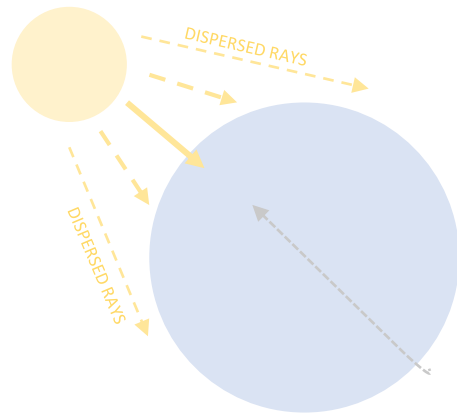


Principles of solar radiation

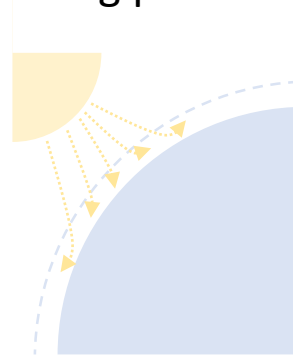
1. Solar radiation: electromagnetic waves radiated from the sun as a result of nuclear fission process.
2. Comprised of three types: 50% visible light, 12% UV, 38% Infra Red.

3. Dispersion phenomena



A phenomena when the sun's incoming rays do not directly hit the earth's surface due to earth's rotation. Dispersed rays have lower energy than those hitting the earth perpendicularly.

4. Scattering phenomena



Complex processes between light and molecules of gas, suspended particles, and water vapour as sun radiates through the earth's atmosphere, causing a variety of phenomena, including:



Blue sky, haze

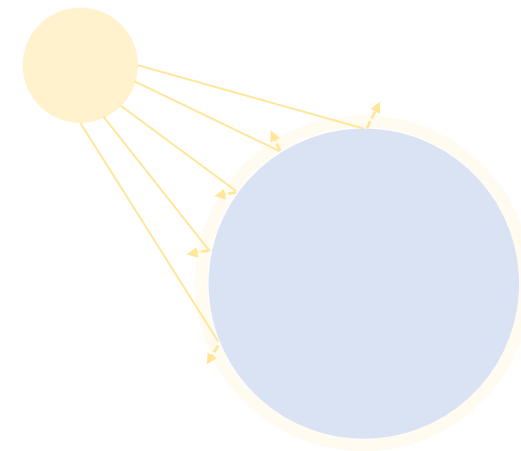


Iridescent clouds



Red colour during sunrise & sunset

5. Reflection



Happens when 30% of the sun's incoming rays are not fully absorbed by the earth (or another space body) and reflected back into space, causing a 'ring' of light around the earth/ space body.

1. Building file from previous assignment is opened, Weather File and designed days is set to Piacenza.

TES week 6.osm*

File Preferences Components & Measures Help

Site Weather File & Design Days Life Cycle Costs Utility Bills

Weather File

Change Weather File

Name: Piacenza

Latitude: 44.92

Longitude: 9.73

Elevation: 134

Time Zone: 1

Download weather files at www.energyplus.gov

Measure Tags (Optional):

ASHRAE Climate Zone

CEC Climate Zone

Design Days

Import From DDY

Select Year by:

Calendar Year

2000

First Day of Year

Sunday

Daylight Savings Time:

off

Starts

Define by Day of The Week And Month

First

Sunday

January

Define by Date

01/01/2000

Ends

Define by Day of The Week And Month

First

Sunday

January

Define by Date

01/01/2000

Design Days

Date Temperature Humidity Pressure Wind Precipitation Solar Custom

Design Day Name	All	Day Of Month	Month	Day Type	Daylight Saving Time Indicator
		Apply to Selected	Apply to Selected	Apply to Selected	
Piacenza Ann Clg .4% Condns DB=>MWB	<input type="checkbox"/>	21	8	SummerDesignDay	<input type="checkbox"/>
Piacenza Ann Clg .4% Condns DP=>MDB	<input type="checkbox"/>	21	8	SummerDesignDay	<input type="checkbox"/>
Piacenza Ann Clg .4% Condns Enth=>MDB	<input type="checkbox"/>	21	8	SummerDesignDay	<input type="checkbox"/>
Piacenza Ann Clg .4% Condns WB=>MDB	<input type="checkbox"/>	21	8	SummerDesignDay	<input type="checkbox"/>
Piacenza Ann Htg 99.6% Condns DB	<input type="checkbox"/>	21	1	WinterDesignDay	<input type="checkbox"/>
Piacenza Ann Htg Wind 99.6% Condns WS=>MCDB	<input type="checkbox"/>	21	1	WinterDesignDay	<input type="checkbox"/>
Piacenza Ann Hum_n 99.6% Condns DP=>MCDB	<input type="checkbox"/>	21	1	WinterDesignDay	<input type="checkbox"/>

Task View

20:47

Tuesday

19/11/2019

2. Opening 'Construction Sets'

TES week 6.osm*

File Preferences Components & Measures Help

Constructions 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**

ASHRAE 189.1-2009 ExtWall X

ExtSlabCarpet 4in ClimateZone X

ASHRAE 189.1-2009 ExtRoof X

Interior Surface Constructions

Walls **Floors** **Ceilings**

Interior Wall X

Interior Floor X

Interior Ceiling X

Ground Contact Surface Constructions

Walls **Floors** **Ceilings**

ExtSlabCarpet 4in ClimateZone X

ExtSlabCarpet 4in ClimateZone X

ExtSlabCarpet 4in ClimateZone X

Exterior Sub Surface Constructions

Fixed Windows **Operable Windows** **Doors**

ASHRAE 189.1-2009 ExtWindow X

ASHRAE 189.1-2009 ExtWindow X

Exterior Door X

Glass Doors **Overhead Doors** **Skylights**

Drag From Library

Drag From Library

Drag From Library

Tubular Daylight Domes **Tubular Daylight Diffusers**

Interior Window X

Interior Window X

Interior Sub Surface Constructions

Fixed Windows **Operable Windows** **Doors**

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

ASHRAE 189.1-2009 ExtWall Mass ClimateZone 6

ASHRAE 189.1-2009 ExtWall Mass ClimateZone 7-8

ASHRAE 189.1-2009 ExtWindow ClimateZone 1

ASHRAE 189.1-2009 ExtWindow ClimateZone 2

ASHRAE 189.1-2009 ExtWindow ClimateZone 3

20:55 Tuesday 19/11/2019

3. Creating a different construction set by copying existing construction set and renaming it.

TES week 6.osm*

File Preferences Components & Measures Help

Constructions Construction Sets Constructions Materials

189.1-2009 - CZ1 - Office

myconstruction set 19.11

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

myconstruction set 19.11

Name

myconstruction set 19.11

Exterior Surface Constructions

Walls Floors Roofs

ASHRAE 189.1-2009 ExtWall

ExtSlabCarpet 4in ClimateZone

ASHRAE 189.1-2009 ExtRoof

Interior Surface Constructions

Walls Floors Ceilings

Interior Wall

Interior Floor

Interior Ceiling

Ground Contact Surface Constructions

Walls Floors Ceilings

ExtSlabCarpet 4in ClimateZone

ExtSlabCarpet 4in ClimateZone

ExtSlabCarpet 4in ClimateZone

Exterior Sub Surface Constructions

Fixed Windows Operable Windows Doors

ASHRAE 189.1-2009 ExtWindow

ASHRAE 189.1-2009 ExtWindow

Exterior Door

Glass Doors Overhead Doors Skylights

Drag From Library

Drag From Library

Drag From Library

Tubular Daylight Domes Tubular Daylight Diffusers

Interior Window

Interior Window

Interior Sub Surface Constructions

Fixed Windows Operable Windows Doors

ASHRAE 189.1-2009 ExtWindow ClimateZone 1

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

ASHRAE 189.1-2009 ExtWall Mass ClimateZone 6

ASHRAE 189.1-2009 ExtWall Mass ClimateZone 7-8

ASHRAE 189.1-2009 ExtWindow ClimateZone 1

ASHRAE 189.1-2009 ExtWindow ClimateZone 2

ASHRAE 189.1-2009 ExtWindow ClimateZone 3

The wall type will be modified.

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

ASHRAE 189.1-2009 ExtWall Mass ClimateZone 6

ASHRAE 189.1-2009 ExtWall Mass ClimateZone 7-8

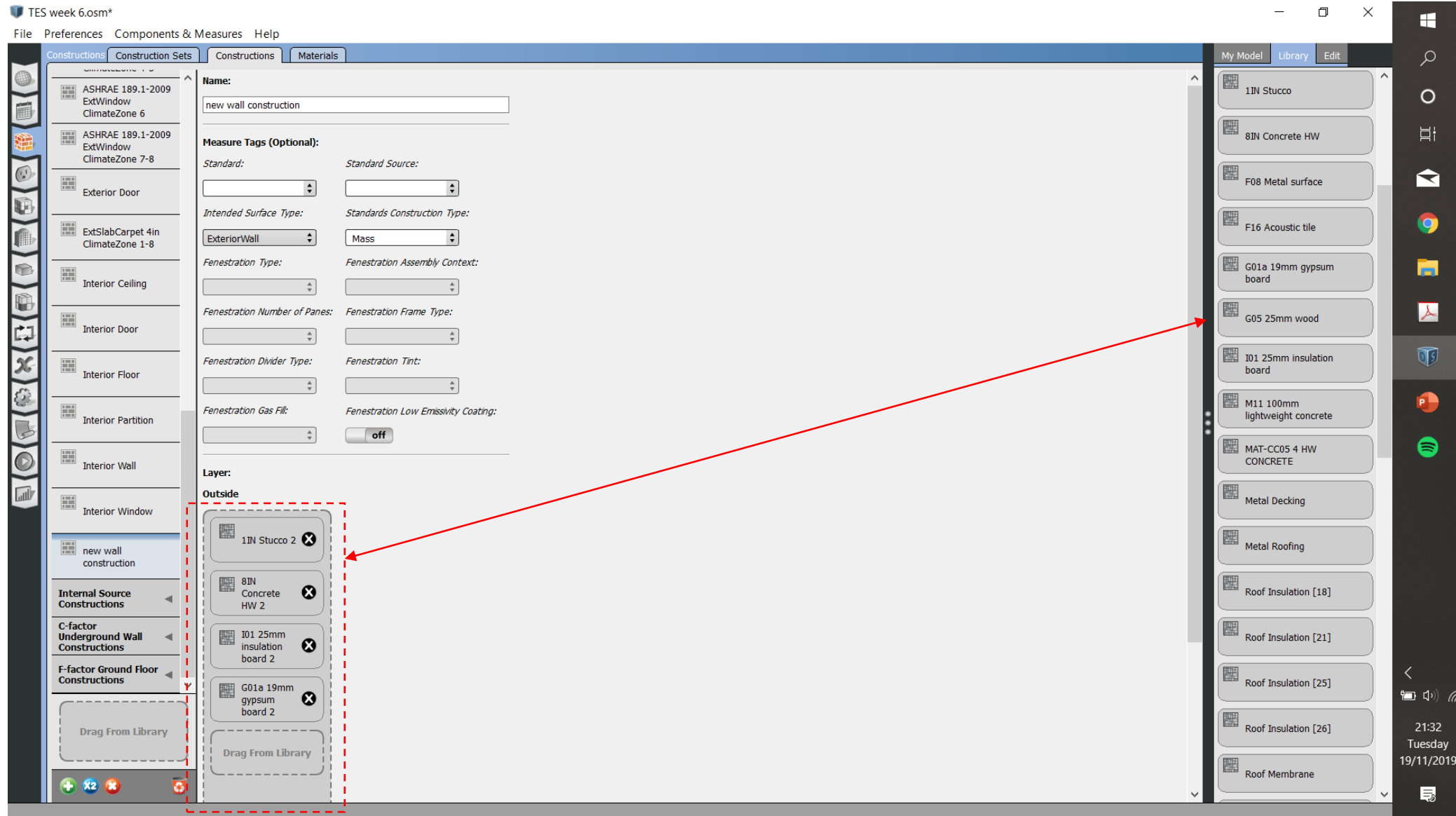
ASHRAE 189.1-2009 ExtWindow ClimateZone 1

ASHRAE 189.1-2009 ExtWindow ClimateZone 2

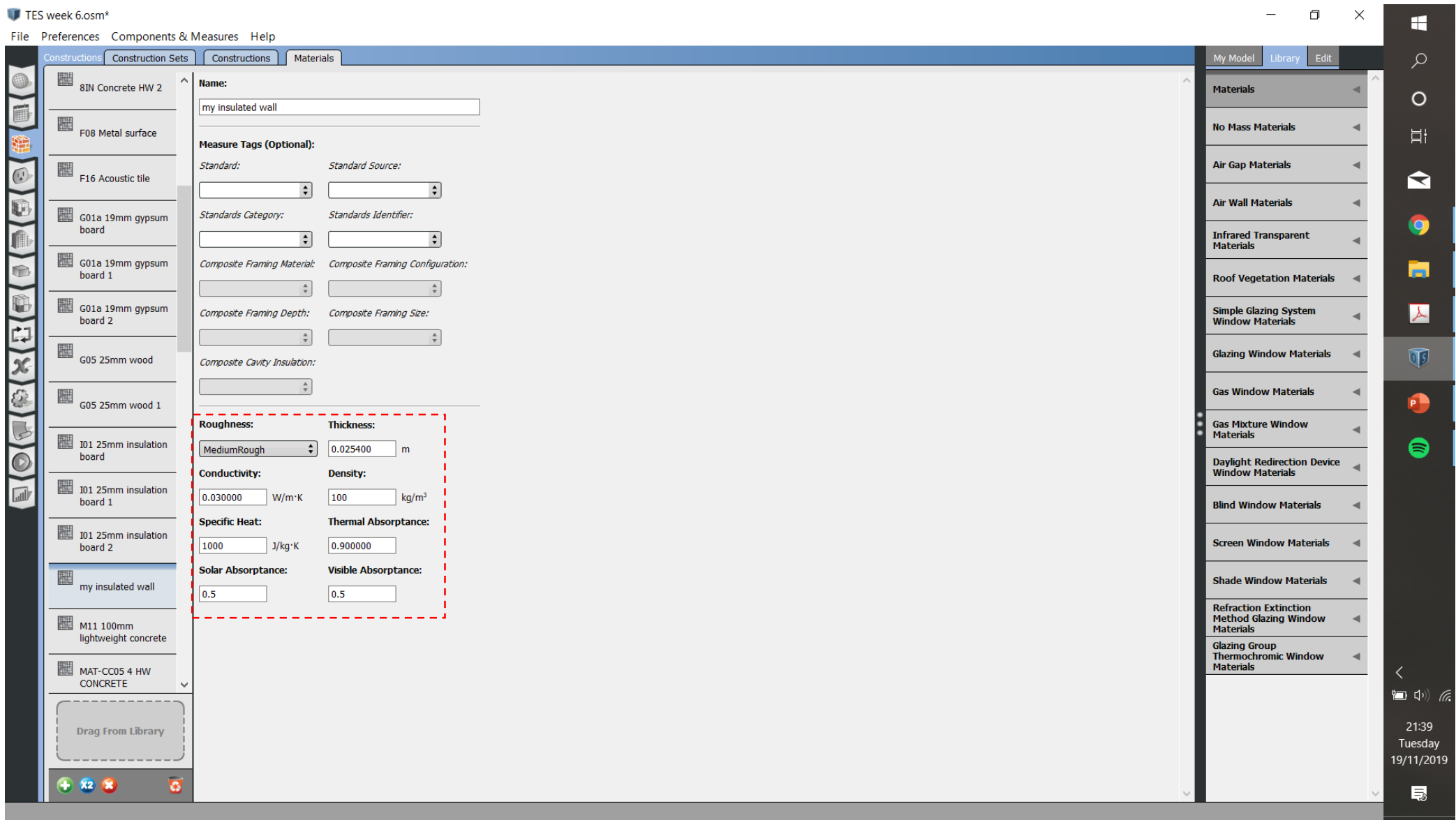
ASHRAE 189.1-2009 ExtWindow ClimateZone 3

20:59 Tuesday 19/11/2019

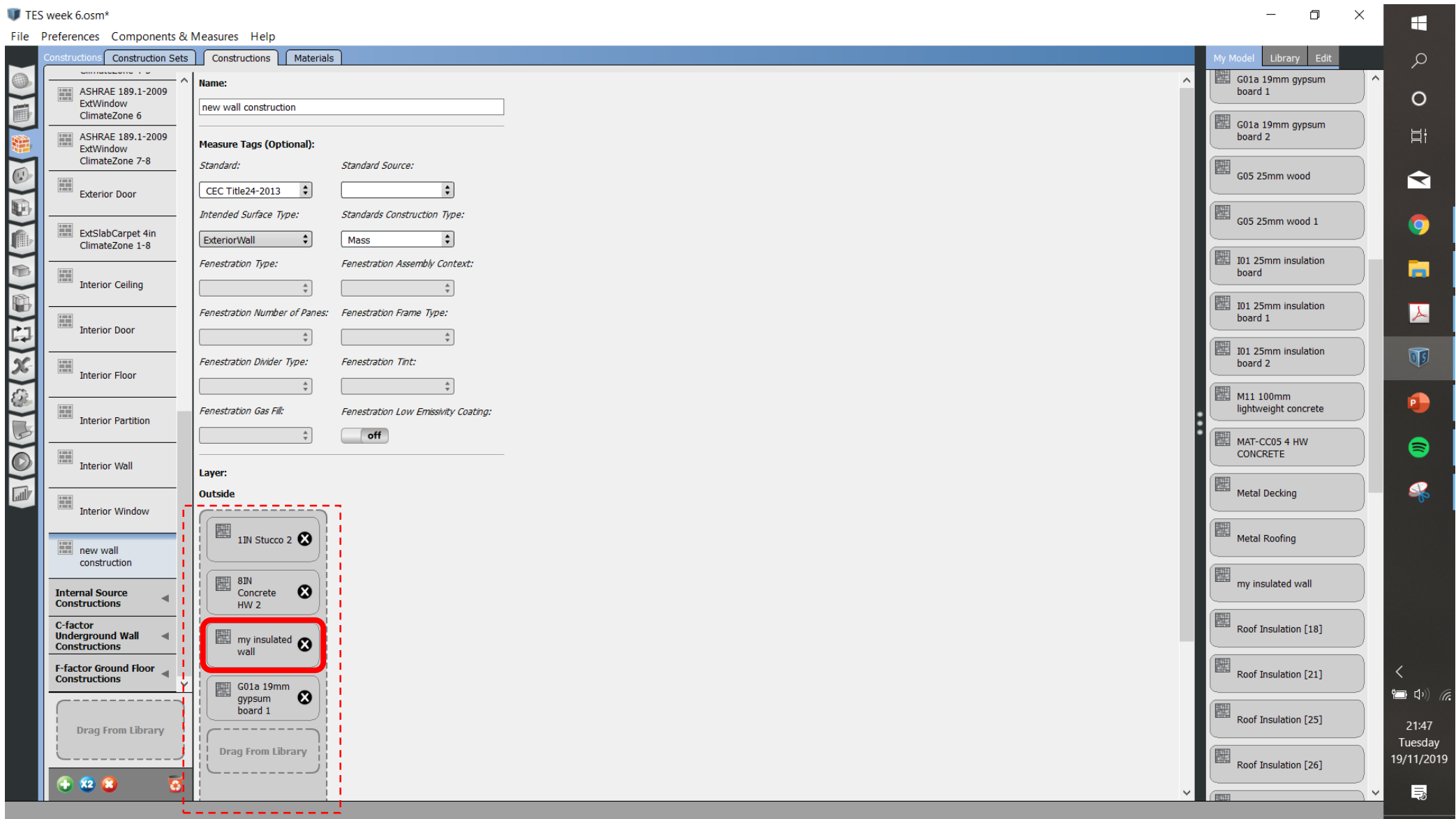
4. In 'Constructions', new materials are selected for the new wall construction.



5. In 'Materials', the properties of the insulated wall is changed



6. Back to 'Constructions', the properties of the new wall is updated.



7. Back to 'Constructions Sets', the wall type is updated.

TES week 6.osm*

File Preferences Components & Measures Help

Constructions 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
myconstruction set 19.11

Name
myconstruction set 19.11

Exterior Surface Constructions

Walls Floors Roofs

new wall construction X ExtSlabCarpet 4in ClimateZone X ASHRAE 189.1-2009 ExtRoof X

Interior Surface Constructions

Walls Floors Ceilings

Interior Wall X Interior Floor X Interior Ceiling X

Ground Contact Surface Constructions

Walls Floors Ceilings

ExtSlabCarpet 4in ClimateZone X ExtSlabCarpet 4in ClimateZone X ExtSlabCarpet 4in ClimateZone X

Exterior Sub Surface Constructions

Fixed Windows Operable Windows Doors

ASHRAE 189.1-2009 ExtWindow X ASHRAE 189.1-2009 ExtWindow X Exterior Door X

Glass Doors Overhead Doors Skylights

Drag From Library Drag From Library Drag From Library

Tubular Daylight Domes Tubular Daylight Diffusers

Interior Window X Interior Window X

Interior Sub Surface Constructions

Fixed Windows Operable Windows Doors

My Model Library Edit

ASHRAE 189.1-2009 ExtWindow ClimateZone 2
ASHRAE 189.1-2009 ExtWindow ClimateZone 3
ASHRAE 189.1-2009 ExtWindow ClimateZone 4-5
ASHRAE 189.1-2009 ExtWindow ClimateZone 6
ASHRAE 189.1-2009 ExtWindow ClimateZone 7-8
Exterior Door
ExtSlabCarpet 4in ClimateZone 1-8
Interior Ceiling
Interior Door
Interior Floor
Interior Partition
Interior Wall
Interior Window
new wall construction

Internal Source Constructions
C-factor Underground Wall Constructions
F-factor Ground Floor Constructions

21:50 Tuesday 19/11/2019

8. In the 'Spaces' panel, the new construction set is applied to all the spaces

TES week 6.osm*

File Preferences Components & Measures Help

Spaces Properties Loads Surfaces Subsurfaces Interior Partitions Shading

General Airflow Custom

Filters: Story Thermal Zone Space Type

All All All

Space Name	All	Story	Thermal Zone	Space Type	Default Construction Set	Default Schedule Set	Part of Total Floor Area
Space 101	<input type="checkbox"/>	Building Story 1	Thermal Zone 1	189.1-2009 - Office - Op	myconstruction set 19.11		<input checked="" type="checkbox"/>
Space 102	<input type="checkbox"/>	Building Story 1	Thermal Zone 1	189.1-2009 - Office - Op	myconstruction set 19.11		<input checked="" type="checkbox"/>
Space 103	<input type="checkbox"/>	Building Story 1	Thermal Zone 1	189.1-2009 - Office - Op	myconstruction set 19.11		<input checked="" type="checkbox"/>
Space 104	<input type="checkbox"/>	Building Story 1	Thermal Zone 2	189.1-2009 - Office - Br	myconstruction set 19.11		<input checked="" type="checkbox"/>
Space 105	<input type="checkbox"/>	Building Story 1	Thermal Zone 1	189.1-2009 - Office - Op	myconstruction set 19.11		<input checked="" type="checkbox"/>
Space 201	<input type="checkbox"/>	Building Story 2	Thermal Zone 3	189.1-2009 - Office - Op	myconstruction set 19.11		<input checked="" type="checkbox"/>
Space 202	<input type="checkbox"/>	Building Story 2	Thermal Zone 3	189.1-2009 - Office - Op	myconstruction set 19.11		<input checked="" type="checkbox"/>
Space 203	<input type="checkbox"/>	Building Story 2	Thermal Zone 3	189.1-2009 - Office - Op	myconstruction set 19.11		<input checked="" type="checkbox"/>
Space 204	<input type="checkbox"/>	Building Story 2	Thermal Zone 4	189.1-2009 - Office - Br	myconstruction set 19.11		<input checked="" type="checkbox"/>
Space 205	<input type="checkbox"/>	Building Story 2	Thermal Zone 3	189.1-2009 - Office - Op	myconstruction set 19.11		<input checked="" type="checkbox"/>
Space 301	<input type="checkbox"/>	Building Story 3	Thermal Zone 5	189.1-2009 - Office - Op	myconstruction set 19.11		<input checked="" type="checkbox"/>
Space 302	<input type="checkbox"/>	Building Story 3	Thermal Zone 5	189.1-2009 - Office - Op	myconstruction set 19.11		<input checked="" type="checkbox"/>
Space 303	<input type="checkbox"/>	Building Story 3	Thermal Zone 5	189.1-2009 - Office - Op	myconstruction set 19.11		<input checked="" type="checkbox"/>
Space 304	<input type="checkbox"/>	Building Story 3	Thermal Zone 6	189.1-2009 - Office - Br	myconstruction set 19.11		<input checked="" type="checkbox"/>
Space 305	<input type="checkbox"/>	Building Story 3	Thermal Zone 5	189.1-2009 - Office - Op	myconstruction set 19.11		<input checked="" type="checkbox"/>

My Model Library Edit

Default Construction Sets

- 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
- myconstruction set 19.11

Default Schedule Sets

Design Specification Outdoor Air

People Definitions

Lights Definitions

Luminaire Definitions

Electric Equipment Definitions

Gas Equipment Definitions

Water Use Equipment Definitions

22:40 Tuesday 19/11/2019

9. In 'Schedule' panel, the modified area will be the Break Room schedule set.

TES week 6.osm*

File Preferences Components & Measures Help

Schedules Schedule Sets Schedules

My Model Library Edit

Name
189.1-2009 - Office - BreakRoom - CZ1-3 Schedule Set

Default Schedules

Hours of Operation
Drag From Library

Number of People
Office Misc Occ

People Activity
Office Activity

Lighting
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

Drag From Library

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

189.1-2009 - Office - Elec/MechRoom - CZ1-3 Schedule Set

189.1-2009 - Office - Elec/MechRoom - CZ4-8 Schedule Set

189.1-2009 - Office - IT_Room - CZ1-3 Schedule Set

189.1-2009 - Office - IT_Room - CZ4-8 Schedule Set

189.1-2009 - Office - Lobby - CZ1-3 Schedule Set

189.1-2009 - Office - Lobby - CZ4-8

22:08
Tuesday
19/11/2019

10. In the 'Schedules' tab, the occupancy of the building is modified to reflect a day-to-day setting.

TES week 6.osm*

File Preferences Components & Measures Help

Schedules Schedule Sets Schedules

Schedule Name: Large Office Bldg Occ Schedule Type: Fractional

Default day profile.

Lower Limit: 0.00 Upper Limit: 1.00

Mouse over horizontal line to set value

Large Office Activity
Large Office Bldg Equip
Large Office Bldg Light
Large Office Bldg Occ
Design Day Profiles
Summer
Winter
Run Period Profiles
Priority 1
Priority 2
Default
Large Office ClgSetp
Large Office HtgSetp
Large Office Infil Quarter On
Medium Office Activity
Medium Office Bldg Equip
Medium Office Bldg Occ
Medium Office ClgSetp
Medium Office HtgSetp

Drag From Library

Hourly 15 Minutes 1 Minute

Jan

M	T	W	T	F	S	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Feb

M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					

Mar

M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Apr

M	T	W	T	F	S	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

May

M	T	W	T	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21

OS:Schedule:Day

Name
Office Bldg Occ Default Schedule

Schedule Type Limits Name
Fractional

Interpolate to Timestep
No

Hour
6

Minute
0

Value Until Time
0

Hour
7

Minute
0

Value Until Time
0.100000001490116

Hour
8

Minute
0

Value Until Time
0.200000002980232

Hour
12

Minute

22:28
Tuesday
19/11/2019

11. The same adjustment is performed for the Building Lights.

TES week 6.osm*

File Preferences Components & Measures Help

Schedules Schedule Sets Schedules

Large Office Activity
Large Office Bldg Equip
Large Office Bldg Light
Design Day Profiles
Summer
Winter
Run Period Profiles
Priority 1
Priority 2
Default
Large Office Bldg Occ
Large Office ClgSetp
Large Office HtgSetp
Large Office Infil Quarter On
Medium Office Activity
Medium Office Bldg Equip
Medium Office Bldg Occ
Medium Office ClgSetp
Medium Office HtgSetp

Drag From Library

Schedule Name: Large Office Bldg Light Schedule Type: Fractional

Default day profile.
Lower Limit: 0.00 Upper Limit: 1.00

Type value and press enter: 0.5

0.5 - Double click to cut segment

Hourly 15 Minutes 1 Minute

Jan
M T W T F S S
2 3 4 5 6 7 8
9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30 31

Feb
M T W T F S S
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28

Mar
M T W T F S S
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31

Apr
M T W T F S S
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30

May
M T W T F S S
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21

My Model Library Edit

OS:Schedule:Day

Name
Office Bldg Light Default Schedule

Schedule Type Limits Name
Fractional

Interpolate to Timestep
No

Hour
5

Minute
0

Value Until Time
0.0500000007450581

Hour
7

Minute
0

Value Until Time
0.100000001490116

Hour
8

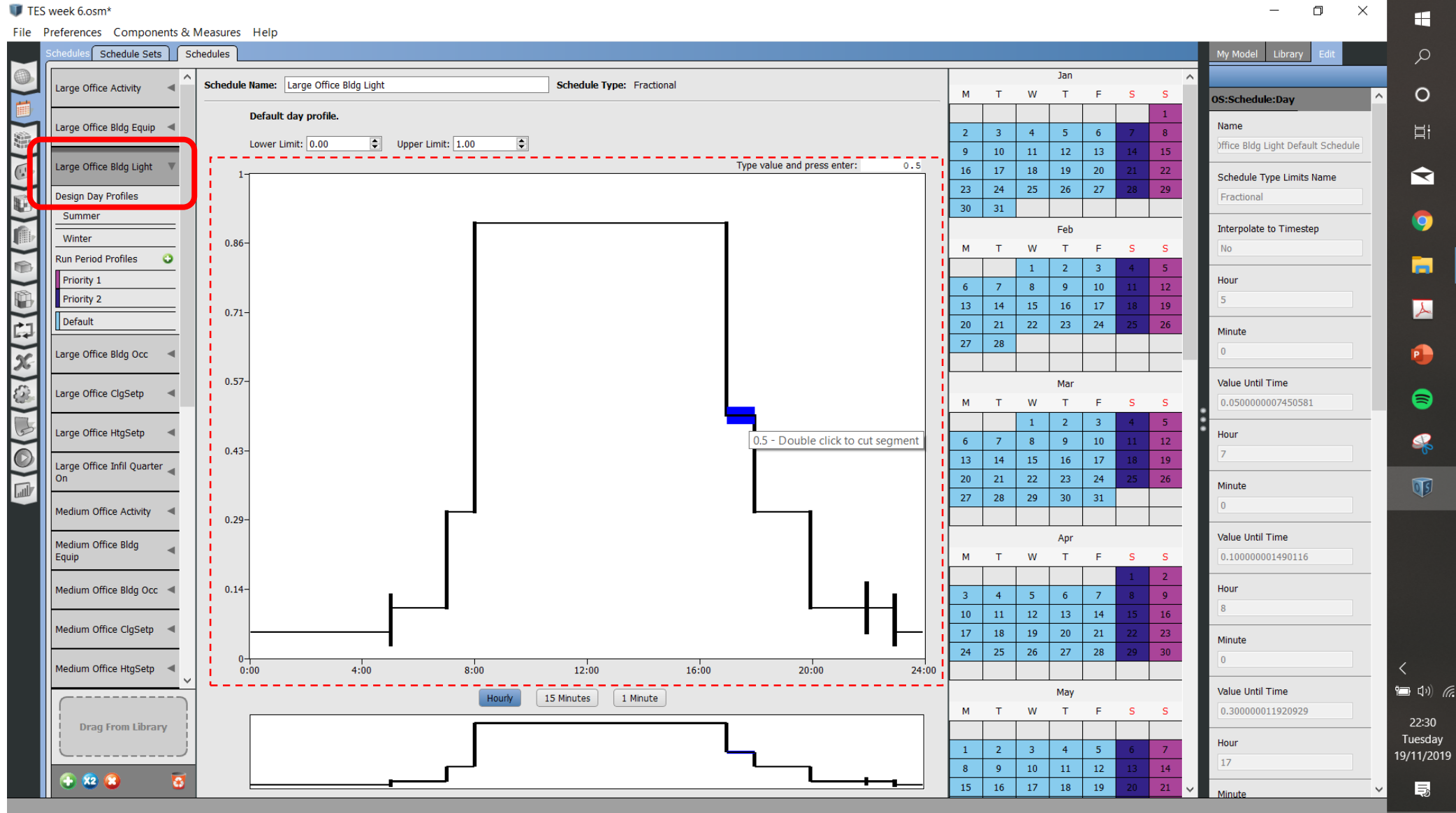
Minute
0

Value Until Time
0.300000011920929

Hour
17

Minute

22:30
Tuesday
19/11/2019



12. Both the occupancy and lights schedules are given new names.

TES week 6.osm*

File Preferences Components & Measures Help

Schedules Schedule Sets Schedules

Large Office Activity

Large Office Bldg Equip

my office lights

Design Day Profiles

Summer

Winter

Run Period Profiles

Priority 1

Priority 2

Default

my office occupancy

Large Office ClgSetp

Large Office HtgSetp

Large Office Infil Quarter On

Medium Office Activity

Medium Office Bldg Equip

Medium Office Bldg Occ

Medium Office ClgSetp

Medium Office HtgSetp

Drag From Library

Schedule Name: my office lights 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

M	T	W	T	F	S	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Feb

M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					

Mar

M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Apr

M	T	W	T	F	S	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

May

M	T	W	T	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21

OS:Schedule:Day

Name

Office Bldg Light Default Schedule

Schedule Type Limits Name

Fractional

Interpolate to Timestep

No

Hour

5

Minute

0

Value Until Time

0.0500000007450581

Hour

7

Minute

0

Value Until Time

0.100000001490116

Hour

8

Minute

0

Value Until Time

0.300000011920929

Hour

17

Minute

22:32 Tuesday 19/11/2019

13. Back in 'Schedule Sets', the Break Room schedule is modified with the adjusted schedule sets and renamed.

TES week 6.osm*

File Preferences Components & Measures Help

Schedules Schedule Sets Schedules

my office schedule

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

189.1-2009 - Office - Elec/MechRoom - CZ1-3 Schedule Set

189.1-2009 - Office - Elec/MechRoom - CZ4-8 Schedule Set

189.1-2009 - Office - IT_Room - CZ1-3 Schedule Set

189.1-2009 - Office - IT_Room - CZ4-8 Schedule Set

189.1-2009 - Office - Lobby - CZ1-3 Schedule Set

189.1-2009 - Office - Lobby - CZ4-8

Drag From Library

my office schedule

Default Schedules

Hours of Operation

Number of People

People Activity

Lighting

Electric Equipment

Gas Equipment

Hot Water Equipment

Steam Equipment

Other Equipment

Infiltration

my office lights

my office occupancy

Office Misc Occ

Office Activity

Office Infil Quarter On

Office Bldg Equip

Office Bldg Light

Office Infil Quarter On

Office Misc Occ

Office Work Occ

Small Office Activity

My Model Library Edit

Large Office Infil Quarter On

Medium Office Activity

Medium Office Bldg Equip

Medium Office Bldg Occ

Medium Office ClgSetp

Medium Office HtgSetp

Medium Office Infil Quarter On

my office lights

my office occupancy

Office Activity

Office Bldg Equip

Office Bldg Light

Office Infil Quarter On

Office Misc Occ

Office Work Occ

Small Office Activity

22:37 Tuesday 19/11/2019

14. Back in 'Spaces' panel, the new office schedule is applied to the break room areas.

TES week 6.osm*

File Preferences Components & Measures Help

Spaces Properties Loads Surfaces Subsurfaces Interior Partitions Shading

General Airflow Custom

Filters: Story Thermal Zone Space Type

All All All

Space Name	All	Story	Thermal Zone	Space Type	Default Construction Set	Default Schedule Set	Part of Total Floor Area
Space 101	<input type="checkbox"/>	Building Story 1	Thermal Zone 1	189.1-2009 - Office - Op	myconstruction set 19.11	189.1-2009 - Office - Clc	<input checked="" type="checkbox"/>
Space 102	<input type="checkbox"/>	Building Story 1	Thermal Zone 1	189.1-2009 - Office - Op	myconstruction set 19.11	189.1-2009 - Office - Clc	<input checked="" type="checkbox"/>
Space 103	<input type="checkbox"/>	Building Story 1	Thermal Zone 1	189.1-2009 - Office - Op	myconstruction set 19.11	189.1-2009 - Office - Co	<input checked="" type="checkbox"/>
Space 104	<input type="checkbox"/>	Building Story 1	Thermal Zone 2	189.1-2009 - Office - Bre	myconstruction set 19.11	my office schedule	<input checked="" type="checkbox"/>
Space 105	<input type="checkbox"/>	Building Story 1	Thermal Zone 1	189.1-2009 - Office - Op	myconstruction set 19.11	189.1-2009 - Office - Clc	<input checked="" type="checkbox"/>
Space 201	<input type="checkbox"/>	Building Story 2	Thermal Zone 3	189.1-2009 - Office - Op	myconstruction set 19.11	189.1-2009 - Office - Clc	<input checked="" type="checkbox"/>
Space 202	<input type="checkbox"/>	Building Story 2	Thermal Zone 3	189.1-2009 - Office - Op	myconstruction set 19.11	189.1-2009 - Office - Clc	<input checked="" type="checkbox"/>
Space 203	<input type="checkbox"/>	Building Story 2	Thermal Zone 3	189.1-2009 - Office - Op	myconstruction set 19.11	189.1-2009 - Office - Co	<input checked="" type="checkbox"/>
Space 204	<input type="checkbox"/>	Building Story 2	Thermal Zone 4	189.1-2009 - Office - Bre	myconstruction set 19.11	my office schedule	<input checked="" type="checkbox"/>
Space 205	<input type="checkbox"/>	Building Story 2	Thermal Zone 3	189.1-2009 - Office - Op	myconstruction set 19.11	189.1-2009 - Office - Clc	<input checked="" type="checkbox"/>
Space 301	<input type="checkbox"/>	Building Story 3	Thermal Zone 5	189.1-2009 - Office - Op	myconstruction set 19.11	189.1-2009 - Office - Clc	<input checked="" type="checkbox"/>
Space 302	<input type="checkbox"/>	Building Story 3	Thermal Zone 5	189.1-2009 - Office - Op	myconstruction set 19.11	189.1-2009 - Office - Clc	<input checked="" type="checkbox"/>
Space 303	<input type="checkbox"/>	Building Story 3	Thermal Zone 5	189.1-2009 - Office - Op	myconstruction set 19.11	189.1-2009 - Office - Co	<input checked="" type="checkbox"/>
Space 304	<input type="checkbox"/>	Building Story 3	Thermal Zone 6	189.1-2009 - Office - Bre	myconstruction set 19.11	my office schedule	<input checked="" type="checkbox"/>
Space 305	<input type="checkbox"/>	Building Story 3	Thermal Zone 5	189.1-2009 - Office - Op	myconstruction set 19.11	189.1-2009 - Office - Clc	<input checked="" type="checkbox"/>

My Model Library Edit

Building Stories

Thermal Zones

Space Types

Default Construction Sets

Default Schedule Sets

- 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
- 189.1-2009 - Office - Elec/ MechRoom - CZ1-3 Schedule Set
- 189.1-2009 - Office - Elec/ MechRoom - CZ4-8 Schedule Set
- 189.1-2009 - Office - IT_Room - CZ1-3 Schedule Set
- 189.1-2009 - Office - IT_Room - CZ4-8 Schedule Set
- 189.1-2009 - Office - Lobby - CZ1-3 Schedule Set

22:44 Tuesday 19/11/2019

15. In the 'Loads' panel, the load of people will also be adjusted.

TES week 6.osm

File Preferences Components & Measures Help

Loads

People Definitions

- 189.1-2009 - Office - BreakRoom - CZ1-3 People
- 189.1-2009 - Office - BreakRoom - CZ4-8 People
- 189.1-2009 - Office - ClosedOffice - CZ1-3 People
- 189.1-2009 - Office - ClosedOffice - CZ4-8 People
- 189.1-2009 - Office - Conference - CZ1-3 People
- 189.1-2009 - Office - Conference - CZ4-8 People
- 189.1-2009 - Office - Corridor - CZ1-3 People Definition
- 189.1-2009 - Office - Corridor - CZ4-8 People Definition
- 189.1-2009 - Office - IT_Room - CZ1-3 People Definition
- 189.1-2009 - Office - IT_Room - CZ4-8 People Definition
- 189.1-2009 - Office - Lobby - CZ1-3 People Definition
- 189.1-2009 - Office - Lobby - CZ4-8

Drag From Library

Name:
189.1-2009 - Office - BreakRoom - CZ1-3 People Definition

Number of People: **People per Space Floor Area:** 0.538196 people/m² **Space Floor Area per Person:** m²/person

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

My Model Library Edit

22:48
Tuesday
19/11/2019

16. The new values of the new floor load.

TES week 6.osm*

File Preferences Components & Measures Help

Loads

People Definitions

- 189.1-2009 - Office - BreakRoom - CZ1-3 People
- my office load
- 189.1-2009 - Office - BreakRoom - CZ4-8 People
- 189.1-2009 - Office - ClosedOffice - CZ1-3 People
- 189.1-2009 - Office - ClosedOffice - CZ4-8 People
- 189.1-2009 - Office - Conference - CZ1-3 People
- 189.1-2009 - Office - Conference - CZ4-8 People
- 189.1-2009 - Office - Corridor - CZ1-3 People Definition
- 189.1-2009 - Office - Corridor - CZ4-8 People Definition
- 189.1-2009 - Office - IT_Room - CZ1-3 People Definition
- 189.1-2009 - Office - IT_Room - CZ4-8 People Definition
- 189.1-2009 - Office - Lobby - CZ1-3

Drag From Library

Name:
my office load

Number of People: **People per Space Floor Area:** **Space Floor Area per Person:**

people/m² m²/person

Fraction Radiant: **Sensible Heat Fraction:** **Carbon Dioxide Generation Rate:**

L/s·W

My Model Library Edit

22:51
Tuesday
19/11/2019

17. The same adjustment is also applied to the lights.

TES week 6.osm*

File Preferences Components & Measures Help

Loads

People Definitions

Lights Definitions

189.1-2009 - Office - BreakRoom - CZ1-3 Lights

my office lights

189.1-2009 - Office - BreakRoom - CZ4-8 Lights

189.1-2009 - Office - ClosedOffice - CZ1-3 Lights

189.1-2009 - Office - ClosedOffice - CZ4-8 Lights

189.1-2009 - Office - Conference - CZ1-3 Lights

189.1-2009 - Office - Conference - CZ4-8 Lights

189.1-2009 - Office - Corridor - CZ1-3 Lights Definition

189.1-2009 - Office - Corridor - CZ4-8 Lights Definition

189.1-2009 - Office - Elec/MechRoom - CZ1-3 Lights

189.1-2009 - Office

Drag From Library

Name:
my office lights

Lighting Power: W

Energy Per Space Floor Area: W/m²

Energy Per Person: W/person

Fraction Radiant:

Fraction Visible:

Return Air Fraction:

My Model Library Edit

22:53
Tuesday
19/11/2019