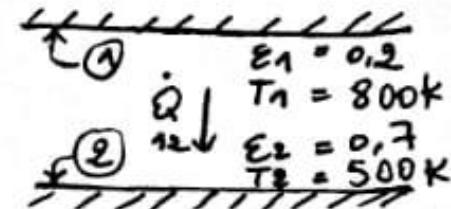


QUESTION 1

- From the previous example :
the heat transfer per Area is :

$$\dot{q}_{1 \rightarrow 2} = \frac{\dot{Q}_{1 \rightarrow 2}}{A} = \frac{\sigma(T_1^4 - T_2^4)}{\gamma_{\epsilon_1} + \gamma_{\epsilon_2} - 1}$$

$$= \frac{5,67 \cdot 10^{-8} (800^4 - 500^4)}{\gamma_{0,2} + \gamma_{0,7} - 1} \Rightarrow \boxed{\dot{q}_{1 \rightarrow 2} = 3625,4 \frac{W}{m^2}}$$



- A Heat transfer rate \dot{q}' is 1% of the upper case
 $\Leftrightarrow \dot{q}'_{1 \rightarrow 2} = \frac{\dot{q}_{1 \rightarrow 2}}{100} \Rightarrow \dot{q}'_{1 \rightarrow 2} = 36,254 \frac{W}{m^2}$
- The number of shields "x" with $\epsilon = 0,1$ would be as :

$$\dot{q}'_{1 \rightarrow 2} = \frac{\dot{q}_{1 \rightarrow 2}}{100} = \frac{\sigma(T_1^4 - T_2^4)}{(\gamma_{\epsilon_1} + \gamma_{\epsilon_2} - 1) + x(\gamma_{\epsilon} - 1)}$$

$$\Rightarrow \left(\frac{1}{\varepsilon_1} + \frac{1}{\varepsilon_2} - 1 \right) \dot{q}_{1 \rightarrow 2} + x \cdot \dot{q}_{1 \rightarrow 2} \left(\frac{1}{\varepsilon} \times 2 - 1 \right) = \\ 100 \sigma (\tau_1^4 - \tau_2^4)$$

$$\Rightarrow x \left(\frac{2}{\varepsilon} - 1 \right) = 100 \frac{\sigma (\tau_1^4 - \tau_2^4)}{\dot{q}_{1 \rightarrow 2}} - \left(\frac{1}{\varepsilon_1} + \frac{1}{\varepsilon_2} - 1 \right)$$

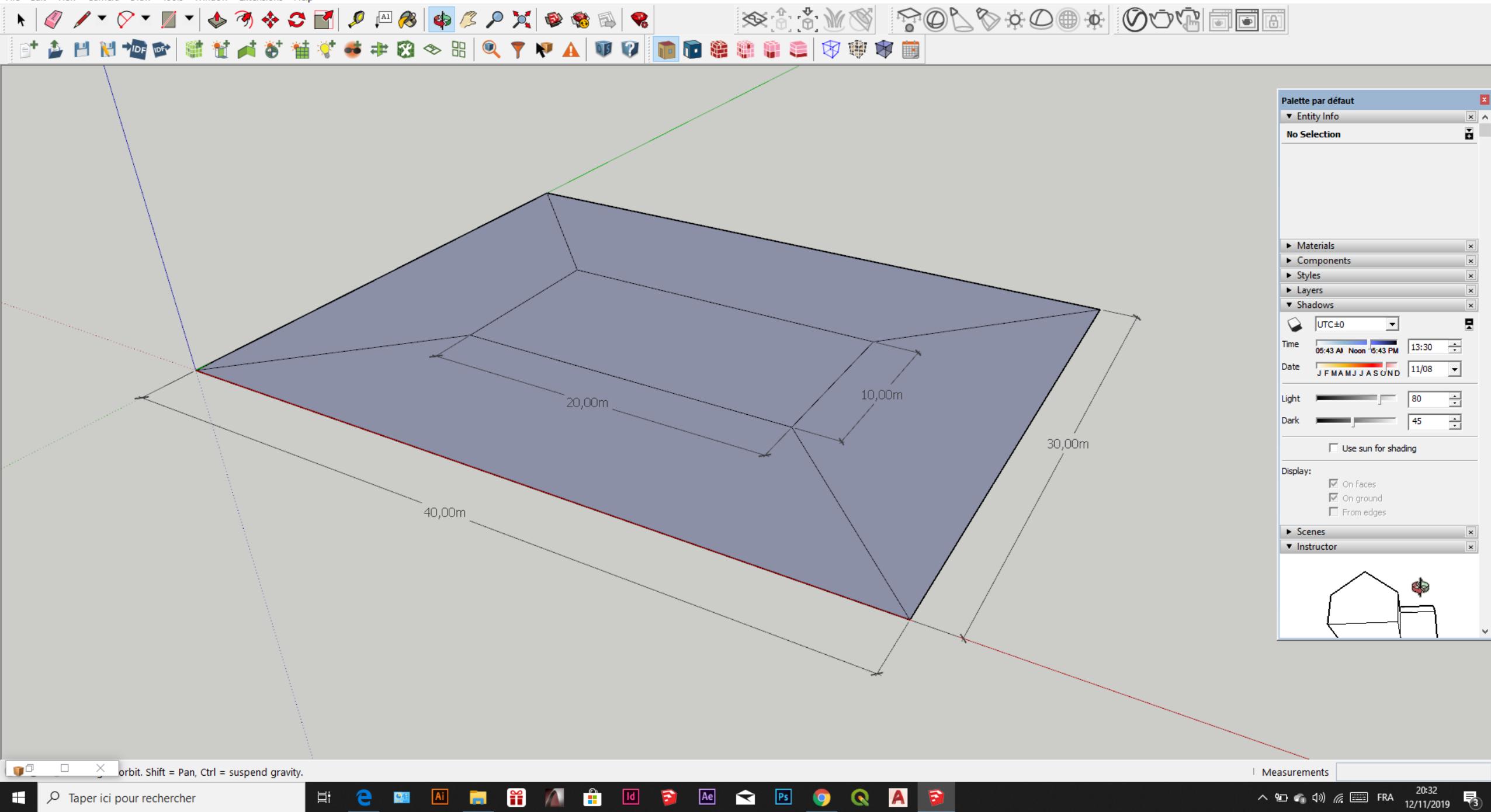
$$\Rightarrow x = \frac{99 \left(\frac{1}{\varepsilon_1} + \frac{1}{\varepsilon_2} - 1 \right)}{\left(\frac{2}{\varepsilon_{\text{shields}}} - 1 \right)}$$

$$\Rightarrow x = 99 \times \frac{1}{19} \times \left[\left(\frac{1}{0.2} \right) + \left(\frac{1}{0.7} \right) - 1 \right]$$

$$\Rightarrow x \approx 28,28$$

The number of shields is 28

QUESTION 2





Create Spaces From 2d Floor Plan

Floor Height (SketchUp Units)

Number of Floors

OK Cancel

20,00m 10,00m 30,00m
40,00m

Palette par défaut

Entity Info

21 Entities

Layer: Layer0

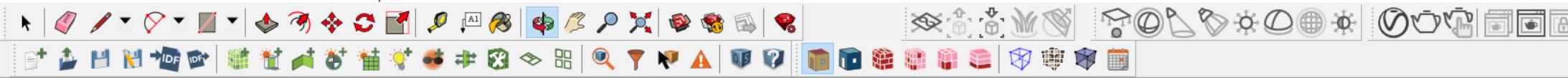
Materials Components Styles Layers Shadows

UTC±0 Time 05:43 AM Noon 16:43 PM 13:30 Date J F M A M J J A S O N D 11/08 Light 80 Dark 45 Use sun for shading

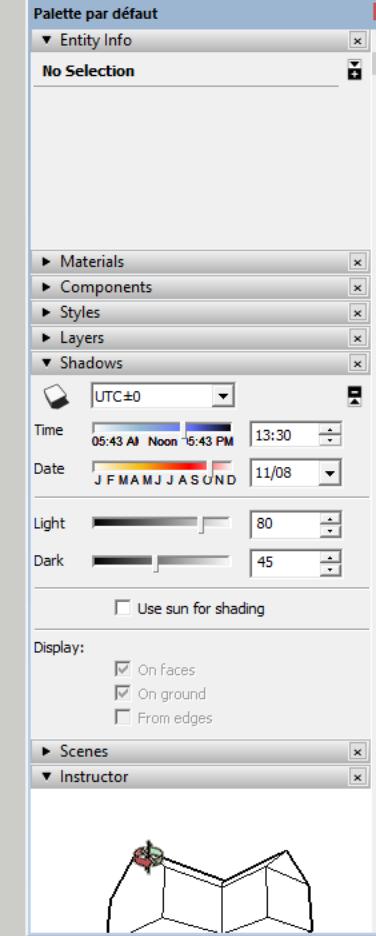
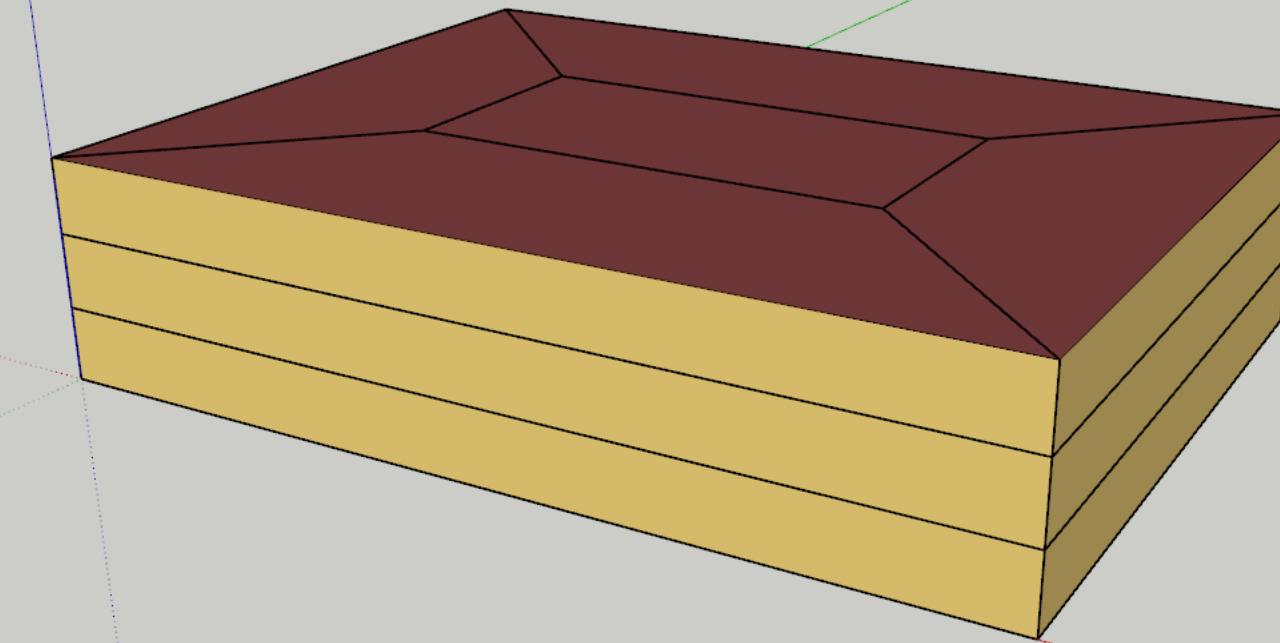
Display: On faces On ground From edges

Scenes Instructor

A detailed 3D architectural model of a building is shown in the main workspace. The model includes a central rectangular volume with a height of 10' and three floors. The base dimensions are 40,00m by 20,00m. An adjacent wing has a height of 10,00m and a depth of 30,00m. A callout box from a floating dialog box specifies these values. The right side of the screen features the SketchUp interface's palette, which displays entity information, materials, components, styles, layers, shadows, and scene settings. The date and time are also visible.

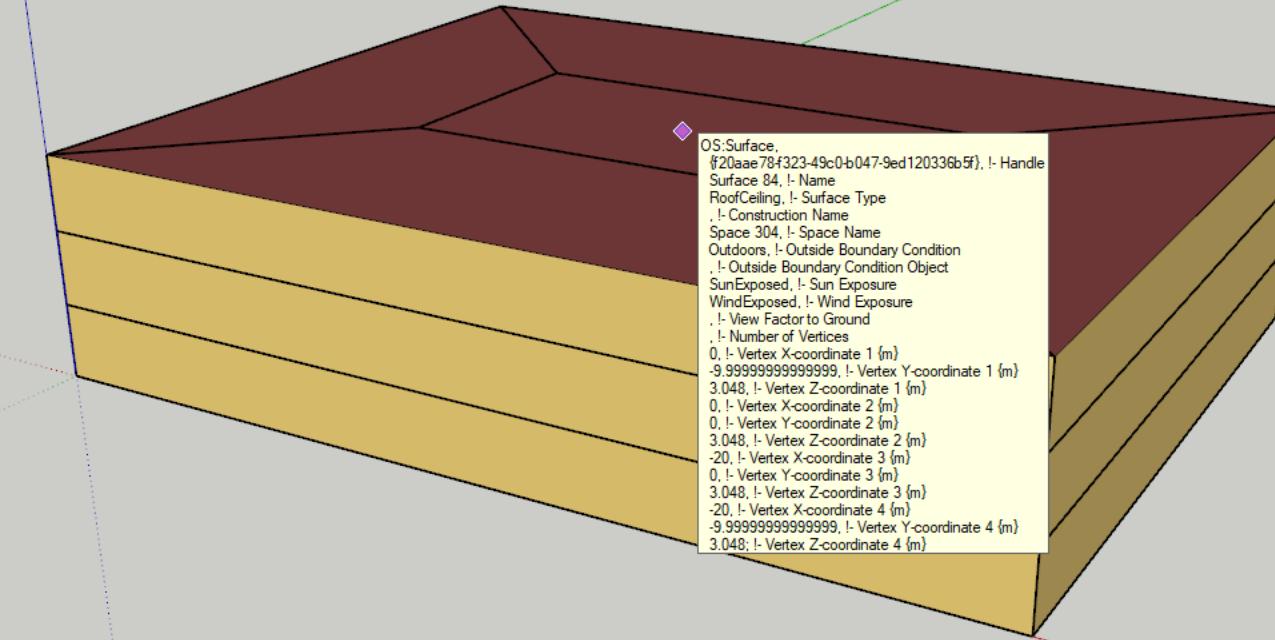


We make a building of 3 floors

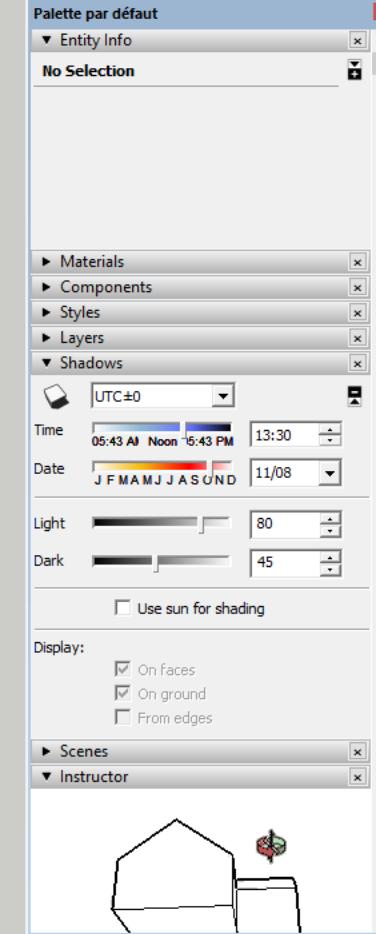




The info tool gives information about the surfaces, spaces and other properties



OS:Surface,
{f20aae78-f323-49c0-b047-9ed120336b5f}, l- Handle
Surface 84, l- Name
RoofCeiling, l- Surface Type
.l- Construction Name
Space 304, l- Space Name
Outdoors, l- Outside Boundary Condition
.l- Outside Boundary Condition Object
SunExposed, l- Sun Exposure
WindExposed, l- Wind Exposure
.l- View Factor to Ground
.l- Number of Vertices
0, l- Vertex X-coordinate 1 (m)
-9.999999999999999, l- Vertex Y-coordinate 1 (m)
3.048, l- Vertex Z-coordinate 1 (m)
0, l- Vertex X-coordinate 2 (m)
0, l- Vertex Y-coordinate 2 (m)
3.048, l- Vertex Z-coordinate 2 (m)
-20, l- Vertex X-coordinate 3 (m)
0, l- Vertex Y-coordinate 3 (m)
3.048, l- Vertex Z-coordinate 3 (m)
-20, l- Vertex X-coordinate 4 (m)
-9.999999999999999, l- Vertex Y-coordinate 4 (m)
3.048; l- Vertex Z-coordinate 4 (m)

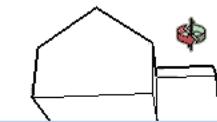


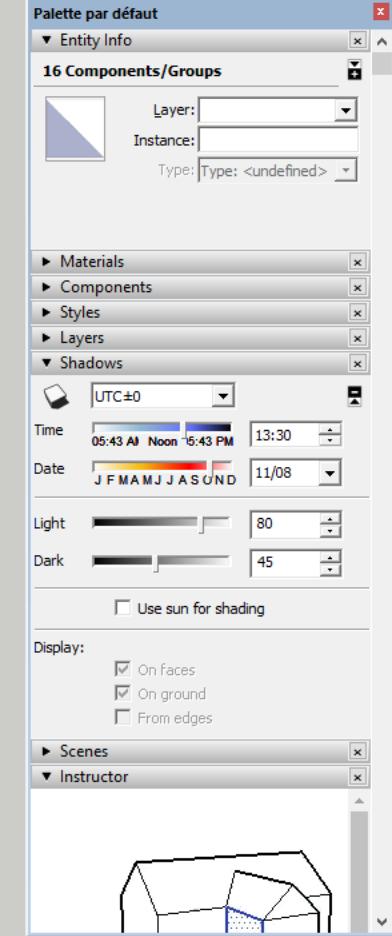
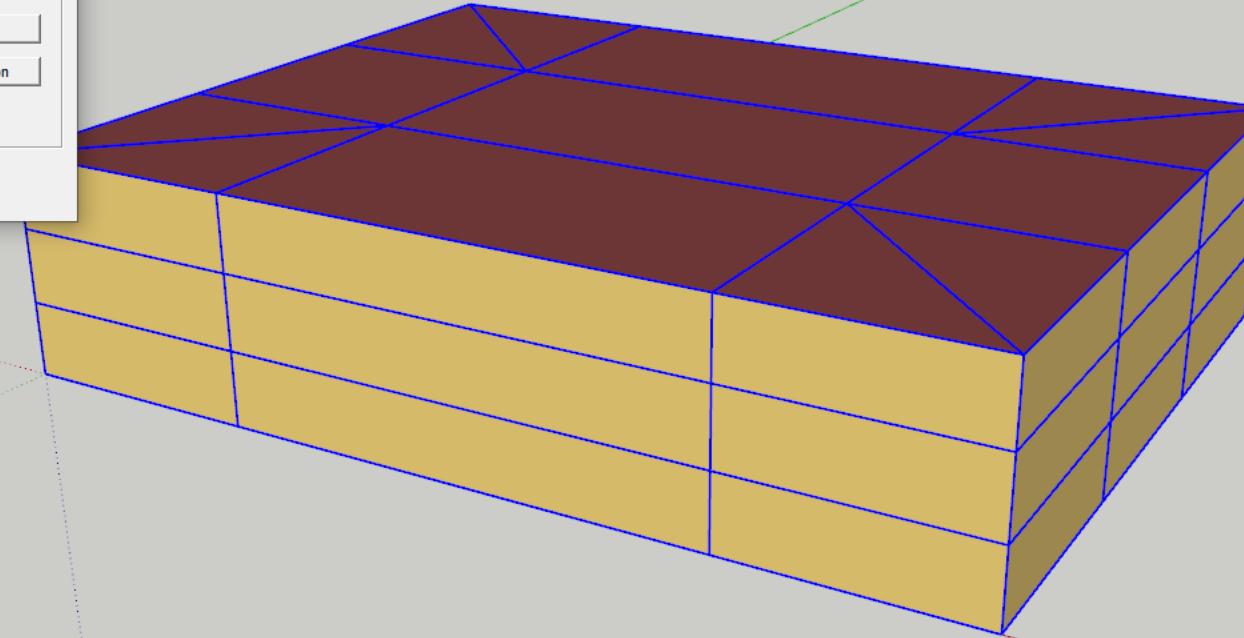
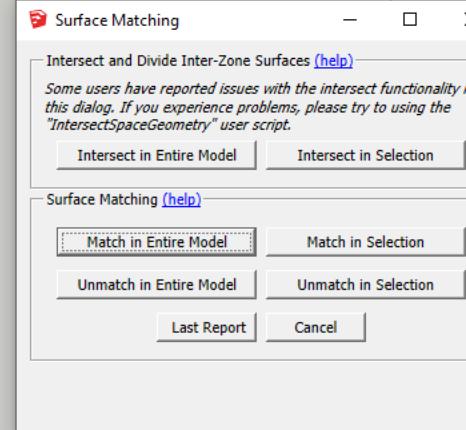
► Materials
► Components
► Styles
► Layers
▼ Shadows

UTC±0
Time 05:43 AM Noon 16:43 PM 13:30
Date J F M A M J J A S O N D 11/08
Light 80
Dark 45
 Use sun for shading

Display:
 On faces
 On ground
 From edges

► Scenes
▼ Instructor





OpenStudio >

OpenStudio User Scripts > **Load User Scripts**

V-Ray >

Alter or Add Model Elements >

- Add New Thermal Zone For Spaces With No Thermal Zone
- Add Overhangs by Projection Factor
- Create Standard Building Shapes
- On Demand Template Generators
- Reports
- Visualization

Building Component Library

Add Photovoltaics

Add Shading Controls

Assign Building Stories

Change Shading Type

Cleanup Origins

Export Selected Spaces to a new External Model

Merge Spaces From External File

Intersect Space Geometry

Make Selected Surfaces Adiabatic and Assign a Construction

Move Selected Surfaces to New Space

Remove Hard Assigned Constructions

Remove Loads Directly Assigned to Spaces

Remove Orphan Photovoltaics

Remove Orphan SubSurfaces

Remove Photovoltaics

Remove Unused ThermalZones

Rename Thermal Zones Based On Space Names

Set Interior Partition Height Above Floor

Set Shading Controls

Set Window Property Frame and Divider

Set Window to Wall Ratio

Palette par défaut

Entity Info

16 Components/Groups

Layer:

Instance:

Type: <undefined>

Materials

Components

Styles

Layers

Shadows

UTC±0

Time: 05:43 AM Noon 16:43 PM 13:30

Date: J F M A M J J A S O N D 11/08

Light: 80

Dark: 45

Use sun for shading

Display:
 On faces
 On ground
 From edges

Scenes

Instructor

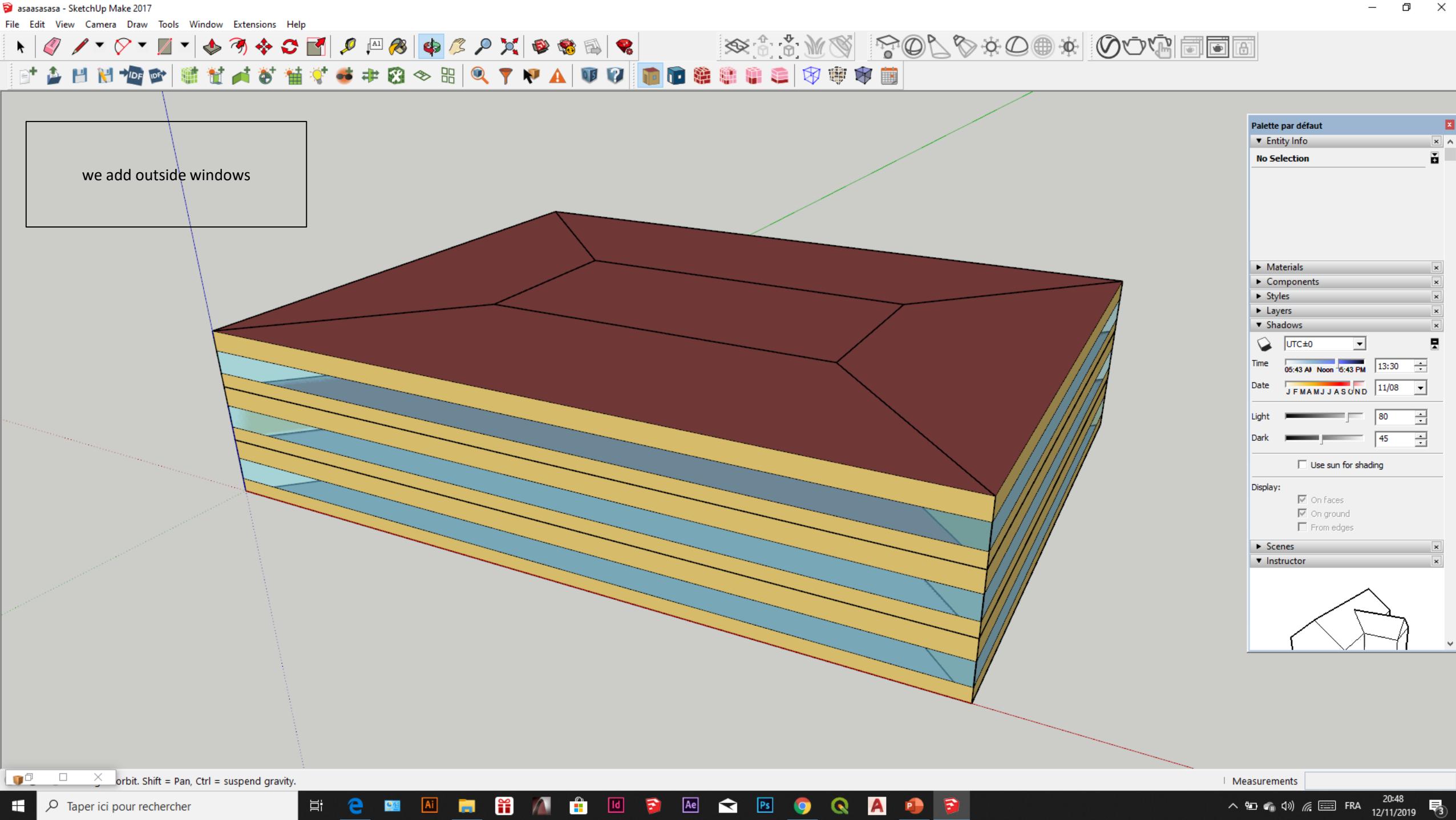
Measurements

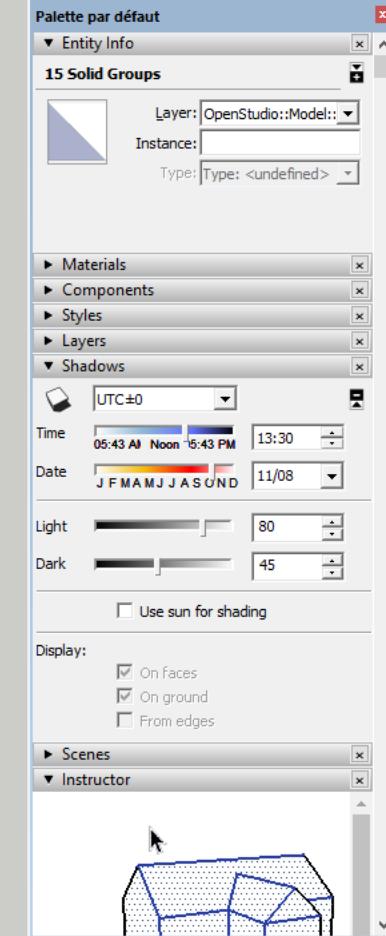
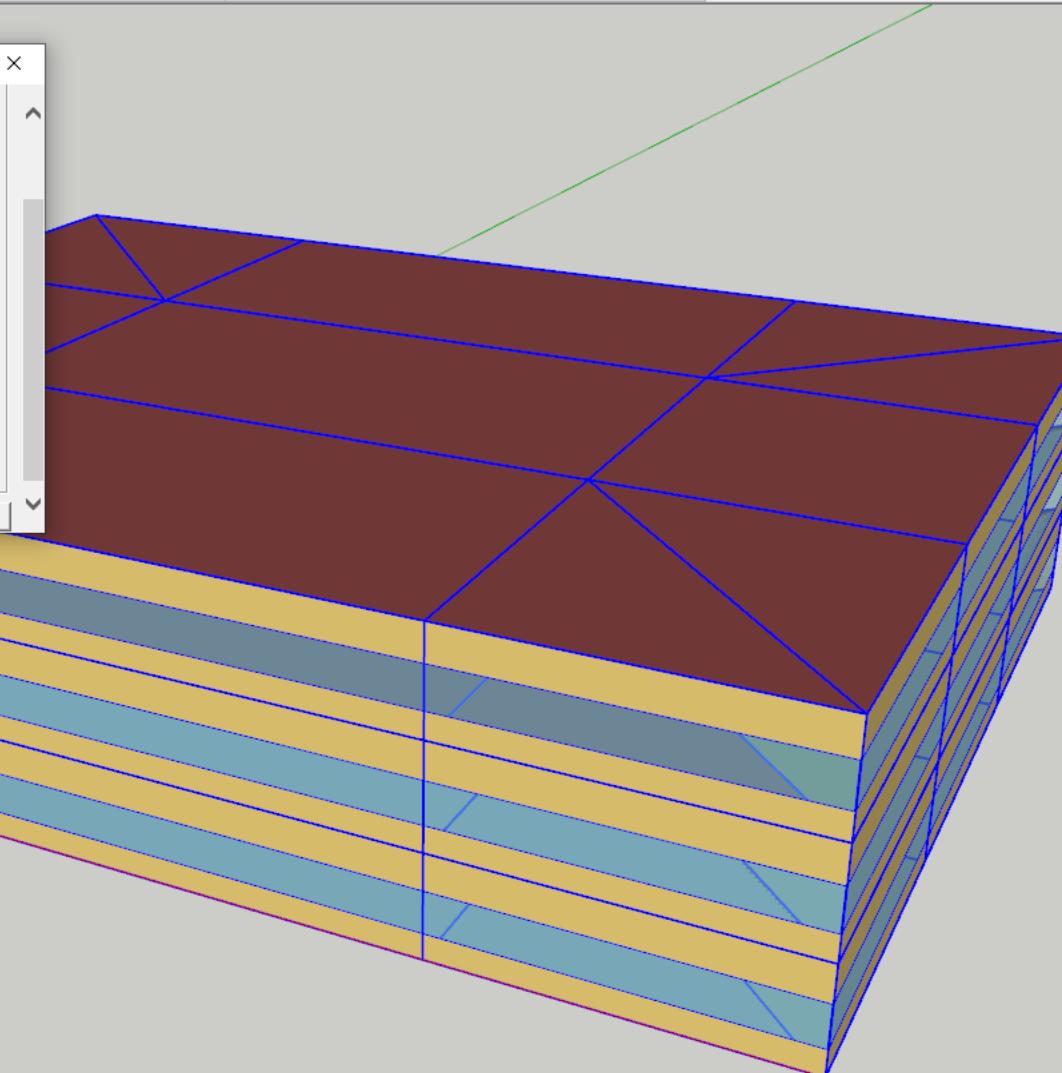
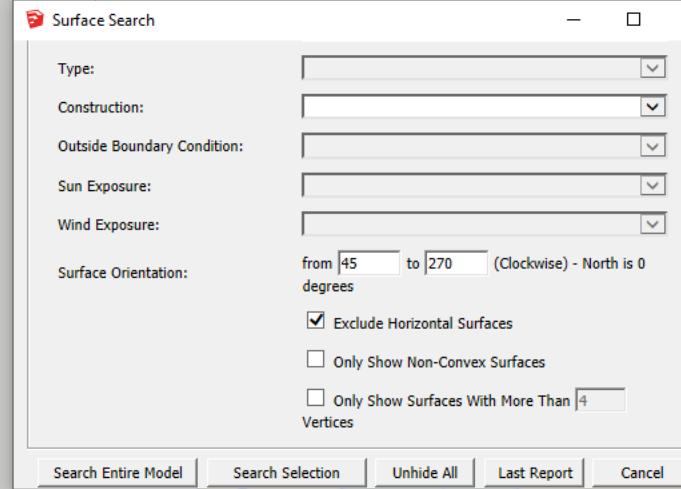
Taper ici pour rechercher

Windows Start button

e Ai Id Ps Q A P F

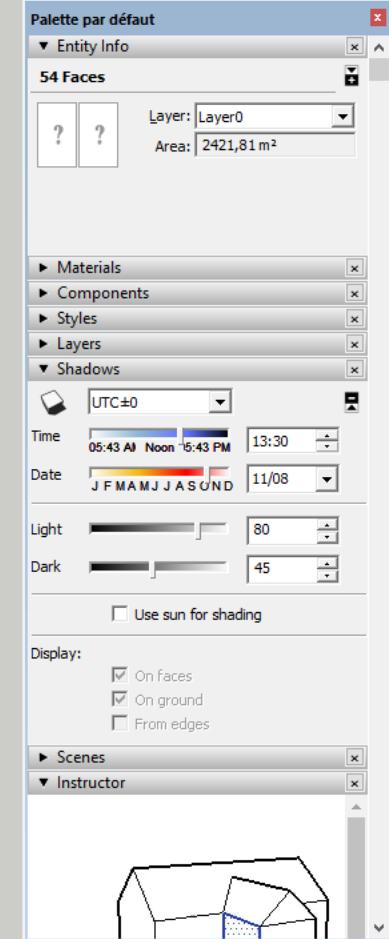
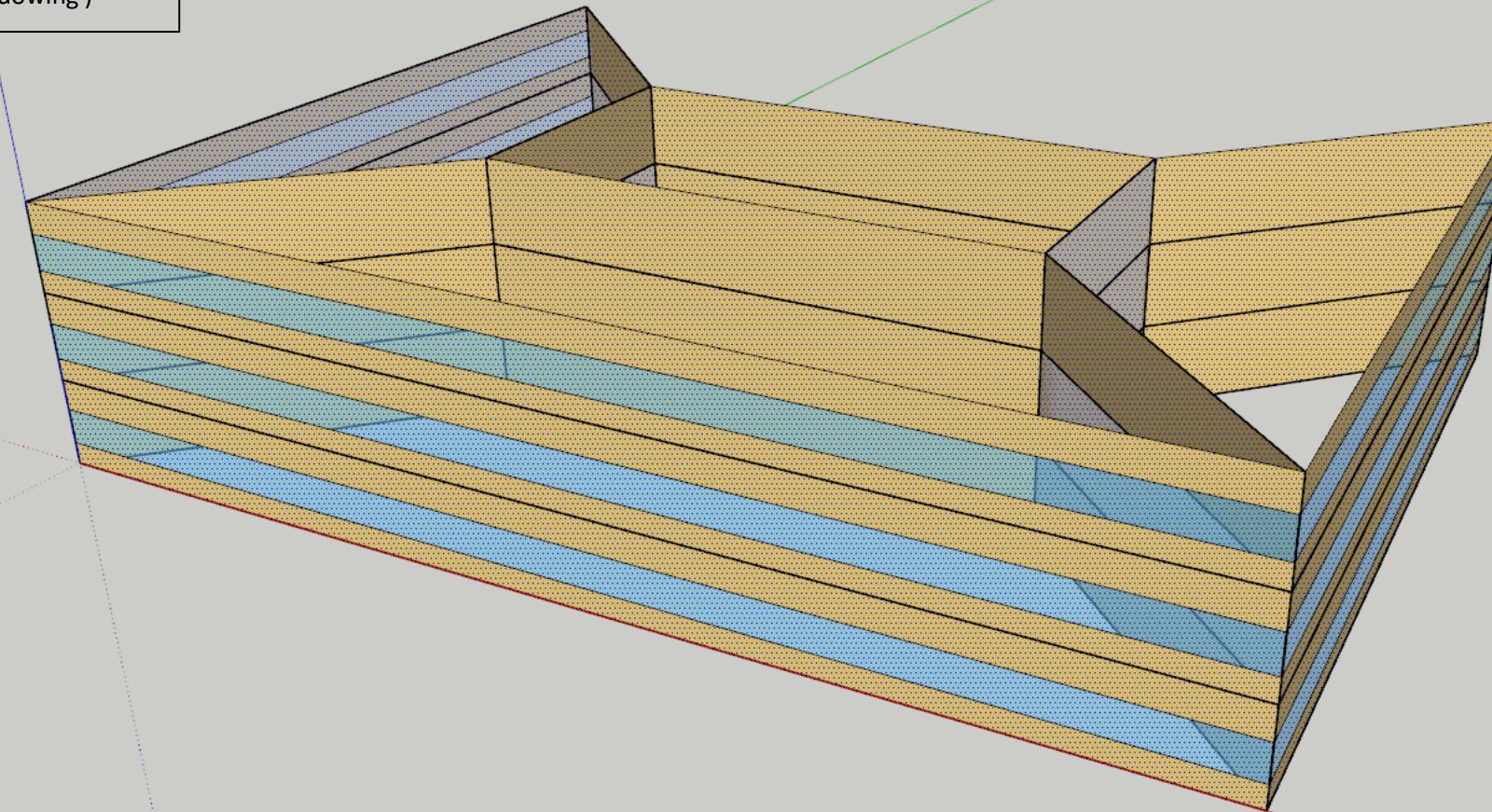
20:46 12/11/2019 FRA







We select all the surfaces except the north one to add overhangs for shadowing (since the north surface doesn't need shadowing)



OpenStudio

OpenStudio User Scripts

V-Ray

Load User Scripts

Alter or Add Model Elements

Building Component Library

Create Standard Building Shapes

On Demand Template Generators

Reports

Visualization

Add New Thermal Zone For Spaces With No Thermal Zone

Add Overhangs by Projection Factor

Add Photovoltaics

Add Shading Controls

Assign Building Stories

Change Shading Type

Cleanup Origins

Export Selected Spaces to a new External Model

Merge Spaces From External File

Intersect Space Geometry

Make Selected Surfaces Adiabatic and Assign a Construction

Move Selected Surfaces to New Space

Remove Hard Assigned Constructions

Remove Loads Directly Assigned to Spaces

Remove Orphan Photovoltaics

Remove Orphan SubSurfaces

Remove Photovoltaics

Remove Unused ThermalZones

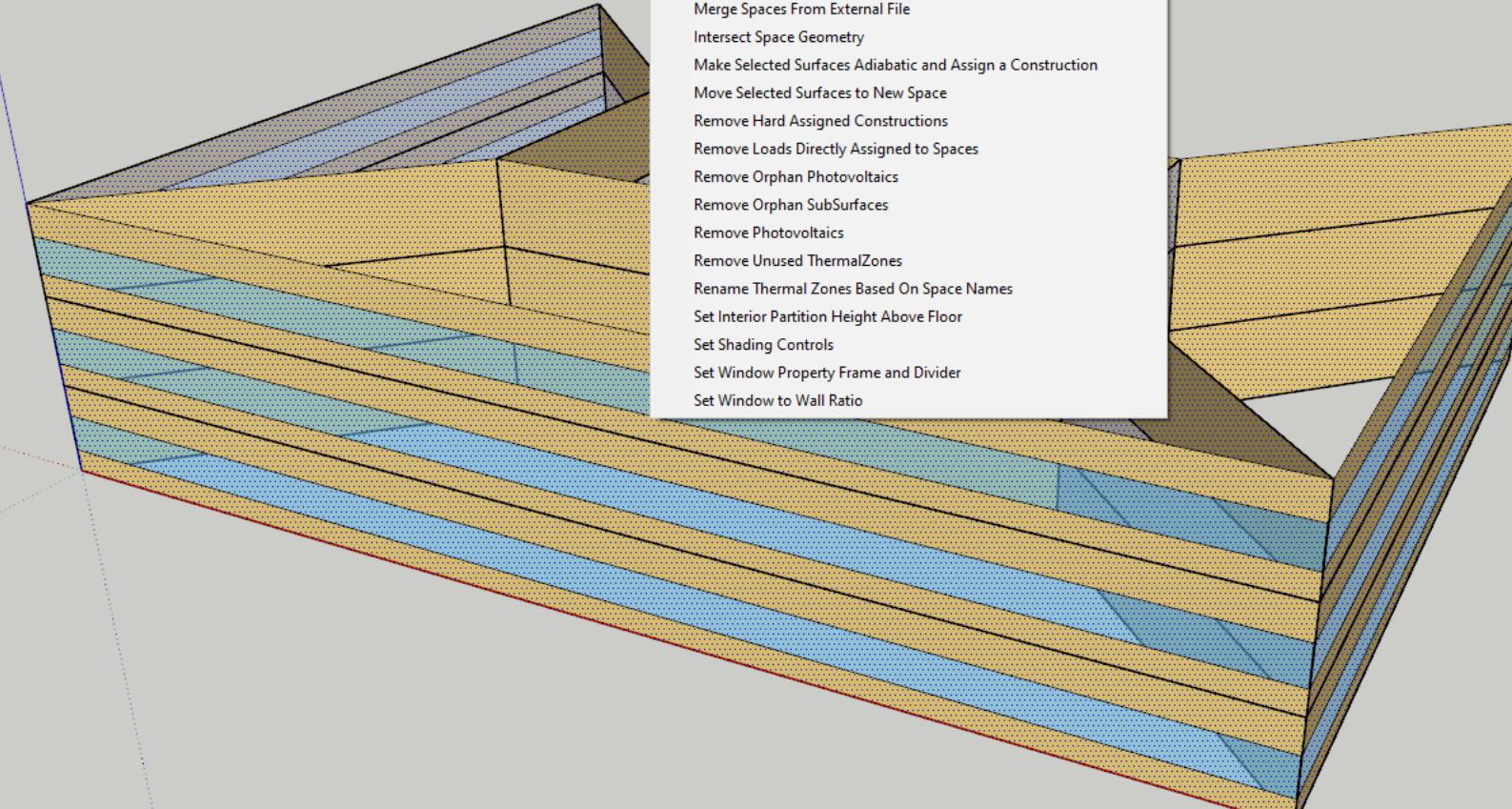
Rename Thermal Zones Based On Space Names

Set Interior Partition Height Above Floor

Set Shading Controls

Set Window Property Frame and Divider

Set Window to Wall Ratio



Palette par défaut

Entity Info
54 Faces
Layer: Layer0 Area: 2421,81 m²

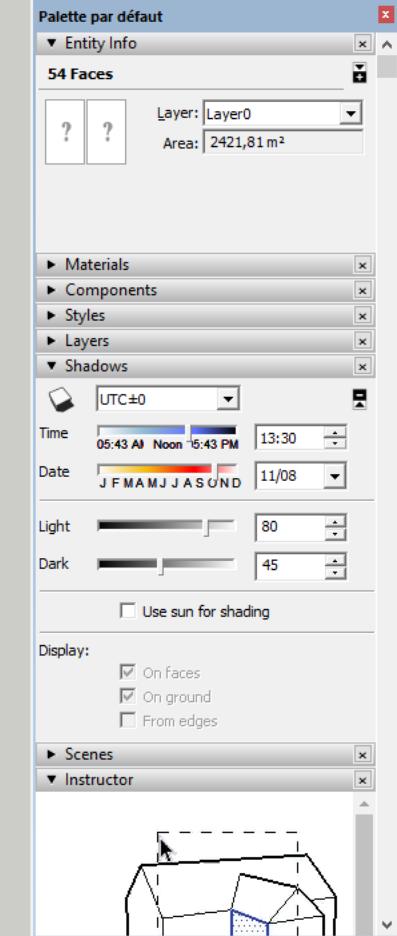
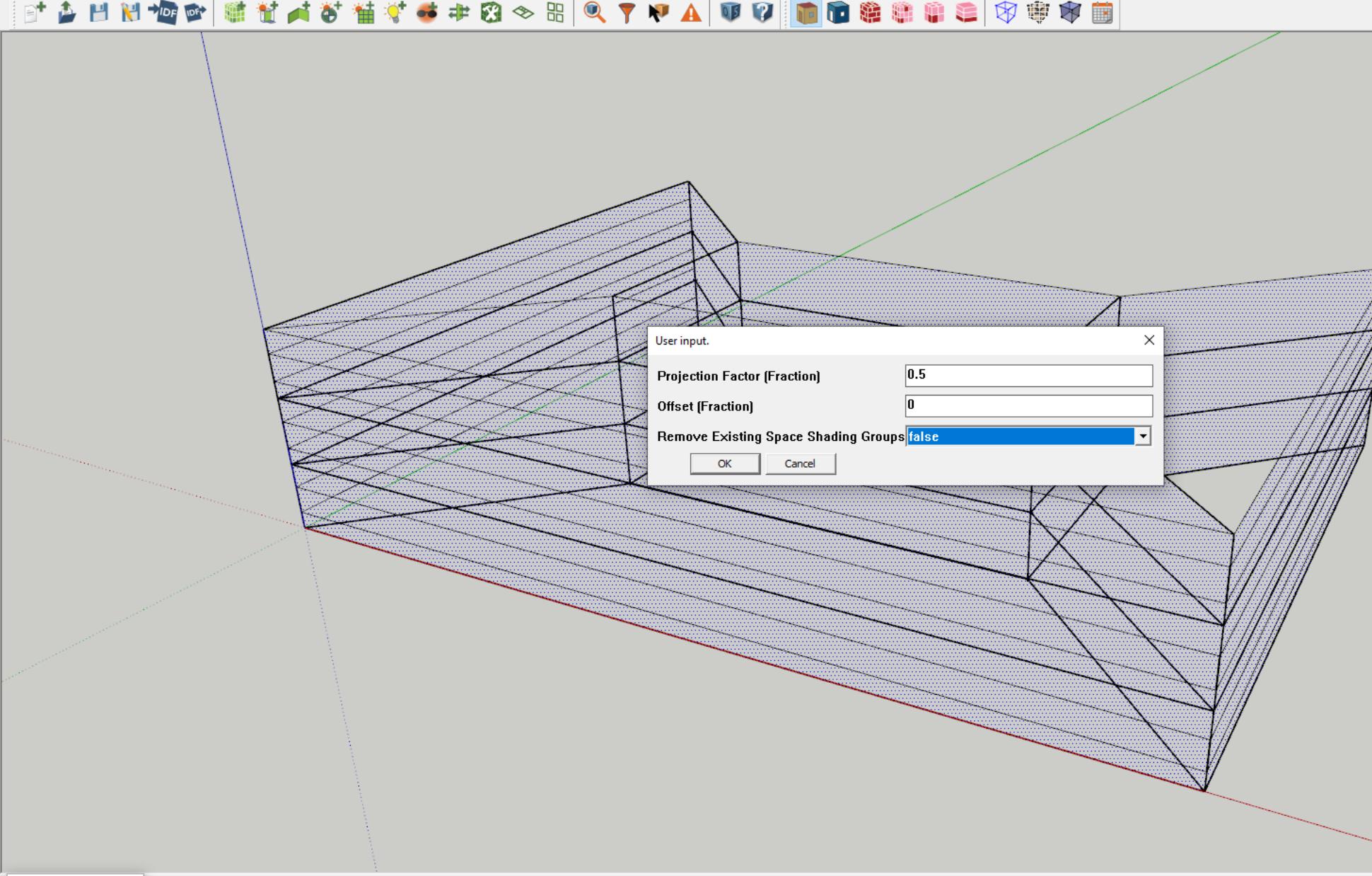
Materials Components Styles Layers Shadows

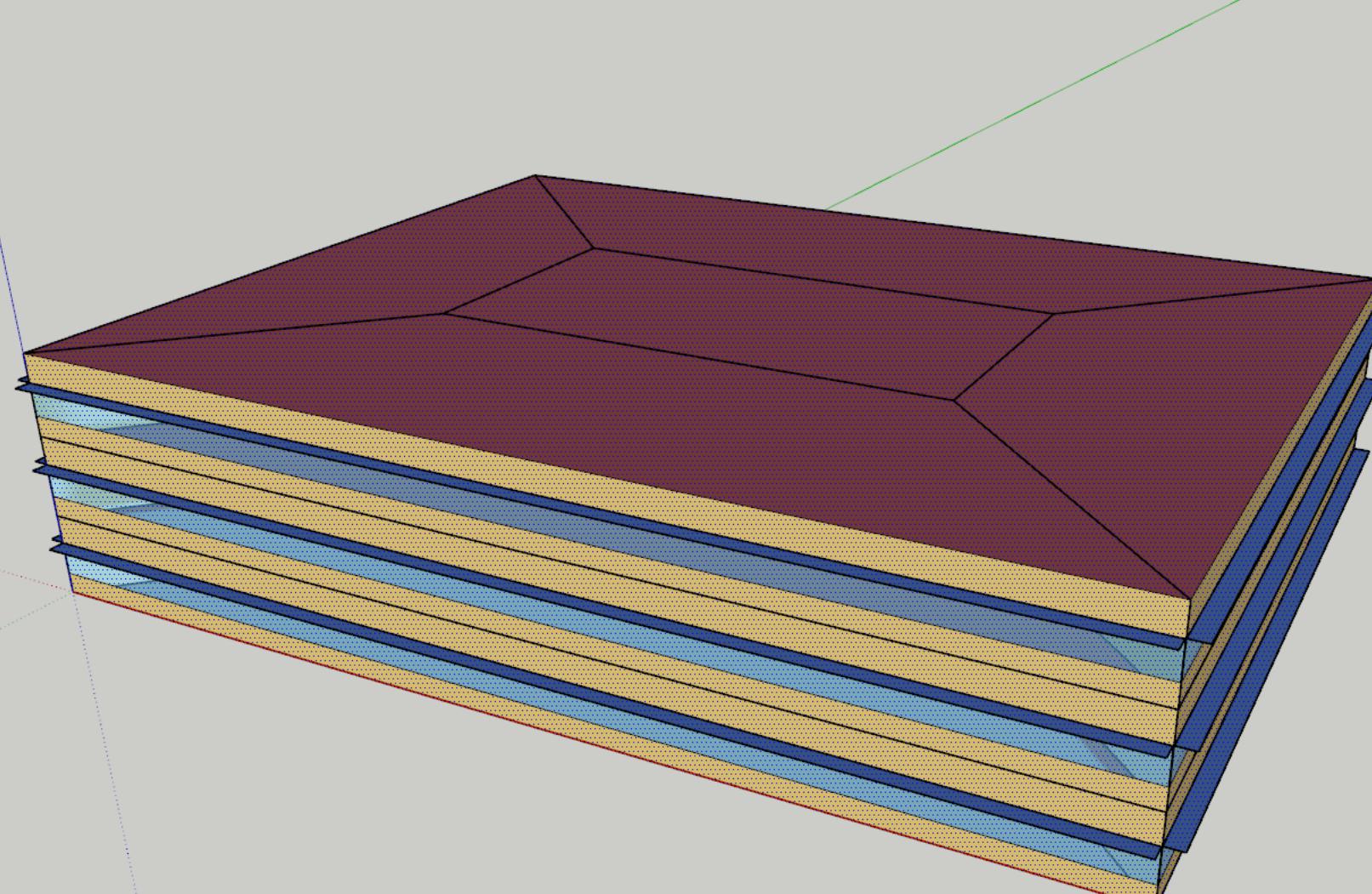
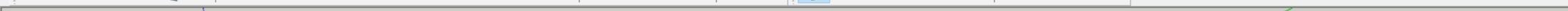
UTC±0
Time: 05:43 AM Noon 16:43 PM 13:30
Date: J F M A M J J A S O N D 11/08

Light: 80 Dark: 45
 Use sun for shading

Display:
 On faces
 On ground
 From edges

Scenes Instructor





Palette par défaut

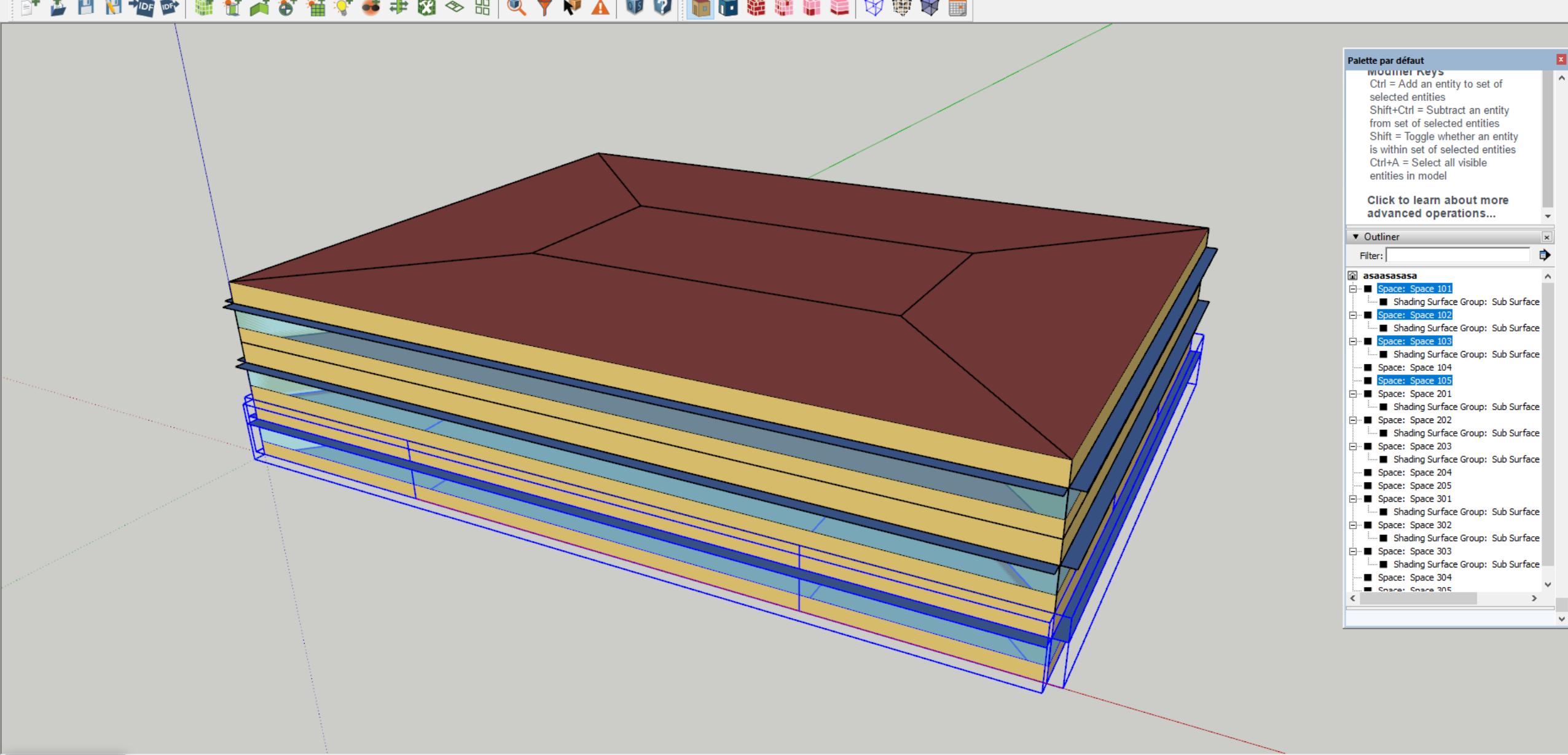
Entity Info
111 Faces
Layer: Layer0 Area: 10794,85 m²

Materials Components Styles Layers Shadows

UTC±0 Time 05:43 AM Noon 16:43 PM 13:30 Date J F M A M J J A S O N D 11/08 Light 80 Dark 45 Use sun for shading

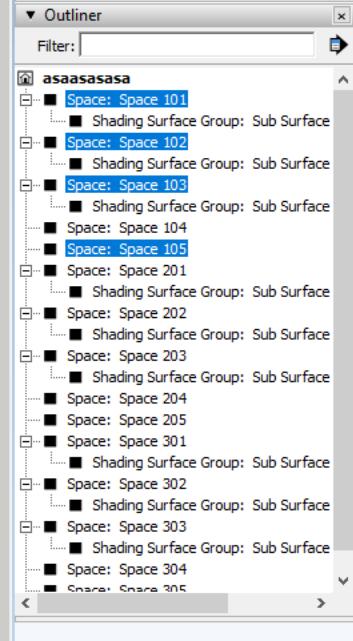
Display: On faces On ground From edges

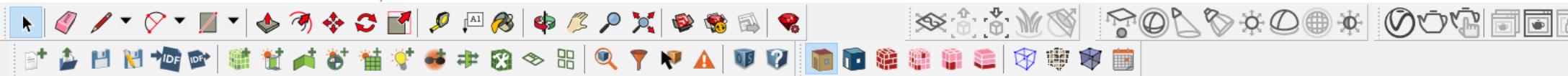
Scenes Instructor



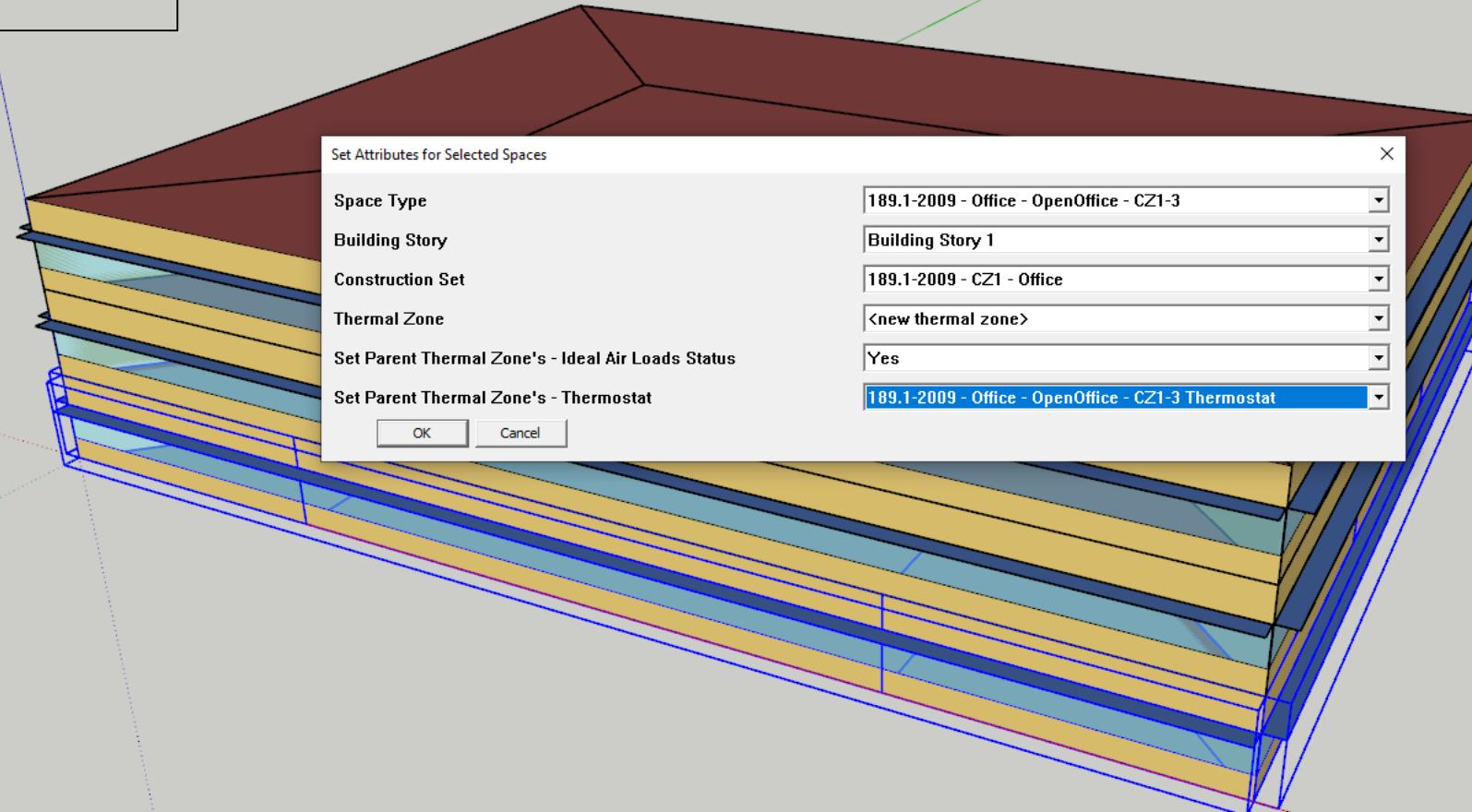
Palette par défaut
MOUDRER Keys
Ctrl = Add an entity to set of selected entities
Shift+Ctrl = Subtract an entity from set of selected entities
Shift = Toggle whether an entity is within set of selected entities
Ctrl+A = Select all visible entities in model

Click to learn about more advanced operations...





We add the thermal specifications for each space in each floor



Palette par défaut
Mouvements Keys
Ctrl = Add an entity to set of selected entities
Shift+Ctrl = Subtract an entity from set of selected entities
Shift = Toggle whether an entity is within set of selected entities
Ctrl+A = Select all visible entities in model

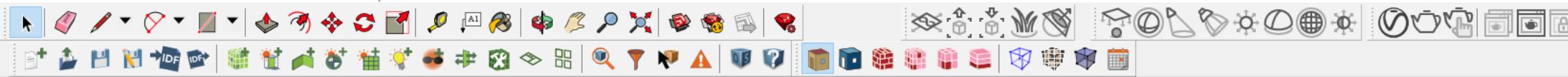
Click to learn about more advanced operations...

▼ Outliner

Filter:

asaasasa

- Space: Space 101
- Space: Space 102
- Space: Space 103
- Space: Space 104
- Space: Space 105
- Space: Space 201
- Space: Space 202
- Space: Space 203
- Space: Space 204
- Space: Space 205
- Space: Space 301
- Space: Space 302
- Space: Space 303
- Space: Space 304
- Space: Space 305



3D view showing a multi-story building model with various rooms and floors. A context menu is open over one of the rooms.

Set Attributes for Selected Spaces

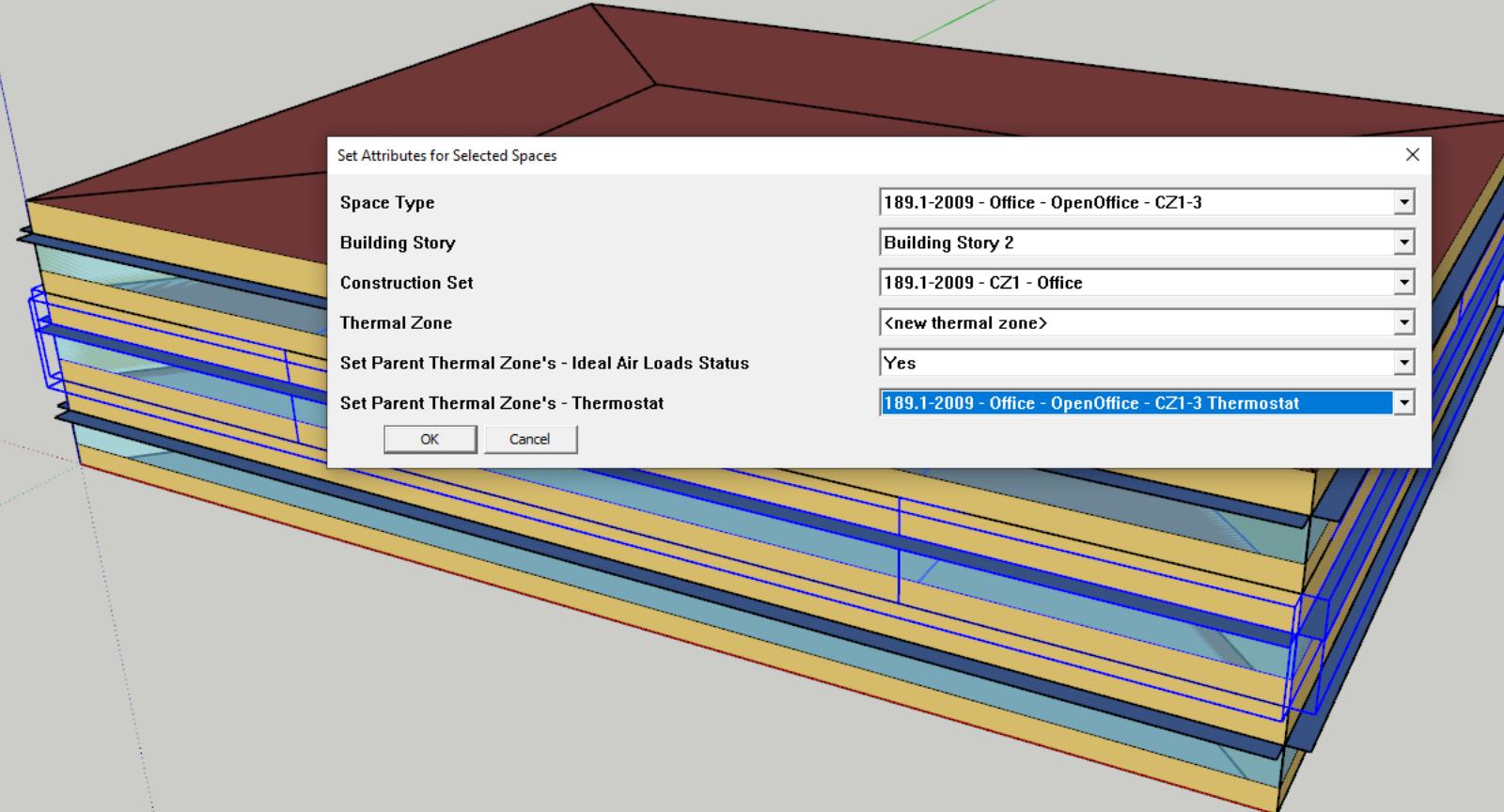
- Space Type: 189.1-2009 - Office - BreakRoom - CZ1-3
- Building Story: Building Story 1
- Construction Set: 189.1-2009 - CZ1 - Office
- Thermal Zone: <new thermal zone>
- Set Parent Thermal Zone's - Ideal Air Loads Status: Yes
- Set Parent Thermal Zone's - Thermostat: 189.1-2009 - Office - OpenOffice - CZ1-3 Thermostat

Buttons: OK, Cancel

Outliner palette:

- Filter: asaasasa
- asaasasa
 - Space: Space 101
 - Space: Space 102
 - Space: Space 103
 - Space: Space 104
 - Space: Space 105
 - Space: Space 201
 - Space: Space 202
 - Space: Space 203
 - Space: Space 204
 - Space: Space 205
 - Space: Space 301
 - Space: Space 302
 - Space: Space 303
 - Space: Space 304
 - Space: Space 305

Bottom status bar: Objects. Shift to extend select. Drag mouse to select multiple.



Set Attributes for Selected Spaces

Space Type

189.1-2009 - Office - OpenOffice - CZ1-3

Building Story

Building Story 2

Construction Set

189.1-2009 - CZ1 - Office

Thermal Zone

<new thermal zone>

Set Parent Thermal Zone's - Ideal Air Loads Status

Yes

Set Parent Thermal Zone's - Thermostat

189.1-2009 - Office - OpenOffice - CZ1-3 Thermostat

OK Cancel

Palette par défaut

Mouvement Keys

Ctrl = Add an entity to set of selected entities
Shift+Ctrl = Subtract an entity from set of selected entities
Shift = Toggle whether an entity is within set of selected entities
Ctrl+A = Select all visible entities in model

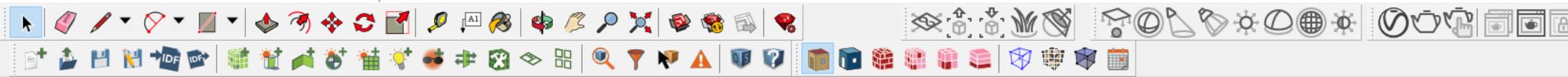
Click to learn about more advanced operations...

▼ Outliner

Filter:

asaasasa

- Space: Space 101
- Space: Space 102
- Space: Space 103
- Space: Space 104
- Space: Space 105
- Space: Space 201
- Space: Space 202
- Space: Space 203
- Space: Space 204
- Space: Space 205
- Space: Space 301
- Space: Space 302
- Space: Space 303
- Space: Space 304
- Space: Space 305



3D view showing a multi-story building model with colored floors (blue, yellow, red) and a green roof. A callout box highlights a specific area of the roof.

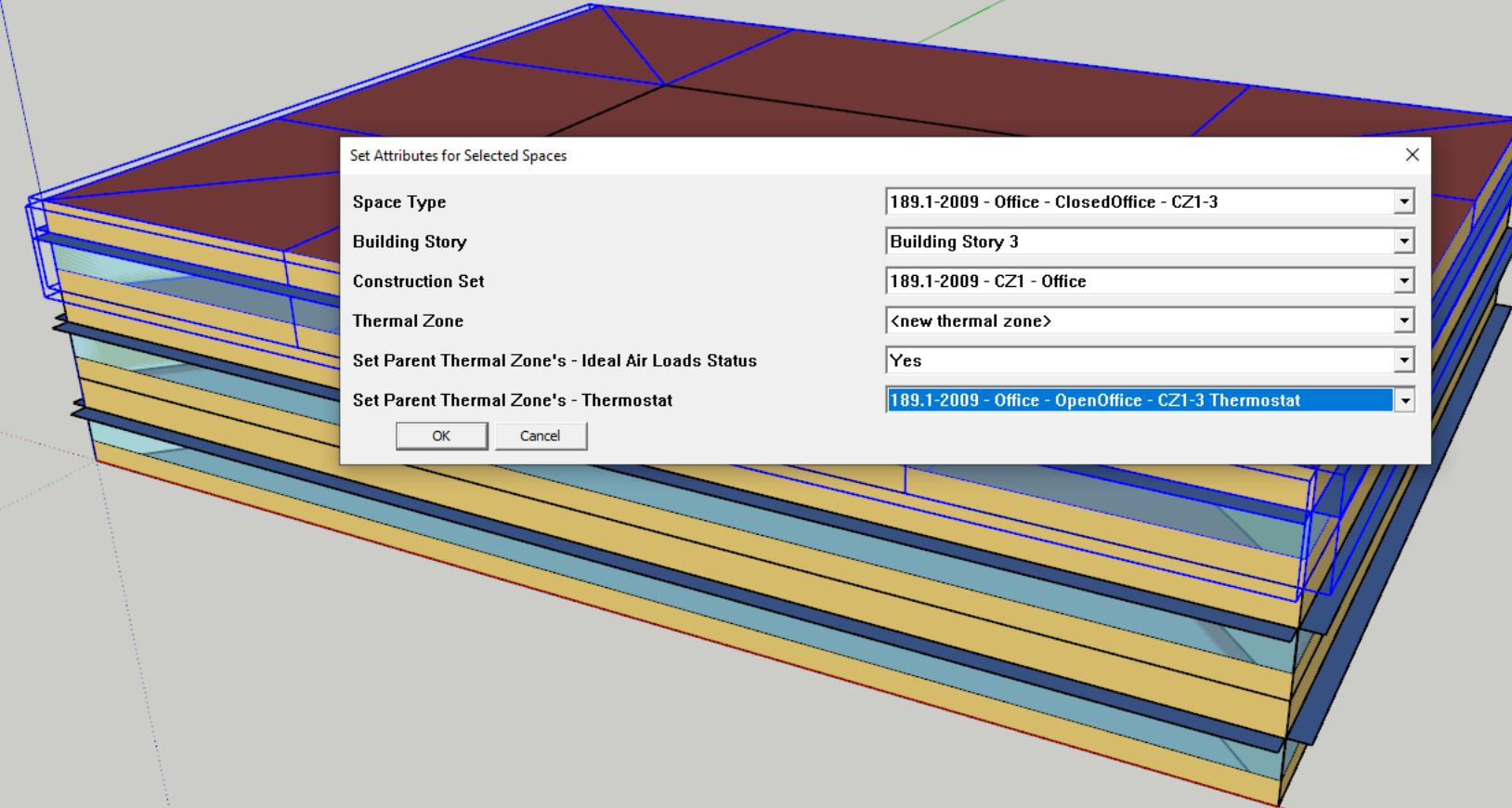
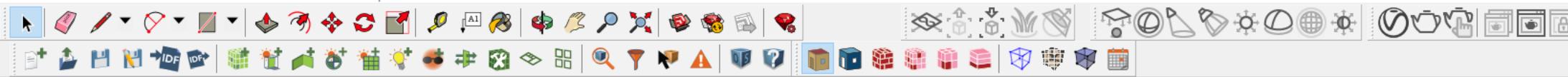
Set Attributes for Selected Spaces dialog box:

- Space Type: 189.1-2009 - Office - ClosedOffice - CZ1-3
- Building Story: Building Story 2
- Construction Set: 189.1-2009 - CZ1 - Office
- Thermal Zone: <new thermal zone>
- Set Parent Thermal Zone's - Ideal Air Loads Status: Yes
- Set Parent Thermal Zone's - Thermostat: 189.1-2009 - Office - OpenOffice - CZ1-3 Thermostat

Buttons: OK, Cancel

Outliner palette (right side):

- Filter: asaasasa
- Space: Space 101
- Space: Space 102
- Space: Space 103
- Space: Space 104
- Space: Space 105
- Space: Space 201
- Space: Space 202
- Space: Space 203
- Space: Space 204
- Space: Space 205
- Space: Space 301
- Space: Space 302
- Space: Space 303
- Space: Space 304
- Space: Space 305



Palette par défaut

Mouvements Keys

- Ctrl = Add an entity to set of selected entities
- Shift+Ctrl = Subtract an entity from set of selected entities
- Shift = Toggle whether an entity is within set of selected entities
- Ctrl+A = Select all visible entities in model

Click to learn about more advanced operations...

Outliner

Filter:

asaasasa

- Space: Space 101
- Space: Space 102
- Space: Space 103
- Space: Space 104
- Space: Space 105
- Space: Space 201
- Space: Space 202
- Space: Space 203
- Space: Space 204
- Space: Space 205
- Space: Space 301
- Space: Space 302
- Space: Space 303
- Space: Space 304
- Space: Space 305



3D view showing a multi-story building model with colored layers (blue, yellow, red) and a green roof. A blue line highlights a specific edge or feature on the left side of the building.

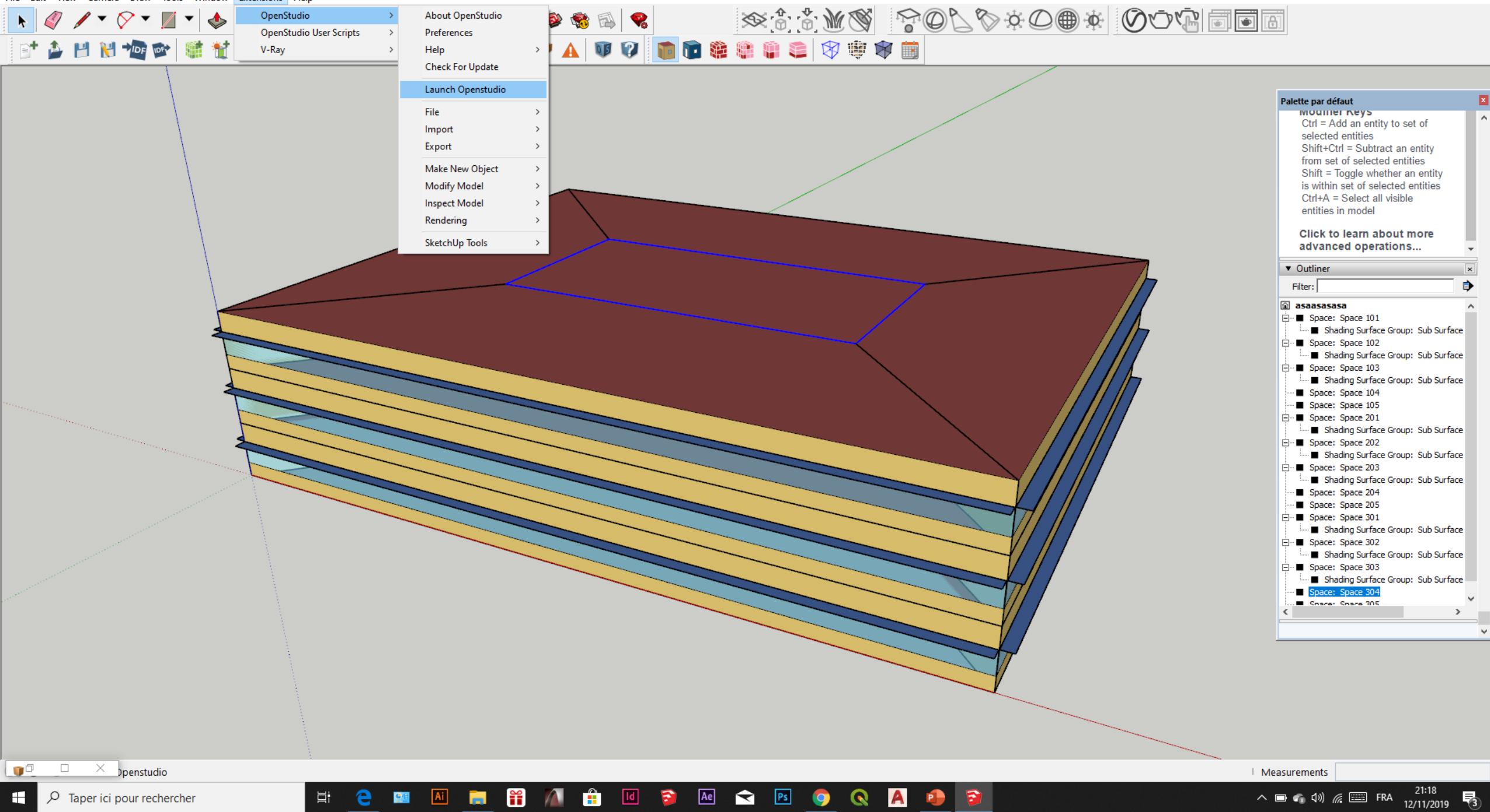
A dialog box titled "Set Attributes for Selected Spaces" is open, displaying the following settings:

- Space Type: 189.1-2009 - Office - ClosedOffice - CZ1-3
- Building Story: Building Story 3
- Construction Set: 189.1-2009 - CZ1 - Office
- Thermal Zone: <new thermal zone>
- Set Parent Thermal Zone's - Ideal Air Loads Status: Yes
- Set Parent Thermal Zone's - Thermostat: 189.1-2009 - Office - OpenOffice - CZ1-3 Thermostat

Buttons at the bottom of the dialog box: OK and Cancel.

Right-hand panels:

- Palette par défaut**: A list of keyboard shortcuts for common operations like adding entities, subtracting entities, and selecting entities.
- Click to learn about more advanced operations...**: A link to additional documentation.
- Outliner**: A tree view of the model components, showing nested spaces and shading surface groups.



Site Weather File & Design Days Life Cycle Costs Utility Bills My Model Library Edit

Weather File Set Weather File

Name:

Latitude:

Longitude:

Elevation:

Time Zone:

Download weather files at www.energypplus.net/weather

Measure Tags (Optional):

ASHRAE Climate Zone

CEC Climate Zone

Select Year by:

Calendar Year

First Day of Year

Daylight Savings Time: off

Starts

Define by Day of The Week And Month

Define by Date

Ends

Define by Day of The Week And Month

Define by Date

Design Days Import From DDY

Design Days

Date Temperature Humidity Pressure Wind Precipitation Solar Custom

Design Day Name	All	Day Of Month	Month	Day Type	Daylight Saving Time Indicator
	<input type="checkbox"/>	<input type="button" value="Apply to Selected"/>			

We consider that the building is located in Piacenza, and we add the weather properties for that city



Weather File Set Weather File

Name:
Latitude:
Longitude:
Elevation:
Time Zone:
Download weather files at www.energypplus.net/weather

Measure Tags (Optional):

ASHRAE Climate Zone

CEC Climate Zone

Design Days Import From DDY

Design Days

Date Temperature Humidity Pressure Wind
Precipitation Solar

Design Day Name All Day Of Month

Apply to Selected

Select Year by:

Open Weather File

Rechercher dans : Télécharge...

Organiser Nouveau dossier

Nom	Modifié le	Type	Taille
ITA_Piacenza.160840_IGDG.epw	06/11/2019 13:16	Fichier EPW	1 721 Ko

Semaine dernière (1)

Le mois dernier (4)

	Modifié le	Type
_MACOSX	07/10/2019 23:20	Dossier de fichiers
ambiance	07/10/2019 23:20	Dossier de fichiers
FireShot	07/10/2019 23:20	Dossier de fichiers
Hero	07/10/2019 23:20	Dossier de fichiers

OneDrive Ce PC A360 Drive Bureau Documents Galaxy S9+ Images Musique Objets 3D Téléchargement Vidéos OS (C:) Disque local (D:) Réseau

Nom du fichier: ITA_Piacenza.160840_IGDG.epw EPW Files (*.epw) Ouvrir Annuler

Day Saving Time Indicator Apply to Selected





Weather File Change Weather File

Name: Piacenza

Latitude: 44.92

Longitude: 9.73

Elevation: 134

Time Zone: 1

Download weather files at www.energypplus.net/weather

Measure Tags (Optional):

ASHRAE Climate Zone

CEC Climate Zone

Design Days Import From DDY

Design Days

Date	Temperature	Humidity	Pressure Wind Precipitation	Solar
------	-------------	----------	-----------------------------------	-------

Design Day Name All Day Of Month

Apply to Selected

Apply to Selected

Apply to Selected

Apply to Selected

Select Year by:

Open DDY File

Rechercher dans : Télécharge...

Organiser Nouveau dossier

Nom	Modifié le	Type	Taille
ITA_Piacenza.160840_IGDG	06/11/2019 13:13	EnergyPlus Locati...	29 Ko
MACOSX	07/10/2019 23:20	Dossier de fichiers	
ambiance	07/10/2019 23:20	Dossier de fichiers	
FireShot	07/10/2019 23:20	Dossier de fichiers	
Hero	07/10/2019 23:20	Dossier de fichiers	

Nom du fichier: ITA_Piacenza.160840_IGDG

Files (*.ddy)

Ouvrir Annuler

Night Saving Time Indicator

Apply to Selected



Weather File Change Weather File

Name: Piacenza

Latitude: 44.92
Longitude: 9.73
Elevation: 134
Time Zone: 1
Download weather files at www.energypplus.net/weather

Measure Tags (Optional):

ASHRAE Climate Zone: [dropdown]

CEC Climate Zone: [dropdown]

Select Year by:

Calendar Year 2000
 First Day of Year Sunday

Daylight Savings Time: off

Starts

Define by Day of The Week And Month First Sunday January
 Define by Date 01/04/2009

Ends

Define by Day of The Week And Month First Sunday January
 Define by Date 01/10/2009

Design Days Import From DDY

Design Days

Date Temperature Humidity Pressure Wind Precipitation Solar Custom

Design Day Name	All	Day Of Month	Month	Day Type	Daylight Saving Time Indicator
Piacenza Ann Clg .4% Condns DB=>MWB	<input type="checkbox"/>	21	8	SummerDesignDay	<input type="checkbox"/>
Piacenza Ann Clg .4% Condns DP=>MDB	<input type="checkbox"/>	21	8	SummerDesignDay	<input type="checkbox"/>
Piacenza Ann Clg .4% Condns Enth=>MDB	<input type="checkbox"/>	21	8	SummerDesignDay	<input type="checkbox"/>
Piacenza Ann Clg .4% Condns WB=>MDB	<input type="checkbox"/>	21	8	SummerDesignDay	<input type="checkbox"/>
Piacenza Ann Htg 99.6% Condns DB	<input type="checkbox"/>	21	1	WinterDesignDay	<input type="checkbox"/>
Piacenza Ann Htg Wind 99.6% Condns WS=>MCDB	<input type="checkbox"/>	21	1	WinterDesignDay	<input type="checkbox"/>
Piacenza Ann Hum_n 99.6% Condns DP=>MCDB	<input type="checkbox"/>	21	1	WinterDesignDay	<input type="checkbox"/>

Bottom Bar: + X2 X3

General **Airflow** **Custom**

Filters: Story Thermal Zone Space Type

Space Name	All	Story	Thermal Zone	Space Type	Default Construction Set	Default Schedule Set	Part of Total Floor Area
Space 101	<input type="checkbox"/>	Building Story 1	Thermal Zone 1	189.1-2009 - Office - OpenO	189.1-2009 - CZ1 - Office	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Space 102	<input type="checkbox"/>	Building Story 1	Thermal Zone 1	189.1-2009 - Office - OpenO	189.1-2009 - CZ1 - Office	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Space 103	<input type="checkbox"/>	Building Story 1	Thermal Zone 1	189.1-2009 - Office - OpenO	189.1-2009 - CZ1 - Office	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Space 104	<input type="checkbox"/>	Building Story 1	Thermal Zone 2	189.1-2009 - Office - BreakR	189.1-2009 - CZ1 - Office	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Space 105	<input type="checkbox"/>	Building Story 1	Thermal Zone 1	189.1-2009 - Office - OpenO	189.1-2009 - CZ1 - Office	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Space 201	<input type="checkbox"/>	Building Story 2	Thermal Zone 3	189.1-2009 - Office - OpenO	189.1-2009 - CZ1 - Office	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Space 202	<input type="checkbox"/>	Building Story 2	Thermal Zone 3	189.1-2009 - Office - OpenO	189.1-2009 - CZ1 - Office	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Space 203	<input type="checkbox"/>	Building Story 2	Thermal Zone 3	189.1-2009 - Office - OpenO	189.1-2009 - CZ1 - Office	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Space 204	<input type="checkbox"/>	Building Story 2	Thermal Zone 4	189.1-2009 - Office - ClosedC	189.1-2009 - CZ1 - Office	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Space 205	<input type="checkbox"/>	Building Story 2	Thermal Zone 3	189.1-2009 - Office - OpenO	189.1-2009 - CZ1 - Office	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Space 301	<input type="checkbox"/>	Building Story 3	Thermal Zone 5	189.1-2009 - Office - ClosedC	189.1-2009 - CZ1 - Office	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Space 302	<input type="checkbox"/>	Building Story 3	Thermal Zone 5	189.1-2009 - Office - ClosedC	189.1-2009 - CZ1 - Office	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Space 303	<input type="checkbox"/>	Building Story 3	Thermal Zone 5	189.1-2009 - Office - ClosedC	189.1-2009 - CZ1 - Office	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Space 304	<input type="checkbox"/>	Building Story 3	Thermal Zone 6	189.1-2009 - Office - ClosedC	189.1-2009 - CZ1 - Office	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Space 305	<input type="checkbox"/>	Building Story 3	Thermal Zone 5	189.1-2009 - Office - ClosedC	189.1-2009 - CZ1 - Office	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Space Types

Construction Sets

Schedule Sets

Design Specification Outdoor Air

Space Infiltration Effective Leakage Areas

Space Infiltration Design Flow Rates

People Definitions

Lights Definitions

Luminaire Definitions

Electric Equipment Definitions

Gas Equipment Definitions

Water Heater - Heat Pump - Wrapped Condenser

Water Heater - Heat Pump

Water Use Equipment Definitions

Hot Water Equipment Definitions

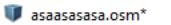
Steam Equipment Definitions

Other Equipment Definitions

Internal Mass Definitions

Ruleset Schedules





asaasasa.osm*

[File](#) [Preferences](#) [Components & Measures](#) [Help](#)

Run Simulation

Run



Run

Show Simulation



Taper ici pour rechercher

21:23
12/11/2019 FRA 3

Run Simulation



66%

Show Simulation

warming up

Performing Zone Sizing Simulation

...for Sizing Period: #2 PIACENZA ANN CLG .4% CONDNS DP=>MDB

Warming up

Performing Zone Sizing Simulation

...for Sizing Period: #3 PIACENZA ANN CLG .4% CONDNS ENTH=>MDB

Warming up

Warming up

Warming up

Warming up

Warming up

Warming up

Performing Zone Sizing Simulation

...for Sizing Period: #4 PIACENZA ANN CLG .4% CONDNS WB=>MDB

Warming up

Warming up

Warming up

Warming up

Warming up

Warming up

Performing Zone Sizing Simulation

...for Sizing Period: #5 PIACENZA ANN HTG 99.6% CONDNS DB

Warming up

Warming up

Warming up

Warming up

Warming up

Warming up

Performing Zone Sizing Simulation

...for Sizing Period: #6 PIACENZA ANN HTG WIND 99.6% CONDNS WS=>MCDB

Warming up

Warming up

Warming up

Warming up

Warming up

Warming up

Performing Zone Sizing Simulation

...for Sizing Period: #7 PIACENZA ANN HUM_N 99.6% CONDNS DP=>MCDB

Adjusting Air System Sizing

Adjusting Standard 62.1 Ventilation Sizing

Initializing Simulation

Reporting Surfaces

The software processes the results

Run Simulation



100%

Show Simulation

Starting Simulation at 01/01/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=01/21/2006
Continuing Simulation at 01/21/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=02/10/2006
Continuing Simulation at 02/10/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=03/02/2006
Continuing Simulation at 03/02/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=03/22/2006
Continuing Simulation at 03/22/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=04/11/2006
Continuing Simulation at 04/11/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=05/01/2006
Continuing Simulation at 05/01/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=05/21/2006
Continuing Simulation at 05/21/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=06/10/2006
Continuing Simulation at 06/10/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=06/30/2006
Continuing Simulation at 06/30/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=07/20/2006
Continuing Simulation at 07/20/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=08/09/2006
Continuing Simulation at 08/09/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=08/29/2006
Continuing Simulation at 08/29/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=09/18/2006
Continuing Simulation at 09/18/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=10/08/2006
Continuing Simulation at 10/08/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=10/28/2006
Continuing Simulation at 10/28/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=11/17/2006
Continuing Simulation at 11/17/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=12/07/2006
Continuing Simulation at 12/07/2006 for RUN PERIOD 1
Updating Shadowing Calculations, Start Date=12/27/2006
Continuing Simulation at 12/27/2006 for RUN PERIOD 1
Writing tabular output file results using HTML format.
Computing Life Cycle Costs and Reporting
Writing final SQL reports

EnergyPlus Run Time=00hr 00min 15.28sec
EnergyPlus Completed Successfully.

Processing Reporting Measures.

Gathering Reports.

Completed.

Results Summary

Reports: EnergyPlus Results

Refresh

Open DView for
Detailed Reports

Program Version: EnergyPlus, Version 9.2.0-921312fa1d, YMD=2019.11.12 21:23

[Table of Contents](#)Tabular Output Report in Format: **HTML**Building: **Building 1**

Environment: RUN PERIOD 1 ** Piacenza - ITA IGDG WMO#=160840

Simulation Timestamp: 2019-11-12 21:23:33

Report: Annual Building Utility Performance Summary

[Table of Contents](#)For: **Entire Facility**

Timestamp: 2019-11-12 21:23:33

Values gathered over 8760.00 hours

Results !!!

Site and Source Energy

	Total Energy [GJ]	Energy Per Total Building Area [MJ/m ²]	Energy Per Conditioned Building Area [MJ/m ²]
Total Site Energy	1832.56	509.04	509.04
Net Site Energy	1832.56	509.04	509.04
Total Source Energy	5013.65	1392.68	1392.68
Net Source Energy	5013.65	1392.68	1392.68

Site to Source Energy Conversion Factors

	Site=>Source Conversion Factor
Electricity	3.167
Natural Gas	1.084
District Cooling	1.056
District Heating	3.613
Steam	0.300
Gasoline	1.050
Diesel	1.050
Coal	1.050



Taper ici pour rechercher



21:26

FRA

12/11/2019

3