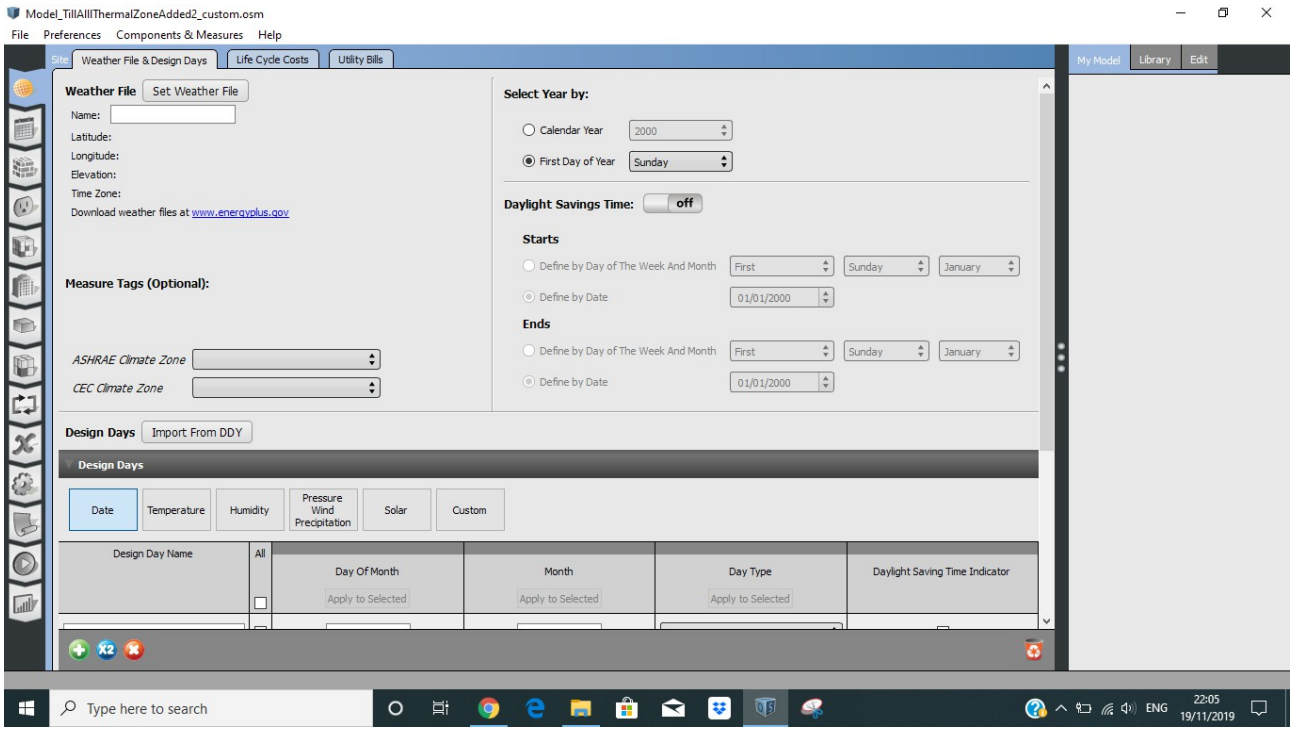
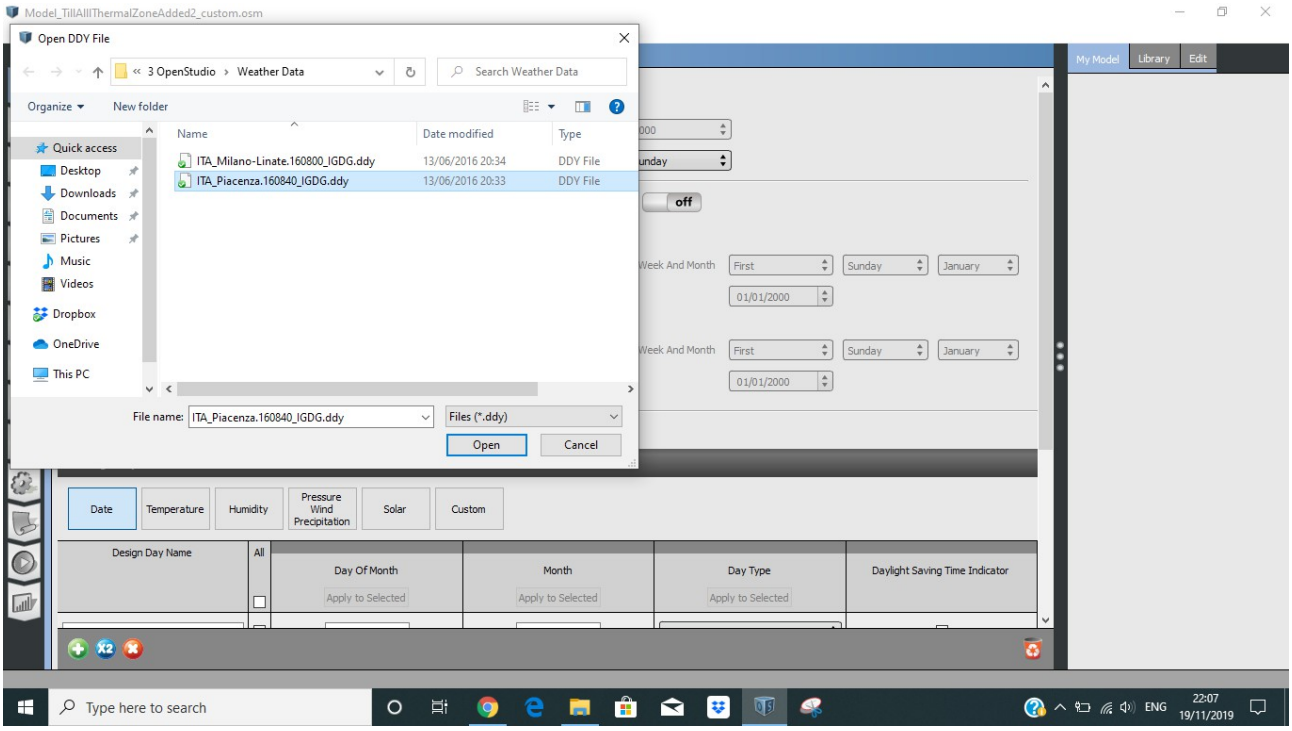
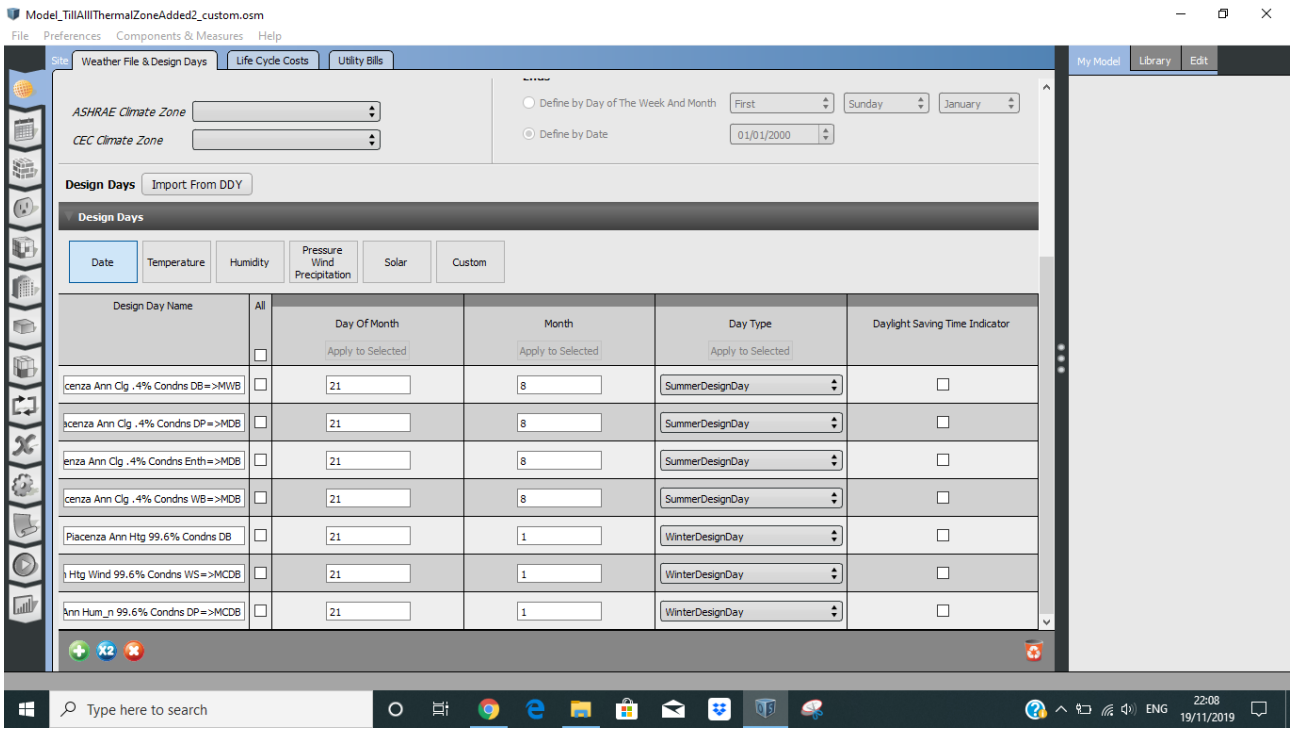
TASK 2 :



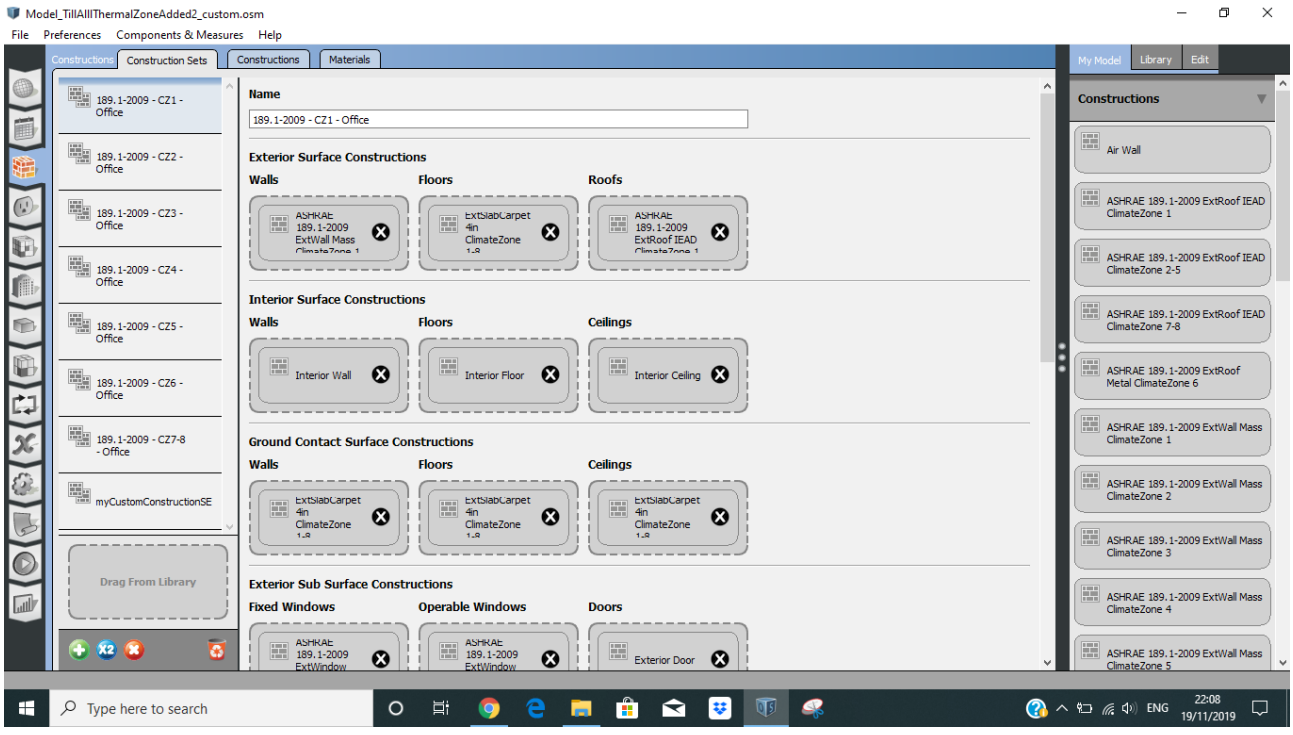
We first open our project file on openstudio.

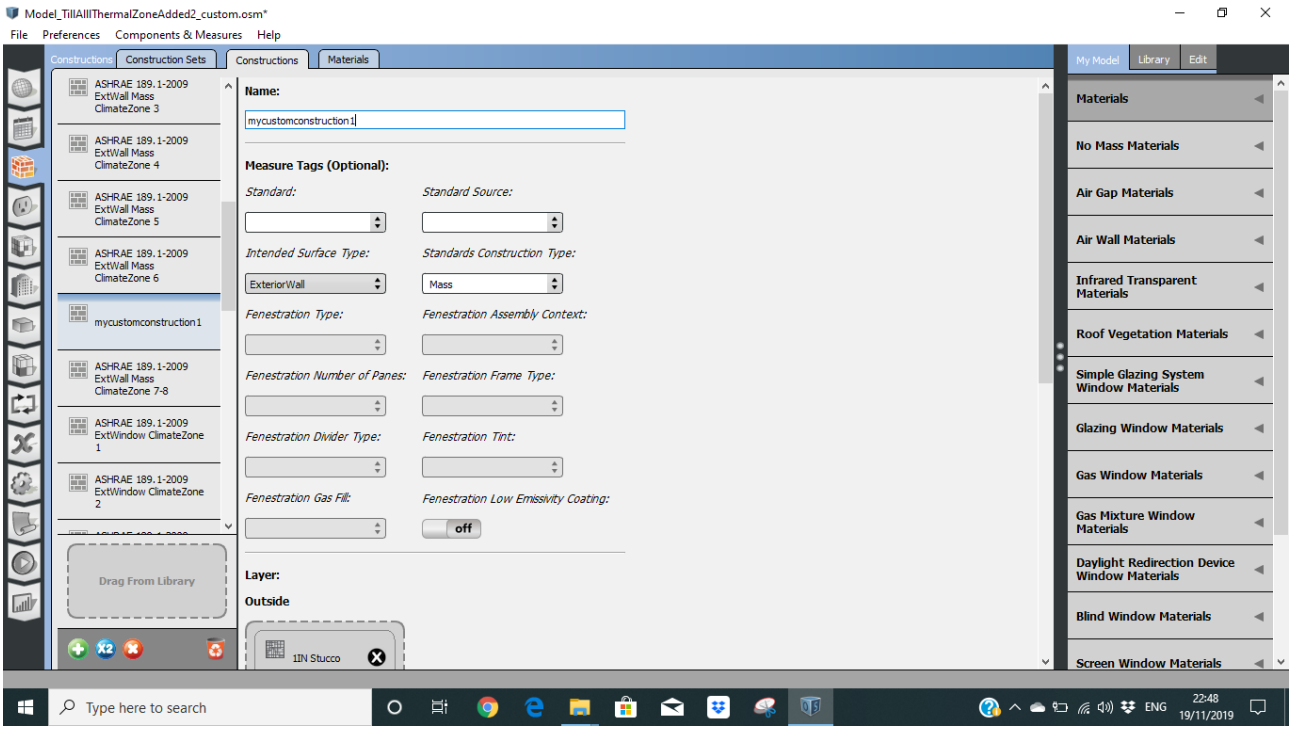


Import the weather data that we have for Piacenza (in case we don't have it, we can search the city on energy plus weather and download it and then import it from ddy).

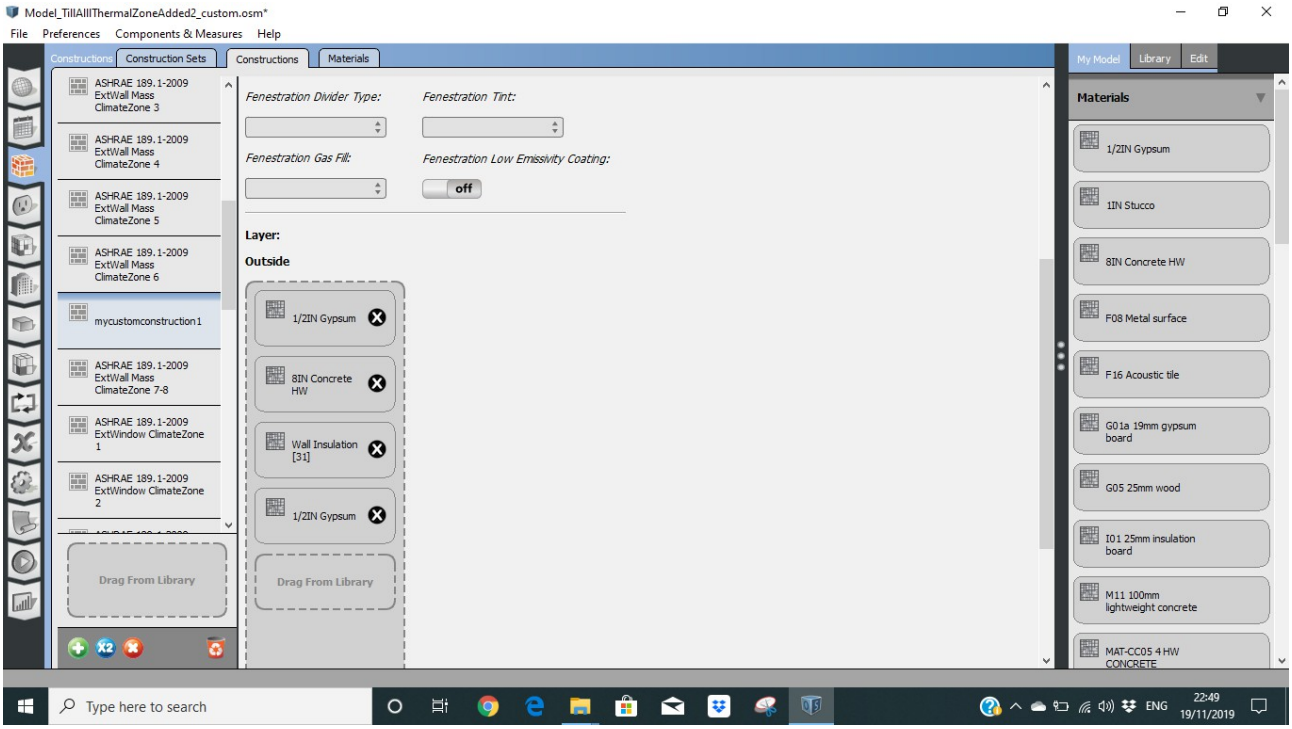


Here we have all the elements for Piacenza.

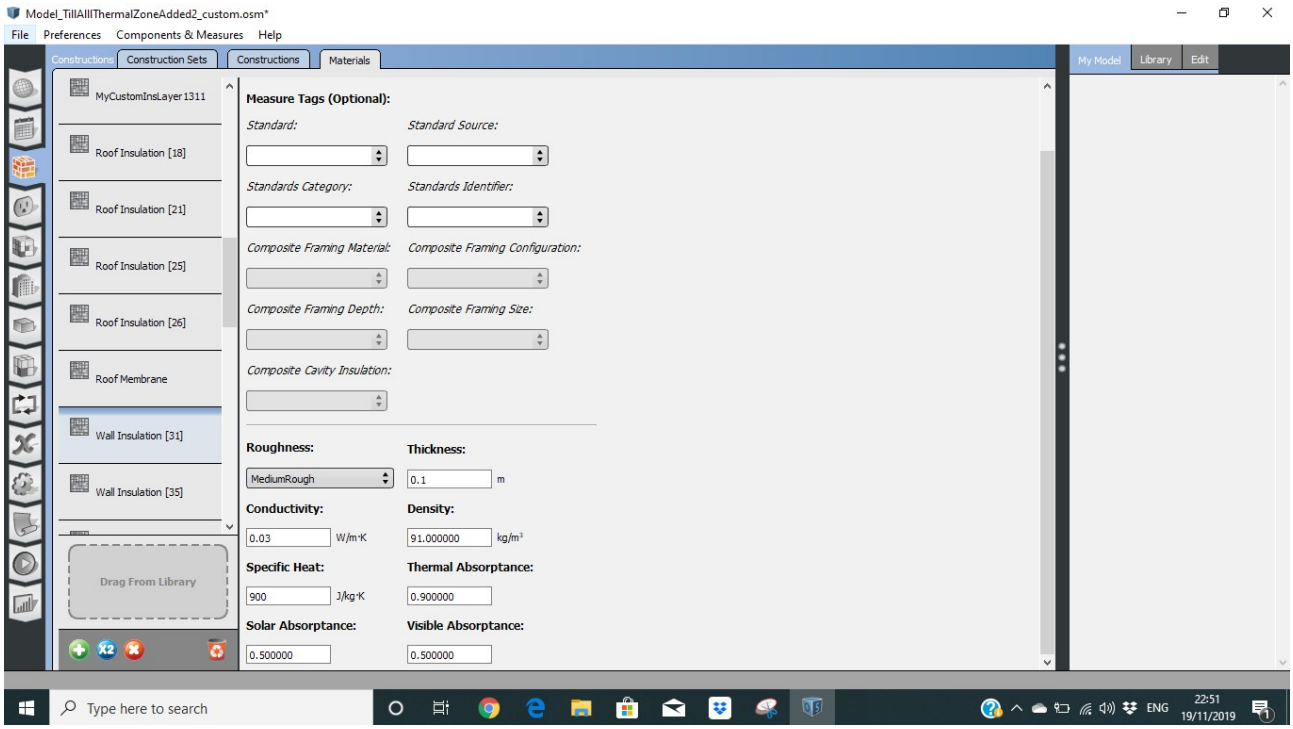




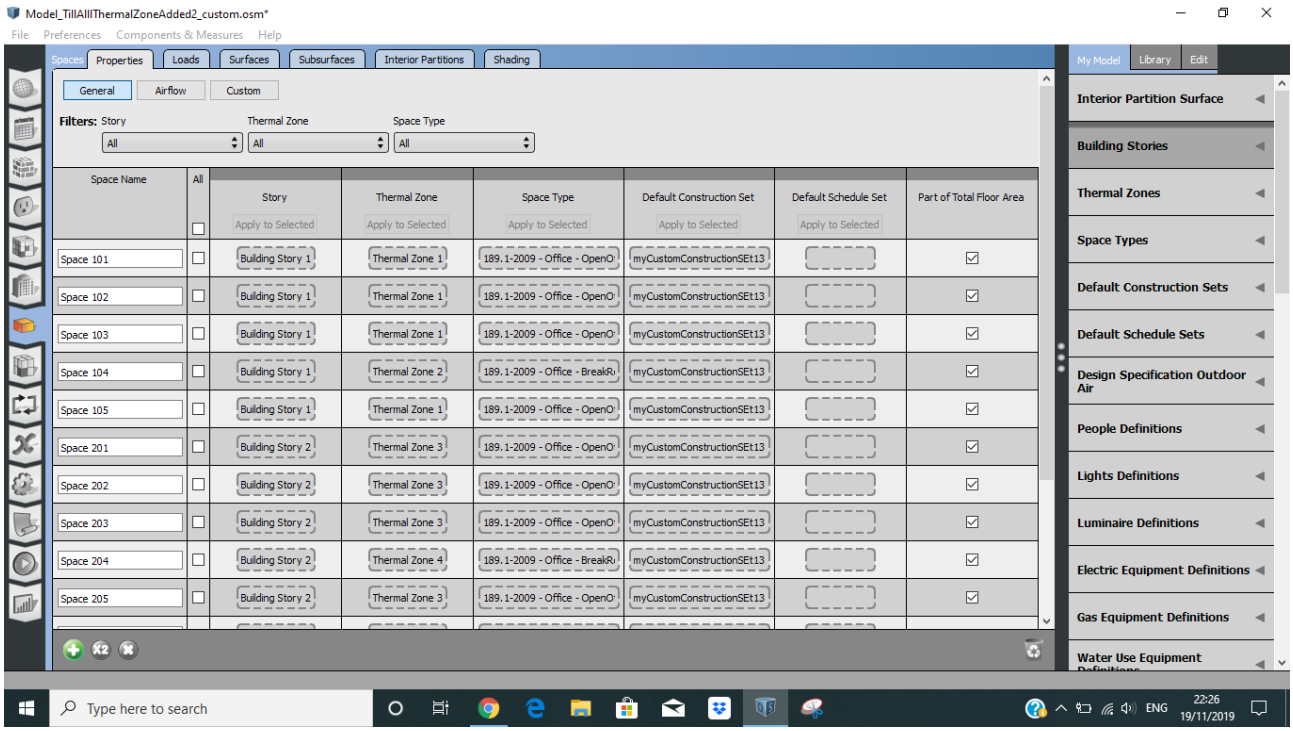
Now we go to The construction icon, we have to select one of the construction elements, duplicate it (to keep the original one), and change the name .



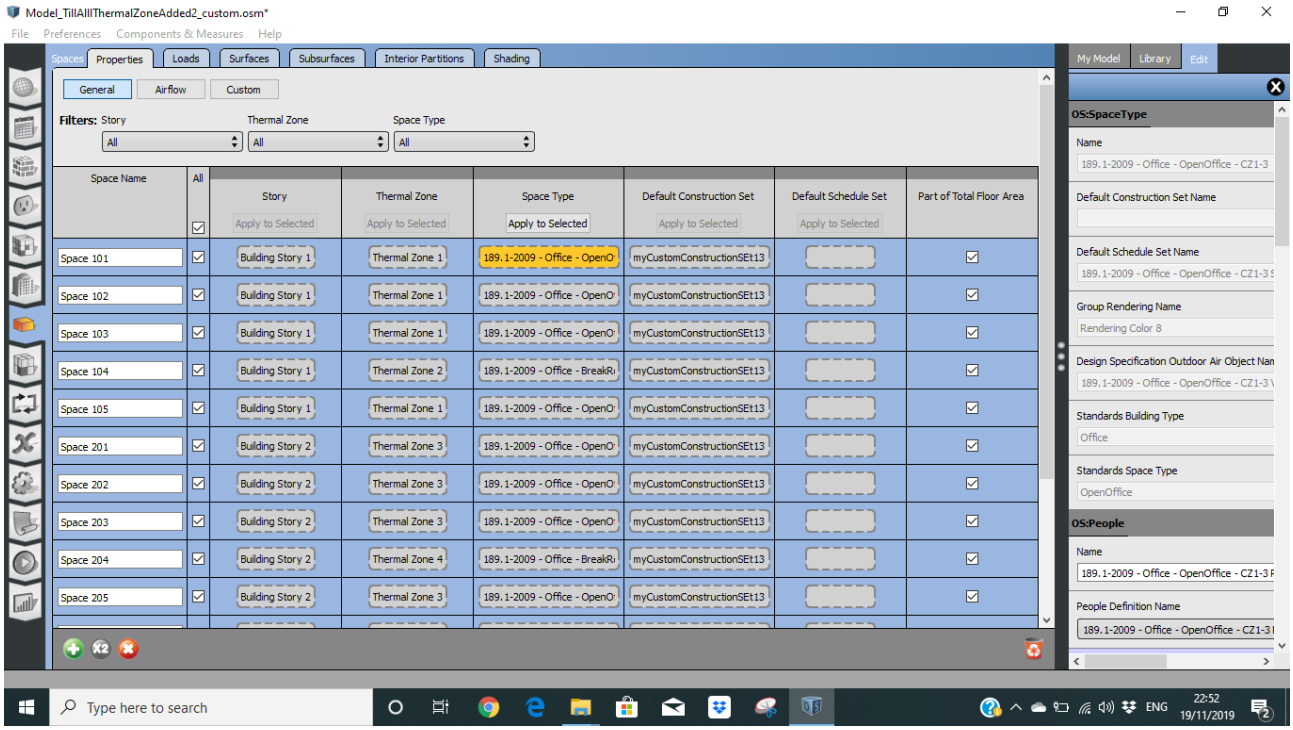
In this stage , we can change, add and delete the layers of the wall from outside to inside, the order here is important because it's corresponding to the composition of the wall.



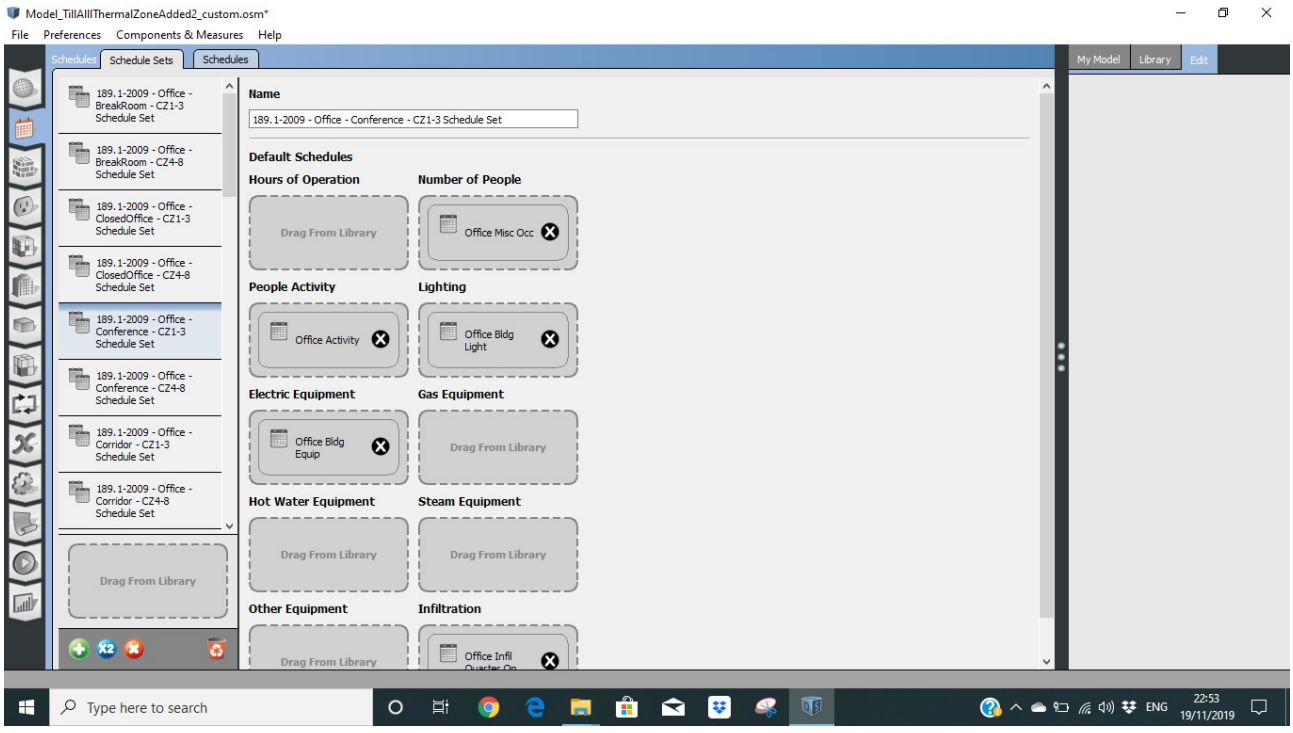
in Materials, we can change for exemple the caracteristics of the insulation (toughness, thickness,density,conductivity...)

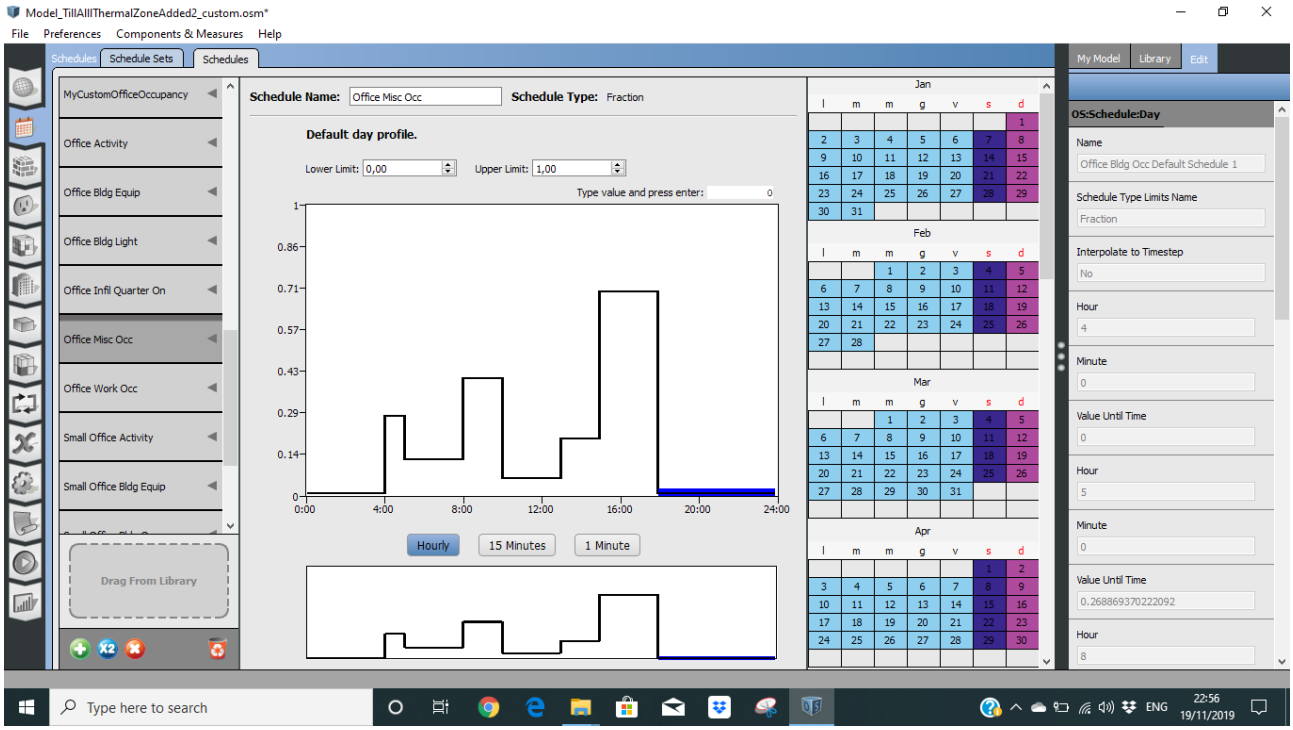


Now we go to spaces=> properties .

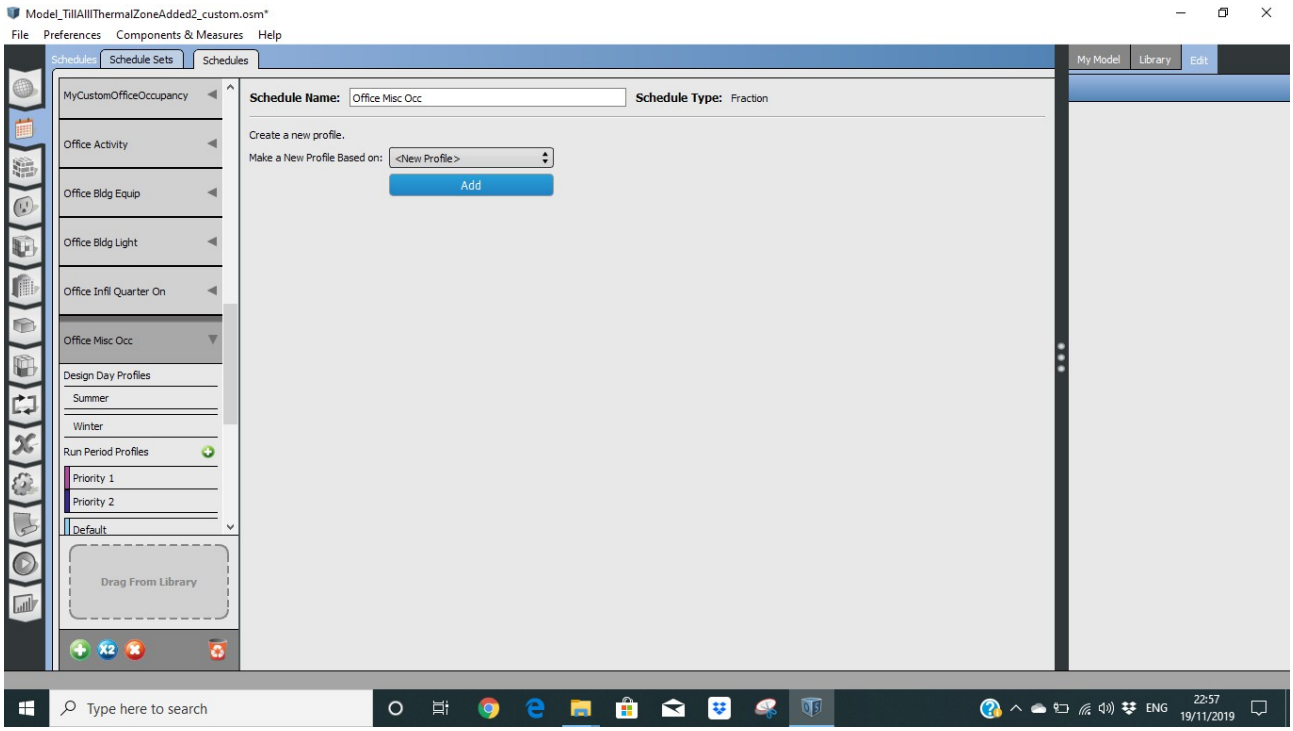


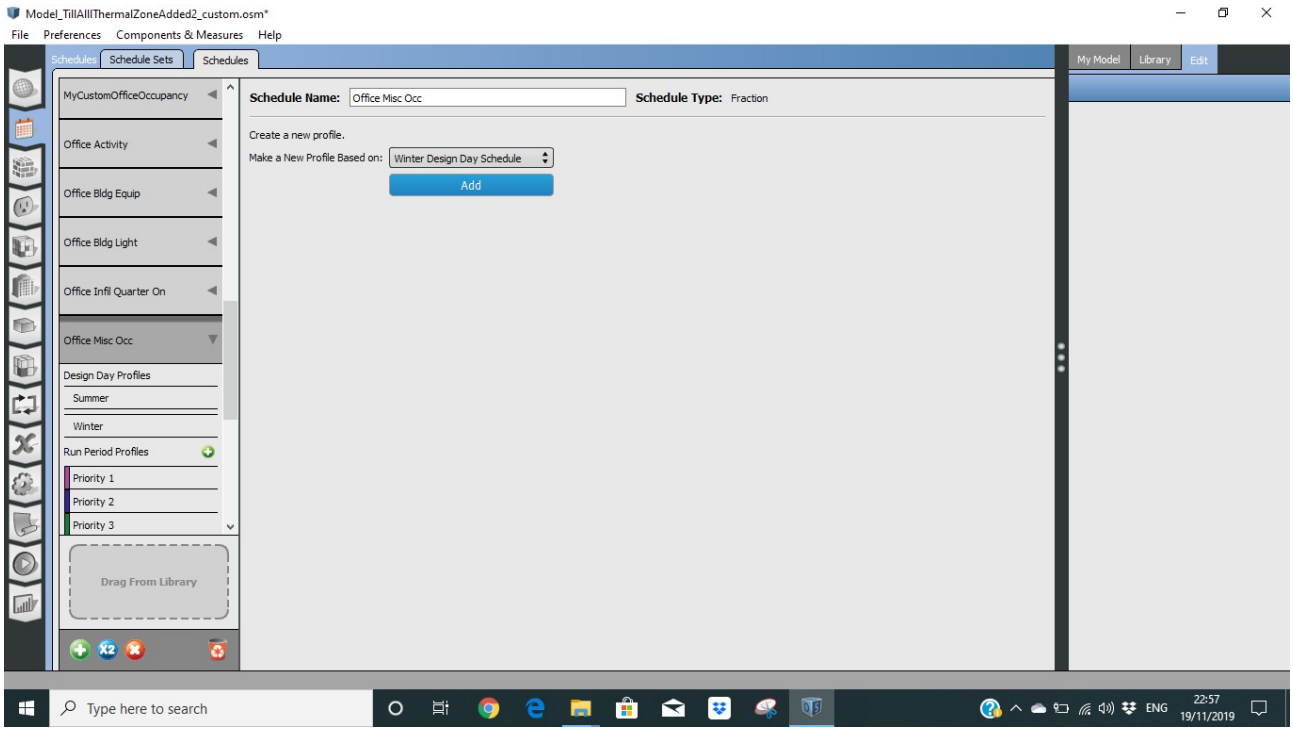
We select our type of construction and apply it to all.





In this scheduale tab we can apply the scheduale and modify it according to what we want as a ressource for our work.





At the end we can add a new element(winter for exemple) and add it using run period profiles.

TASK 1 :

Solar radiation is the radiant energy emitted by the sun. This radiation is generated from thermonuclear fusion reactions occurring in the solar core and to produce electromagnetic radiation at different frequencies or wavelengths, which it then propagates in space at the typical speeds of these waves. This spread allows you to bring solar energy with them.
Due to the characteristics of the Earth's atmosphere, solar radiation passes through some alterations to cross it and reach the surface :
-Reflection and backscatter
-An absorption that causes an increase in temperature, following which it emits radiation in all directions. However, this absorption is modest in the band of visible light, so it is transparent to direct solar radiation.
-About half of the solar radiation passes through the atmosphere without alteration, under the name of net radiation (direct). Half of the net radiation ultimately contributes to the evaporation of water bodies. As a result, available solar energy accounts for about a quarter of the total energy emitted.
-The stratosphere absorbs ultraviolet rays in the 200-300 nm band by the ozone.