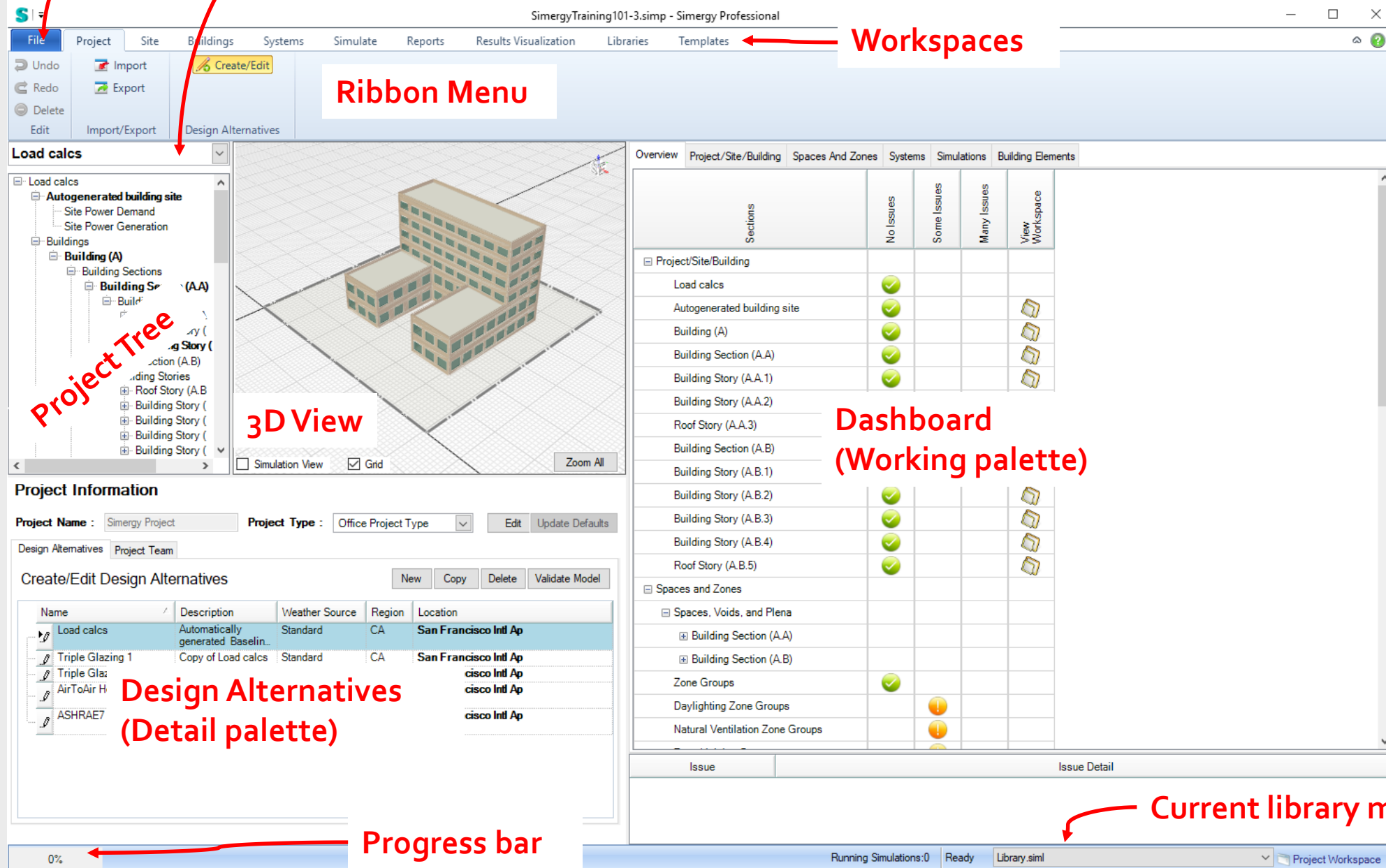
3D View

Dashboard (Working palette)

Design Alternatives (Detail palette)

Progress bar

Current library model



Project workspace

The screenshot displays the Simergy Professional software interface. At the top, the title bar reads "SimergyTraining101-3.simp - Simergy Professional". The menu bar includes File, Project, Site, Buildings, Systems, Simulate, Reports, Results Visualization, Libraries, and Templates. Below the menu bar is a toolbar with buttons for Undo, Redo, Delete, Edit, Import, Export, and Create/Edit. The main workspace is divided into several panels:

- Left Panel (Load calcs):** A tree view showing the project structure, including "Autogenerated building site", "Buildings", and "Building (A)".
- Center Panel:** A 3D isometric view of a building model on a grid. It includes "Simulation View" and "Grid" checkboxes, and a "Zoom All" button.
- Bottom Left Panel (Project Information):** Fields for "Project Name" (Simergy Project) and "Project Type" (Office Project Type). Below this is a "Create/Edit Design Alternatives" section with a table of design alternatives.
- Bottom Right Panel (Dashboard):** A table with columns for "Sections", "No Issues", "Some Issues", "Many Issues", and "View Workspace". It lists various project components and their status.

Red annotations are present:

- "Dashboard" in red text is written diagonally across the dashboard table.
- "Set location/weather" in red text with an arrow points to the "Location" column in the "Create/Edit Design Alternatives" table.
- "Create/Edit Design Alternatives" in red text is written at the bottom left of the interface.

Sections	No Issues	Some Issues	Many Issues	View Workspace
Project/Site/Building				
Load calcs	✓			
Autogenerated building site	✓			📁
Building (A)	✓			📁
Building Section (A.A)	✓			📁
Building Story (A.A.1)	✓			📁
Building Story (A.A.2)	✓			📁
Roof Story (A.A.3)	✓			📁
Building Section (A.B)	✓			📁
Building Story (A.B.1)	✓			📁
Building Story (A.B.2)	✓			📁
Building Story (A.B.3)	✓			📁
Building Story (A.B.4)	✓			📁
Building Story (A.B.5)	✓			📁
Spaces and Zones				
Spaces, Voids, and Plena				
Building Section (A.A)				
Daylighting Zone Groups		⚠		
Natural Ventilation Zone Groups		⚠		

Name	Description	Weather Source	Region	Location
Load calcs	Automatically generated Baselin...	Standard	CA	San Francisco Intl Ap
Triple Glazing 1	Copy of Load calcs	Standard	CA	San Francisco Intl Ap
Triple Glazing 2	Copy of Load calcs	Standard	CA	San Francisco Intl Ap
AirToAir HeatPump	Copy of Triple Glazing 2	Standard	CA	San Francisco Intl Ap
ASHRAE7	Copy of AirToAir HeatPump	Standard	CA	San Francisco Intl Ap

Building workspace

The screenshot displays the Simergy Professional software interface. At the top, the title bar reads "SimergyTraining101-3.simp - Simergy Professional". The menu bar includes File, Project, Site, Buildings, Systems, Simulate, Reports, Results Visualization, Libraries, and Templates. The "Buildings" menu is open, showing options like "Create/Edit Buildings", "Tools", "Create/Edit Zones", "Zone Natural Ventilation", "Zone Load Groups", "Zone SHW Groups", "Zone Daylighting", "Custom Openings", and "Interiors". A red arrow points to "Zone SHW Groups" with the text "Zone Grouping".

On the left, a "Load calcs" tree view shows a hierarchy: "Autogenerated building site" (Site Power Demand, Site Power Generation), "Buildings" (Building (A)), "Building Sections" (Building Section (A.A)), "Building Stories" (Roof Story (A.A.3), Building Story (A.A.2), Building Story (A.A.1), Building Section (A.B), Building Stories, Roof Story (A.B.5)).

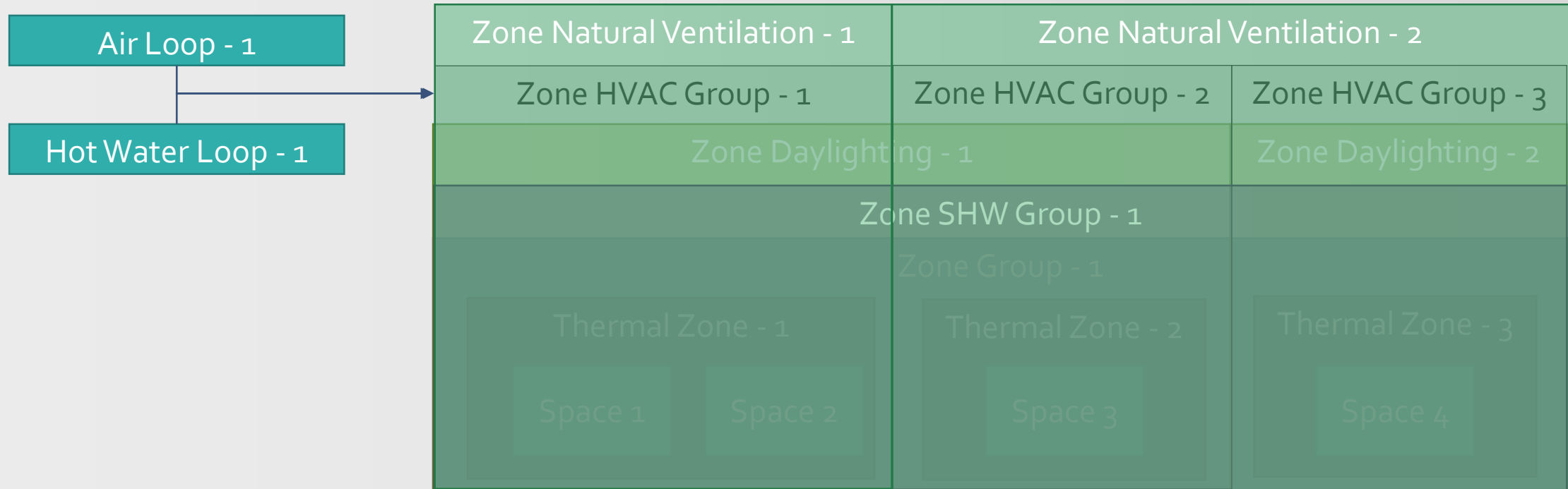
The main workspace is split into two views: a 3D "Simulation View" of a building model and a 2D "Space A.A. 1.1" floor plan. The floor plan shows a large green rectangular area with a smaller inner rectangle, overlaid on a grid. A coordinate list is visible at the top of the floor plan view.

The "Create/Edit Building" dialog box is open, showing settings for "Building Section (A.A)". It includes tabs for Buildings, Building Sections, Building Stories, Glazing, and Roof. The "Building Story Type" is set to "Retail Building Story Type". The "Base Story" is 1 and "Num of Stories" is 1. The "Shape Parameters" section includes fields for X1, Y1, X2, Y2, X3, Y3, X, Y, Z, and Rot. There are checkboxes for "Flip X", "Flip Y", and "Rot". Below the parameters are diagrams of a "Space/ Thermal Zone" and a "Thermal Zone" with dimensions X-1, X-2, X-3, Y-1, and Y-2. The "Space/ Thermal Zone" diagram shows a ceiling void above the zone. The "Thermal Zone" diagram shows a U-shaped zone with dimensions X-1, X-2, X-3, Y-1, and Y-2.

The dialog box also has a "Shape" dropdown set to "U Shape", "Plenum Configuration" set to "No Plenum", "Occupied Configuration" set to "One Zone per Story", "Ceiling Configuration" set to "Same As Occupied", and "Floor Configuration" set to "Same As Occupied". The "Floor to Floor" height is 16.00 ft, "Above Ceiling Height" is 2.60 ft, "Ceiling Elevation" is 13.00 ft, "Top of Floor Elevation" is 0.00 ft, "Below Floor Height" is 0.00 ft, "Perimeter Zone Depth" is 15.00 ft, "Floor Area" is 9600.00 ft², and "Floor Perimeter" is 560.00 ft.

At the bottom of the dialog box, there are buttons for "New Stories", "Save Stories", "Cancel", and "Update Defaults". The "Building Story (A.A.1)" section at the bottom of the dialog shows "Point: 48.76, 153.55 ft", "SnapType", "Grid", "Ortho", "DWG", "X: 50.00 ft", "Y: 50.00 ft", "Z: 0.00 ft", "Rotation: 0.0 °", and "DWG Settings...".

Grouping



Systems workspace

The screenshot displays the Simergy Professional interface for system configuration. The top menu bar includes File, Project, Site, Buildings, Systems, Simulate, Reports, Results Visualization, Libraries, and Templates. The Systems menu is open, showing options like Zone HVAC Groups, VRF Loops, Air Loops, Water Loops, and Create/Edit Building Systems. A red arrow points to the 'Create/Edit Building Systems' option with the text 'Detailed Systems Editing'.

On the left, the 'Load calcs' tree shows a hierarchy: Autogenerated building site (Site Power Demand, Site Power Generation) and Buildings (Building (A) with Building Sections AA and AB, each containing Roof Story and Building Story sub-items). 'Building Story (A.A.1)' is selected.

The central 3D view shows a multi-story building model on a grid. Below it, the 'Template Name' is set to 'ASHRAE7-VAVwReheat'. A red warning states 'All existing systems will be replaced'. A 'Building Systems Creator™' watermark is overlaid on the configuration area.

The configuration table below is as follows:

	Grouping	Primary Template
Zone HVAC Group:	One Per Story	ASHRAE-AT_VAV_ReH-Wtr_TC
SHW Group:	One Per Building	None Selected
Air loop:	One Per Section	ASHRAE-VAV_wtrC_wtrH_DT
VRF loop:	One Per Project	None Selected
Hot water loop:	One Per Project	ASHRAE-Boil(2)_Hw_VSD
Chilled water loop:	One Per Project	ASHRAE-ChlR(2)_VC_Elec_EIR_VS
Mixed water loop:	One Per Project	None Selected
SHW Loop:	One Per Project	None Selected
Condenser loop:	One Per Project	ASHRAE-CoolTwr(2)_2SP_CSD
Steam loop:	One Per Project	None Selected

The right side features a system diagram on a grid. It shows a central red circle 'HW-1' connected to six grey circles 'ZHG-1' through 'ZHG-6'. Two orange circles 'Air-1' and 'Air-2' are connected to 'ZHG-1' through 'ZHG-4'. Two blue circles 'CHW-1' and 'CW-1' are connected to 'Air-1' and 'Air-2'.

The bottom status bar shows 'Running Simulations:0', 'Ready', 'Library.siml', and 'Building System Creator Workspace'.

Simulate workspace

The screenshot displays the Simergy Professional software interface. The main window title is "SimergyTraining101-3.simp - Simergy Professional". The menu bar includes "File", "Project", "Site", "Buildings", "Systems", "Simulate", "Reports", "Results Visualization", "Libraries", and "Templates". The "Simulate" menu is open, showing "Image Based Simulations" and "Grid Based Simulations". A red arrow points to "Radiance Simulations" in the menu. The "Load calcs" panel on the left shows a tree view of the project structure, including "Autogenerated building site", "Buildings", and "Building (A)". The central 3D model shows a multi-story building with a grid overlay. The "Measures" panel on the right is active, showing "Local Measures" selected and a list of measures including "People", "Whole Building(1)", "Electric Lighting(1)", "Envelope(6)", "Equipment", "HVAC(4)", "Refrigeration", "Service Water Heating", "Onsite Power Generation(1)", "Economics(1)", and "Reporting(3)". A red arrow points to the "Measures" panel. The status bar at the bottom shows "Running Simulations:0" and "Ready".

Radiance Simulations

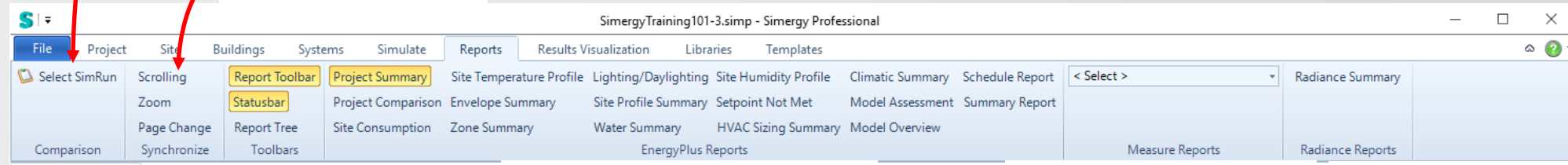
Measures

Running simulations

Select run

Synchronize

Resports workspace



EnergyPlus Reports

Measure Reports

Radiance Reports

Report Details

Project Summary

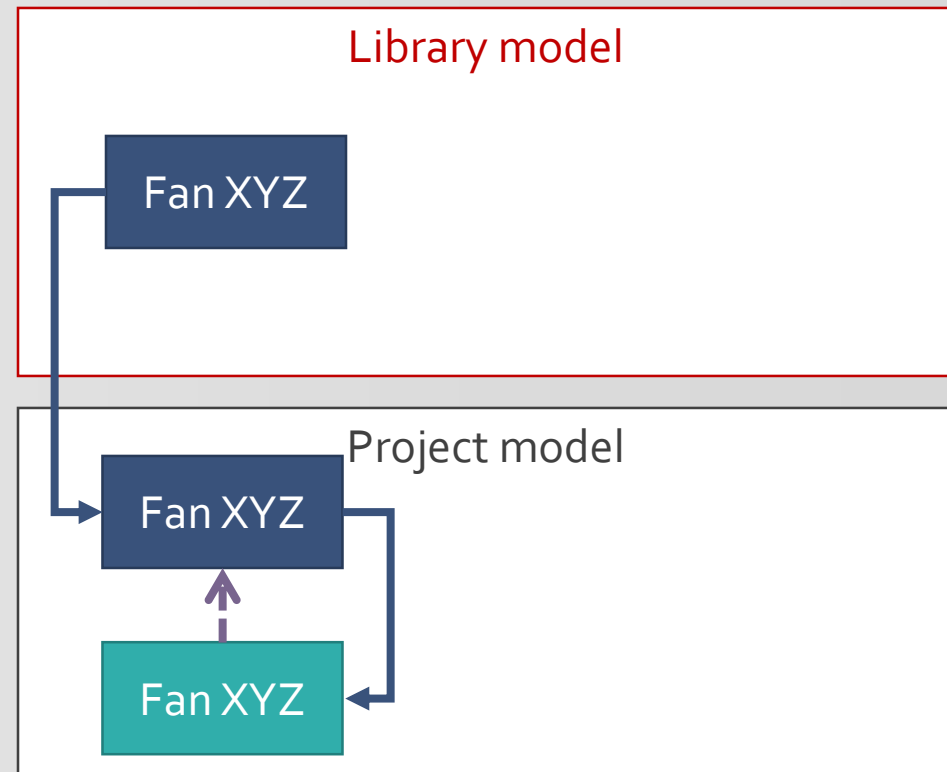
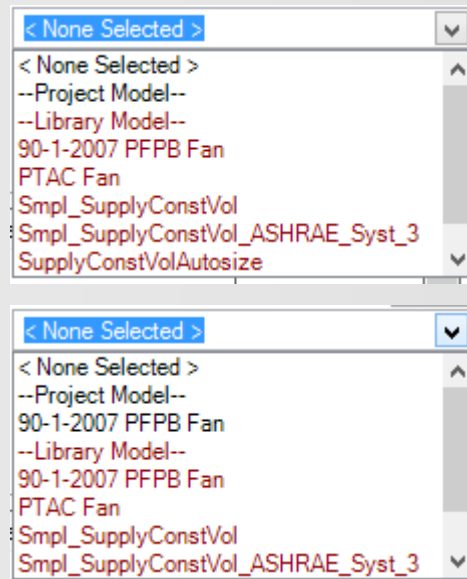
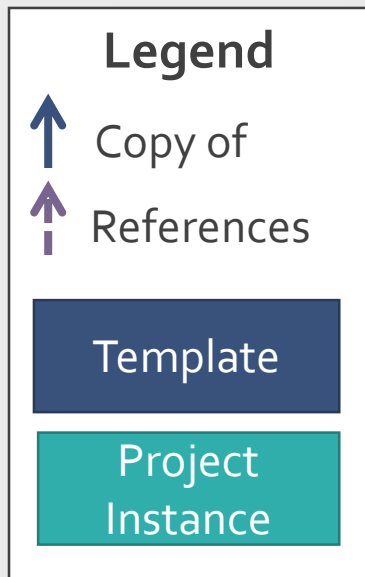
Load calcs | Configuration 1 | SimRun3
 Calculated at YMD=2019.03.07 20:43
 Simergy Version: v3.1

Building Summary		Weather Summary		Building Performance	
Building Type		Location	San Francisco Intl Ap CA USA	Unmet cooling load hours (Occupied)	AVG 21 This Building: 295 hours
Conditioned Floor Area	36,122 ft ²	Weather File	USA_CA_San.Francisco.Intl.AP.724940_TMY3	Less hours	More hours
Total Building Area	36,122 ft ²	Latitude	N 37° 37'	0 hours	600 hours
Gross Wall Area	19,272 ft ²	Time Zone	GMT -8.0 Hours	Unmet heating load hours (Occupied)	AVG 0 This Building: 0 hours
Window to Wall Ratio	70.08 %	Summer Design Dry Bulb Temperature (1%)	78.3 °F	Less hours	More hours
Window to Wall Density	1.12 W/ft ²	Summer Design Wet Bulb Temperature (1%)	75 °F	0 hours	600 hours
Window to Wall Density	1.25 W/ft ²	Winter Design Dry Bulb Temperature (99%)	40.8 °F	Net Site Energy Intensity	This Building: 85.82 kBtu/ft ²
Window to Wall Occupancy	301	User Defined		Uses less energy	Uses more energy
Total Outdoor Air Flow	0.00 cfm	Summer Design Day Dry Bulb Temperature		0 kBtu/ft ²	350 kBtu/ft ²
Cooling Specific Air Flow		Coincident Design Day Wet Bulb Temperature			
Heating Specific Air Flow		Winter Design Day Dry Bulb Temperature			
Site Peak Cooling Load	1,001,801.17 Btu/h				
Site Peak Heating Load	609,982.93 Btu/h				

Site Performance		Site Power Generation		Site Thermal Energy Recovery	
Net Source EUI	153.7 kBtu/ft ²	Fuel-Fired Power Generation	0 kWh	Water-Side Heat Recovery	0 kWh
Annual Electrical Consumption	290,656 kWh	High Temperature Geothermal	0 kWh	Air to Air Heat Recovery Cooling	0 kWh
Annual Peak Electrical Demand	67.7 kW	Photovoltaic Power	0 kWh	Air to Air Heat Recover Heating	0 kWh
Annual Gas Consumption	6,402.3 kWh	Wind Power	0 kWh	High-Temperature Geothermal	0 kWh
Annual Water Consumption	0 ft ³	Net Decrease in On-Site Storage	0 kWh	Solar Water Thermal	0 kWh
Operating Cooling Load	2,028,668 kWh	Sub-Total On Site Electric	0 kWh	Solar Air Thermal	0 kWh
Operating Heating Load	862 kWh	Electricity Coming From Utility	290,657 kWh	Total On-Site Thermal Sources	0 kWh
		Surplus Electricity To Utility	0 kWh		
		Net Electricity From Utility	290,657 kWh		

Library concept

- Library models versus project model
- Selecting a component in the library



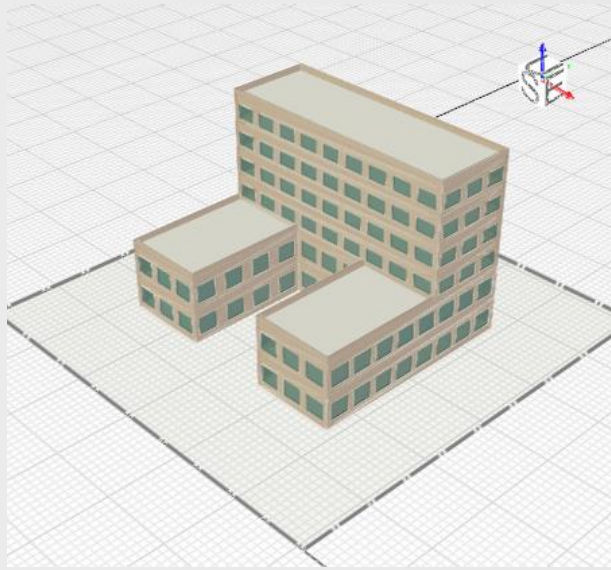
Standard/Professional Simergy version

Feature area	Standard	Professional (4 weeks trial)
User support	Limited	Full
Multiple design alternatives and comparison of simulation results	✓	✓
Building Model Creator (basic = 15 thermal zones)	Basic	Full
Air Loops	Basic (1)	Full (3)
Water Loops	Basic (3)	Full (7)
Advanced HVAC systems (VRF, PV, solar thermal, CHP)		✓
Model validation checking	Basic	Full
Results reporting	Basic	Full
Libraries and Templates	Basic	Advanced
UI Features	Basic	Full
Issue Resolution Knowledgebase		✓
Results Visualization		✓
Exporting of building models		✓

Design questions

1. How do I calculate loads with Simergy?
Lesson 1a & 1b
2. How much energy can we save by using triple low-e instead of double glazed windows?
Lesson 2 & 3
3. What is the difference in energy performance between an air to air heat pump and a typical VAV water cooled and heated system (ASHRAE7)?
Lesson 4 & 5

Mixed use building



2 story U-space retail building section

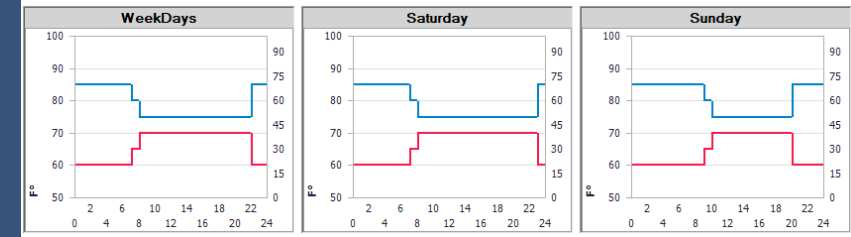
- High ceilings
- Larger windows

4 story rectangle office building section

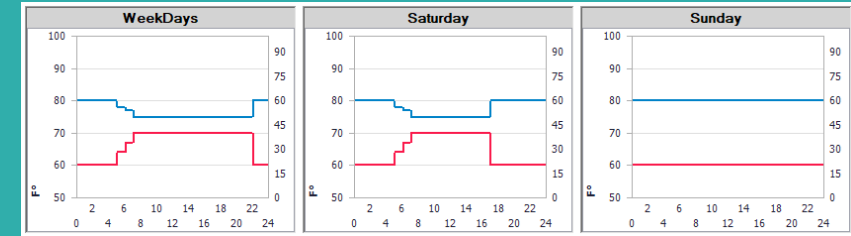
- Typical ceiling heights
- Typical Window to wall ratio

Thermostat schedules

Retail

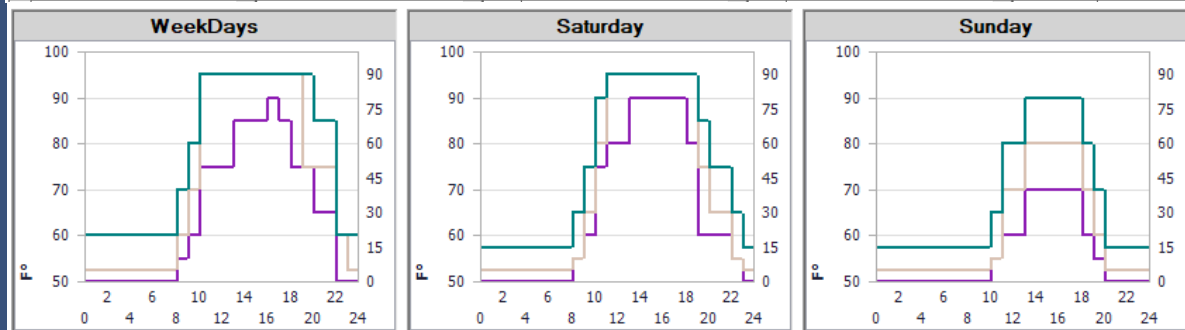


Office



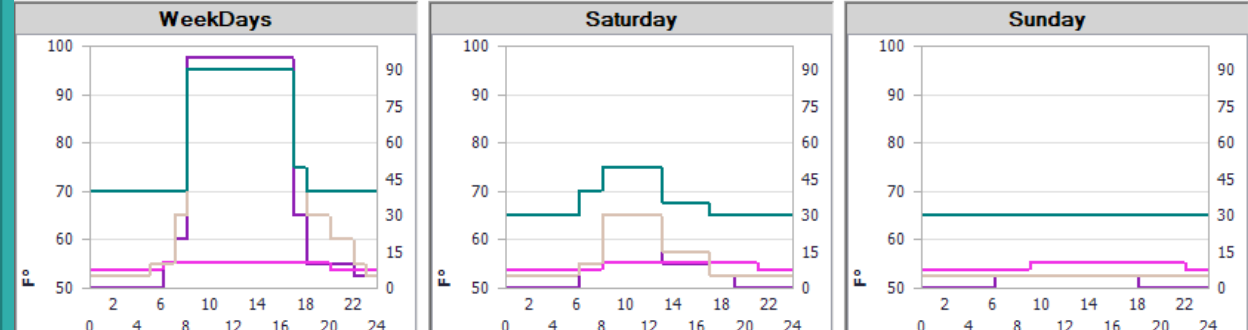
Retail internal loads

Load Type	Load Definition	Schedule	Value Type	Value	Unit
People	Bldg-Retail Occupancy ASHRAE	COMNET C-8 Retail-Occupancy	Area/Person	67	ft2/person
Lights	Bldg-Retail Lights ASHRAE90.1-	COMNET C-8 Retail-Lights Sche	Watts/Area	1.5	W/ft2
Electric Outlets	Bldg-Retail Receptacle ASHRAE	COMNET C-8 Retail-Receptacle	Watts/Area	0.3	W/ft2



Office internal loads

Load Type	Load Definition	Schedule	Value Type	Value	Unit
People	Bldg-Office Occupancy ASHRAE	COMNET C-5 Office-Occupancy	Area/Person	200	ft2/person
Lights	Bldg-Office Lights ASHRAE90.1-	COMNET C-5 Office-Lights Sche	Watts/Area	1	W/ft2
Electric Outlets	Bldg-Office Receptacle ASHRAE	COMNET C-5 Office-Receptacle	Watts/Area	0.75	W/ft2

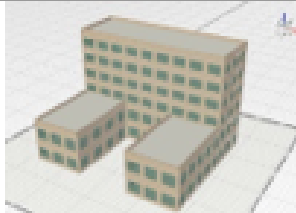


Demo Model Creator – Lesson 1

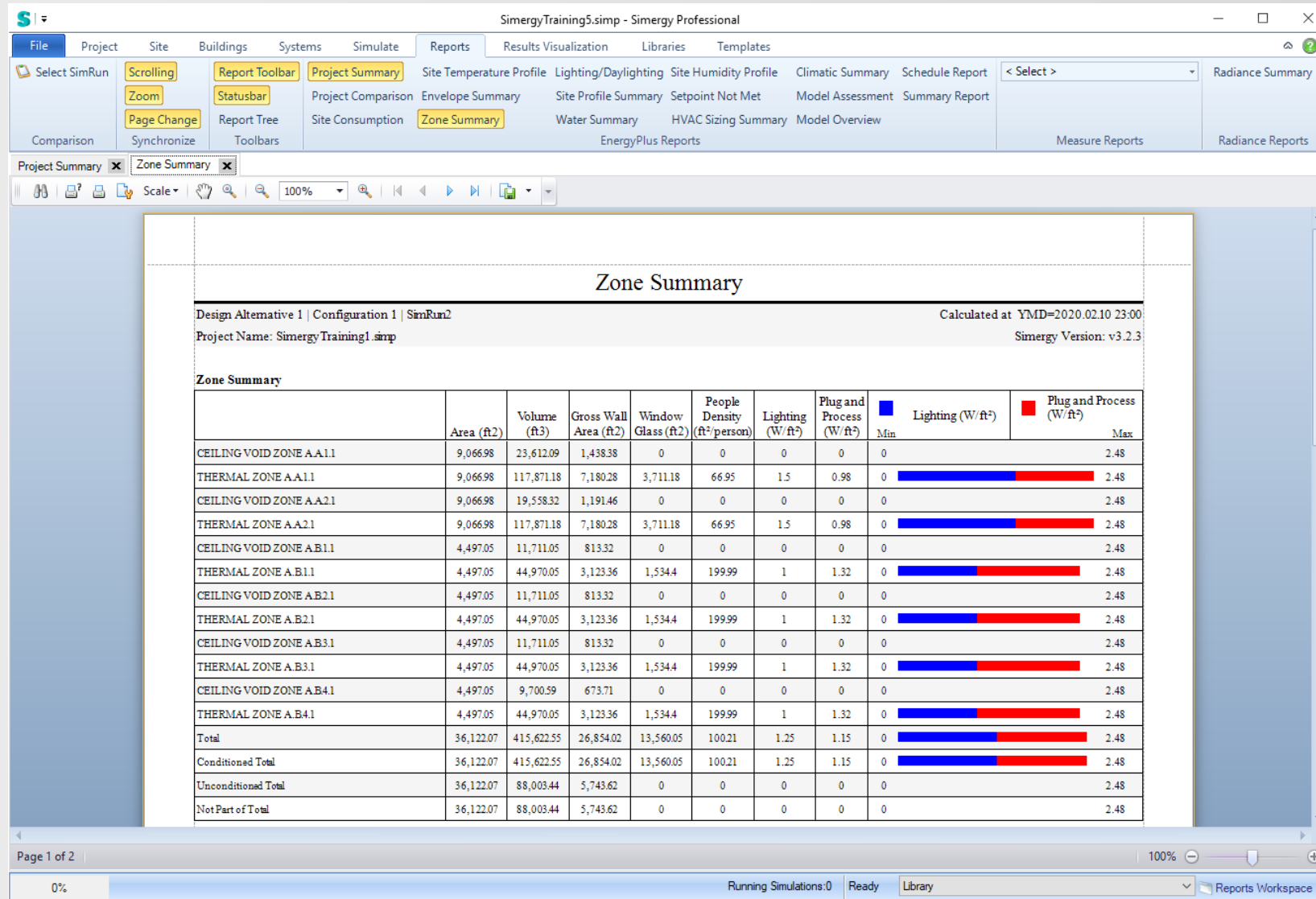
How do I calculate loads with Simergy?

Lesson 1: Create basic model

Lesson 1a: Mixed use model with load calculations – Design Alternative

1	Click on the File Menu											
2	Click on the New Menu-Button to create a new project.											
3	In the Project workspace											
4	In the Project Information palette											
5	For Design Alternative 1 , set the Region dropdown to	"CA"										
6	Set the Location dropdown to (or type in "San F" to filter the list) This loads the weather data for the project.	"San Francisco Intl Ap"										
7	Rename the Design Alternative 1 to	"Load calculation"										
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">Create/Edit Design Alternatives</div> <div style="display: flex; gap: 10px;"> <div style="border: 1px solid #ccc; padding: 2px 10px;">New</div> <div style="border: 1px solid #ccc; padding: 2px 10px;">Copy</div> <div style="border: 1px solid #ccc; padding: 2px 10px;">Validate Model</div> <div style="border: 1px solid #ccc; padding: 2px 10px;">Delete</div> </div> </div> <table border="1" style="margin-top: 10px; width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Name</th> <th style="width: 20%;">Description</th> <th style="width: 15%;">Weather Source</th> <th style="width: 10%;">Region</th> <th style="width: 40%;">Location</th> </tr> </thead> <tbody> <tr> <td> Load calculation</td> <td>Automatically generated Baseli...</td> <td>Standard</td> <td>CA</td> <td>San Francisco Intl Ap</td> </tr> </tbody> </table>			Name	Description	Weather Source	Region	Location	Load calculation	Automatically generated Baseli...	Standard	CA	San Francisco Intl Ap
Name	Description	Weather Source	Region	Location								
Load calculation	Automatically generated Baseli...	Standard	CA	San Francisco Intl Ap								
8	Go to the Buildings Workspace											
9	In the Create/Edit Buildings ribbon menu											
10	In the Create/Edit Building palette											
11	Click on the Building Sections tab											

Zone Summary Report – Zone Loads



Zone Summary Report – Calculate Loads

Design Day: Zone Cooling (1%) and Heating (99%)

		Calculated Design Load (Btu/h)	User Design Load (Btu/h)	Calculated Design Air Flow (cfm)	User Design Air Flow (cfm)	Date of Peak	External Temperature at Peak (°F)	Humidity Ratio at Peak (lb-H2O/lb-air)	Calculated Cooling Load (Btu/h)		Calculated Heating Load (Btu/h)	
									Min	Max	Min	Max
THERMAL ZONE A.A.1.1	Cooling	242,151.9	278,474.7	12,376.4	14,232.5	8/21 16	77.14	0.00819	0		291,530.9	
	Heating	80,313.3	100,391.6	2,080.7	2,602	1/21 11	40.82	0.00537	0		97,735.4	
THERMAL ZONE A.A.2.1	Cooling	291,530.9	335,260.5	14,900	17,135.4	8/21 16	76.32	0.00819	0		291,530.9	
	Heating	97,735.4	122,169.2	2,542.7	3,178.3	1/21 11	40.82	0.00537	0		97,735.4	
THERMAL ZONE A.B.1.1	Cooling	107,729.1	123,888.4	4,898.9	5,634.1	8/21 14	78.26	0.00819	0		291,530.9	
	Heating	17,920.5	22,400.6	262.7	381.4	1/21 05	40.82	0.00537	0		97,735.4	
THERMAL ZONE A.B.2.1	Cooling	107,582.3	123,719.6	4,892.5	5,627.7	8/21 14	78.26	0.00819	0		291,530.9	
	Heating	17,978.5	22,473.1	264.9	381.4	1/21 05	40.82	0.00537	0		97,735.4	
THERMAL ZONE A.B.3.1	Cooling	107,458	123,576.7	4,888.3	5,621.4	8/21 14	78.26	0.00819	0		291,530.9	
	Heating	18,035.1	22,543.9	264.9	381.4	1/21 05	40.82	0.00537	0		97,735.4	
THERMAL ZONE A.B.4.1	Cooling	107,347.7	123,449.9	4,881.9	5,615	8/21 14	78.26	0.00819	0		291,530.9	
	Heating	18,090.9	22,613.6	264.9	381.4	1/21 05	40.82	0.00537	0		97,735.4	

Calculated loads: Calculated based on design day

User design loads: Calculated loads including sizing factors and OA requirements

Demo Model Creator – Lesson 2

How much energy can we save by using **triple low-e** instead of **double glazed** windows?

Lesson 2: Replacing windows

Lesson 2: DESIGN ALTERNATE 2 – Triple glazing with low-e with Measure		
67	In the Project workspace	
68	In the Project Information palette	
69	Select the “Load calculation” design alternative and click on the Copy button	
70	Rename the Design Alternative 1 to	“Triple Glazing 2”
71	Go to the Simulate Workspace	
72	In the EnergyPlus ribbon menu	
73	In the right palette	
74	Click on the plus in front of Envelope. Click on the plus left of Fenestration Locate the “Add low-e triple glazing to all windows” Measure	

The screenshot shows the 'Measures' panel in a software application. At the top, there are tabs for 'Measures' and 'Dashboard'. Below the tabs, there are radio buttons for 'Local Measures' (selected) and 'Online Measures'. To the right, there is a 'Measure Compatibility' section with three colored circles: MM (blue), E+M (green), and RM (orange). A 'Validation succeeded' button is also present. The main area is divided into 'Measure details' and a list of measures. The 'Measure details' section has fields for 'Name:', 'Description:', and 'Details:'. The list of measures includes: People, Whole Building(1), Electric Lighting, Envelope(9), Construction Sets, Form, Infiltration, Opaque, and Fenestration. The 'Fenestration' measure is expanded, showing a sub-measure: 'Add low-e triple glazing to all windows'.

Results – Low-E glazing – Envelope summary

SimergyTraining5.simp - Simergy Professional

File Project Site Buildings Systems Simulate Reports Results Visualization Libraries Templates

Select SimRun Scrolling Report Toolbar Project Summary Site Temperature Profile Lighting/Daylighting Site Humidity Profile Climatic Summary Schedule Report Radiance Summary

Zoom Statusbar Project Comparison Envelope Summary Site Profile Summary Setpoint Not Met Model Assessment Summary Report

Page Change Report Tree Site Consumption Zone Summary Water Summary HVAC Sizing Summary Model Overview

Comparison Synchronize Toolbars EnergyPlus Reports Measure Reports Radiance Reports

Project Summary Zone Summary Envelope Summary

Project Name: SimergyTraining1.simp

Fenestration

	Construction	Area of One Opening (ft2)	Area of Openings (ft2)	U-Factor (BTU/h-ft ² -F)	SHGC
SPACE A.A.2.1:WINDOW A.A.2.7.6	GLAZ_TRIPLEPANE WITH LOWE	88	88	0.288	0.568
SPACE A.A.2.1:WINDOW A.A.2.7.7	GLAZ_TRIPLEPANE WITH LOWE	88	88	0.288	0.568
SPACE A.A.2.1:WINDOW A.A.2.7.8	GLAZ_TRIPLEPANE WITH LOWE	88	88	0.288	0.568
SPACE A.A.2.1:WINDOW A.A.2.7.9	GLAZ_TRIPLEPANE WITH LOWE	88	88	0.288	0.568
SPACE A.A.2.1:WINDOW A.A.2.8.1	GLAZ_TRIPLEPANE WITH LOWE	88	88	0.288	0.568
SPACE A.A.2.1:WINDOW A.A.2.8.2	GLAZ_TRIPLEPANE WITH LOWE	88	88	0.288	0.568
SPACE A.A.2.1:WINDOW A.A.2.8.3	GLAZ_TRIPLEPANE WITH LOWE	88	88	0.288	0.568
SPACE A.A.2.1:WINDOW A.A.2.8.4	GLAZ_TRIPLEPANE WITH LOWE	88	88	0.288	0.568
SPACE A.A.2.1:WINDOW A.A.2.8.5	GLAZ_TRIPLEPANE WITH LOWE	88	88	0.288	0.568
SPACE A.A.2.1:WINDOW A.A.2.8.6	GLAZ_TRIPLEPANE WITH LOWE	88	88	0.288	0.568
SPACE A.A.2.1:WINDOW A.A.2.8.7	GLAZ_TRIPLEPANE WITH LOWE	88	88	0.288	0.568
SPACE A.A.2.1:WINDOW A.A.2.8.8	GLAZ_TRIPLEPANE WITH LOWE	88	88	0.288	0.568
SPACE A.B.1.1:WINDOW A.B.1.1.1	GLAZ_TRIPLEPANE WITH LOWE	64	64	0.288	0.568
SPACE A.B.1.1:WINDOW A.B.1.1.2	GLAZ_TRIPLEPANE WITH LOWE	64	64	0.288	0.568
SPACE A.B.1.1:WINDOW A.B.1.1.3	GLAZ_TRIPLEPANE WITH LOWE	64	64	0.288	0.568

Page 10 of 27

Project Name: SimergyTraining1.simp

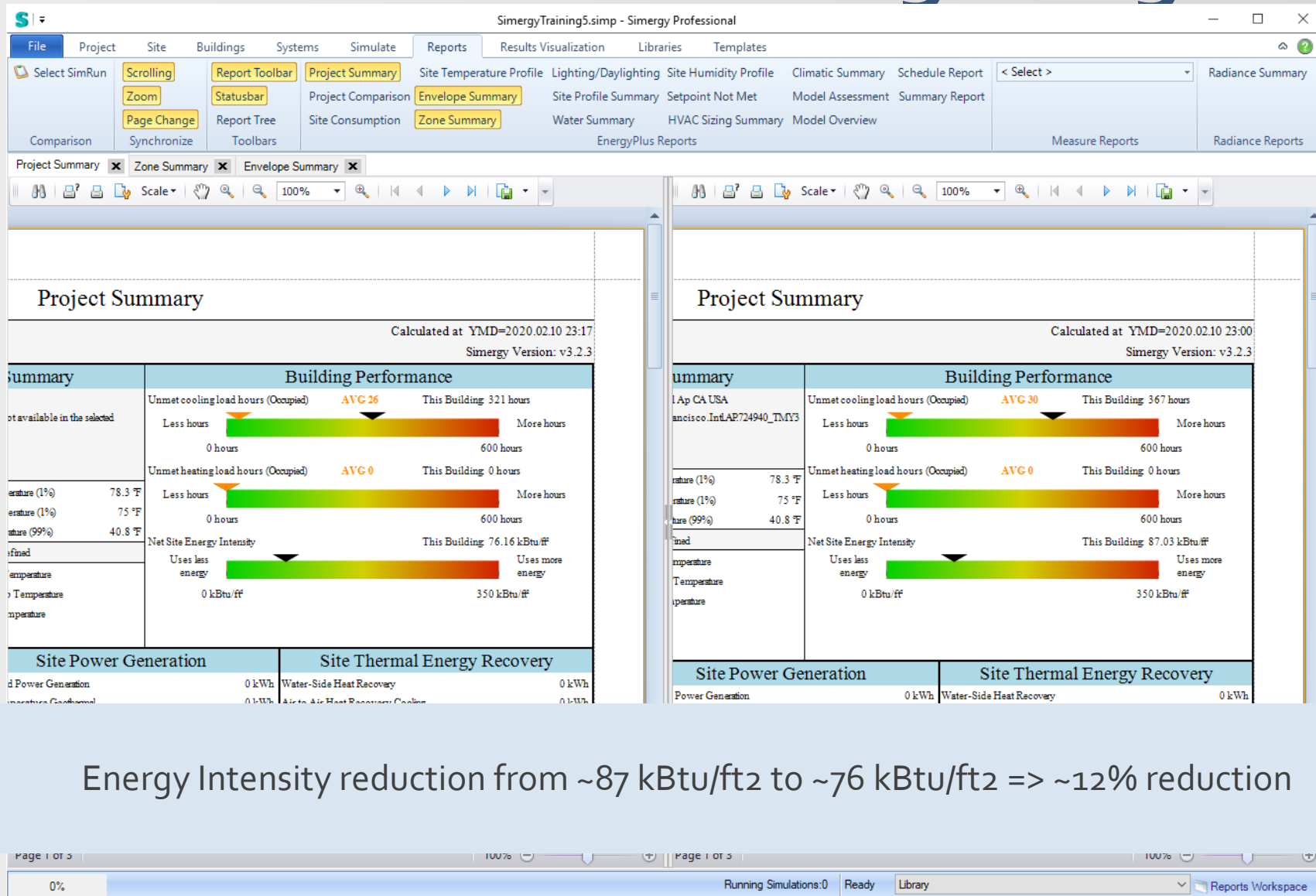
Fenestration

	Construction	Area of One Opening (ft2)	Area of Openings (ft2)	U-Factor (BTU/h-ft ² -F)	SHGC
SPACE A.A.1.1:WINDOW A.A.1.8.3	GLAZ_DOUBLEPANE	88	88	0.525	0.858
SPACE A.A.1.1:WINDOW A.A.1.8.3	GLAZ_DOUBLEPANE	88	88	0.525	0.858
SPACE A.A.1.1:WINDOW A.A.1.8.4	GLAZ_DOUBLEPANE	88	88	0.525	0.858
SPACE A.A.1.1:WINDOW A.A.1.8.4	GLAZ_DOUBLEPANE	88	88	0.525	0.858
SPACE A.A.1.1:WINDOW A.A.1.8.5	GLAZ_DOUBLEPANE	88	88	0.525	0.858
SPACE A.A.1.1:WINDOW A.A.1.8.5	GLAZ_DOUBLEPANE	88	88	0.525	0.858
SPACE A.A.1.1:WINDOW A.A.1.8.6	GLAZ_DOUBLEPANE	88	88	0.525	0.858
SPACE A.A.1.1:WINDOW A.A.1.8.6	GLAZ_DOUBLEPANE	88	88	0.525	0.858
SPACE A.A.1.1:WINDOW A.A.1.8.7	GLAZ_DOUBLEPANE	88	88	0.525	0.858
SPACE A.A.1.1:WINDOW A.A.1.8.7	GLAZ_DOUBLEPANE	88	88	0.525	0.858
SPACE A.A.1.1:WINDOW A.A.1.8.8	GLAZ_DOUBLEPANE	88	88	0.525	0.858
SPACE A.A.1.1:WINDOW A.A.1.8.8	GLAZ_DOUBLEPANE	88	88	0.525	0.858
SPACE A.A.2.1:WINDOW A.A.2.1.1	GLAZ_DOUBLEPANE	88	88	0.525	0.858
SPACE A.A.2.1:WINDOW A.A.2.1.1	GLAZ_DOUBLEPANE	88	88	0.525	0.858
SPACE A.A.2.1:WINDOW A.A.2.1.2	GLAZ_DOUBLEPANE	88	88	0.525	0.858

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0% Running Simulations:0 Ready Library Reports Workspace

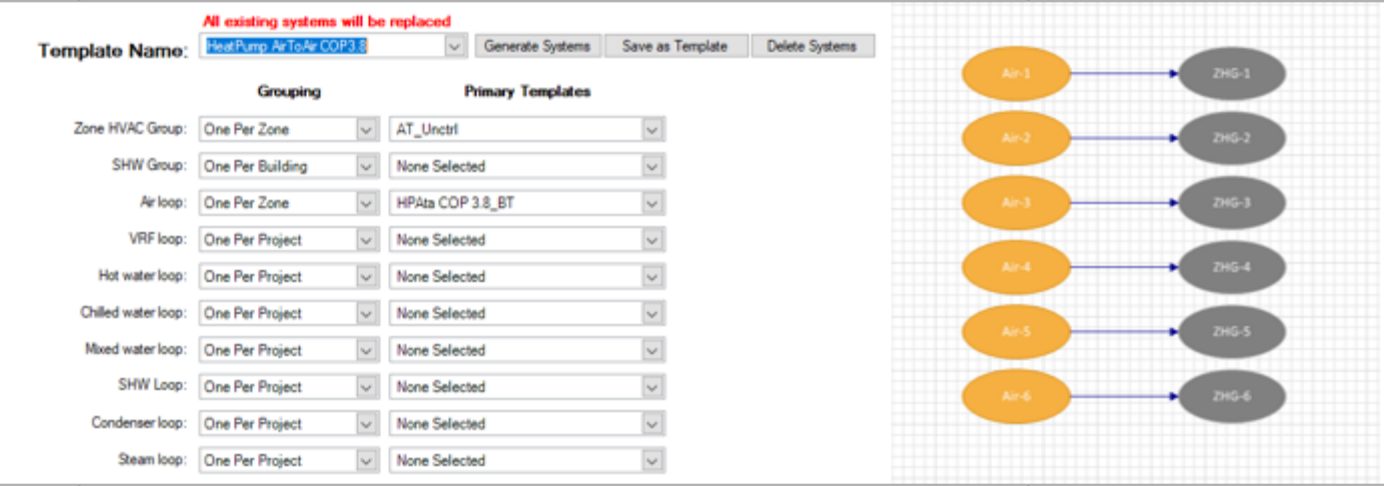
Results – Low-E glazing



Demo Model Creator – Lesson 3&4

What is the difference in energy performance between an **air to air heat pump** and a typical **VAV water cooled and heated system (ASHRAE7)**?

Lesson 3: HeatPump Air to Air

Lesson 3: DESIGN ALTERNATE 3 – Air to air heat pump		
91	In the Project workspace	
92	In the Project Information palette	
93	Select the "Triple Glazing 2" design alternative and click on copy	
94	Rename the Design Alternative 1 to	<i>"Air to Air Heat Pump"</i>
95	Go to the Systems Workspace	
96	In the Systems Creator ribbon menu	
97	Select the Template Name dropdown as	<i>"HeatPump AirToAir COP3.8"</i>
98	Set the dropdown for Zone HVAC Groups and Air loops to	<i>"One per zone"</i>
99	Click on Generate Systems	
 <p>The screenshot shows the Systems Creator interface with the following settings:</p> <ul style="list-style-type: none"> Template Name: HeatPump AirToAir COP3.8 Buttons: Generate Systems, Save as Template, Delete Systems Grouping: <ul style="list-style-type: none"> Zone HVAC Group: One Per Zone SHW Group: One Per Building Air loop: One Per Zone VRF loop: One Per Project Hot water loop: One Per Project Chilled water loop: One Per Project Mixed water loop: One Per Project SHW Loop: One Per Project Condenser loop: One Per Project Steam loop: One Per Project Primary Templates: <ul style="list-style-type: none"> AT_Unctrl None Selected HPAta COP 3.8_BT None Selected None Selected None Selected None Selected None Selected None Selected <p>The diagram on the right shows six orange ovals labeled Air-1 through Air-6, each with a blue arrow pointing to a grey oval labeled ZHG-1 through ZHG-6.</p>		
100	Click on the File Menu	
101	Click on the SaveAs Button to save the current model.	
102	Set File name to	<i>"BasicTraining4"</i>
103	Go to the Simulate Workspace	

Lesson 4: ASHRAE-7

Lesson 4: DESIGN ALTERNATE 4 – ASHRAE-7		
111	In the Project workspace	
112	In the Project Information palette	
113	Select the "Triple Glazing 2" design alternative and click on copy	
114	Rename the Design Alternative 4 to	"ASHRAE-7"
115	Go to the Systems Workspace	
116	In the Systems Creator ribbon menu	
117	Select the Template Name dropdown as	"ASHRAE-7"
118	Set the dropdown for Zone HVAC Groups and Air loops to	"One per zone"
119	Click on Generate Systems	
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 60%;"> <p>Template Name: ASHRAE7-VAVwReheat Generate Systems Save as Template Delete Systems</p> <p>Grouping</p> <p>Zone HVAC Group: One Per Zone ASHRAE-AT_VAV_ReH-Wtr_TC</p> <p>SHW Group: One Per Building None Selected</p> <p>Air loop: One Per Zone ASHRAE-VAV_wtrC_wtrH_DT</p> <p>VRF loop: One Per Project None Selected</p> <p>Hot water loop: One Per Project ASHRAE-Boil(2)_Htr_VSD</p> <p>Chilled water loop: One Per Project ASHRAE-Chlr(2)_VC_Elec_EIR_VS</p> <p>Mixed water loop: One Per Project None Selected</p> <p>SHW Loop: One Per Project None Selected</p> <p>Condenser loop: One Per Project ASHRAE-CoolTwr(2)_2SP_CSD</p> <p>Steam loop: One Per Project None Selected</p> </div> <div style="width: 35%; text-align: center;"> </div> </div>		
120	Click on the File Menu	
121	Click on the SaveAs Button to save the current model.	
122	Set File name to	"BasicTraining5"
123	Go to the Simulate Workspace	

Results – System comparison

SimergyTraining5.simp - Simergy Professional

File Project Site Buildings Systems Simulate Reports Results Visualization Libraries Templates

Select SimRun Scrolling Report Toolbar Project Summary Site Temperature Profile Lighting/Daylighting Site Humidity Profile Climatic Summary Schedule Report < Select > Radiance Summary

Zoom Statusbar Project Comparison Envelope Summary Site Profile Summary Setpoint Not Met Model Assessment Summary Report

Page Change Report Tree Site Consumption Zone Summary Water Summary HVAC Sizing Summary Model Overview

Comparison Synchronize Toolbars EnergyPlus Reports Measure Reports Radiance Reports

Project Summary X Zone Summary X Envelope Summary X

Scale 100%

ASHRAE-7 | Configuration 1 | SimRun1
Project Name: SimergyTraining3.simp

Energy End Use Summary

	Electricity (kWh)	Gas (kBtu)	District Cooling (kBtu)	District Heating (kBtu)	Other Utilities (kBtu)	Site Energy (kBtu)
Heating	0	74,336.8	.0	.0	.0	74,337
Cooling	18,658	.0	.0	.0	.0	63,616
Fans	84,122	.0	.0	.0	.0	286,816
Pumps	11,944	.0	.0	.0	.0	40,725
Heat Rejection	1,106	.0	.0	.0	.0	3,769
Humidification	0	.0	.0	.0	.0	0
Heat Recovery	0	.0	.0	.0	.0	0
Water Systems	0	.0	.0	.0	.0	0
Interior Lighting	151,494	.0	.0	.0	.0	516,522
Exterior Lighting	0	.0	.0	.0	.0	0
Interior Equipment	85,981	116,927.3	.0	126,530.7	.0	536,610
Exterior Equipment	0	.0	.0	.0	.0	0
Refrigeration	0	.0	.0	.0	.0	0
Generators	0	.0	.0	.0	.0	0
Grand Total	353,306	191,264	0	126,531	0	1,522,394

AirToAirHeatPump | Configuration 1 | SimRun2
Project Name: SimergyTraining3.simp

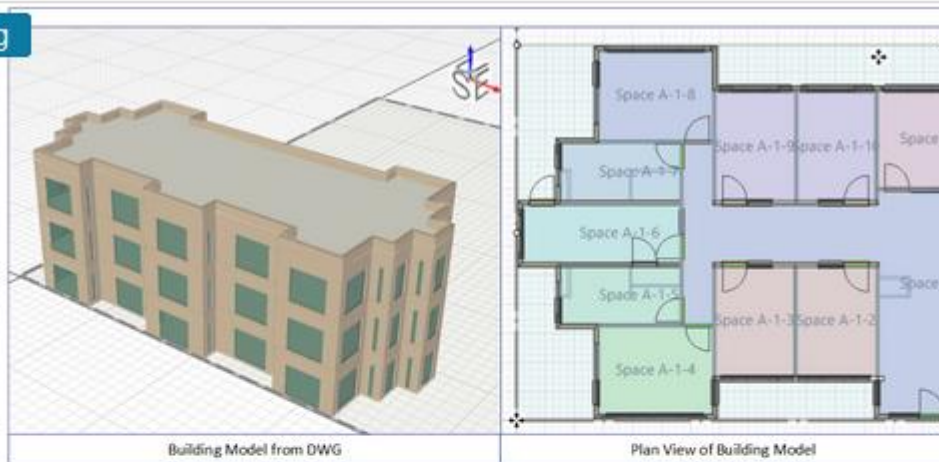
Energy End Use Summary

	Electricity (kWh)	Gas (kBtu)	District Cooling (kBtu)	District Heating (kBtu)	Other Utilities (kBtu)	Site Energy (kBtu)
Heating	2,117	.0	.0	.0	.0	7,217
Cooling	42,678	.0	.0	.0	.0	145,510
Fans	163,722	.0	.0	.0	.0	558,213
Pumps	0	.0	.0	.0	.0	0
Heat Rejection	0	.0	.0	.0	.0	0
Humidification	0	.0	.0	.0	.0	0
Heat Recovery	0	.0	.0	.0	.0	0
Water Systems	0	.0	.0	.0	.0	0
Interior Lighting	151,494	.0	.0	.0	.0	516,522
Exterior Lighting	0	.0	.0	.0	.0	0
Interior Equipment	85,981	116,927.3	.0	126,530.7	.0	536,610
Exterior Equipment	0	.0	.0	.0	.0	0
Refrigeration	0	.0	.0	.0	.0	0
Generators	0	.0	.0	.0	.0	0
Grand Total	445,992	116,927	0	126,531	0	1,764,071

ASHRAE7 performs better than AirToAirHeatPump by 16%

Additional training courses

Training



Training 102: DWG Model-Over, Editing HVAC Loops, Results Visualization

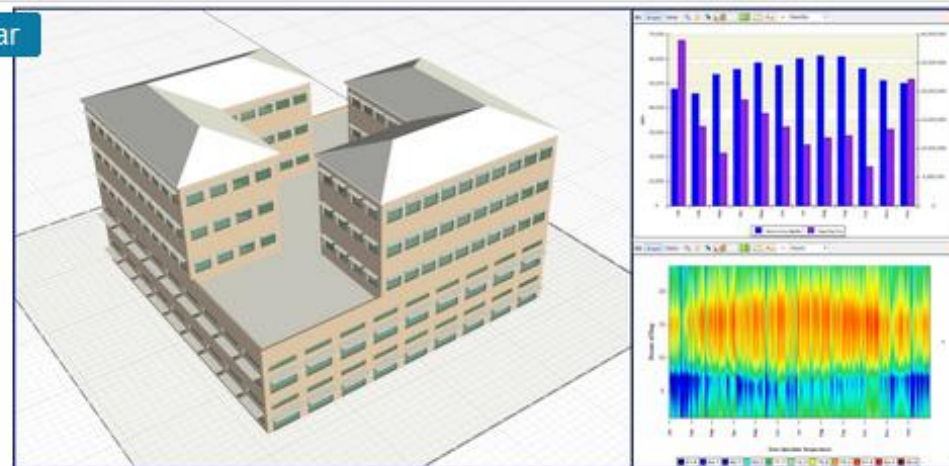
In this 2-hour session, you will learn to create building models from DWG drawings, create HVAC loops, and create graphs/charts from simulation results.

Date: 25 Feb 2020

Time: 08:00 PM to 10:00 PM (CET)

[Click to Sign up](#)

Webinar



Webinar: How to answer building energy questions in early design (US Units)

In this session, you will see how Simergy users answer building energy questions in early stages of design, by creating and simulating a building model.

Date: 17 Mar 2020

Time: 07:00 PM to 08:00 PM (CET)

[Click to Sign up](#)

New features in Simergy 3.2

Simergy (application framework)

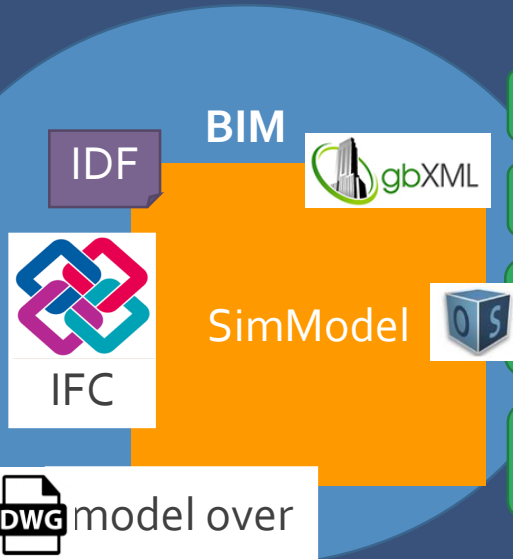
Parametric model creation with

Building Model Creator™

Multiple Buildings

Occupancy templ.

Building Systems Creator™



Schedule editor

MLS editor

Scripting via Measures

Results Visualization

predicting building performance through



Energy simulation

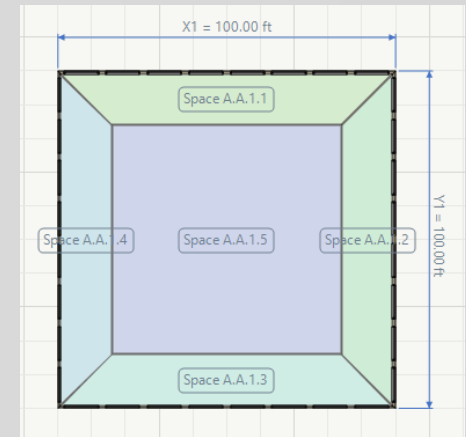


Daylighting simulation



Title24 certification

1. Updated ASHRAE content to 2016
2. Added ASHRAE system 9 & 10
3. Dimensions in plan view

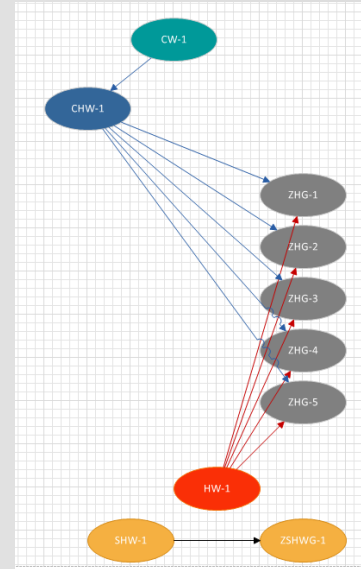
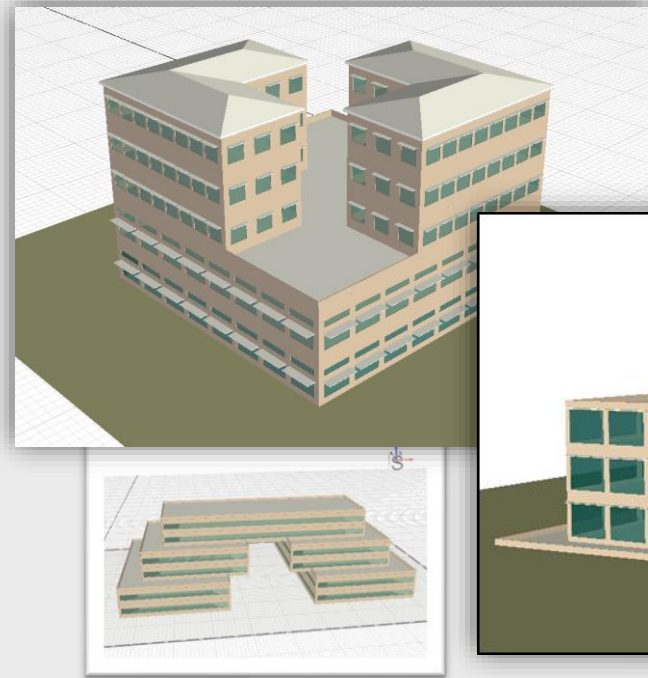


4. Auto adjusting schedules for mixed occupancy
5. Improvements throughout
 1. Building Model and Systems Creator
 2. Space boundary generation
 3. Import/Export/Validation
 4. More samples, etc..

New features since Simergy 3

(1)

Multiple Buildings
Multiple Building Sections



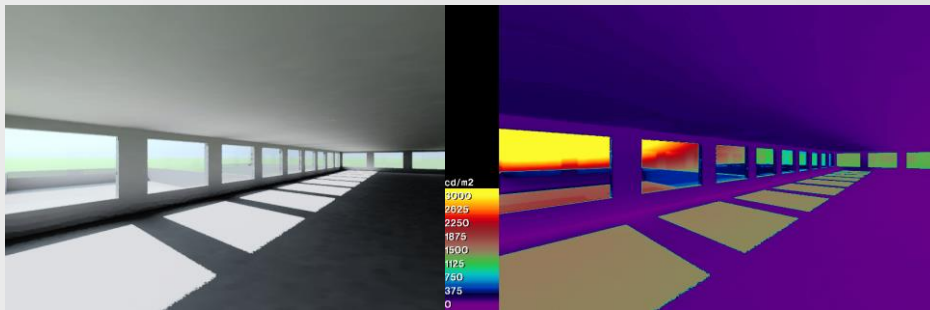
Building Systems Creator

All existing systems will be replaced

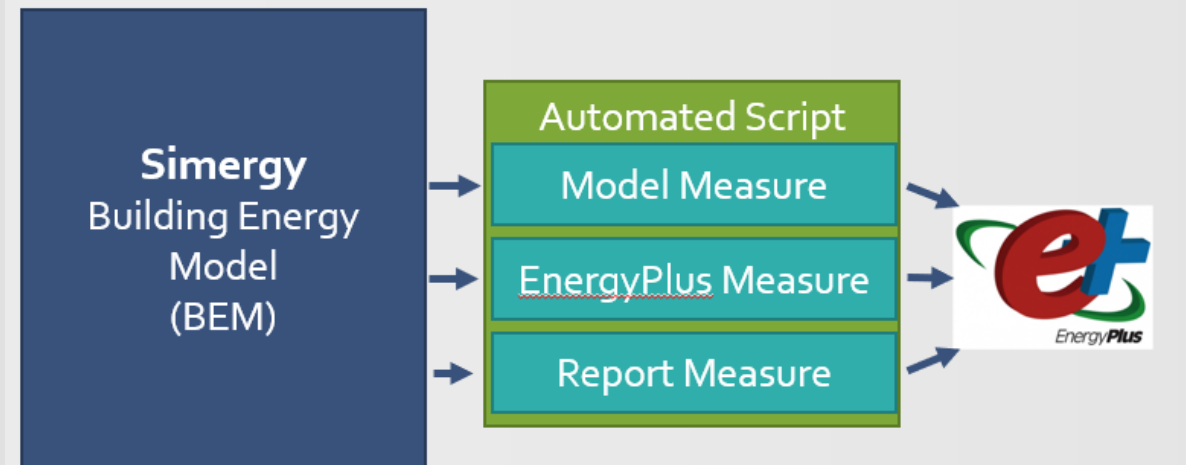
Template Name:

Grouping	Primary Templates
Zone HVAC Group: <input type="text" value="One Per Building"/>	<input type="text" value="ASHRAE-AT_VAV_ReH-Wtr_TC"/>
SHW Group: <input type="text" value="One Per Building"/>	<input type="text" value="Office building 1 gal/day/person - 104 d"/>
Air loop: <input type="text" value="One Per Building"/>	<input type="text" value="ASHRAE-VAV_wtrC_wtrH_DT"/>
VRF loop: <input type="text" value="One Per Project"/>	<input type="text" value="None Selected"/>
Hot water loop: <input type="text" value="One Per Project"/>	<input type="text" value="ASHRAE-Boil(2)_HW_VSD"/>
Chilled water loop: <input type="text" value="One Per Project"/>	<input type="text" value="ASHRAE-Chlr(2)_VC_Elec_EIR_VS"/>
Mixed water loop: <input type="text" value="One Per Project"/>	<input type="text" value="None Selected"/>
SHW Loop: <input type="text" value="One Per Project"/>	<input type="text" value="Heater Natural Gas - 135 deg F - AS 1"/>
Condenser loop: <input type="text" value="One Per Project"/>	<input type="text" value="ASHRAE-CoolTwr(2)_2SP_CSD"/>
Steam loop: <input type="text" value="One Per Project"/>	<input type="text" value="None Selected"/>

Daylighting with Radiance



Scripted model changes



New features since Simergy 3

(2)

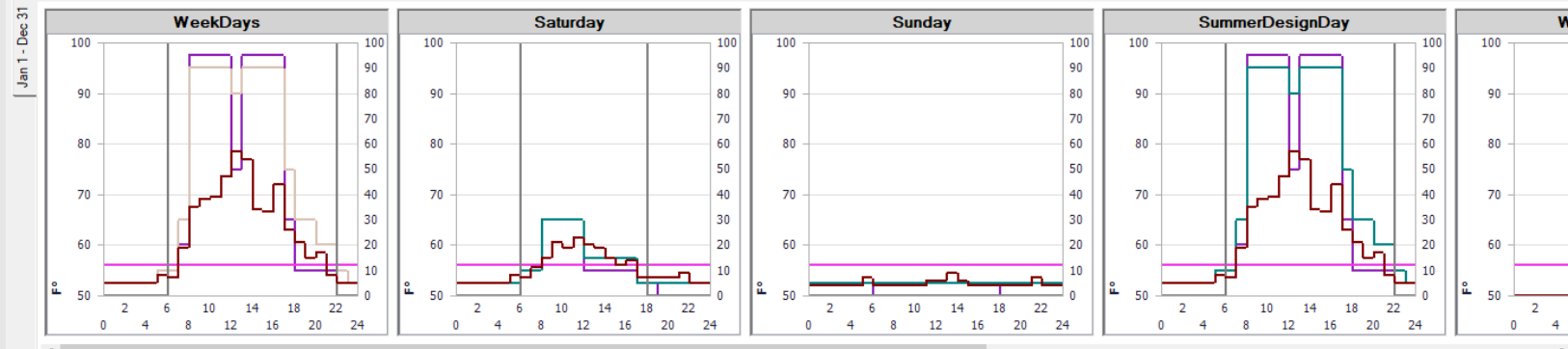
Map materials during import

Some imported materials do not have any physical properties assigned. Use this dialog to map physical properties of existing materials in the library to the imported materials.

Material Name	Conductivity	Density	Specific H	R-value per Unit
INT-FINISH_GypsumWallB	1.08	49.01	0.2	
INT-FINISH_GypsumBoard	1.08	49.94	0.2	
INT-FINISH_GypPlaster_S	5.64	105	0.2	
Gypsum or plaster board	4.02	49.94	0.26	
G01 gypsum board	1.11	49.94	0.26	
Gypsum or plaster board	4.02	49.94	0.26	
Concrete: Gypsum-fiber co	1.66	50.94	0.21	
Gypsum plaster: Lightweig				89.45373306192
Gypsum plaster: Lightweig				1.369825146655
Gypsum plaster: Lightweig				90.69902864979
Gypsum partition tile 75 by				61.43458233487
Gypsum partition tile 75 by				65.79311689241
Gypsum partition tile 100 b				61.01948380558

Load Type	Load Definition	Schedule	Value Type	Value	Unit	Activity Schedule	Max Value	Unit
People	OfficeBldg_Occup_COMNET_w	ASHRAE 90.1 Office_People	Area/Person	149.94	ft2/person	Office_ActivityLevel_ASHRAE	0.8	W/ft2
Lights	OfficeBldg_Ltg_90-1-2007	ASHRAE 90.1 Office_Ltg&Plug	Watts/Area	1	W/ft2	<Make Selection>		
Electric Outlets	OfficeBldg_Equip_COMNET	ASHRAE 90.1 Office_Ltg&Plug	Watts/Area	0.8	W/ft2	<Make Selection>		
Gas Equipment	OfficeBldg_Gas_COMNET	Office_HVAC_90-1-2007	Watts/Area	0.04	Btu/h-ft2	<Make Selection>		
Hot Water Equip	OfficeBldg_SHW_ASHRAE 90-	ASHRAE 90.1 Office_ServiceH	Watts/Person	106	Btu/h-person	<Make Selection>		

Occupancy driven loads and conditions



Pick a weather file just in time

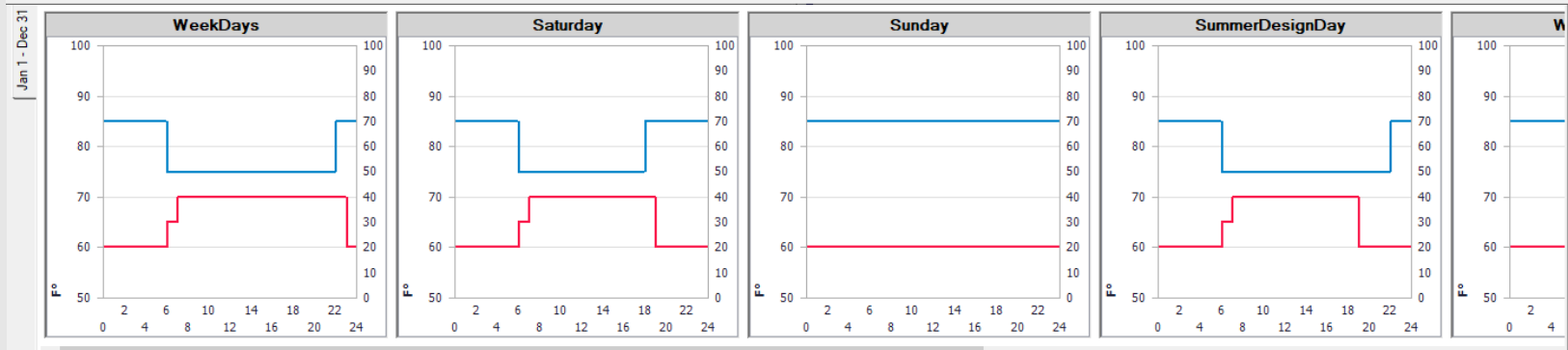
Your project does not have a weather file assigned, please assign one now.

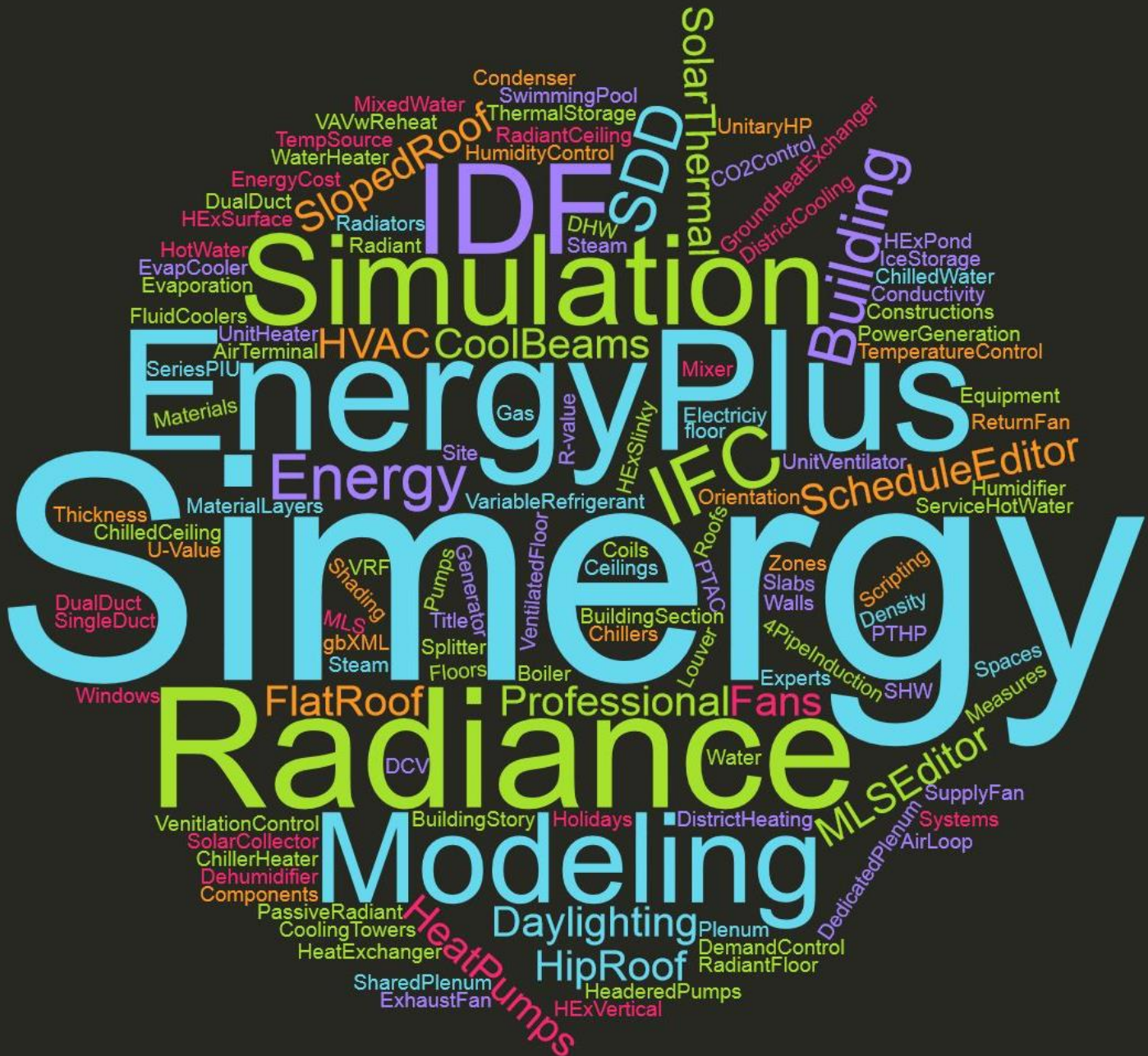
Weather Source: Standard Region: CO Location: Denver Intl Ap

import and add design days There are currently no design days assigned to the location template.

update location metadata

Property Name	Value (Project)	Value (Weather File)	New Value	Unit
Latitude	39.83	39.83		deg
Longitude	-104.65	-104.65		deg
TimeZone	-7	-7		hr
Elevation	1650	1650		m





Feedback and/or Questions?

- New website: d-alchemy.com
- Email support: Support@D-Alchemy.com
- Topics you would need help with?

