## Task 1

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

The Solar radiation is radiant energy. Energy emitted by the Sun is also referred to as Solar or Shortwave Radiation. Most of Solar Radiation is the visible light we see with our eyes (Sunlight), but it also includes wavelengths that we cannot see like the Ultraviolet Rays that causes sunburn. Solar radiation entering the Earth's atmosphere is absorbed and scattered by atmospheric gases, aerosols, clouds, and the Earth's surface. Solar radiation absorbed by any surface is given by the product of how much solar energy is incident on that surface, depending on the direction of the Sun and the orientation of the surface relative to this direction, and the fraction of that incident radiation that is absorbed.
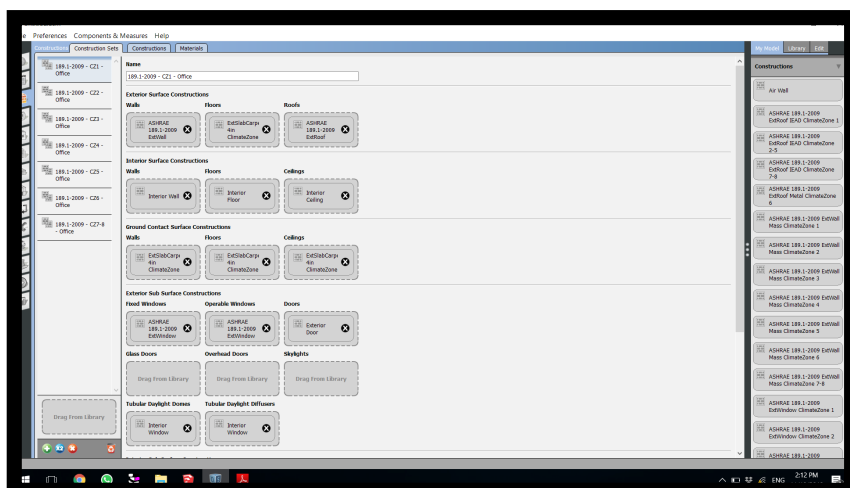
## Task 2

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!)

Importing weather data



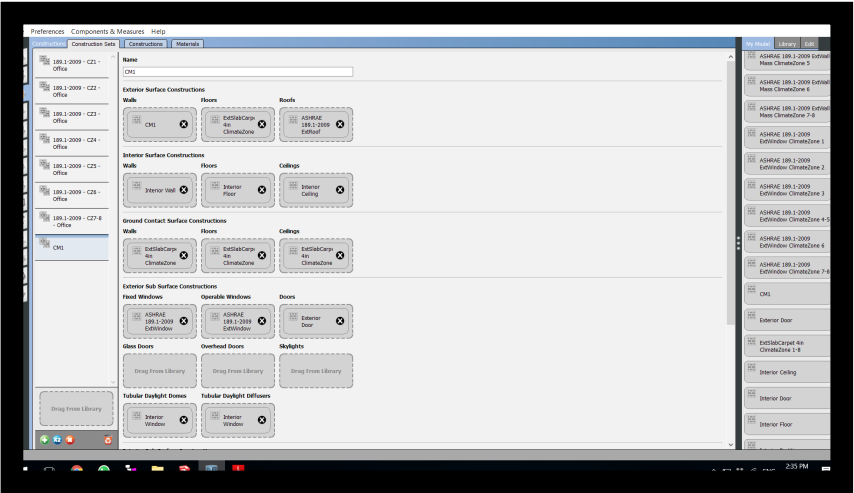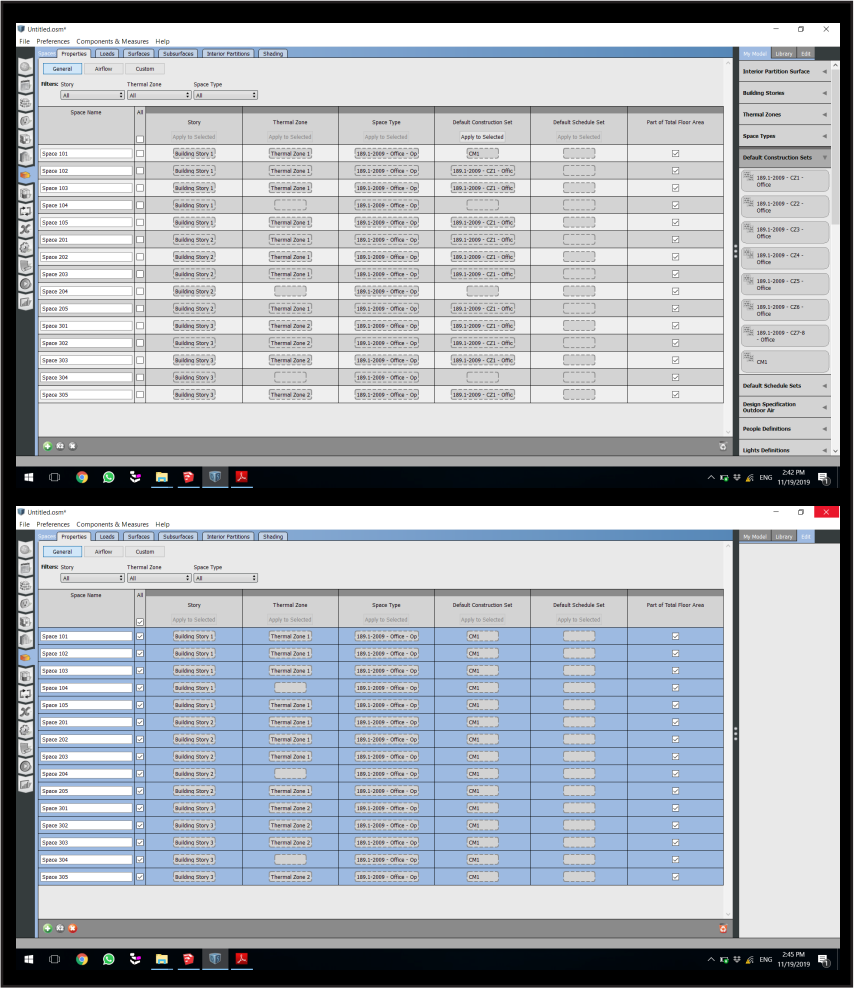create a new custom construction set
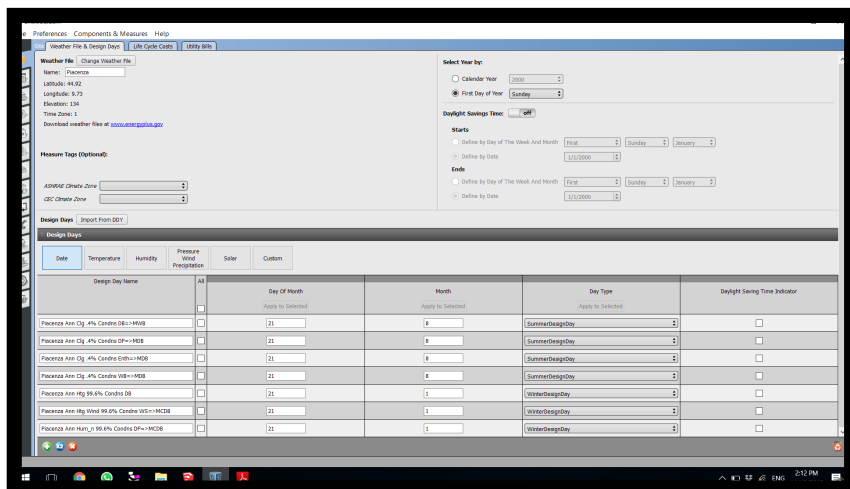
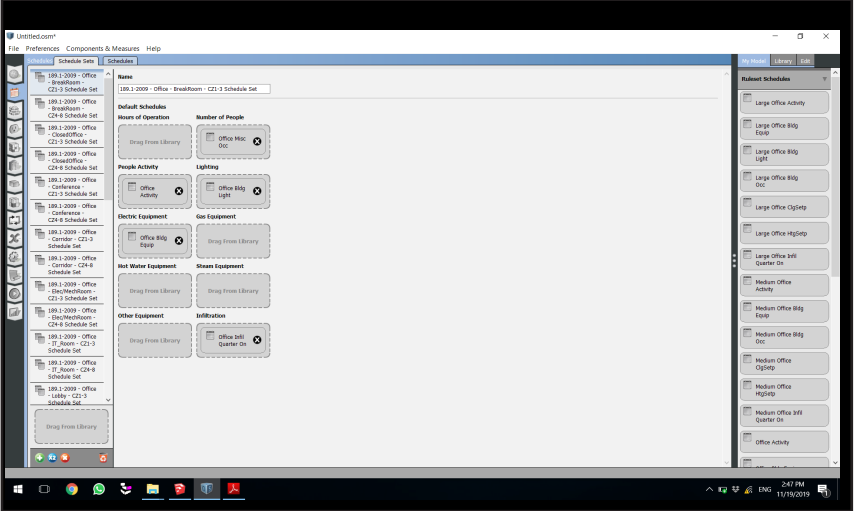# create a new custom construction wall and adding new material
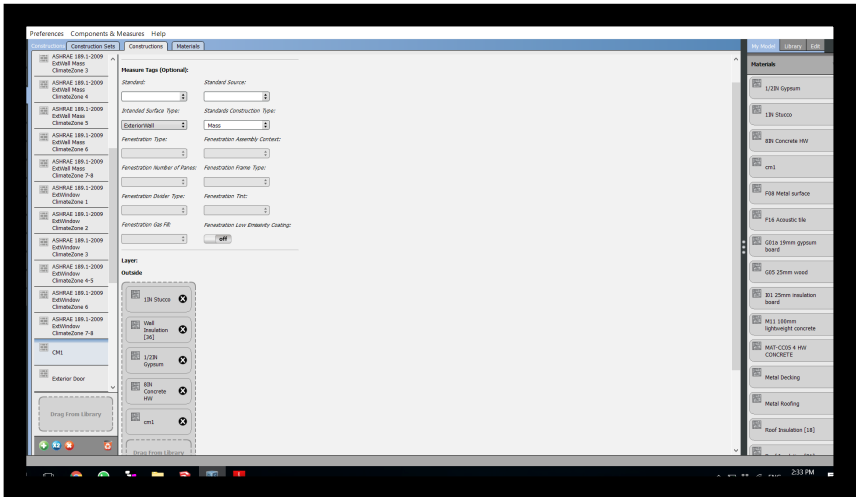
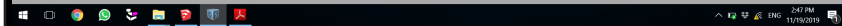Adding the custom construction in wall construction set.



Apply the "Custom construction set" to all the layers





Customizing schedule set

File  Preferences  Components & Measures  Help

Schedule Sets | Schedules

**Schedule Name:** Large Office Activity  **Schedule Type:** ActivityLevel 5

Default day profile.

Lower Limit: 0.00   Upper Limit: 120.00

Mouse over horizontal line to set value

Drag From Library

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File  Preferences  Components & Measures  Help

Schedule Sets | Schedules

**Schedule Name:** Medium Office Bldg Occ  **Schedule Type:** Fraction

Default day profile.

Lower Limit: 0.00   Upper Limit: 1.00

Mouse over horizontal line to set value

OS:Schedule:Day

Name
Office Bldg Occ Default Schedule

Schedule Type Limits Name
Fraction

Interpolate to Timestep
No

Hour

Minute

Value Until Time

Drag From Library

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File  Preferences  Components & Measures  Help

**Name:**
189.1-2009 - Office - OpenOffice - CZ1-3 People Definition 1 CM1

Number of People:   People per Space Floor Area:   Space Floor Area per Person:
0.05651 people/m²   m²/person

Fraction Radiant:   Sensible Heat Fraction:   Carbon Dioxide Generation Rate:
0.300000   autocalculate   0.000038   L/s·W

Drag From Library

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File  Preferences  Components & Measures  Help

Drag Space Type | General | Loads | Measure Tags | Custom

**Filter:** Load Type
Show all loads

| Space Type Name | All | Rendering Color | Default Construction Set | Default Schedule Set | Design Specification Outdoor Air | Space Infiltration Design Flow Rates | Space Infiltration Effective Leakage Areas |
|---|---|---|---|---|---|---|---|