

## WEEK 7

Monday, December 16, 2019 1:01 AM

### Musa Bayzada

- Provide a summary of the main concepts that we went through about solar radiation.

- **Mean Radiant Temperature** is a measure of the average temperature of the surfaces surrounding a given point, where thermal radiation will change. If the point is exposed to the outside, it may include sky temperature and solar radiation.

- **Operative Temperature** 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** is 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/m<sup>2</sup>.

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

- **Atmospheric Absorption** 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:

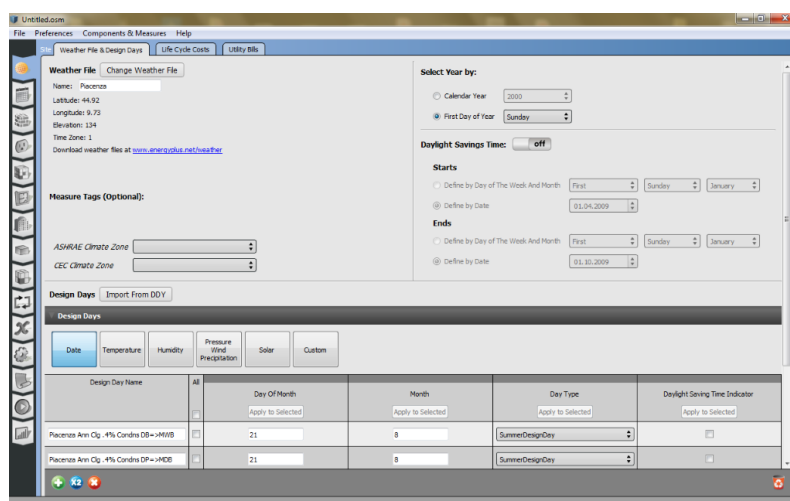
The sun position in the sky (altitude and azimuth angles), which changes daily and seasonally

The weather condition

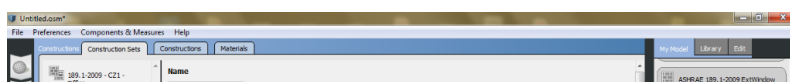
The site altitude over the sea level

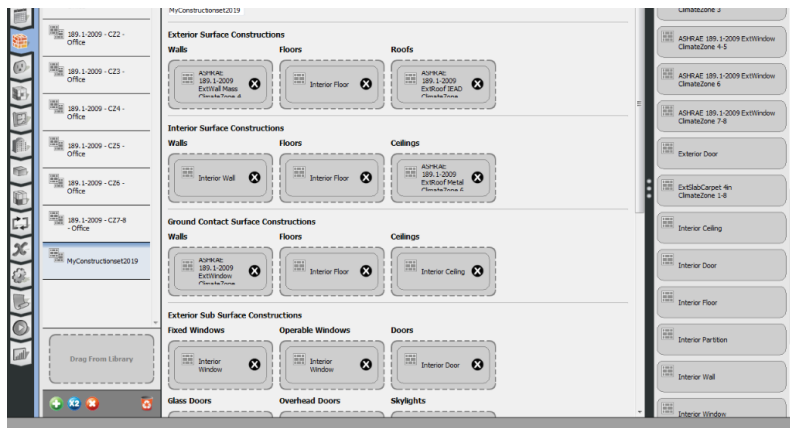
Sunshine hours

- 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.

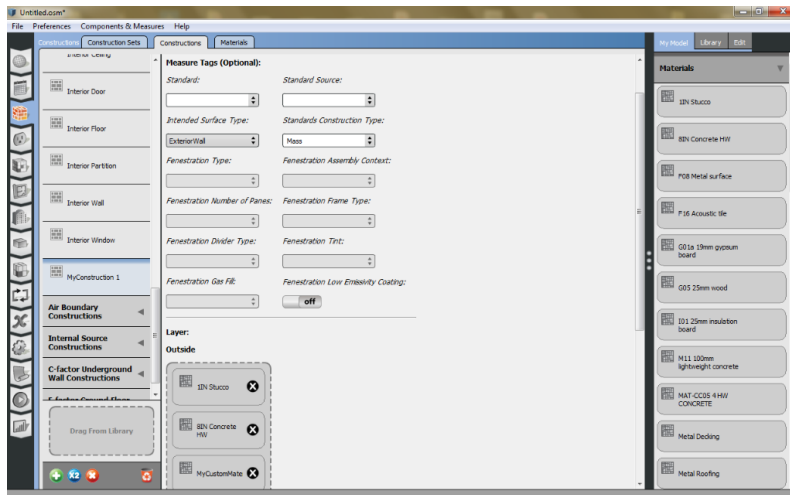


I open Open studio to add the weather data.

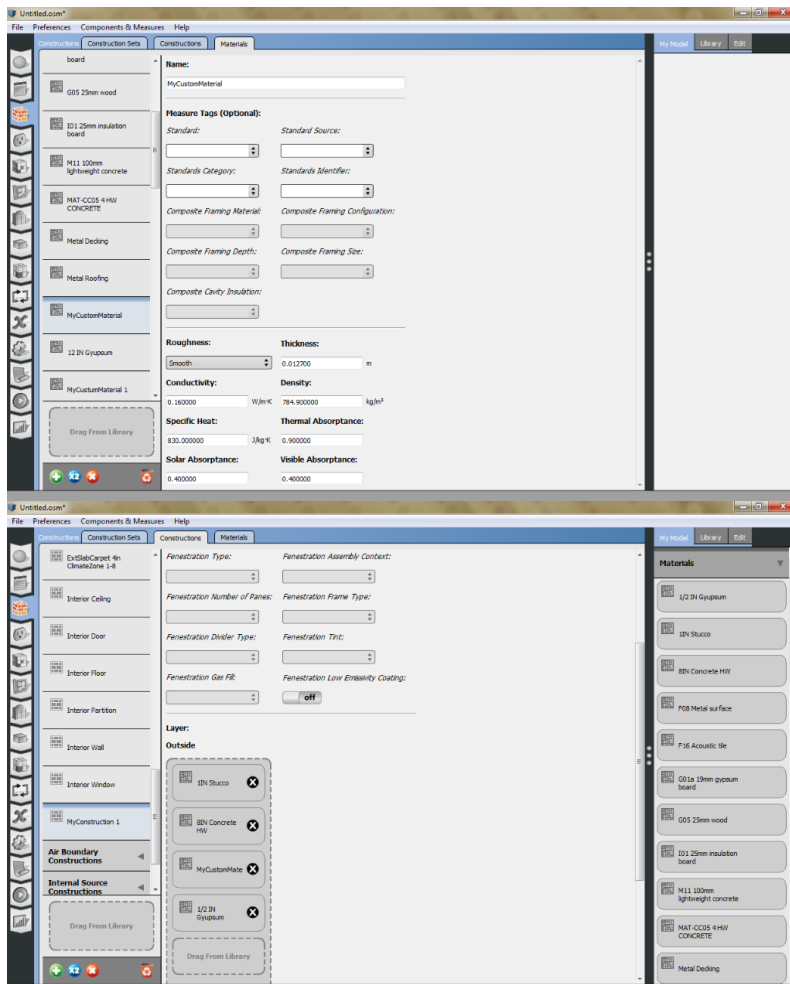




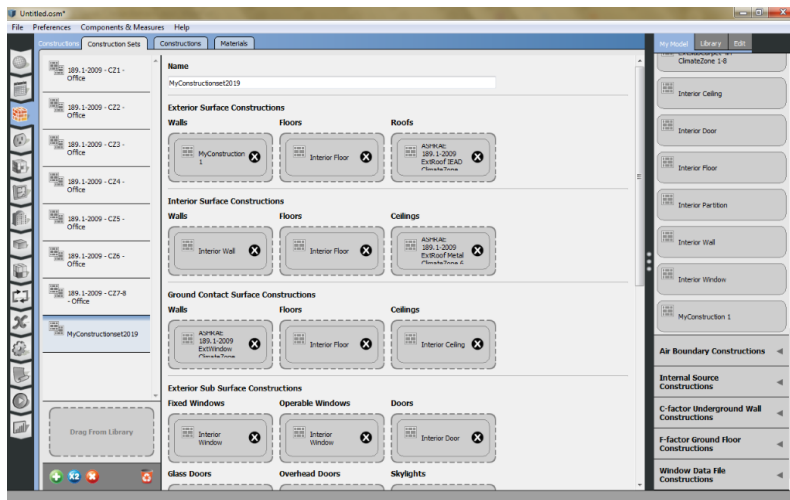
Go to the “construction” command to start customize the building, renaming it



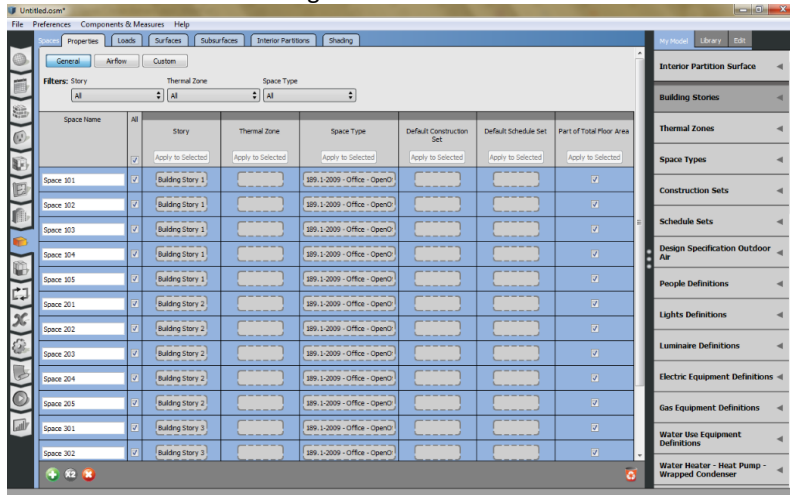
Start customizing the wall package in the “construction sets” window.



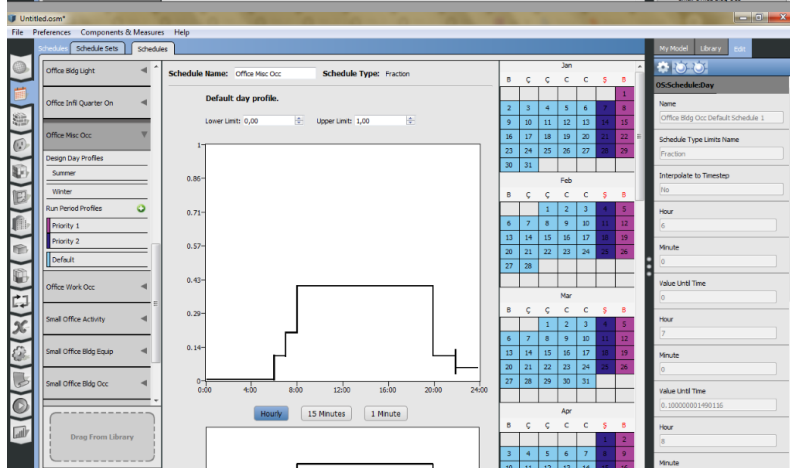
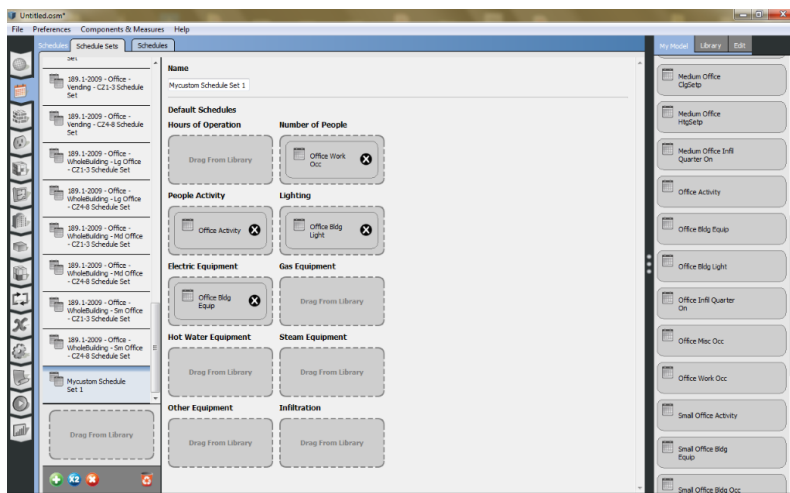
Decide the type of wall insulation and insert it later in the package



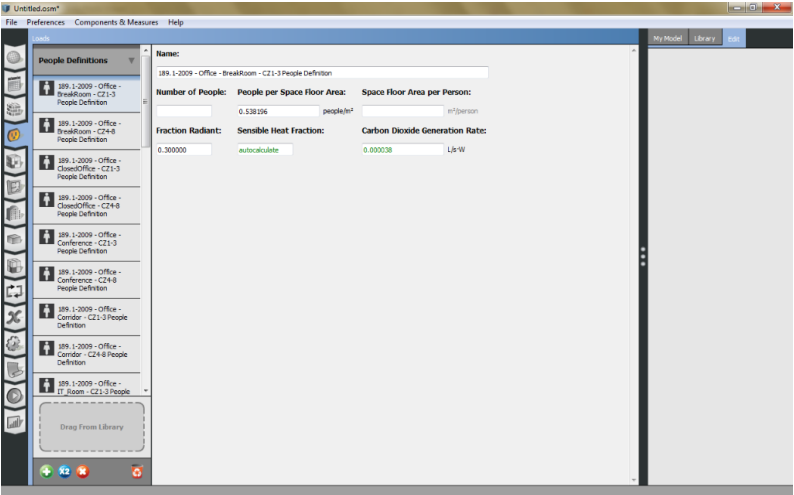
Insert the wall in the building data



Go to the "space" window and insert the project layer with my 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.