1. SUMMARY OF SOLAR RADIATION

The solar radiations are the electromagnetic waves (infrared, ultraviolet and visible ones) exhaled by the Sun.

The amount of this energy outside the atmosphere is defined by the solar constant. A solar constant is defined as the amount of energy that is captured in the space outside the atmosphere from a surface of one square meter, in a second, at the average distance of the Earth from the Sun ($C = 1.367 \text{ W} / \text{m}^2$).

The intensity of solar radiation is measured by two physical quantities:

-Insolation: Average daily energy (kWh / m² day)

-Radiation: Instantaneous power on horizontal surface (kW / m²)

It is possible to divide the solar radiation into different components:

- -global radiation
- -diffuse radiation
- -direct radiation
- -reflected radiation
- -net radiation

Global radiation is defined as the sum of the radiation measured on the ground on a horizontal plane coming directly from the Sun and that spread by the sky (atmosphere). The relationships between the two components are related to weather conditions. The spectrum of wavelengths involved is between 0.3 and 3 mm. Most of the instruments used to measure solar radiation measure this parameter. The global radiation must always be lower than the maximum theoretical radiation calculated outside the atmosphere but can be, at the limit, equal to the maximum theoretical values calculated taking into account the atmosphere.

The diffuse radiation is the component, measured on a horizontal plane, of the solar radiation that reaches the earth not directly from the Sun but due to the atmosphere (gas, clouds, etc.); the spectrum of wavelengths involved is between 0.3 and 3 mm. The instrument used for the measurement is a solarimeter with a device that keeps the sensitive element in "shadow" with respect to the light coming directly from the Sun.

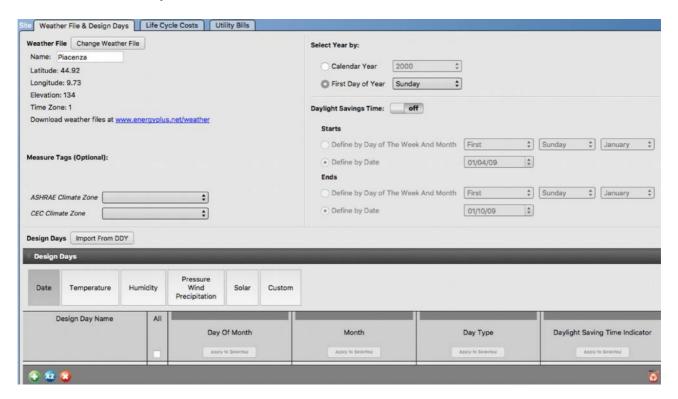
The direct radiation is the radiation coming only directly from the Sun between 0.3 and 3 mm. The instrument (the "pyrheliometer") measures only what comes from the disk of the Sun.

The reflected radiation is the solar radiation reflected from a surface within the band 0.3 - 3 mm. The ratio between the reflected radiation and the global radiation gives the albedo. The measuring instrument is placed horizontally but facing downwards.

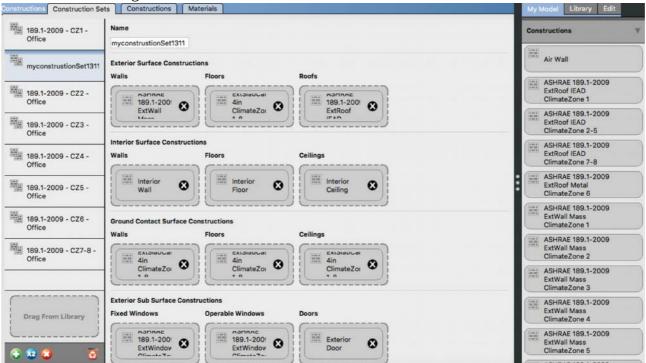
The net radiation is the difference between the radiation coming from the sky and that coming from the surface under examination in the 0.3 - 60 mm band. The instrument for measurement consists of two radiometers: one facing upwards and one pointing downwards.

1. OPENSTUDIO

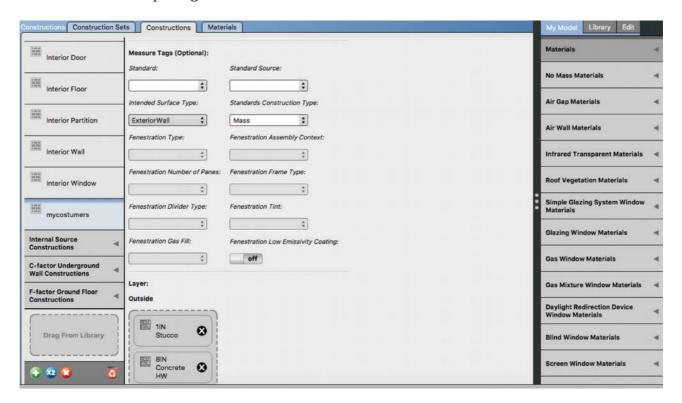
Climate data of the city.



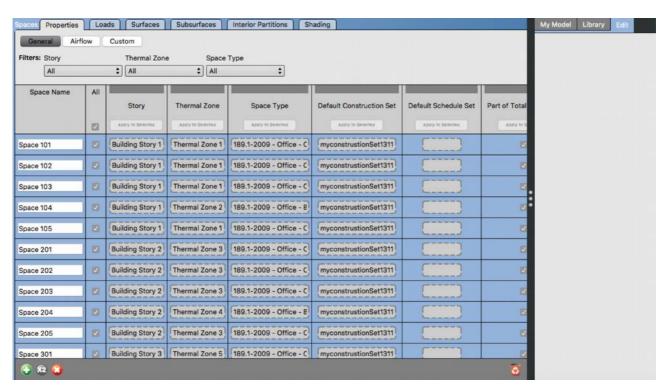
Custome the building



Custome of the wall package



Insert the project layer appling to the building



Change other specifications

