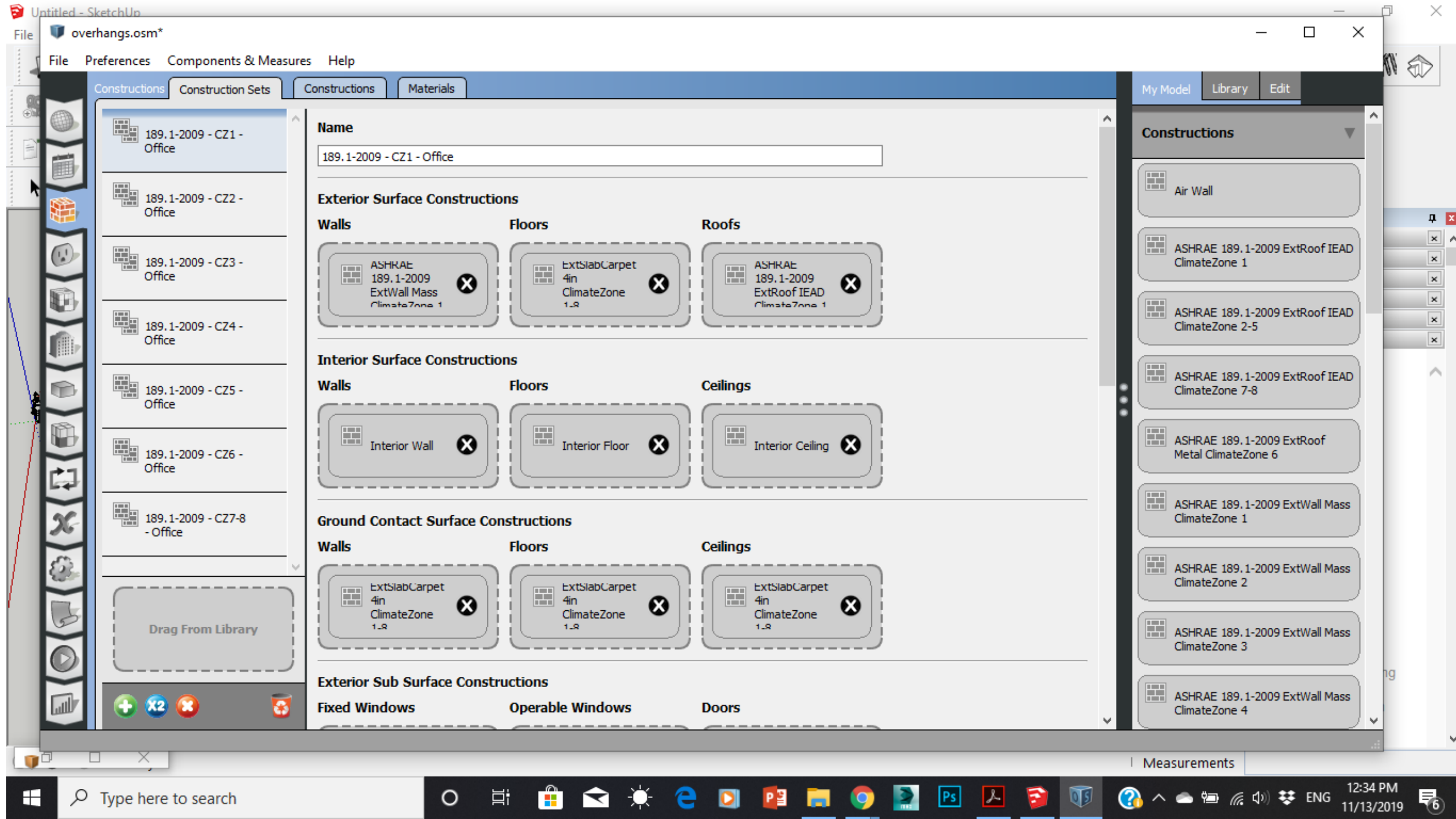
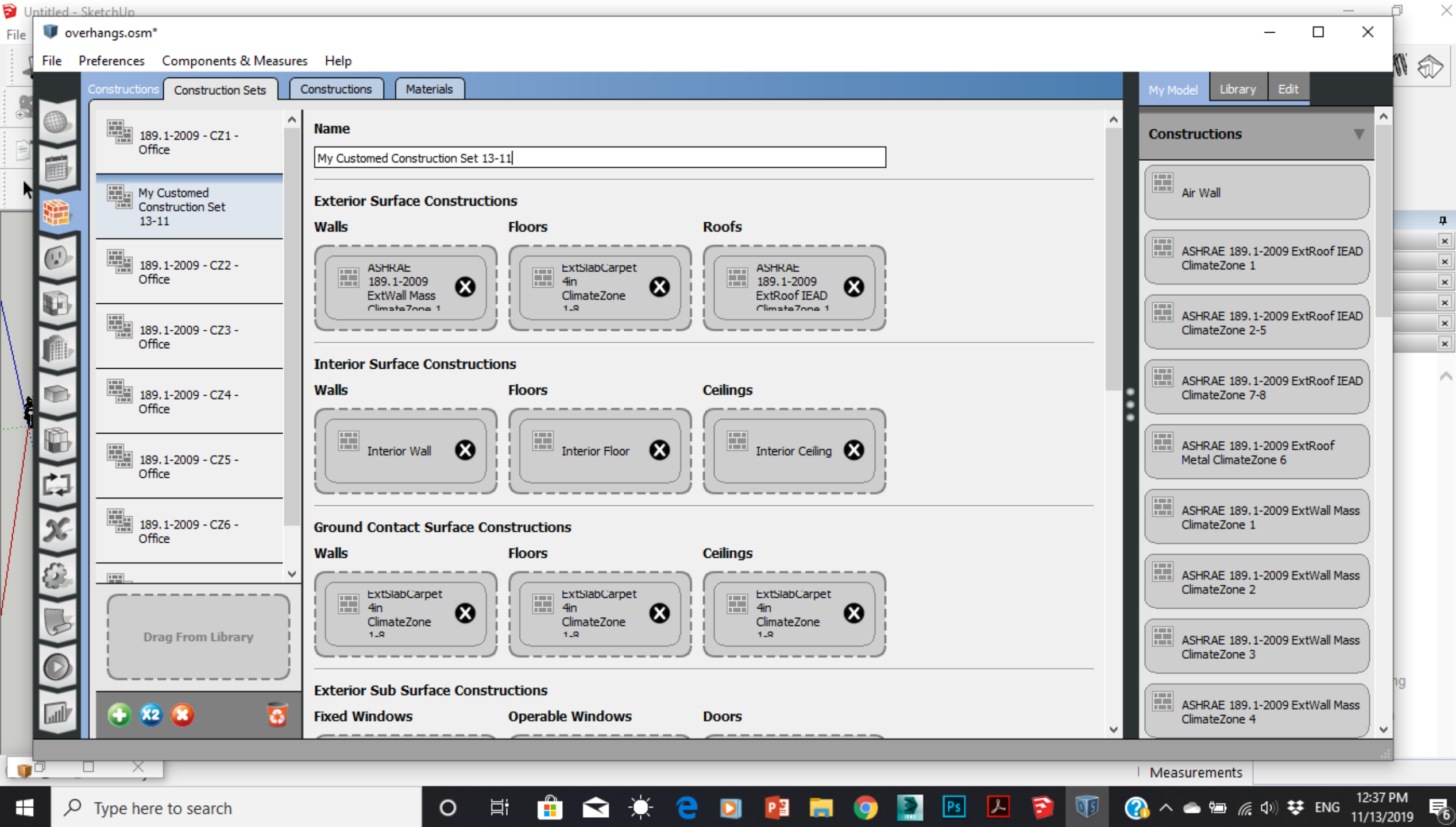
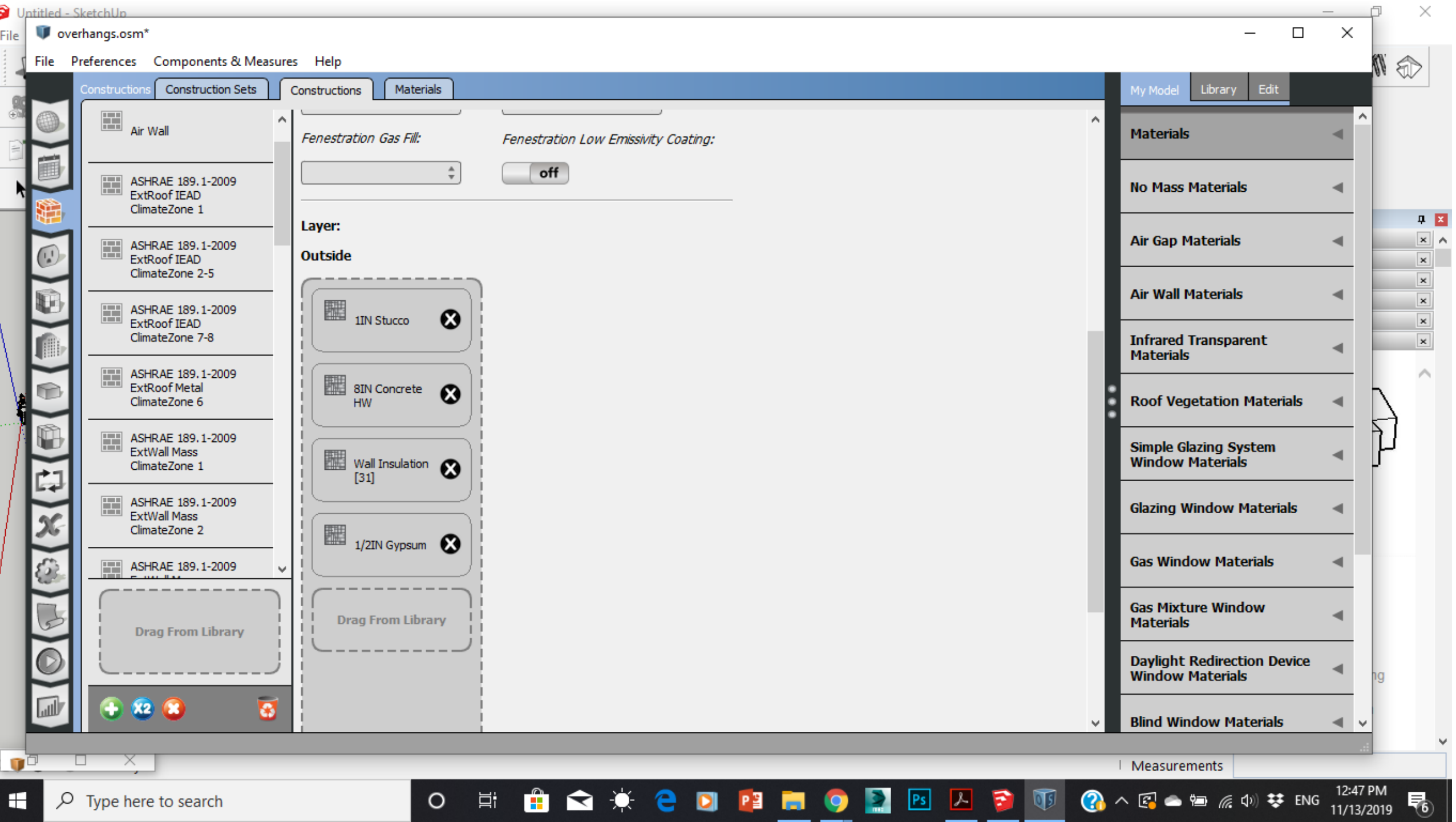


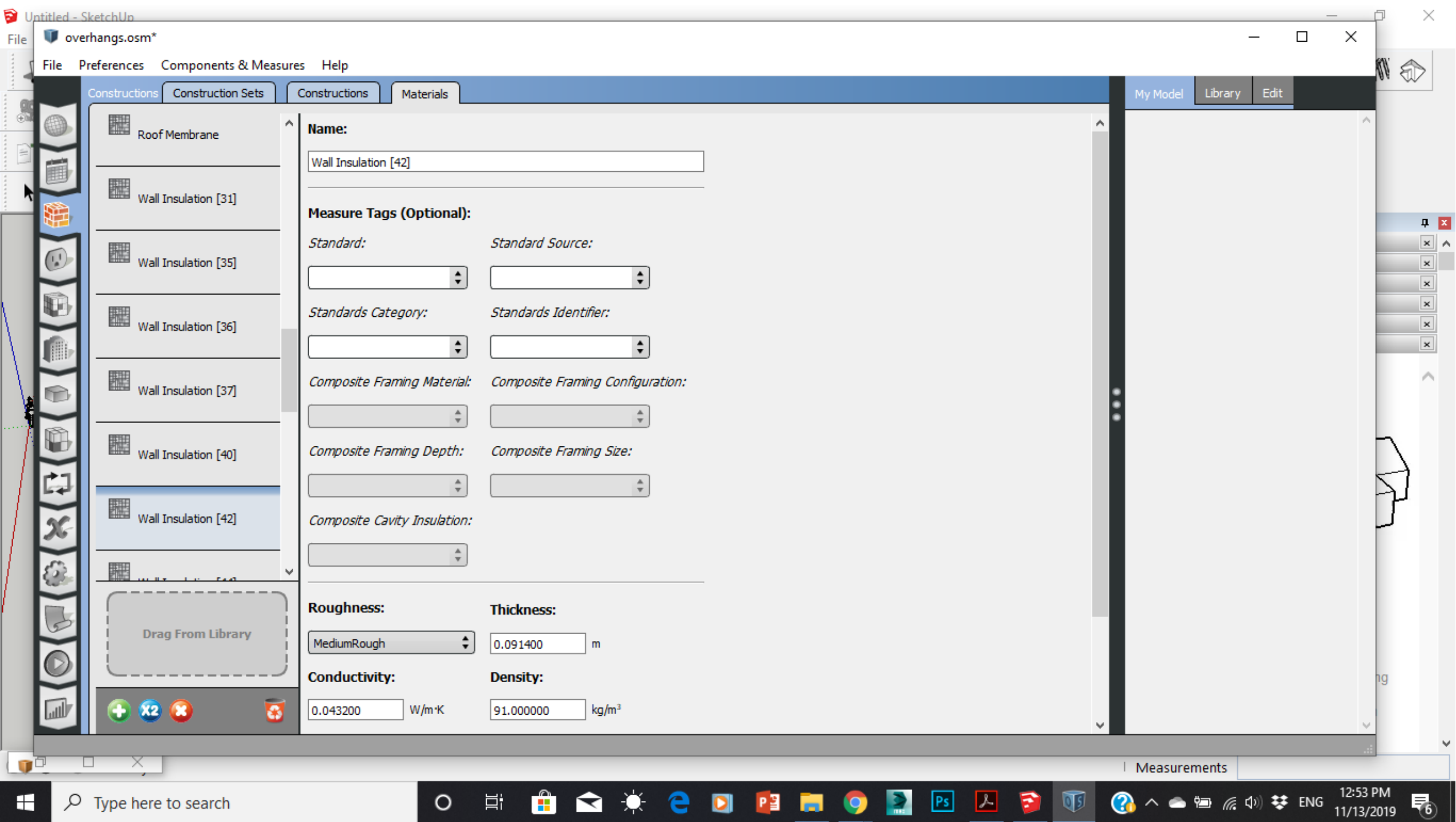
Week 7 Assignment

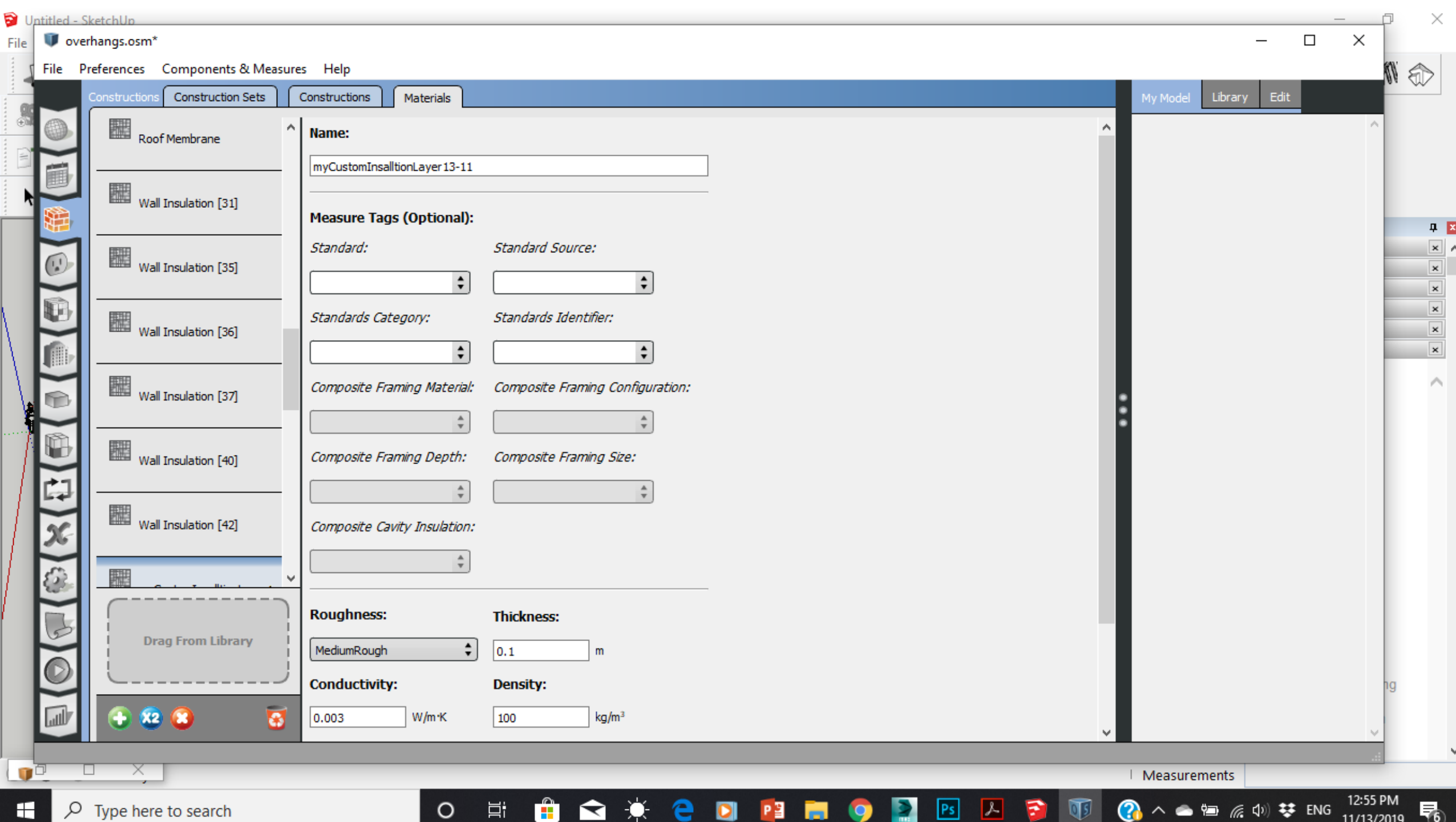
- main concepts that went through about solar radiation.
- **Solar radiation:** is the emitted energy from the sun in a radiative transfer of heat, creating an electromagnetic energy.
- Solar radiation electromagnetic energy has a spectrum (**solar spectrum**) of visible (short wave) and invisible spectrum (near infrared and ultra violet).
- **Diffused solar radiation:** while solar radiation is transferring from outer space into the earth's atmosphere reaching the earth's surface (soil or water) it finds many obstacles which scatter, absorb, or reflect it causing in diffusing it, like air molecules, water vapor, clouds, dust, pollutants.. etc.
- **Direct beam solar radiation:** is the solar radiation that travels in a straight line from sun to earth's surface which doesn't find obstacles in its way and doesn't get diffused.
- The amount of radiation reaching earth's surface depends on several factors, such as; the location, time of day, season, in addition to local factors as the surrounding landscape and weather.
- One of the main affecting factors of sun radiation is the **air mass** in the earth's atmosphere, when the sun radiation is perpendicular to earth's surface and gets the biggest amount of energy possible. The less the angle of incidence the more the energy rays travel and get scattered or diffused, meaning less energy reaching that surface.

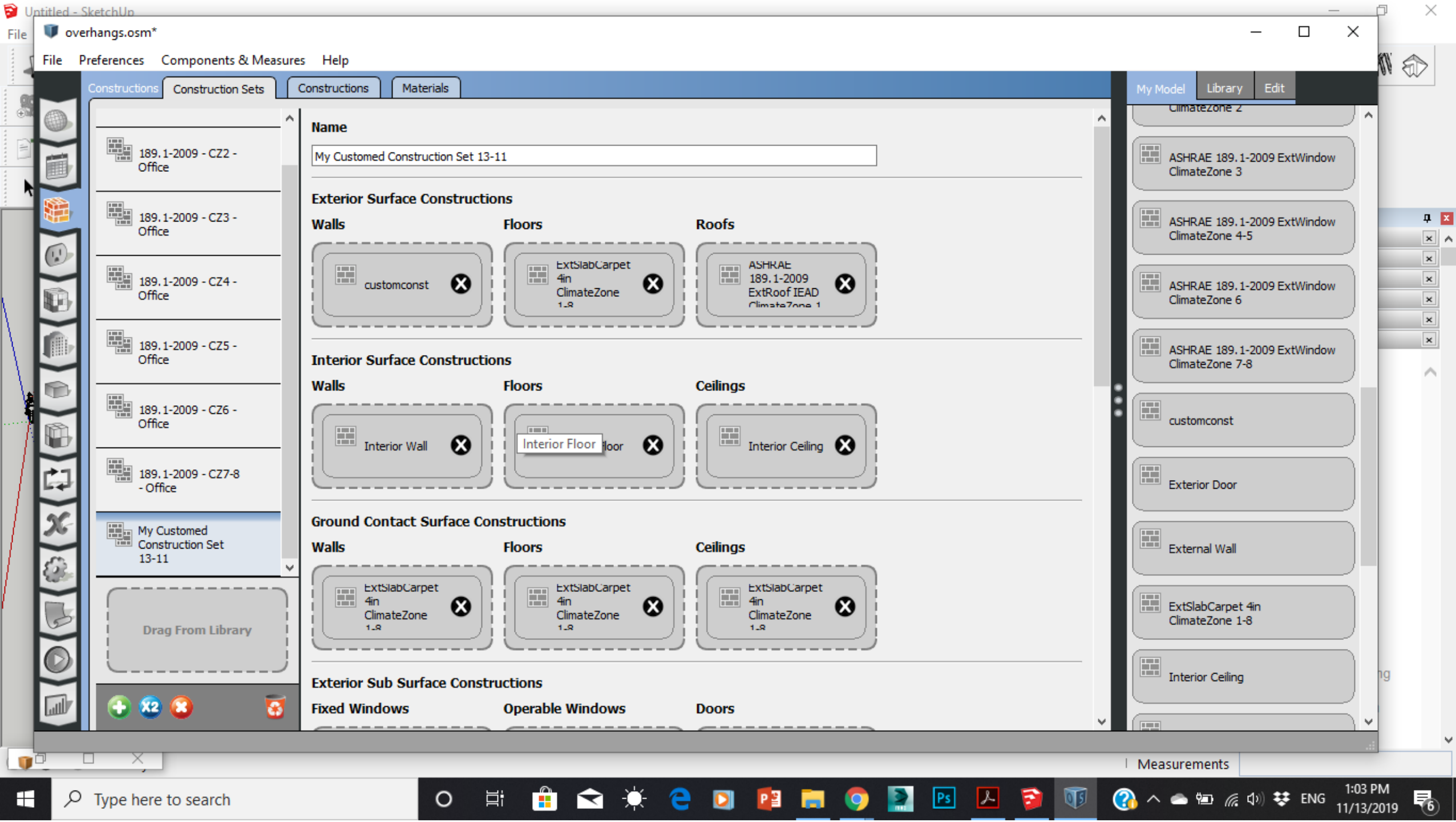


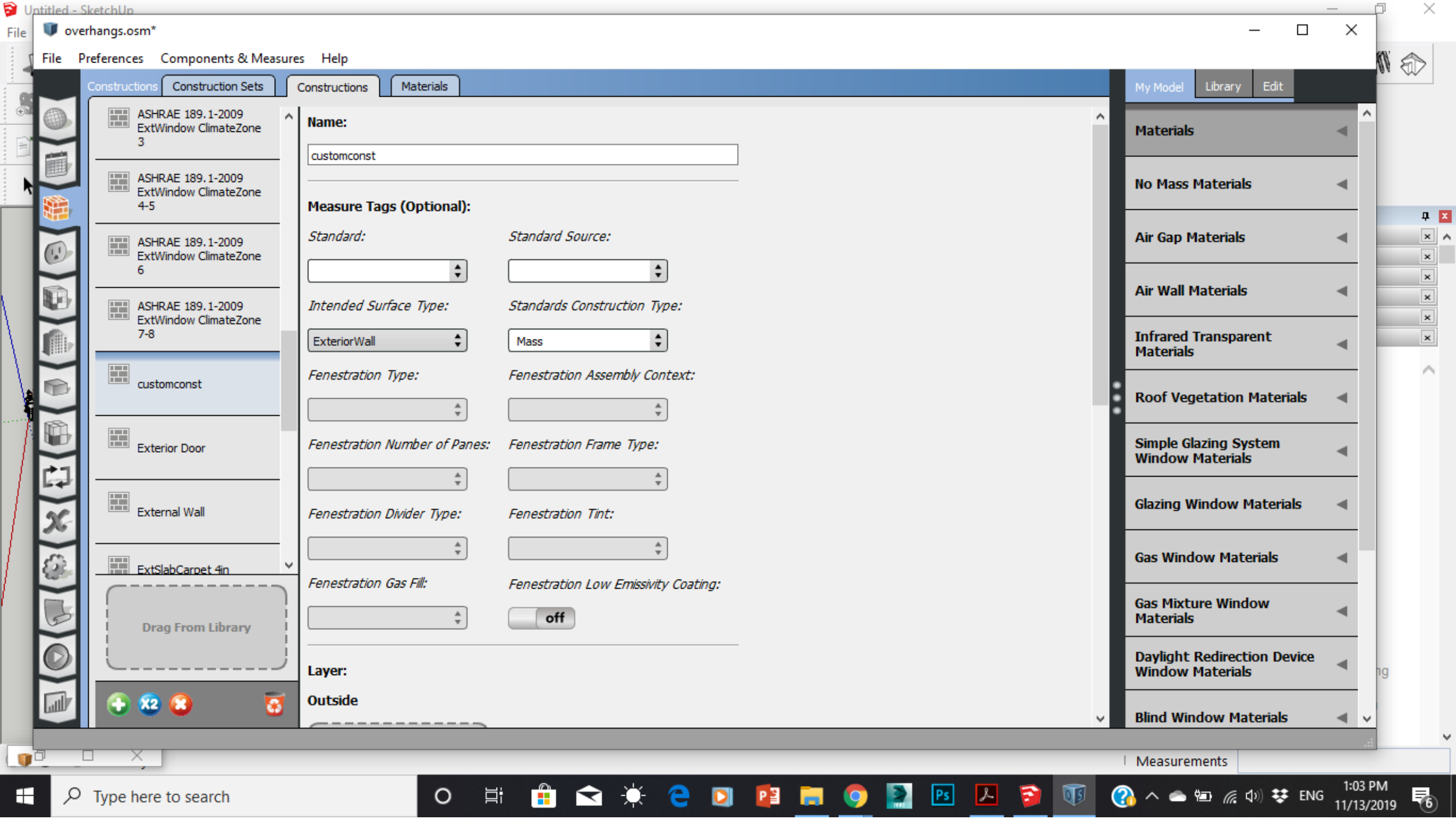


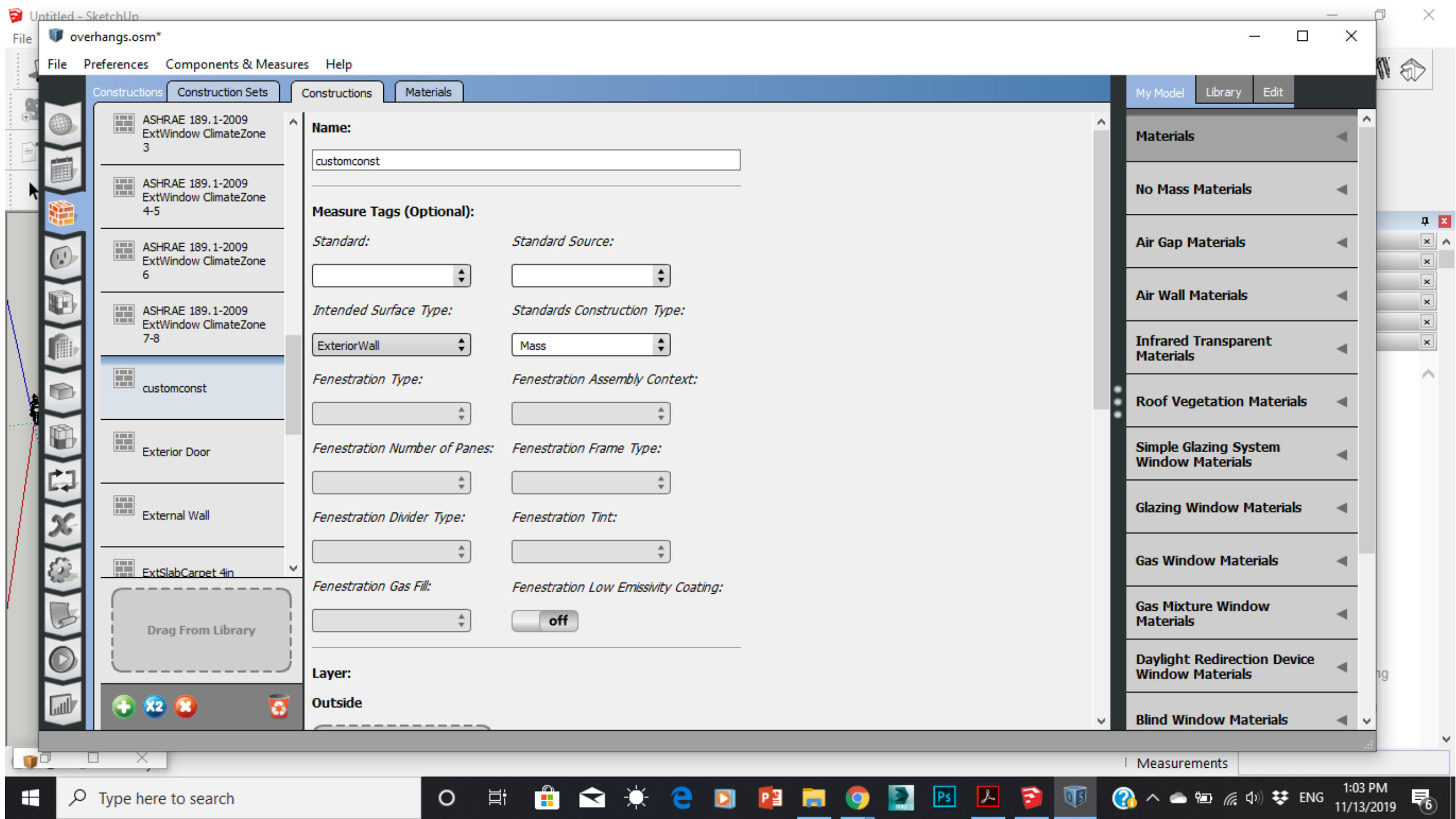
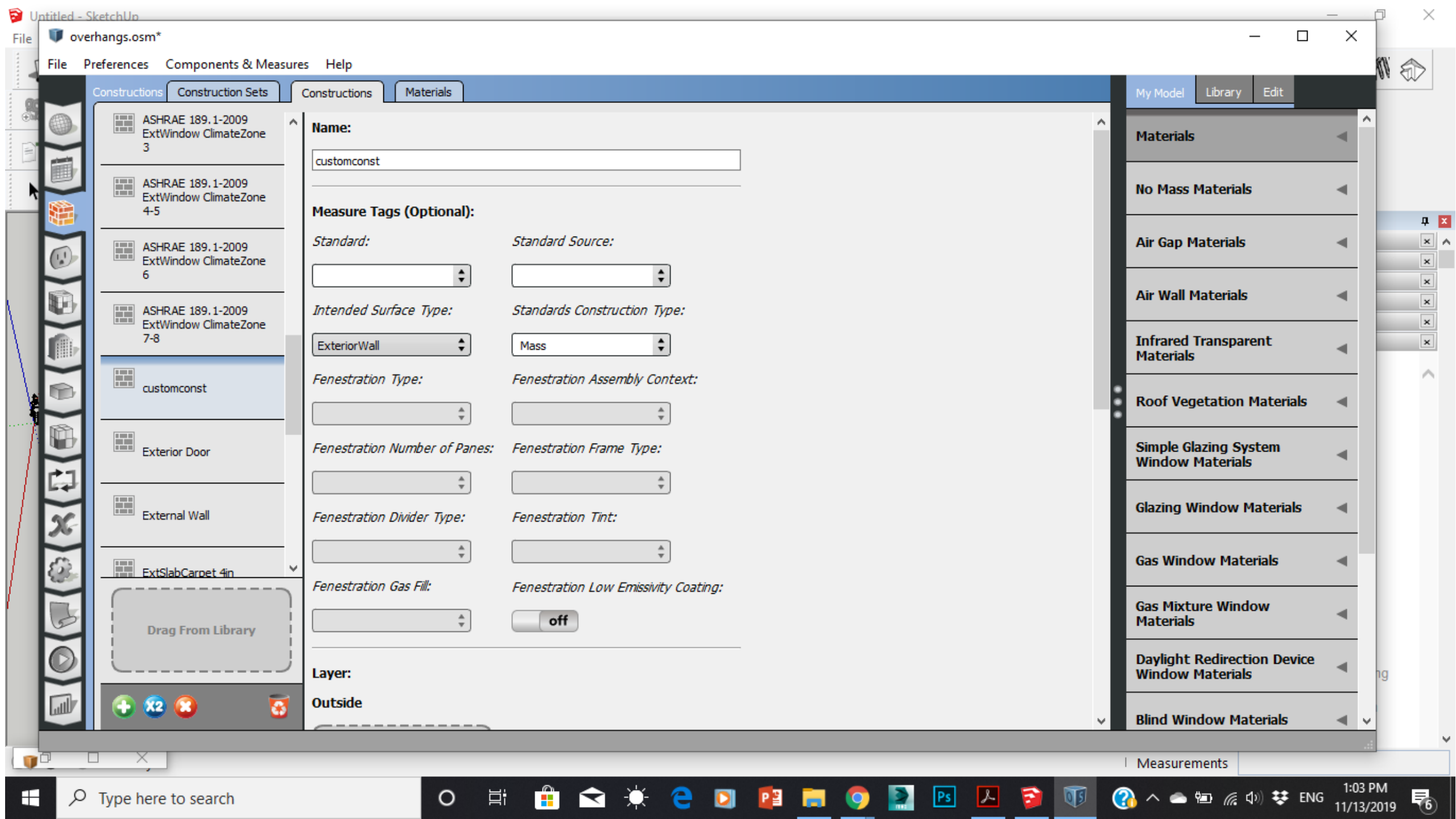


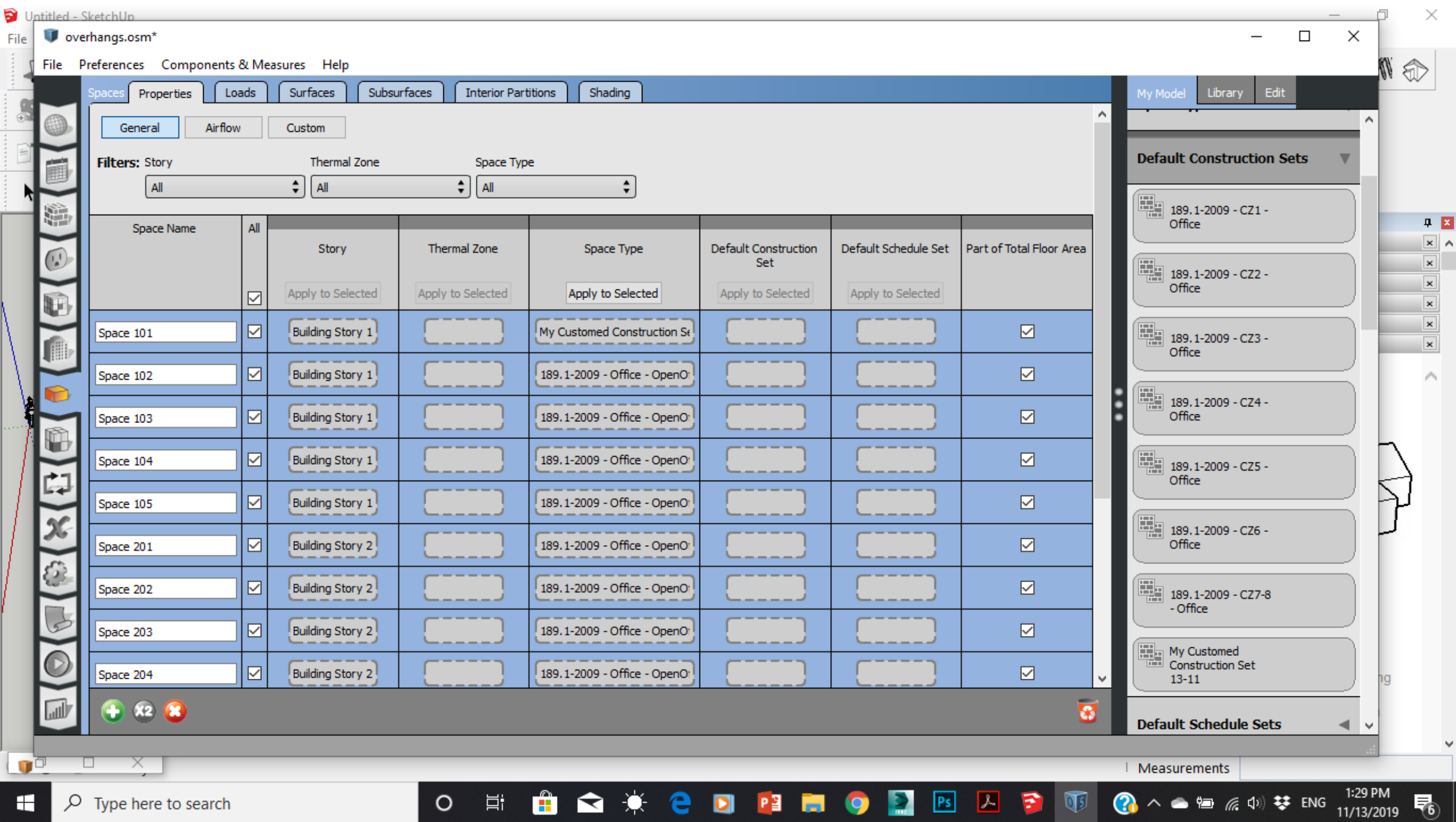




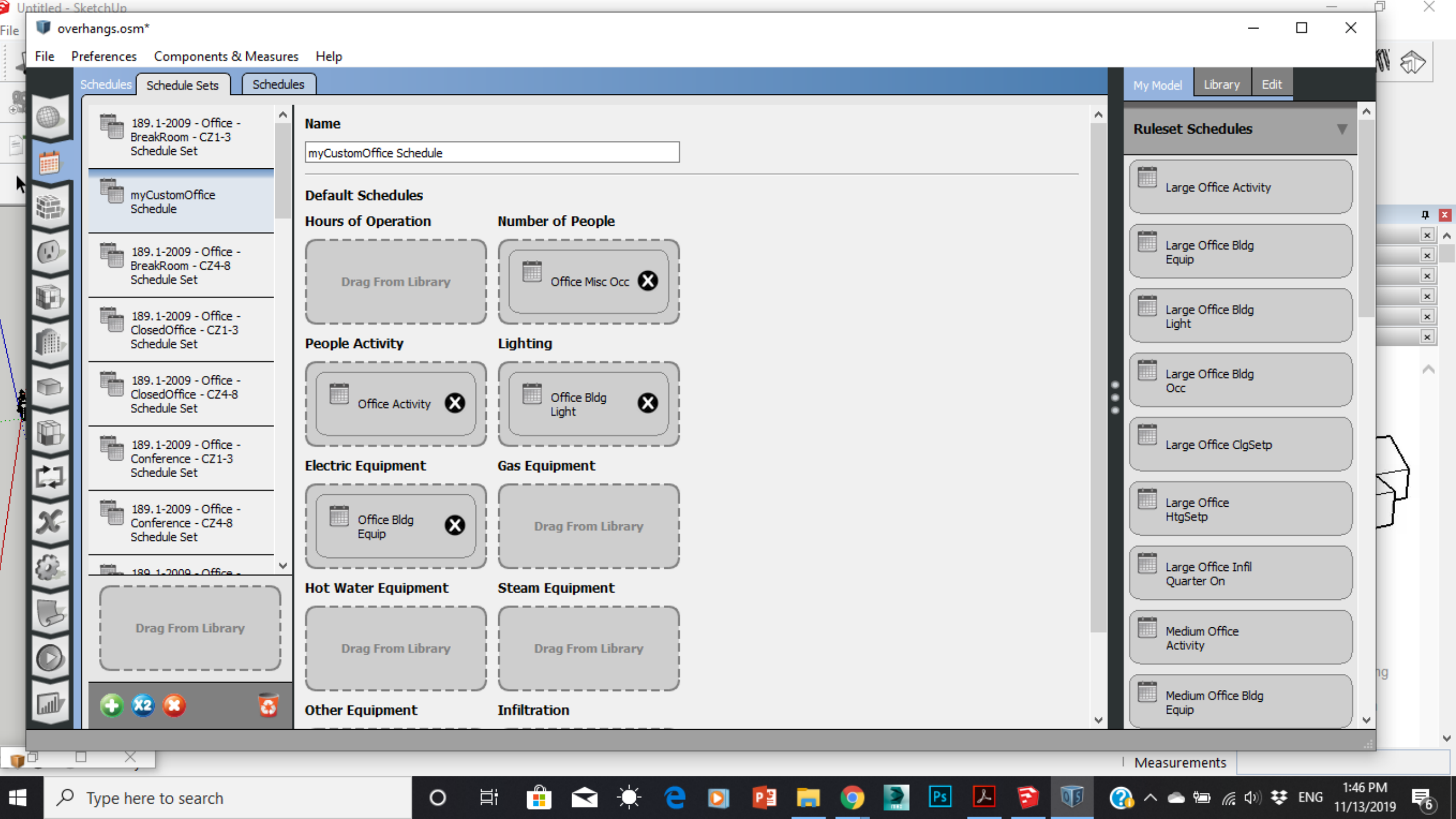








Filters: StoryThermal ZoneSpace Type							
AllAllAll							
Space Name	All	Story	Thermal Zone	Space Type	Default Construction Set	Default Schedule Set	Part of Total Floor Area
	<input checked="" type="checkbox"/>	Apply to Selected	Apply to Selected	Apply to Selected	Apply to Selected	Apply to Selected	
Space 101	<input checked="" type="checkbox"/>	Building Story 1		My Customed Construction Set			<input checked="" type="checkbox"/>
Space 102	<input checked="" type="checkbox"/>	Building Story 1		189.1-2009 - Office - OpenOffice			<input checked="" type="checkbox"/>
Space 103	<input checked="" type="checkbox"/>	Building Story 1		189.1-2009 - Office - OpenOffice			<input checked="" type="checkbox"/>
Space 104	<input checked="" type="checkbox"/>	Building Story 1		189.1-2009 - Office - OpenOffice			<input checked="" type="checkbox"/>
Space 105	<input checked="" type="checkbox"/>	Building Story 1		189.1-2009 - Office - OpenOffice			<input checked="" type="checkbox"/>
Space 201	<input checked="" type="checkbox"/>	Building Story 2		189.1-2009 - Office - OpenOffice			<input checked="" type="checkbox"/>
Space 202	<input checked="" type="checkbox"/>	Building Story 2		189.1-2009 - Office - OpenOffice			<input checked="" type="checkbox"/>
Space 203	<input checked="" type="checkbox"/>	Building Story 2		189.1-2009 - Office - OpenOffice			<input checked="" type="checkbox"/>
Space 204	<input checked="" type="checkbox"/>	Building Story 2		189.1-2009 - Office - OpenOffice			<input checked="" type="checkbox"/>



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

myCustomOffice
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 -

Drag From Library

Name

myCustomOffice Schedule

Default Schedules

Hours of Operation

Drag From Library

Number of People

Office Misc Occ X

People Activity

Office Activity X

Lighting

Office Bldg
Light X

Electric Equipment

Office Bldg
Equip X

Gas Equipment

Drag From Library

Hot Water Equipment

Drag From Library

Steam Equipment

Drag From Library

Other Equipment

Infiltration

Ruleset Schedules

Large Office Activity

Large Office Bldg
Equip

Large Office Bldg
Light

Large Office Bldg
Occ

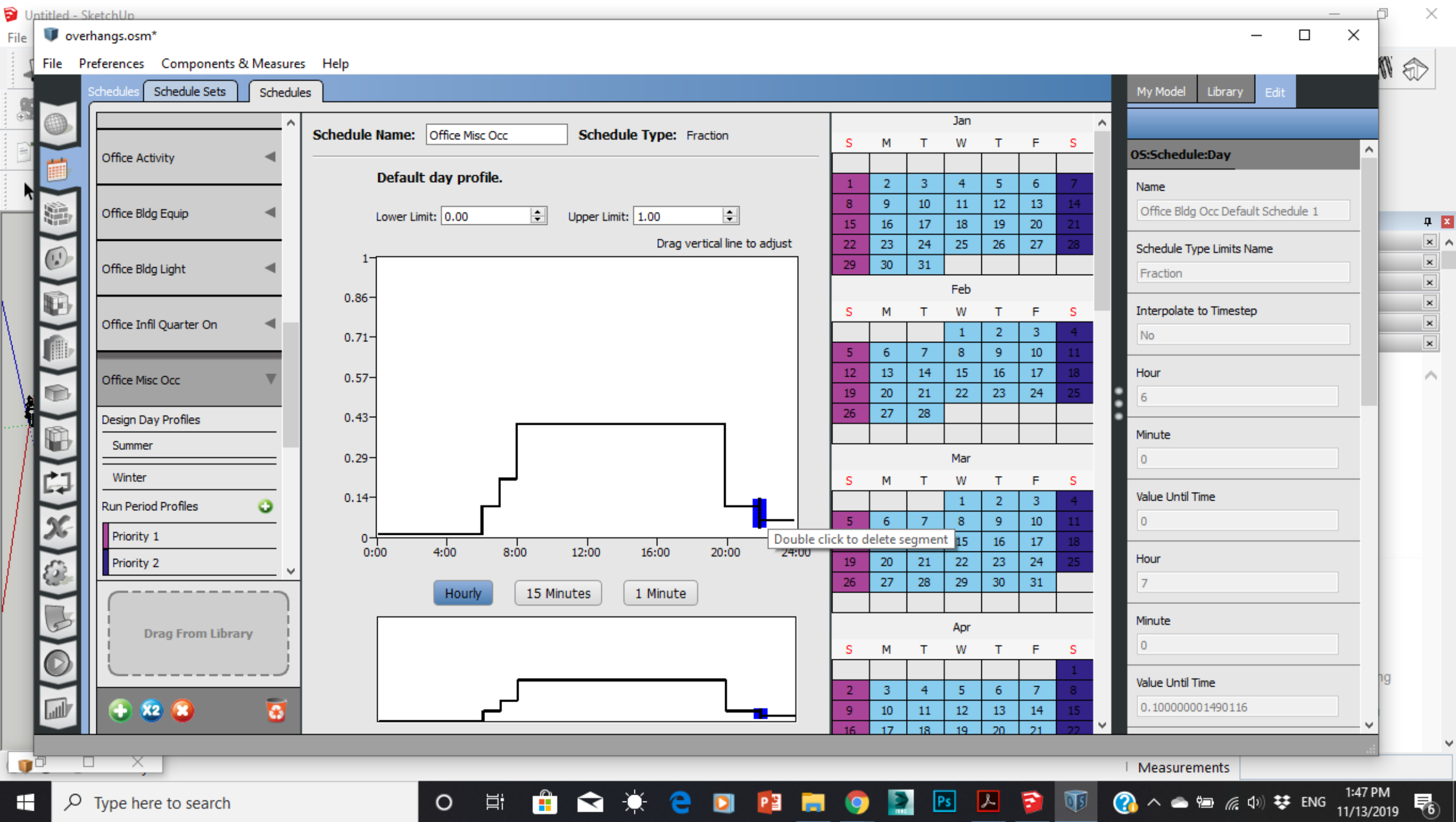
Large Office ClgSetp

Large Office
HtgSetp

Large Office Infil
Quarter On

Medium Office
Activity

Medium Office Bldg
Equip



overhangs.osm*

File Preferences Components & Measures Help

SchedulesSchedule SetsSchedules

Office Activity

Office Bldg Equip

Office Bldg Light

Office Infil Quarter On

Office Misc Occ

Design Day Profiles

Summer

Winter

Run Period Profiles

Priority 1

Priority 2

Drag From Library

Schedule Name:Office Misc OccSchedule Type: Fraction

Default day profile.

Lower Limit:0.00Upper Limit:1.00

Drag vertical line to adjust

1

0.86

0.71

0.57

0.43

0.29

0.14

0

0:00

4:00

8:00

12:00

16:00

20:00

24:00

Hourly

15 Minutes

1 Minute

Double click to delete segment

Jan

S	M	T	W	T	F	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

S	M	T	W	T	F	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

S	M	T	W	T	F	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

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

My ModelLibraryEdit

OS:Schedule:Day

Name

Office Bldg Occ Default Schedule 1

Schedule Type Limits Name

Fraction

Interpolate to Timestep

No

Hour

6

Minute

0

Value Until Time

0

Hour

7

Minute

0

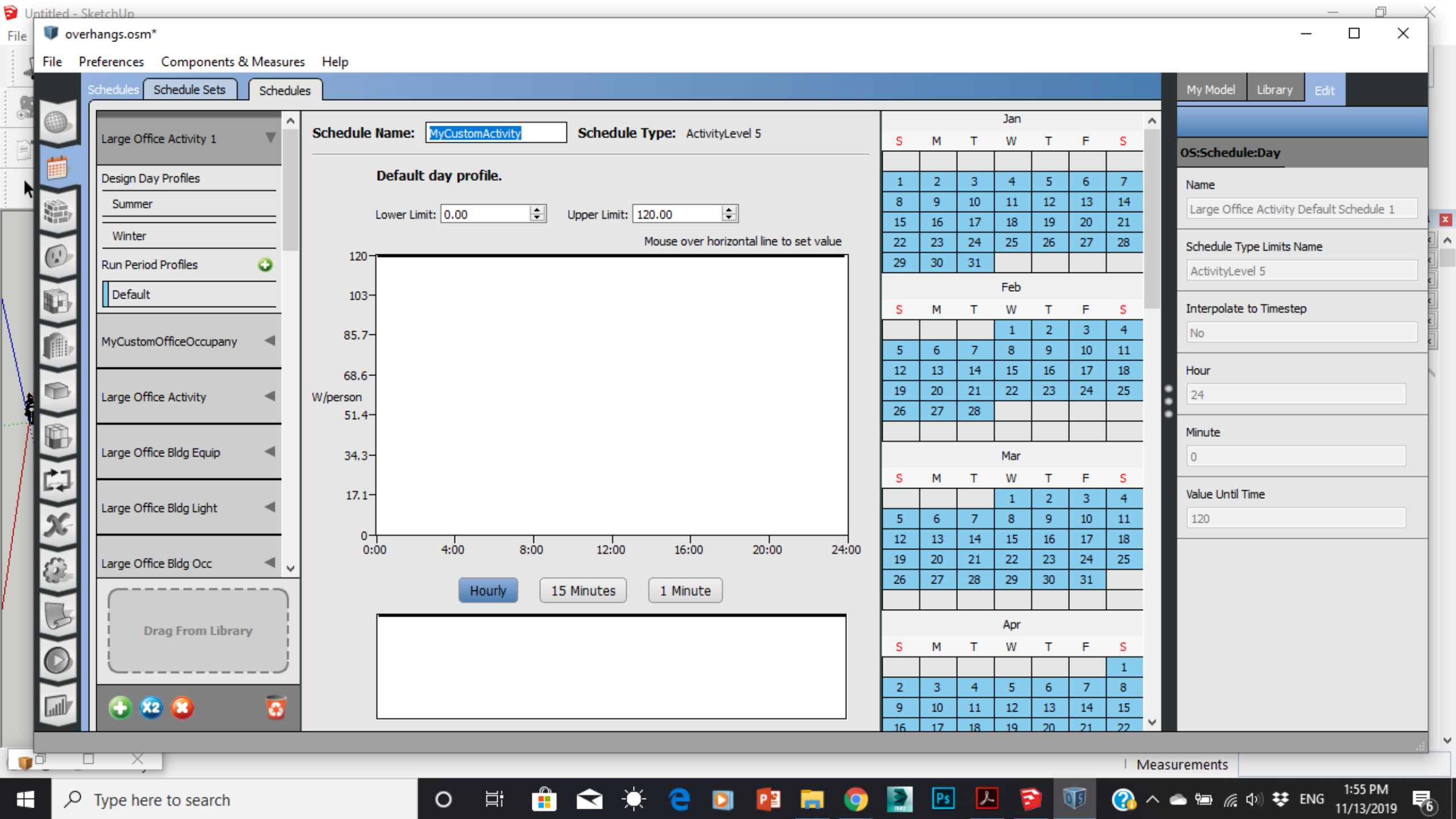
Value Until Time

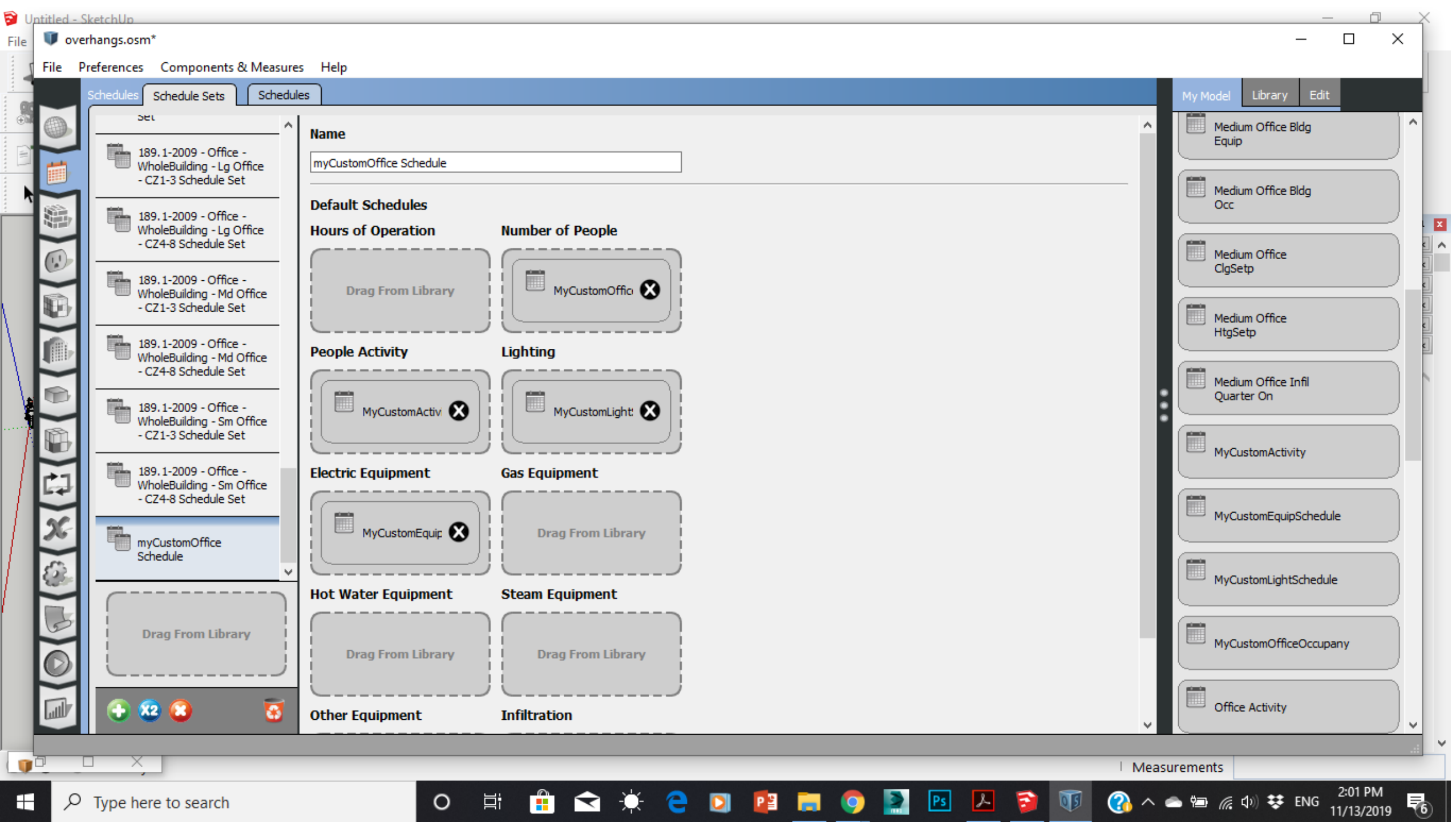
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Measurements

Type here to search

1:47 PM 11/13/2019





Name

myCustomOffice Schedule

Default Schedules

Hours of Operation

Drag From Library

Number of People

MyCustomOffice X

People Activity

MyCustomActiv X

Lighting

MyCustomLight X

Electric Equipment

MyCustomEquip X

Gas Equipment

Drag From Library

Hot Water Equipment

Drag From Library

Steam Equipment

Drag From Library

Other Equipment

Infiltration

My Model

Library

Edit

Medium Office Bldg Equip

Medium Office Bldg Occ

Medium Office ClgSetp

Medium Office HtgSetp

Medium Office Infil Quarter On

MyCustomActivity

MyCustomEquipSchedule

MyCustomLightSchedule

MyCustomOfficeOccupany

Office Activity

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
	<input type="checkbox"/>	Apply to Selected	Apply to Selected	Apply to Selected	Apply to Selected	Apply to Selected	
Space 101	<input type="checkbox"/>	Building Story 1		189.1-2009 - Office - OpenO	My Customed Construction St	myCustomOffice Schedule 13	<input checked="" type="checkbox"/>
Space 102	<input type="checkbox"/>	Building Story 1		189.1-2009 - Office - OpenO	My Customed Construction St	myCustomOffice Schedule 13	<input checked="" type="checkbox"/>
Space 103	<input type="checkbox"/>	Building Story 1		189.1-2009 - Office - OpenO	My Customed Construction St	myCustomOffice Schedule 13	<input checked="" type="checkbox"/>
Space 104	<input type="checkbox"/>	Building Story 1		189.1-2009 - Office - OpenO	My Customed Construction St	myCustomOffice Schedule 13	<input checked="" type="checkbox"/>
Space 105	<input type="checkbox"/>	Building Story 1		189.1-2009 - Office - OpenO	My Customed Construction St	myCustomOffice Schedule 13	<input checked="" type="checkbox"/>
Space 201	<input type="checkbox"/>	Building Story 2		189.1-2009 - Office - OpenO	My Customed Construction St	myCustomOffice Schedule 13	<input checked="" type="checkbox"/>
Space 202	<input type="checkbox"/>	Building Story 2		189.1-2009 - Office - OpenO	My Customed Construction St	myCustomOffice Schedule 13	<input checked="" type="checkbox"/>
Space 203	<input type="checkbox"/>	Building Story 2		189.1-2009 - Office - OpenO	My Customed Construction St	myCustomOffice Schedule 13	<input checked="" type="checkbox"/>
Space 204	<input type="checkbox"/>	Building Story 2		189.1-2009 - Office - OpenO	My Customed Construction St	myCustomOffice Schedule 13	<input checked="" type="checkbox"/>

My Model Library Edit

Default Construction Sets

Default Schedule Sets

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 - ClosedOffice - CZ4-8 Schedule Set

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

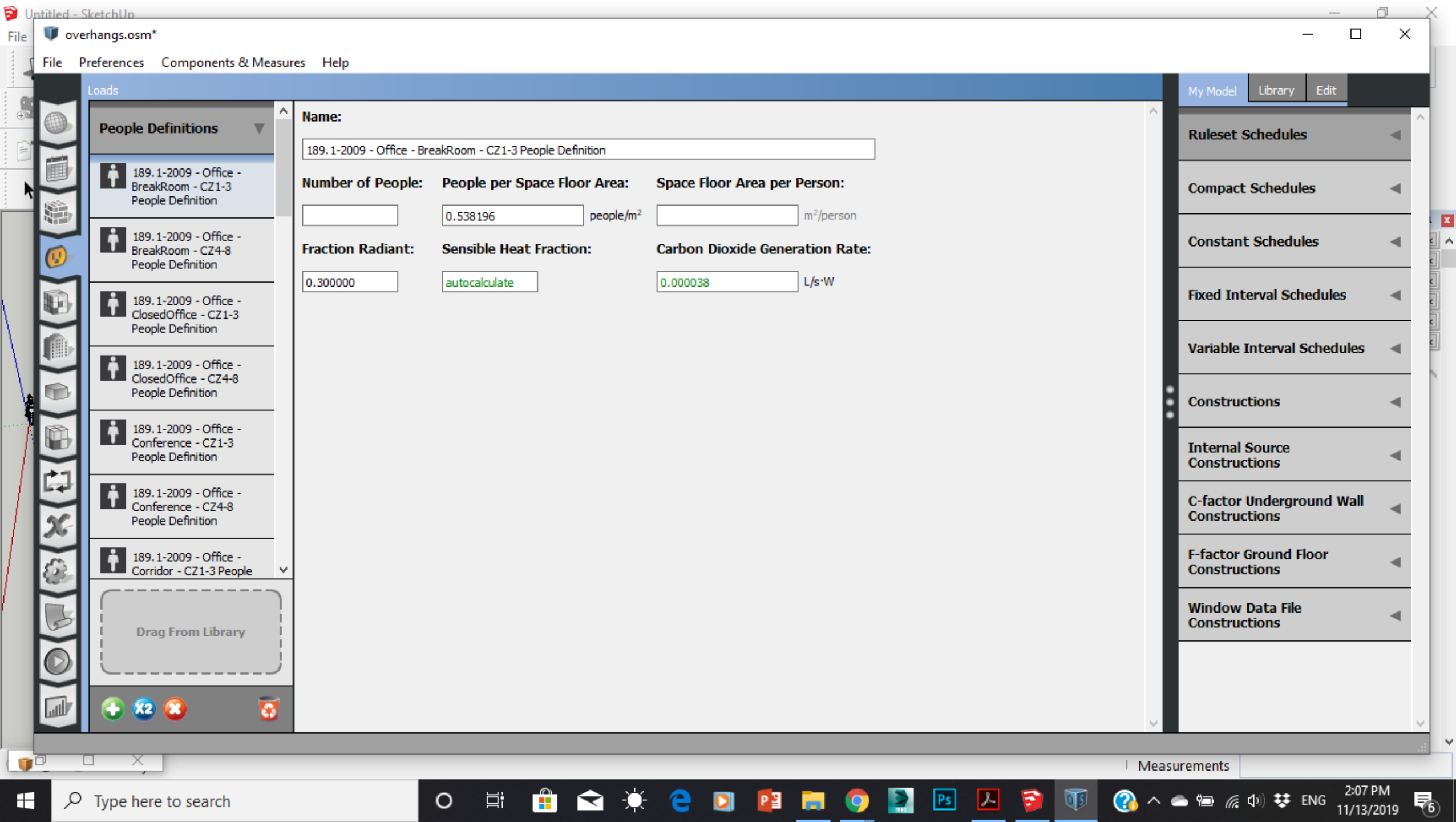
189.1-2009 - Office - Conference - CZ4-8 Schedule Set

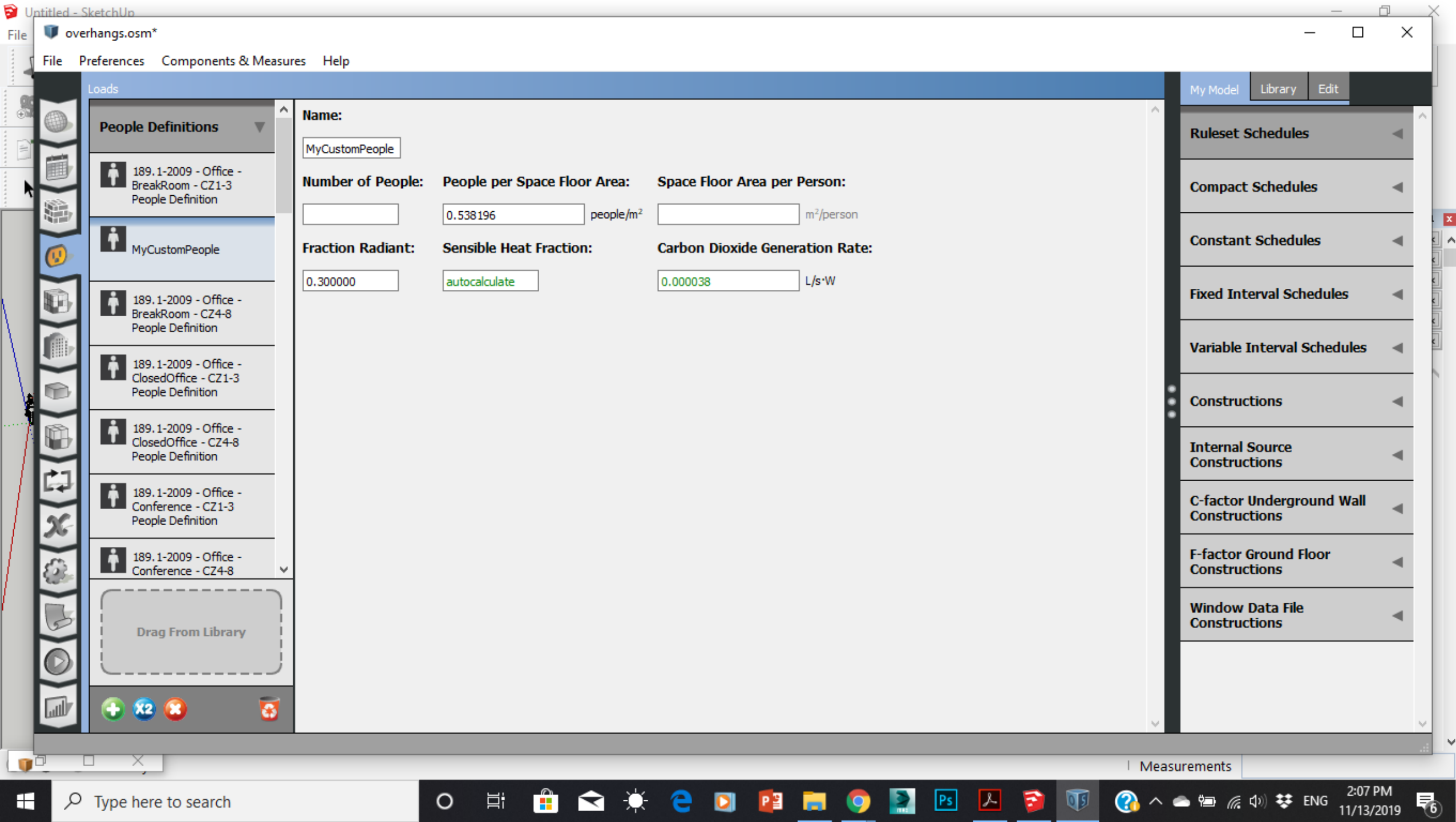
189.1-2009 - Office - Corridor - CZ1-3 Schedule Set

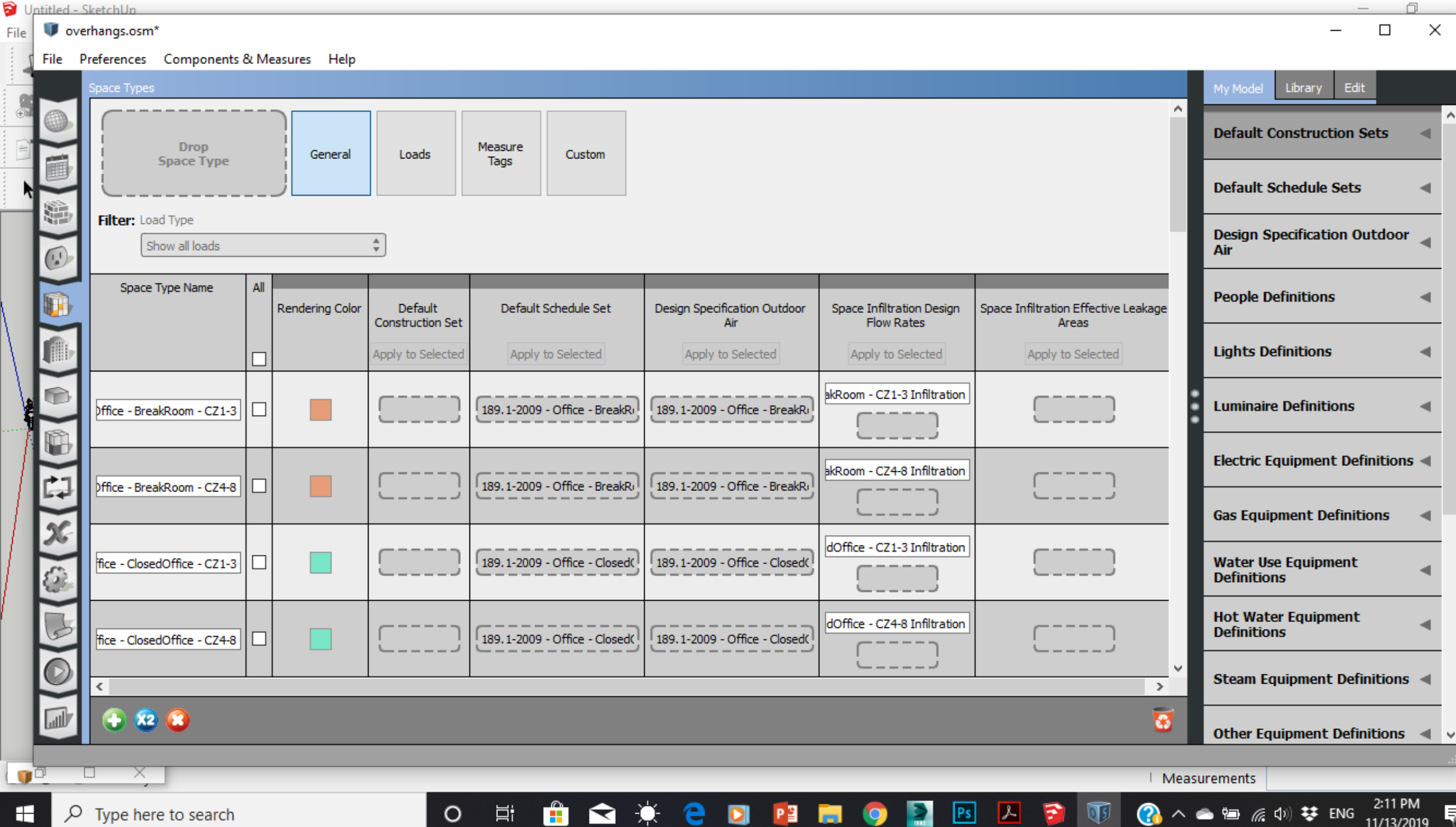
189.1-2009 - Office - Corridor - CZ4-8 Schedule Set

Measurements

2:05 PM 11/13/2019







Space Types

Drop Space Type

General Loads Measure Tags Custom

Filter: Load Type

Show all loads

Space Type Name	All	Rendering Color	Default Construction Set	Default Schedule Set	Design Specification Outdoor Air	Space Infiltration Design Flow Rates	Space Infiltration Effective Leakage Areas
	<input type="checkbox"/>		Apply to Selected	Apply to Selected	Apply to Selected	Apply to Selected	Apply to Selected
Office - BreakRoom - CZ1-3	<input type="checkbox"/>			189.1-2009 - Office - BreakR	189.1-2009 - Office - BreakR	akRoom - CZ1-3 Infiltration	
Office - BreakRoom - CZ4-8	<input type="checkbox"/>			189.1-2009 - Office - BreakR	189.1-2009 - Office - BreakR	akRoom - CZ4-8 Infiltration	
Office - ClosedOffice - CZ1-3	<input type="checkbox"/>			189.1-2009 - Office - ClosedC	189.1-2009 - Office - ClosedC	dOffice - CZ1-3 Infiltration	
Office - ClosedOffice - CZ4-8	<input type="checkbox"/>			189.1-2009 - Office - ClosedC	189.1-2009 - Office - ClosedC	dOffice - CZ4-8 Infiltration	

- My Model Library Edit
- Default Construction Sets
- Default Schedule Sets
- Design Specification Outdoor Air
- People Definitions
- Lights Definitions
- Luminaire Definitions
- Electric Equipment Definitions
- Gas Equipment Definitions
- Water Use Equipment Definitions
- Hot Water Equipment Definitions
- Steam Equipment Definitions
- Other Equipment Definitions