

(Week 7)

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

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Solar radiation is radiant energy emitted by the sun, particularly electromagnetic energy. Not all of the radiation emitted by the Sun makes it to the Earth's surface. Some of it is absorbed, but much of it is reflected off of the surface or scattered off of the atmosphere which makes the planet livable!

Scattering: scattering of solar radiation happens when the radiation attacks very small objects in Earth's atmosphere, such as air molecules, tiny water droplets, ice crystals, etc...., which diffuse the solar radiation in all directions. red Sun at the time of sunset, varying cloud colors at sunrise and sunset are the outcomes of this phenomenon.

Reflection: Reflection of solar radiation occurs when the radiation is sent directly backward from a surface. The fraction of radiation reflected back is known as albedo. Albedo varies greatly from one location to another on Earth. Earth reflects an average of 36% of the insolation

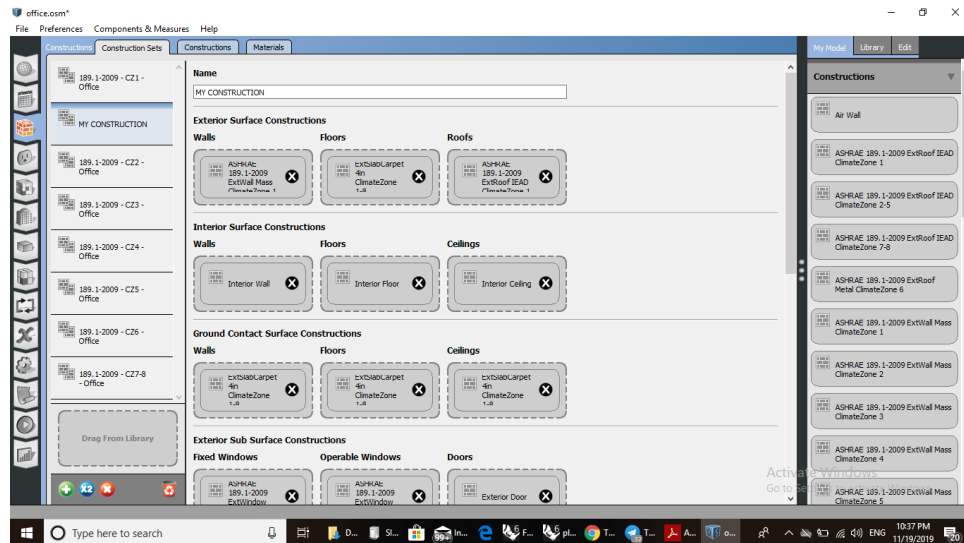
ABSORPTION: The atmosphere and the surface of the Earth together absorb 71 percent of incoming solar radiation. Absorption is different from scattering and reflection, because it involves the conversion of electromagnetic radiation into heat energy.

Furthermore

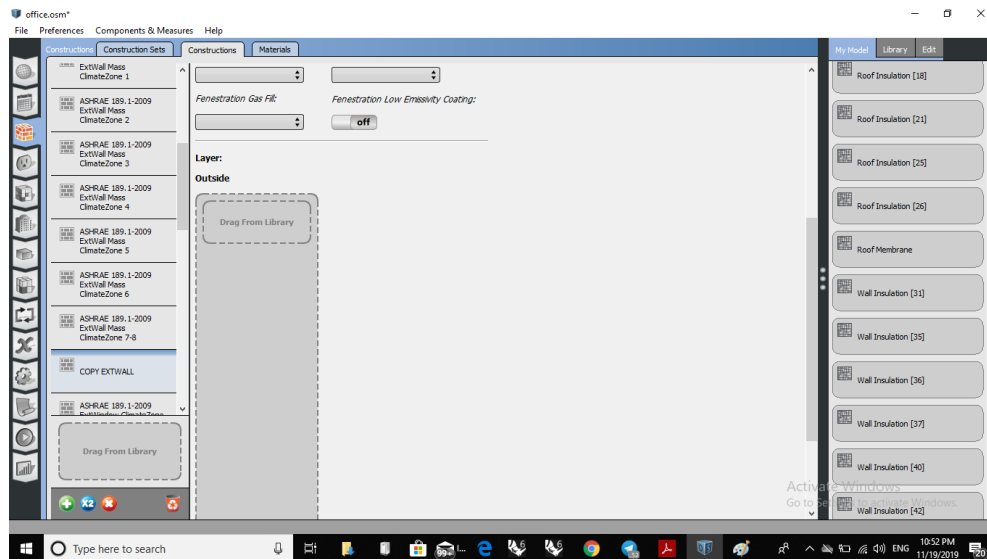
Solar radiation depends on:

1. position of the sun
2. the weather condition
3. the site altitude over the sea level
4. length of the day

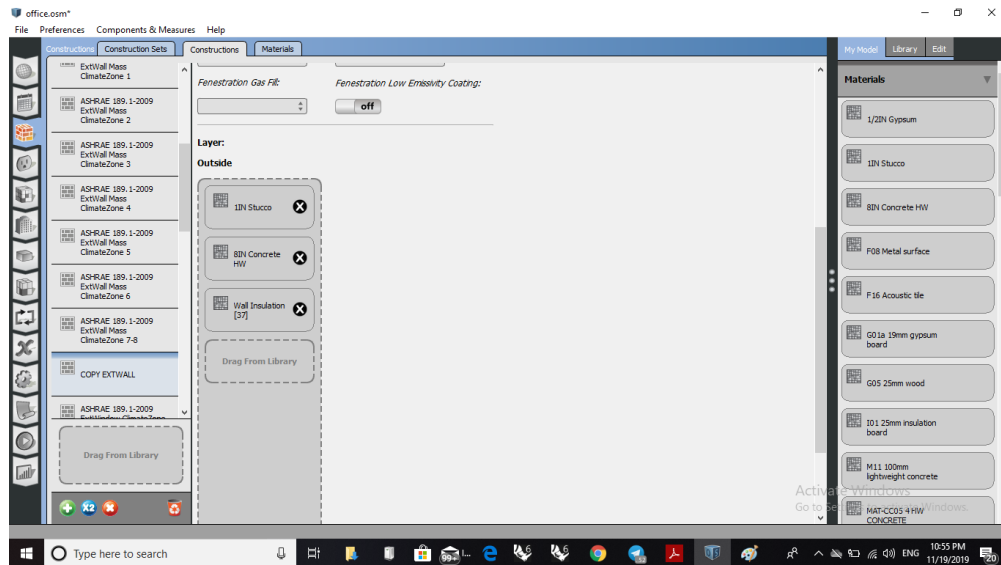
2. ** Task 2** Y create a pdf file with screenshots of all of the steps we went through in the second lesson on openStudio and explain briefly the reason behind the use of each step



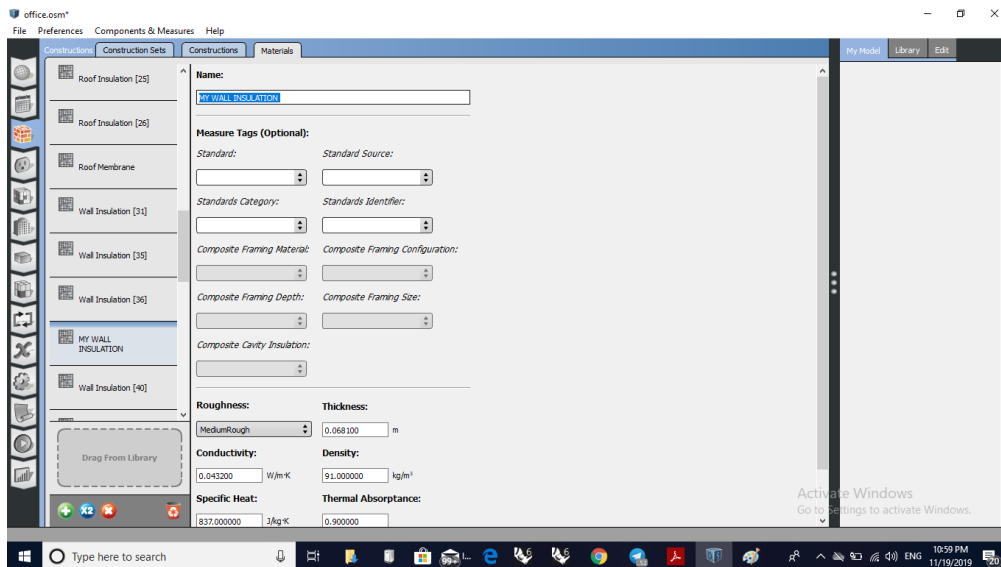
First I opened my file and the construction set AND got the copy of construction set in order to change the name of my set (MY CONSTRUCTION)



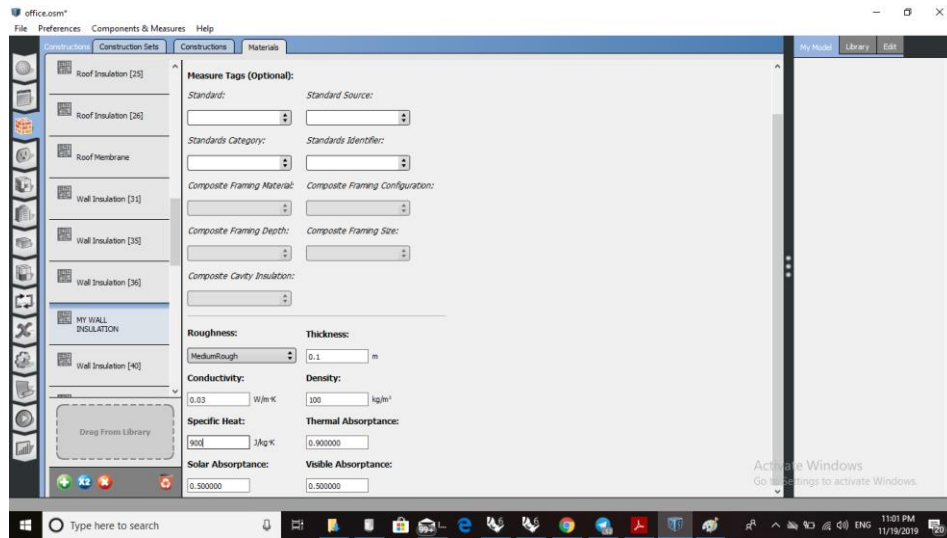
In this section we can choose our construction and we can edit them. I changed the name to the copy extwall



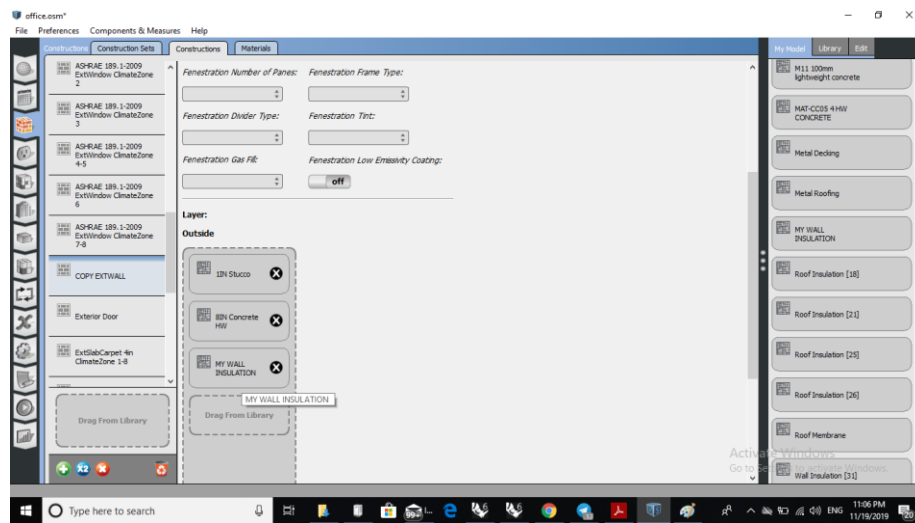
I remove the properties and add new properties from material library with drag and drop



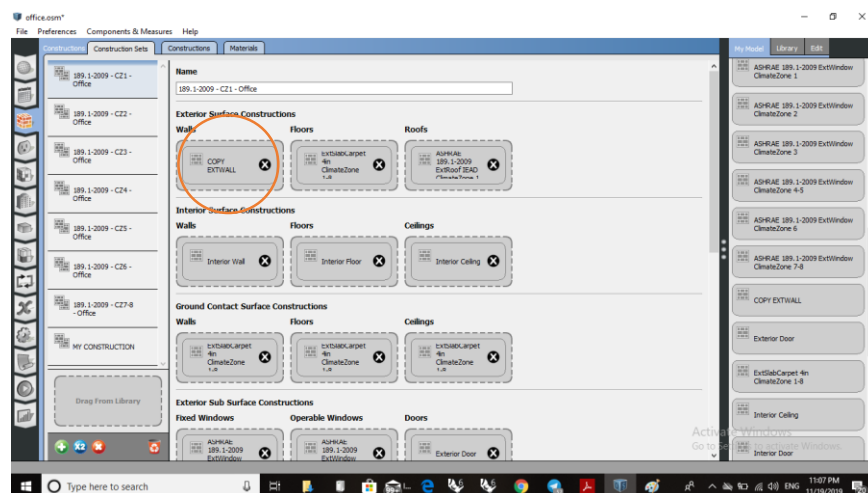
Also we can change the material properties and I changed the name of one of them (MY WALL INSULATION)



Moreover we can change some parameters such as thickness density conductivity....and I changed them.



Then I back to the construction to put MY WALL INSULATION in the properties of COPY EXTWALL that I created



Also in the construction set I can drag and drop my COPY EXTWALL to change the properties.

