



Aalto University
School of Engineering

Aalto BIM exercise

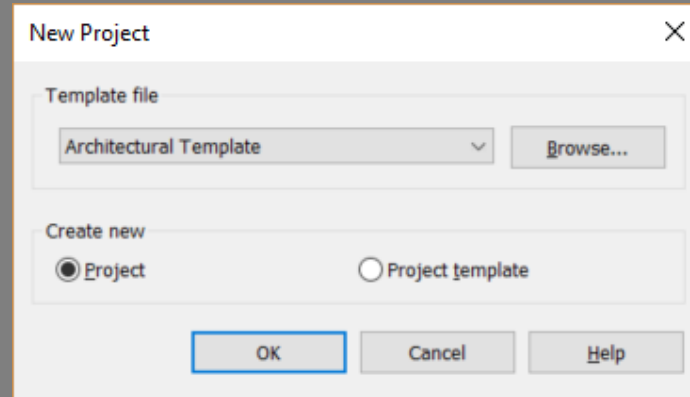
Sunil Suwal

A”

Aalto University
School of Engineering



*In use: Revit2017
Architectural template*

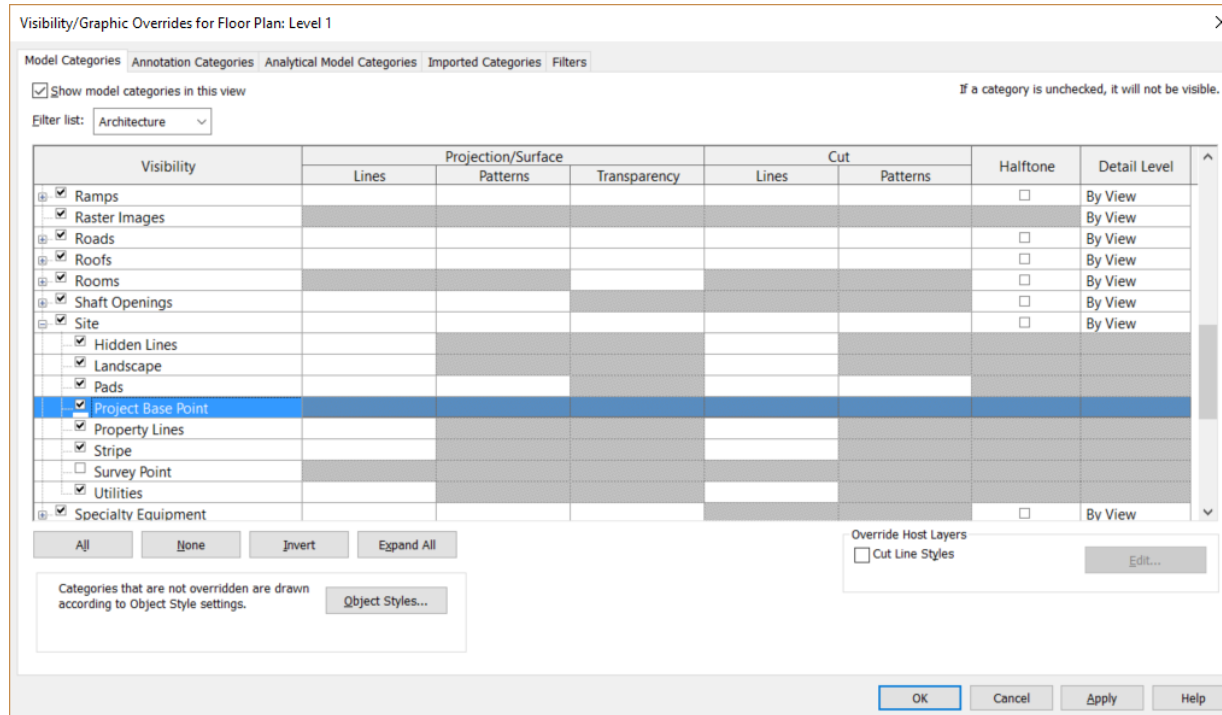


Revit demo

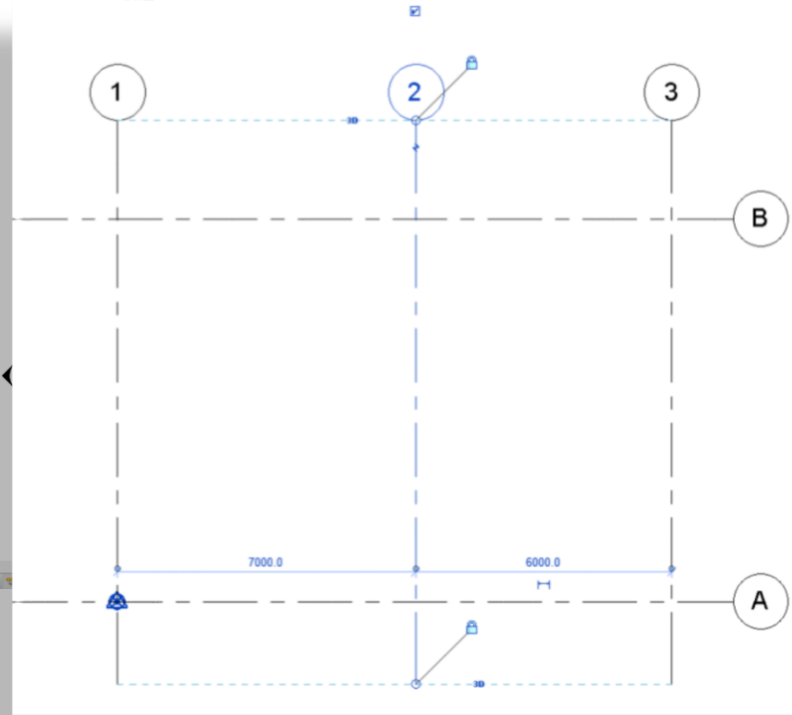
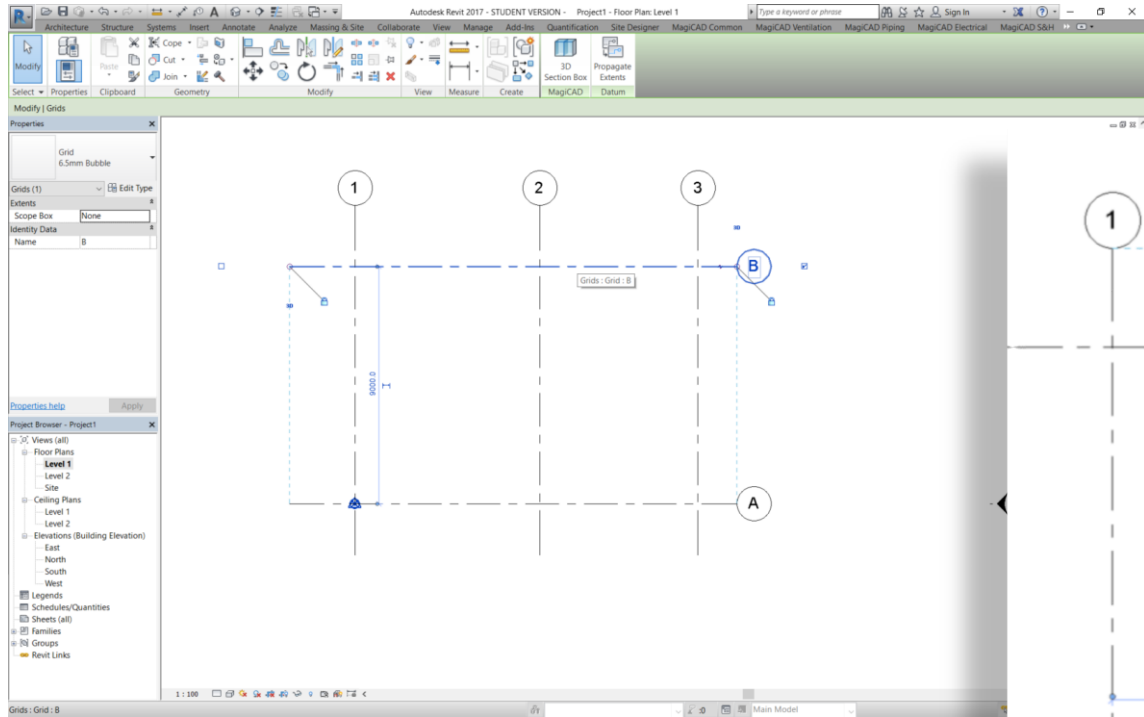
Revit architecture

Open revit

Select visibility/graphics from view and make project base point visible



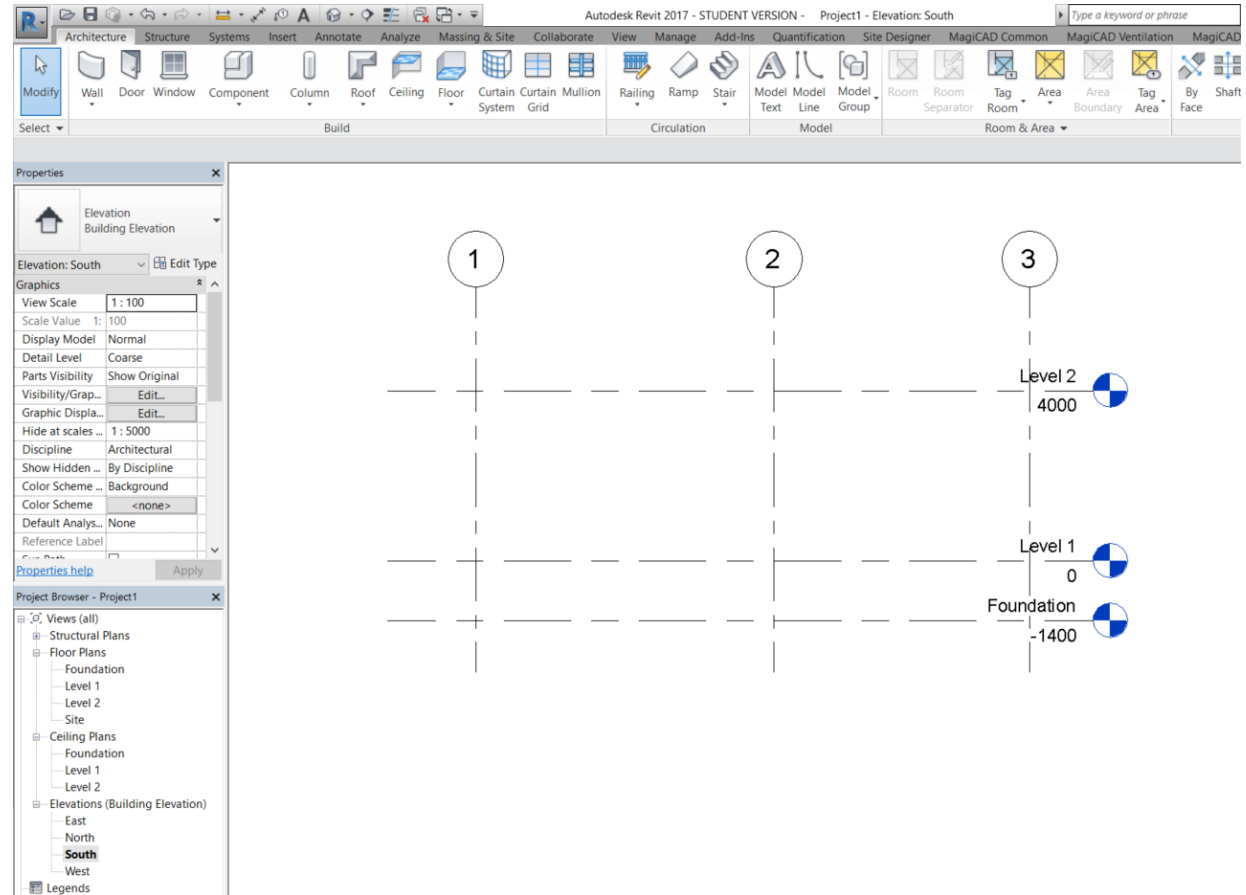
Grid



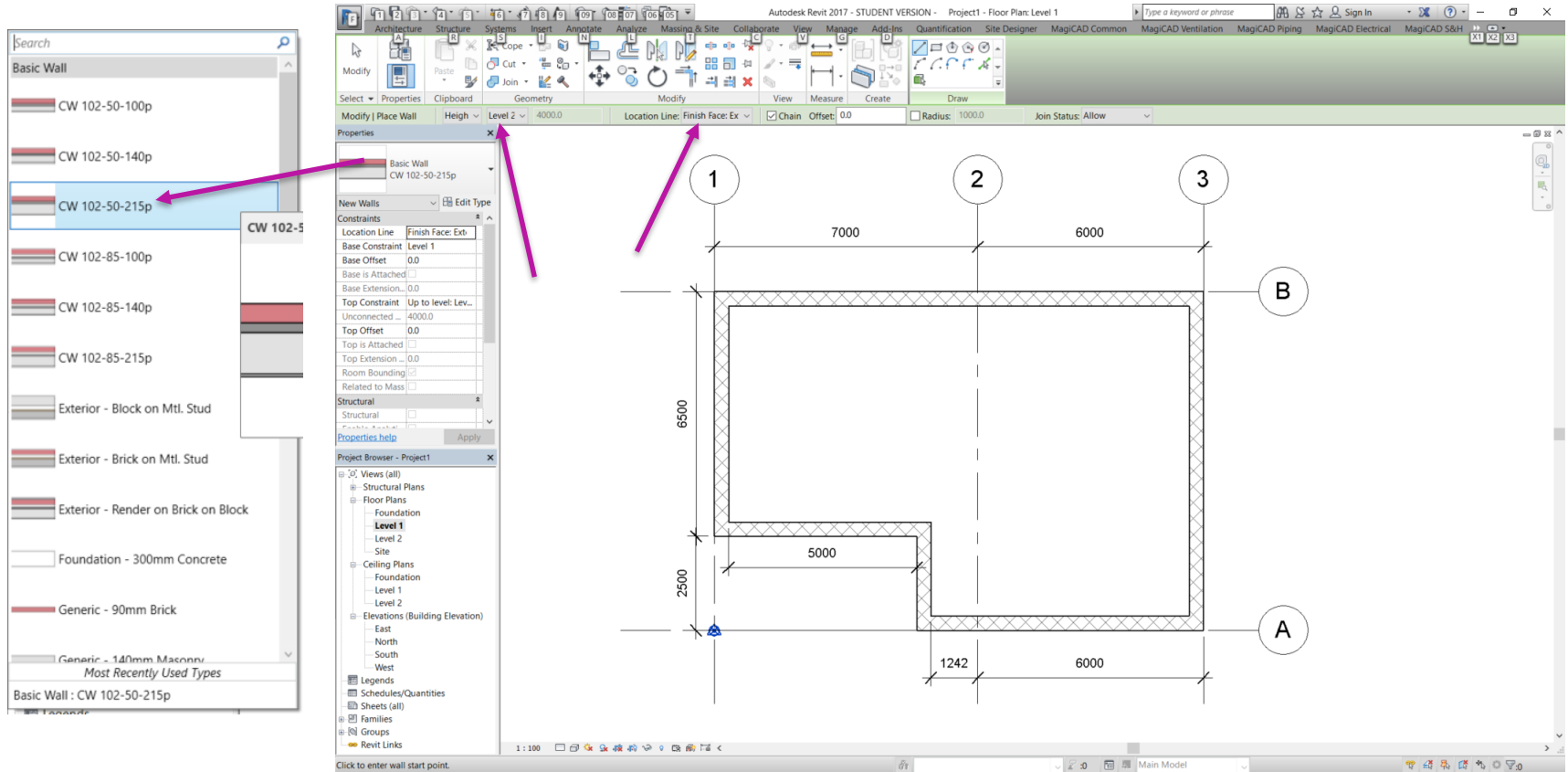
Foundation level

Go to south elevation
and create a new level
for foundation at -1400

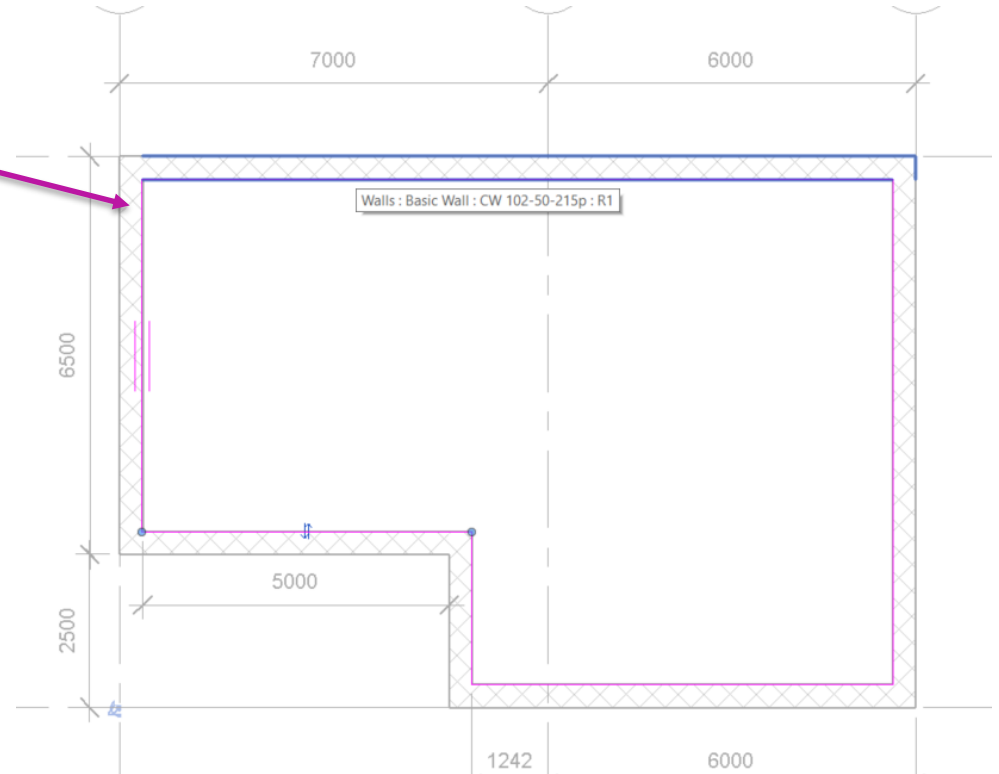
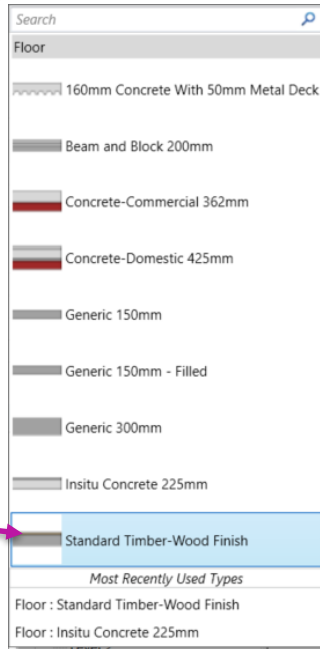
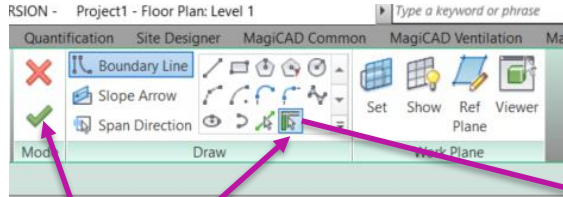
(Architecture > Datum
>level)



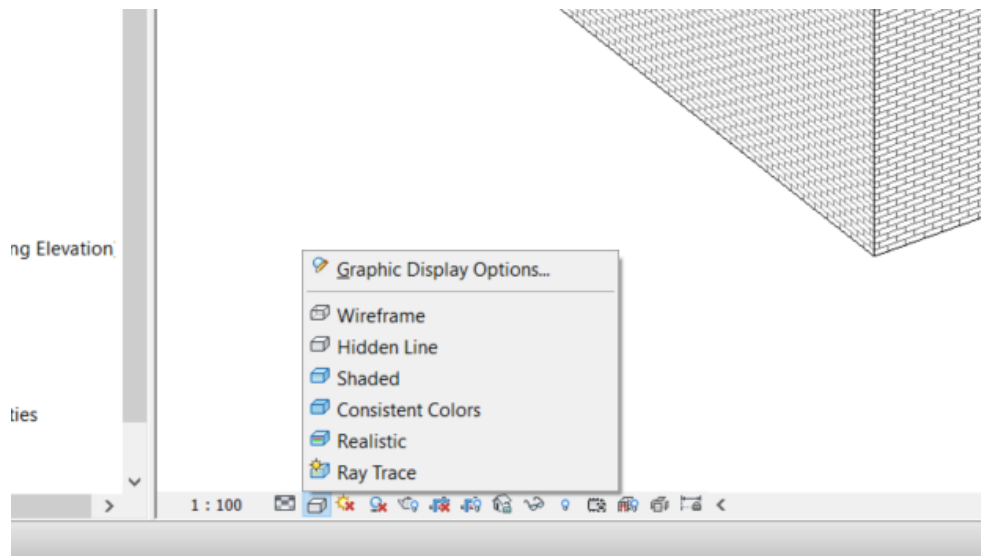
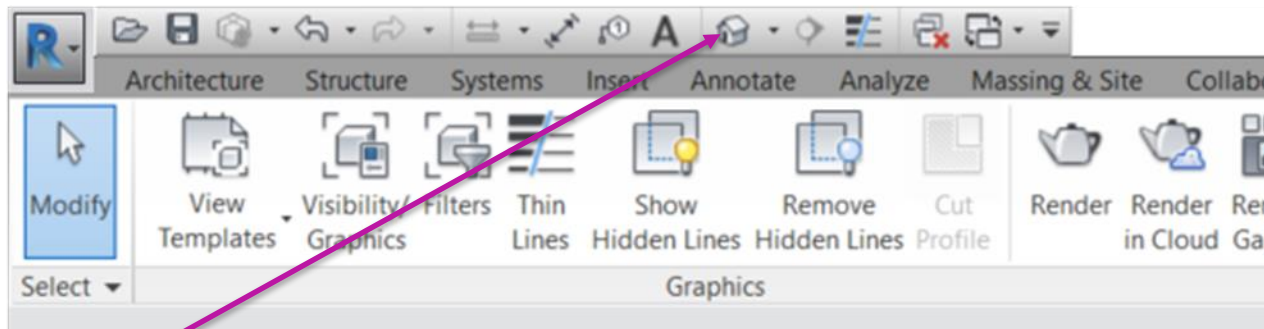
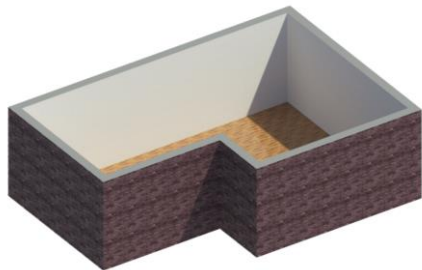
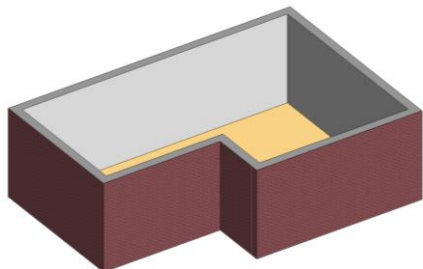
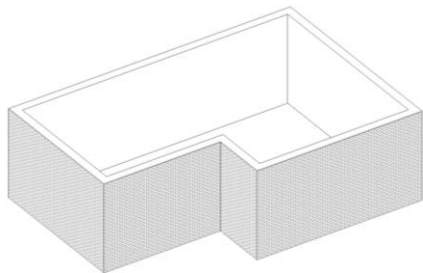
Make a space (select wall type – CW 102-50-215p)



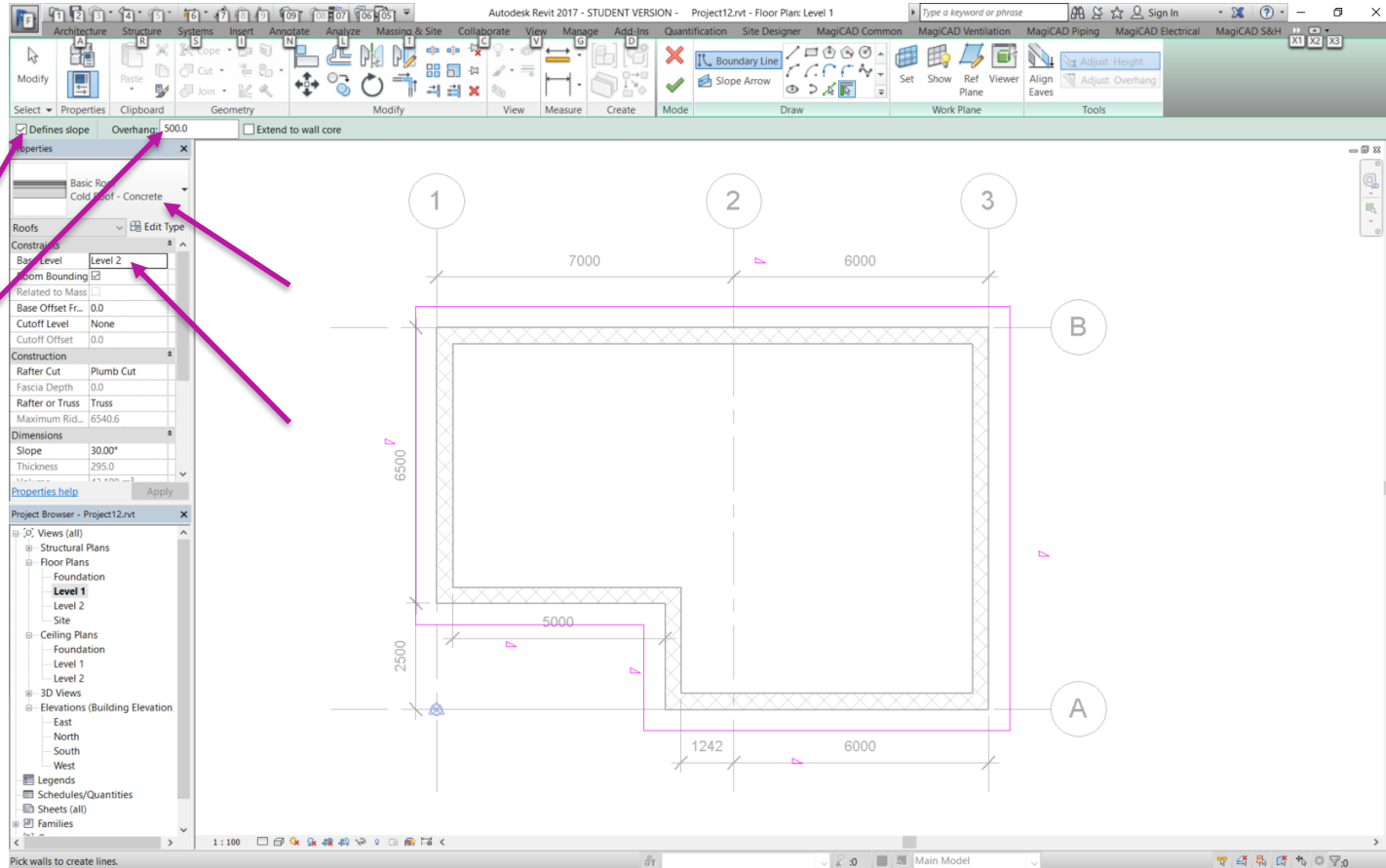
Select Architecture floor (and slab type)



Check 3d view

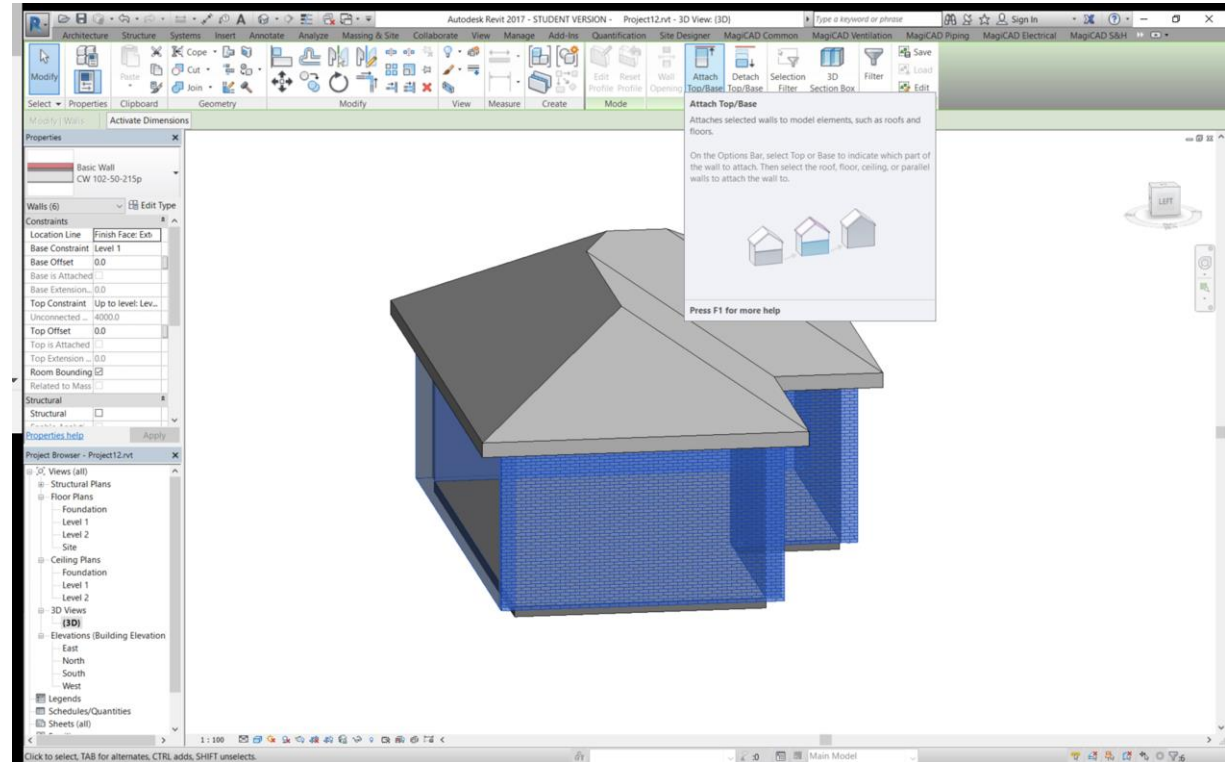
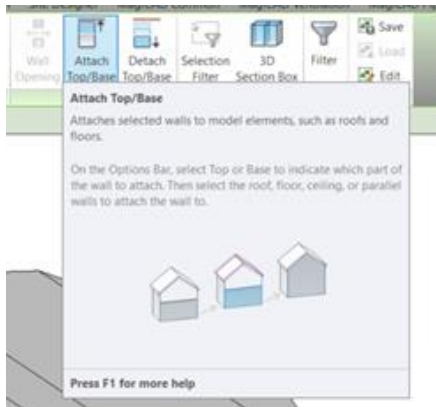


Roof



Attach walls with roof

Select all the walls and "attach top/base"

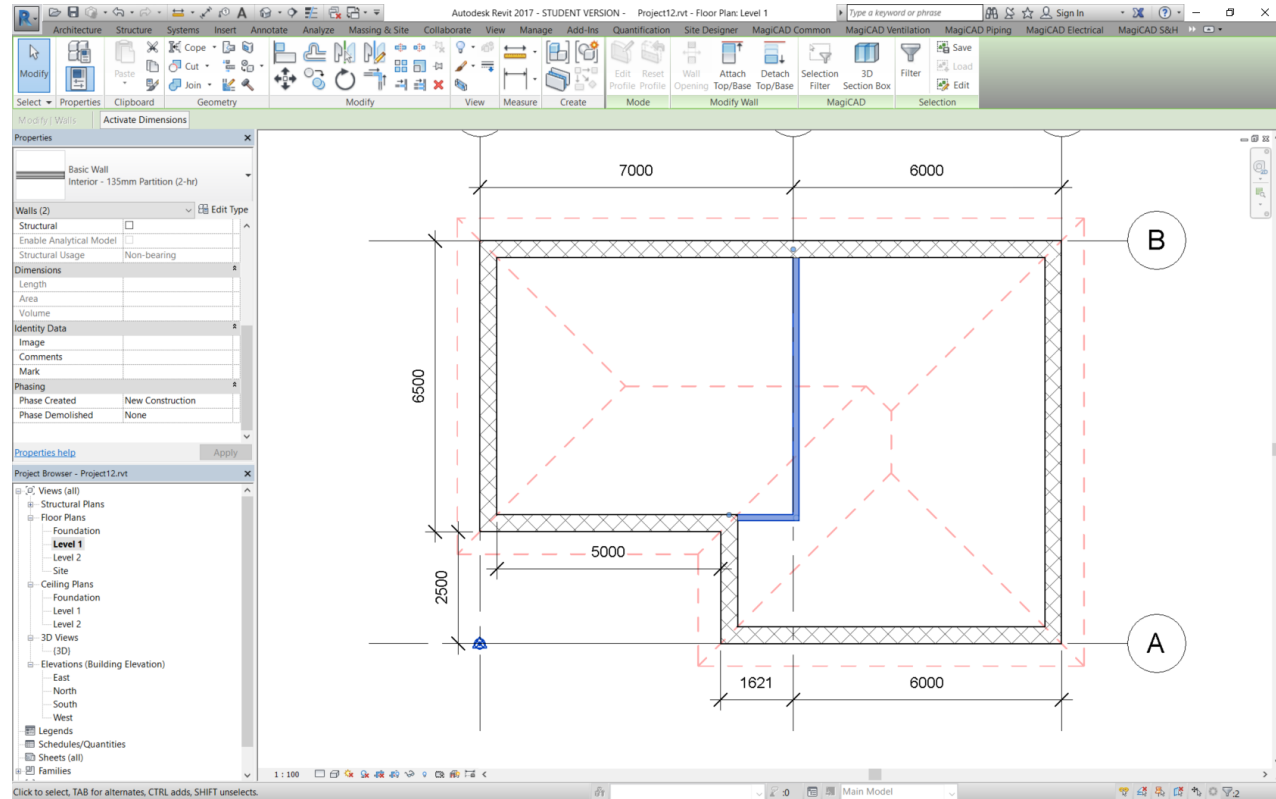


Internal partition walls

Draw basic interior partition walls as shown

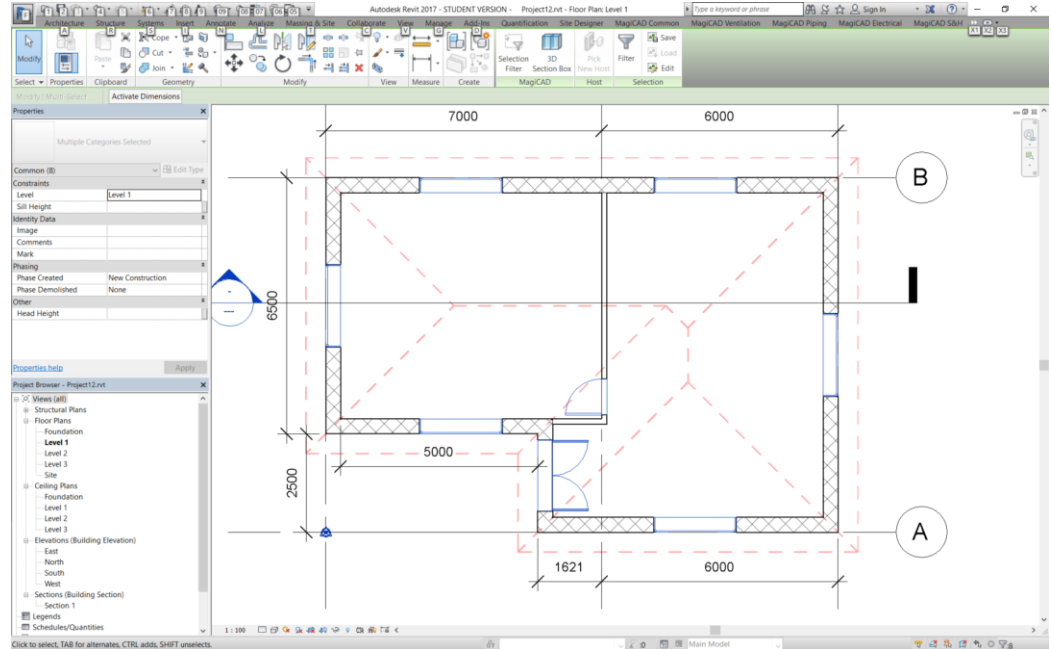
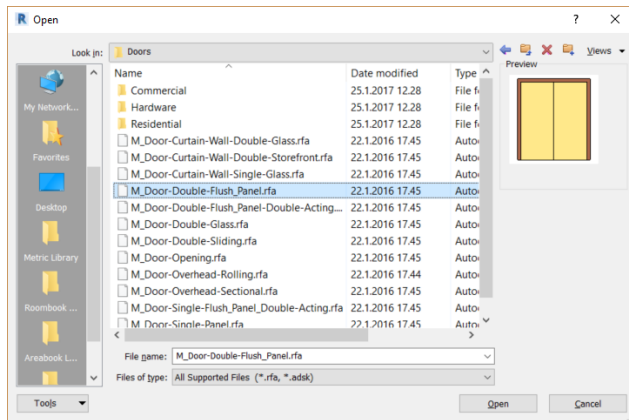
Make the roof lines visible in Level 1

Attach the interior partition walls to the roof



Door and windows

Put door and windows as needed. You can also load more door and window families from the revit library



Foundation

Create concrete foundation wall of 400 mm along the outer wall, constrain 25 mm from the exterior of outer wall

Edit Assembly

Family: Basic Wall
Type: Foundation - 400mm Concrete 2
Total thickness: 400.0
Resistance (R): 0.3824 (m²·K)/W
Thermal Mass: 56.15 kJ/K

Sample Height: 0000.0

EXTERIOR SIDE					
	Function	Material	Thickness	Wraps	Structural Material
1	Core Boundary	Layers Above Wrap	0.0		
2	Structure (1)	Concrete, Cast In Situ	400.0		<input checked="" type="checkbox"/>
3	Core Boundary	Layers Below Wrap	0.0		

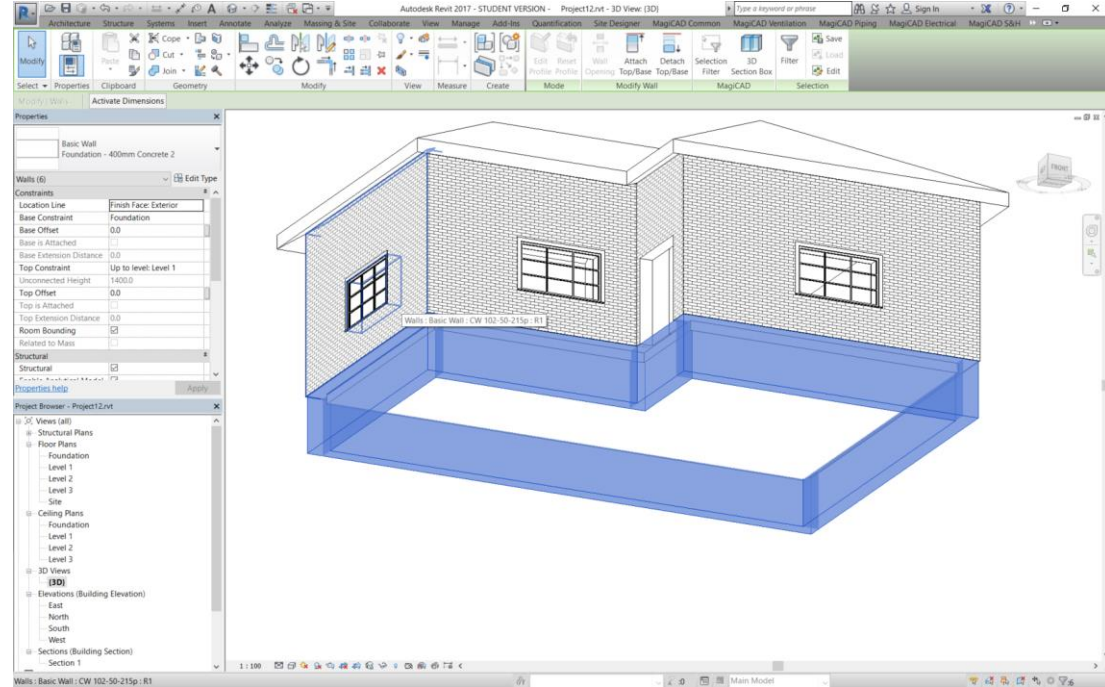
INTERIOR SIDE

Insert Delete Up Dgwn

Default Wrapping
At Inserts: Do not wrap At Ends: None

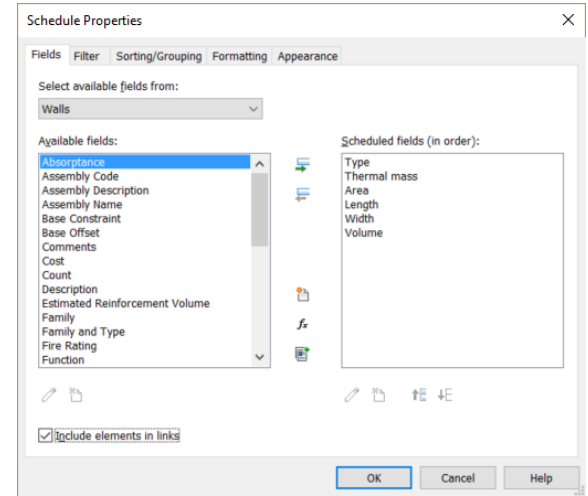
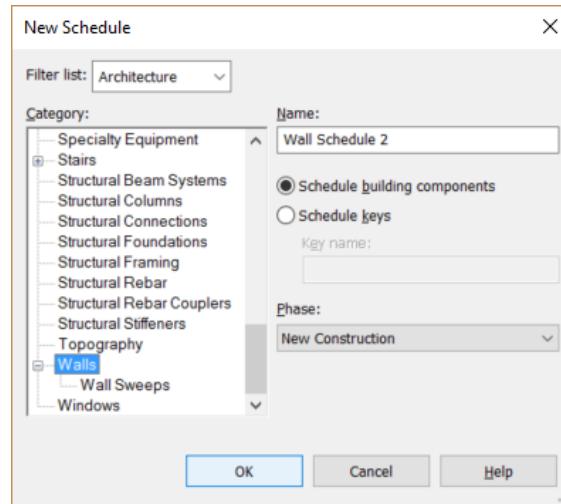
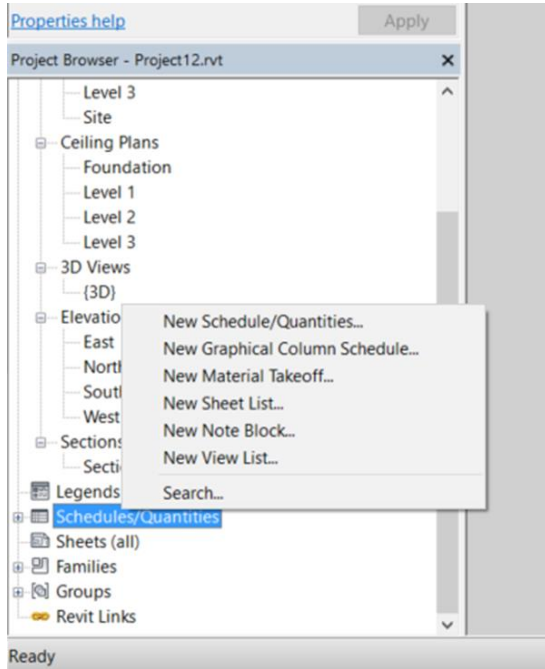
Modify Vertical Structure (Section Preview only)
Modify Merge Regions Systeeps
Assign Layers Split Region Bevels

<< Preview OK Cancel Help



Finish the model as needed

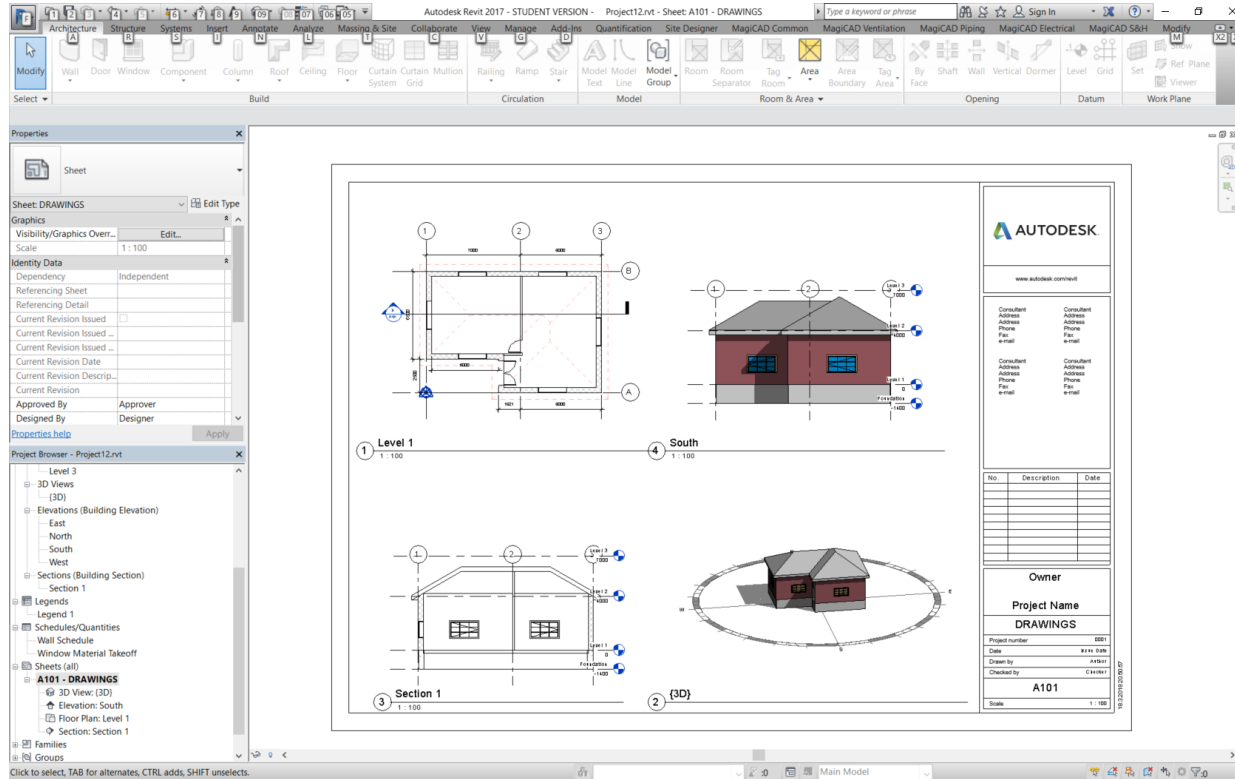
Schedule



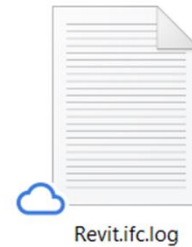
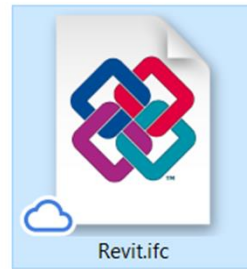
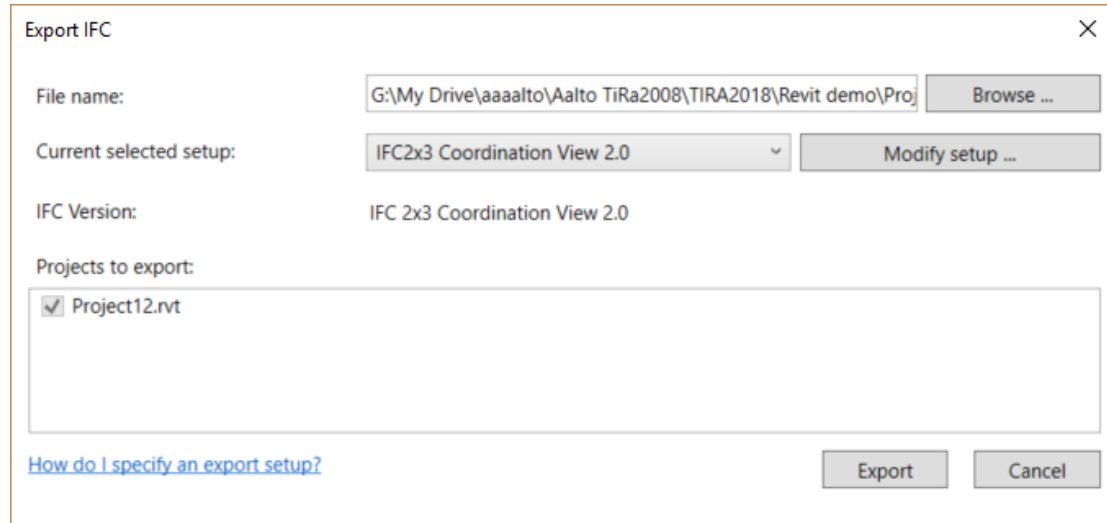
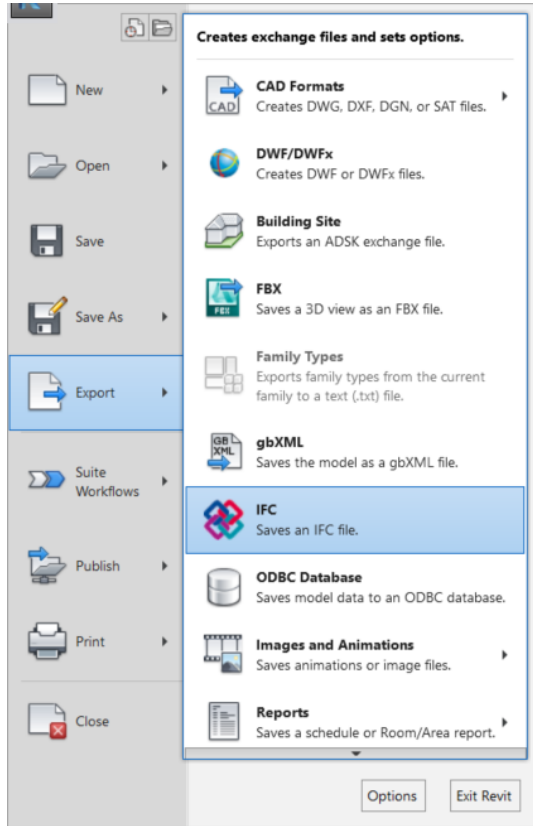
<Wall Schedule>					
A	B	C	D	E	F
Type	Thermal mass	Area	Length	Width	Volume
CW 102-50-215	44.93 kJ/K	25 m ²	6121	379	9.14 m ³
CW 102-50-215	44.93 kJ/K	48 m ²	12621	379	17.71 m ³
CW 102-50-215	44.93 kJ/K	34 m ²	8621	379	12.45 m ³
CW 102-50-215	44.93 kJ/K	28 m ²	7242	379	10.30 m ³
CW 102-50-215	44.93 kJ/K	5 m ²	2500	379	1.87 m ³
CW 102-50-215	44.93 kJ/K	20 m ²	5379	379	7.41 m ³
Interior - 135m	6.14 kJ/K	6 m ²	1499	136	0.86 m ³
Interior - 135m	6.14 kJ/K	28 m ²	5999	136	3.74 m ³
Foundation - 40	56.15 kJ/K	9 m ²	6050	400	3.61 m ³
Foundation - 40	56.15 kJ/K	18 m ²	12550	400	7.03 m ³
Foundation - 40	56.15 kJ/K	12 m ²	8550	400	4.79 m ³
Foundation - 40	56.15 kJ/K	10 m ²	7171	400	4.02 m ³
Foundation - 40	56.15 kJ/K	4 m ²	2500	400	1.40 m ³
Foundation - 40	56.15 kJ/K	7 m ²	5379	400	2.79 m ³

Drawings in revit

You can use "Sheets" in Revit to put different views



IFC export



Check if similar information is available through solibri for the walls as in wall schedule of revit.

Report findings in solibri

Solibri Model Checker - Revit

TIEDOSTO MALLI TARKASTUS KOMMUNIKOINTI **INFORMAATION TALTEENOTTO** COBIE SIS AREA CALCULATION + TO-DO (3/7) NÄKYMÄT

THERMAL MASS

MALLIPUU (A) Revit (A) Default (B) Project12 (R) Default

LUOKITTELU Kalustus

VALINTAKORI Ei valintajoukkoja (B) Project12

INFO (B) Seinä.0.3

Hyperlinkit	Analytical Properties	BaseQuantities	Constraints
Identiteetti	Sijainti	Määrä	Materiaali
Ominaisuus	Arvo		
Pinta-ala	24,78 m ²		
Pinta-ala (minimi)	24,78 m ²		
Bruttopinta-ala	27,34 m ²		
Bruttopinta-ala (minimi)	27,34 m ²		
Ovien pinta-ala	0,00 m ²		
Ikkunoiden pinta-ala	2,56 m ²		
Aukkojen pinta-ala	0,00 m ²		
Pohjan pinta-ala	2,46 m ²		
Korkeus	4,219 m		
Korkeus (minimi)	4,000 m		
Pituus	6,500 m		
Pituus (minimi)	6,500 m		
Paksuus	0,379 m		
Paksuus (minimi)	0,379 m		
Tilavuus	9,14 m ³		
Suurin korkeus	4,219 m		

INFORMAATION TALTEENOTTO

Leske valittu Uusi ITO-kuvas 1 Raportoi

Typppi	Thermal mass	Pinta-ala	Pituus	Korkeus	Tilavuus	Lukumäärä	Väri
CW 102-50-215p	483672.0	5,17 m ²		2,121 m	4,219 m	1,87 m ³	1
CW 102-50-215p	483672.0	20,13 m ²		5,379 m	4,219 m	7,41 m ³	1
CW 102-50-215p	483672.0	24,78 m ²		6,500 m	4,219 m	9,14 m ³	1
CW 102-50-215p	483672.0	27,95 m ²		7,242 m	4,219 m	10,30 m ³	1
CW 102-50-215p	483672.0	33,76 m ²		8,621 m	4,219 m	12,45 m ³	1
CW 102-50-215p	483672.0	48,08 m ²		12,621 m	4,219 m	17,71 m ³	1
Foundation - 400mm Con...	604440.0	3,50 m ²		2,500 m	1,400 m	1,40 m ³	1
Foundation - 400mm Con...	604440.0	6,97 m ²		4,979 m	1,400 m	2,79 m ³	1
Foundation - 400mm Con...	604440.0	9,03 m ²		6,450 m	1,400 m	3,61 m ³	1
Foundation - 400mm Con...	604440.0	10,04 m ²		7,171 m	1,400 m	4,02 m ³	1
Foundation - 400mm Con...	604440.0	11,97 m ²		8,550 m	1,400 m	4,79 m ³	1
Foundation - 400mm Con...	604440.0	17,57 m ²		12,550 m	1,400 m	7,03 m ³	1
Interior - 135mm Partition...	66143.0688	6,36 m ²		1,378 m	5,014 m	0,86 m ³	1
Interior - 135mm Partition...	66143.0688	27,67 m ²		5,742 m	5,876 m	3,74 m ³	1

Uusi ITO-kuvas 1 päivitetty valintakorista

Rooli Koulutus Valittuja: 38

Thank you