Week 7

Task 1

Provide a summary of the main concepts that went through about solar radiation (formulas are not needed)

Solar radiation overview

The continuous emission of energy from the sun in the form of electromagnetic waves is called solar radiation. It refers to the electromagnetic waves and particle flows emitted by the sun into space. The energy transmitted by solar radiation is called solar radiant energy. Solar radiation is a type of short-wave radiation.

Distribution of solar radiation

The distribution of solar radiation at the upper boundary of the atmosphere is determined by the astronomical position of the Earth, which is called astronomical radiation.

Solar radiation intensity

Solar radiation intensity refers to the intensity of solar radiation reaching the ground. The absorption, reflection, and scattering of the sun's radiation by the atmosphere greatly weaken the solar radiation reaching the ground.

The solar radiation density

The maximum yearly average solar radiation density is the solar constant, which is the solar irradiance, its value is 1367 W/m2.

Air mass

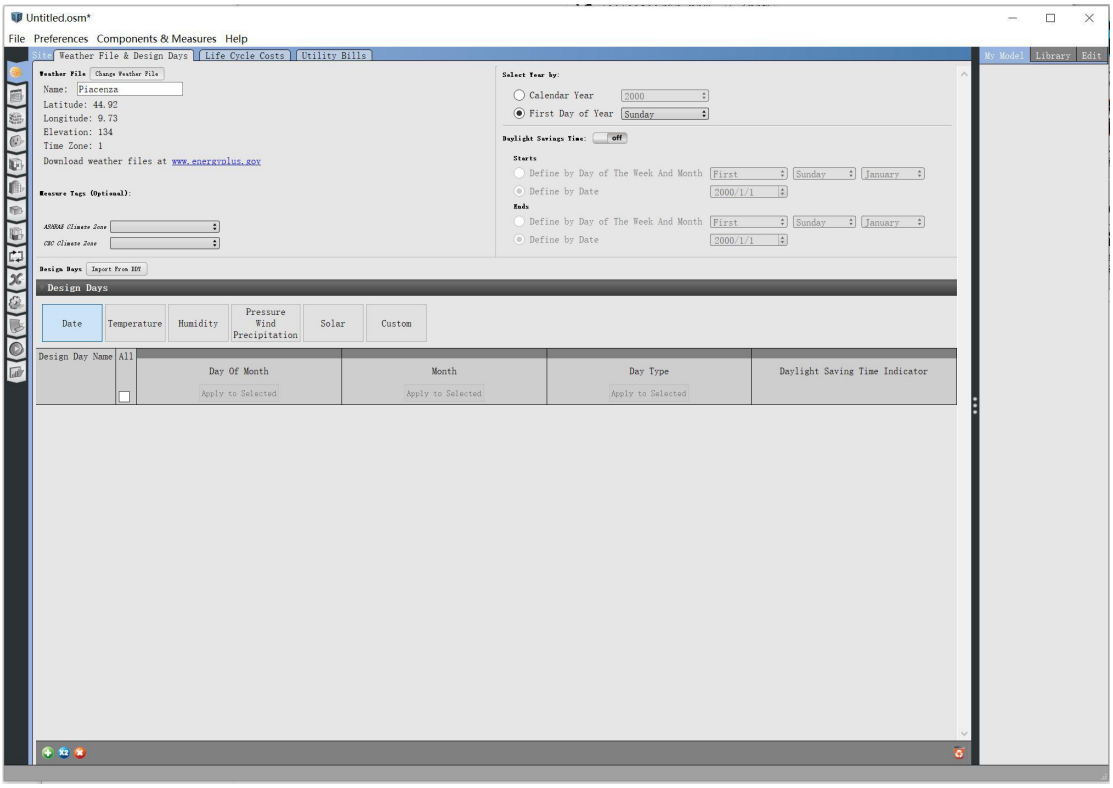
The sun to the zenith crosses the minimum thickness of the atmosphere, the sun with an elevated zenith angle crosses a large thickness of the atmosphere.

Solar radiation intensity refers to the intensity of solar radiation reaching the ground. The main factors affecting the strength of solar radiation are:1. Latitude position 2. weather 3. Altitude 4. Length of sunshine

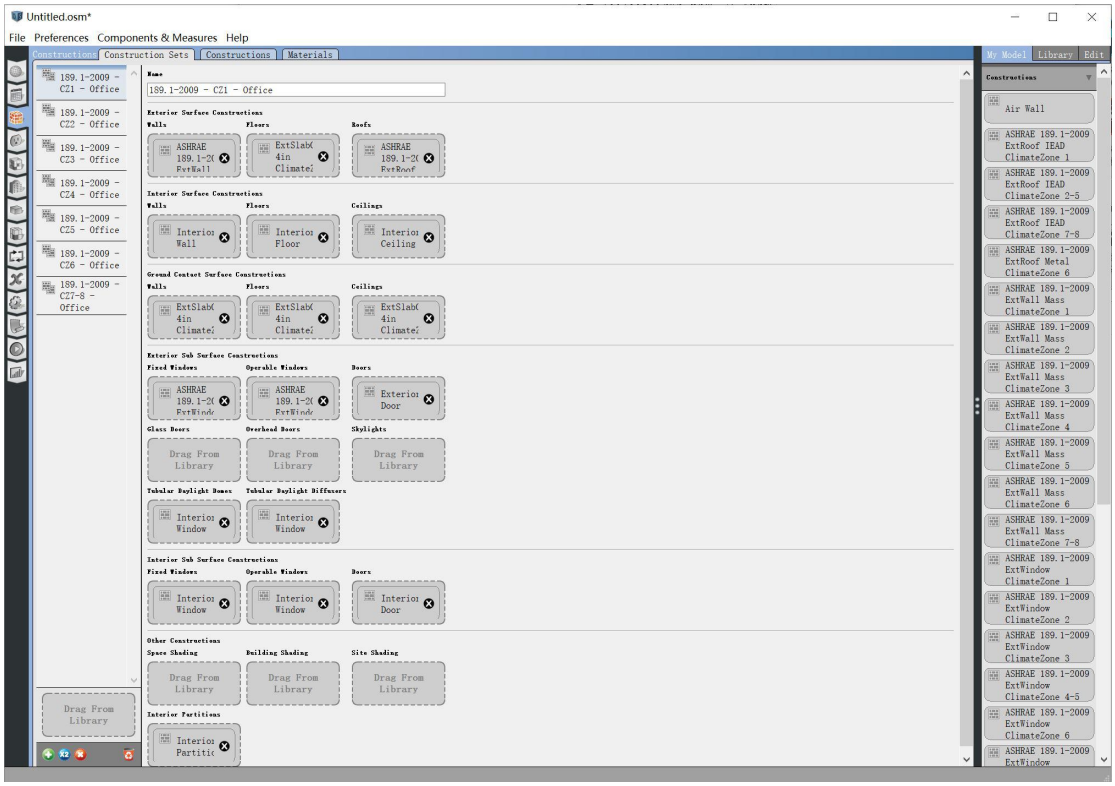
Task 2

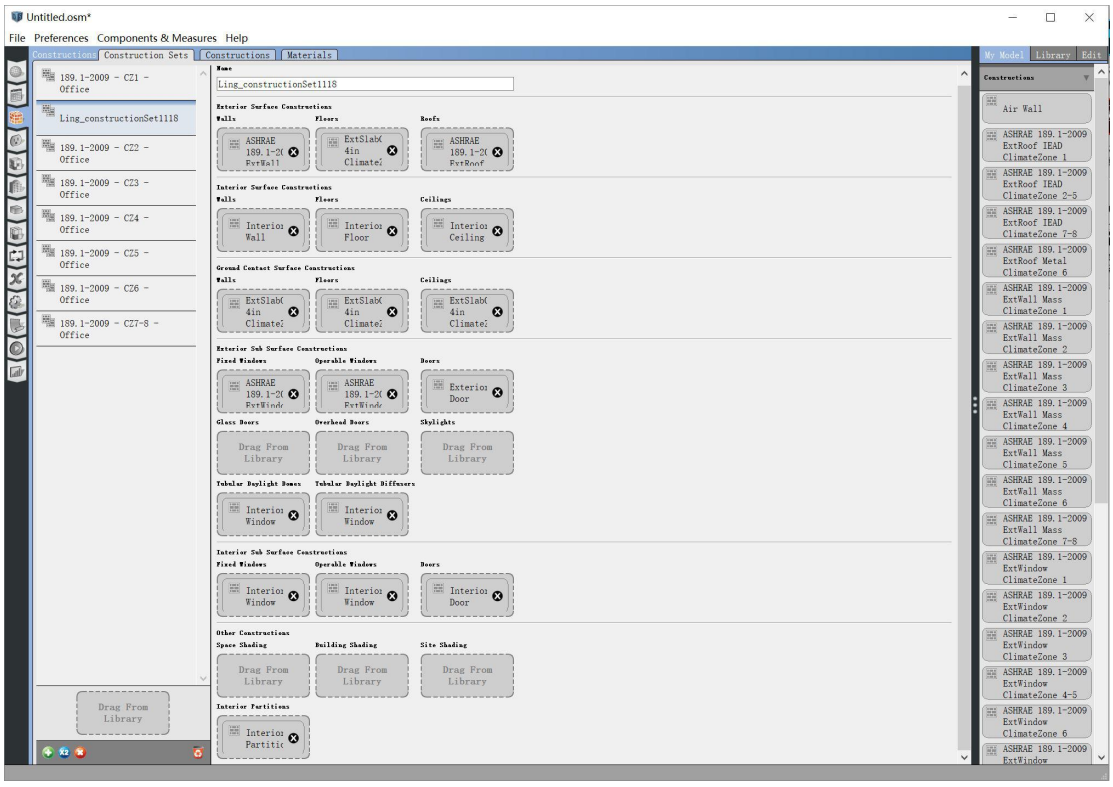
Create a pdf file with screenshots of all of the steps we went through in the second lesson on openStudio and explain briefly the reason behind the use of each step (in your own words!)

1)Adding Piacenza weather data in openoffice

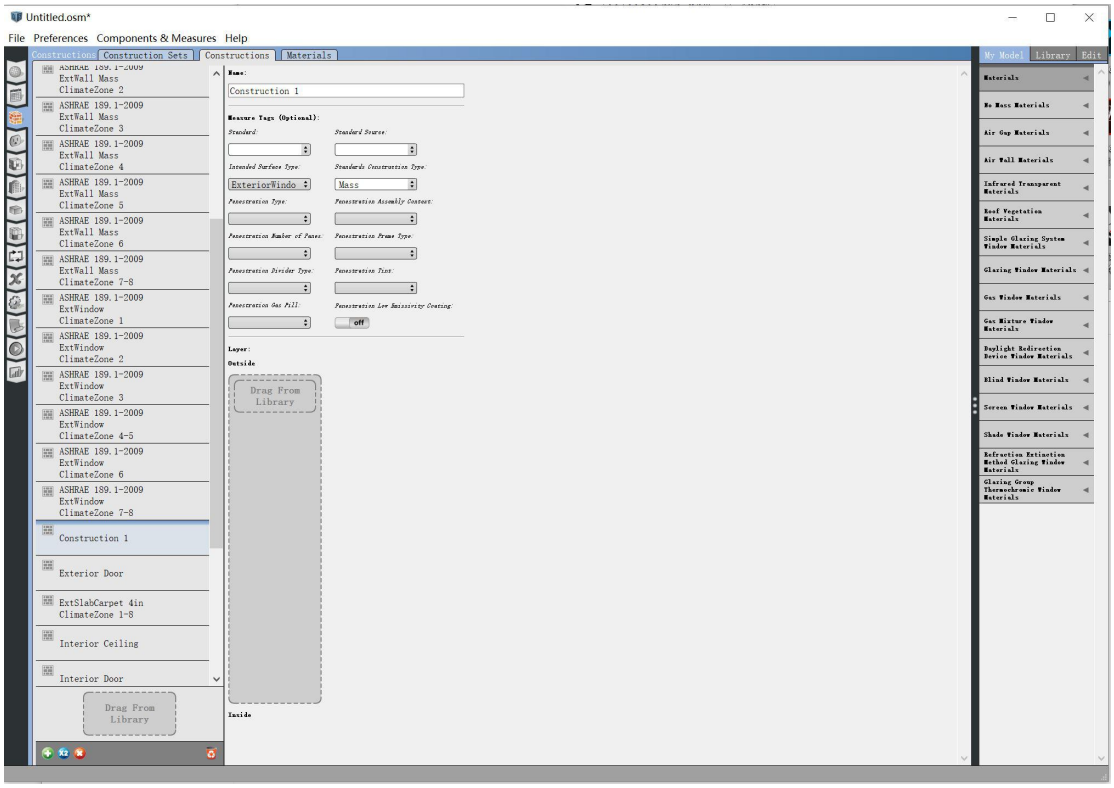


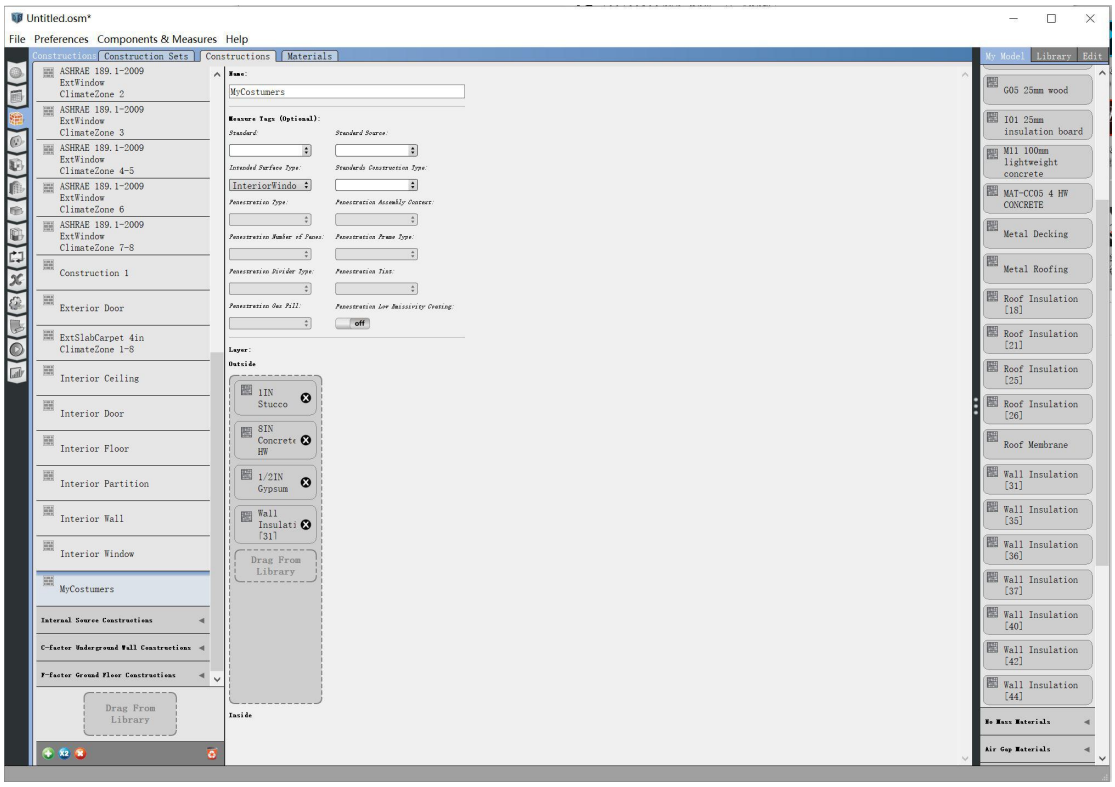
2) In “construction” command to start customize the building



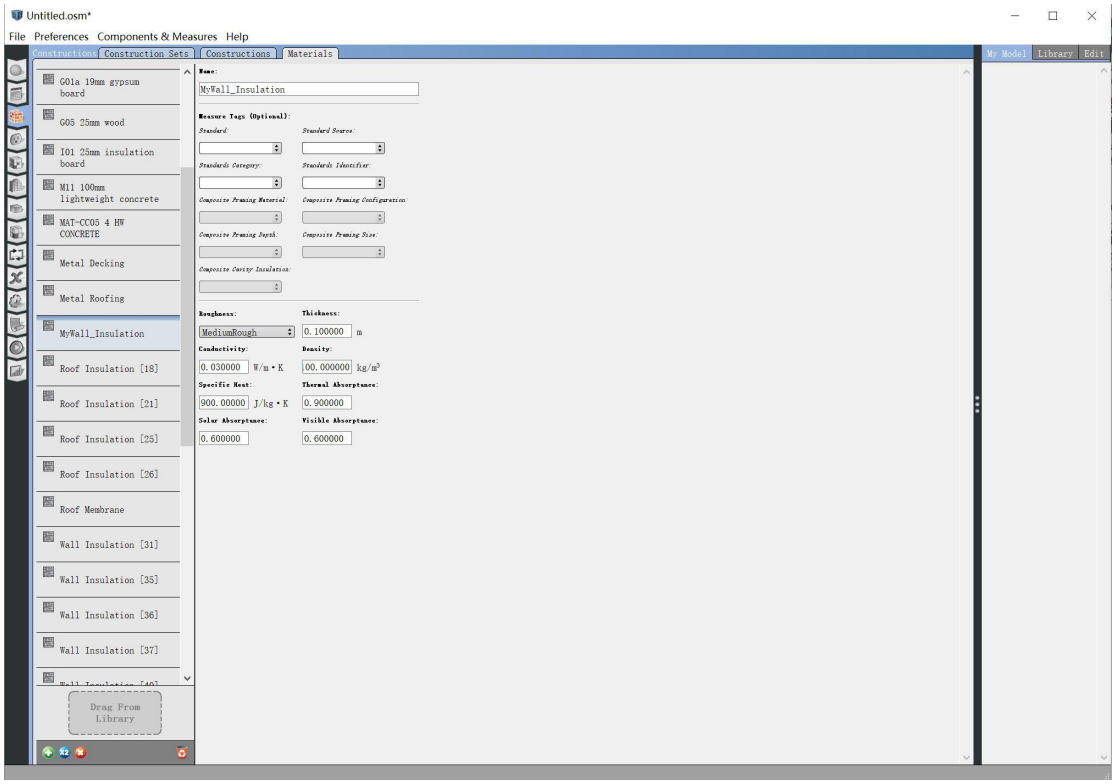


3) In the “construction sets” Customizing the wall

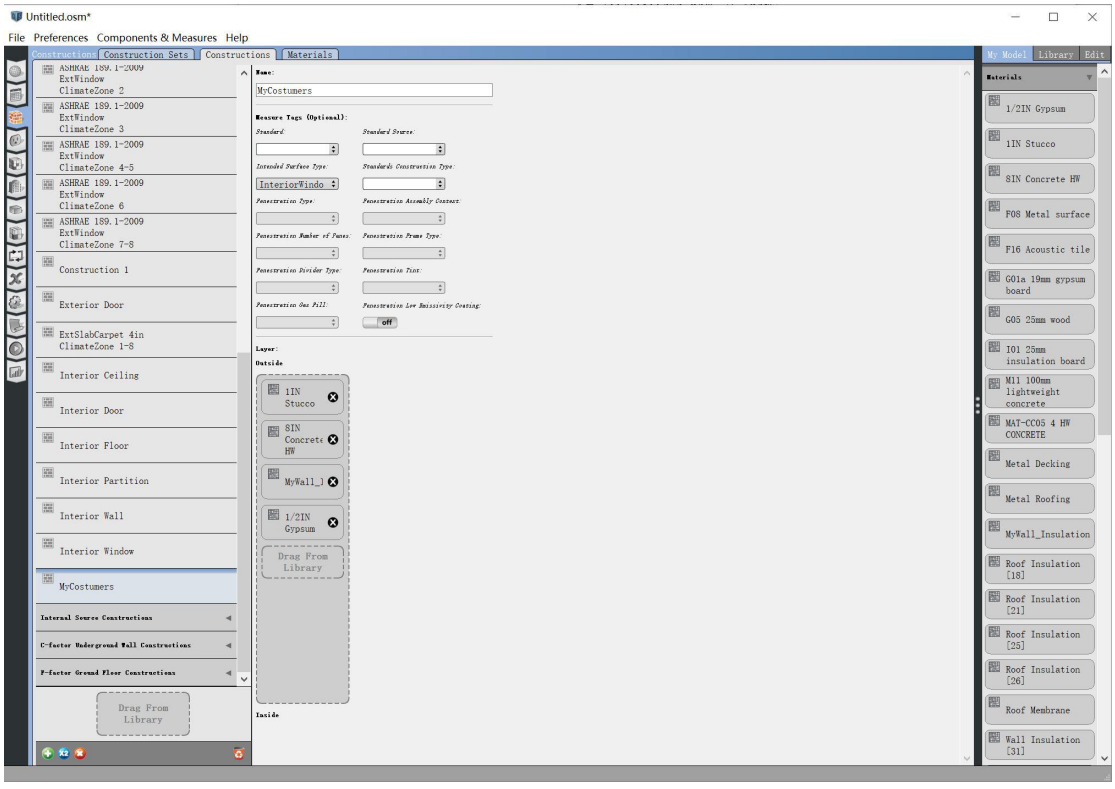


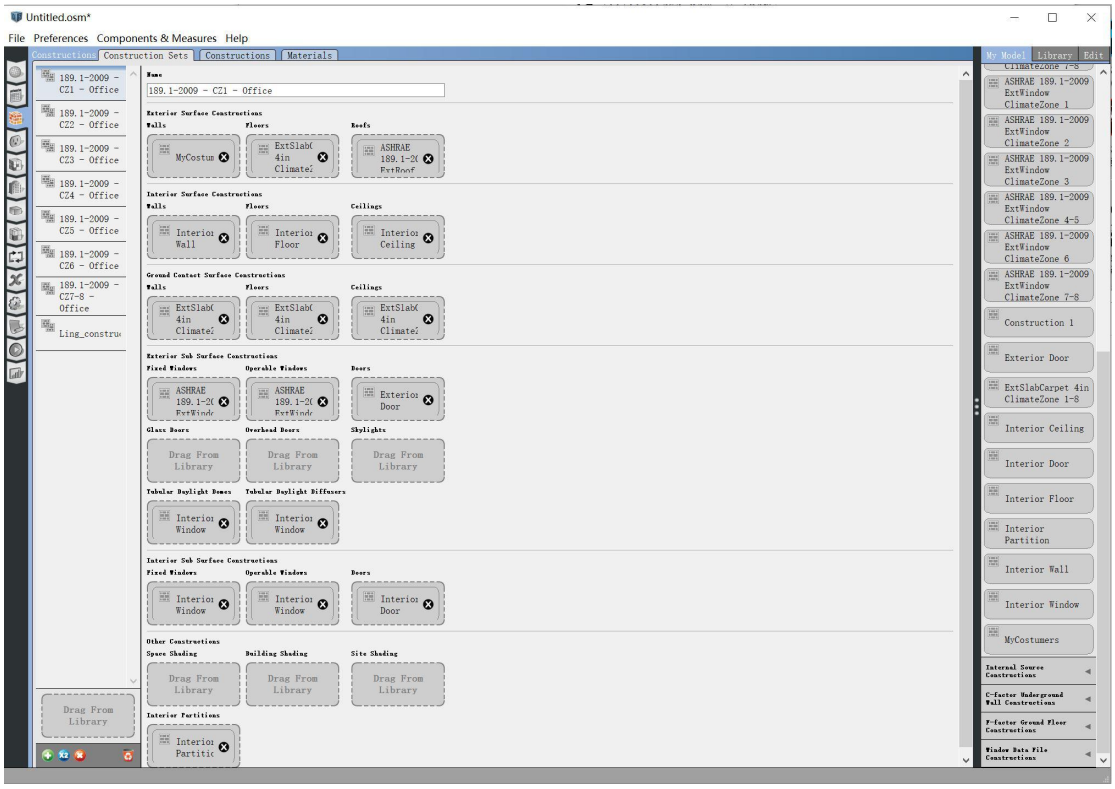


4)Add a new material and decide the type

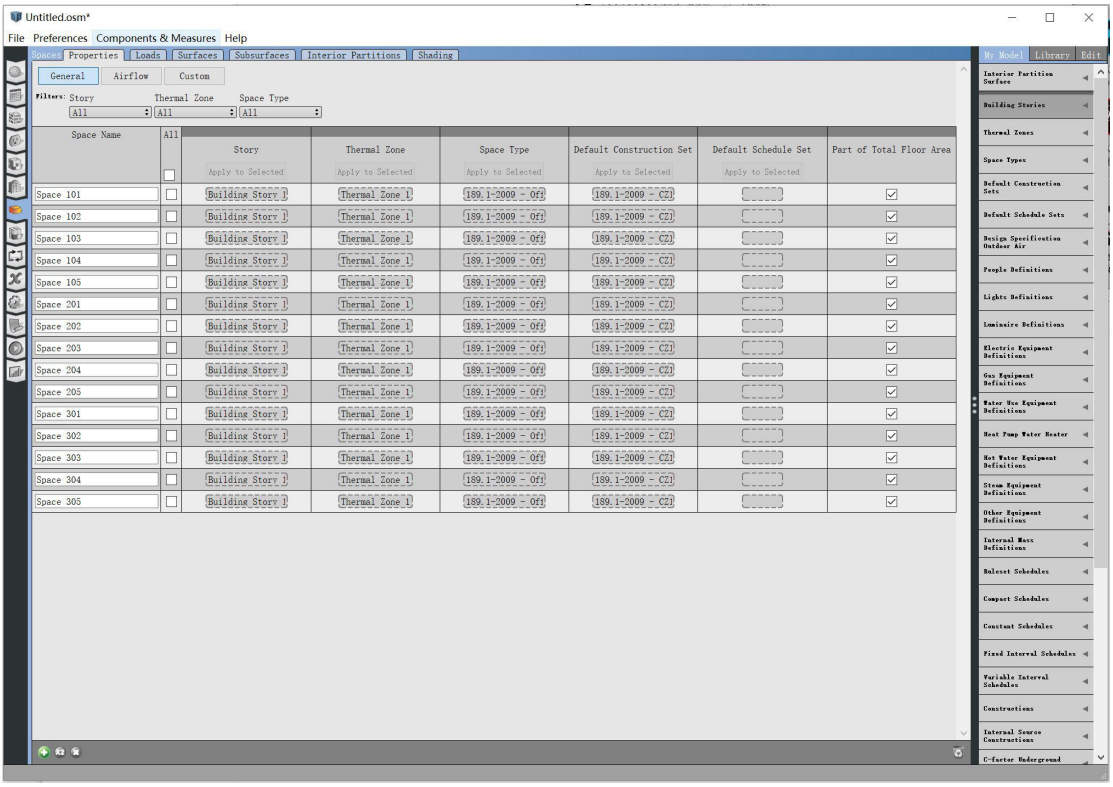


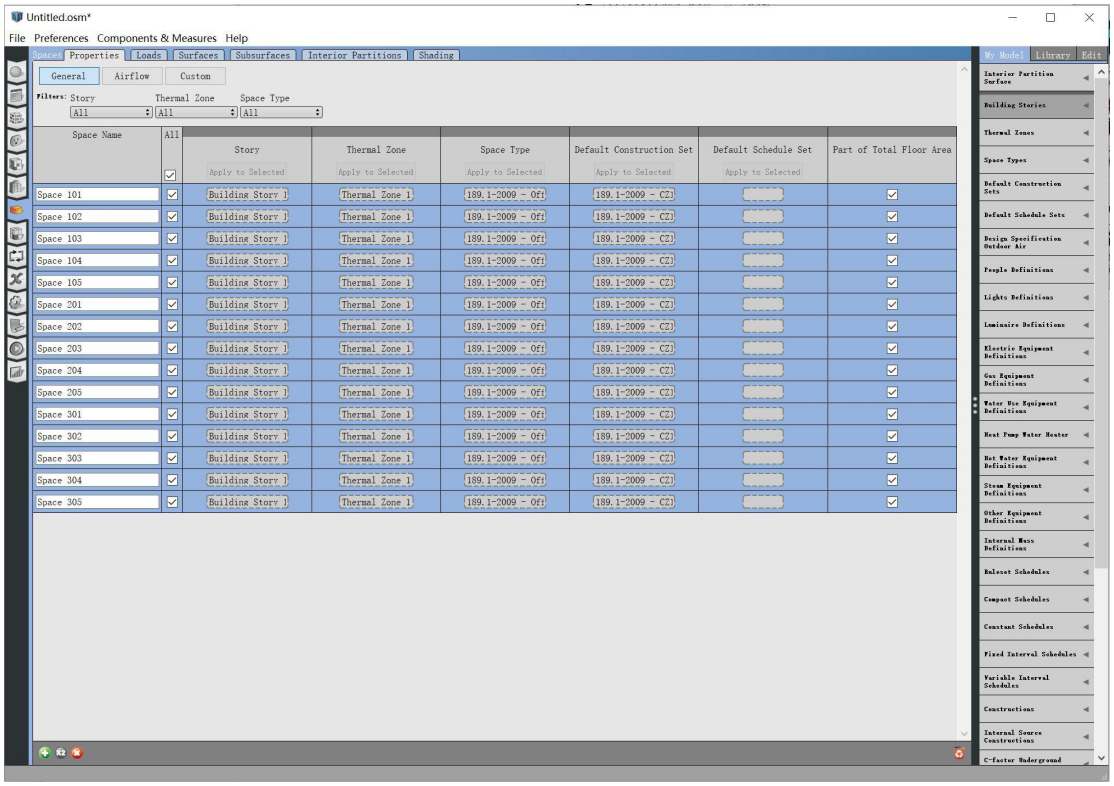
5)Insert the wall in the building data



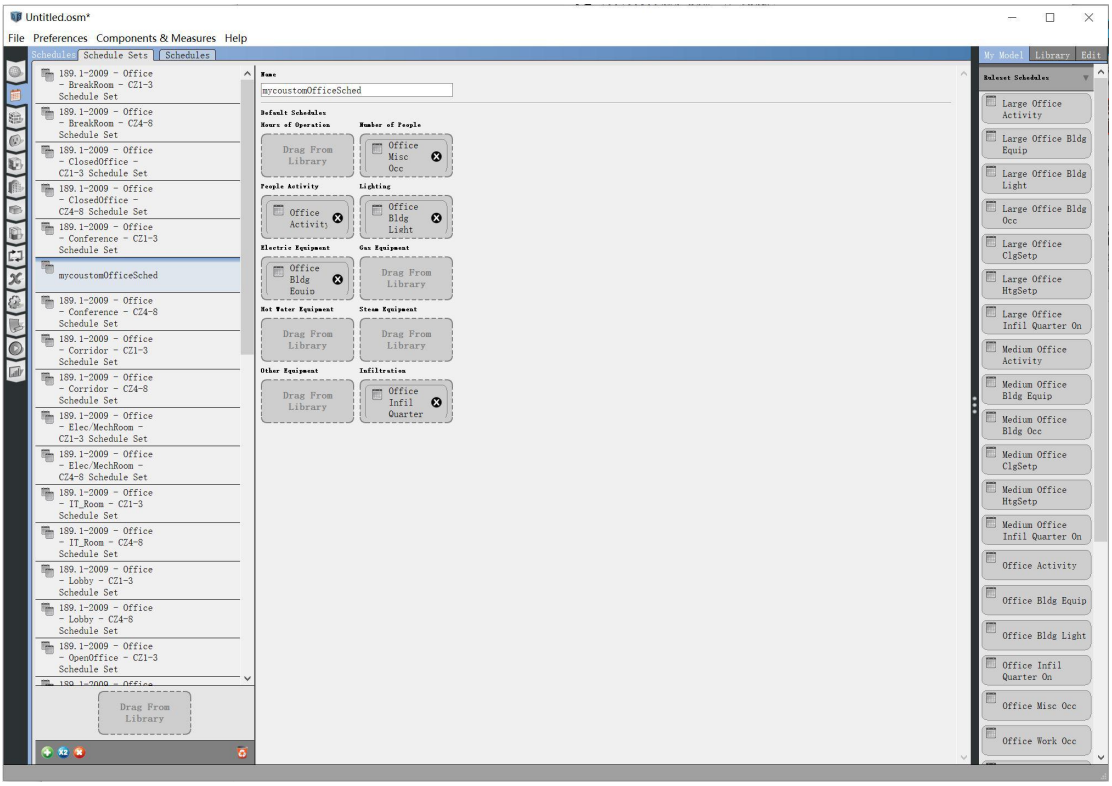


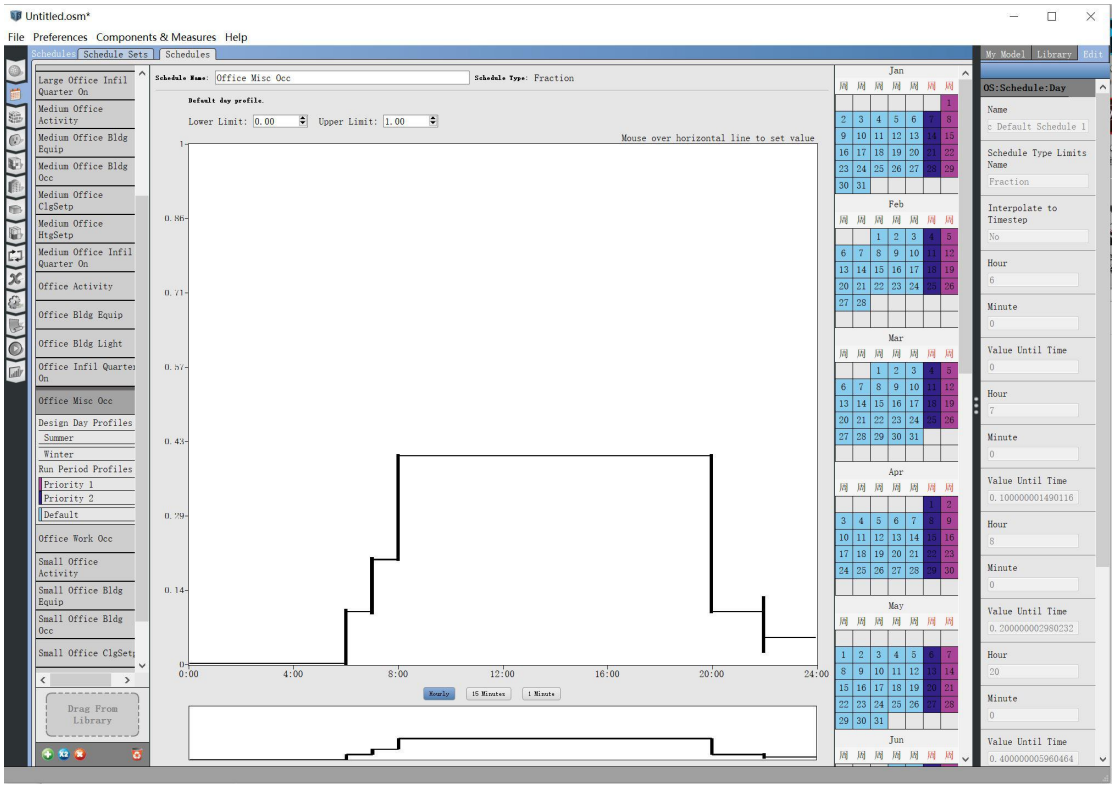
6)In the space window and insert the project layer with our modifications applying it to the whole building.



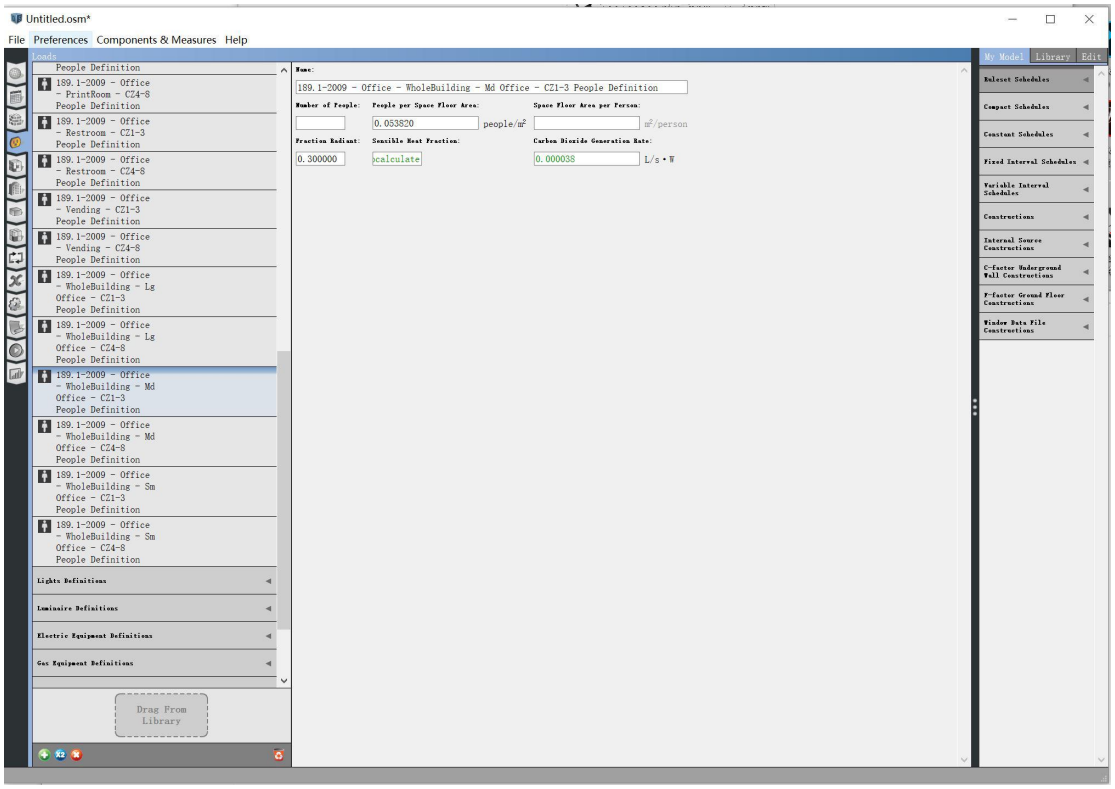


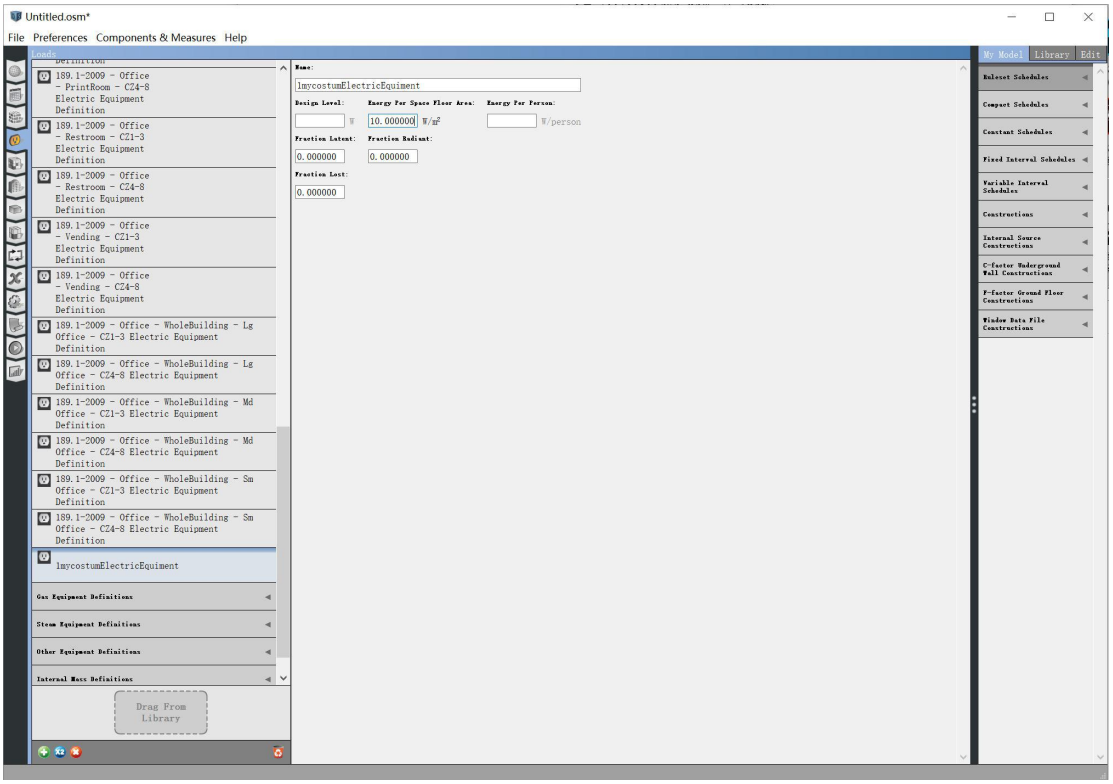
7)Back to schedule set to enter all the information





8) In loads command to change other elements




Untitled.osm*
File Preferences Components & Measures Help
Loads
189.1-2009 - Office - PrintRoom - CZ4-8 Electric Equipment Definition
189.1-2009 - Office - Restroom - CZ1-3 Electric Equipment Definition
189.1-2009 - Office - Restroom - CZ4-8 Electric Equipment Definition
189.1-2009 - Office - Vending - CZ1-3 Electric Equipment Definition
189.1-2009 - Office - Vending - CZ4-8 Electric Equipment Definition
189.1-2009 - Office - WholeBuilding - Lg Office - CZ1-3 Electric Equipment Definition
189.1-2009 - Office - WholeBuilding - Lg Office - CZ4-8 Electric Equipment Definition
189.1-2009 - Office - WholeBuilding - Md Office - CZ1-3 Electric Equipment Definition
189.1-2009 - Office - WholeBuilding - Md Office - CZ4-8 Electric Equipment Definition
189.1-2009 - Office - WholeBuilding - Sm Office - CZ1-3 Electric Equipment Definition
189.1-2009 - Office - WholeBuilding - Sm Office - CZ4-8 Electric Equipment Definition
lmycostumElectricEquiment
Gas Equipment Definitions
Steam Equipment Definitions
Other Equipment Definitions
Internal Mass Definitions
Drag From Library
Name:
lmycostumElectricEquiment
Design Level:
W
Energy Per Space Floor Area:
10.000000
W/m²
Energy Per Person:
W/person
Fraction Latent:
0.000000
Fraction Radiant:
0.000000
Fraction Lost:
0.000000
My Model
Library
Edit
Ruleset Schedules
Compact Schedules
Constant Schedules
Fixed Interval Schedules
Variable Interval Schedules
Constructions
Internal Source Constructions
C-factor Underground Wall Constructions
F-factor Ground Floor Constructions
Window Data File Constructions