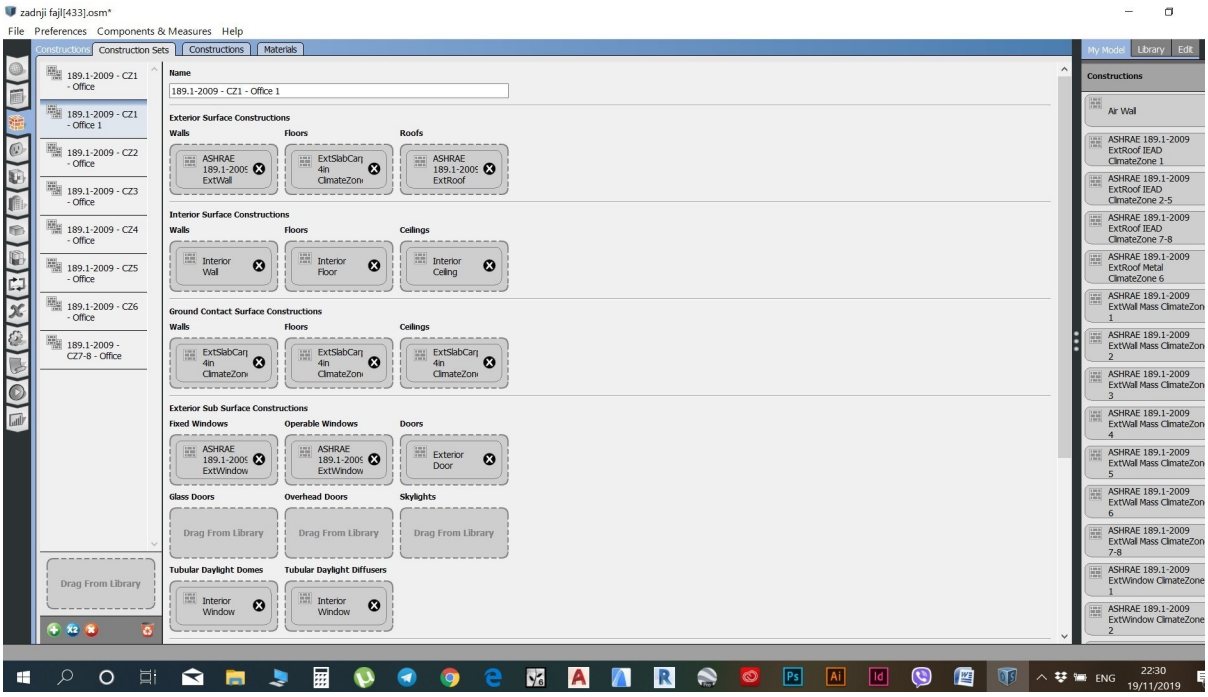
ASSIGMENT 7

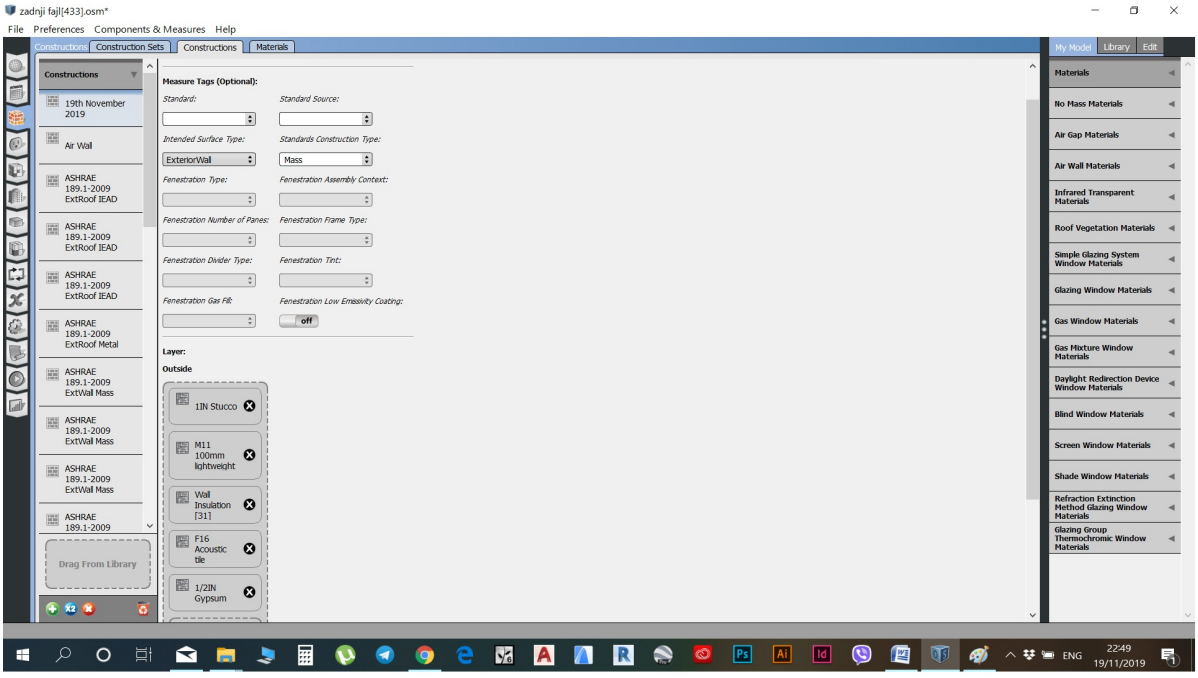
Task 1 - *Provide a summary of the main concepts that went through about solar radiation (formulas are not needed)*

- Solar radiation is radiant type of energy emitted by the sun, particularly electromagnetic energy. Radiation from the sun sustains life on earth and determines climate. The energy flow within the sun results in a surface temperature of around 5800 K, so the spectrum of the radiation from the sun is similar to that of a 5800 K blackbody
- Solar radiation can be accepted, captured and turned into heat and electricity. That part of solar radiation is interesting for us.
- The units of measure are - Watts per square meter [W/m^2]
- The spectral distribution of direct solar radiation is altered as it passes through the atmosphere by *absorption* and *scattering.*
  The absorbed energy is converted back to heat, which causes the Earth to warm up and makes it habitable.
  In the scattering of radiant energy in the atmosphere, the shortwave radiation reaching the earth's surface is not only direct solar but also scattered (diffuse) radiation. The two energy distribution in the spectrum of diffuse radiation is: general characteristic and observational results.
- Air mass can be defined by the sentence: 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.
- The maximum yearly average solar radiation is 1367 W/m
- Solar radiation depends on:
  a) position of the sun
  b) the weather conditions
  c) the site altitude
  d) length of the day

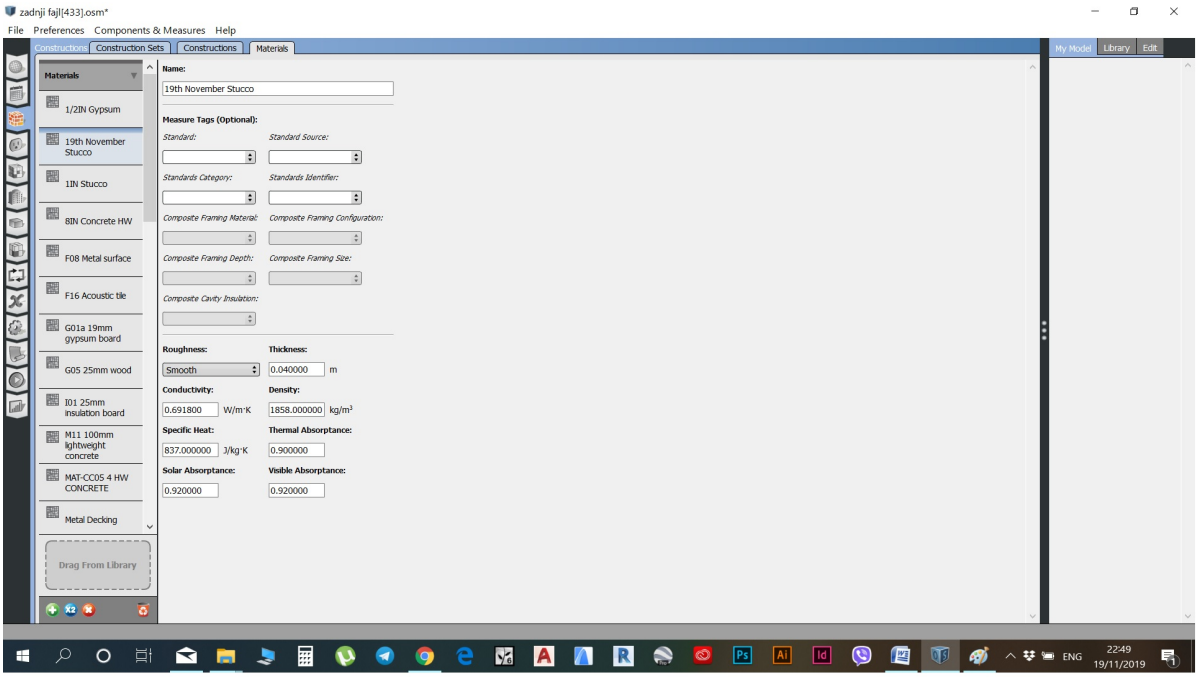
Task 2 - *Create a pdf file with screenshots of all of the steps we went through in the second lesson on openStudio and explain briefly the reason behind the use of each step*



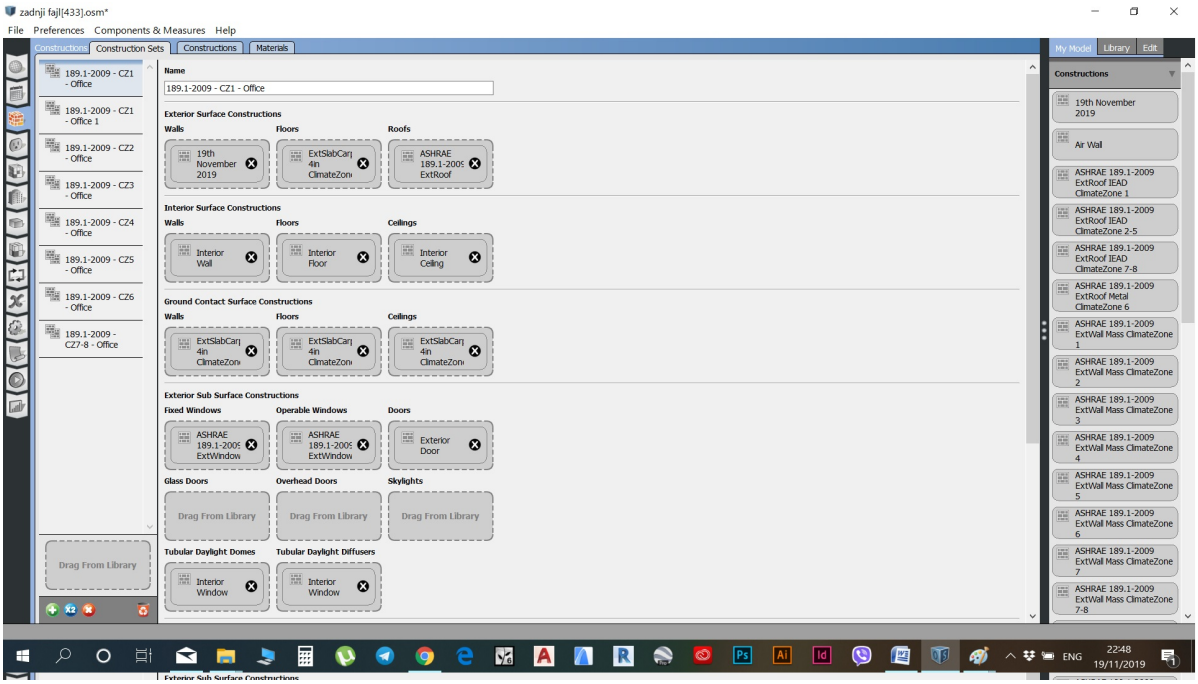
Copy the existing one and change wall construction



Copy the existing one and change the layers



Change thickness



Put new one in wall construction