WEEK 7 SUBMISSION **PAOLA GOBBI - 926210**

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

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 G_{SC} 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/m^2.

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.

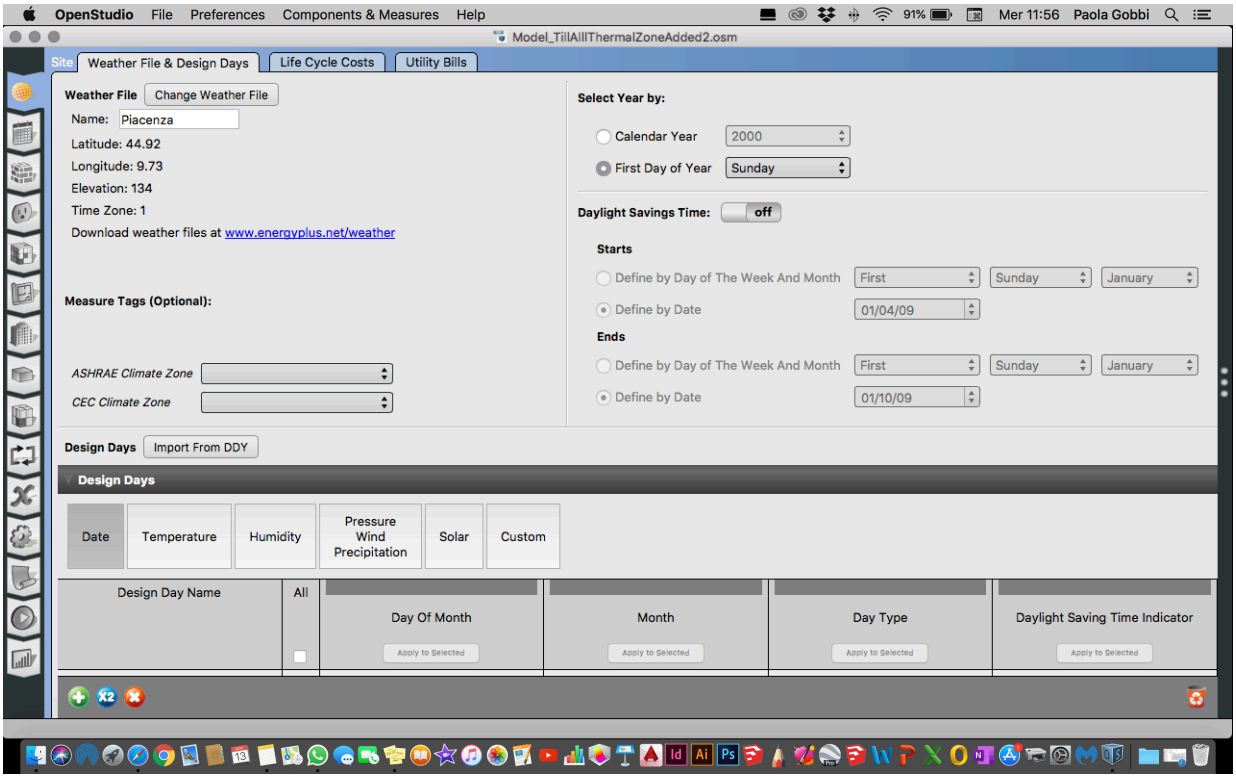
SOLAR ENERGY: AVAILABILITY

The solar radiation depends on:

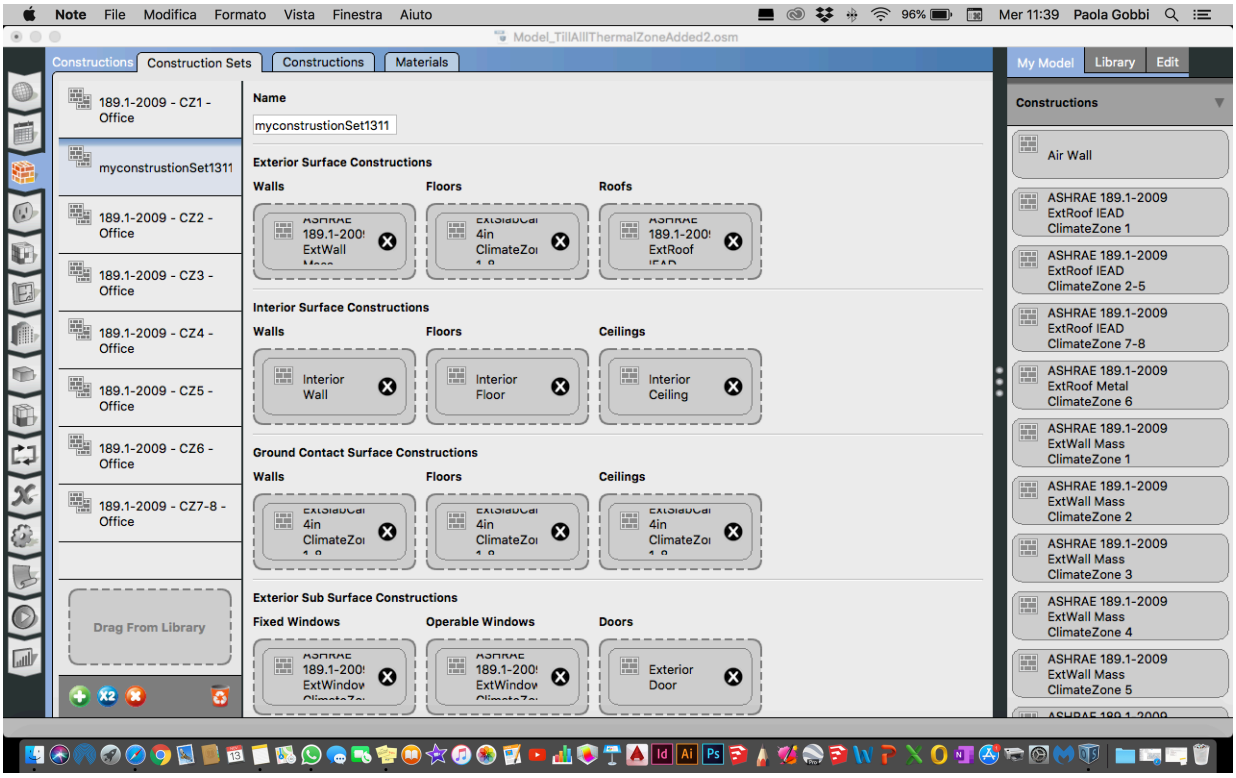
1. the sun position in the sky (altitude and azimuth angles), which changes daily and seasonally
2. the weather condition
3. the site altitude over the sea level
4. sunshine hours

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.

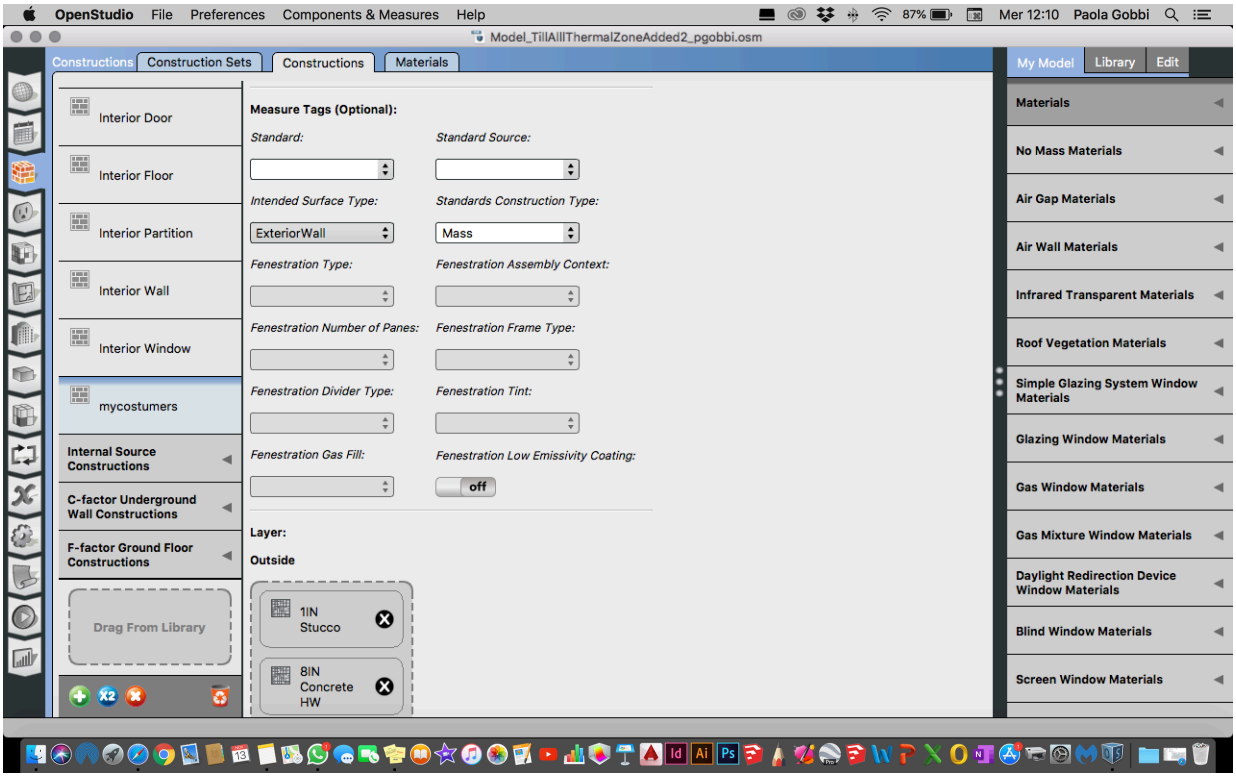
Included the climate data of Piacenza in OpenOffice to get the right information.



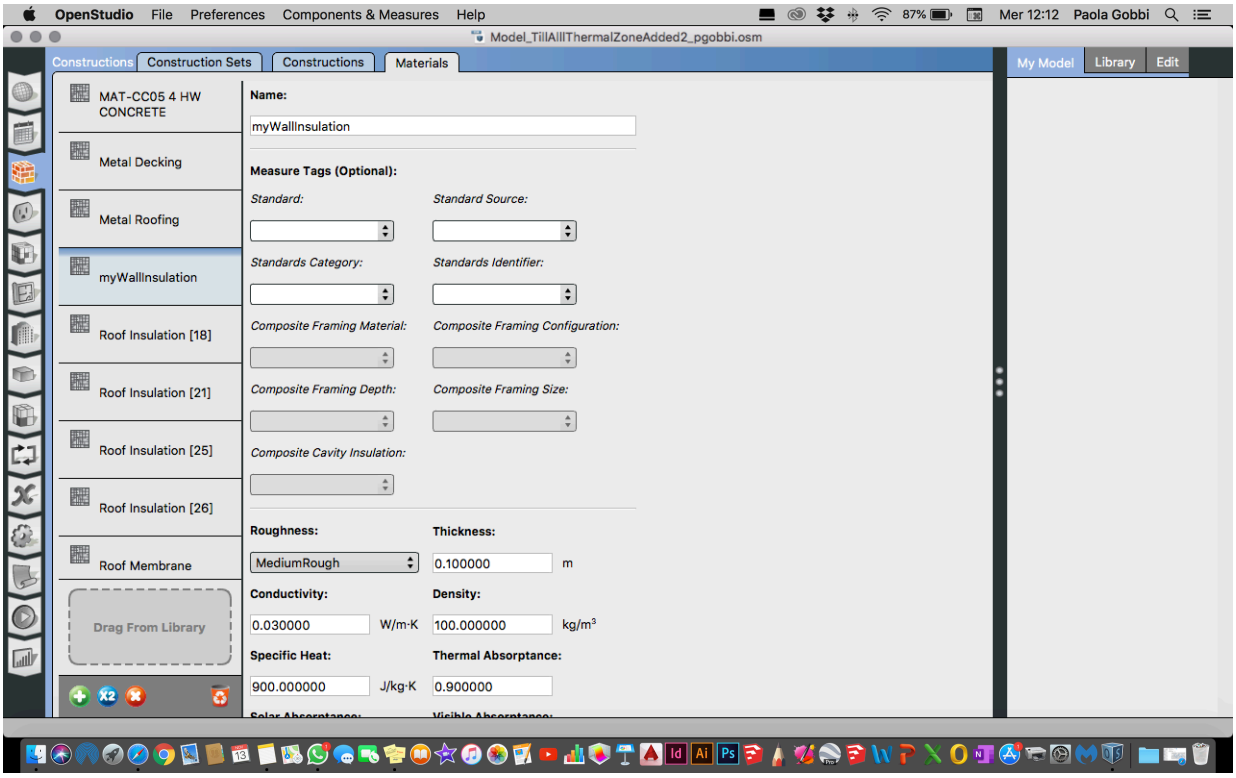
Go to the “construction” command to start customize the building, renaming it.

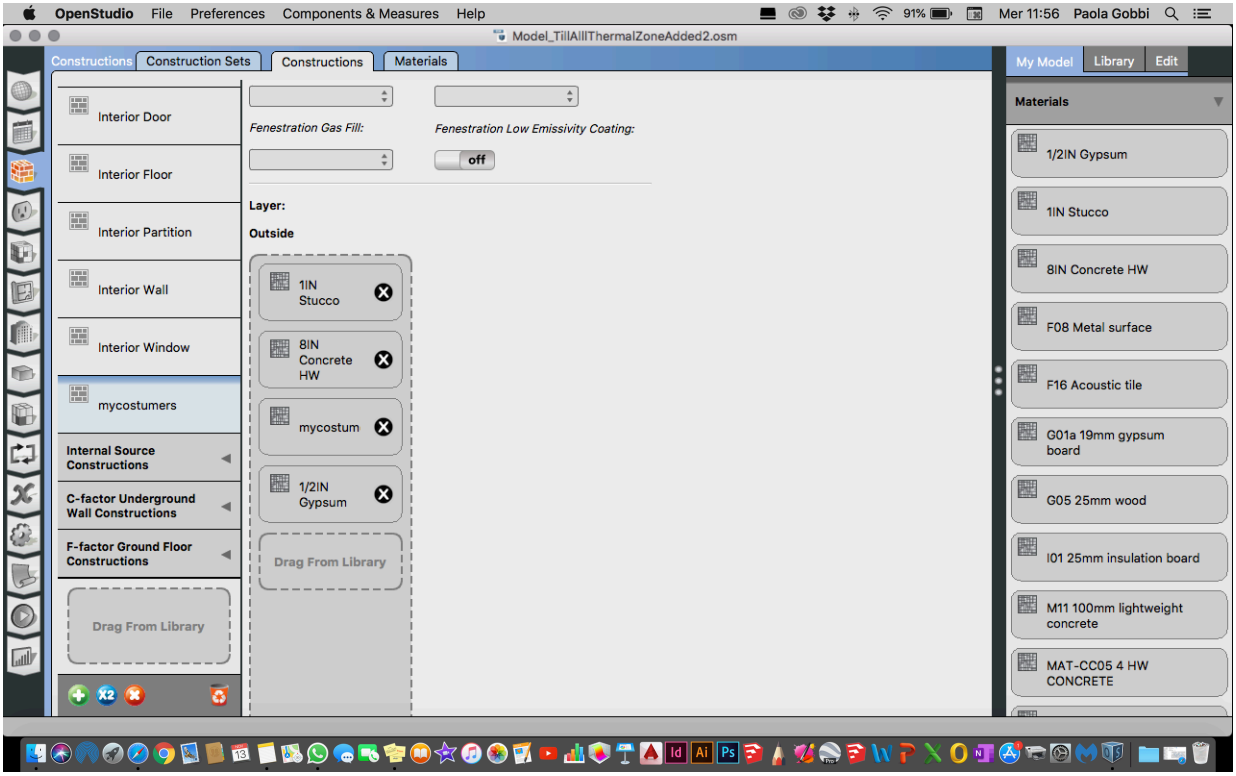


Start customizing the wall package in the “construction sets” window.

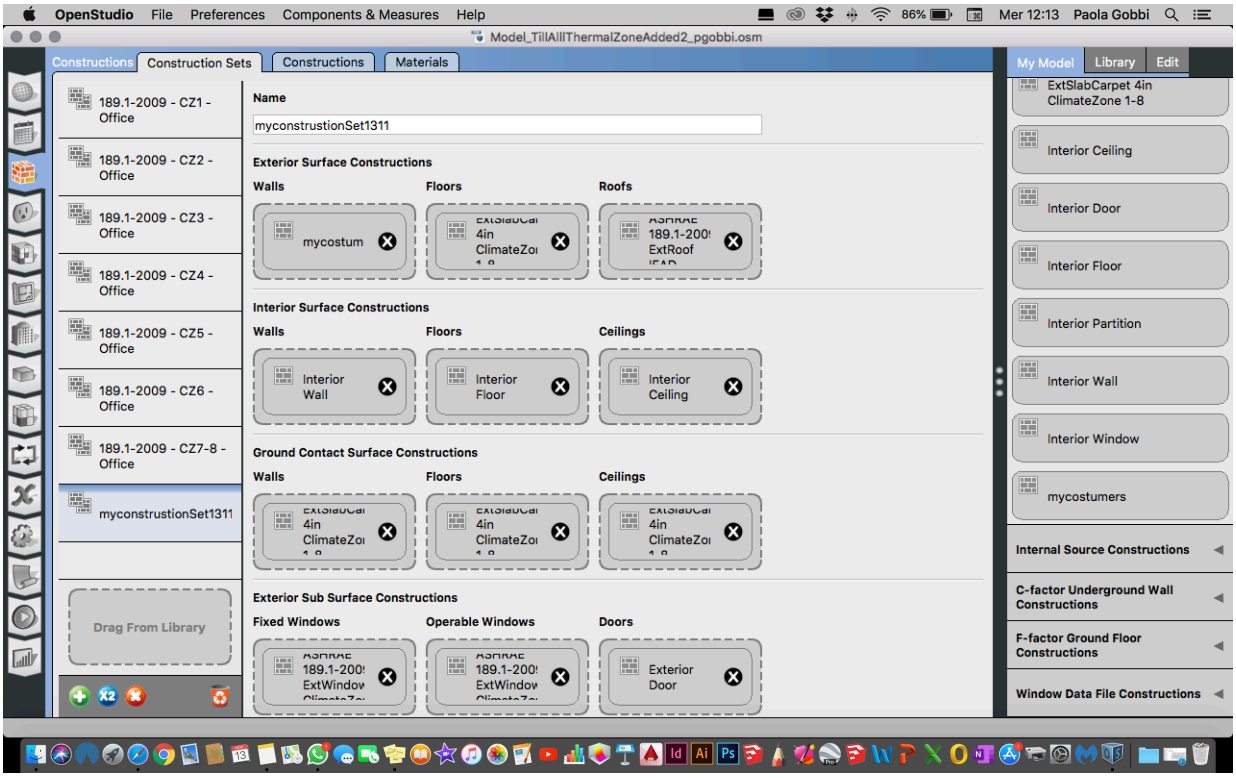


Decide the type of wall insulation and insert it later in the package.

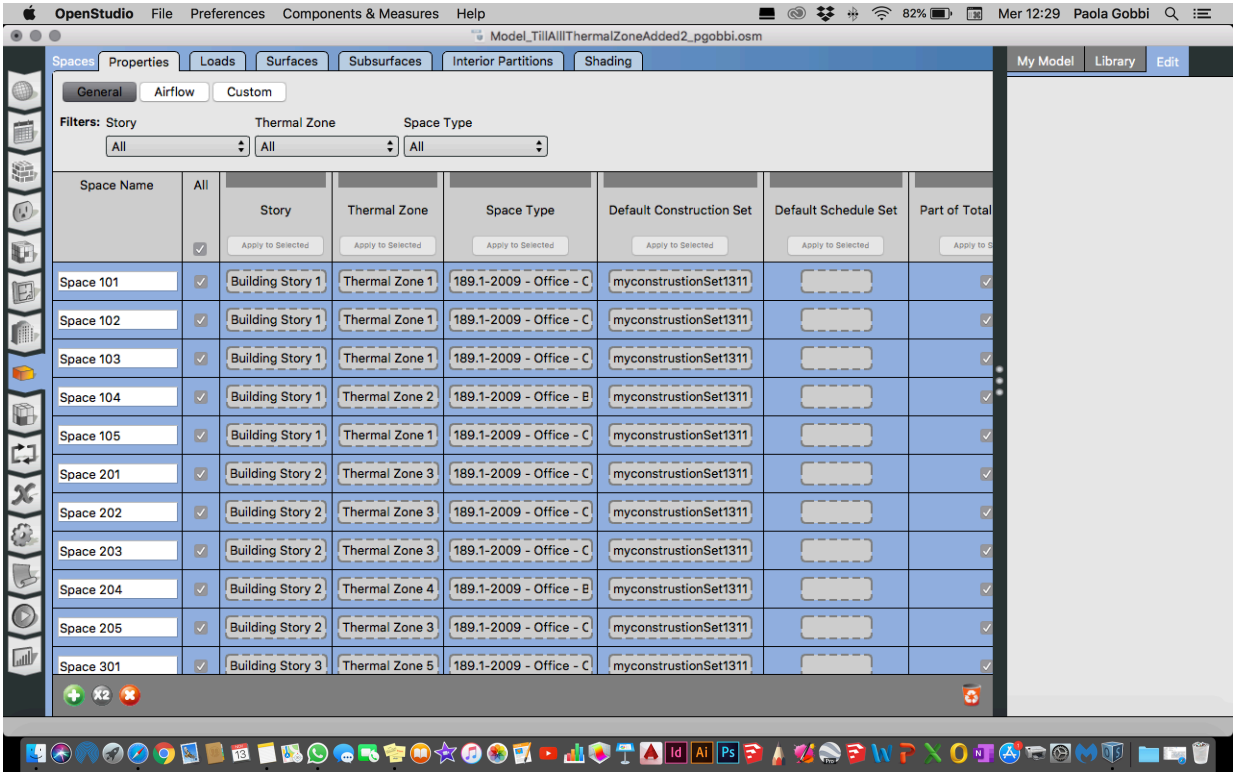




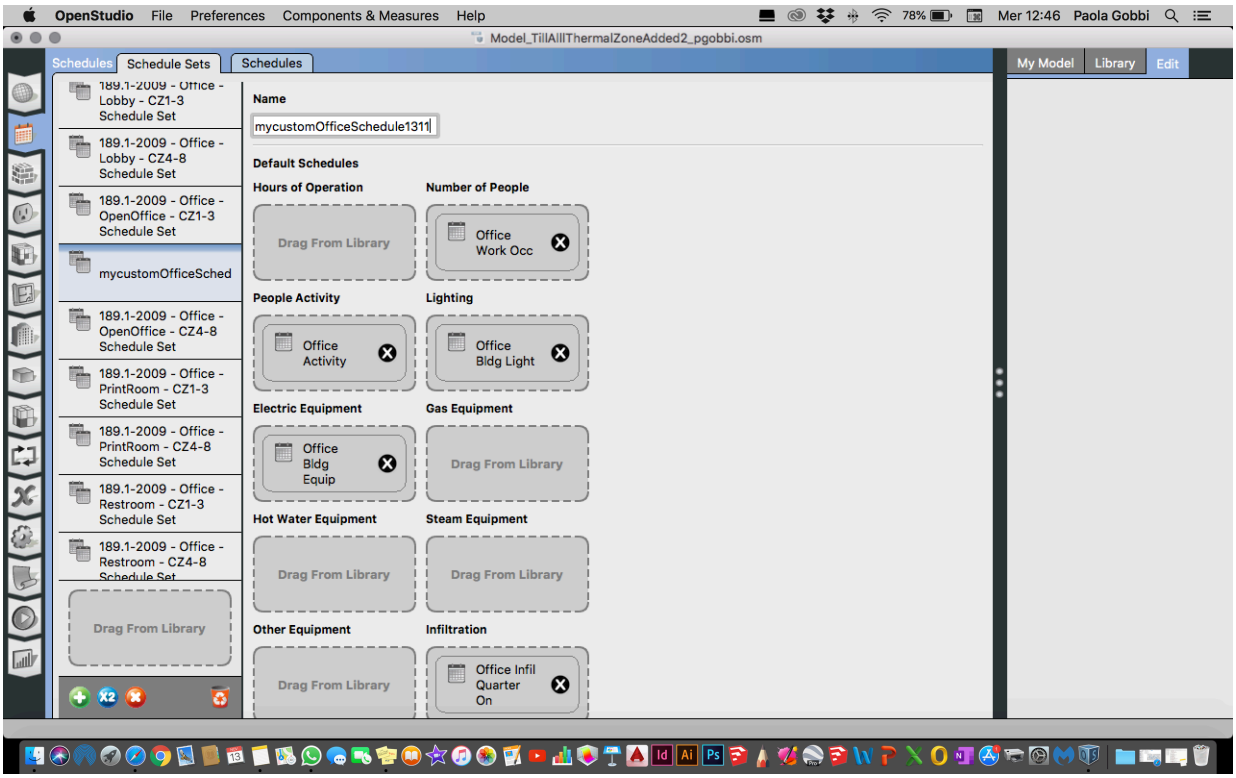
Insert the wall in the building data.

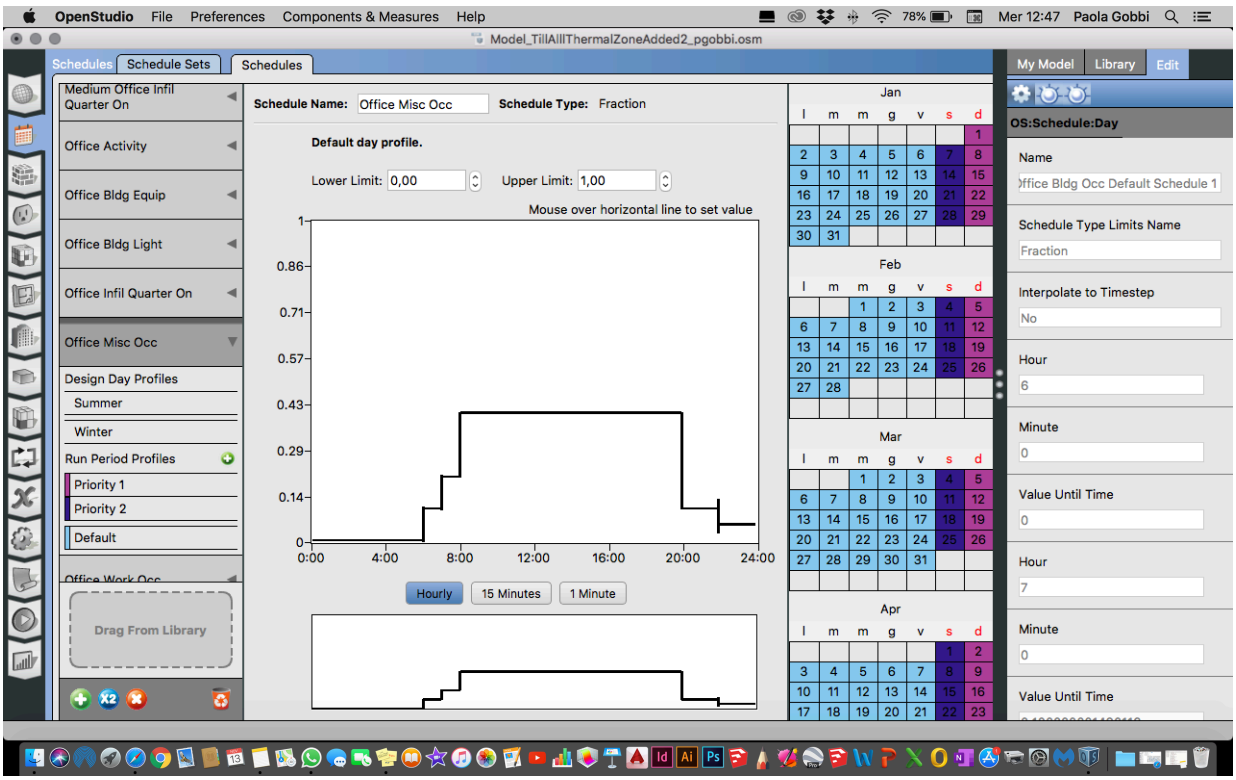


Go to the "space" window and insert the project layer with our modifications applying it to the whole building.



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





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