

# Aalto BIM exercise

Sunil Suwal



#### Architectural template REVIT 2017 $\times$ New Project Template file Architectural Template $\sim$ Browse... Create new Project O Project template OK Cancel Help AUTODESK. **Revit demo**

In use: Revit2017

*Revit architecture* 

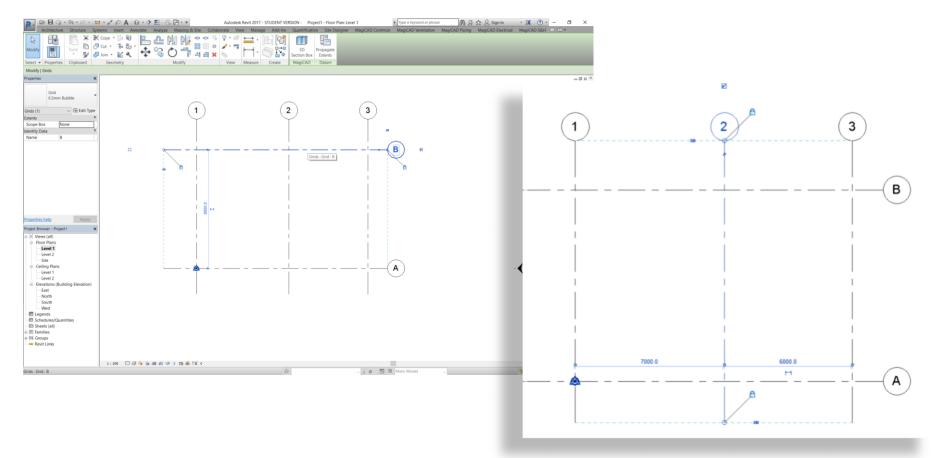
#### **Open revit**

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

		Projection/Surface	<b>.</b>		Cut		
Visibility	Lines	Patterns	Transparency	Lines	Patterns	Halftone	Detail Level
Ramps							By View
Raster Images							By View
Roads							By View
✓ Roofs							By View
Rooms							By View
Shaft Openings							By View
☑ Site							By View
Hidden Lines							
Landscape							
Pads							
Project Base Point							
Property Lines							
Stripe							
Survey Point							
✓ Utilities							
Specialty Equipment							By View
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#### Grid

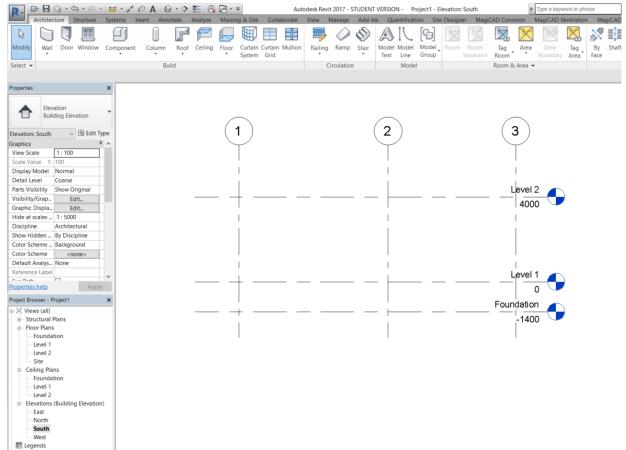




#### **Foundation level**

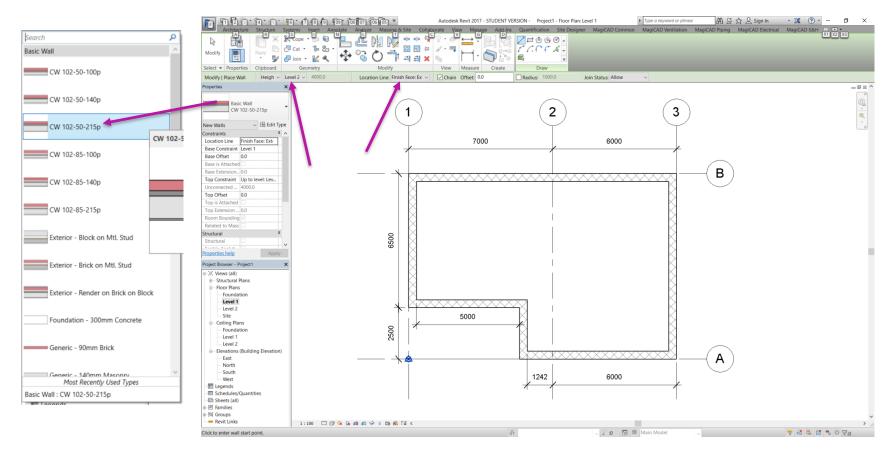
Go to south elevation and create a new level for foundation at -1400

(Architecture > Datum >level)



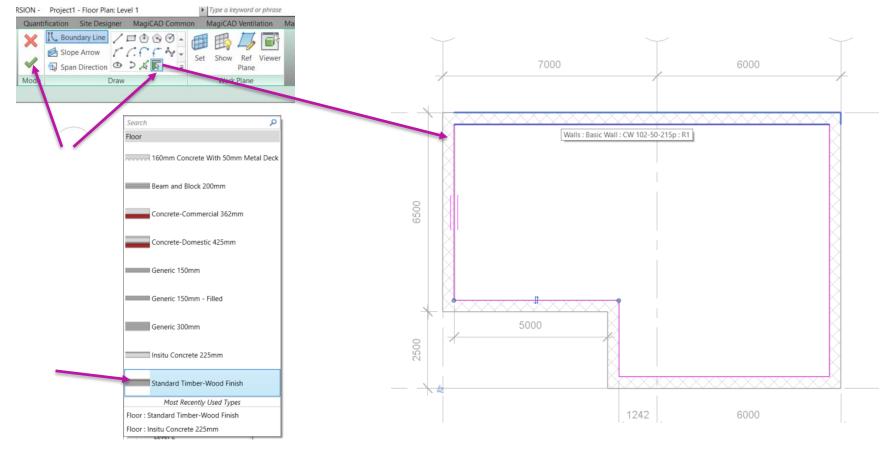


## Make a space (select wall type – CW 102-50-215p)



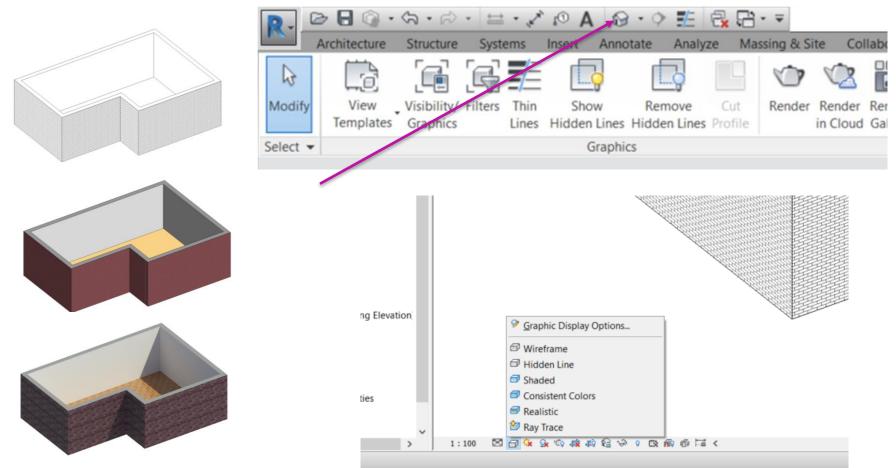


## Select Architecture floor (and slab type)



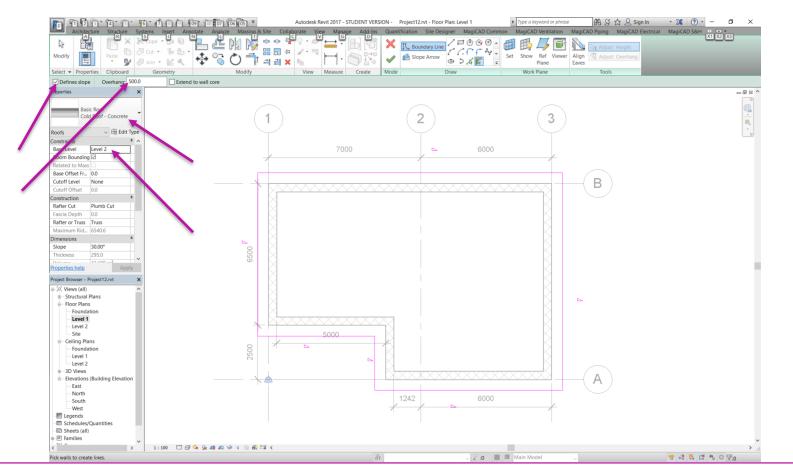


#### **Check 3d view**





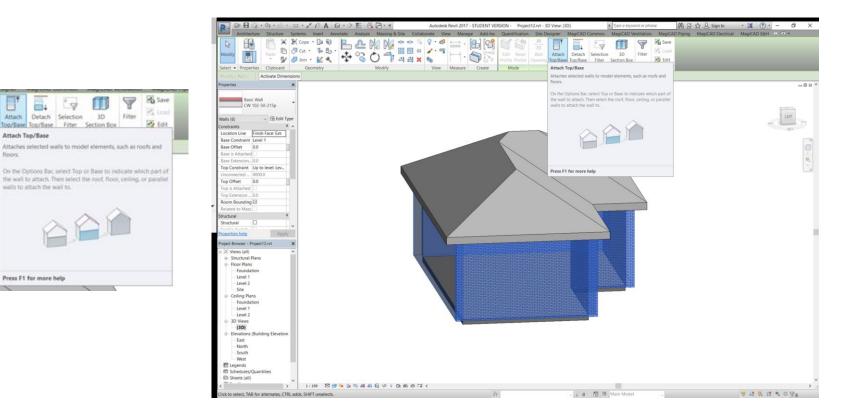
### Roof





#### Attach walls with roof

#### Select all the walls and "attach top/base"





Attach

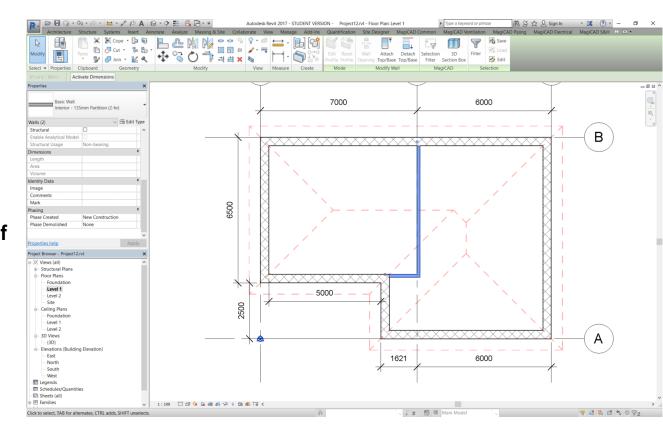
floors.

## **Internal partition walls**

Draw basic interior partition walls as shown

Make the roof lines visbile in Level 1

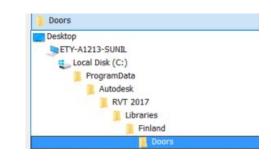
Attach the interior partition walls to the roof



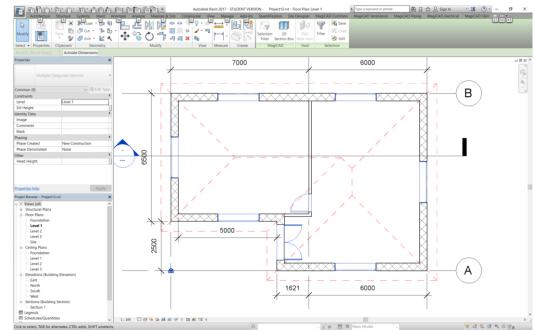


#### **Door and windows**

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



Look in:	Doors		~	🗢 🖳 🗙	<b>E</b> .	⊻iews
<u> </u>	Name	Date modified	Type ^	Preview		
<b>_</b>	Commercial	25.1.2017 12.28	File f			1
y Network	Hardware	25.1.2017 12.28	File f			
	Residential	25.1.2017 12.28	File f			
	M_Door-Curtain-Wall-Double-Glass.rfa	22.1.2016 17.45	Auto			
Favorites	M_Door-Curtain-Wall-Double-Storefront.rfa	22.1.2016 17.45	Auto			
	M_Door-Curtain-Wall-Single-Glass.rfa	22.1.2016 17.45	Auto			
	M_Door-Double-Flush_Panel.rfa	22.1.2016 17.45	Auto			
	M_Door-Double-Flush_Panel-Double-Acting	22.1.2016 17.45	Auto			
	M_Door-Double-Glass.rfa	22.1.2016 17.45	Auto			
	M_Door-Double-Sliding.rfa	22.1.2016 17.45	Auto			
tric Library	M_Door-Opening.rfa	22.1.2016 17.45	Auto			
	M_Door-Overhead-Rolling.rfa	22.1.2016 17.44	Auto			
	M_Door-Overhead-Sectional.rfa	22.1.2016 17.45	Auto			
	M_Door-Single-Flush_Panel_Double-Acting.rfa	22.1.2016 17.45	Auto			
	M Door-Single-Panel.rfa	22.1.2016 17.45	Autor ×			
eabook L	File name: M_Door-Double-Flush_Panel.rfa		~			
<b>`</b> ~	Files of type: All Supported Files (*.rfa, *.adsk)		~			





#### **Foundation**

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

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Edit Assembly         X           Family:         Basic Wall           Type:         Foundation - 400mm Concrete 2	Architecture Stetcher Properties Calculate Stetcher Name Area and State
Type: E-Bundation -400mm Concrete 2 Total thickness: 400.0 Resistance (R): 0.3824 (m <sup>3-</sup> K)/W Thermal Mass: 56.15 kJ/K  Layers 56.15 kJ/K  Layers 56.15 kJ/K  Layers Above Wrap 0.0  2 Structural Material  1 Core Boundary Layers Above Wrap 0.0  2 Structural [3] Concrete, Cast In Situ 400.0  3 Core Boundary Layers Below Wrap 0.0  Differior Side  Differ	New risk       Image: Control Control of Control
Modify         Mergie Regions         Sygreps           Assign Layers         Split Region         Beveals             C<	□ Celling Plans □ Fondation □ Level 1 □ Level 1 □ Level 3 □ D Views □ Level 3 □ Level 3 □ D Views □ D Views □ Level 3 □ Level 3 □ D Views □ D Views

#### Finish the model as needed

Autodesk Revit 2017 - STUDENT VERSION - Project12.nt - 3D View: (3D)

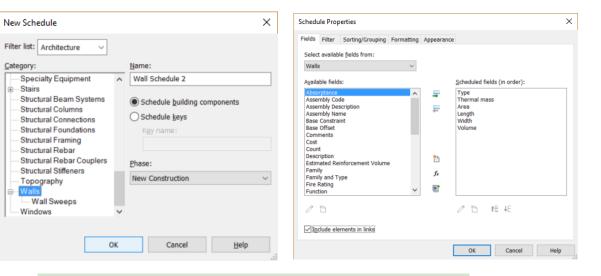
Type a keyword or phrase



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#### **Schedule**

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ct Browser - F Level 3 Site Ceiling Pla Founda Level 1 Level 2 Level 3 3D Views	ns	× ^
	New Schedule/Quantities New Graphical Column Sci New Material Takeoff New Sheet List New Note Block New View List Search	
Schedules/ Sheets (all) Families Groups Revit Links	Quantities	

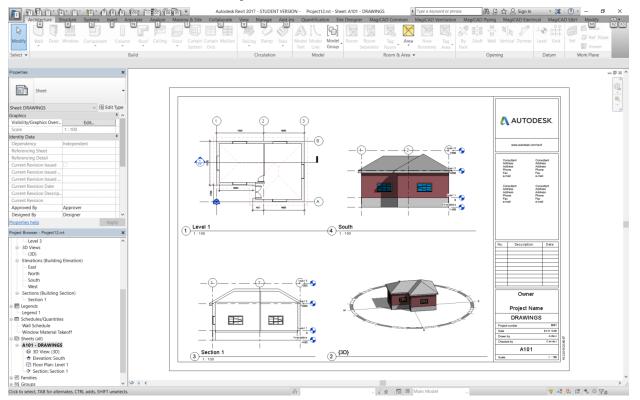


A	В	C	D	E	F
Type	Thermal mass	Area	Length	Width	Volume
CW 102-50-215	44.93 kJ/K	25 m²	6121	379	9.14 m <sup>a</sup>
CW 102-50-215		48 m²	12621	379	17.71 m <sup>a</sup>
CW 102-50-215	44.93 kJ/K	34 m²	8621	379	12.45 mª
CW 102-50-215	44.93 kJ/K	28 m²	7242	379	10.30 m <sup>a</sup>
CW 102-50-215	44.93 kJ/K	5 m²	2500	379	1.87 m <sup>a</sup>
CW 102-50-215	44.93 kJ/K	20 m²	5379	379	7.41 mª
Interior - 135m	6.14 kJ/K	6 m²	1499	136	0.86 mª
Interior - 135m	6.14 kJ/K	28 m²	5999	136	3.74 m <sup>a</sup>
Foundation - 40	56.15 kJ/K	9 m²	6050	400	3.61 m <sup>a</sup>
Foundation - 40	56.15 kJ/K	18 m²	12550	400	7.03 m <sup>s</sup>
Foundation - 40	56.15 kJ/K	12 m²	8550	400	4.79 m <sup>a</sup>
Foundation - 40	56.15 kJ/K	10 m²	7171	400	4.02 m <sup>a</sup>
Foundation - 40	56.15 kJ/K	4 m <sup>2</sup>	2500	400	1.40 m <sup>s</sup>
Foundation - 40	56.15 kJ/K	7 m²	5379	400	2.79 m <sup>a</sup>



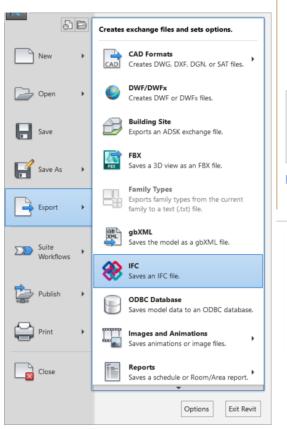
## **Drawings in revit**

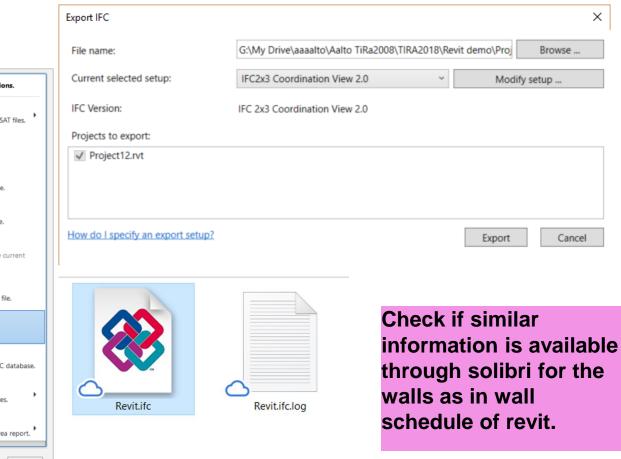
#### You can use "Sheets" in Revit to put different views





## **IFC** export







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### **Report findings in solibri**

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Peet WallCommon Materials and Fini Construction Dim Hyperlinkt Anolytical Dim Hyperlinkt Anolytical Maar Diminaisuus inta-ala (minimi) ruttopinta-ala (muttopinta-ala (kukoien pinta-ala kukoien pinta-ala ohjan pinta-ala ohjan pinta-ala	iches Other Phasin enrions Graphic Identity De Popperies BaseQuantities Constra Materiaeli Porfili Relastiot Luok Arro 24,78 m2 27,74 m2 27,74 m2 27,74 m2 0,00 m2 2,56 m2 0,00 m2 2,46 m2 4,219 m 4,000 m 6,500 m	1         INFORMATION           aints         Tyyppi           ctttl         CV 102-50-215p           cW 102-50-215p         CW 102-50-215p           cW 102-50-215p         Foundation - 400mm Cor           Foundation - 400mm Cor         Foundation - 400mm Cor	Thermal mass           483672.0	5,17 m 20,13 m 24,75 m 33,76 m 48,06 m 3,50 m 6,97 m 9,03 m 10,04 m 11,97 m 17,57 m 6,36 m	2 2,121 2 5,379 2 6,500 2 7,242 2 8,621 2 12,621 2 12,621 2 2,5500 2 4,979 2 6,4500 2 8,550 2 12,550 2 12,550 2 13,787 3 13,787 2 1,378 2 1,378 3 1,	Korkeus m 4,219 m 4,219 m 4,219 m 4,219 m 4,219 m 4,219 m 4,219 m 1,400 m 1,400 m 1,400 m 1,400 m 1,400 m 1,400 m 1,400 m 1,400 m 1,400	Tilavuus m 1,87 m3 m 2,41 m3 m 9,14 m3 m 10,30 m3 m 12,45 m3 m 12,45 m3 m 12,45 m3 m 12,45 m3 m 12,45 m3 m 3,61 m3 m 4,02 m3 m 4,07 m3 m 7,03 m3 m 0,86 m3	Lukumäärä		
Pset, WallCommon Materials and Fini Construction Dim Hyperlinkt Anaphrazi Identifetti Sijainti Määr Ominaisuus Iinta-ala (minimi) Iruttopinta-ala Iruttopinta-ala (minimi) Virei pinta-ala Kuukojen pinta-ala Kuukojen pinta-ala Corkeus Corkeus (minimi) Irutus	iches Other Phasin Properties Graphics Identity Do Part Standard	Image: Second	Thermal mass           483672.0	5,17 m 20,13 m 24,78 m 24,78 m 33,76 m 48,08 m 3,50 m 9,03 m 10,04 m 11,97 m 17,57 m	2 2,121 2 5,379 2 6,500 2 7,242 2 8,621 2 12,621 2 12,621 2 2,5500 2 4,979 2 6,4500 2 8,550 2 12,550 2 12,550 2 13,787 3 13,787 2 1,378 2 1,378 3 1,	Korkeus m 4,219 m 4,219 m 4,219 m 4,219 m 4,219 m 4,219 m 4,219 m 1,400 m 1,400 m 1,400 m 1,400 m 1,400 m 1,400 m 1,400 m 1,400 m 1,400	Tilavuus m 1,87 m3 m 2,41 m3 m 9,14 m3 m 10,30 m3 m 12,45 m3 m 12,45 m3 m 12,45 m3 m 12,45 m3 m 12,45 m3 m 3,61 m3 m 4,02 m3 m 4,07 m3 m 7,03 m3 m 0,86 m3	Lukumäärä		
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