Task 1

MEAN RADIANT TEMPERATURE

The Mean Radiant temperature of a given surface is the temperature of the equivalent black enclosure with which it would exchange the same radiative flux exchanged with all the other surfaces.

OPERATIVE TEMPERATURE

It is the virtual ambient temperature with which the sum of the radiative thermal and convective linearized flow is exchanged which exchanges with the air and all the other surfaces.

SOLAR RADIATION DENSITY

The solar constant GSC is a flux density measuring mean solar electromagnetic radiation (solar irradiance) per unit area. The solar "constant" is not a physical constant, is an average of a varying value. Its value is 1367 W/m2.

SOLAR RADIATION CHARACTERISTICS

Solar radiation is attenuated both in the spectral distribution and in the total radiation. This is due to the dispersion and absorption phenomena.

ATMOSPHERIC ABSORPTION

The absorption of solar radiation is due to the atmospheric components, in particular ozone, water and carbon dioxide, which absorb the incident radiation in absorption bands, consequently modifying its energy spectrum. The stratospheric ozone absorbs almost all the ultraviolet component of solar radiation.

SOLAR ENERGY

The solar radiation depends on:

1. The sun position in the sky (altitude and azimuth angles), which changes daily and seasonally

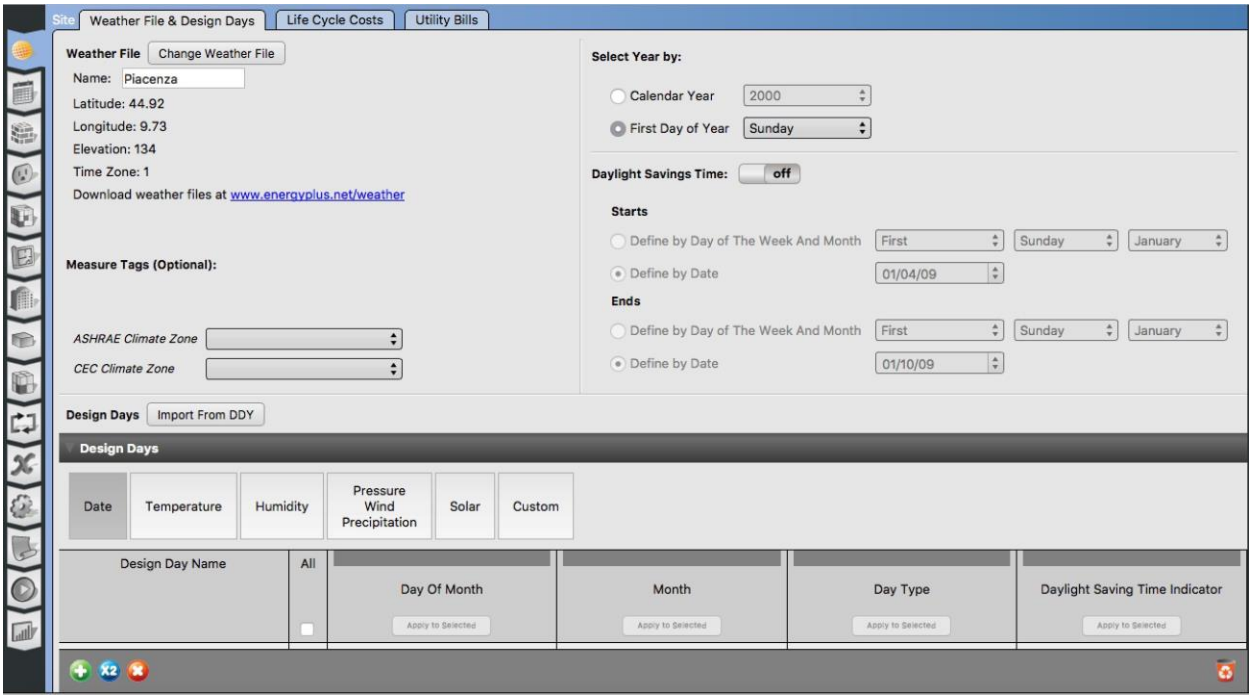
2. The weather condition

3. The site altitude over the sea level

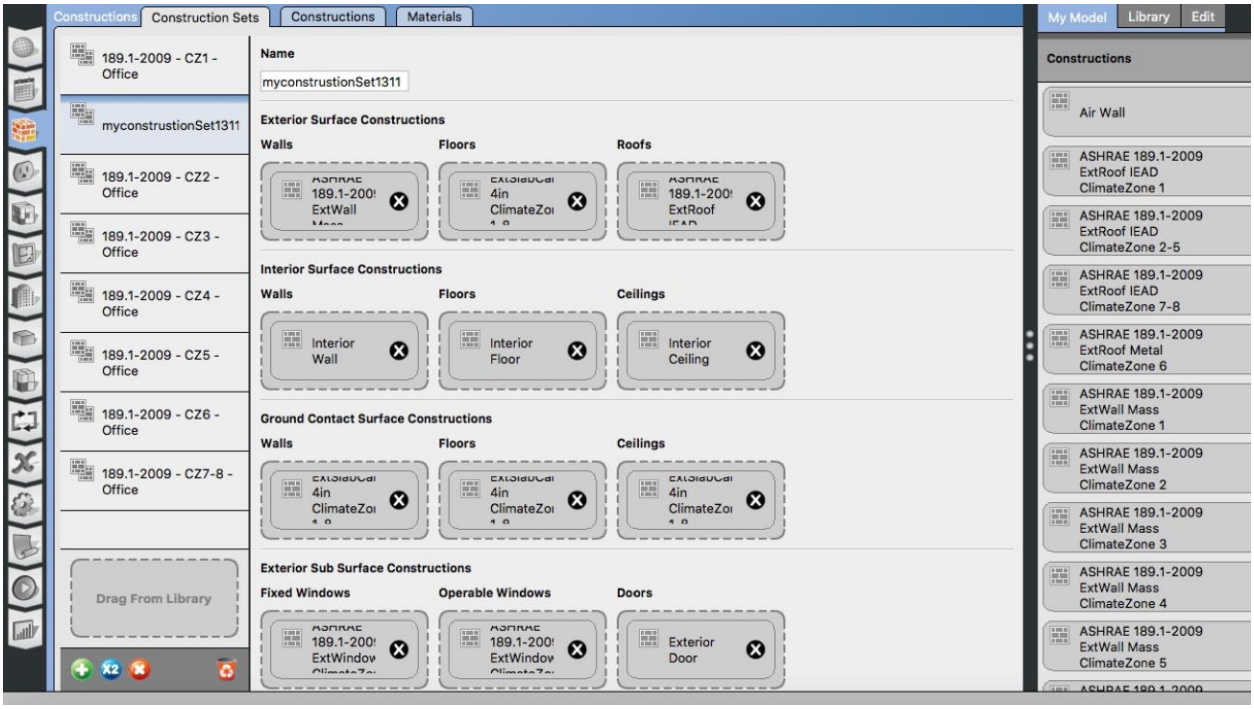
4. Sunshine hours

Task 2

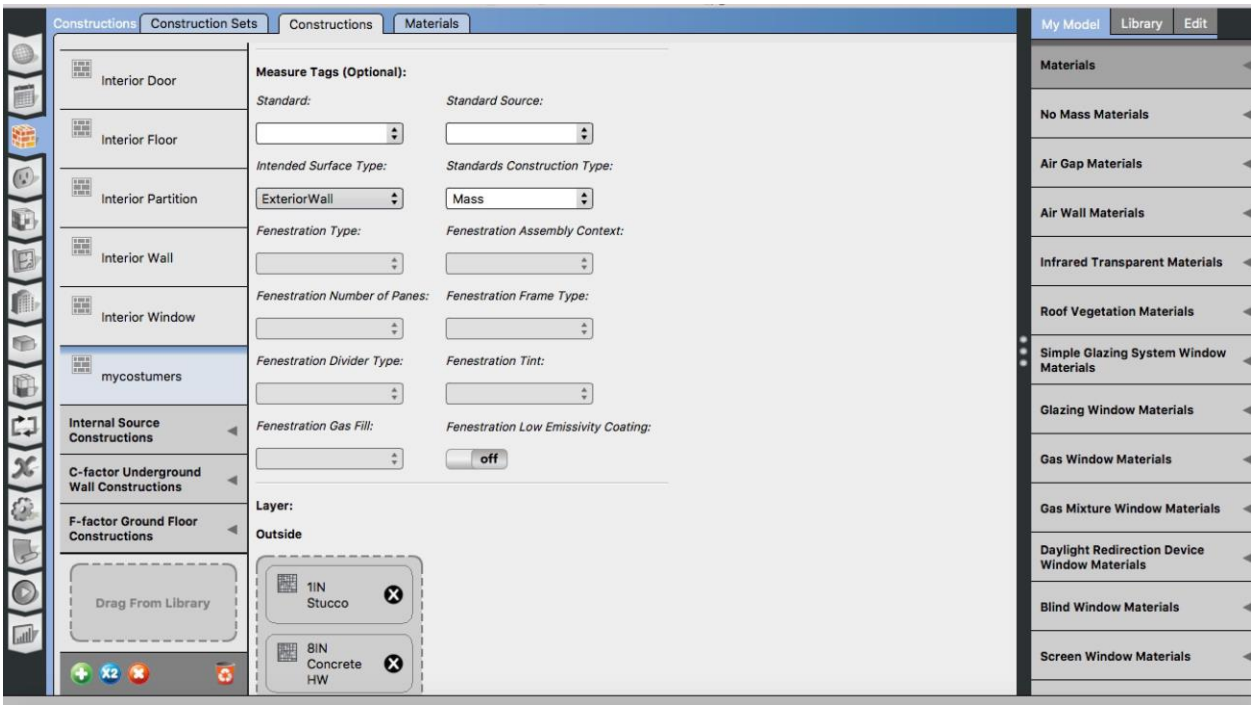
First we open Open studio to add the weather Data



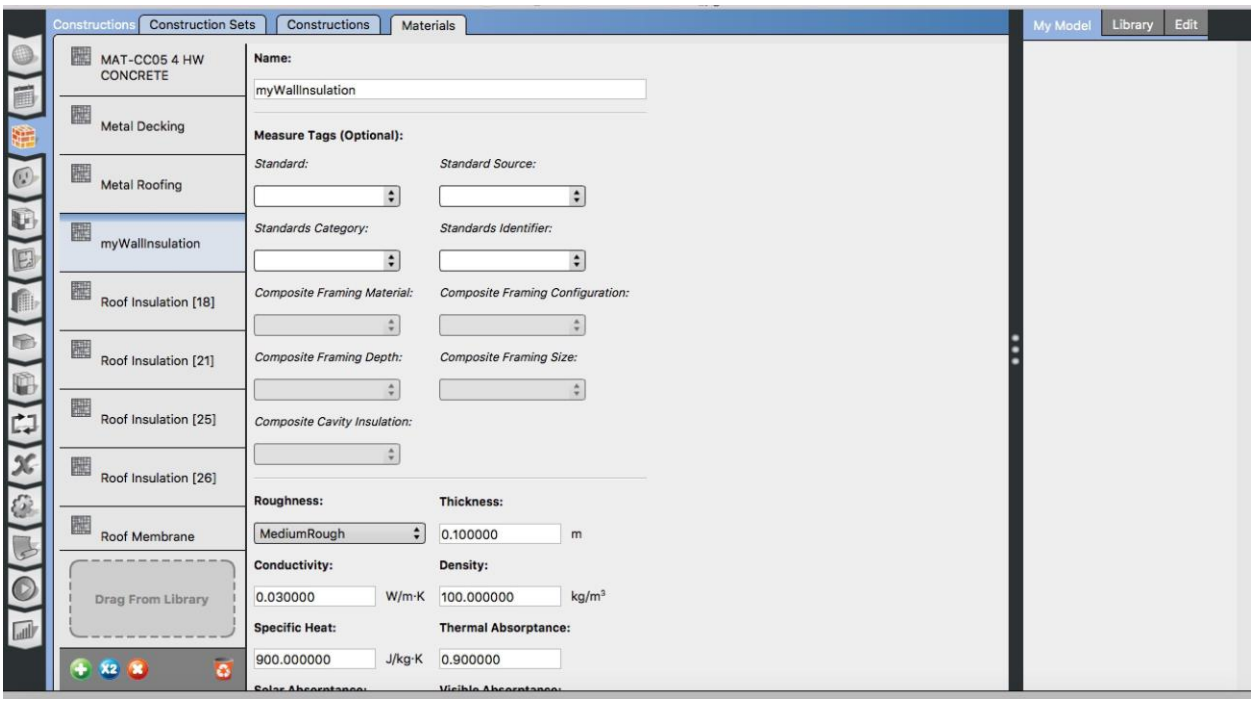
Go to the “construction” command to start customize the building, renaming it

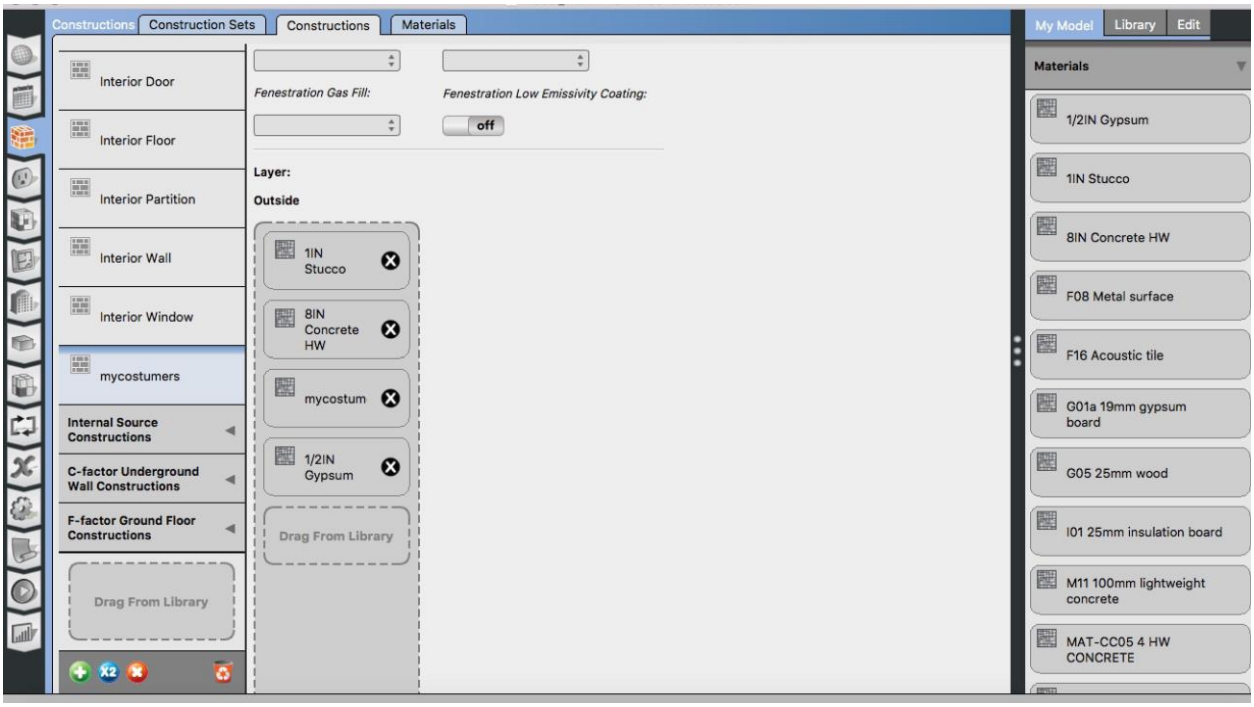


Start customizing the wall package in the “construction sets” window.

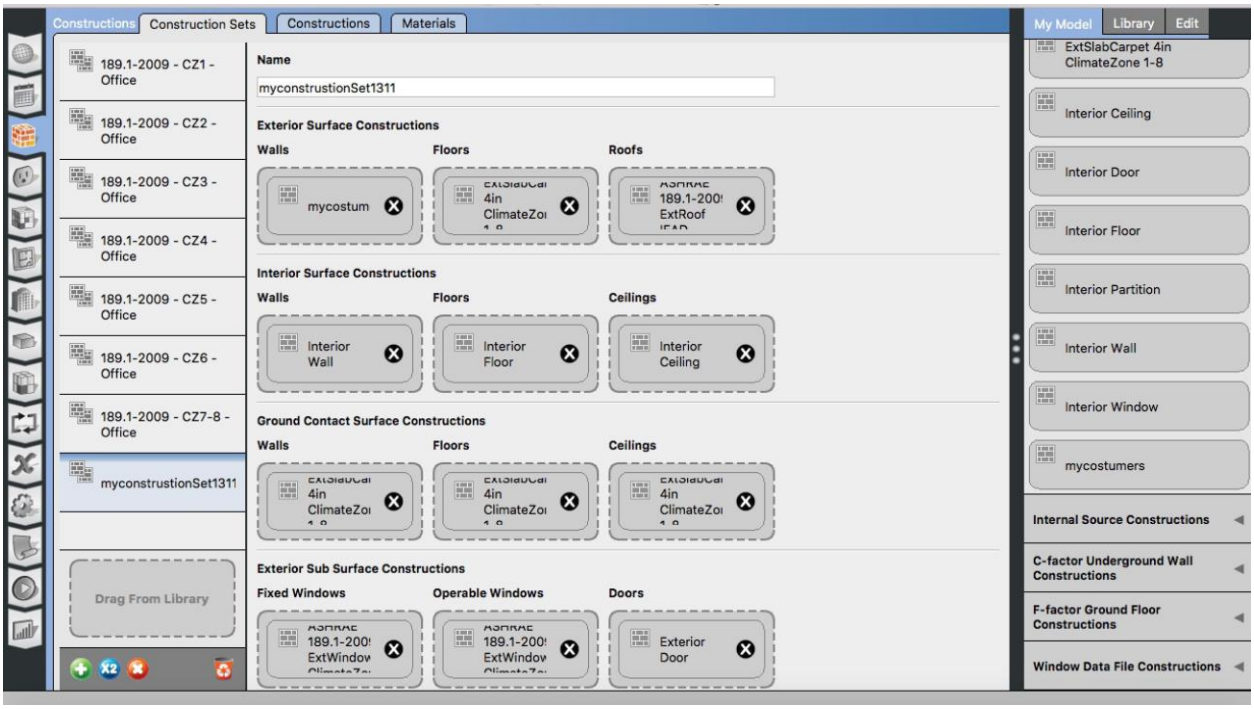


Decide the type of wall insulation and insert it later in the package

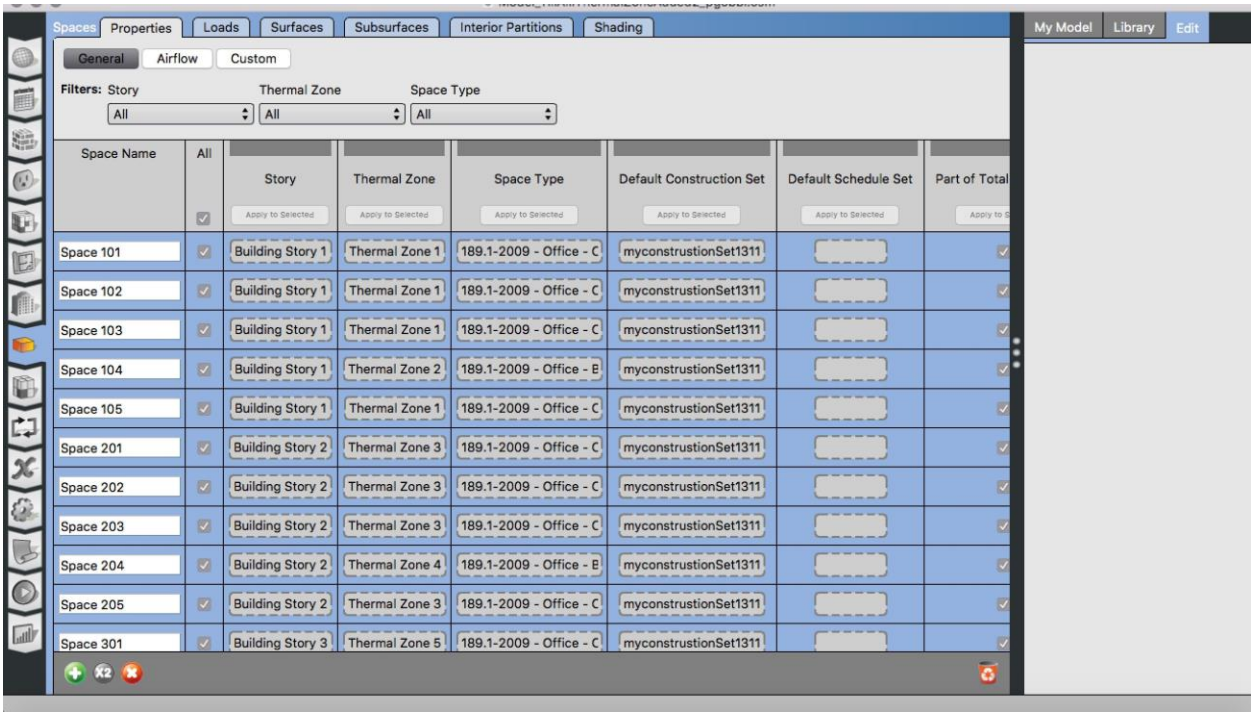




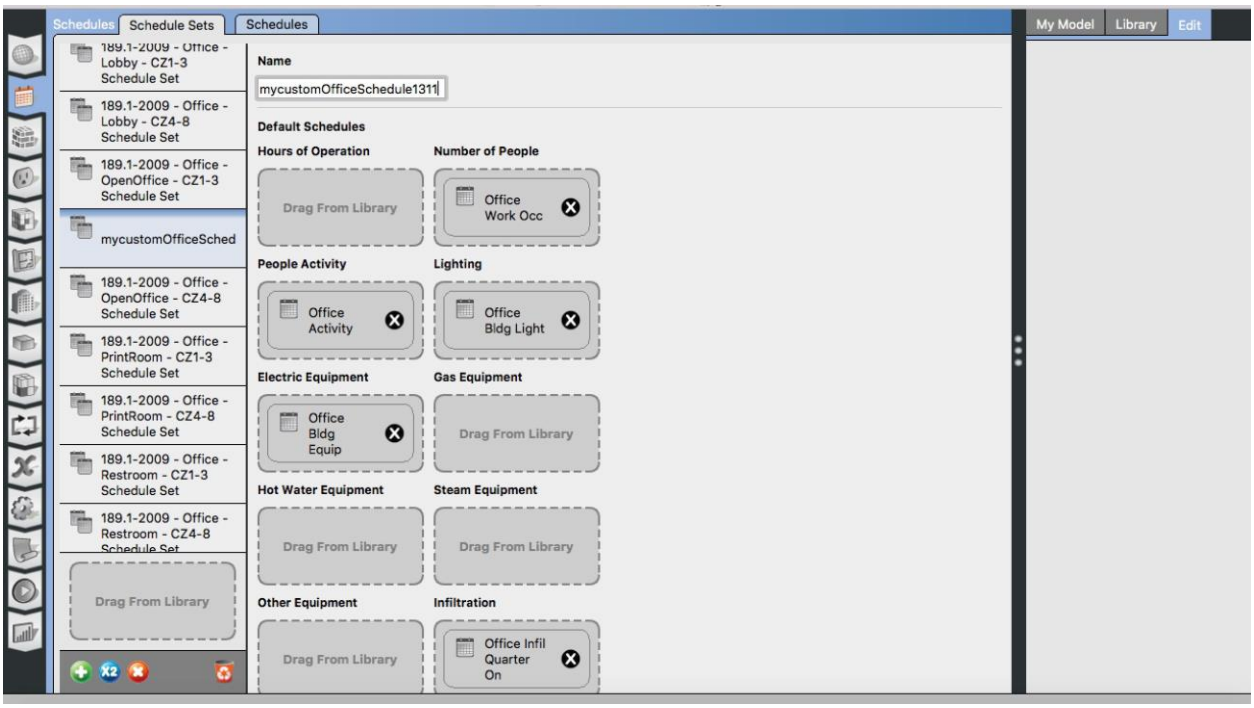
Insert the wall in the building data

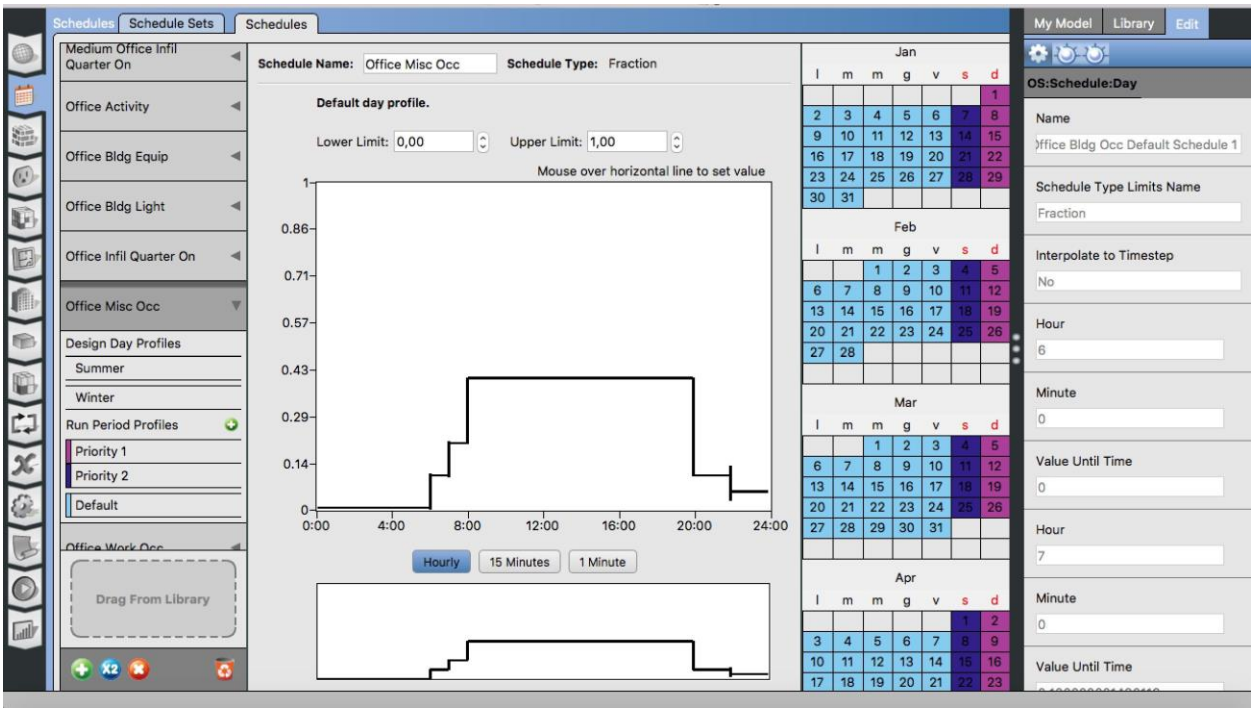


Go to the “space” window and insert the project layer with our modifications applying it to the whole building.

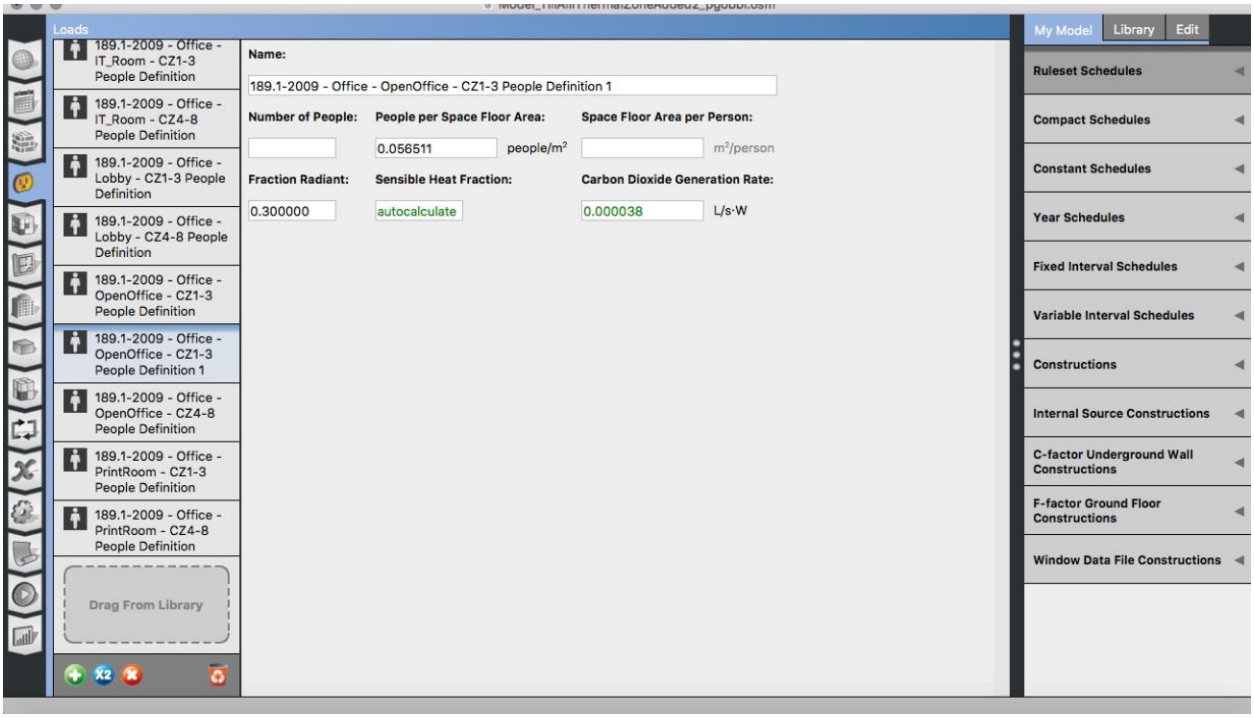


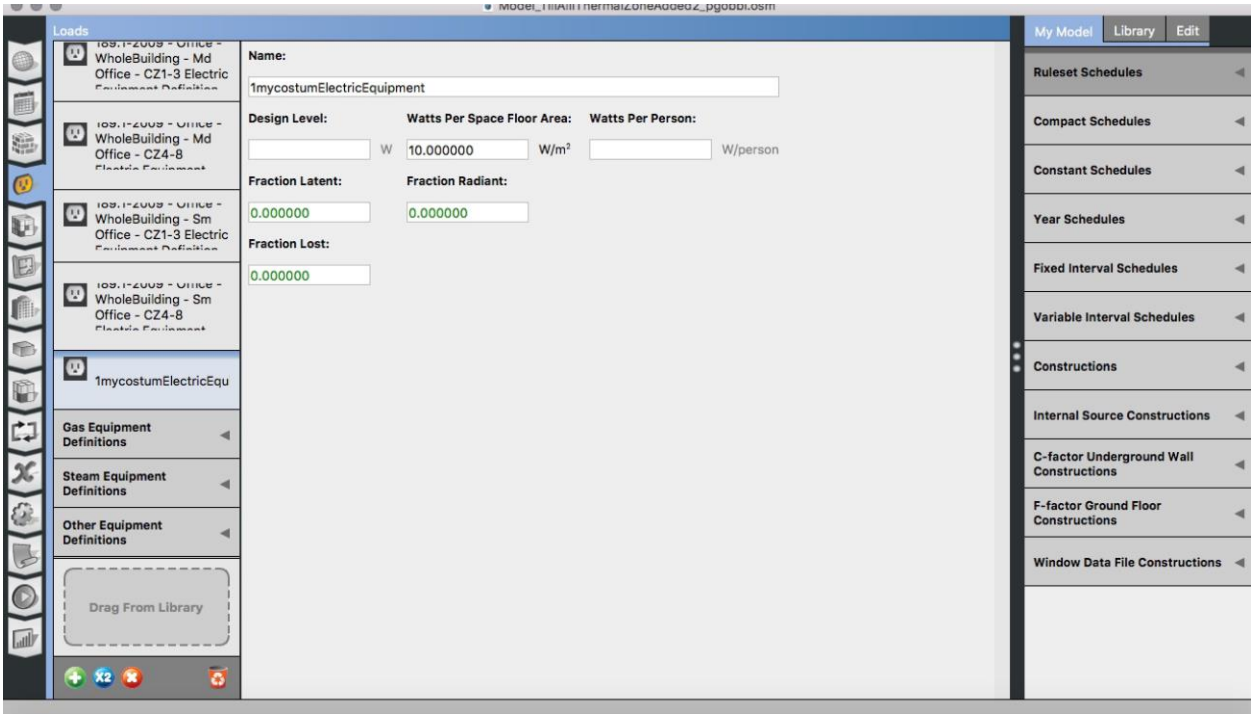
Return to “schedule sets” to enter all the information relating to activities, equipment, est. and their schedules





Go to go to the “loads” command to change other specifications, like people, light, electricity, etc.




Loads
WholeBuilding - Md Office - CZ1-3 Electric
WholeBuilding - Md Office - CZ4-8
WholeBuilding - Sm Office - CZ1-3 Electric
WholeBuilding - Sm Office - CZ4-8
1mycostumElectricEqu
Gas Equipment Definitions
Steam Equipment Definitions
Other Equipment Definitions
Drag From Library
Name:
1mycostumElectricEquipment
Design Level:
Watts Per Space Floor Area:
Watts Per Person:
W
10.000000
W/m²
W/person
Fraction Latent:
Fraction Radiant:
0.000000
0.000000
Fraction Lost:
0.000000
My Model
Library
Edit
Ruleset Schedules
Compact Schedules
Constant Schedules
Year 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