

## Task 1

Solar radiation is the energy generated by the sun's fusion from the nucleus and transmitted to the radiant energy through the electromagnetic waves.

Solar radiation starts from the sun and "travels" in space for about eight and a half minutes. It takes about 150 million kilometers to reach our planet. However, before reaching the Earth's surface, solar radiation first passes through a thick atmosphere, and nearly 50% of the energy is lost as the sun radiates through the atmosphere.

There are three main aspects of the weakening of the atmosphere, namely, dispersion, reflection and scattering. Solar radiation is an electromagnetic wave with a wavelength ranging from 0.15 micrometers to 4 micrometers. The wavelengths range from long to short, respectively infrared, visible, and ultraviolet. Certain components of the Earth's atmosphere absorb the energy of solar radiation, which is "selective." In the flat flow of the atmosphere, several layers of ozone are distributed, and ozone can strongly absorb a large amount of ultraviolet rays in solar radiation. In addition, carbon dioxide, water vapor, clouds and floating dust in the troposphere of the atmosphere can directly a

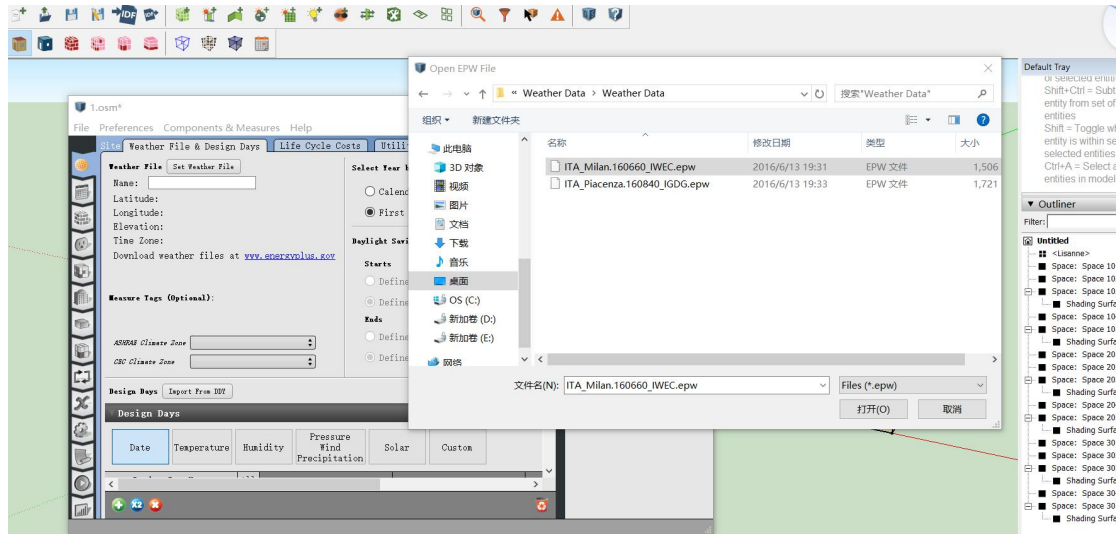
absorb a large amount of infrared rays in solar radiation. The direct absorption of solar radiation by the atmosphere is about 19%, mainly concentrated in ultraviolet and infrared rays, but almost no absorption of visible light.

The second effect is the reflection of the atmosphere. The clouds and dust in the atmosphere directly reflect the solar radiation. The intensity of the reflection depends on the amount of clouds and dust in the atmosphere. On a sunny day, there are few clouds in the atmosphere, and the reflection is very weak. On a cloudy day, there are a lot of clouds in the atmosphere, and the reflection is very strong.

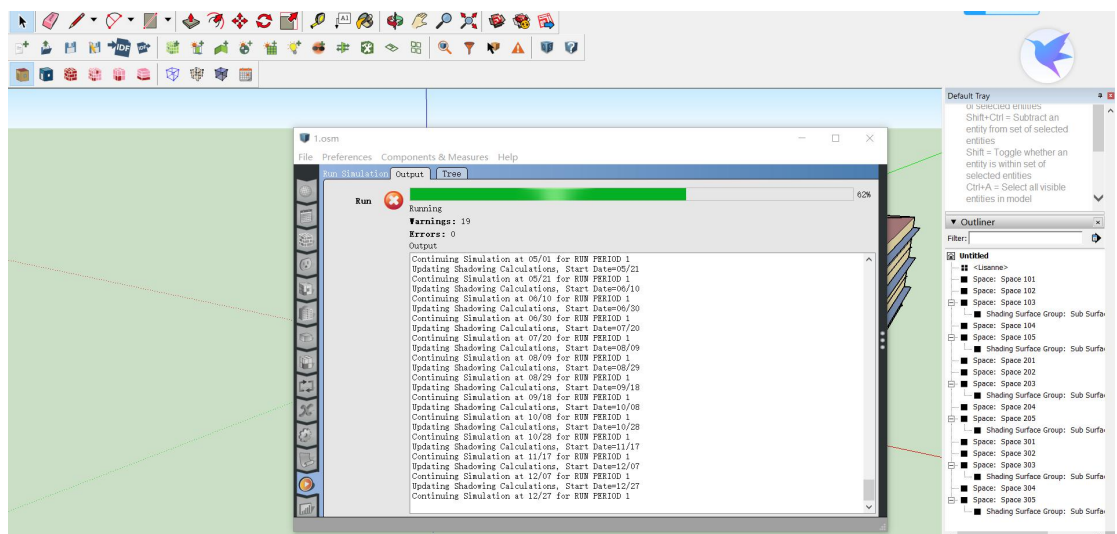
The third effect is the scattering of the atmosphere. When the solar radiation passes through tiny dust and atmospheric molecules in the atmosphere, the light that occurs is diverged in all directions with dust as the center. The blue-violet light with a shorter wavelength in visible light is more easily scattered by the atmosphere, so the sky we see on a sunny day will appear blue.

## Task 2

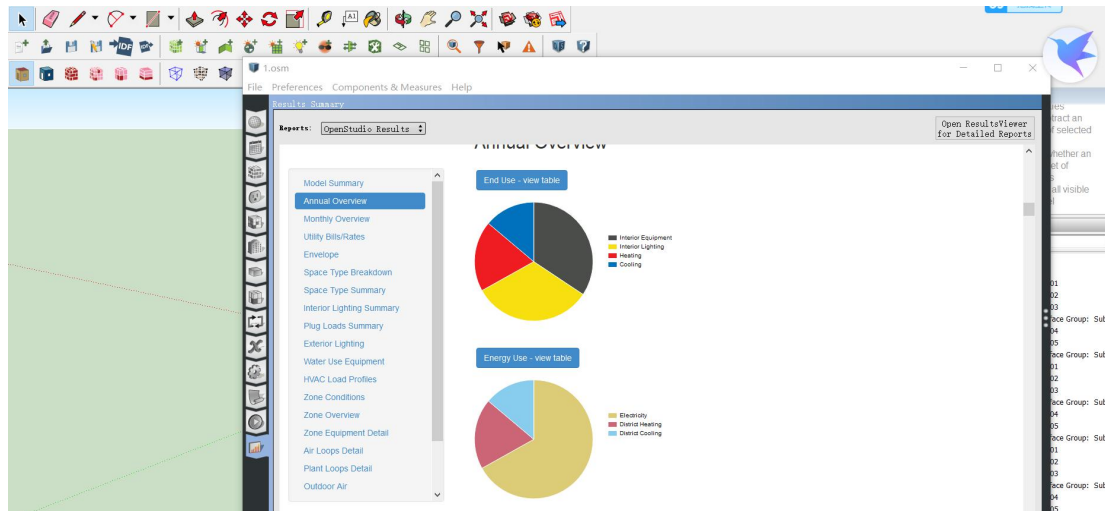
## 1.Add weather data.



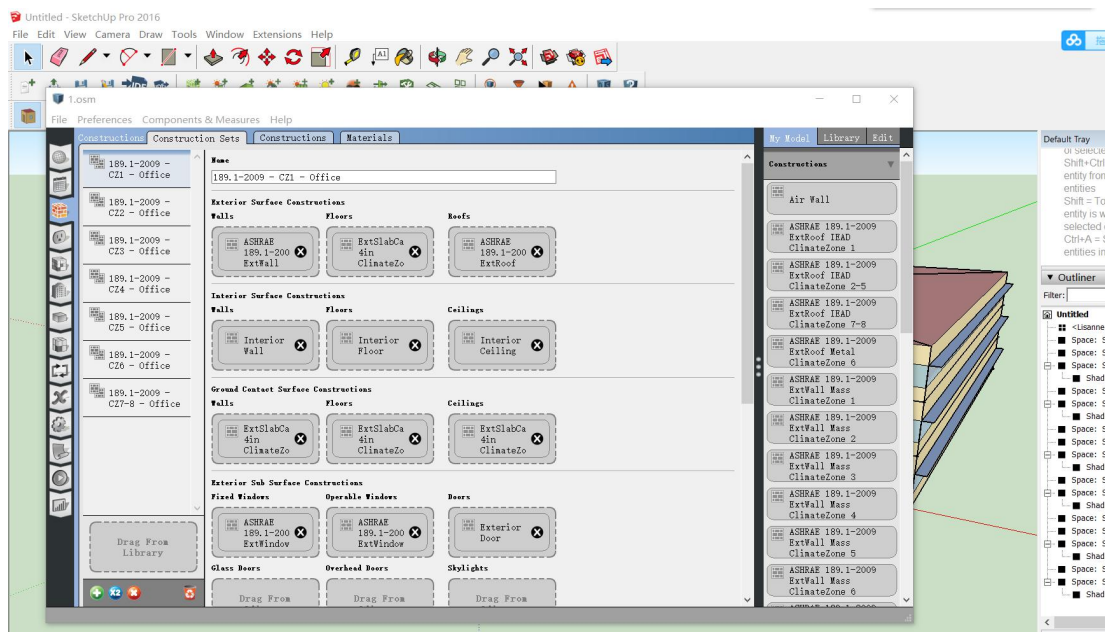
2. Run data analysis.



### 3. Get the analysis results.

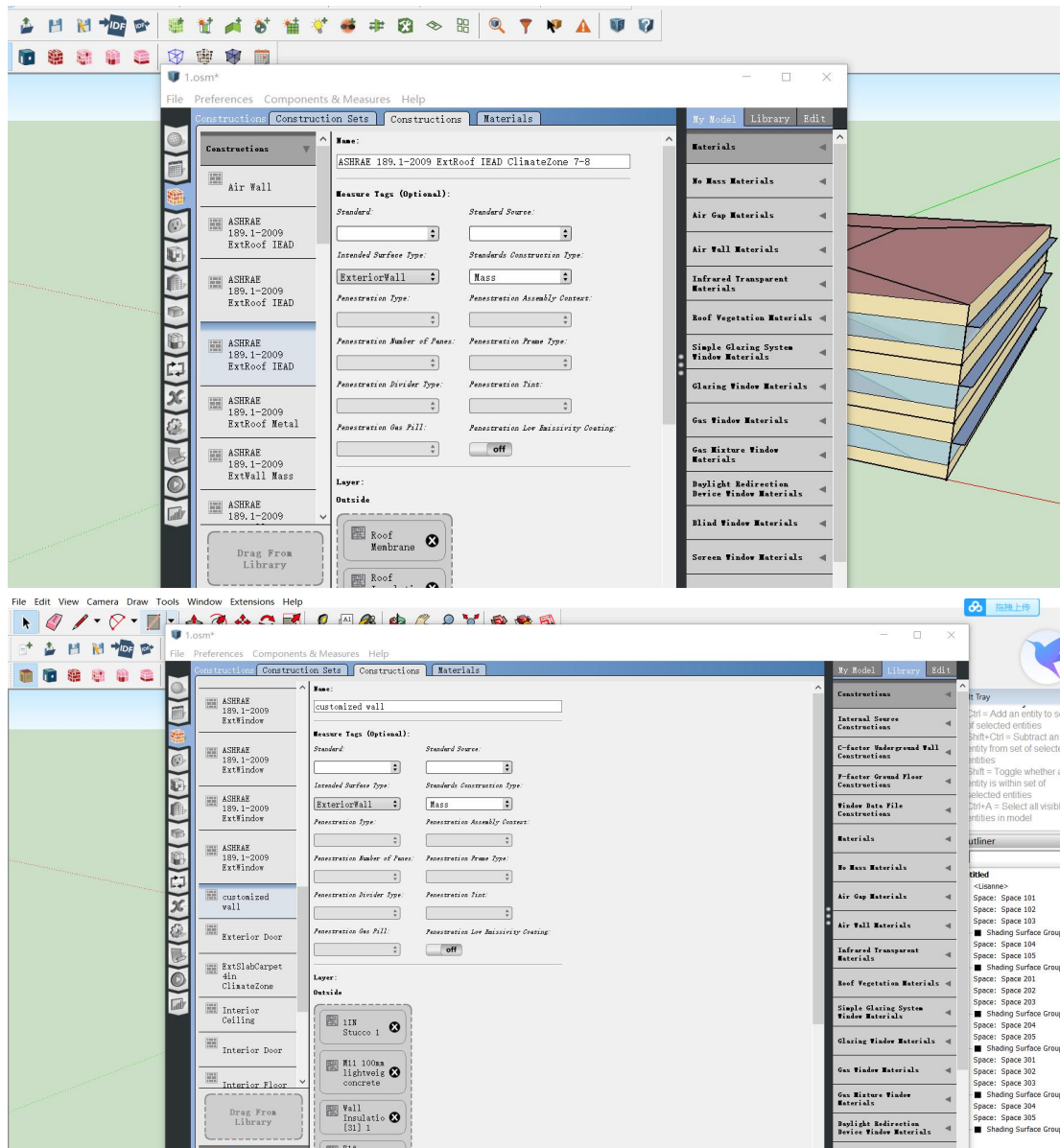


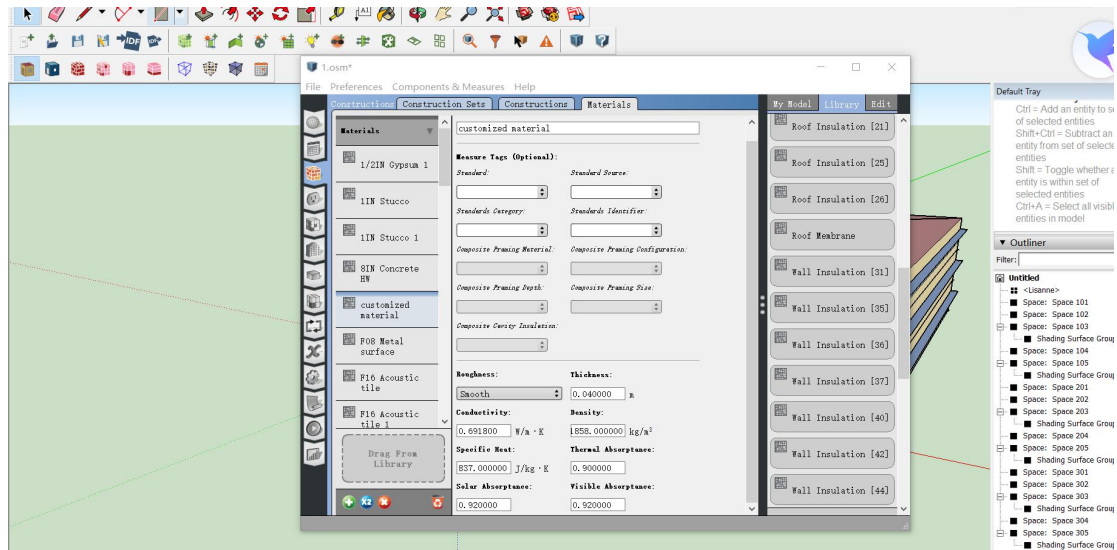
4. Copy an existing wall to create a new wall and then change the name and other characteristics.



5. In the Construction tab, we can create a new type of wall and choose the materials that should be part of it. The order of the layers should be from the outside to the inside. If we want to change an existing property, or we can create a new property by copying an existing property. To change and

check the properties of the material, we must go to the Materials tab.





6. Now we can put the new material into the new wall we created.

