Task 1: solar radiation summary

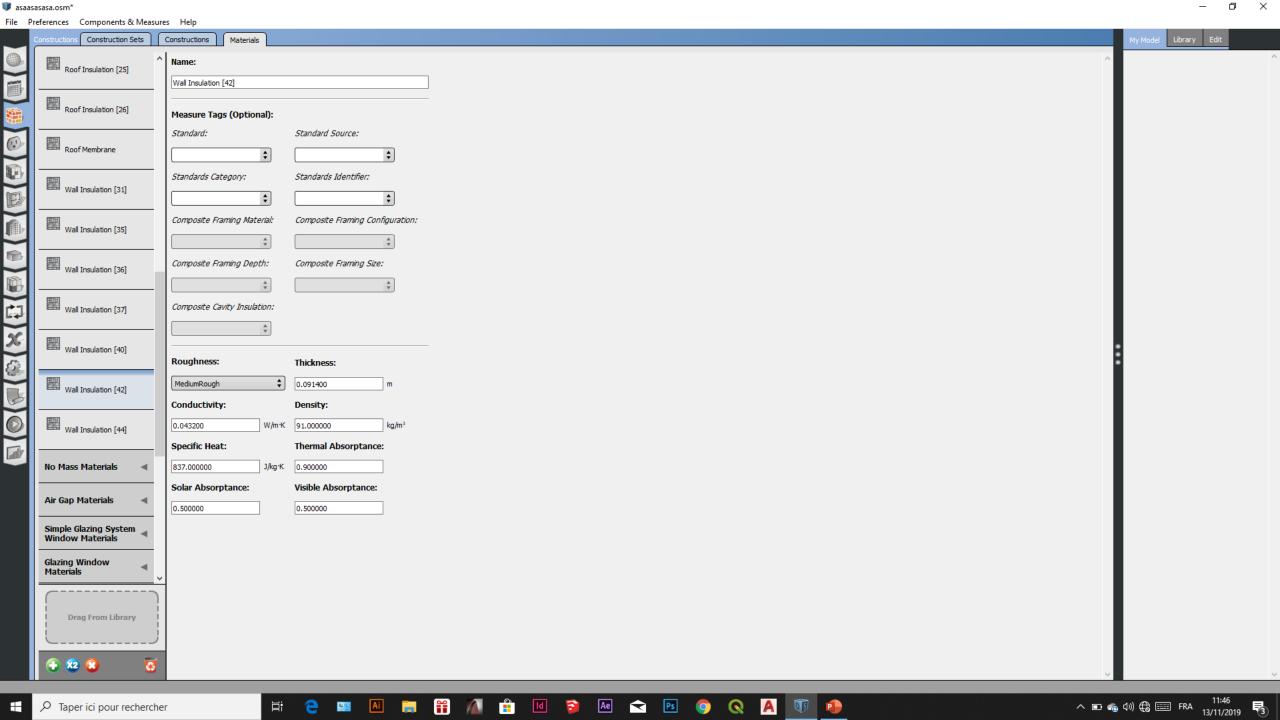
- Solar radiation is an electromagnetic energy emitted by the sun,
- This radiation is either absorbed by the atmosphere molecules and sent back (absorbtion) or scattered by them (dispersion),
- The spectrum of the solar radiation at the earth's surface has several components. Direct radiation comes straight from the sun, diffuse radiation is scattered from the sky and from the surroundings. Additional radiation reflected from the surroundings (ground or sea) depends on the local albedo. The total ground radiation is called the global radiation. The direction of the target surface must be defined for global irradiance. For direct radiation the target surface faces the incoming beam.
- When the sun's rays are vertical, the Earth's surface gets all the energy possible. The more slanted the sun's rays are, the longer they travel through the atmosphere, becoming more scattered and diffuse.
- Absorption and scattering levels change as the constituents of the atmosphere change.
- Solar radiation depends on the alttitude, direction, geography, time, seasons and weather,
- If we want to measure the total solar radiation, we use a pyranometer, if we want to measure only the diffused one, we add shadowing to the device, if we want to measure the direct one we use the pyrheliometer

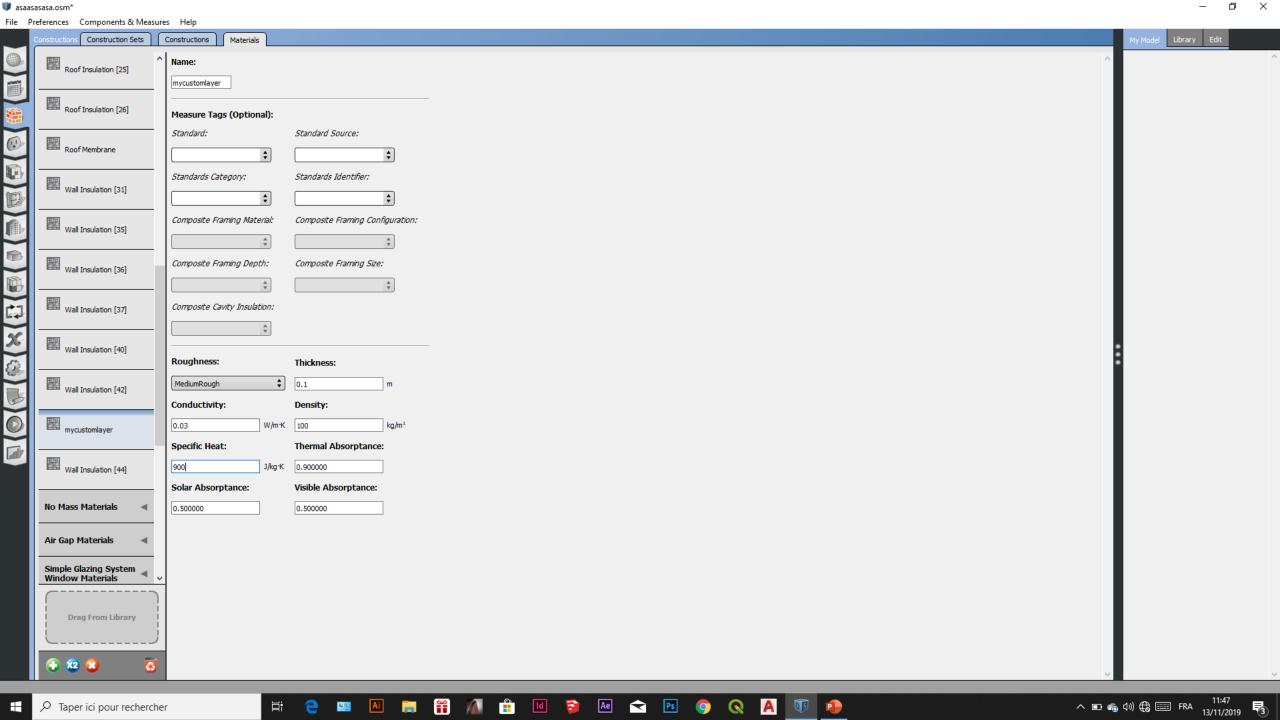
Task 2 : Open studio steps

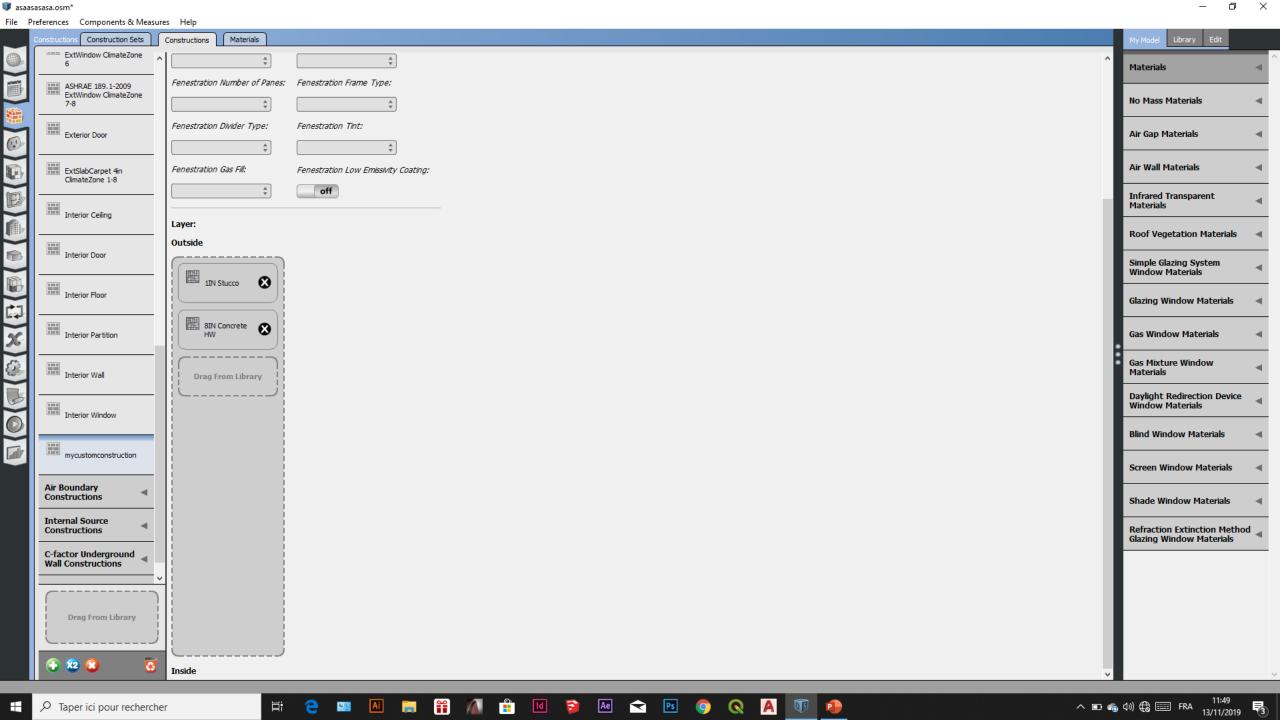
Customize walls in the buildings

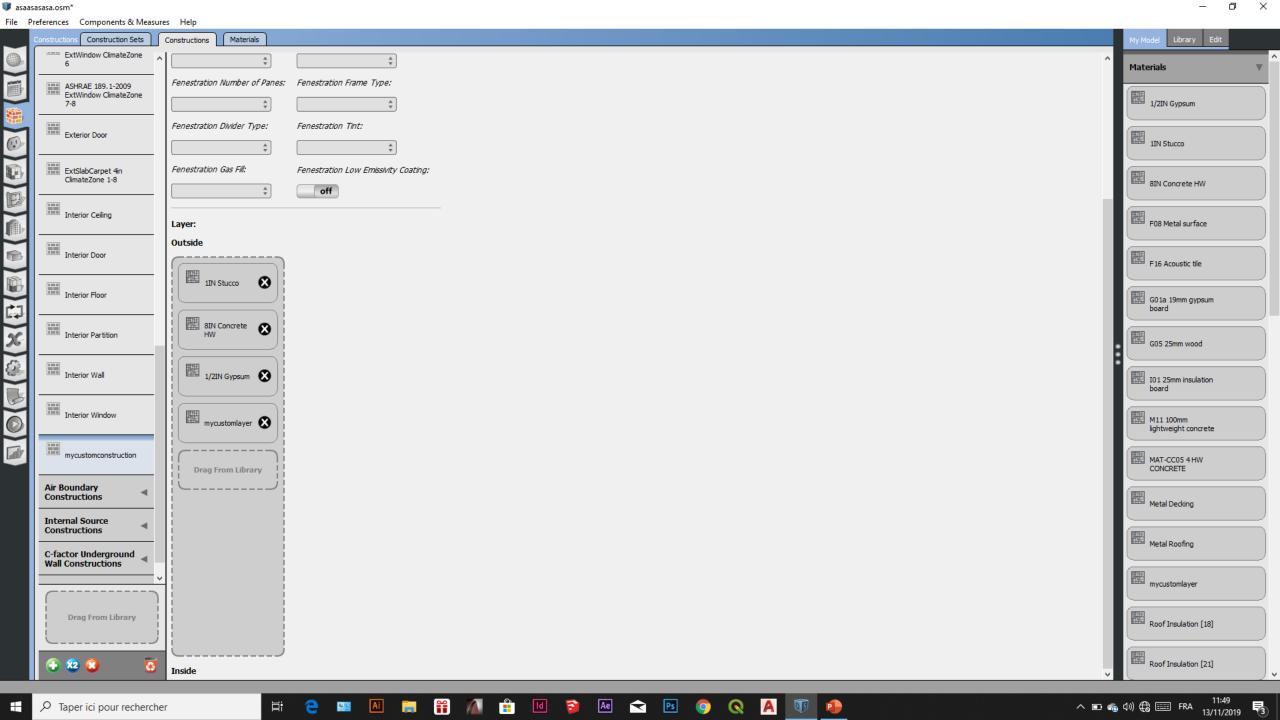
o \times asaasasasa.osm* File Preferences Components & Measures Help Constructions | Materials Library Edit Construction Sets Constructions Name: Materials Air Wall ASHRAE 189, 1-2009 ExtWall Mass ClimateZone 1 No Mass Materials Measure Tags (Optional): ASHRAE 189.1-2009 ExtRoof IEAD Standard: Standard Source: Air Gap Materials ClimateZone 1 ASHRAE 189.1-2009 ASHRAE 189.1-2009 **Air Wall Materials** ExtRoof IEAD Intended Surface Type: Standards Construction Type: ClimateZone 2-5 Infrared Transparent ExteriorWall Mass ASHRAE 189, 1-2009 Materials ExtRoof IEAD Fenestration Type: Fenestration Assembly Context: ClimateZone 7-8 **Roof Vegetation Materials** ASHRAE 189.1-2009 ExtRoof Metal ClimateZone 6 Fenestration Number of Panes: Fenestration Frame Type: Simple Glazing System Window Materials ASHRAE 189.1-2009 ExtWall Mass **Glazing Window Materials** ClimateZone 1 Fenestration Divider Type: Fenestration Tint: ASHRAE 189.1-2009 ExtWall Mass Gas Window Materials ClimateZone 2 Fenestration Gas Fill: Fenestration Low Emissivity Coating: **Gas Mixture Window** ASHRAE 189.1-2009 off ExtWall Mass Materials ClimateZone 3 **Daylight Redirection Device** ASHRAE 189.1-2009 Window Materials Layer: ExtWall Mass ClimateZone 4 Outside **Blind Window Materials** ASHRAE 189.1-2009 ExtWall Mass 1IN Stucco ClimateZone 5 • **Screen Window Materials** ASHRAE 189.1-2009 ExtWall Mass **Shade Window Materials** ClimateZone 6 8IN Concrete ASHRAE 189.1-2009 Refraction Extinction Method ExtWall Mass **Glazing Window Materials** ClimateZone 7-8 Wall Insulation [31] ASHRAE 189.1-2009 ExtWindow ClimateZone 1/2IN Gypsum Drag From Library Drag From Library 🕞 😥 👔 へ ■ 👵 切り 😭 🚃 FRA 13/11/2019 🛂 P Taper ici pour rechercher

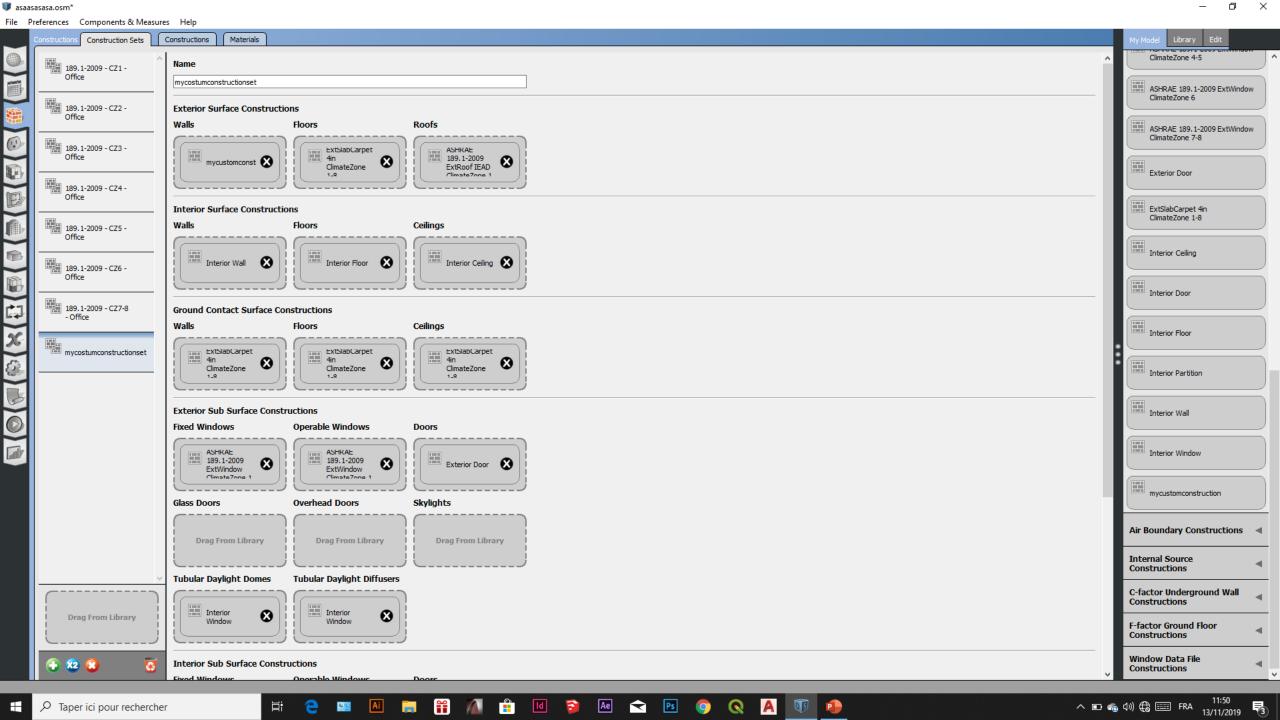
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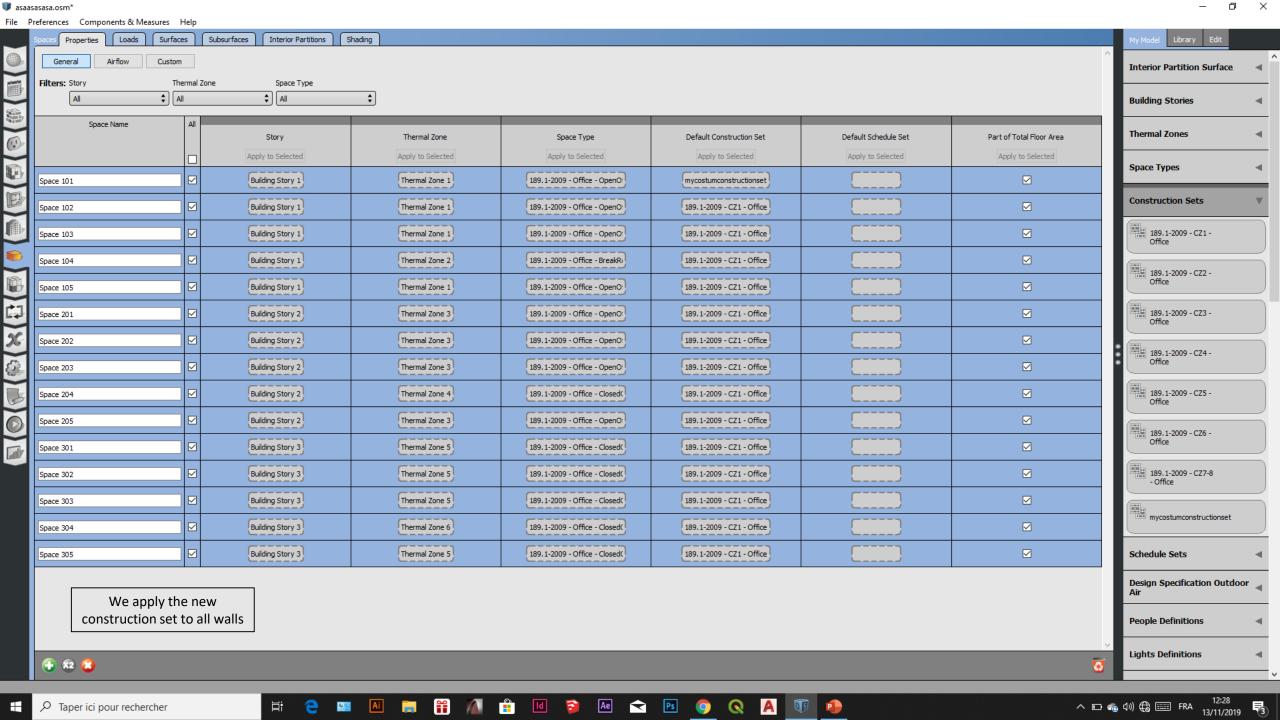


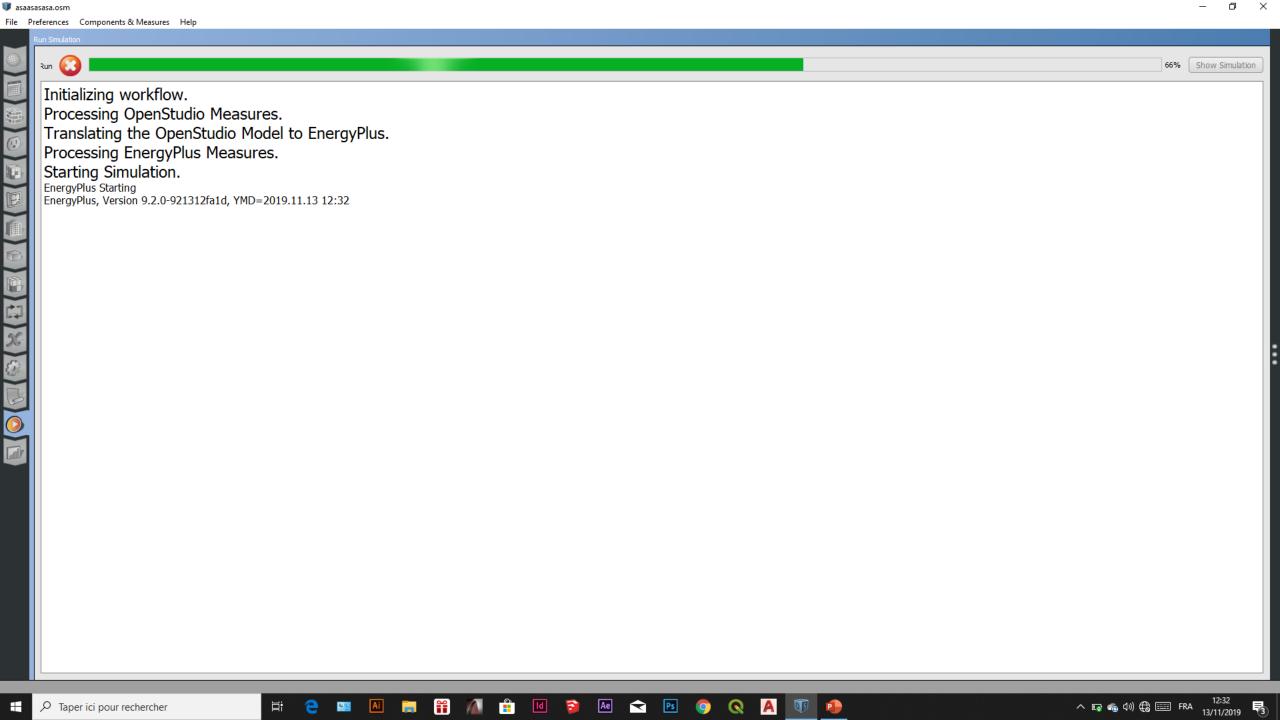






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Define schedule for peoples' activity

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Define a schedule for light

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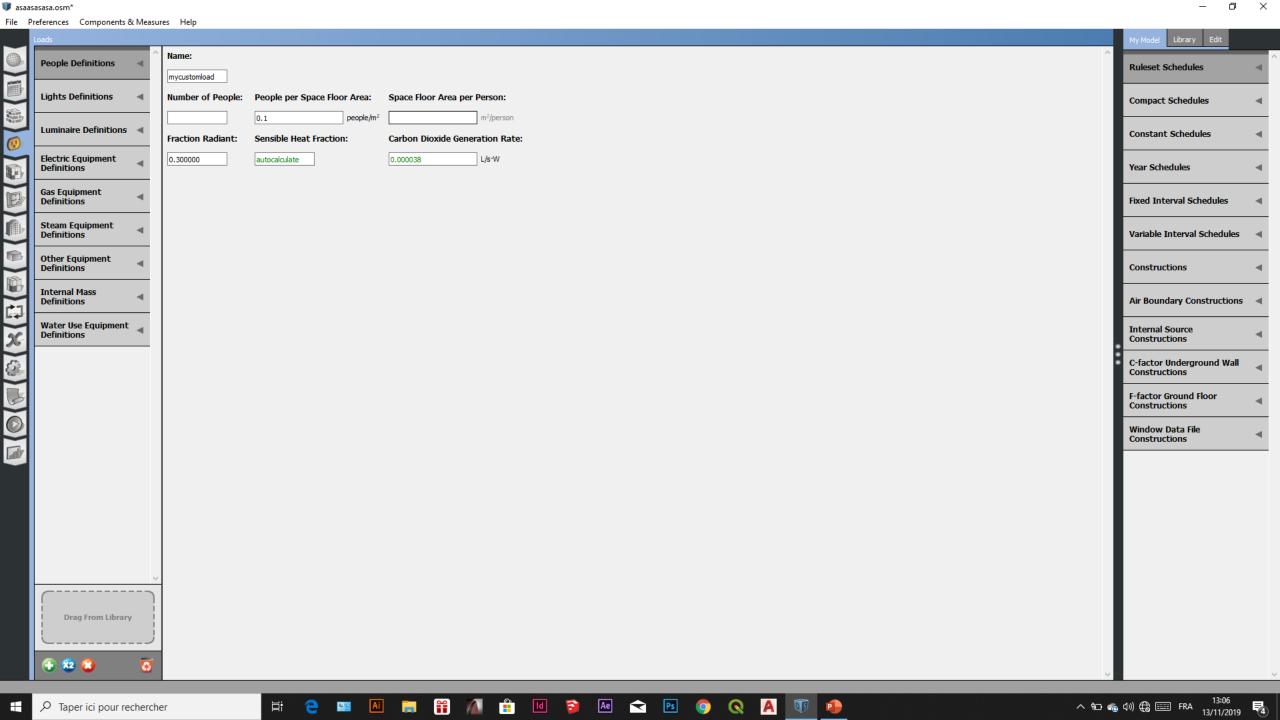
Define schedule for equipements

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Define the loads



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