week7_TPletneva

13 ноября 2019 г. 10:48

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

Solar radiation represents energy, that is emitted by the Sun. It is transferred through electromagnetic waves in the infrared, ultraviolet and visible spectrums.

Solar constant is the annual maximum amount of energy received by the sun per surface unit. It is measured perpendicular to earth and outside the atmosphere.

Solar radiation reaching the earth surface is diminished by two phenomena; dispersion and absorption.

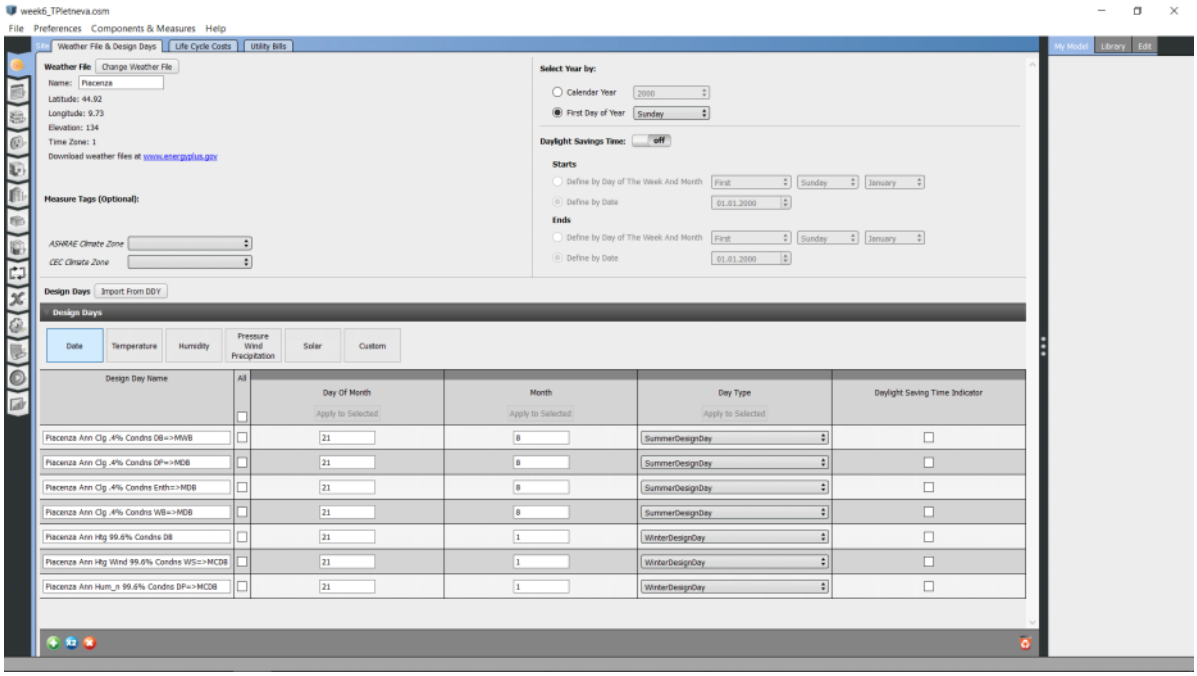
Solar radiation can be either diffuse or direct, being the first one the reflected part of the irradiance on the atmosphere that finally reaches earth.
Absorption occurs due to the presence of molecules (O_2,H_2O,CO_2,O_3) which capture part of the sun energy towards earth.

Solar irradiance depends on:

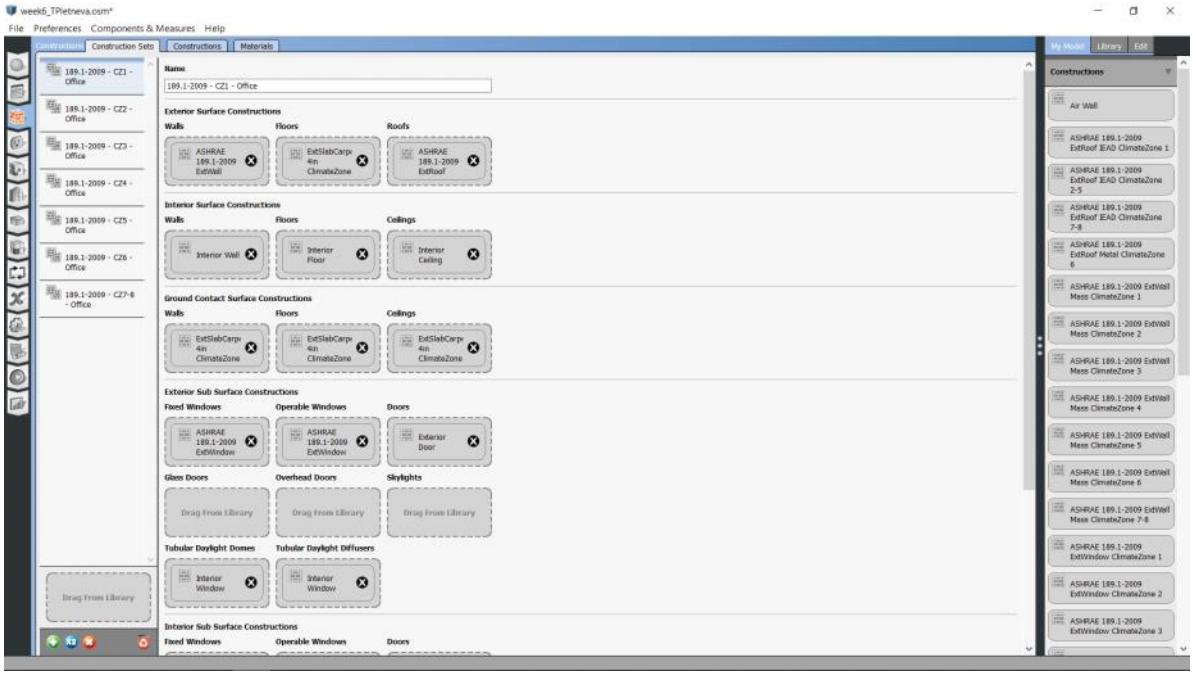
- Altitude angle (complementary to the zenith angle; angle between the horizontal plane in any earth location and the sun position)
- Weather conditions
- Sunshine hours
- Declination angle

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 (in your own words!)

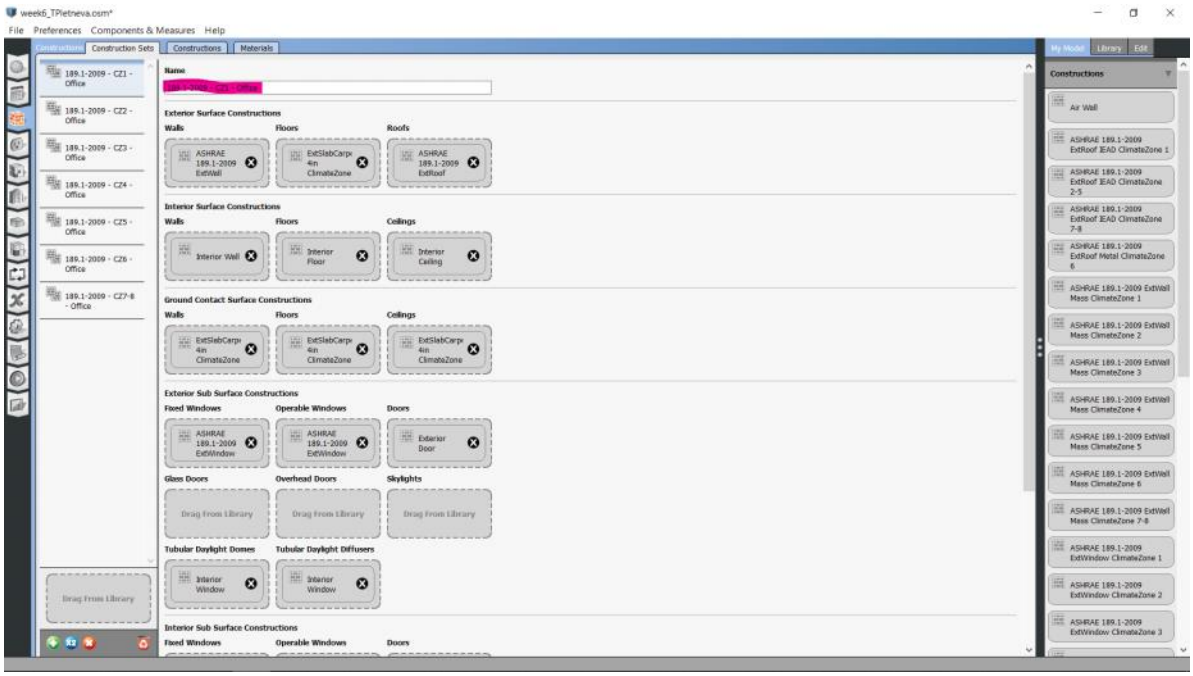
1. Opening the file in OpenStudio



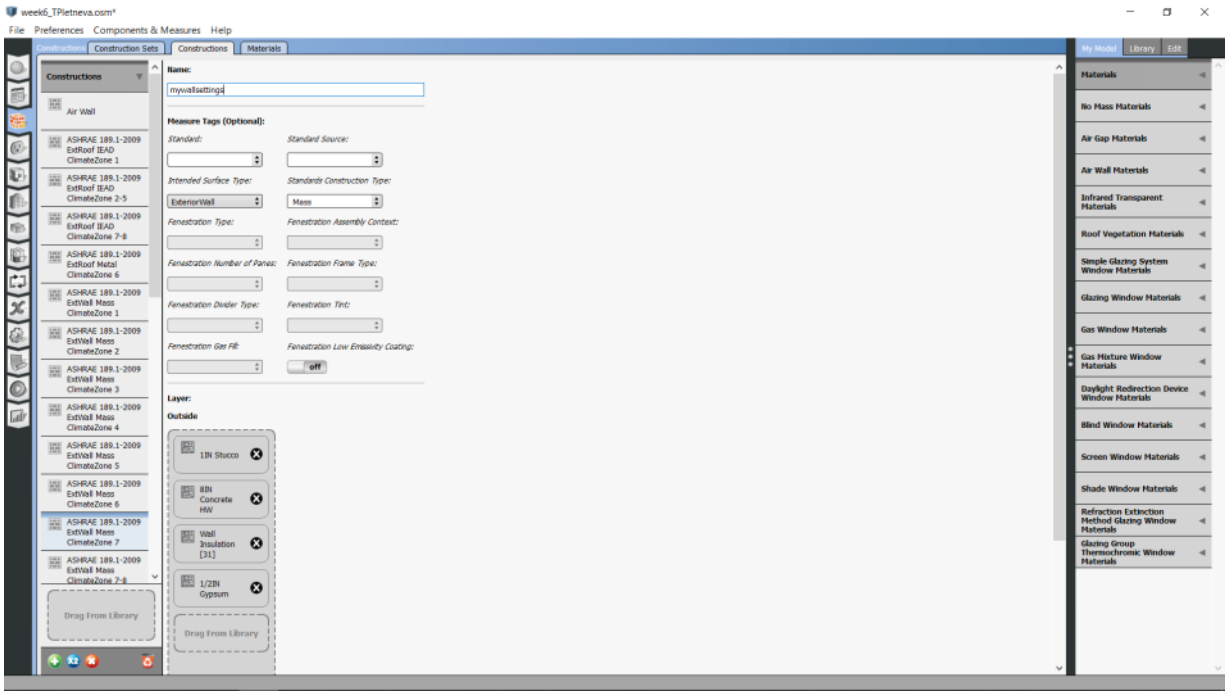
2. Going to "Construction sets" to start editing the parameters of the building.



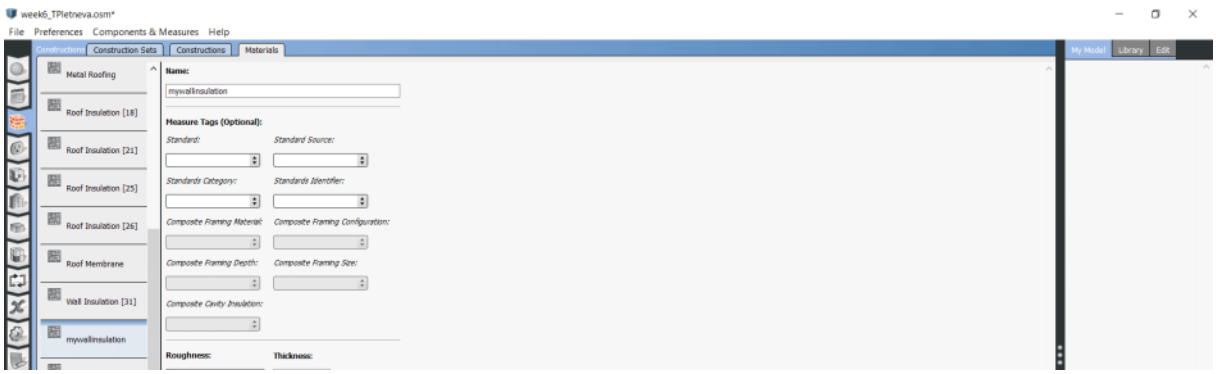
3. Duplicating the existing set and renaming it.

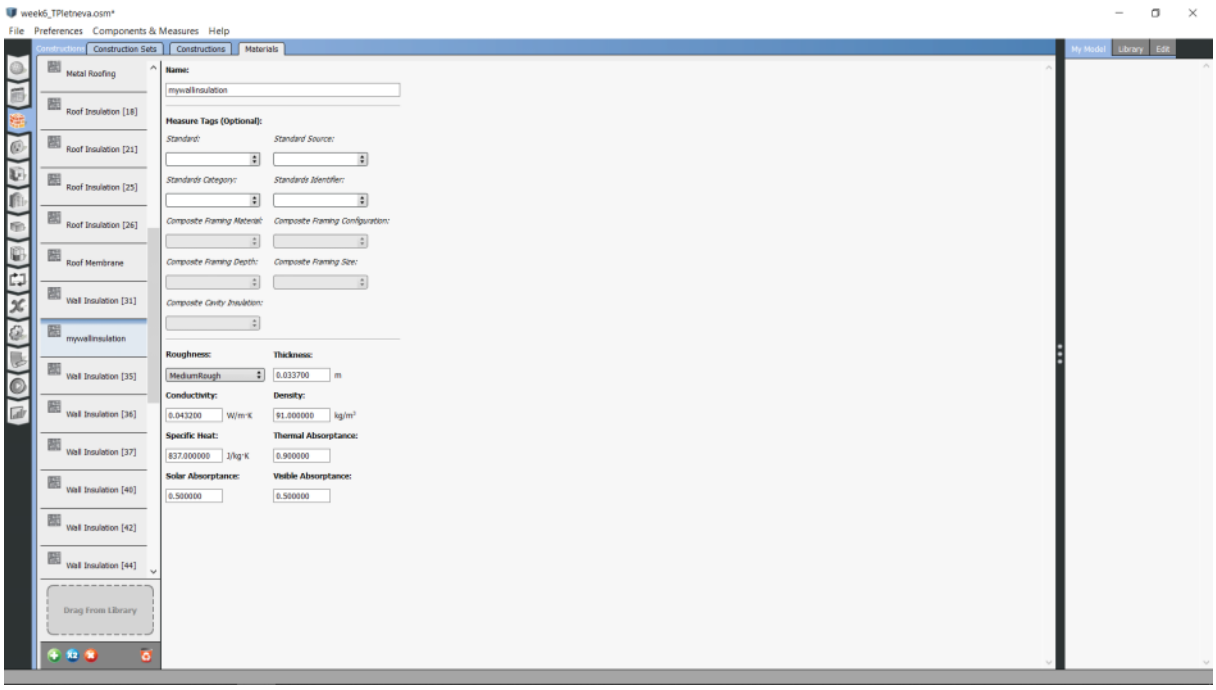


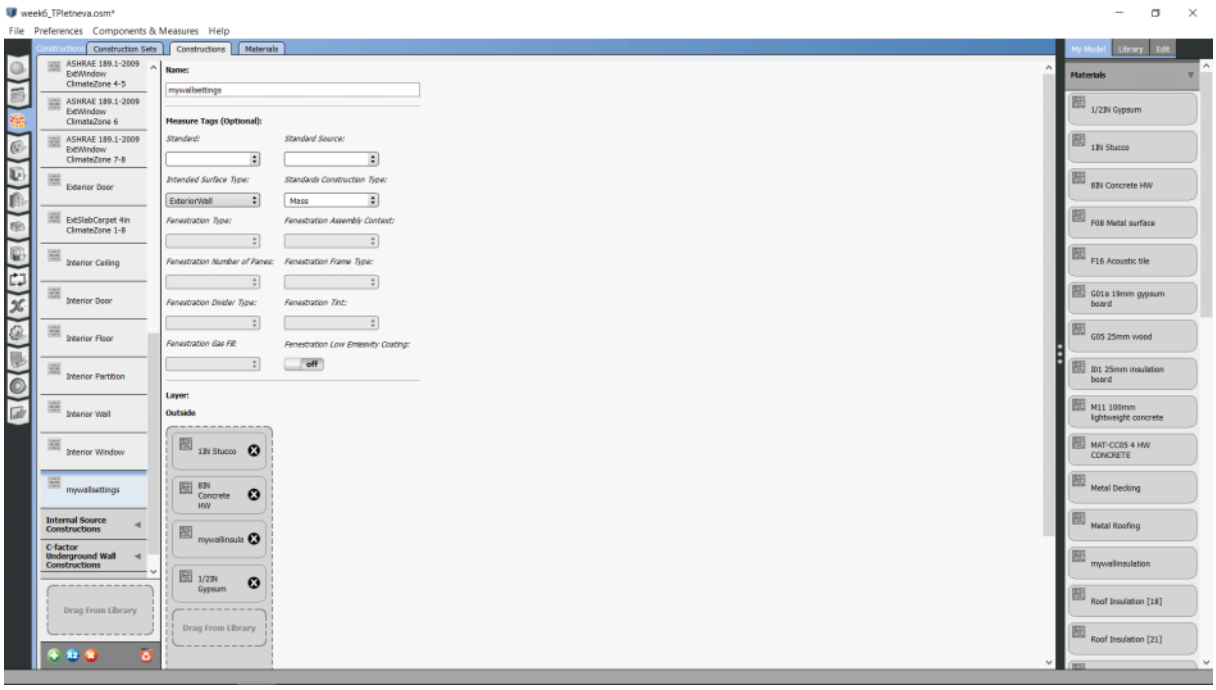
4. Customizing the wall



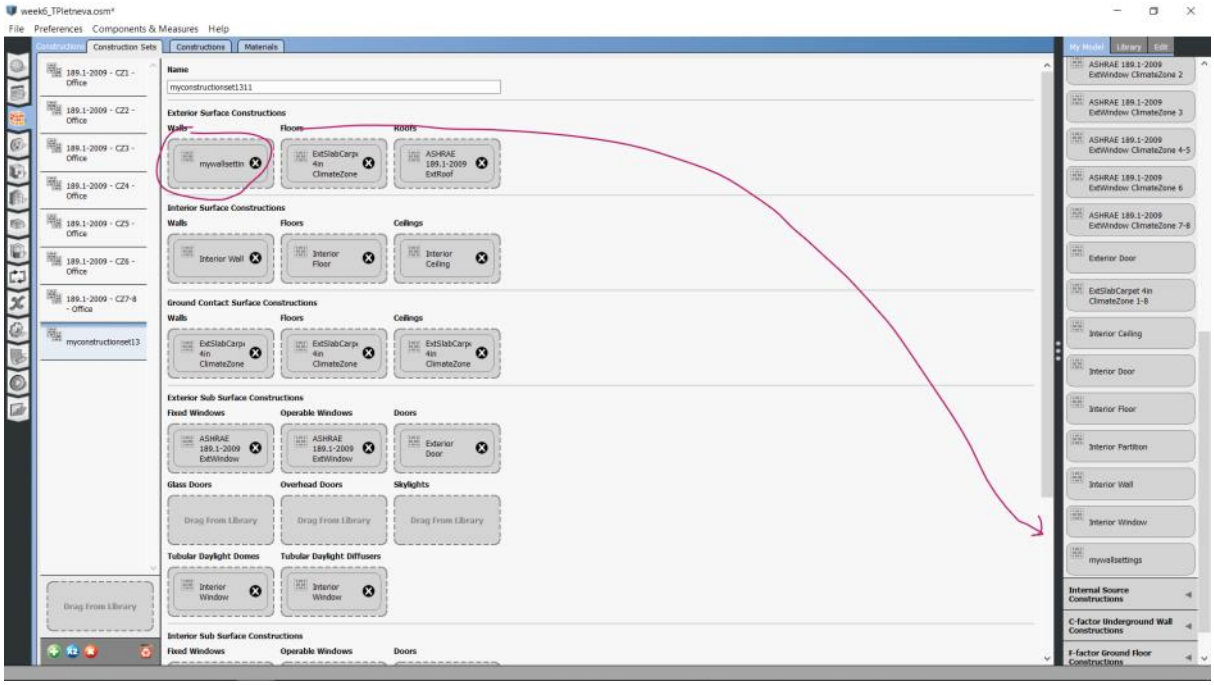
5. Customizing wall insulation and adding it into the wall.



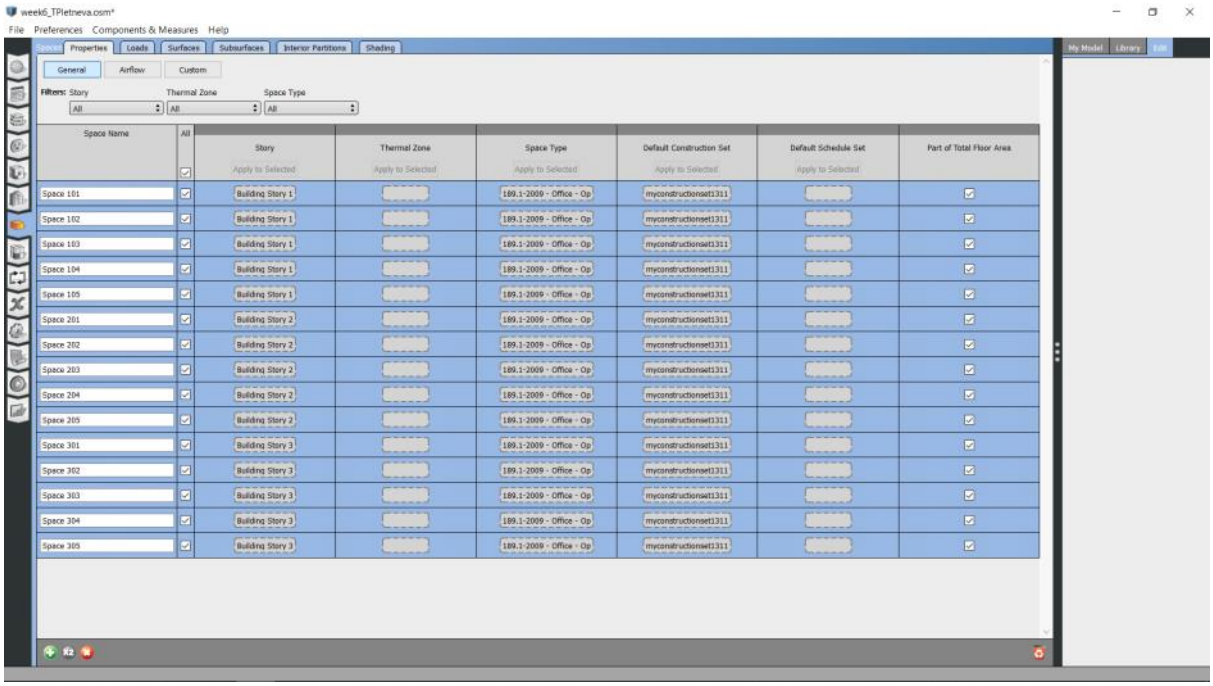




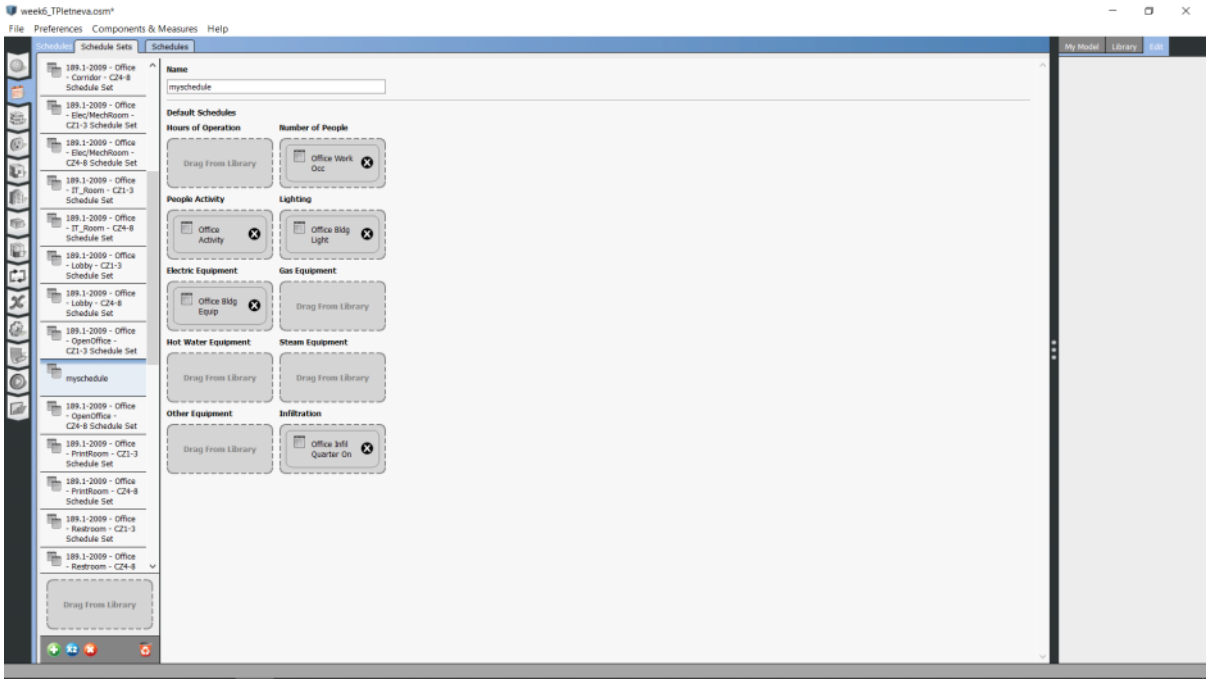
6. Inserting the wall into the construction set.

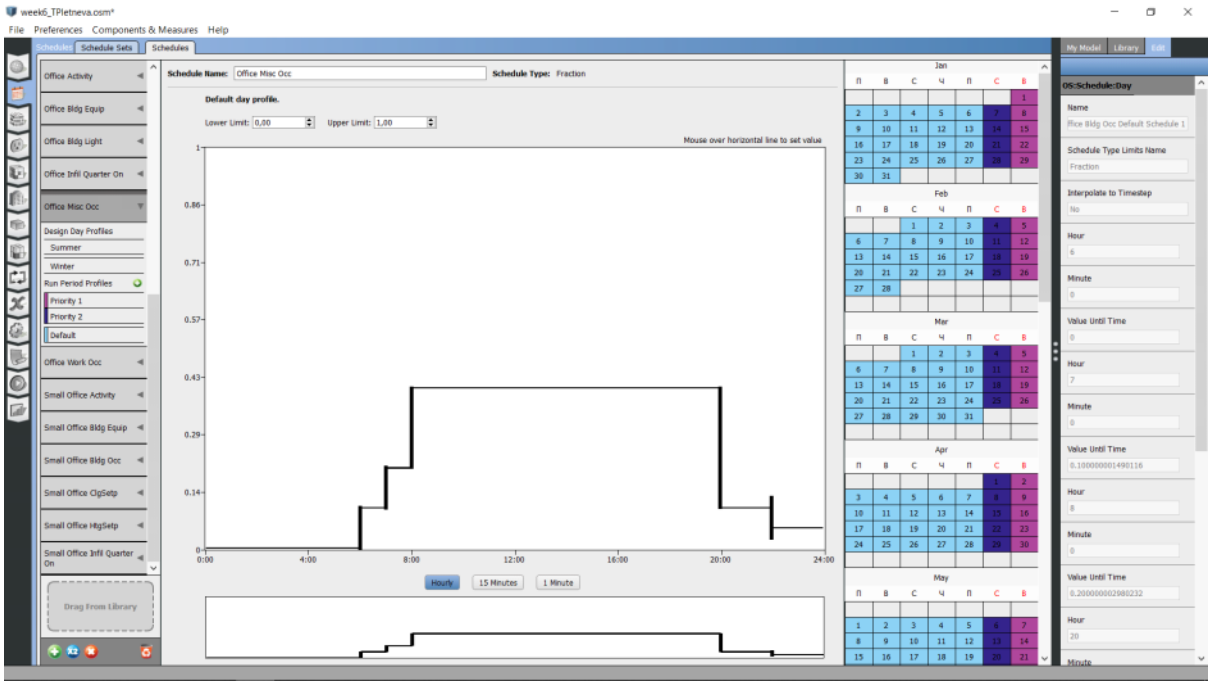


7. Applying the set to the whole building

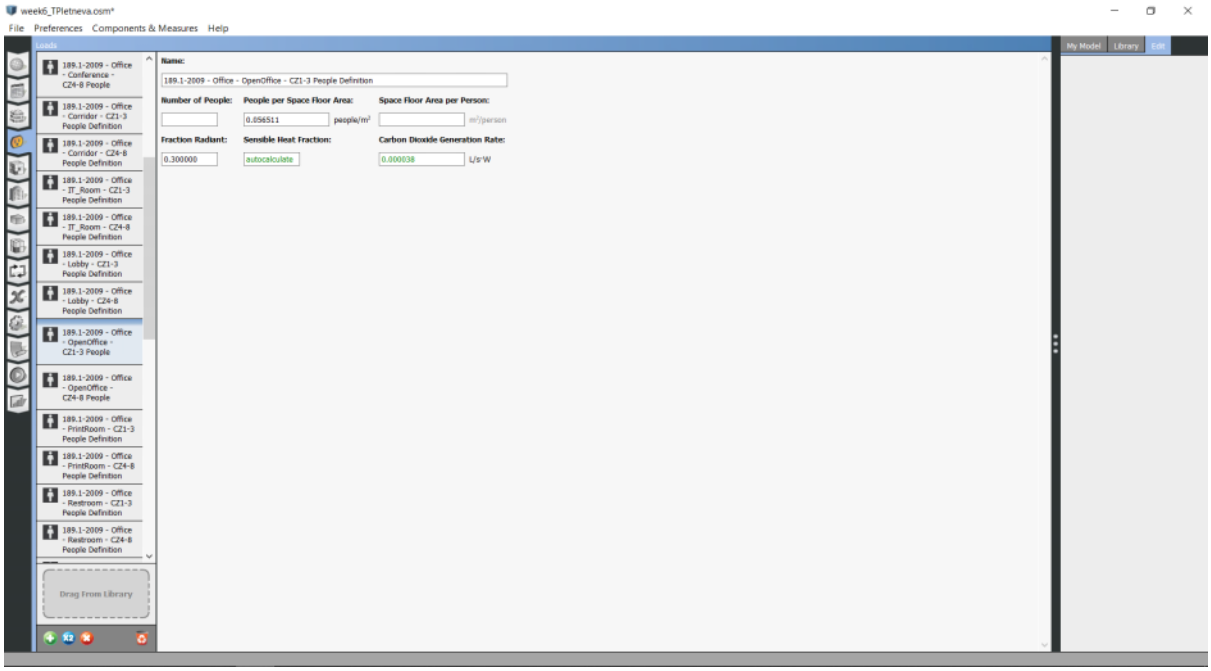


8. Customizing the schedules, entering the information about the activities taking place in the office, equipment installed, etc.





9. Editing the loads and giving them different definitions.


week6_TPletneva.osm*
File Preferences Components & Measures Help
Loads
189.1-2009 - Office - Conference - CZ4-8 People
189.1-2009 - Office - Corridor - CZ1-3 People Definition
189.1-2009 - Office - Corridor - CZ4-8 People Definition
189.1-2009 - Office - IT_Room - CZ1-3 People Definition
189.1-2009 - Office - IT_Room - CZ4-8 People Definition
189.1-2009 - Office - Lobby - CZ1-3 People Definition
189.1-2009 - Office - Lobby - CZ4-8 People Definition
189.1-2009 - Office - OpenOffice - CZ1-3 People
189.1-2009 - Office - OpenOffice - CZ4-8 People
189.1-2009 - Office - PrintRoom - CZ1-3 People Definition
189.1-2009 - Office - PrintRoom - CZ4-8 People Definition
189.1-2009 - Office - Restroom - CZ1-3 People Definition
189.1-2009 - Office - Restroom - CZ4-8 People Definition
Drag From Library
Name:
189.1-2009 - Office - OpenOffice - CZ1-3 People Definition
Number of People:
People per Space Floor Area:
0.056511
people/m²
Space Floor Area per Person:
m²/person
Fraction Radiant:
0.300000
Sensible Heat Fraction:
autocalculate
Carbon Dioxide Generation Rate:
0.000038
L/s·W
My Model
Library
Edit