Week 7

Part 1

SOLAR RADIATION:

To begin, the sun radiates energy. This energy is classified as electromagnetic energy. As follows, electromagnetic energy that is emitted by the sun is called Solar Radiation. Solar radiation is radiated in the form of electromagnetic waves, including visible light, ultraviolet light, and infrared radiation. This energy, or solar radiation, is either transmitted, scattered, or absorbed. When solar radiation reaches earth's surface it is modified. This modification is due to the phenomenon of dispersion and absorption.

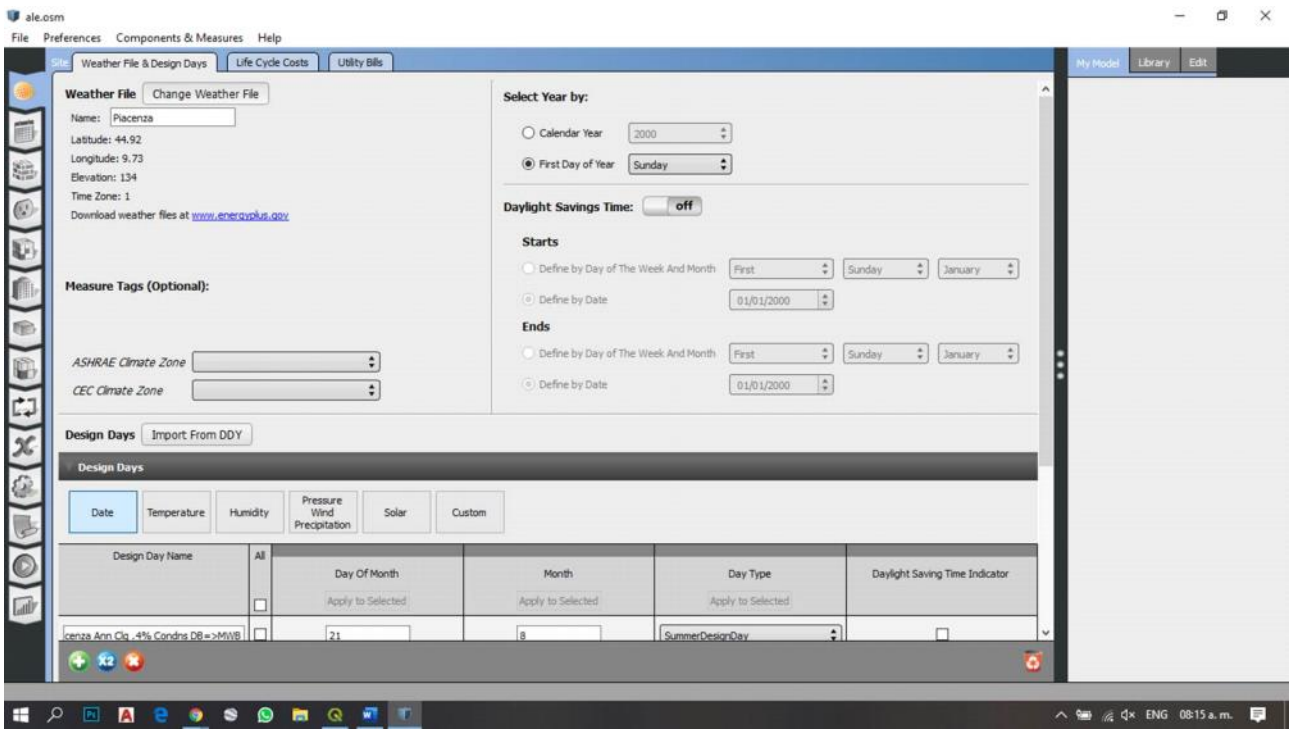
Dispersion is when the sun's rays are not perpendicular to the surface of the earth. Therefore, the energy becomes dispersed. The greater the dispersion, the lower the temperature.

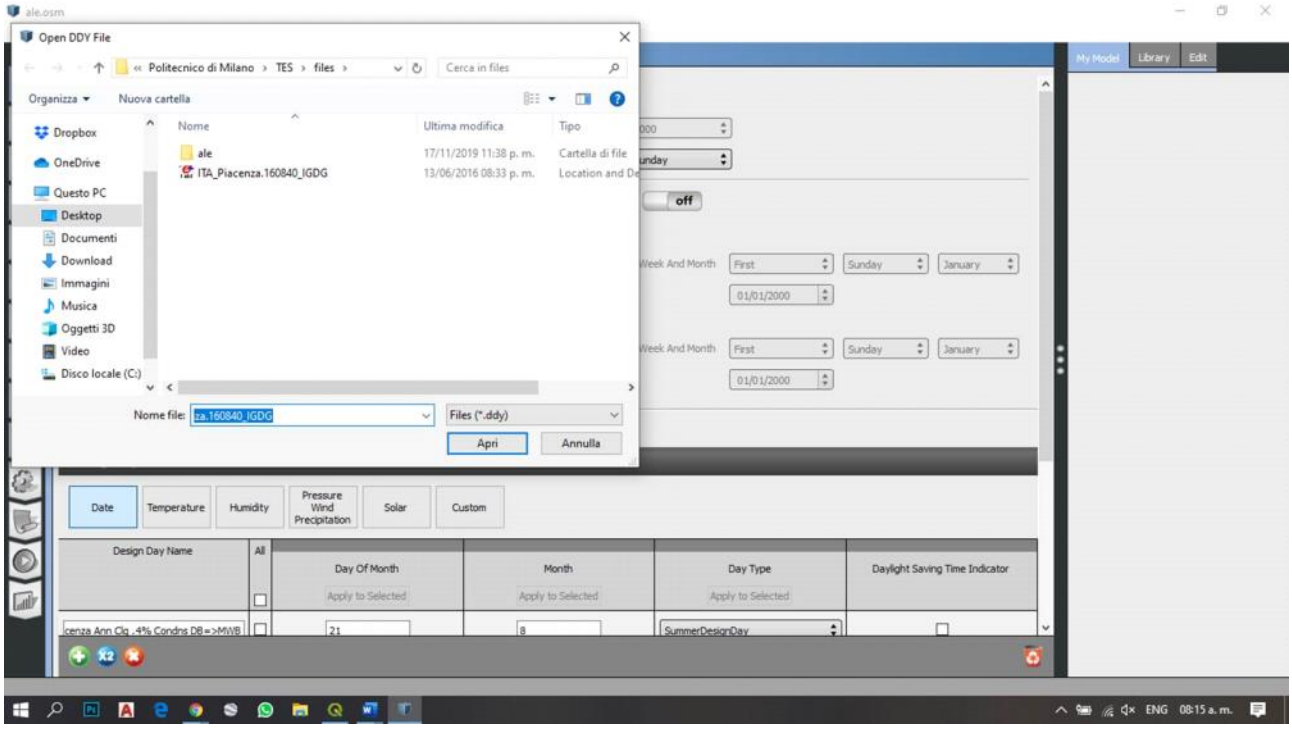
Scattering is when solar radiation passes through and some of the wavelengths are deflected in all directions by gas molecules, particles, and water vapor. When these particles are suspended, they act like prisms and display a variety of colors. A wonderful example of this is the display of colors during the sunset.

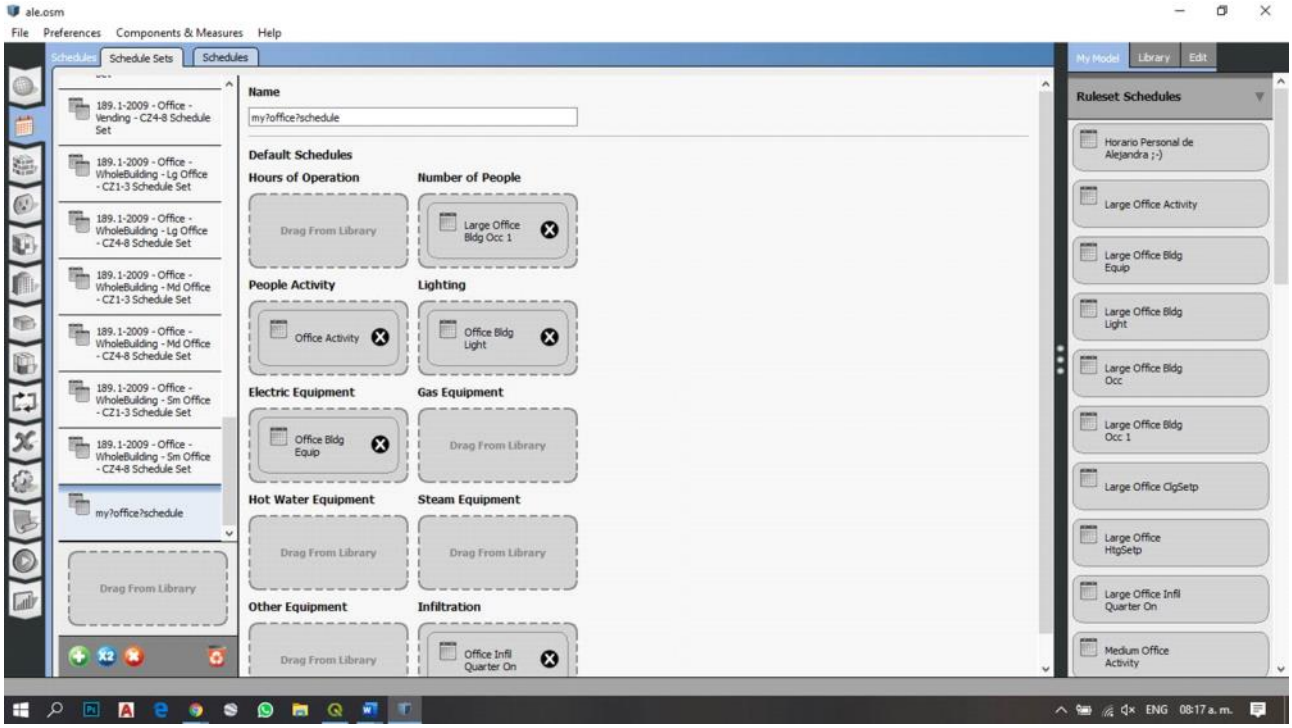
Reflection is when a surface reflects a percentage of the incident radiation back to the medium from which it originated.

Most importantly! Solar radiation is dependent on the position of the sun, the weather conditions, the altitude, and the duration of the day.

Part 2




Open DDY File
Nome file:
Apri
Annulla
Date
Temperature
Humidity
Pressure Wind Precipitation
Solar
Custom
Design Day Name
Day Of Month
Month
Day Type
Daylight Saving Time Indicator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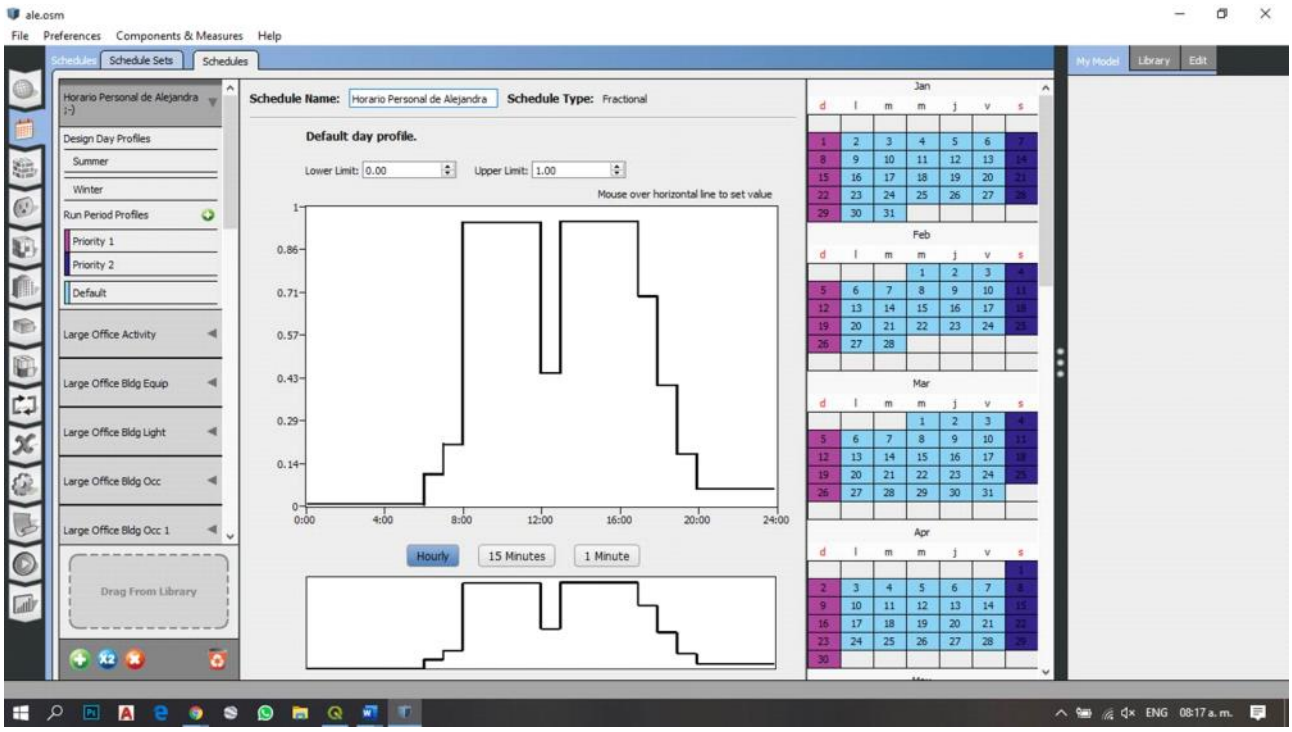
File
Preferences
Components & Measures
Help
Schedule Sets
Schedules
Name
Default Schedules
Hours of Operation
Number of People
People Activity
Lighting
Electric Equipment
Gas Equipment
Hot Water Equipment
Steam Equipment
Other Equipment
Infiltration
Drag From Library
Ruleset Schedules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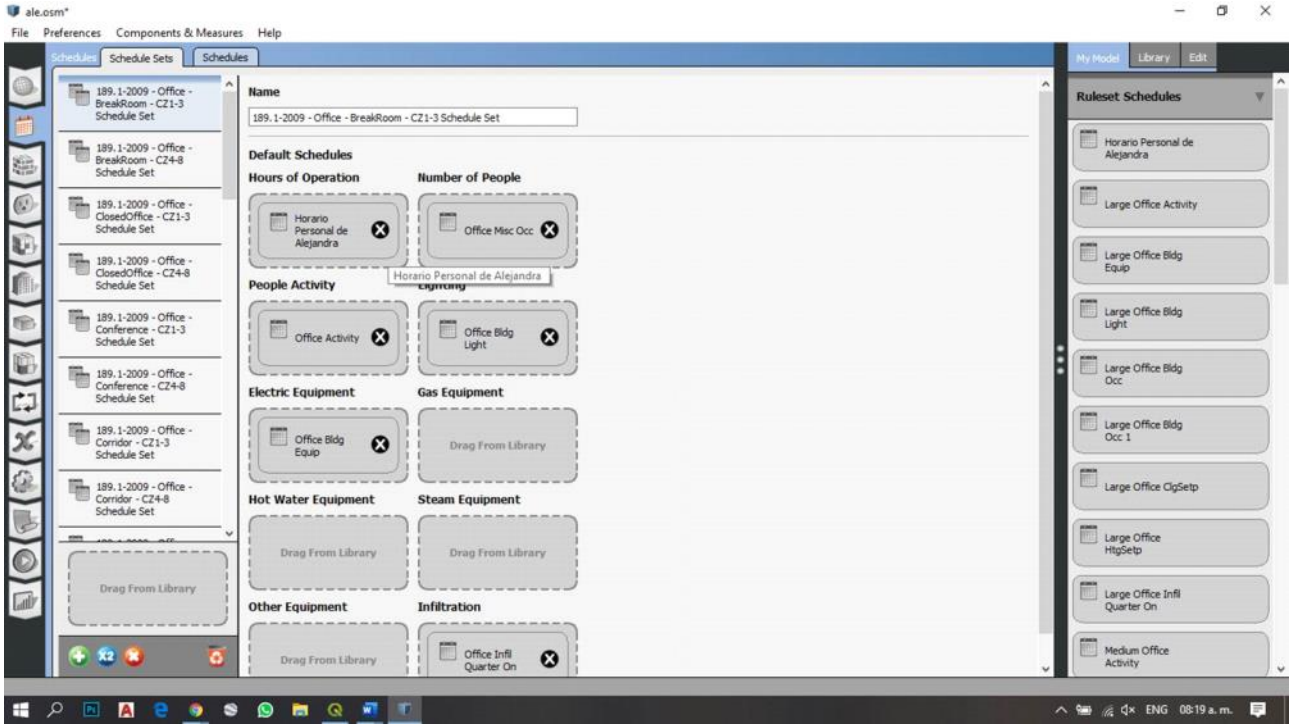
File Preferences Components & Measures Help
Schedules Schedule Sets Schedules
My Model Library Edit
Horario Personal de Alejandra
Design Day Profiles
Summer
Winter
Run Period Profiles
Priority 1
Priority 2
Default
Large Office Activity
Large Office Bldg Equip
Large Office Bldg Light
Large Office Bldg Occ
Large Office Bldg Occ 1
Drag From Library
Schedule Name: Horario Personal de Alejandra
Schedule Type: Fractional
Default day profile.
Lower Limit: 0.00
Upper Limit: 1.00
Mouse over horizontal line to set value
Hourly
15 Minutes
1 Minute
Jan
Feb
Mar
Apr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File Preferences Components & Measures Help
Schedules Schedule Sets Schedules
My Model Library Edit
189.1-2009 - Office - BreakRoom - CZ1-3 Schedule Set
189.1-2009 - Office - BreakRoom - CZ4-8 Schedule Set
189.1-2009 - Office - ClosedOffice - CZ1-3 Schedule Set
189.1-2009 - Office - ClosedOffice - CZ4-8 Schedule Set
189.1-2009 - Office - Conference - CZ1-3 Schedule Set
189.1-2009 - Office - Conference - CZ4-8 Schedule Set
189.1-2009 - Office - Corridor - CZ1-3 Schedule Set
189.1-2009 - Office - Corridor - CZ4-8 Schedule Set
Drag From Library
Name
189.1-2009 - Office - BreakRoom - CZ1-3 Schedule Set
Default Schedules
Hours of Operation
Horario Personal de Alejandra
Number of People
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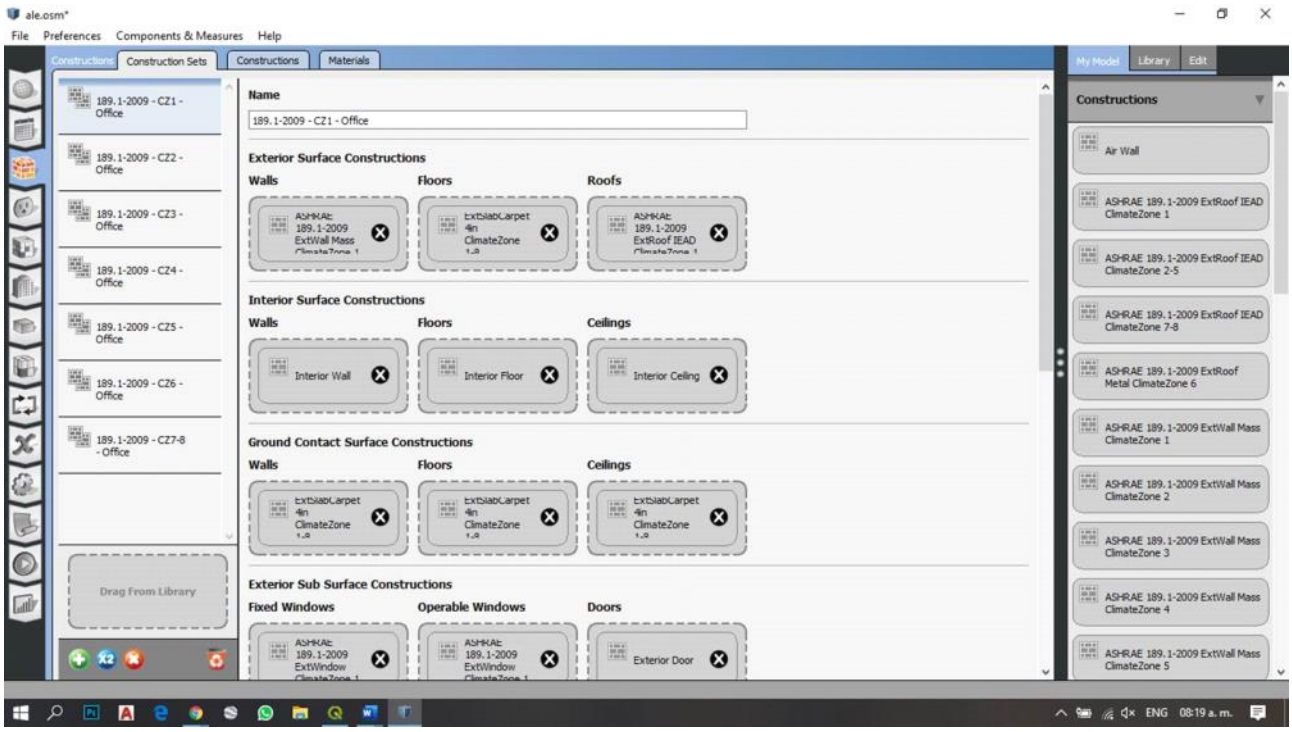
People Activity
Office Activity
Office Bldg Light
Electric Equipment
Office Bldg Equip
Gas Equipment
Drag From Library
Hot Water Equipment
Drag From Library
Steam Equipment
Drag From Library
Other Equipment
Drag From Library
Infiltration
Office Infil Quarter On
Ruleset Schedules
Horario Personal de Alejandra
Large Office Activity
Large Office Bldg Equip
Large Office Bldg Light
Large Office Bldg Occ
Large Office Bldg Occ 1
Large Office ClgSetp
Large Office HtgSetp
Large Office Infil Quarter On
Medium Office Activity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File Preferences Components & Measures Help
Construction Sets
Constructions
Materials
189.1-2009 - CZ1 - Office
189.1-2009 - CZ2 - Office
189.1-2009 - CZ3 - Office
189.1-2009 - CZ4 - Office
189.1-2009 - CZ5 - Office
189.1-2009 - CZ6 - Office
189.1-2009 - CZ7-8 - Office
Drag From Library
Name
189.1-2009 - CZ1 - Office
Exterior Surface Constructions
Walls
Floors
Roofs
Interior Surface Constructions
Walls
Floors
Ceilings
Interior Wall
Interior Floor
Interior Ceiling
Ground Contact Surface Constructions
Walls
Floors
Ceilings
Exterior Sub Surface Constructions
Fixed Windows
Operable Windows
Doors
Exterior Door
My Model
Library
Edit
Constructions
Air Wall
ASHRAE 189.1-2009 ExtRoof IEAD ClimateZone 1
ASHRAE 189.1-2009 ExtRoof IEAD ClimateZone 2-5
ASHRAE 189.1-2009 ExtRoof IEAD ClimateZone 7-8
ASHRAE 189.1-2009 ExtRoof Metal ClimateZone 6
ASHRAE 189.1-2009 ExtWall Mass ClimateZone 1
ASHRAE 189.1-2009 ExtWall Mass ClimateZone 2
ASHRAE 189.1-2009 ExtWall Mass ClimateZone 3
ASHRAE 189.1-2009 ExtWall Mass ClimateZone 4
ASHRAE 189.1-2009 ExtWall Mass ClimateZone 5
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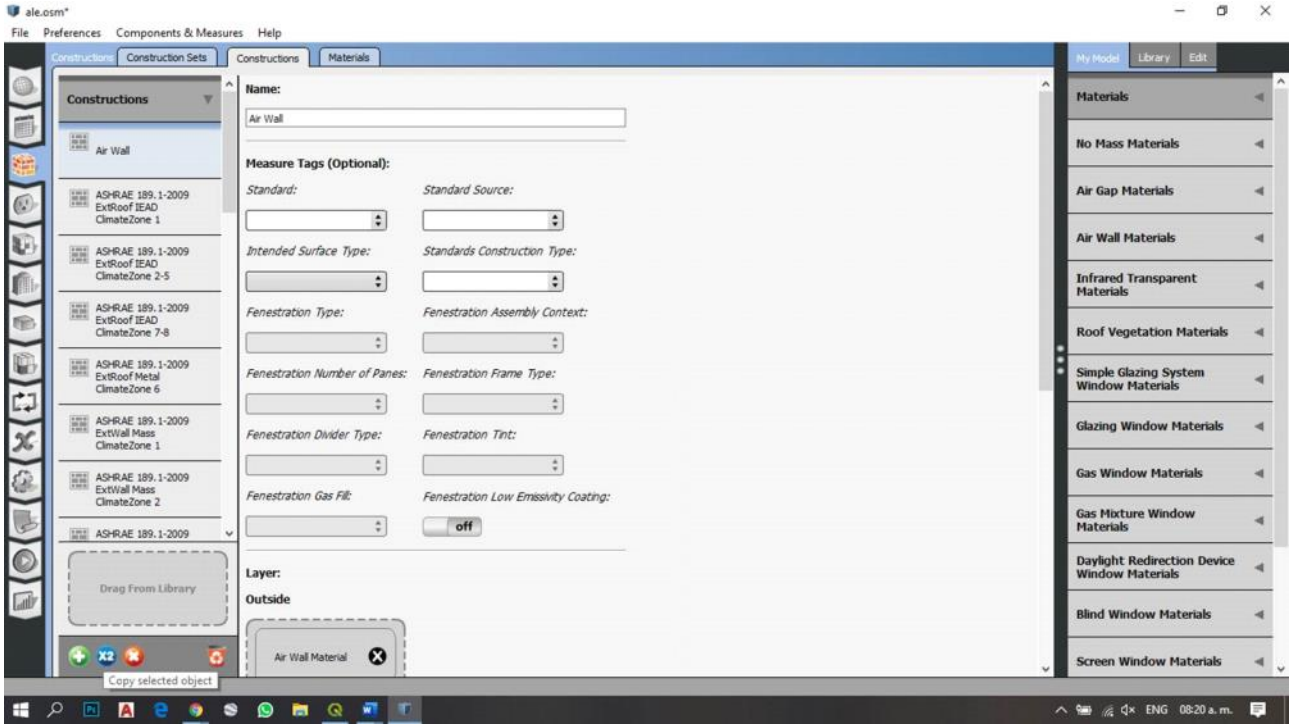
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File Preferences Components & Measures Help
Construction Sets
Constructions
Materials
Constructions
Air Wall
ASHRAE 189.1-2009 ExtRoof IEAD ClimateZone 1
ASHRAE 189.1-2009 ExtRoof IEAD ClimateZone 2-5
ASHRAE 189.1-2009 ExtRoof IEAD ClimateZone 7-8
ASHRAE 189.1-2009 ExtRoof Metal ClimateZone 6
ASHRAE 189.1-2009 ExtWall Mass ClimateZone 1
ASHRAE 189.1-2009 ExtWall Mass ClimateZone 2
ASHRAE 189.1-2009
Drag From Library
Copy selected object
Name:
Air Wall
Measure Tags (Optional):
Standard:
Standard Source:
Intended Surface Type:
Standards Construction Type:
Fenestration Type:
Fenestration Assembly Context:
Fenestration Number of Panes:
Fenestration Frame Type:
Fenestration Divider Type:
Fenestration Tint:
Fenestration Gas Fill:
Fenestration Low Emissivity Coating:
off
Layer:
Outside
Air Wall Material
My Model
Library
Edit
Materials
No Mass Materials
Air Gap Materials
Air Wall Materials
Infrared Transparent Materials
Roof Vegetation Materials
Simple Glazing System Window Materials
Glazing Window Materials
Gas Window Materials
Gas Mixture Window Materials
Daylight Redirection Device Window Materials
Blind Window Materials
Screen Window Materials
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