



Aalto University  
School of Engineering

RAK-C3003

# Aalto BIM exercise

*Sunil Suwal*



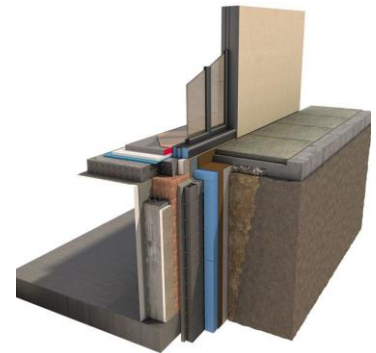
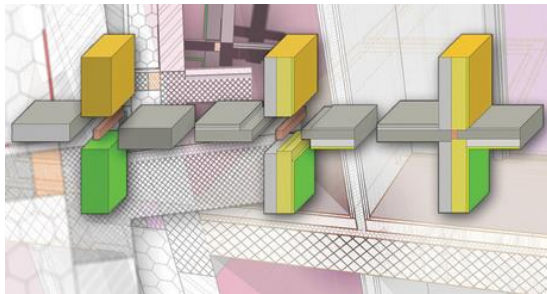
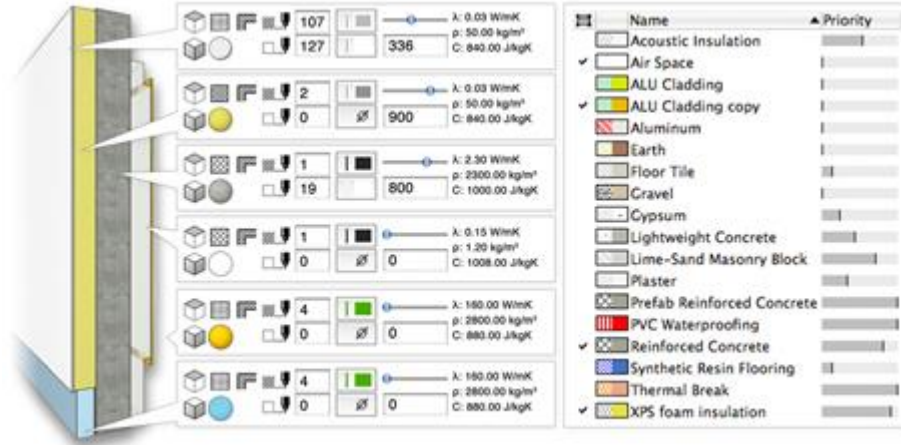
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# CW2

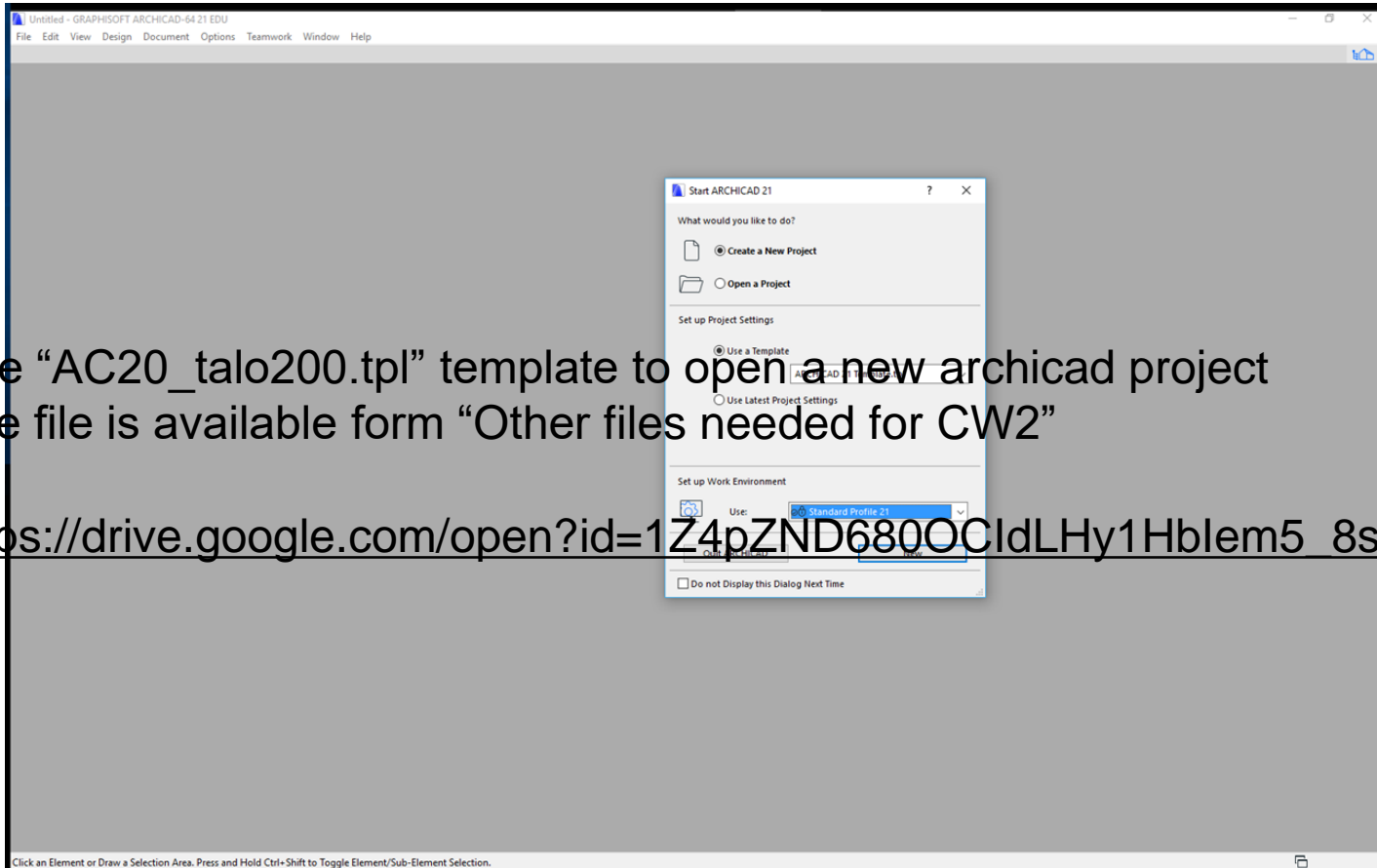
*Pientalo\_2019*



# Archicad – Intelligent materials



# You can click on the welcome screen and proceed

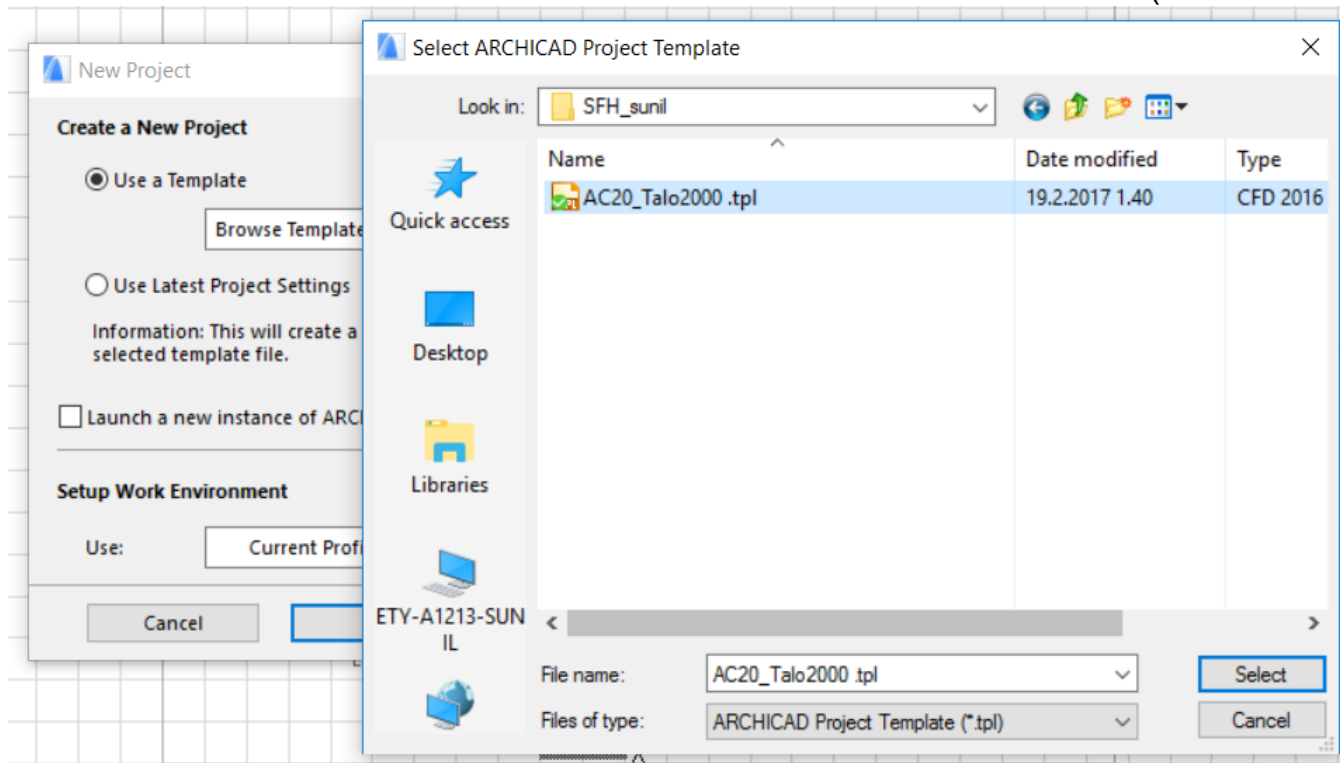


Use “AC20\_talo200.tpl” template to open a new archicad project  
The file is available form “Other files needed for CW2”

[https://drive.google.com/open?id=1Z4pZND680OCldLHy1Hblem5\\_8s3pdVSy](https://drive.google.com/open?id=1Z4pZND680OCldLHy1Hblem5_8s3pdVSy)

# AC20\_Talo2000.tpl

Archicad template: [http://mad.fi/tiedostot/ac20/AC20\\_Talo2000.tpl](http://mad.fi/tiedostot/ac20/AC20_Talo2000.tpl)  
(or linked from earlier page)



RT 3D tyypirakenteet ArchiCAD ohjelmaan

[https://www.rakennustieto.fi/index/tuotteet/kirjastot/kirjasto/203/Kirjasto\\_tuotteet/6073.html](https://www.rakennustieto.fi/index/tuotteet/kirjastot/kirjasto/203/Kirjasto_tuotteet/6073.html)

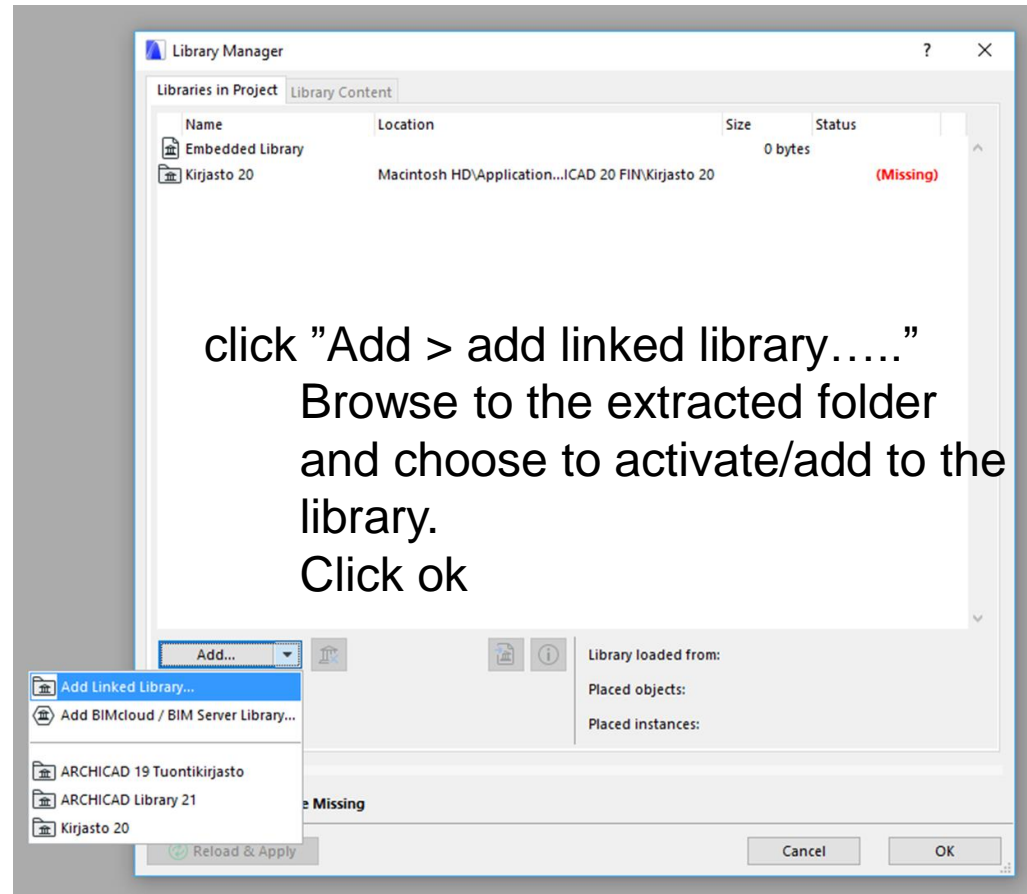
# Missing library

Delete "kirjasto 20" and we will add "kirjasto 21" (download it from [mycourses](#) or [link provided](#) and unzip it in a folder)

The template we used earlier have layers for Finnish classification system as well as other elements required for the wall types to be used in this exercise. So Finnish library is linked for the project.

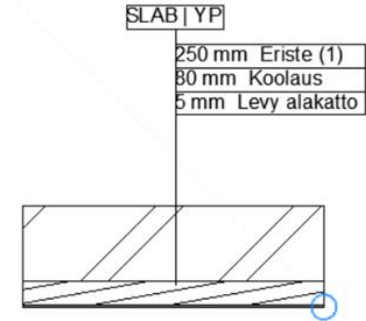
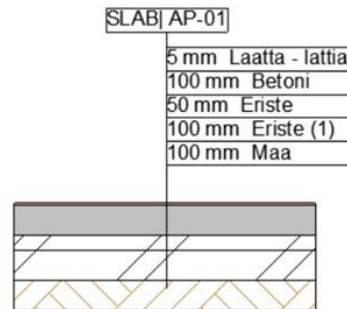
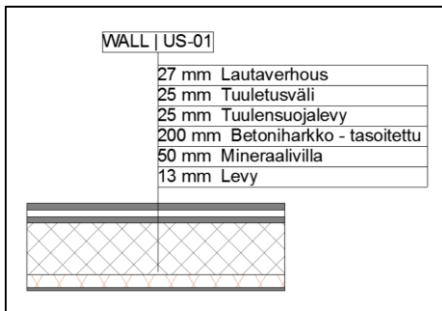
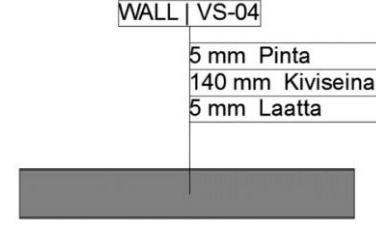
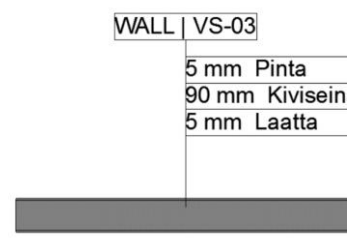
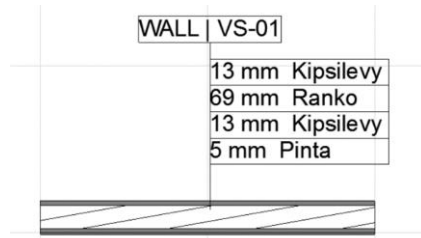
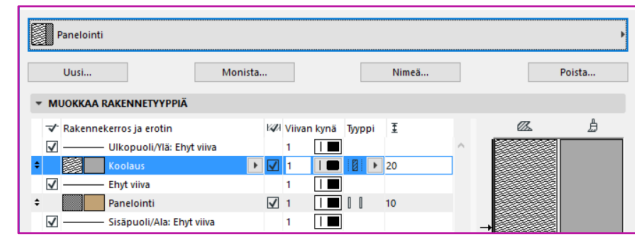
The Finnish "kirjasto 21" is available from mycourses.

Skip "missing library parts" info after loading library 21



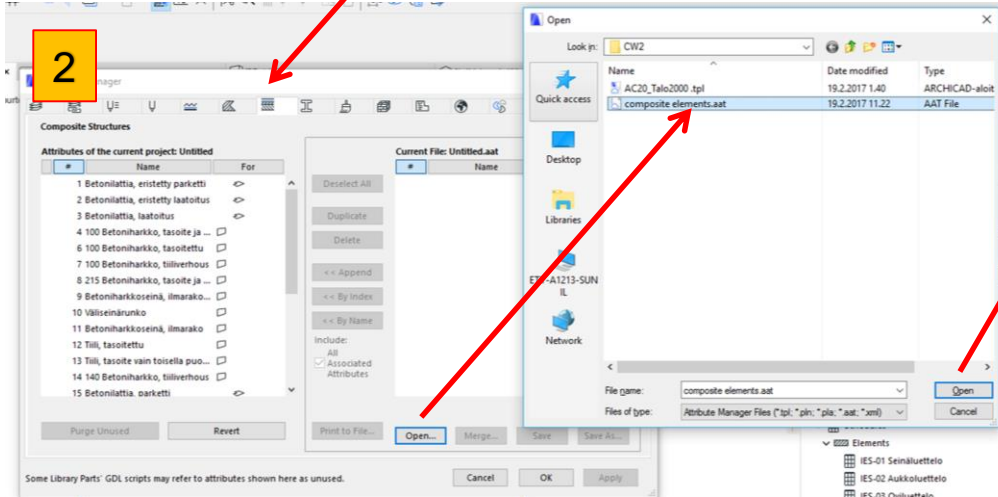
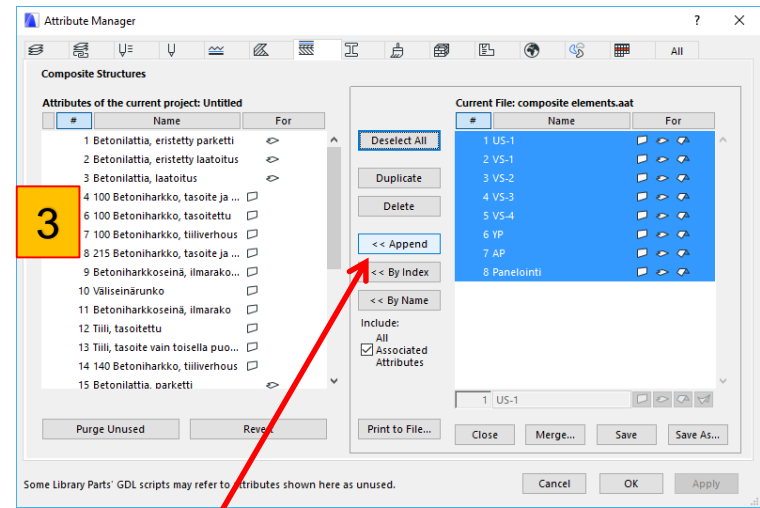
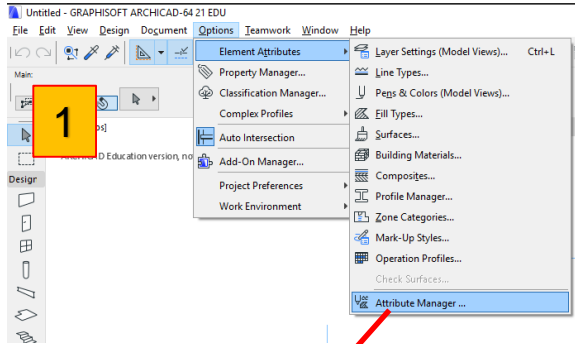
# Composites - imported

Composites imported from "composite elements.aat"





# Import composites

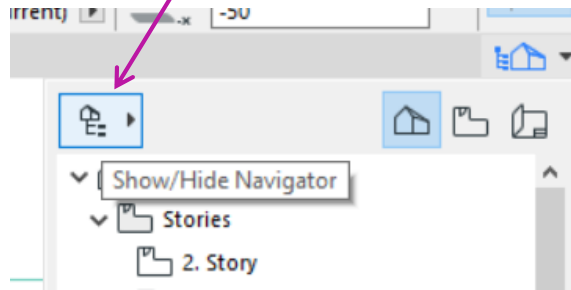


Select all the composite materials and append them to the project

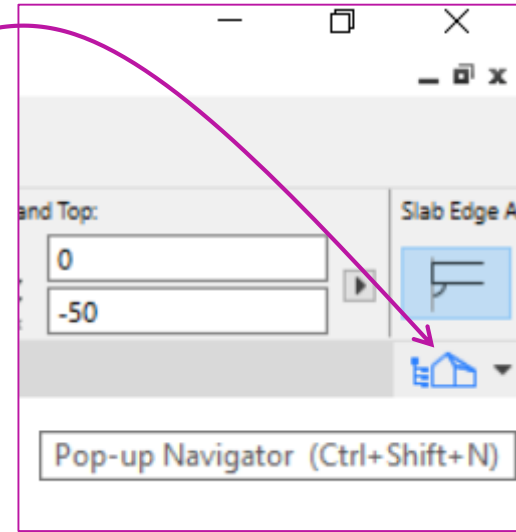
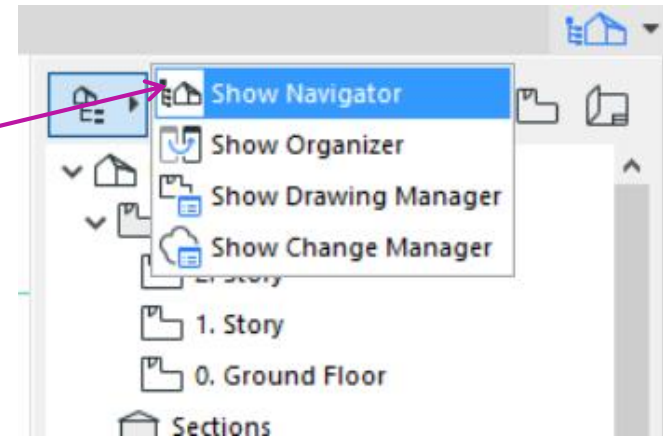
Click "ok", If archicad informs about new material/layer/line creation -- accept them

Make the "navigator map" visible if it is not visible by default

1. Left click popup navigator form the top right
2. Click "show hide navigator"

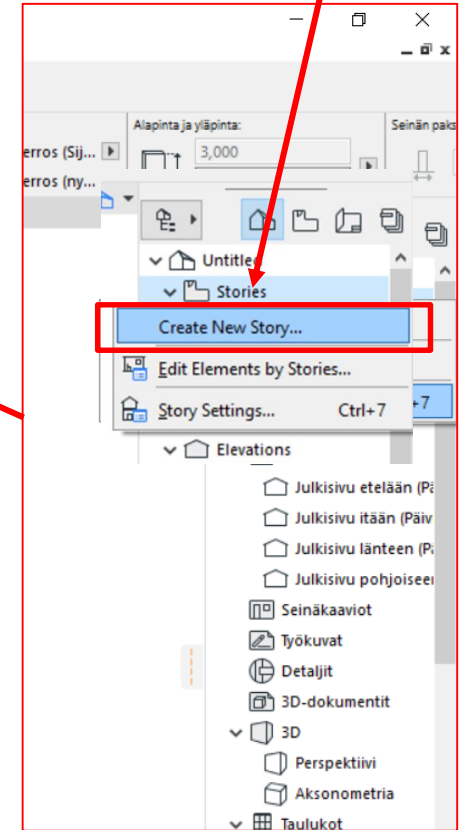
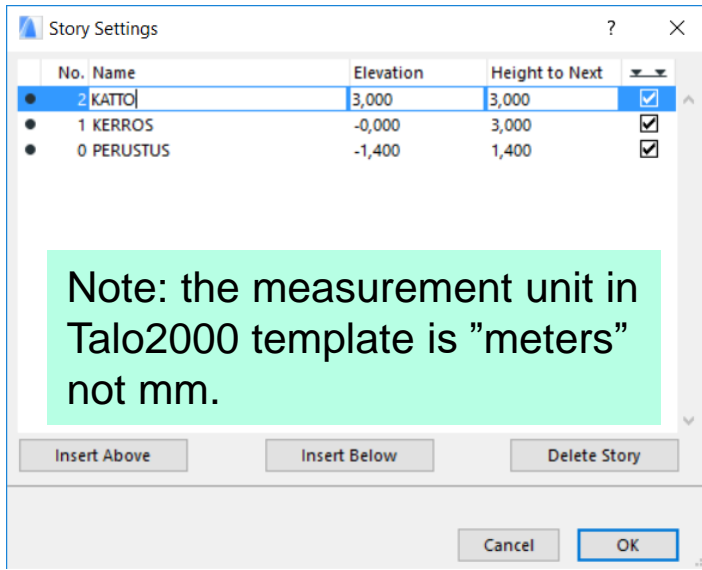


3. Click "show navigator"



# Story settings - Kerrosasetukset - Ctrl+7

Right click



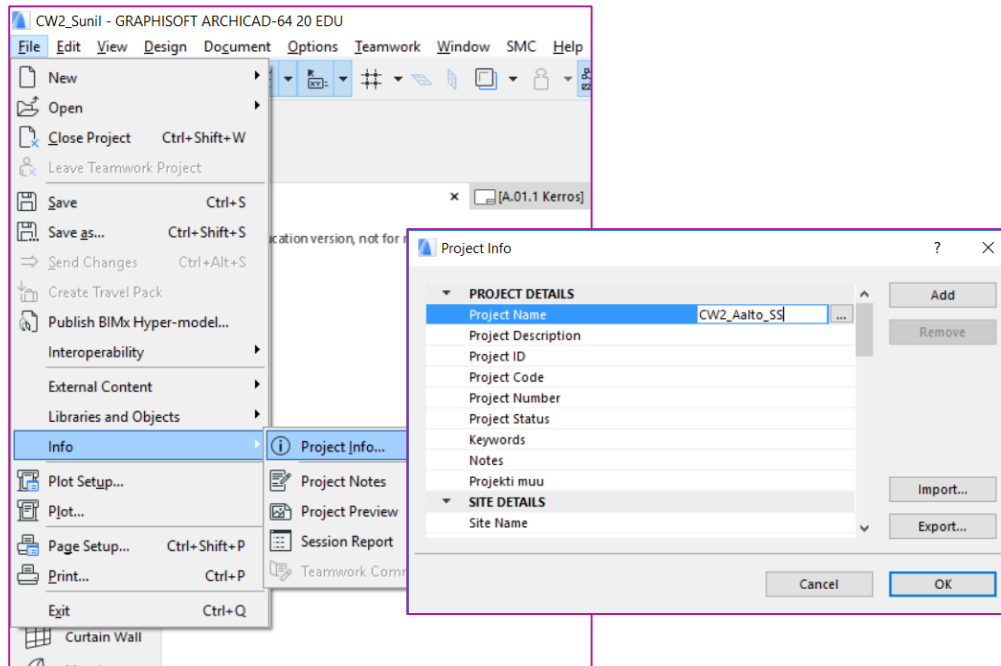
Save the project as: CW2\_yourname.pln

# Project info and settings

Project info: File > Info > project info

Insert project related information here

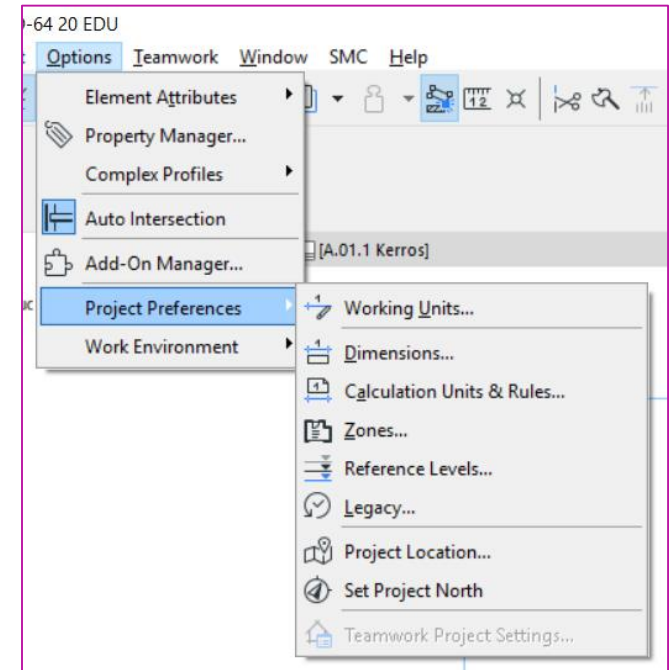
Eg- Project name: CW2\_Aalto\_name initials



Project settings: Options > project preferences

To change project related settings

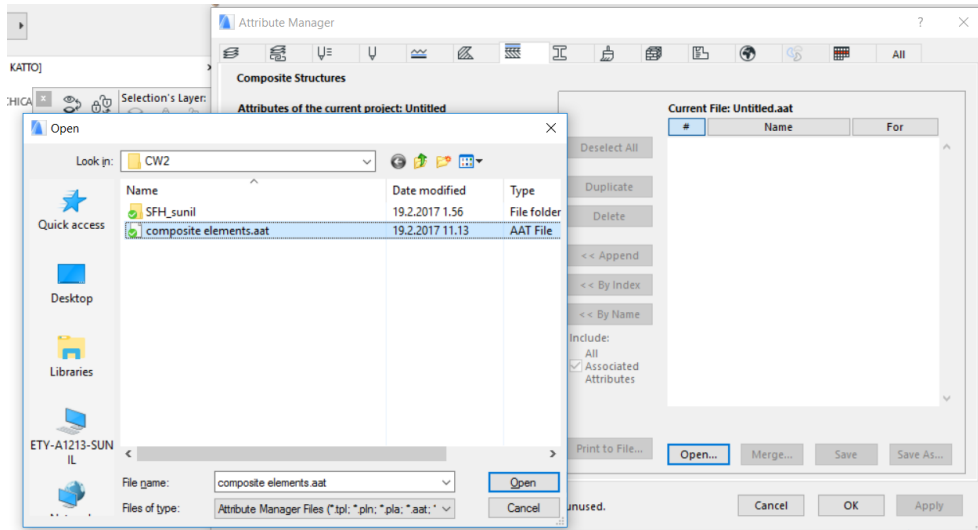
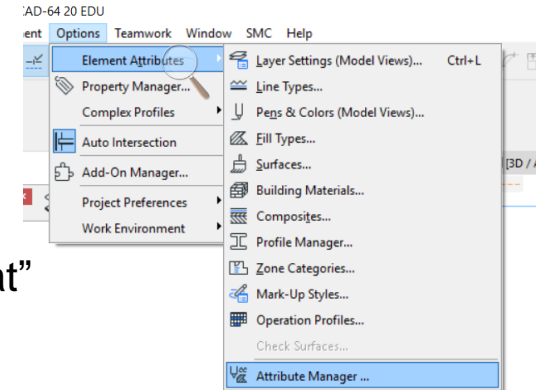
Eg. Working units/dimensions



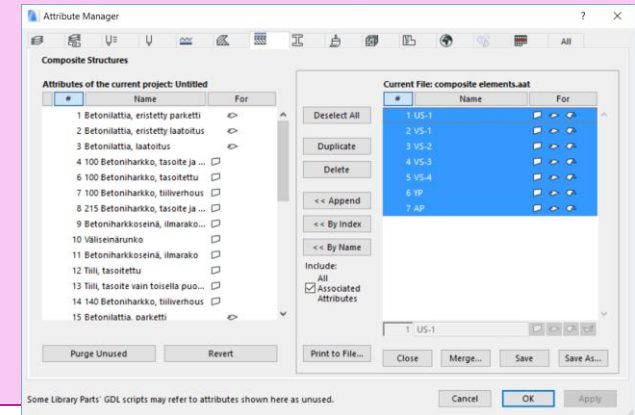
# Attribute manager

Options > element attributes > attribute manager

Go to composites and open and open “composite elements.aat”  
(available from mycourses)



Select all the composite elements and “append”. Check mark “all associated attributes”





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# Importing dwg floor plan of the house

# Importing dwg file as independent worksheet

Right click > worksheet > new independent worksheet

File > external content > attach Xref

3

New independent Worksheet

Reference ID: WS-01

Name: Pohja 1 kerros

2

Cancel Create

4

Attach Xref

Xref Name: <New XREF> Browse...

Path: C:\Users\sunilsu\OneDrive - Metropolia Ammattikorkeakoulu Oy\...  
C:\Users\sunilsu\OneDrive - Metropolia Ammattikorkeakoulu Oy\...  
C:\Users\sunilsu\OneDrive - Metropolia Ammattikorkeakoulu Oy\...

Reference Type:  Attachment  Overlay

Insertion Point:  Specify On-Screen

Scale:  Specify On-Screen

Rotation:  Specify On-Screen

X: 0,00 X: 1,00 Angle: 0,00°

Y: 0,00 Y: 1,00

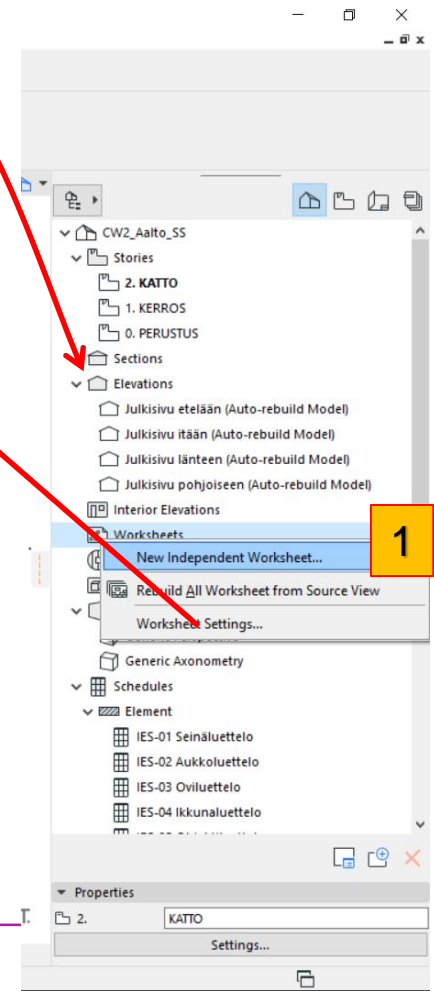
Anchor Point:  Drawing's own origin  Drawing's own anchor point  Bounding box node

Place on story:

Translator: 02 For editable import Settings...

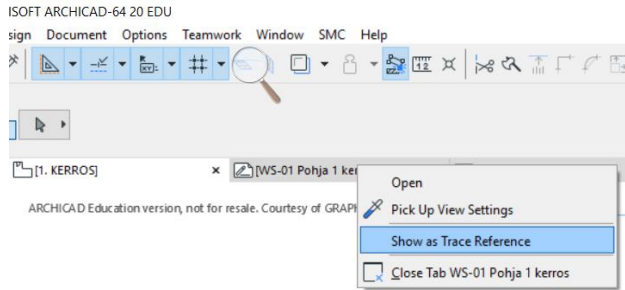
Description: Use this translator to open DXF/DWG content and continue editing after conversion in ARCHICAD.

Cancel Attach



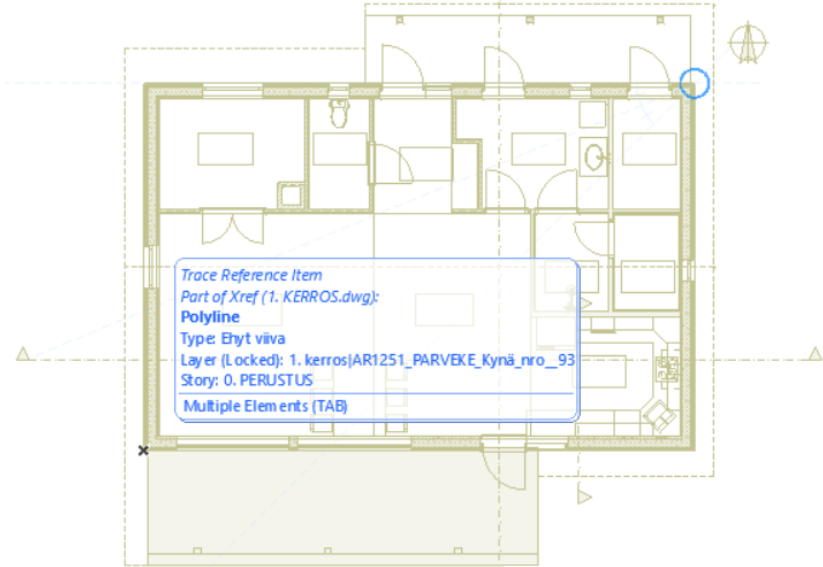
## Activate 1. kerros (From the tabs or double click from project map )

- Right click on the "worksheet created – WS-01 and click show as trace reference



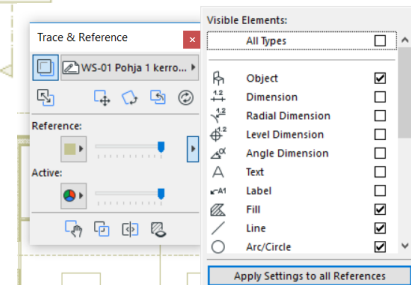
### If the reference drawing is not visible

Turn on Xref layers from (ctrl+L) or option > element attributes > layer settings



Color properties of reference Elements like "dimensions/text...." can be changed and made visible from trace reference palette

### Window > Palettes > Trace & reference







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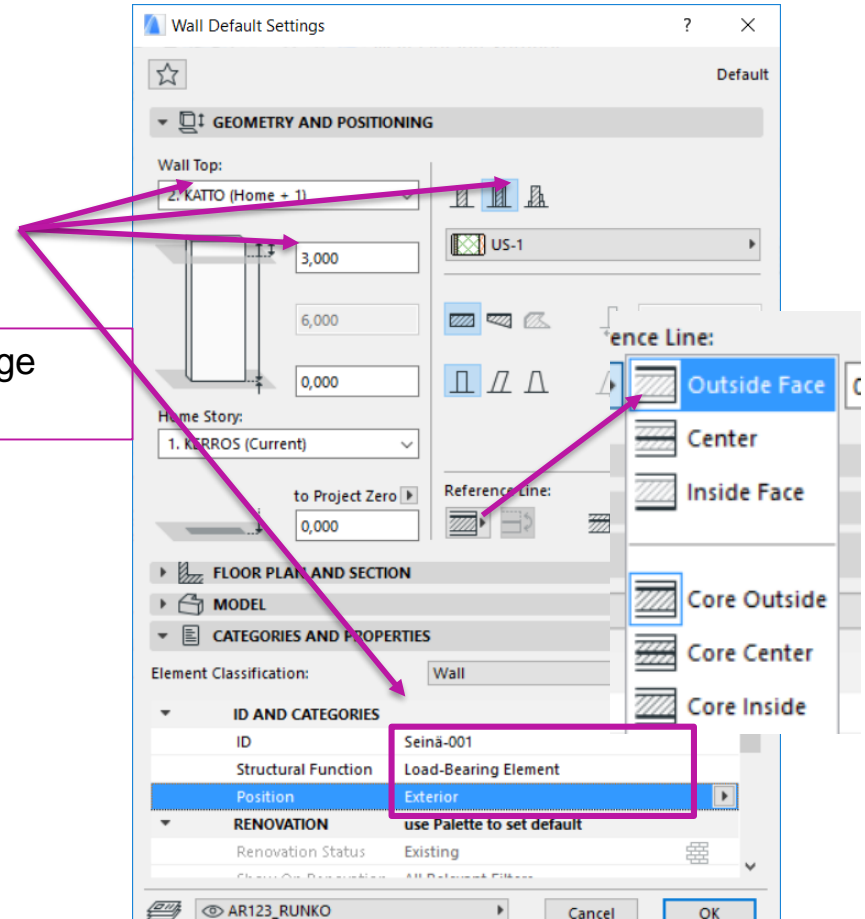
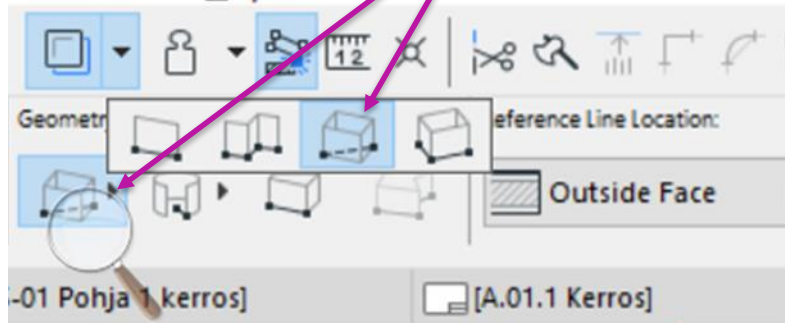
# Modeling the project

# Walls

## Outer wall – US 01

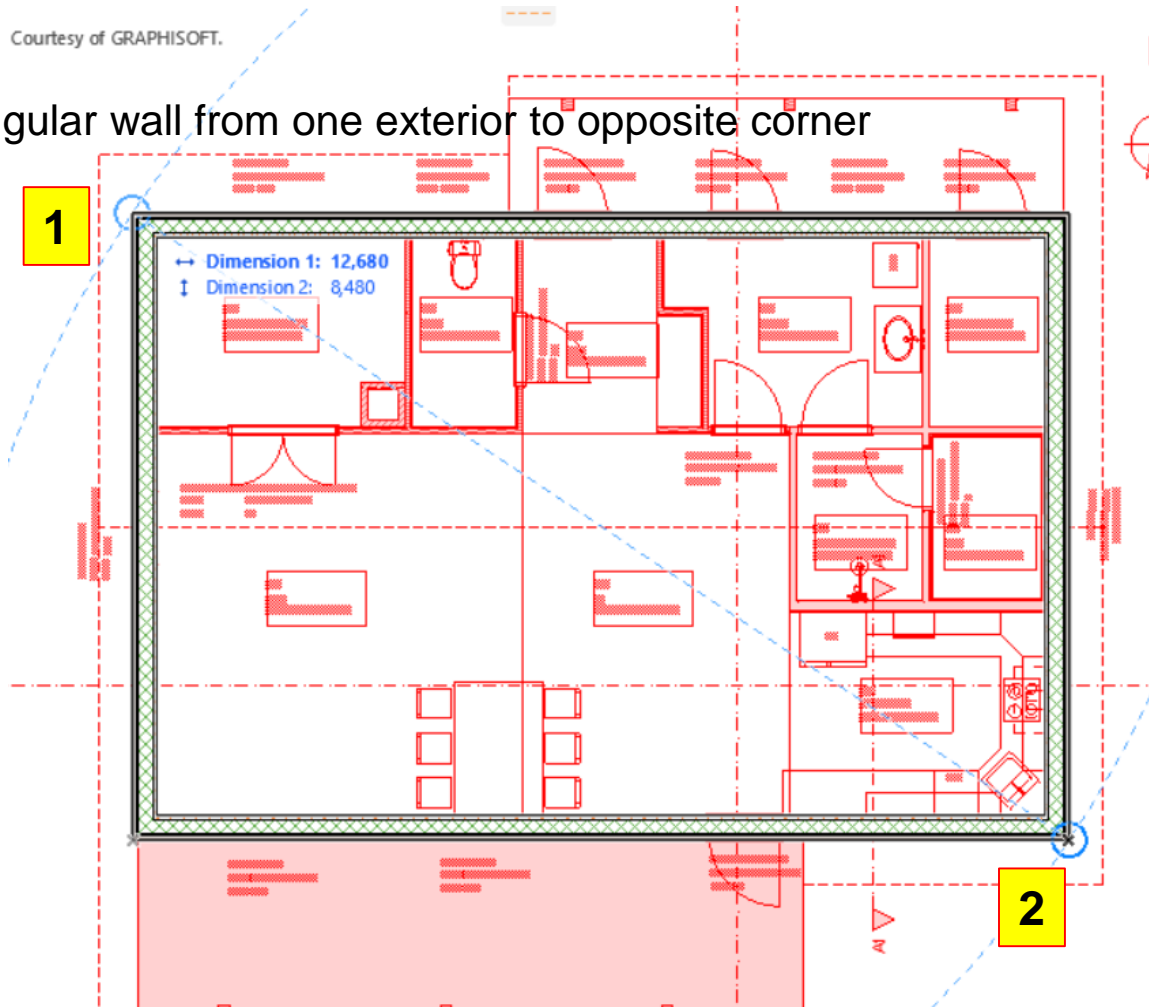
Double click "wall tool" to go to its settings and make following modifications

Left click "black arrow" on info box longer time to change geometry method and click to select

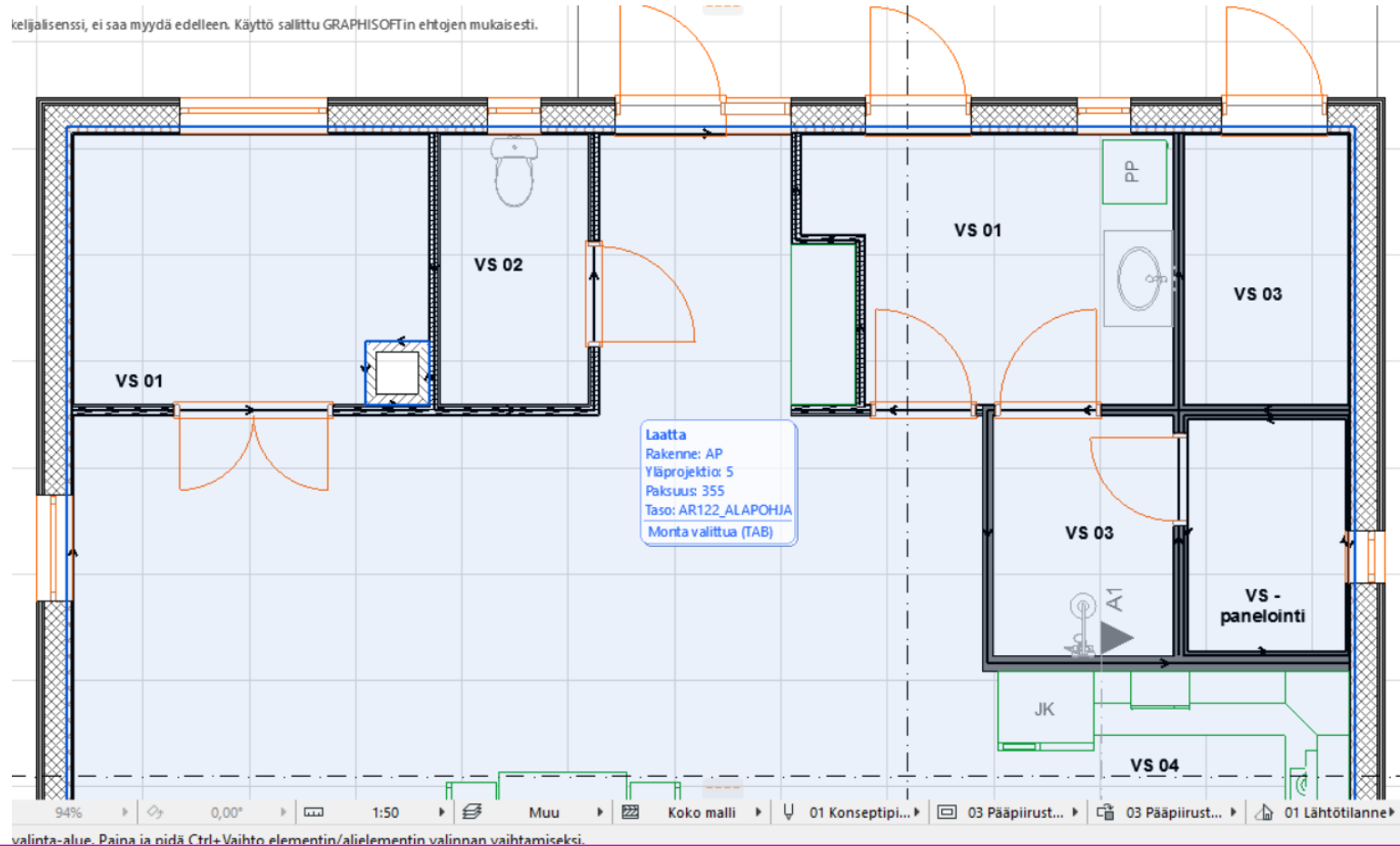


More attributes can be attached with the elements from "tag and categories > manage IFC properties"

Draw a rectangular wall from one exterior to opposite corner



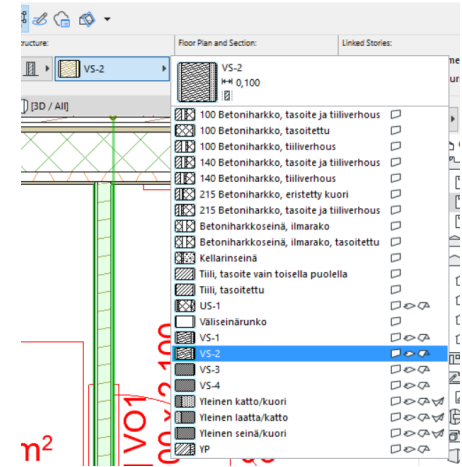
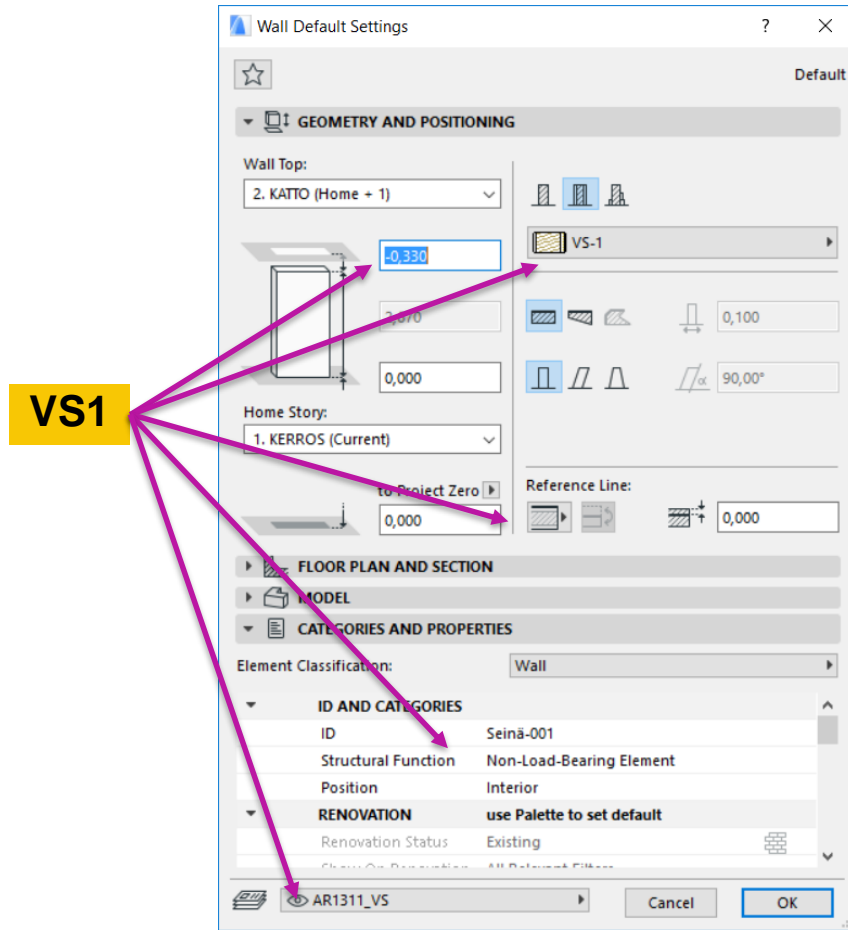
# Inner walls



# Inner walls - VS

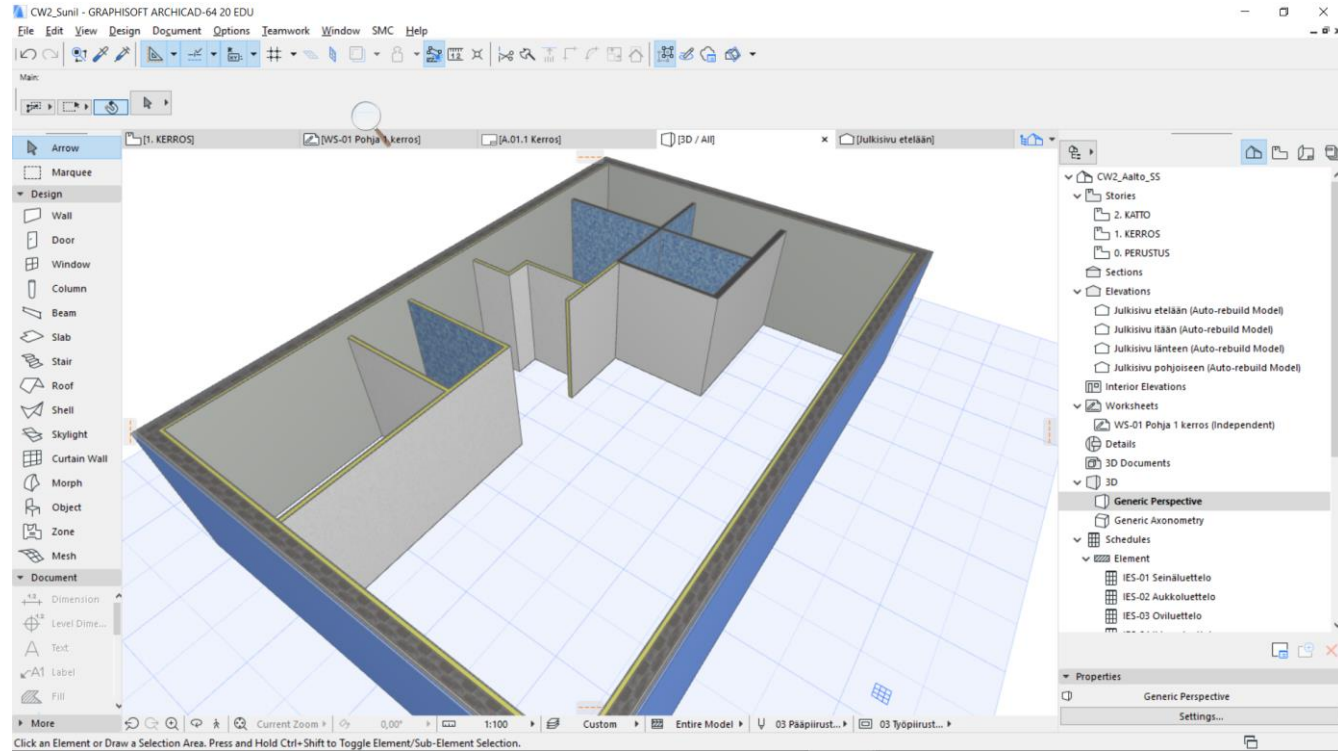
You can draw all the "inner walls" with same composite structure.

Once the walls are finished – change to appropriate composite type by selcting and changing it from info-box

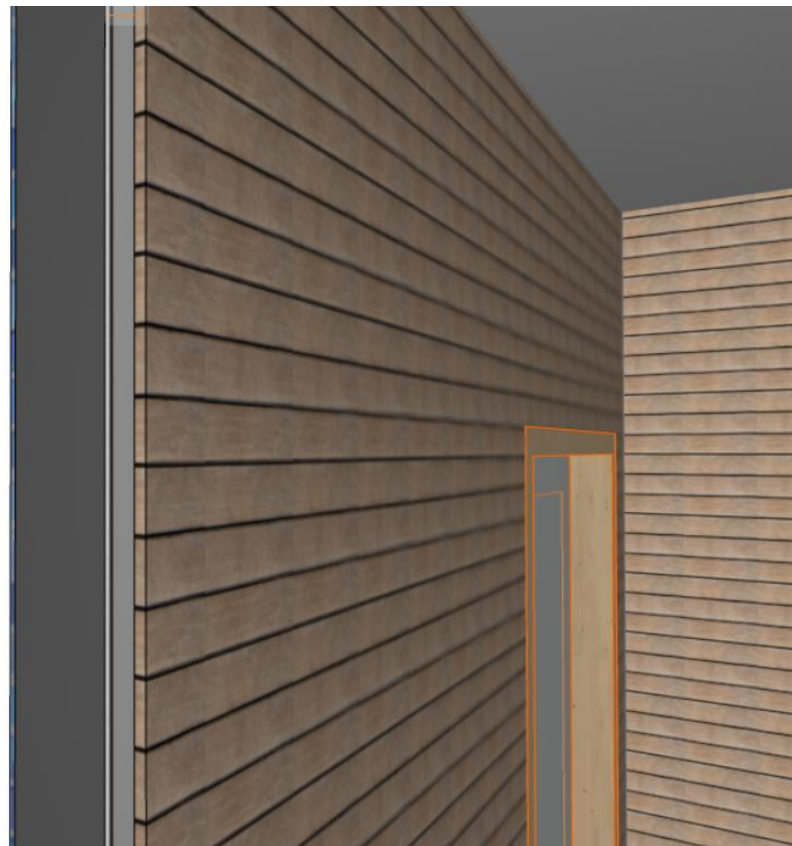
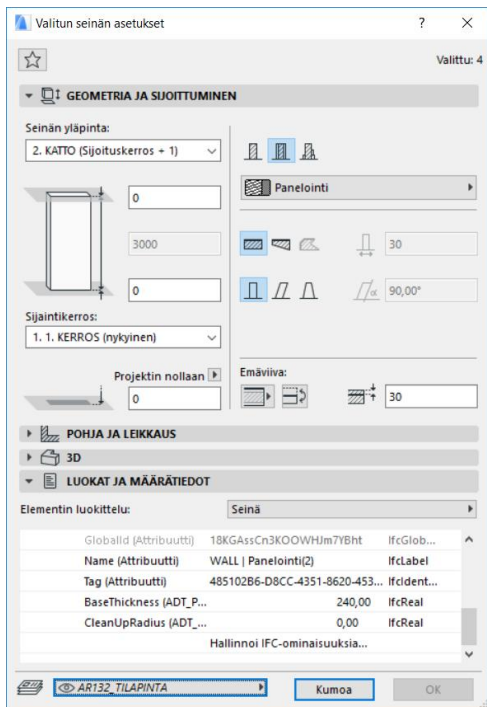


# 3D VIEW WALLS

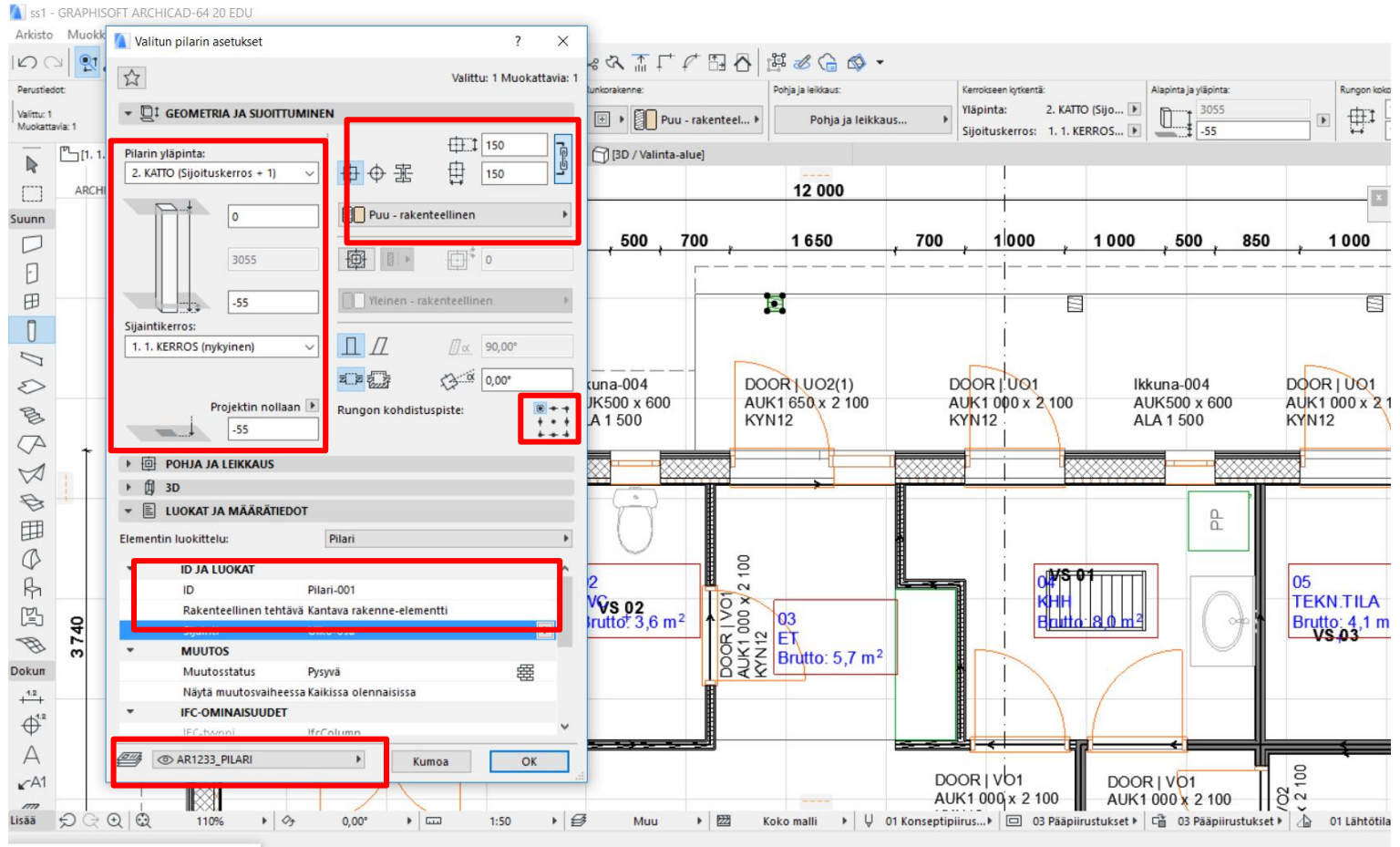
Make appropriate changes as needed with the wall types based on the spaces.



# Sauna inner panel wall

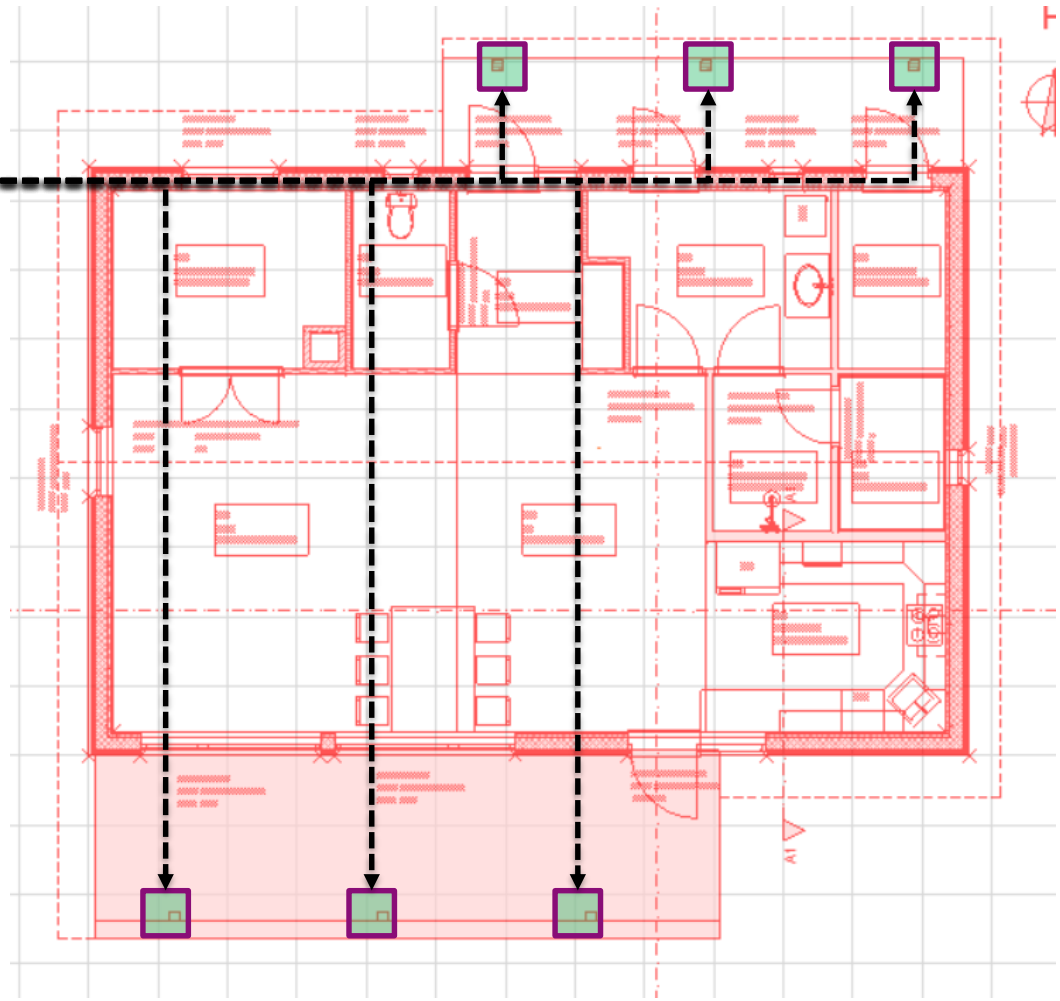


# Wooden columns





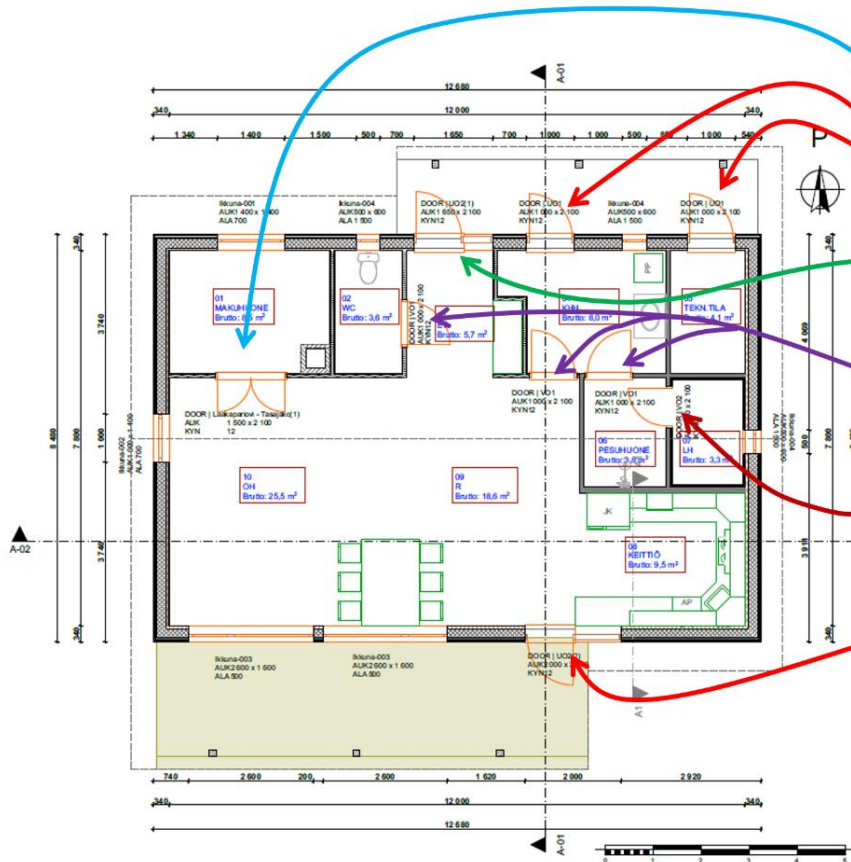
Place the columns in their correct place





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# Openings – Door and windows



	A	B	C	D	E	F	G
1	Aukkoluettelo						
2	Täysi Elementin ID	Koko l x k	Määrä	Alareunan korko	Yläreunan korko	2D-symboli	Sivunäkymä sisäpuolelta
3	DOOR   Laakapariovi - Tasajako(1)	1 500x2 100	1	0	2100		
4	DOOR   UO1	1 000x2 100	2	0	2100		
6	DOOR   UO2(1)	1 650x2 100	1	0	2100		
8	DOOR   UO2(2)	2 000x2 100	1	0	2100		
10	DOOR   VO1	1 000x2 100	3	0	2100		
12	DOOR   VO2	880x2 100	1	0	2100		
14	15	16	17	18	19	20	21
14	ikkuna-001	1 400x1 400	1	700	2100		
16	ikkuna-002	1 000x1 400	1	700	2100		
18	ikkuna-003	2 600x1 600	2	500	2100		
20	21	22	23	24			
20	ikkuna-004	500x600	3	1500	2100		
Aukkoluettelo							

1.

1. KERROS

1:50

# External doors – UO 1

The image displays the Revit software interface for configuring an external door. The main window is titled 'Valittu oven asetukset' (Selected door settings) and shows a list of door types on the left, with 'Ovi 20' selected. The central panel shows the 'ESIKATSELU JA SIJOITUS' (Preview and placement) area, where the door's dimensions (1000 and 2100) and wall thickness (50) are visible. The 'SARANAOVEN ASETUKSET' (Door settings) panel is open, showing options for 'Kynnys' (Threshold) and 'Laajennettu molemmin' (Extended on both sides). The 'LUOKAT JA MÄÄRÄTIEDOT' (Classes and quantity data) panel is also open, showing the door's classification as 'DOOR | UO1' and its material as 'Ulko-osa' (Exterior). A 3D view at the bottom shows the door's placement in a wall section.

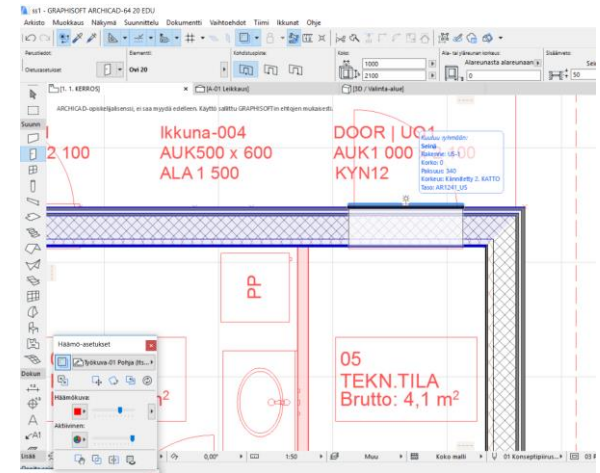
**1** The 'Valittu oven asetukset' window shows the 'Ovi 20' door type selected in the left-hand list.

**2** The 'SARANAOVEN ASETUKSET' window shows the 'Kynnys' (Threshold) settings, including 'Vastapuolen sivulylyty' (Opposite side overhang) and 'Aukeamispuolen sivulylyty' (Opening side overhang), both set to 0. The 'Laajennettu molemmin' (Extended on both sides) option is checked.

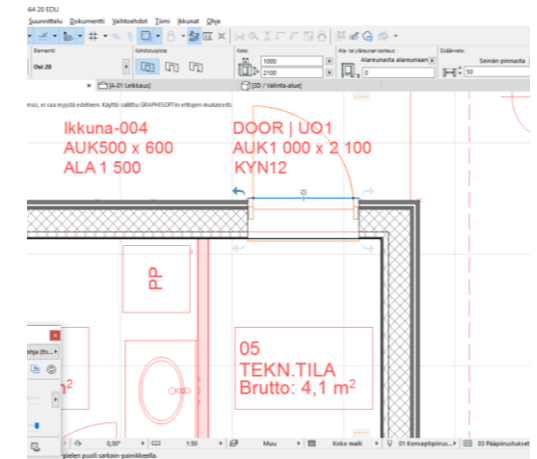
**3** The 'LUOKAT JA MÄÄRÄTIEDOT' window shows the door's classification as 'DOOR | UO1' and its material as 'Ulko-osa' (Exterior).

# Placing openings

First click to define insertion point of the opening



Second click to define its opening side (orientation)



# UO 2 – (north wall)

Valittu oven asetukset

Ovi sivuosa sivulla 2 20

Valittu: 1 Muokattavia: 1

**1**

**2**

ESIKATSELLI JA SIOITUS

1650

2100

kohdistus:

Alareunasta alareunaan

0

Seinän pinnasta

50

SARANAOVEN ASETUKSET

Laitteet ja sovitteet...

Vuoraus

Ulkopuolella

Sisäpuolelle

Liittyminen

Laajennettu...emmin puolin

Kynnyks

Aurinkosuojaus

Koristeellinen

Puinen ikkunalauta

700

650

POHJA JA LEIKKAUS

ISET

ARÄTIEDOT

Kumoa OK

SARANAOVEN ASETUKSET

Laitteet ja sovitteet...

Vuoraus

Ulkopuolella

Sisäpuolelle

Liittyminen

Laajennettu...emmin puolin

Kynnyks

Aurinkosuojaus

Koristeellinen

Puinen ikkunalauta

Kynnykset

Kynnyks

Vastapuolen sivuyitys

0

Aukeamispuolen sivuyitys

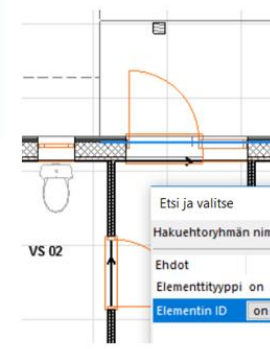
0

25

25

12

**3**



LUOKAT JA MÄÄRÄTIEDOT

mentin luokittelu: Ovi

ID: LUOKAT

ID DOOR | UO2(1)

Rakenteellinen tehtävä Ei-kantava rakenne-elementti

Sijainti Ulko-osa

MUUTOS

Muutosstatus Pysyvä

Näytä muutosvaiheissa Kaikissa olennaisissa

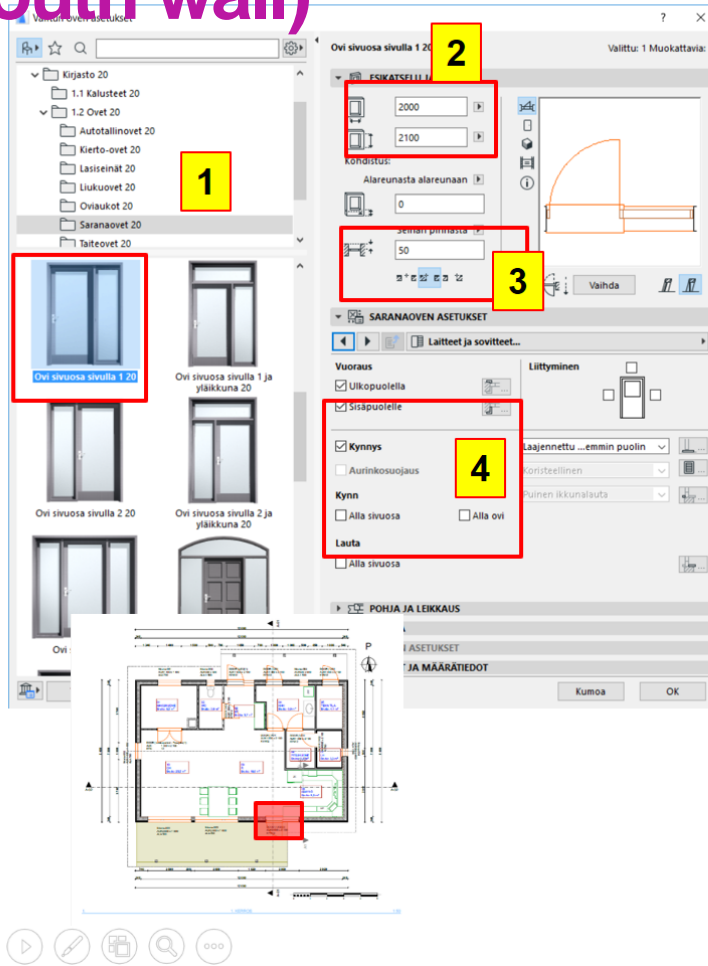
IFC-OMINAISUUDET

IFC\_nimi IFC\_nimi

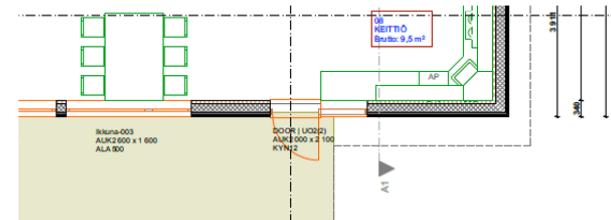
Kumoa OK

**4**

# UO 2 – (south wall)



Other settings as in previous door





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# Internal doors



# Sisäovi - Door | Laakapariovi tasajako

The image displays a software interface for configuring a door. The main window is titled "Valittu oven asetukset" and shows a list of door types on the left, with "Pariovi 20" selected. The right side contains several configuration panels:

- ESIKATSELU JA SIJOITUS (2):** Shows a 3D model of the door and its placement in a wall. Dimensions like 1120 and 2100 are visible.
- SARANAOVEN ASETUKSET (3):** Contains settings for the door's operation, including "Kynnys" (Threshold) and "Kynnys" (Threshold) options. A "Kynnys" value of 100 is set.
- SARANAOVEN ASETUKSET (4):** Shows the "Vuoraus" (Trim) settings, with "Ulkopuolella" (Outside) and "Sisäpuolelle" (Inside) options checked.
- SARANAOVEN ASETUKSET (5):** Shows the "POHJA JA LEIKKAUS" (Base and Section) settings, including "LUOKAT JA MÄÄRÄTIEDOT" (Classes and Quantity Information).





The "LUOKAT JA MÄÄRÄTIEDOT" section shows the following information:

ID JA LUOKAT	
ID	DOOR   Laakapariovi - tasajako
Rakenteellinen tehtävä	Ei-kantava rakenne-elementti
Sijainti	Sisäosa

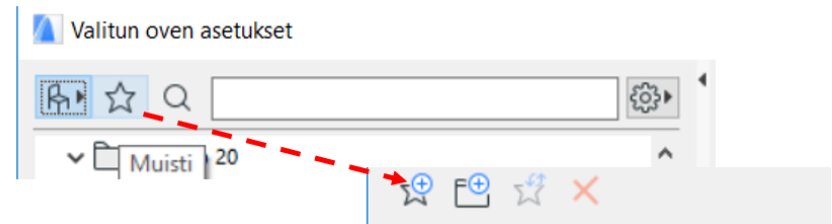
The bottom part of the image shows a 2D architectural floor plan and a 3D perspective view of the door installation. The floor plan highlights the door location in red. The 3D view shows the door in a room, with labels "VS 01" and "VS 02" indicating the door's position relative to the wall and floor.

# Internal doors

- Kaikissa muissa sisäovissa laitetaan
  - Ovi tyyppi – Ovi 20
    - Vuoraus – ulkopuolella ja sisäpuolella
    - Kynnys – Laajennettu molemmin puolin
    - Ei-kantava rakenne-elementti
    - Sisäosa (sijainti)

11	DOOR   VO1						
12		1 000x2 100	3	0	2100		
13	DOOR   VO2						
14		880x2 100	1	0	2100		

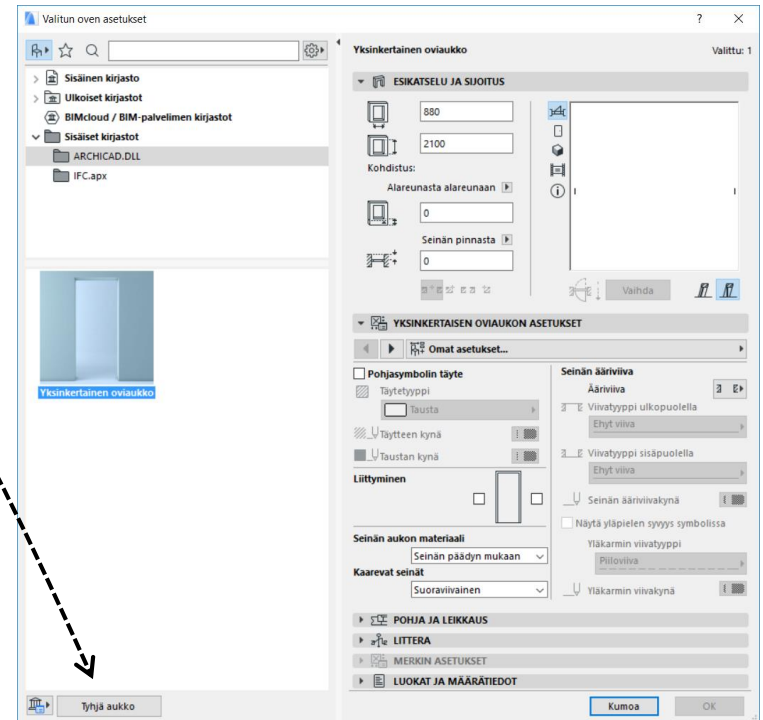
- Valmiit asetukset voimme tallentaa archicadin muistiin



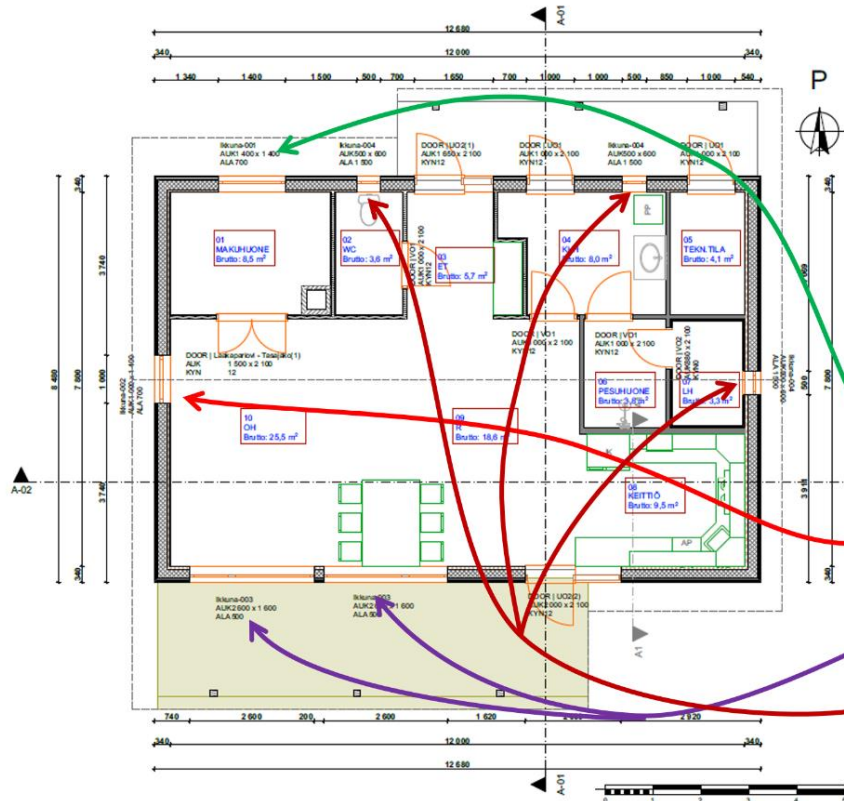
# Door (and window) in sauna panel wall

Use empty door (and window) for sauna panel wall to create empty opening

- Settings for the opening same as the door (or window) placed in the adjacent sauna wall.



# Windows



	A	B	C	D	E	F	G
1	Aukkoluettelo						
2	Täysi Elementin ID	Koko l x k	Määrä	Alareunan korko	Yläreunan korko	2D-symboli	Sivunäkymä sisäpuolelta
3	DOOR   Laakapariovi - Tasajako(1)						
4		1 500x2 100	1	0	2100		
5	DOOR   UO1						
6		1 000x2 100	2	0	2100		
7	DOOR   UO2(1)						
8		1 650x2 100	1	0	2100		
9	DOOR   UO2(2)						
10		2 000x2 100	1	0	2100		
11	DOOR   VO1						
12		1 000x2 100	3	0	2100		
13	DOOR   VO2						
14		880x2 100	1	0	2100		
15	Ikkuna-001						
16		1 400x1 400	1	700	2100		
17	Ikkuna-002						
18		1 000x1 400	1	700	2100		
19	Ikkuna-003						
20		2 600x1 600	2	500	2100		
21	Ikkuna-004						
22		500x600	3	1500	2100		
23							
24							

1









1. KERROS

1:50



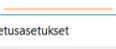





# Window types

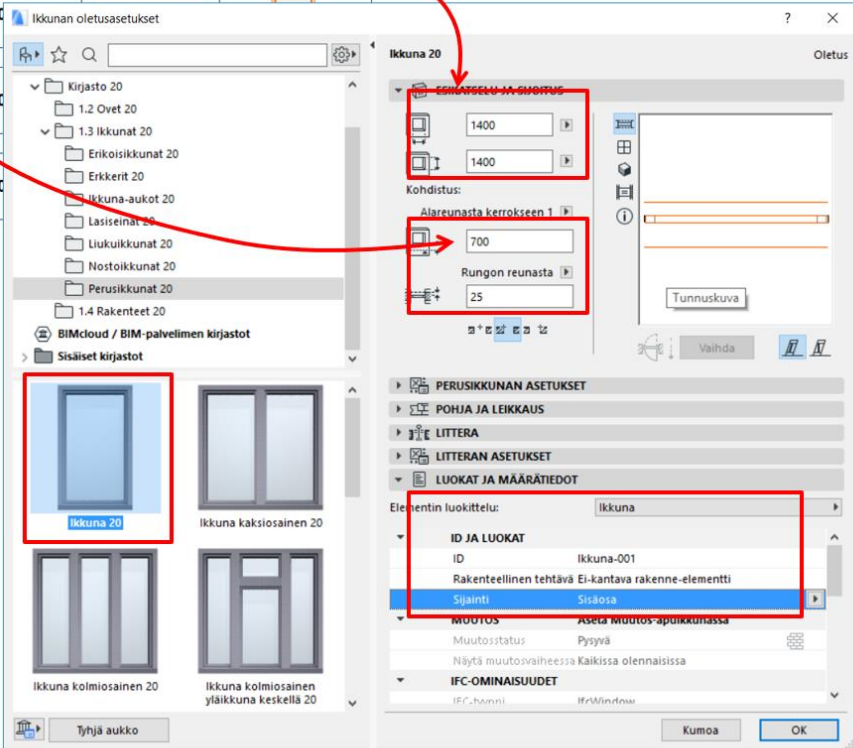
Ikkuna tyyppi (001,002,004) – Ikkuna 20

Ikkuna 003 – ikkuna kaksiosainen 20

A	B	C	D	E	F	G
Aukkoluettelo						
Täysi Elementin ID	Koko l x k	Määrä	Alareunan korko	Yläreunan korko	2D-symboli	Sivunäkymä sisäpuolelta
Ikkuna-001						
	1 400x1 400	1	700	2100		
Ikkuna-002						
	1 000x1 400	1	700	2100		
Ikkuna-003						
	2 600x1 600	2	500	2100		
Ikkuna-004						
	500x600	3	1500	2100		

# Ikkuna 001

Ikkinä-001	1 400x1 400	1	700	2100		
Ikkinä-002	1 000x1 400	1	700	2100		
Ikkinä-003	2 600x1 600	2	500	2100		
Ikkinä-004	500x600	3	1500	2100		



**Ikkuna oletusasetukset**

**Ikkuna 20**

**ENKÄSÄÄLÖ JA SUORITUS**

1400  
1400

Kohdistus:  
Alareunasta kerrokseen 1  
700  
Rungon reunasta  
25

**PERUSIKKUNAN ASETUKSET**

**POHJA JA LEIKKAUS**

**LITTERA**

**LITTERAN ASETUKSET**

**LUOKAT JA MÄÄRÄTIEDOT**

Elementin luokittelu: Ikkuna

**ID JA LUOKAT**

ID Ikkuna-001  
Rakenteellinen tehtävä Ei-kantava rakenne-elementti  
Sijainti Sisäosa

**MUOTOS** Aseta Muutos-apuikkunassa  
Muutosstatus Pysyvä  
Näytä muutosvaiheessa Kaikissa olennaisissa

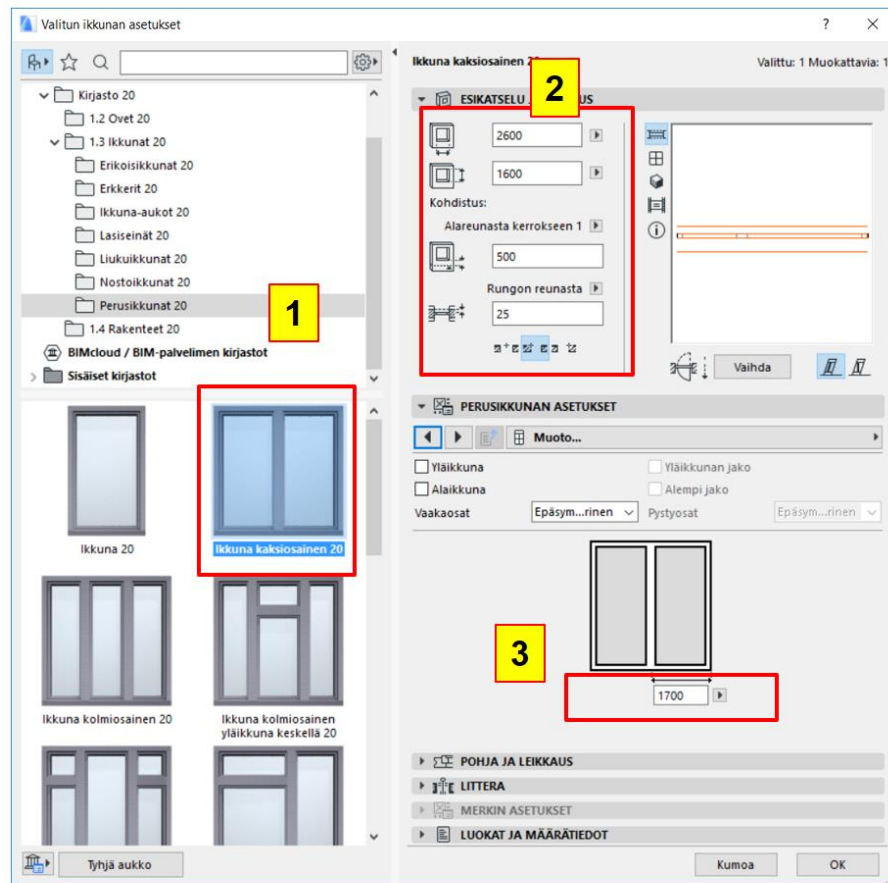
**IFC-OMINAISUUDET**  
IFC\_Muunn IFCWindow

Tyhjä aukko

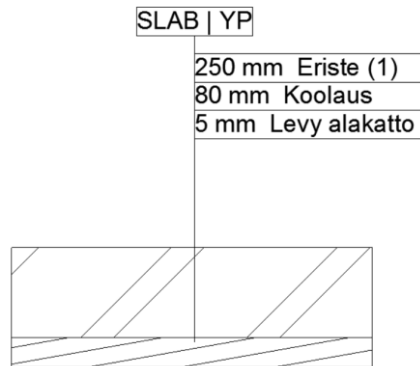
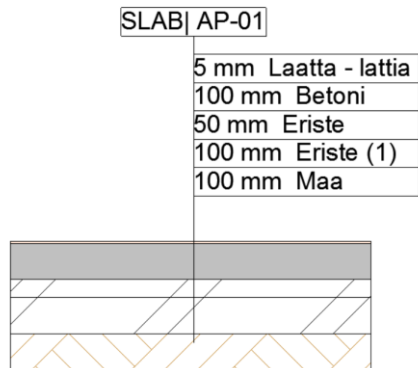
Vaihda

Kumoa OK

# Ikkuna 003 – ikkuna kaksiosainen 20



# Slabs: AP, YP.

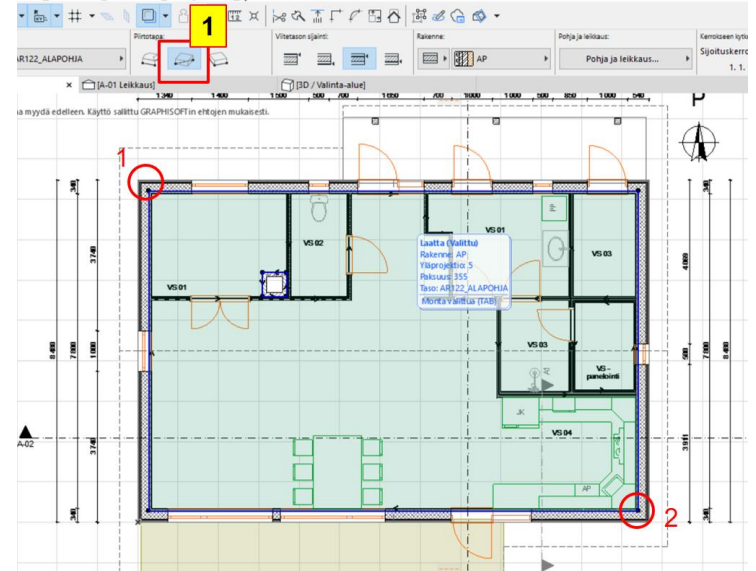
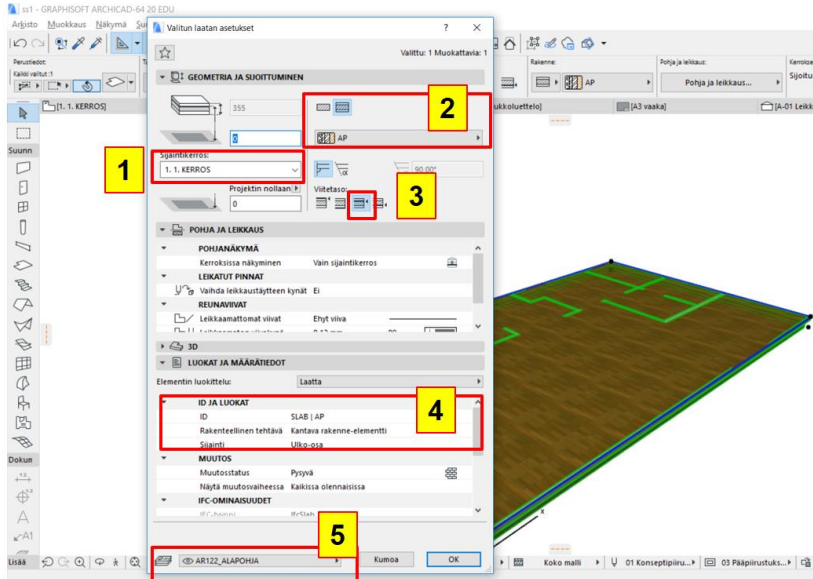


# Roof: Katto, tiili



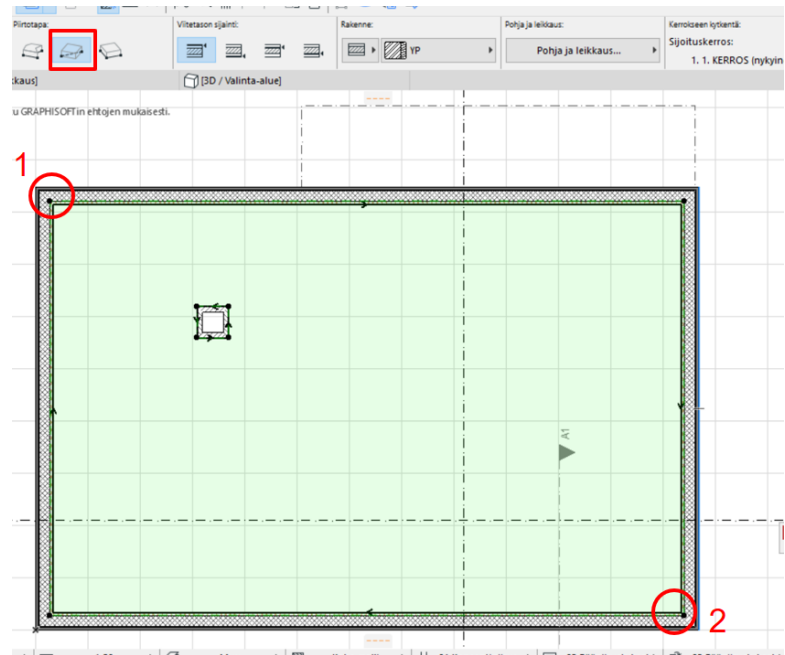
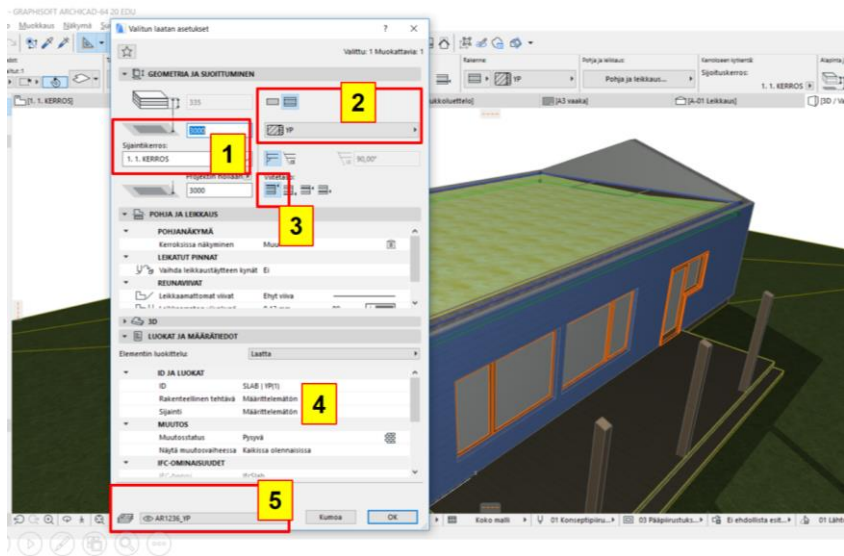


# Slab: AP

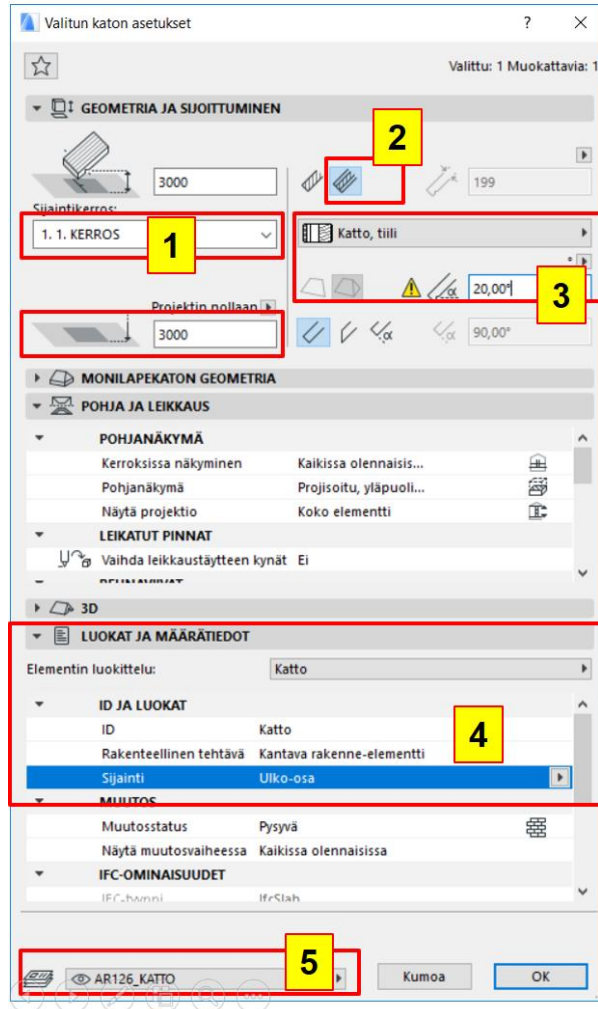


# Slab: YP

- Siirrytään "2.Katto" kerrokseen



# Katto

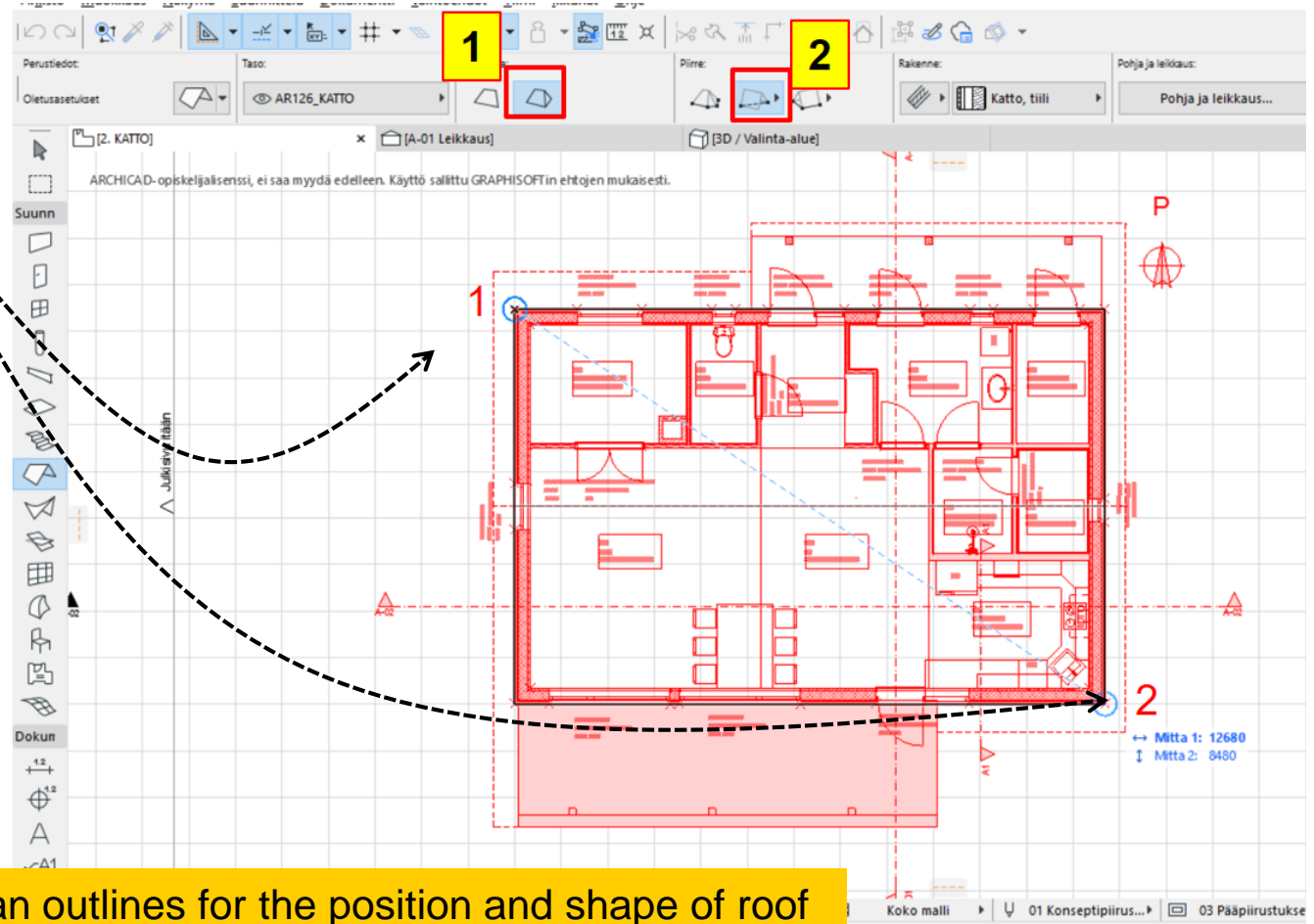
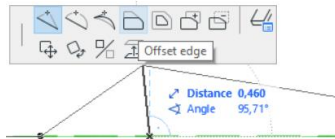


# Katto



Make a rectangular roof from point 1 to 2 (red)

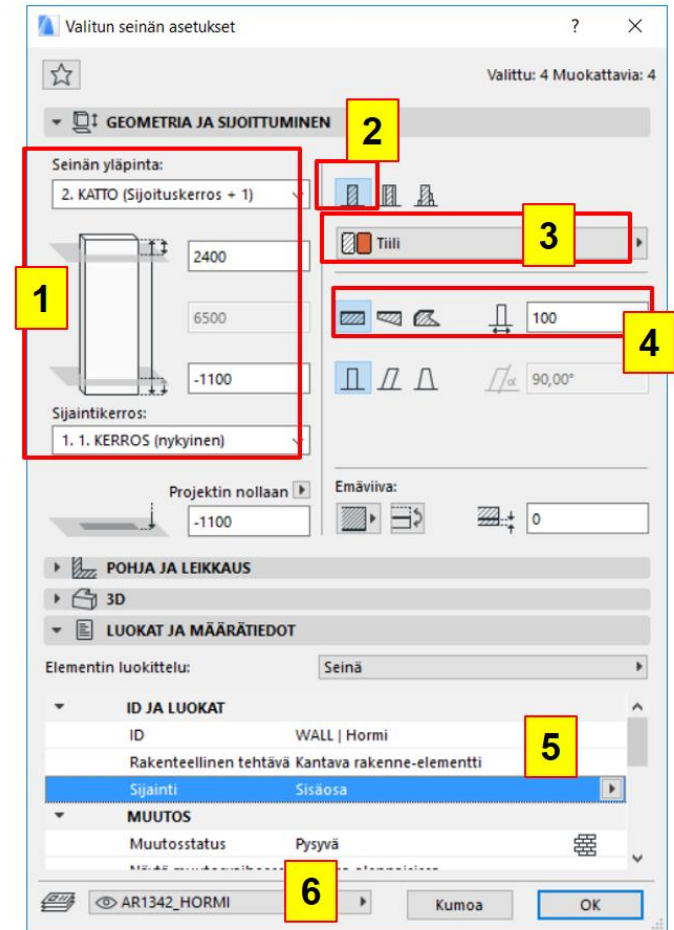
After placing the roof, click on the roof edge and modify the shape by adding points and offsetting the edges



# Chimney - Hormi

Select rectangular geometry method and "brick wall" from basic wall types.

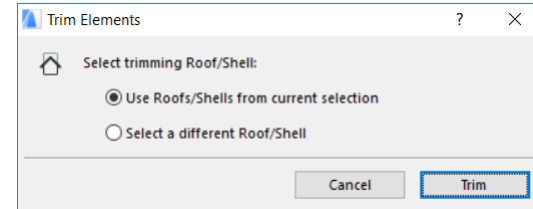
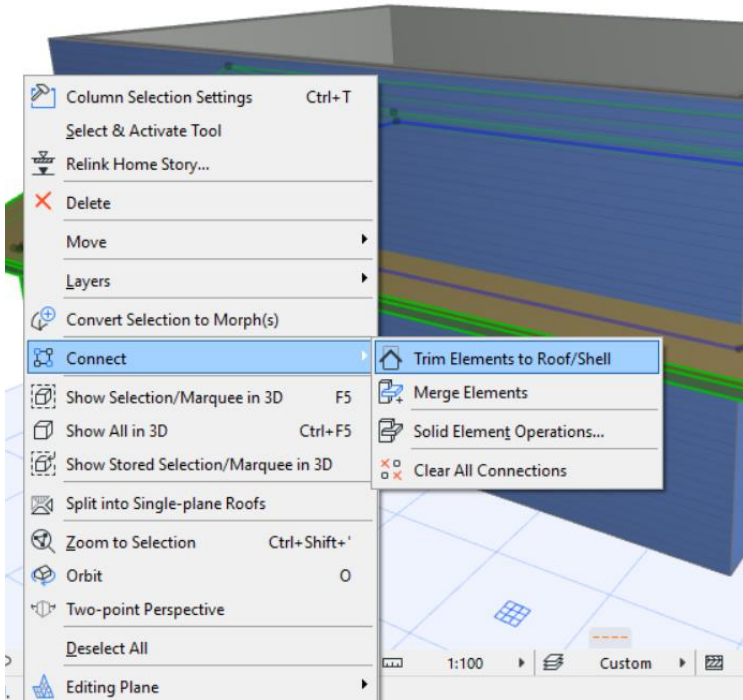
- Make the following modifications shown and draw a rectangular wall with reference to the dwg floor plan



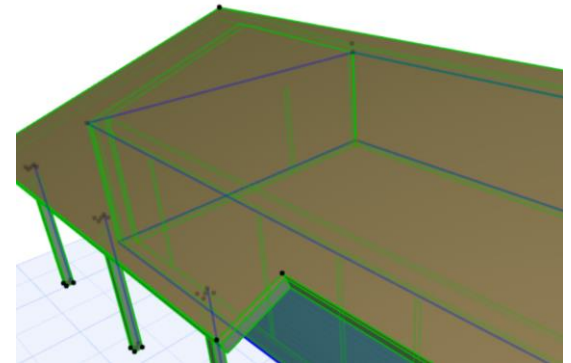
# Combining outer walls, roof and columns

## Select outer walls, columns and roof

- > right click and select connect > trim elements to roof/shell



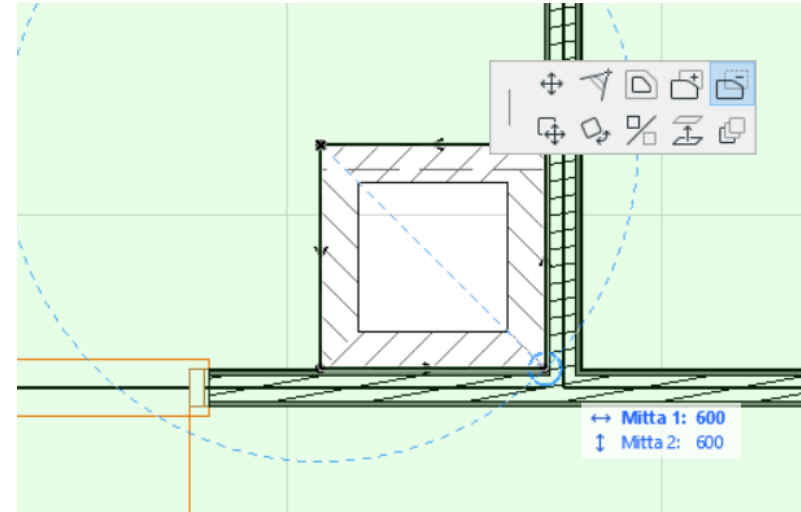
- *Trim.*



# Slab, Roof subtraction from "chimney"

Select slab element from the model and select "slab tool"

- Draw the area to subtract
- *(alternatively subtract from polygon can be selected in "pet palette" when clicked on slab boundary or corner; and drawing the area to be subtracted)*

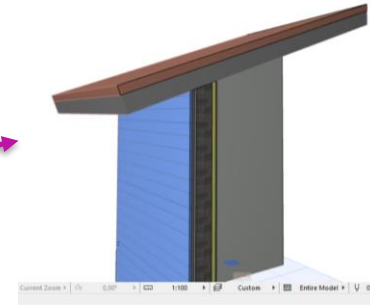
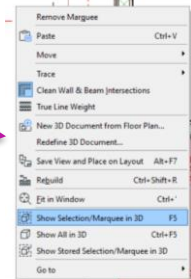
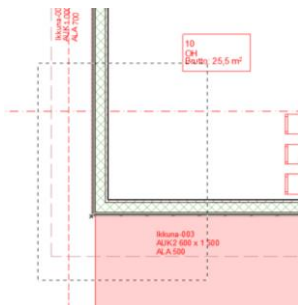
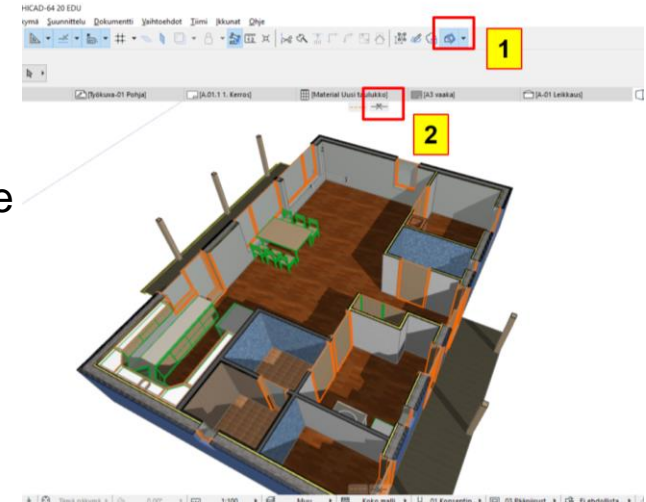


- AP
  - Select AP (1.kerros) → select "slab" tool → Draw the area to subtract
- YP
  - Select YP (2.Katto) → select "slab" tool → Draw the area to subtract
- Katto
  - Select Roof (2.Katto) → select "roof" tool → Draw the area to subtract

# 3D section

3D sectional views can be derived in many ways

- Activate 3D Cutaway (ctrl + y) and select and drag the "scissors" to define section plane
- Define an area in floor plan using "Marquee tool" -> right click -> show selection/marquee in 3D







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# Foundation

*Profiled wall tool*

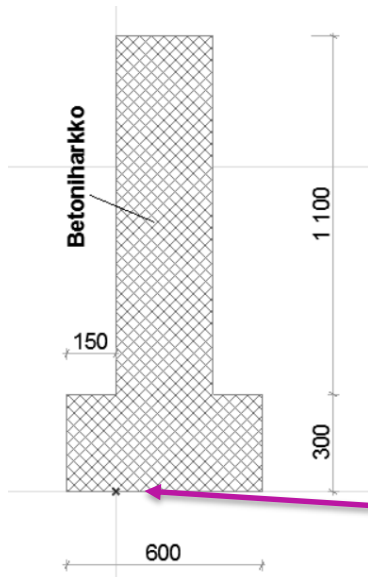
# Foundation

## Profile manager :

*Options > Element attributes > profile manager*

*Or*

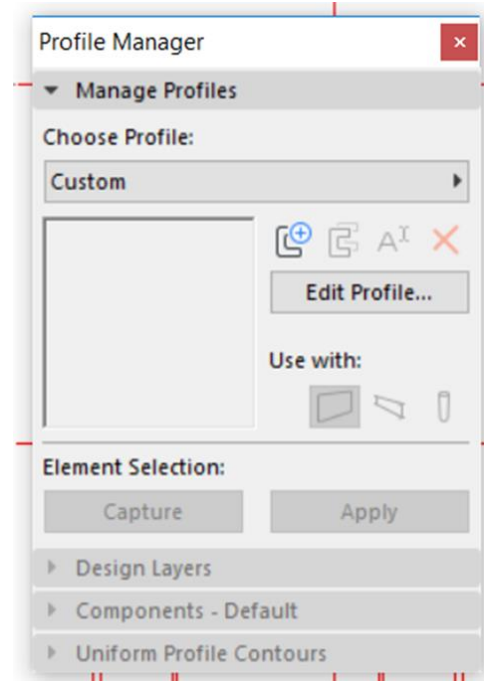
*Window > palettes > profile manager*



Click **edit profile** and Create a T profile as shown using "Fill" tool

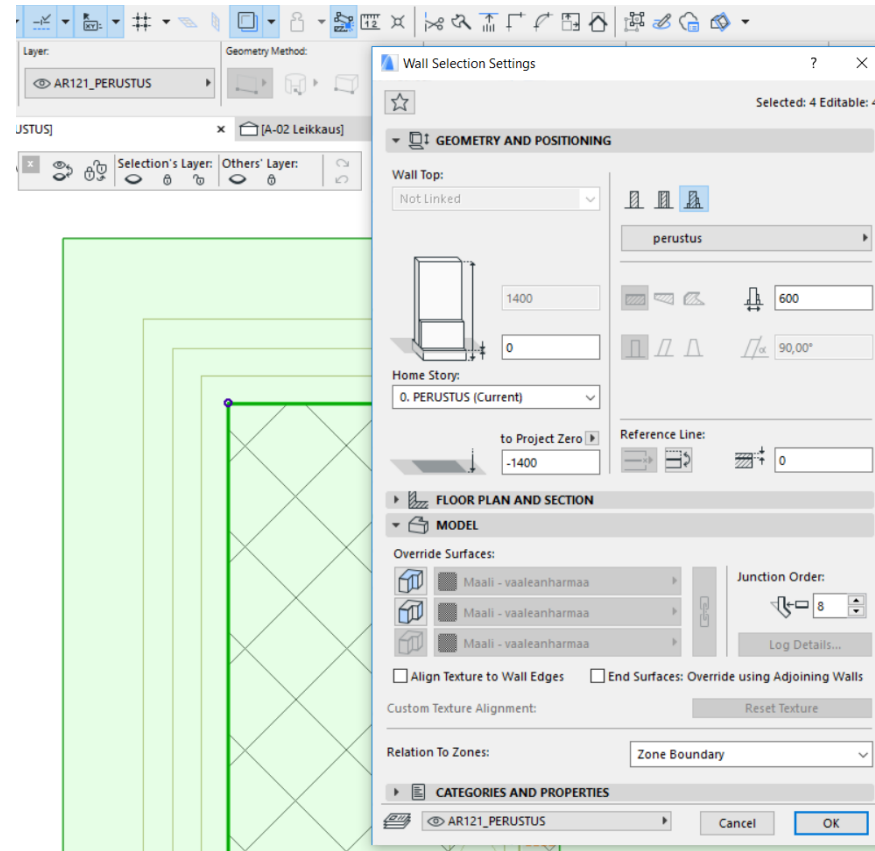
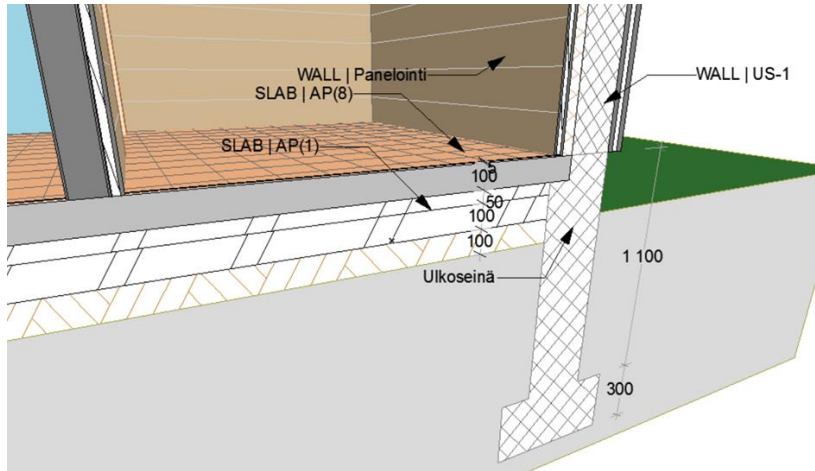
*Select appropriate building material fill. This defines the main material to be used for foundations*

Notice the origin for the profile. This origin defines the reference point of the element when drawn.



Click **store profile** once the shape and position is finished. Provide a name: Perustus

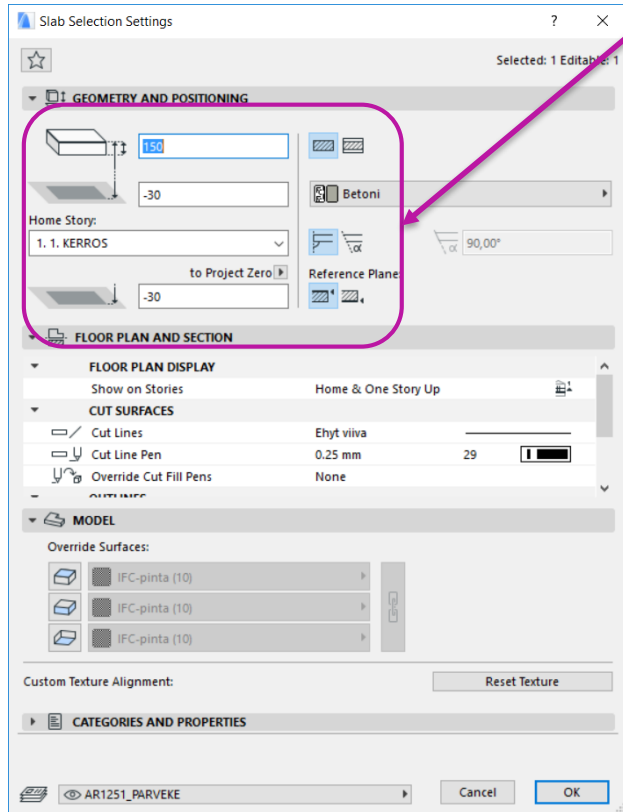
- Go to 0. Perustus in the project map
- Make 1.Kerros visible through **trace and reference**
- Draw Profiled wall (– see right side picture) alongside the exterior side of **”core”** of the outer walls.



A different slab element (5mm thick) is put on the top of AP in sauna and dressing room.

# Terrace slabs

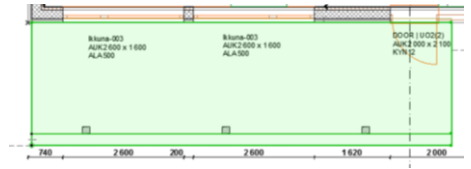
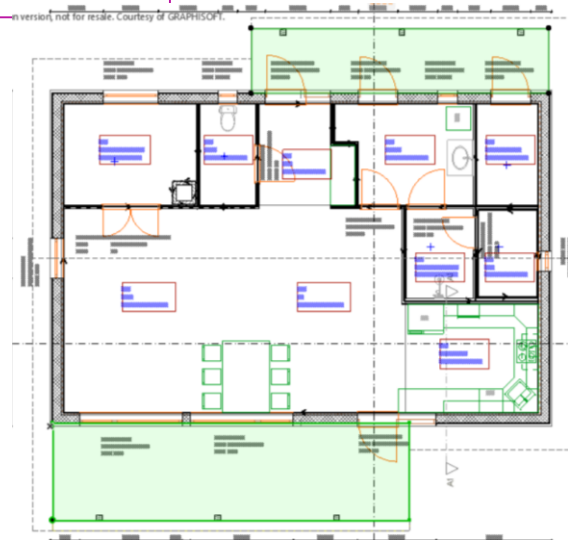
Make rectangular slabs with the settings shown in the left picture



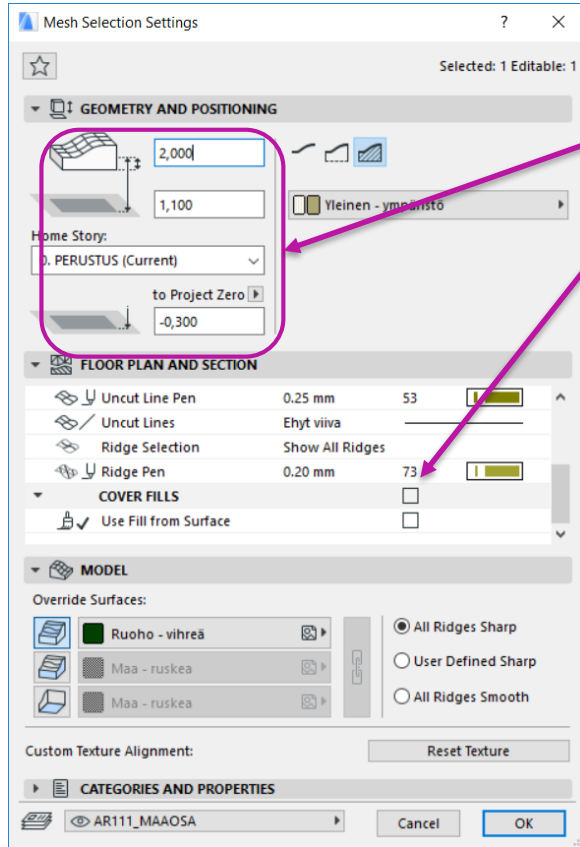
Copy "bottom (southern) slab" and paste at the same place

Select the copied slab and extend (offset) one side to 300mm.

Move the slab 150 mm below the top slab to create steps



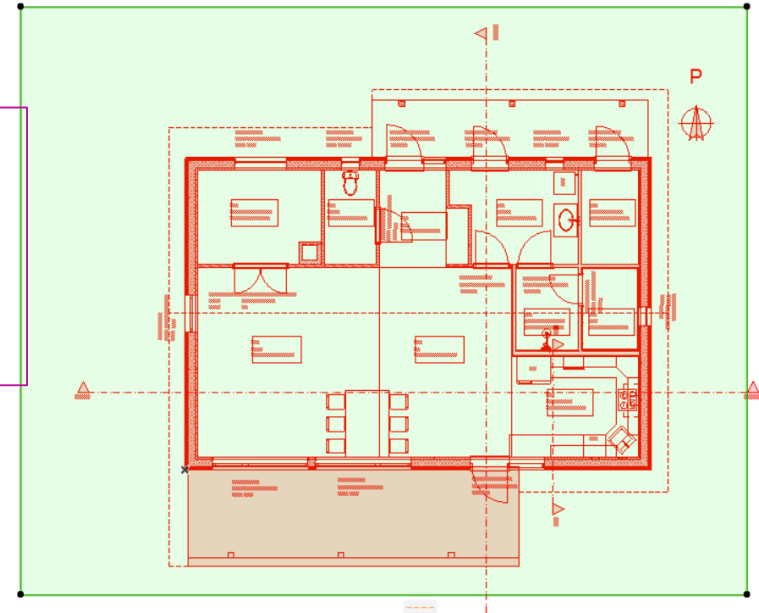
# Creating ground – Mesh tool



Go to 0. Perustus floor

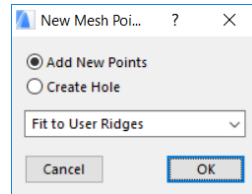
Select "mesh tool" and change the settings

Make appropriate  
site geometry –  
rectangular  
or polygonal



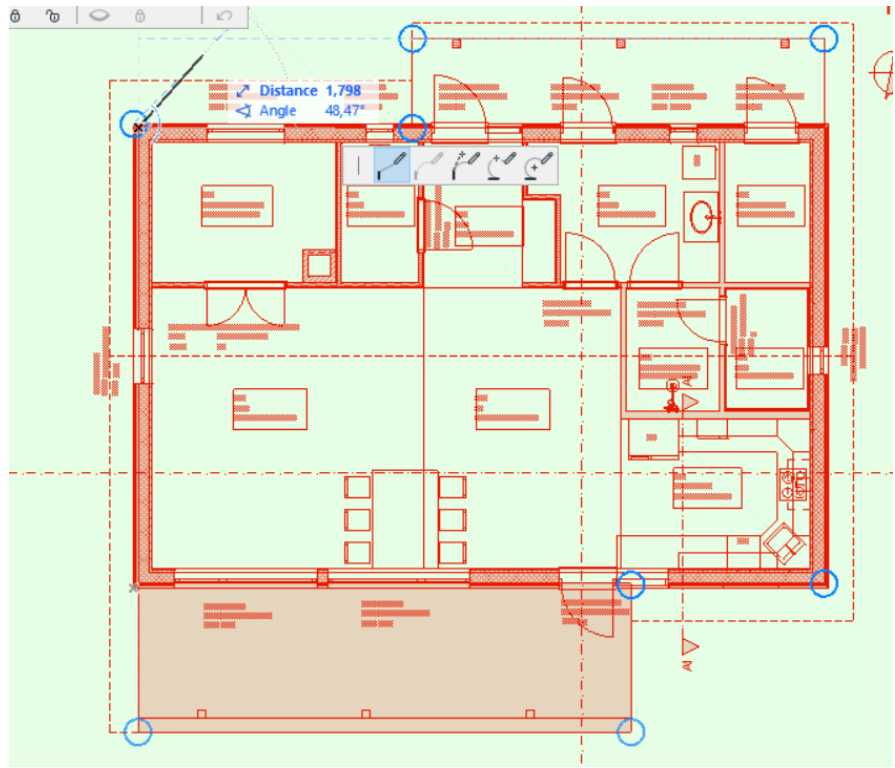
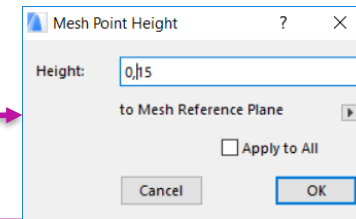
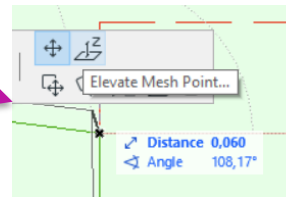
## Select the "mesh" created and select "mesh tool"

- Draw along the foundation wall and the steps of terrace marked with blue in the right picture
- Once finished – add new points



*Elevate the mesh points (all in north direction) to 150 mm.*

*Click on the point and select "elevate mesh point"*





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Modeling part of  
the project ends  
here

*Next we will document the project*



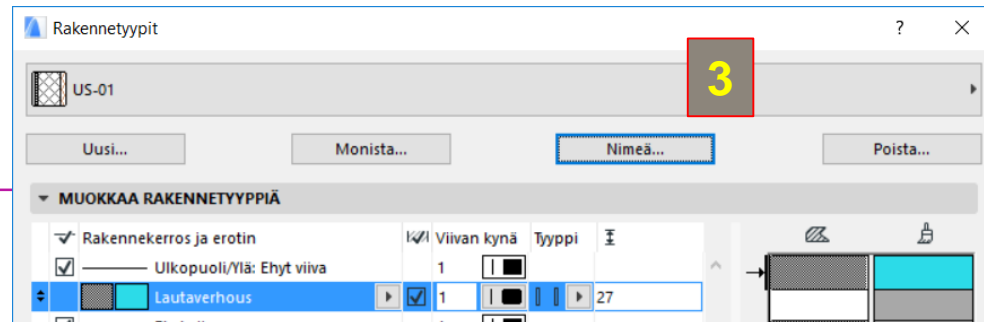
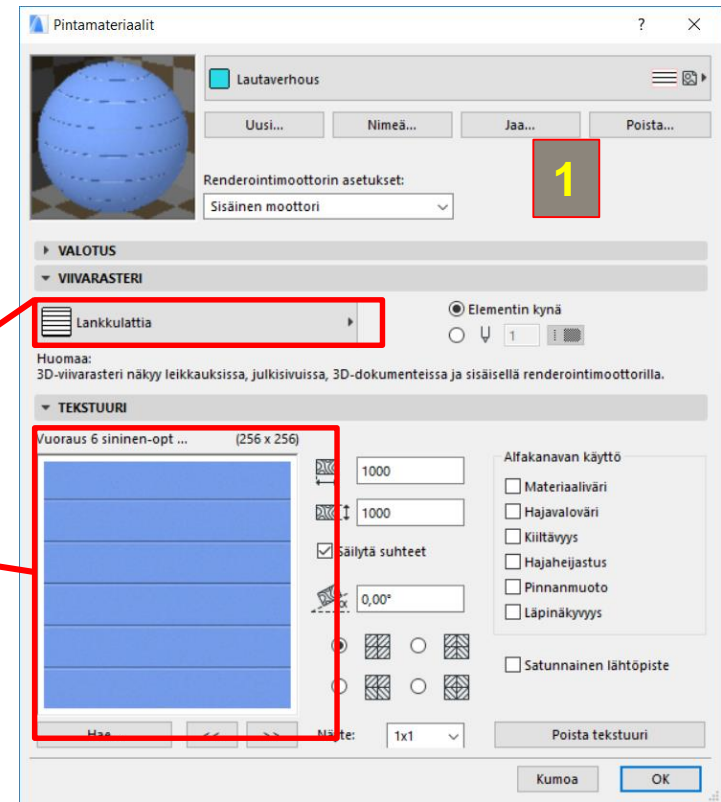
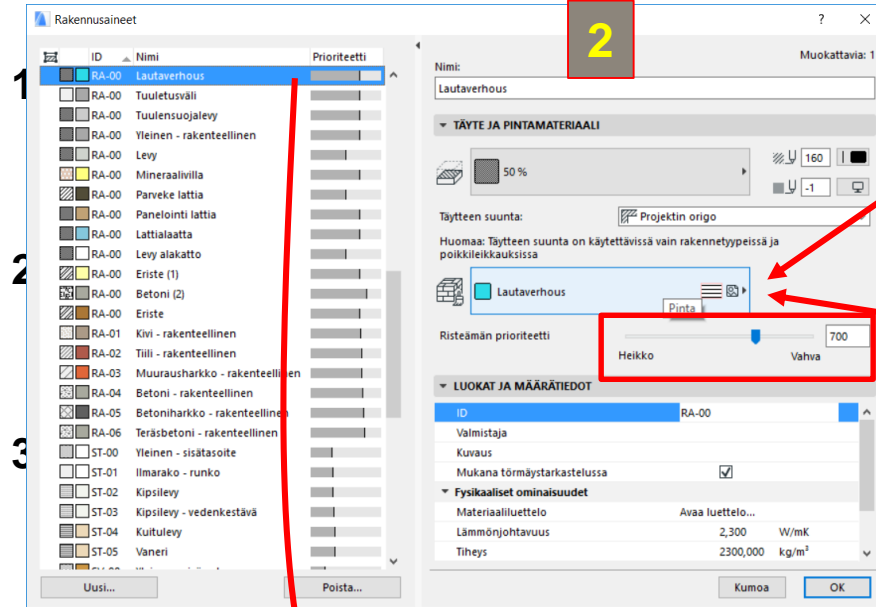
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# Material creation in archicad - Extra



# Archicad material - exercise

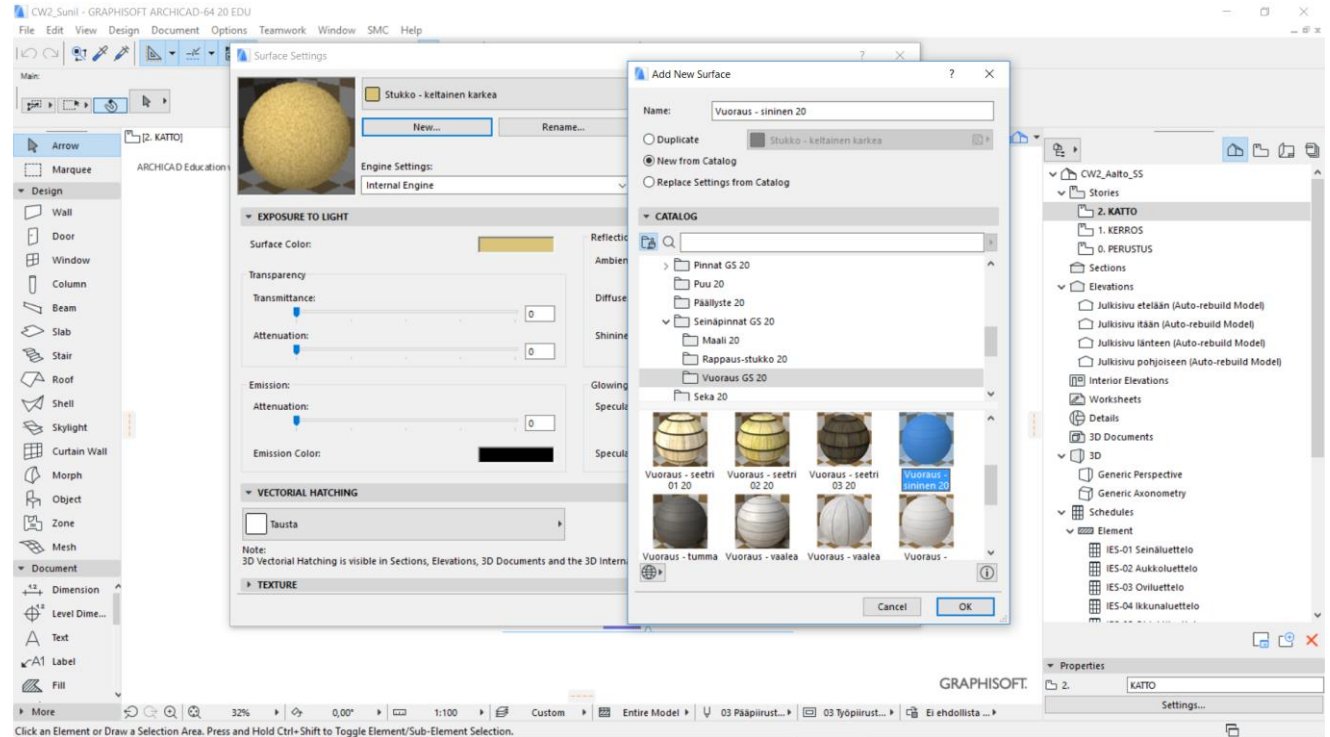
## Options > Element attributes > (1,2,3)



# 1. Surface

Options > element attributes > surface

Select "new from catalog" and select "Vuoraus- sininen20"

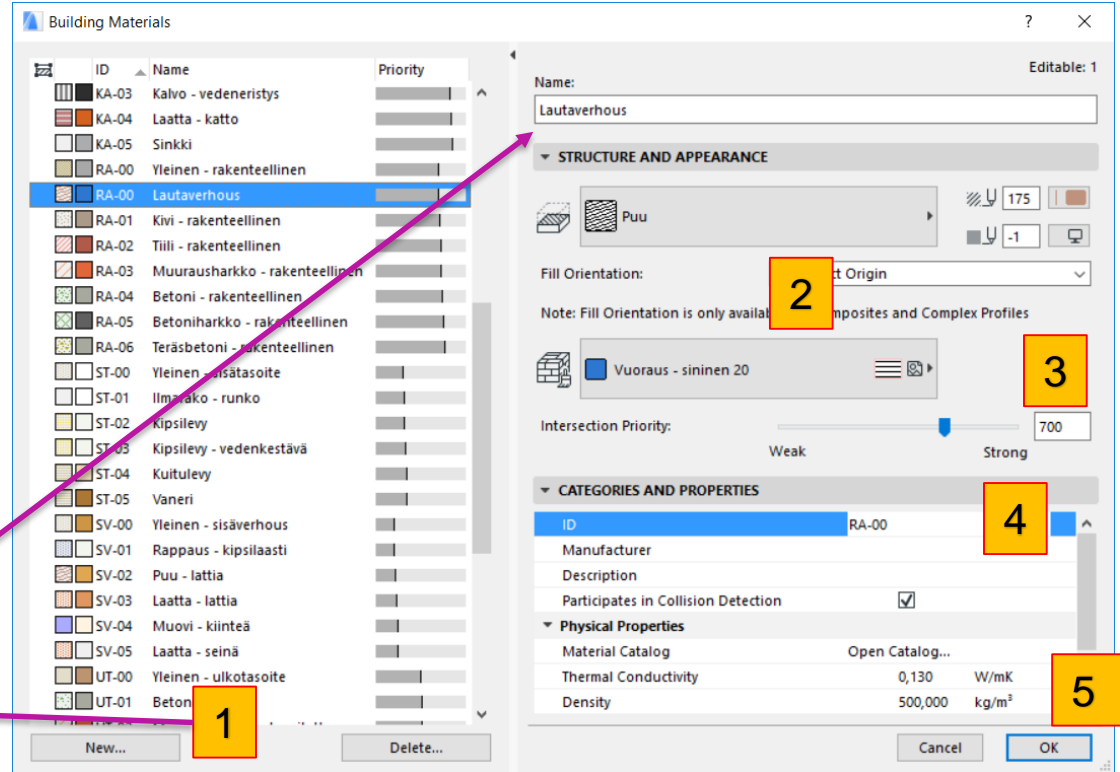
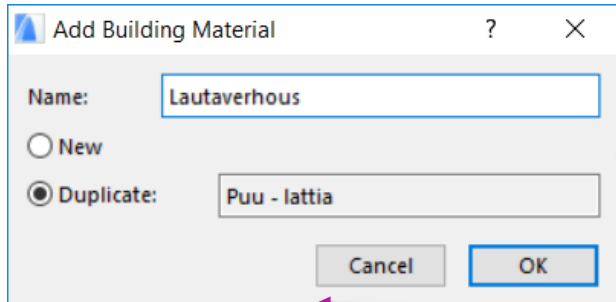


Kirjasto20 > seinäpinnat GS 20 > Vuoraus GS 20 > vuoraus sininen 20

# 2. Building materials

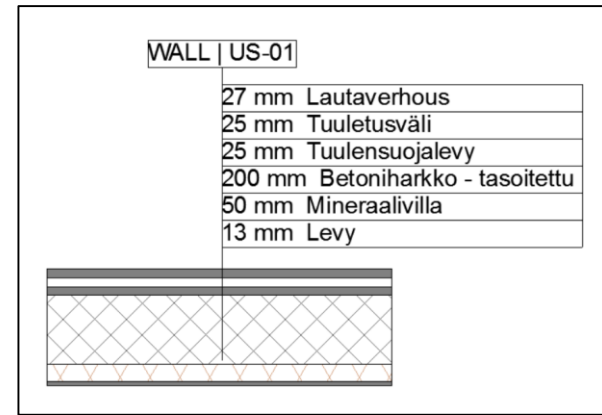
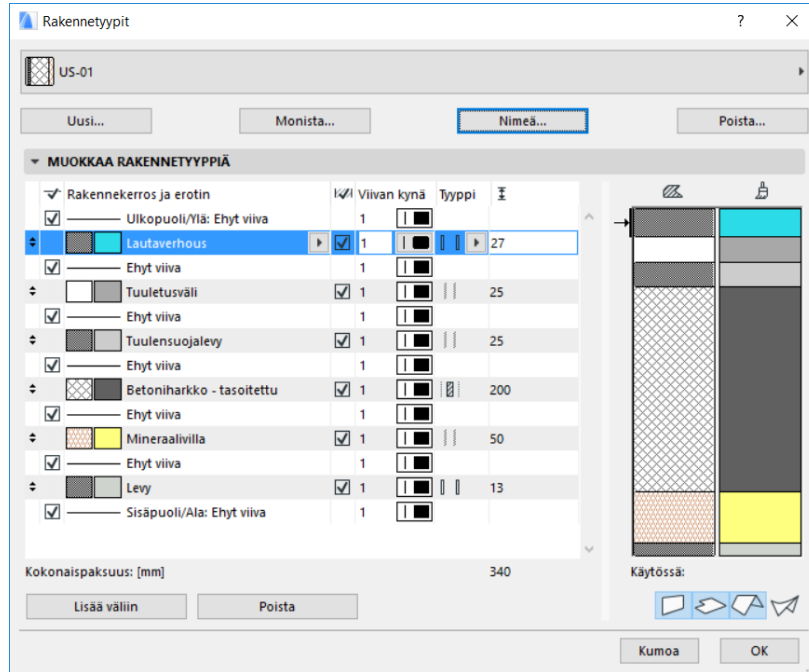
Options > element attributes > building materials

Select "wood surface" from the list of building material and make its duplicate so that all the properties related to wood is copied



# 3. Composite – US 01

Options > element attributes > Composite



- All the building material are not available in the "selected template"
- We will bring these finished components from other file.
- "composite elements.aat"



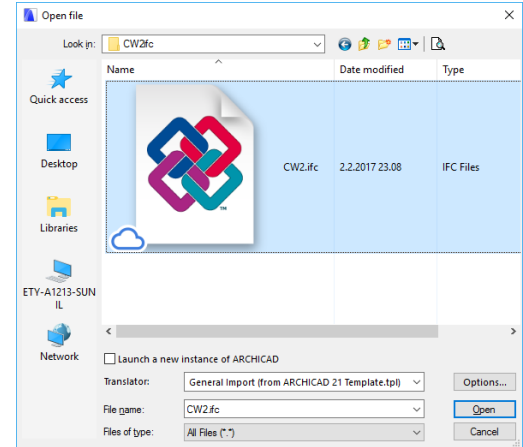
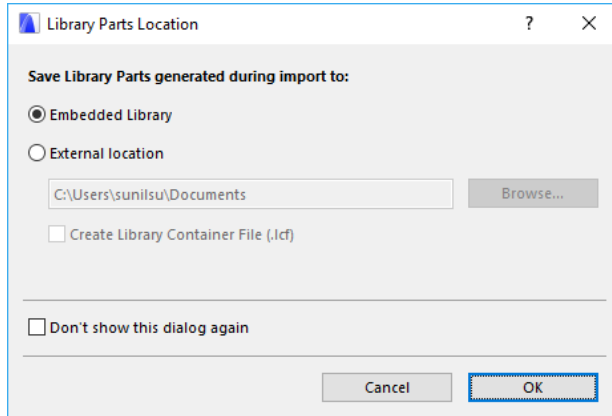
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# Documentation - Arhccicad

*Using IFC file saved from the  
modeling part.*

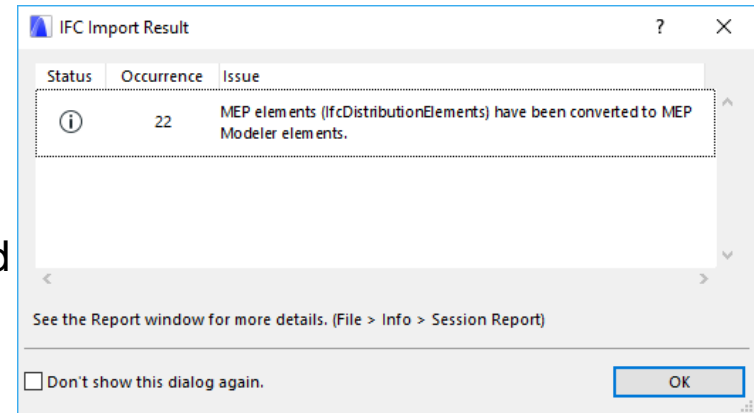
# Open Archicad and IFC file with archicad

Library parts location – embedd within the project

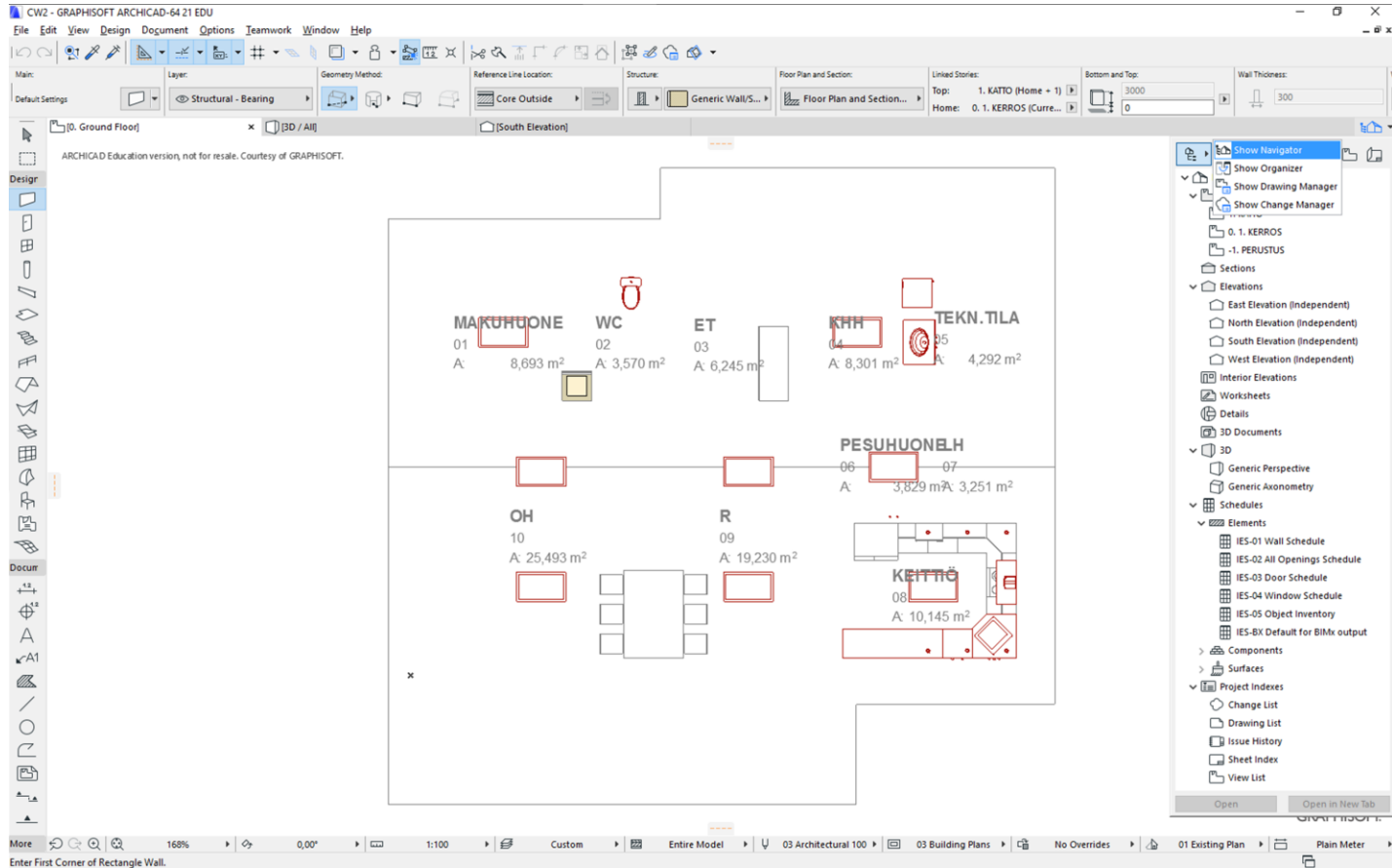


IFC import result is shown only if MEP add on is added to archicad

Click ok to proceed.



# Make "navigator" visible



# Layer combination

## Make a new layer combination "00 Exercise"

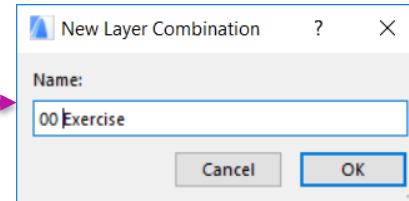
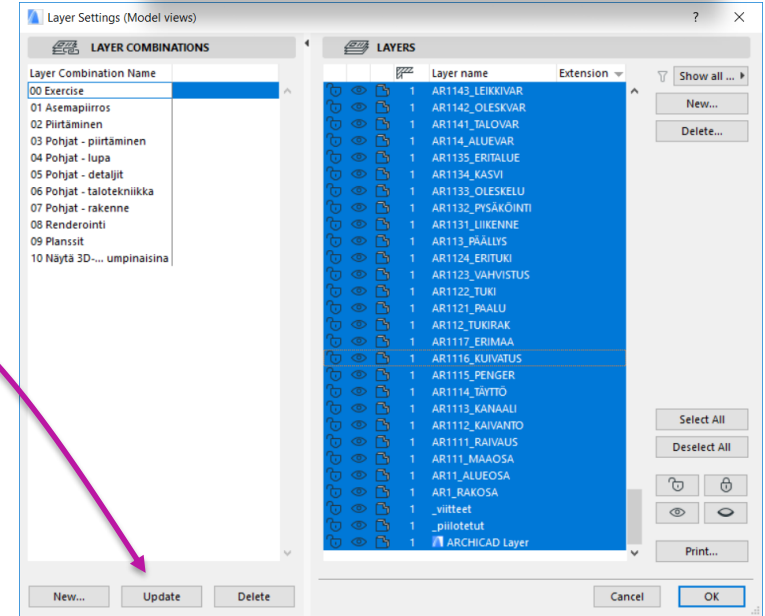
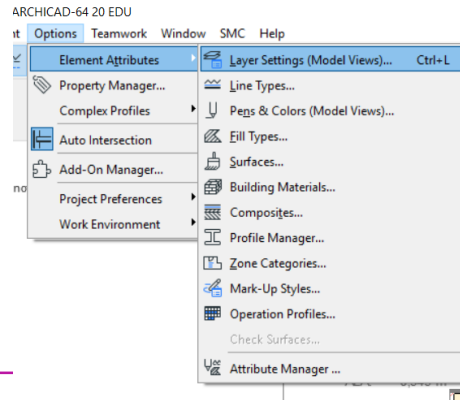
Select all layers on the right

Make all layers visible

Unlock all layers

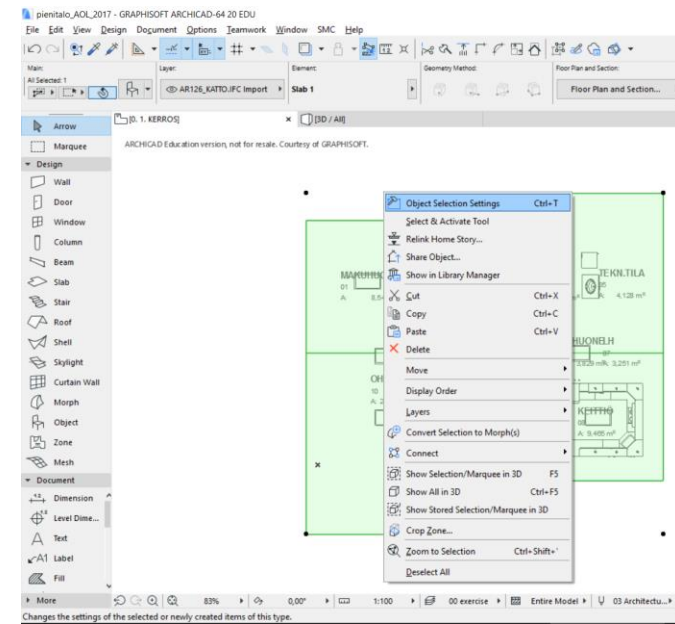
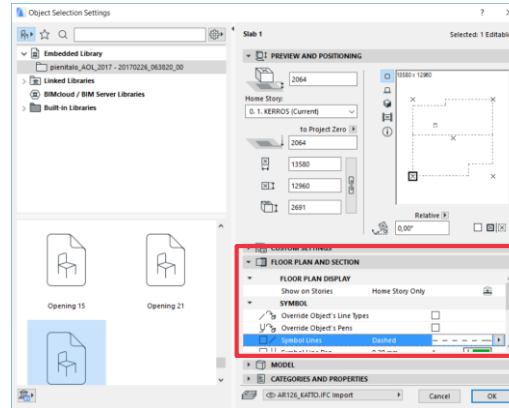
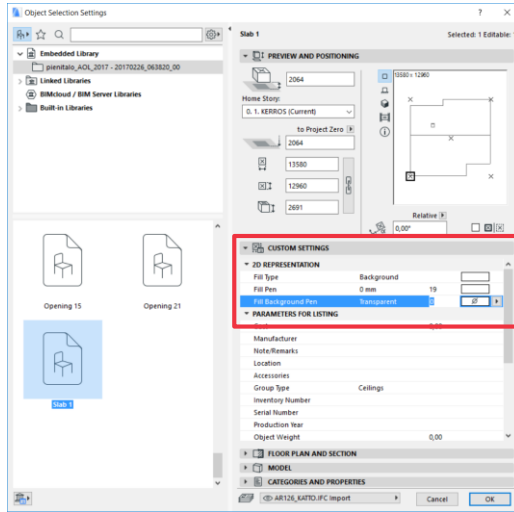
*(Find "IFC Openings" layer and turn it off)*

## Remember to update the layer combination definition

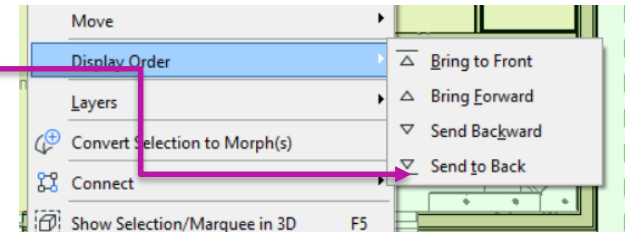




Select the roof. Right click and Select "object selection settings" and make following changes shown below



Select the roof. Right click and now select "display order" then "send to back"

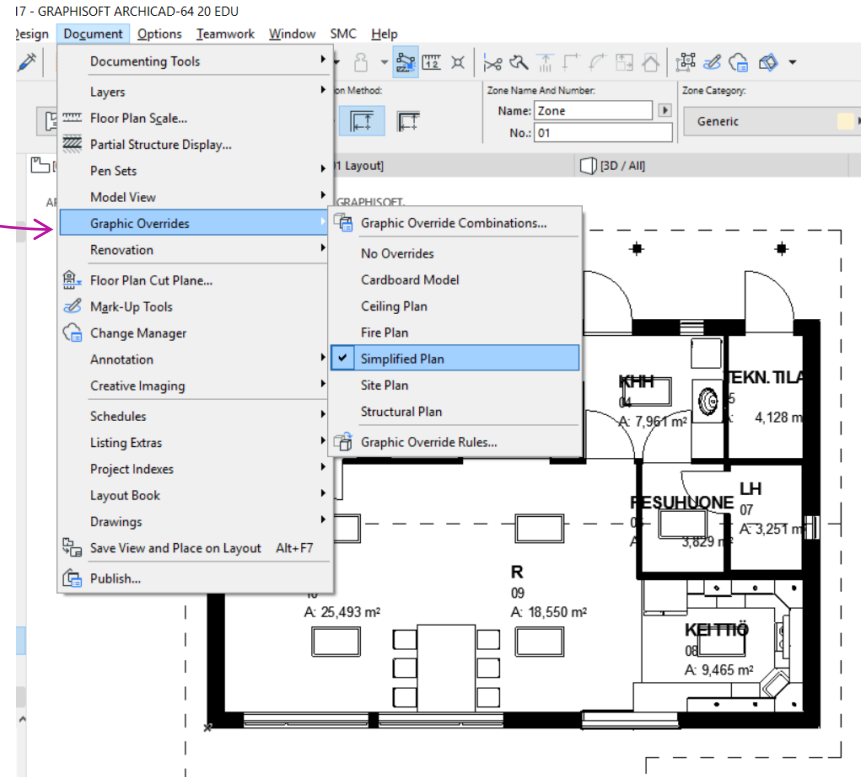
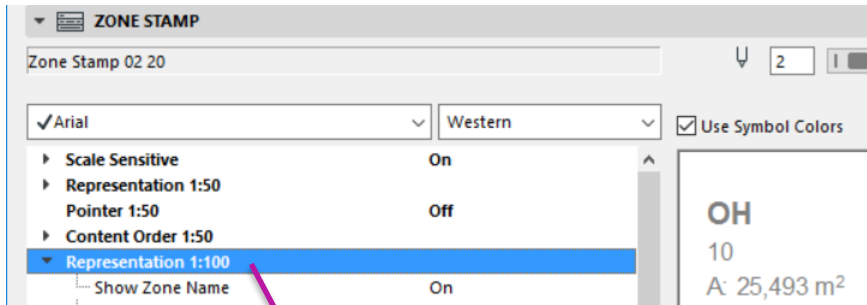


# Display settings

Apply graphic override to "simplified plan"

Select "zone tool" and select all the zones in the model (edit -> select all zones or ctrl+A)

- Make the following changes



Zone Name Font Type	Arial
Zone Name Font Size (mm)	2,00
Zone Name Font Size (model)	250

Zone Number Font Type	Arial
Zone Number Font Size (mm)	1,50

Data Font Type	Arial
Data Font Size (mm)	1,50
Data Font Size (model)	200

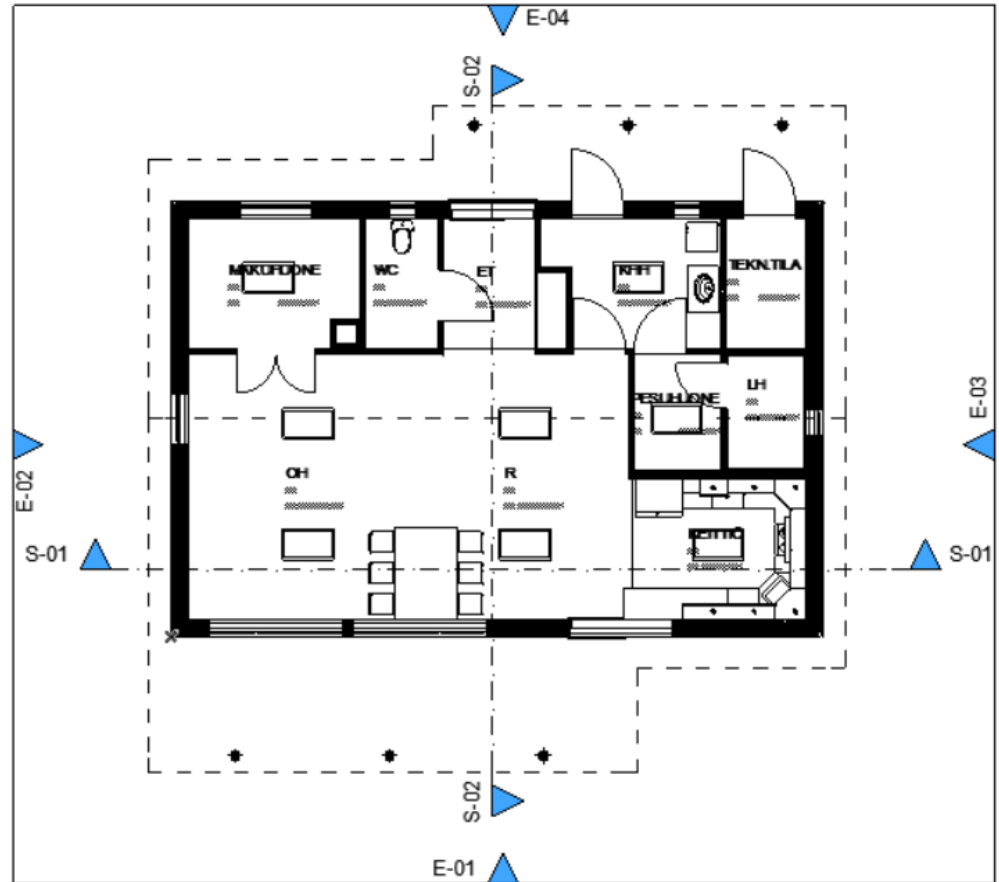
# Section and elevations

## Sections:

- Select "section tool" from document tool group
- Put two section markers S01 and S02

## Elevation

- Select "elevation tool" from document tool group
- Put elevation markers E01; E02; E03; E04
  - *E01 – South elevation*
  - *E02 – West Elevation*
  - *E03 – East Elevation*
  - *E04 – North Elevation*



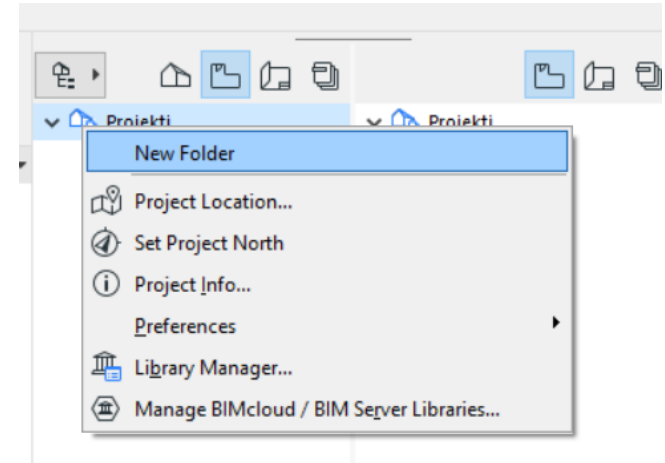
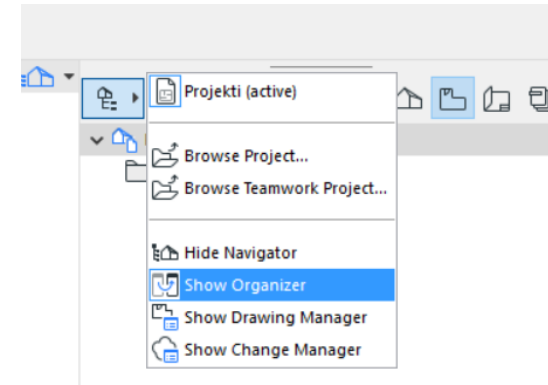
**Click and define two points for starting and end position of markers, then click to specify direction**

# View map - Views

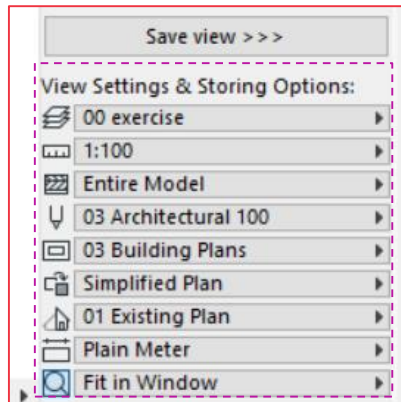
## Go to Project chooser

- Hide navigator
- Show organizer
  - *Drag (by the top of organizer window) and place the organizer in the place of navigator)*

**Go to view map. Right click on the top of project (projekti) and create a new folder "drawings"**



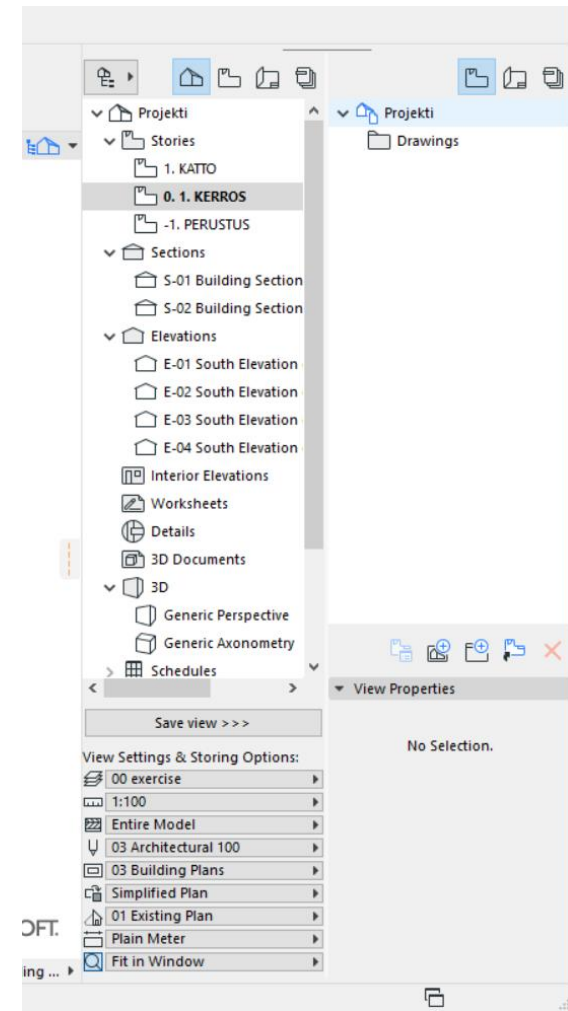
Select project map (in left panel of organizer) and drawings folder on the view map ( in right panel of organizer)



*Check and match the view settings and storing options from project map below when you select individual views*

- 0.1.Kerros
- S01
- S02
- E01, E02, E03, E04

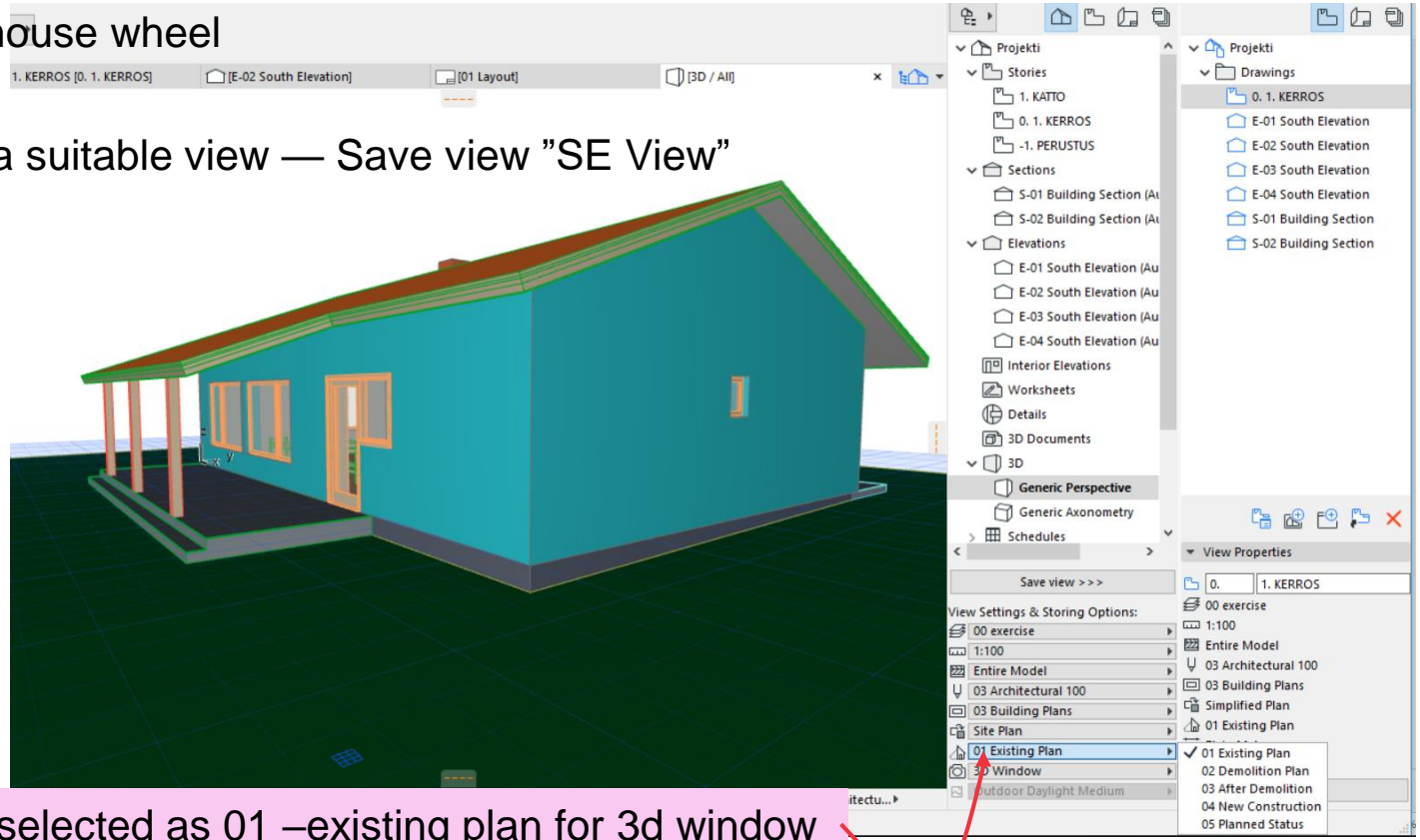
- select 0. 1. Kerros on the left and click save view to place it inside the folder
- Repeat the procedure for "sections" and "elevation" groups
- **(Note: update the scale of 1 kerros to 1:50 )**
  - **Right click on the view and go to view settings**



Go to 3d – Generic perspective view and make a suitable orientation

- Orbit – shift + mouse wheel
- Zoom in/out – mouse wheel

Once the you get a suitable view — Save view "SE View"



Graphic override selected as 01 –existing plan for 3d window

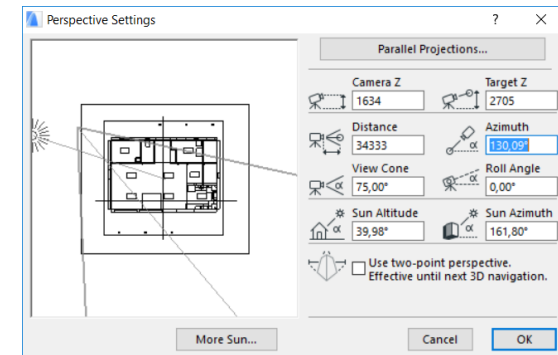
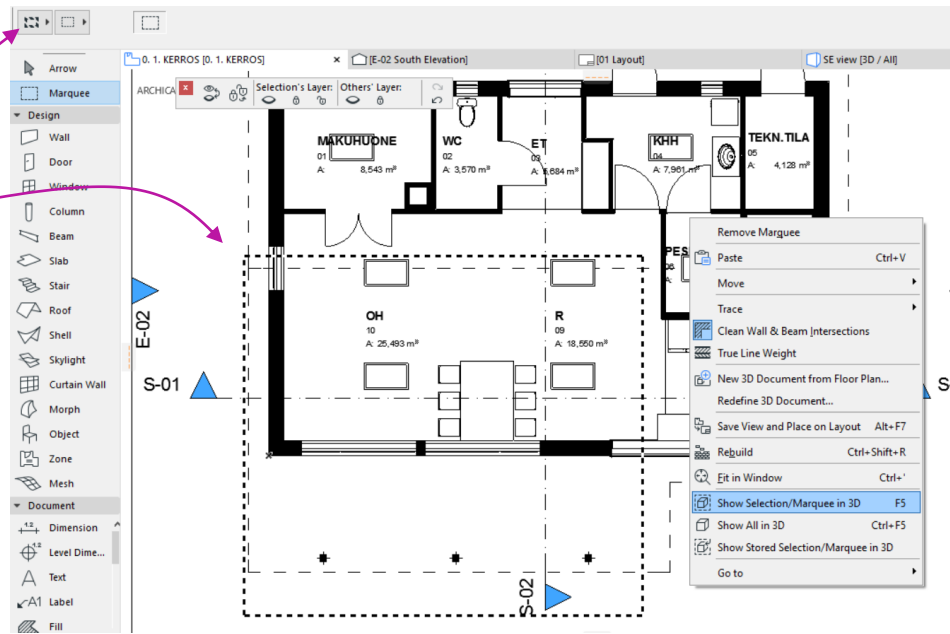
## More views

### • 3d section view

- Select Marquee tool
- Make a rectangular selection (thick dotted lines are for all the stories)
- Right click and select "show selection/marquee as 3d or press F5

### • 3D projection and shadow settings

- Right click > 3d window settings
  - (for display settings of 3d window) : turn sun shadows on
- Right click > 3d Projection settings
  - (for projected views like perspective or axonometric) : change the sun position by click and drag to define sun position

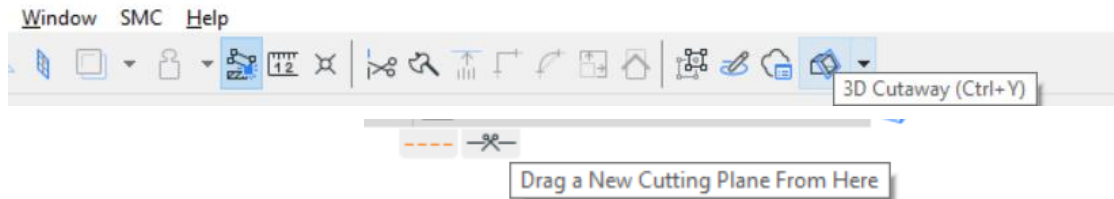
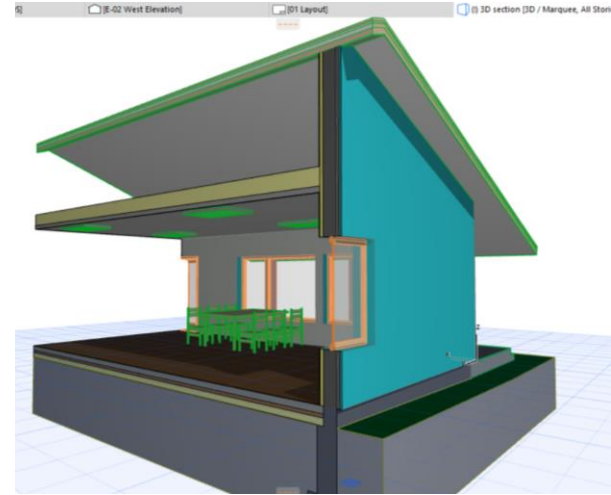


Once the desired view is set:

- *Save view – "3D section"*

### 3D section top view

- Right click > show all
- Right click > 3d projection setting
  - *Scroll to zoom out*
  - *Activate 3D cutaway*
    - View > elements in 3D view > 3d cutaway (or Ctrl+Y or icon from the toolbar)



*Once active – a scissor icon will appear in the 3d window in all (4) directions*

*Drag by the scissor (top) and place it somewhere at the height of window lintel level so that the plane just cuts the window*

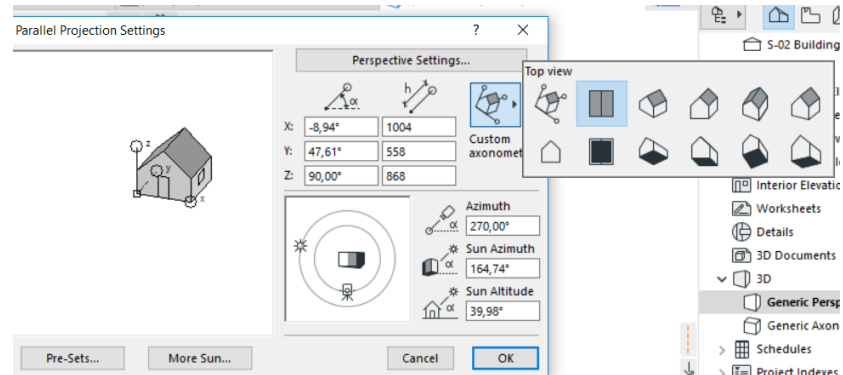
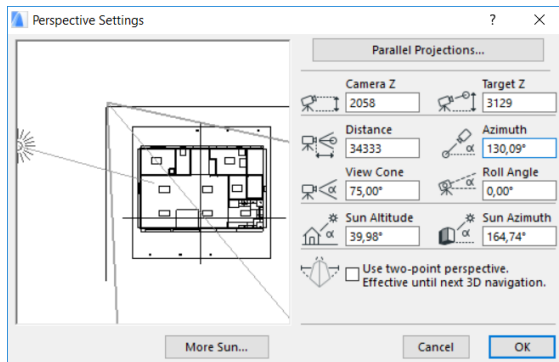


Click finalize to place the cutting plane



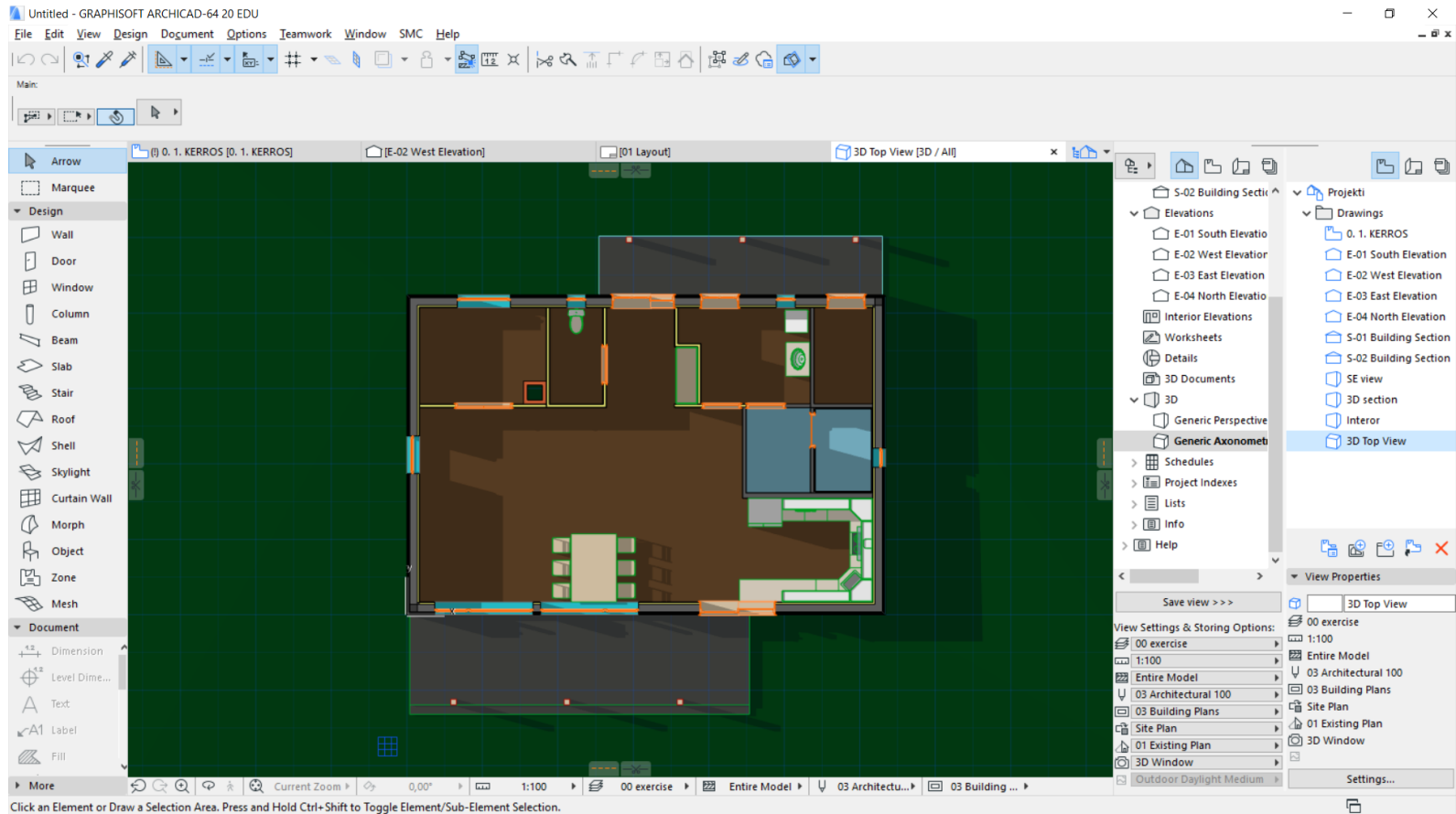
Go to 3D projection setting (right click on empty place in 3d window)

- Click "parallel projection" and select "top view"



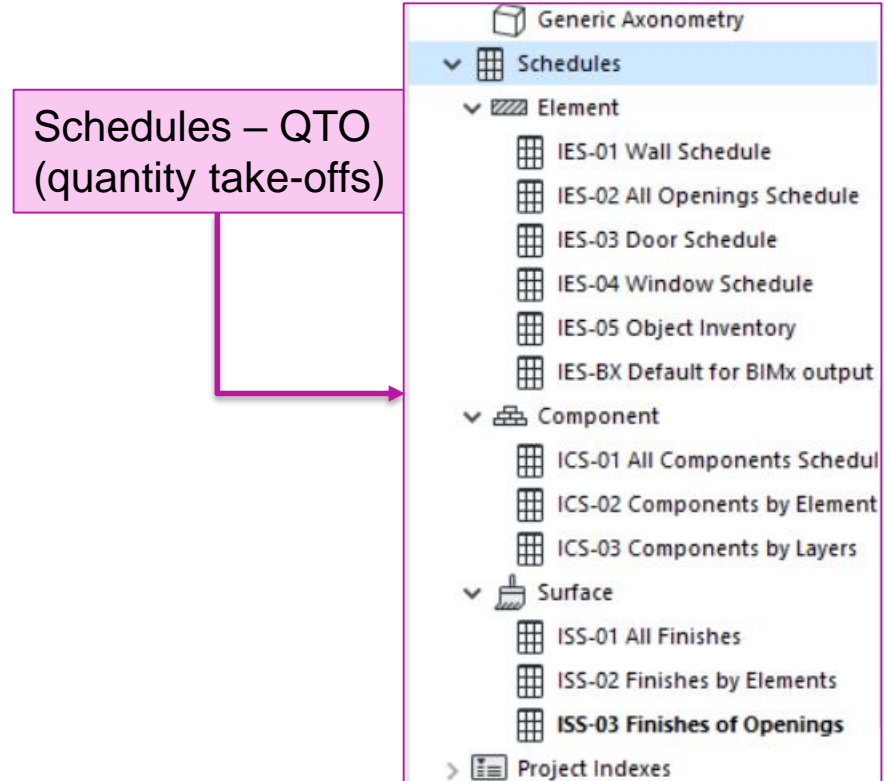
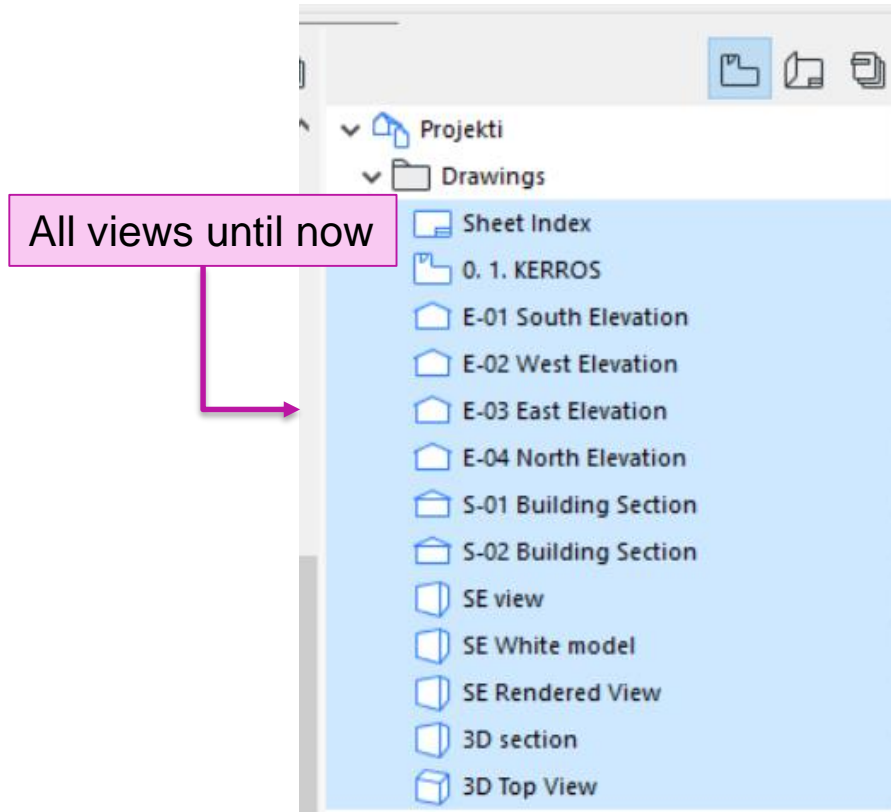
Save current view "3D Top View"

# Resulting top 3D view



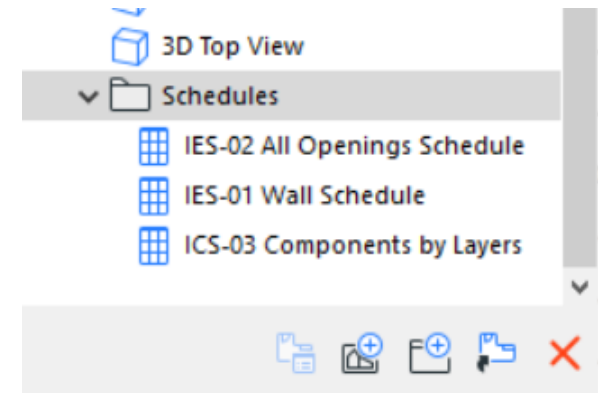
Go to "SE view"

- Save two views> name it as "SE white model" and "SE rendered view"



Make "schedule" folder in view map

Save the views from Project map as shown in the picture



## Modifying schedules

- **Wall schedule**

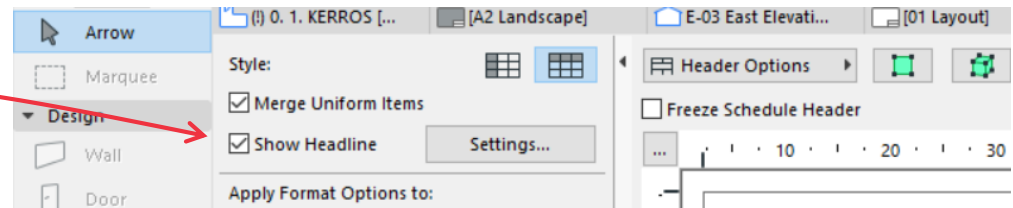
- *Double click to open the schedule*

- *Modify the fields in "Full element ID section" (remove extra numbers from end)*

Full Element ID	2D Plan Preview	Wall Type	Height [m]	Thickness [m]	Area [m2]	Net Volume [m3]
WALL   Paneloint(1)	—	Panelointi	2,600	0,030	0,07	0,17
WALL   Paneloint(2)	—	Panelointi	3,000	0,030	0,07	0,12
WALL   Paneloint(3)	—	Panelointi	3,000	0,030	0,05	0,12

Full Element ID	2D Plan Preview	Wall Type	Height [m]	Thickness [m]	Area [m2]	Net Volume [m3]
WALL   Panelointi	—	Panelointi	2,600	0,030	0,07	0,17
WALL   Panelointi	—	Panelointi	3,000	0,030	0,07	0,12
WALL   Panelointi	—	Panelointi	3,000	0,030	0,05	0,12

Click "show headline" to merge similar items



# Schedule scheme settings

Use to add or remove criteria and element fields of the elements

Wall schedule fields:

Drag by the arrows to reposition the field order

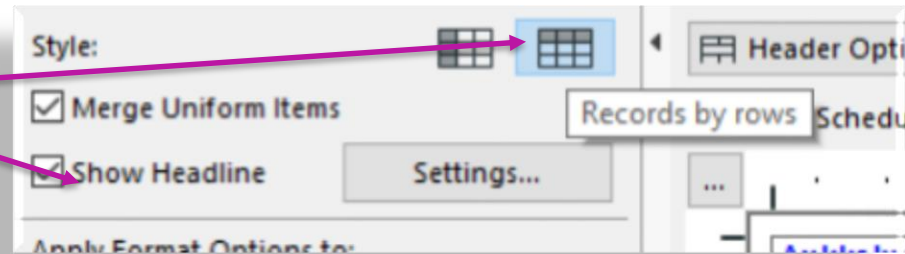


## Opening schedule fields

FIELDS / AUKKOLUETTELO

Name	
Full Element ID	↓
Nominal W x H Size	↓
Quantity	↓
W/D Nominal Sill Height	↓
W/D Nominal Head Height	↓
2D Plan Preview	↓
View from Side Opposite to Opening Side	↓

Other settings  
(cell height to fit the  
content)





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# Layout

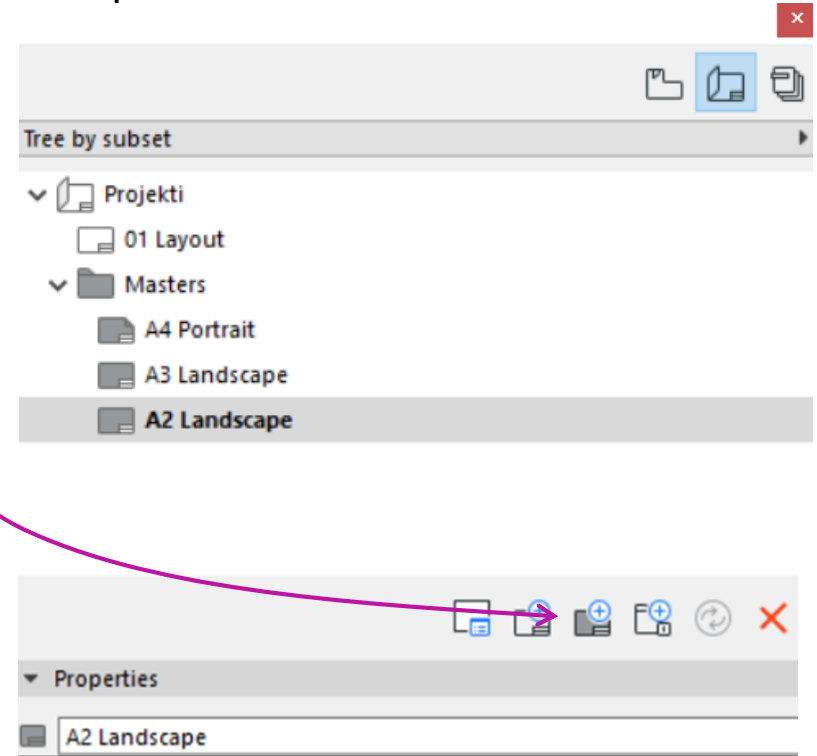
# Master layout VS views

## Master layout – base layout for making the layouts

- Master layout – repeating informations – like name plate
- Layout – place views

## Master layouts

- Create three master layouts
- Define their respective size
- Set margin of 5 mm





# A4 master settings

Master Layout Settings

Selected: 1 Editable: 1

**NAME AND SIZE**

Name: A4 Portrait

Size: A4 (ISO) - Metric

210 297

Portrait Landscape

Margins: 5,00 mm 5,00 mm 5,00 mm 5,00 mm

Printable area: 200 287

Anchor Point:

Display Master Layout:

Above Layout  Below Layout

**DRAWING PLACEMENT**

Auto arrange new Drawings  Align and assign Drawings to a Grid

Auto Arrange Setup...

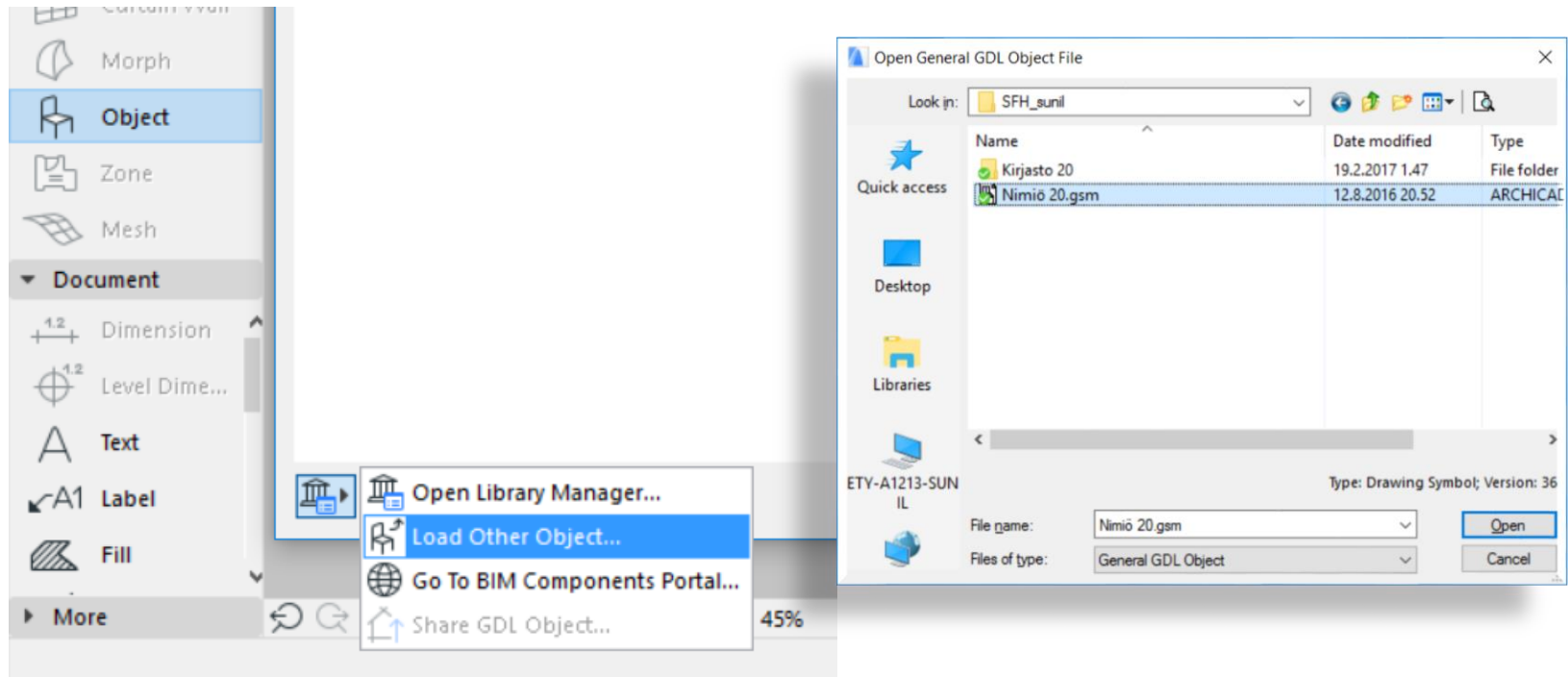
This method arranges newly placed Drawings on the Layout by a pre-set logic. To determine sequence and position of drawings use the Auto Arrange Setup... Button.

Set as Default for New Layouts

Cancel OK

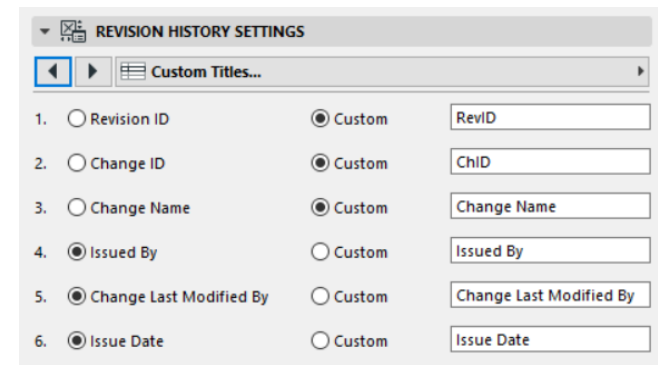
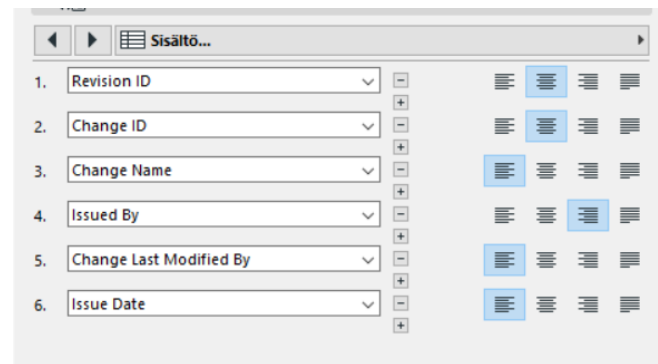
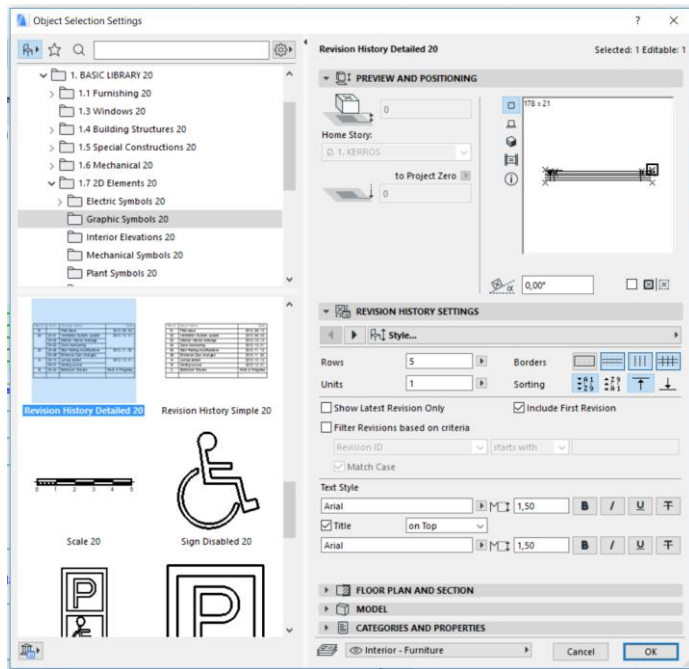
Put the nimiö20.gsm in the layouts

Object tool > load other object > browse for the file (downloaded from mycourses)



# Revision history detailed 20 – object

Place in the master layout and modify its settings

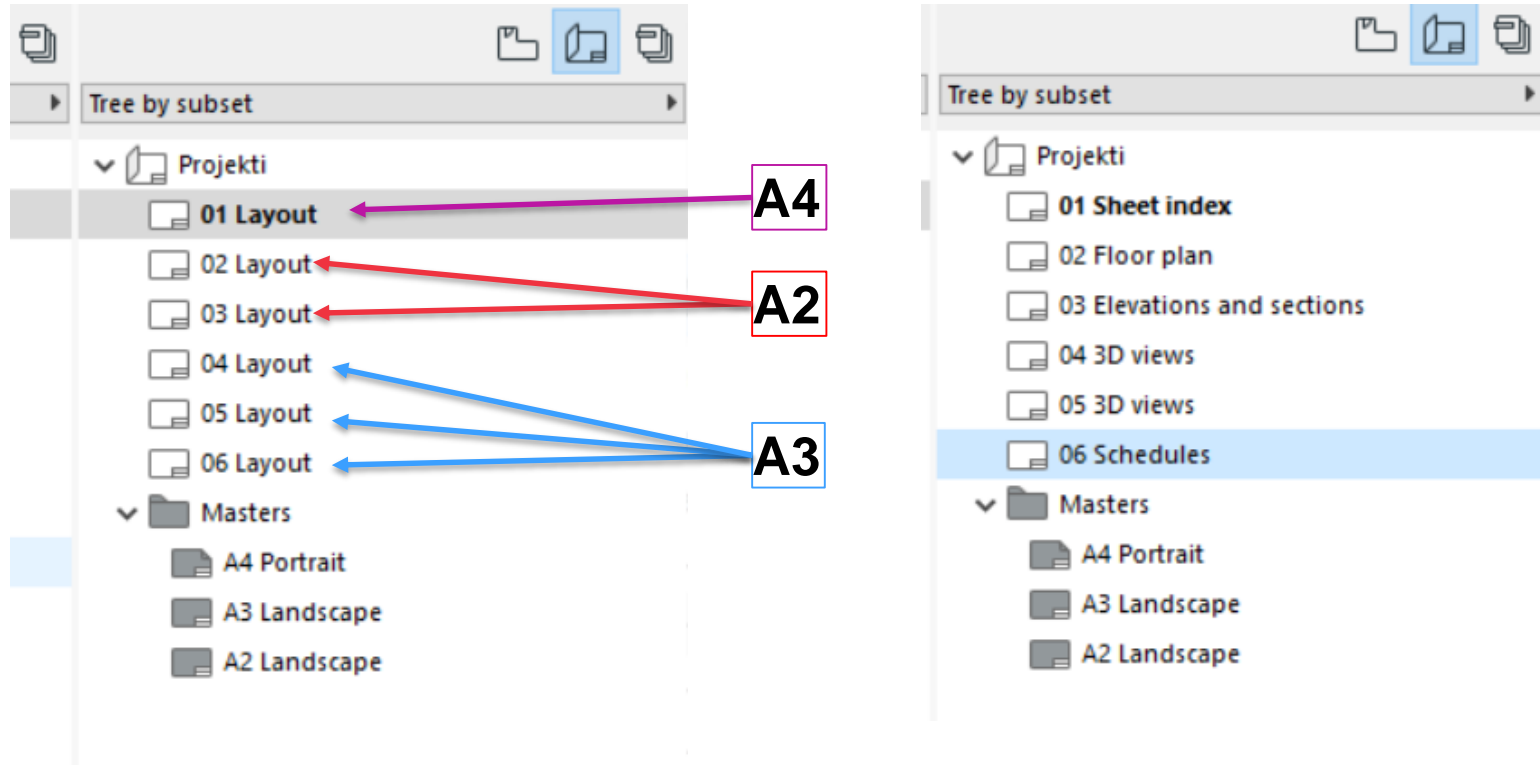


If size needs to be changes (drag by points after placed)

Copy "nimiö" and "revision history" objects to other layouts (right bottom corner)

Create layouts – 6 nos

Modify its name and master templates they use (shown below)





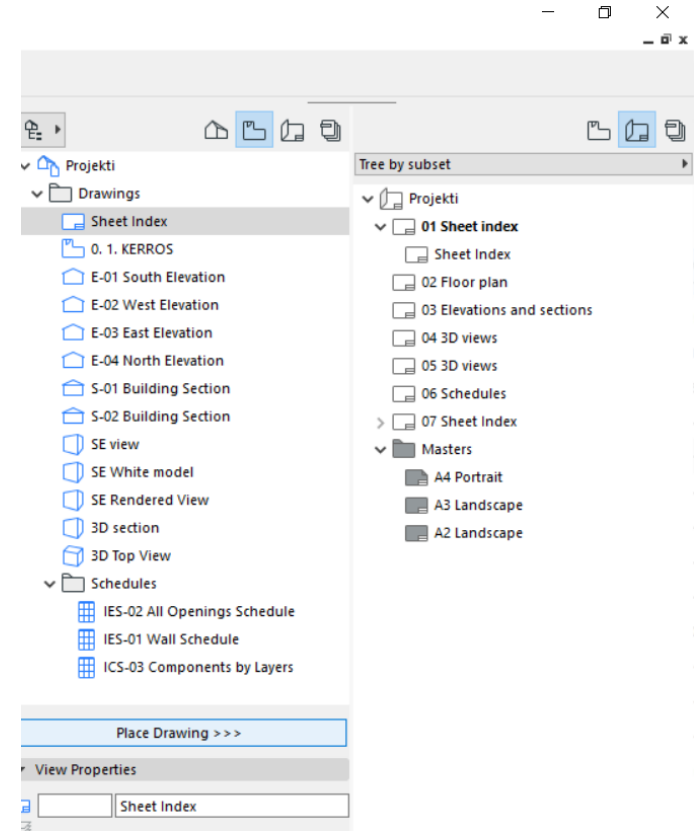
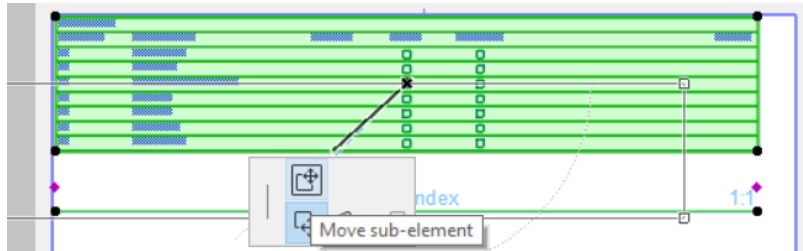
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# Placing views in Layout

# Organizer view

Select "sheet index" layout on right and "sheet index" view on left > click "place drawing"

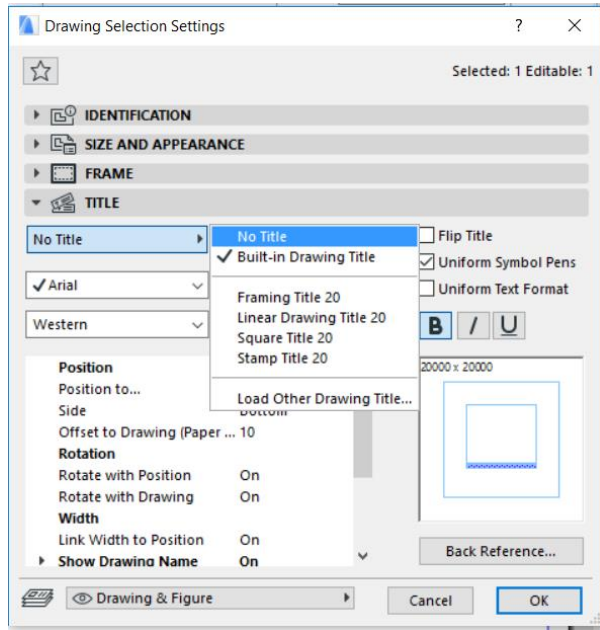
- "Sheet index" layout has now "sheet index drawing"
- Open "Sheet index" layout (double click)
  - Modify the location and size of the "sheet index drawing"
    - Modifying (click on the black hotspot) and select appropriate modification tool (move) from pet palette
    - Place the drawing in the top center of page



# Drawing title

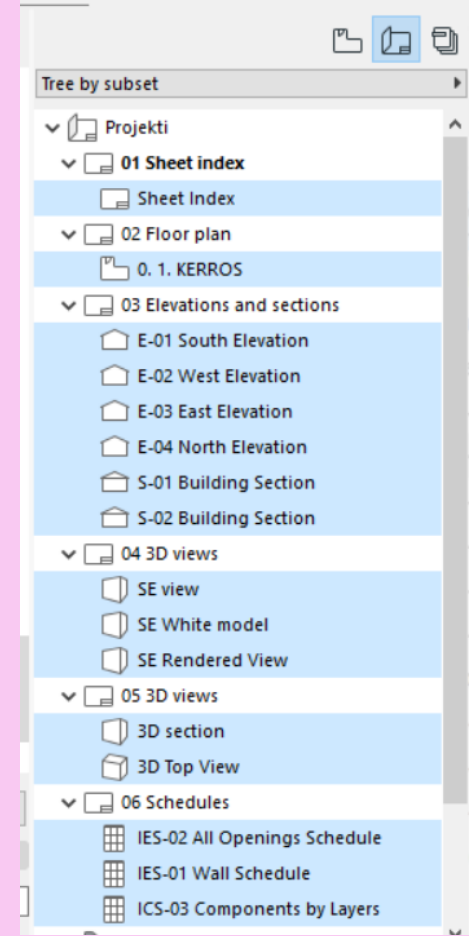
Select the "sheet index drawing" if not selected

- Go to the drawing settings and turn off "Drawing title"



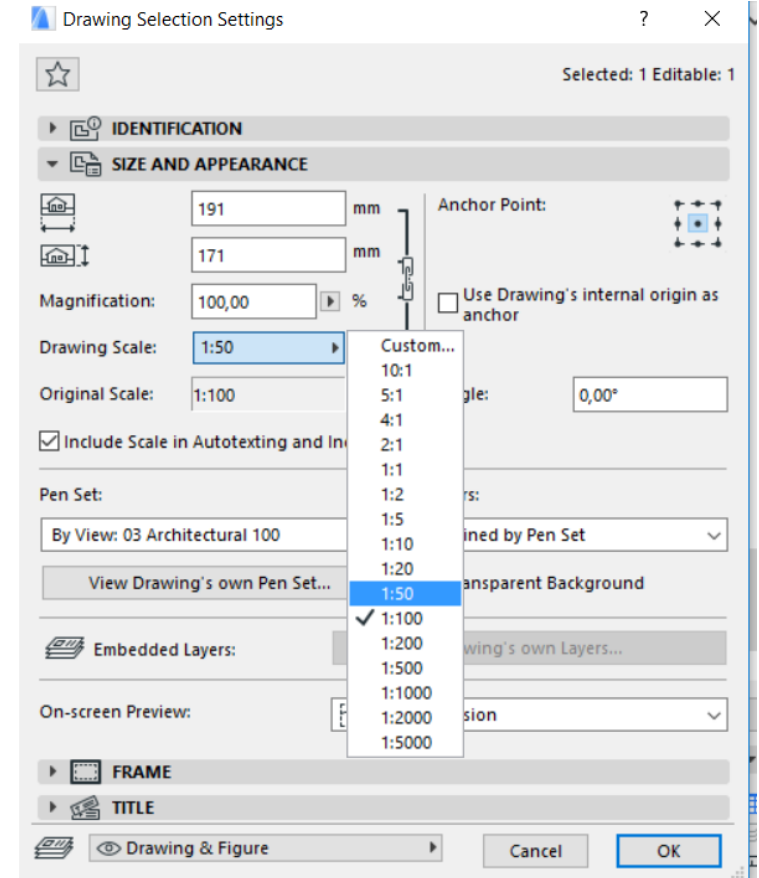
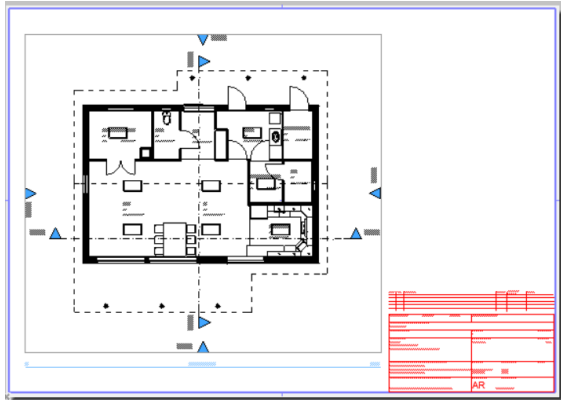
## Place other views to relevant layouts

Select multiple views on the "view map and "layout" on layout map to place multiple views at once



# Organize the views

- Double click on the layout
  - *Select "o.1.kerros" drawing from the paper*
  - *Go to the settings > change the drawing scale to 1:50*
  - *Place it in the paper at correct position*



*Other properties like visibility of elements in text size and color can be modified from "drawing title"*



# Elevation and section layout



- Two sections in the layout are positioned in the right.
- Normally drawings should contain annotations to provide information
- Document tools of archicad can be used for that purpose, however we will make visibility of floor height information in the sections
- Open **"S01"** view in the view map and go to "section settings" (right click in the empty space)

On the "story levels"

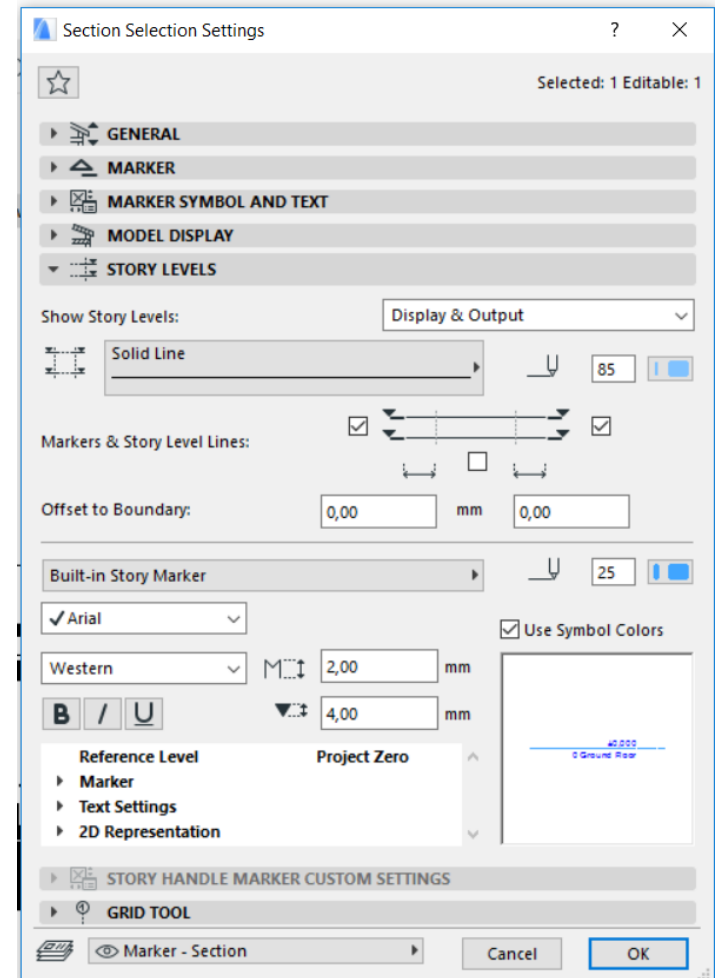
- Change "show story levels" > display and output"

Repeat the process for S02

Check the layout, the views should be automatically updated

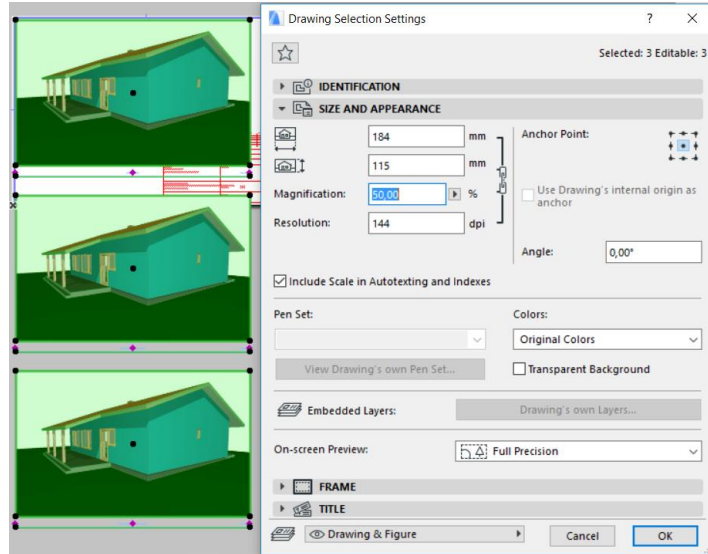
- If not > select the drawing (S01) in the layout and click on the edge (right)
- Select offset edge and extend on the right

- *Repeat for the left edge*
- *And repeat for So2*



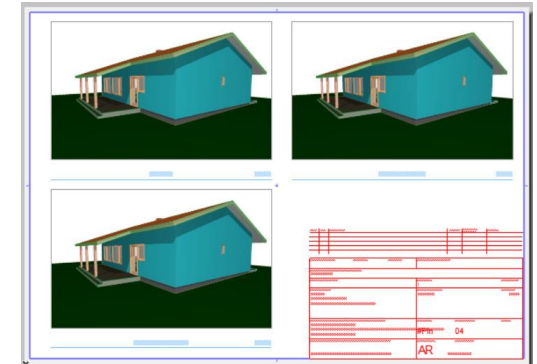
# 3D views

Select all the drawings of 3D views and go to the drawing settings (info box or ctrl +T)



Change the magnification to 50% and rearrange the views on the top of layout

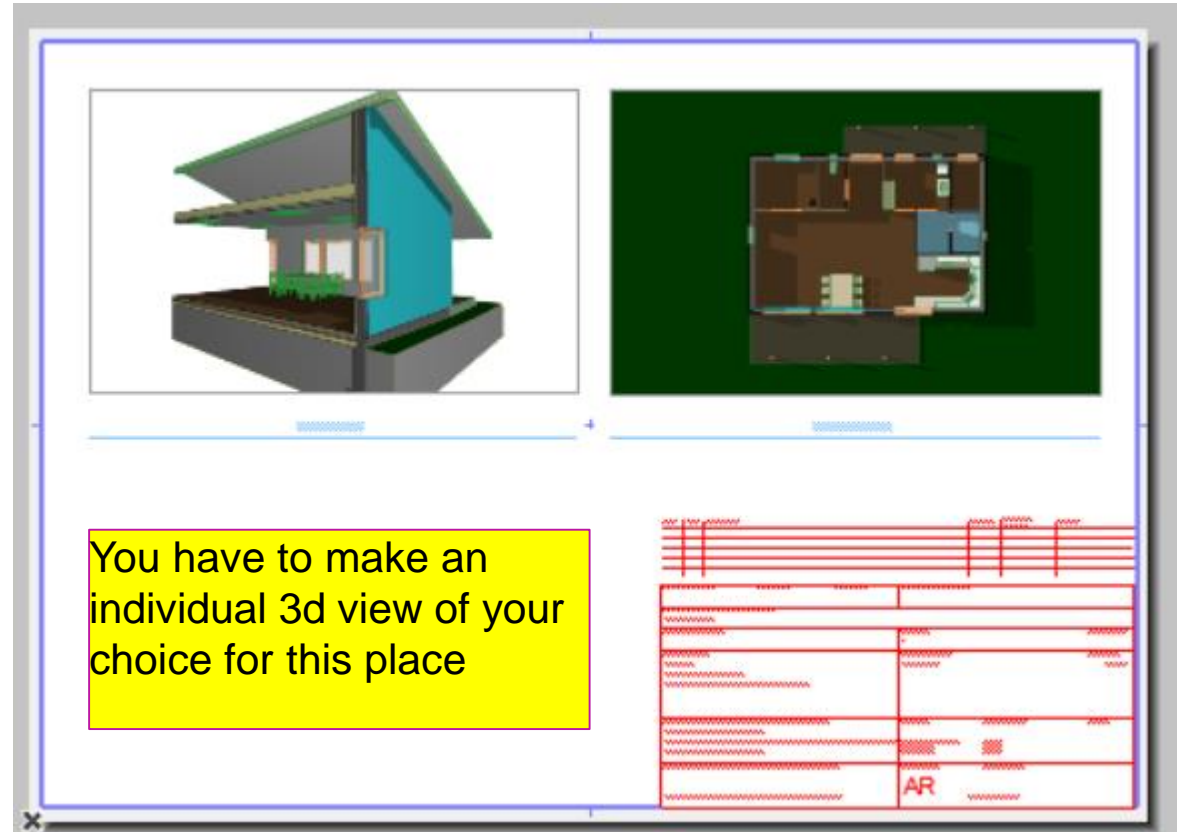
Drawing alignments can be accessed from "Edit > Align >..... ( you need to select the drawings)



Drawing scale information is not required for the views

**Find the "show drawing scale" from title of the settings dialogue box and turn it off**

Repeat the process for another 3d layout

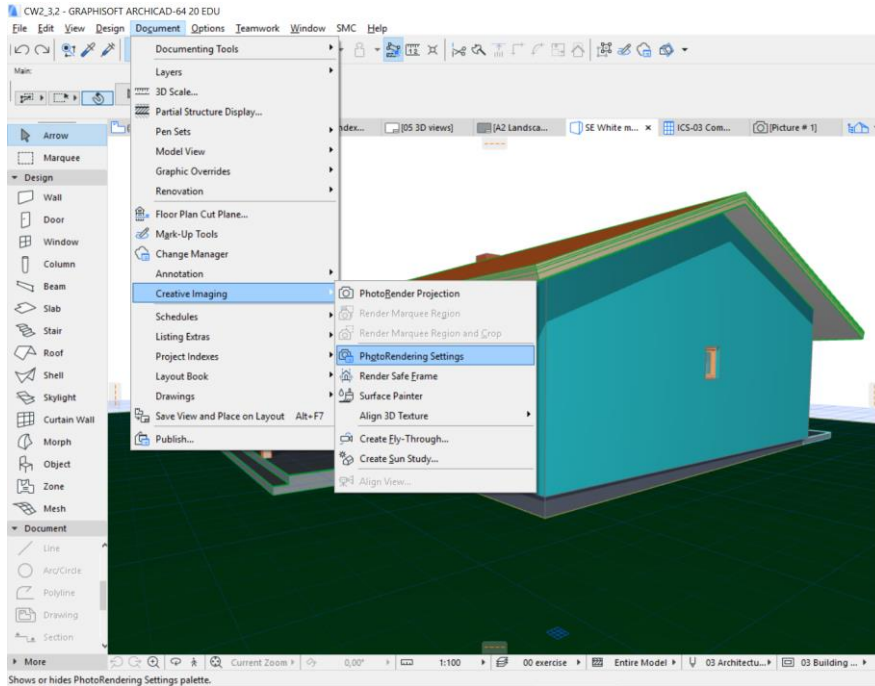


You have to make an individual 3d view of your choice for this place

NO	NAME	UNIT	QTY	AMOUNT
1	CONCRETE	m <sup>3</sup>	100	10000
2	BRICK	m <sup>3</sup>	200	20000
3	ROOF	m <sup>2</sup>	500	50000
4	GLASS	m <sup>2</sup>	100	10000
5	WOOD	m <sup>3</sup>	50	5000
6	PAINT	kg	1000	10000
7	LABOUR	hr	10000	100000
				AR

# 3D rendered view and white model rendering

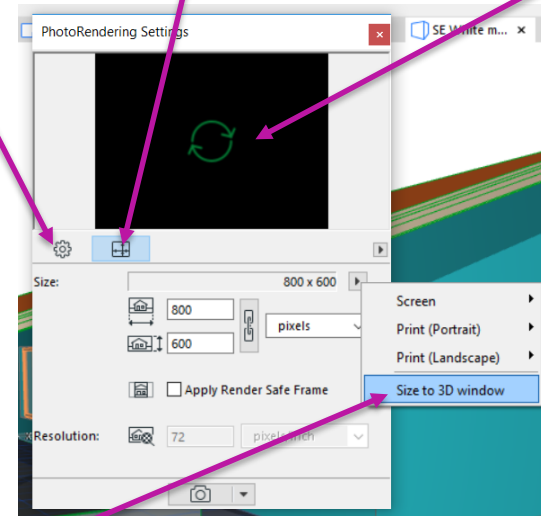
Open "3D rendered view" from view map and open photorendering settings



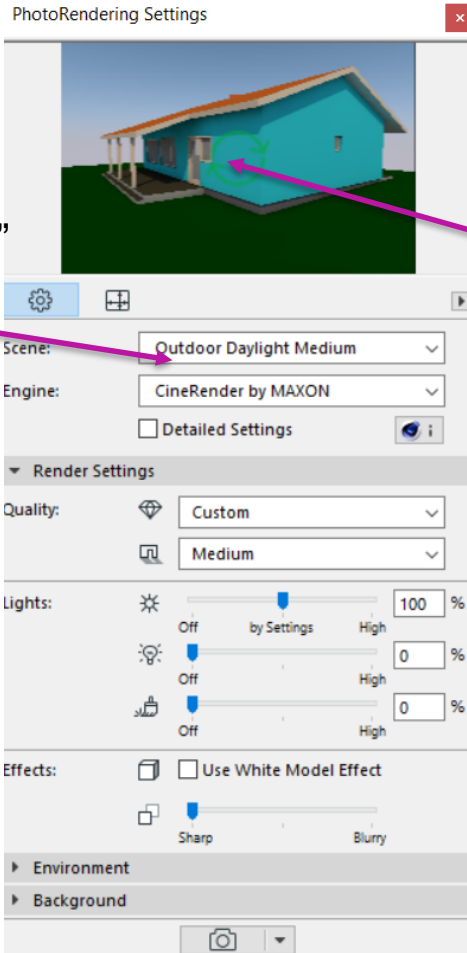
Click on the size and assign it to size to 3D window

Settings

Click the preview window to see the output



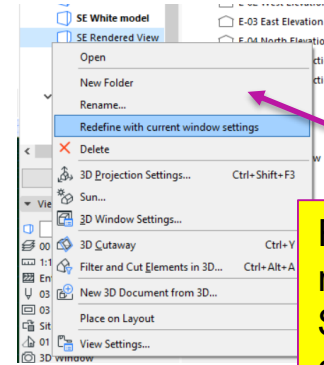
# Go to settings in photorendering window



1

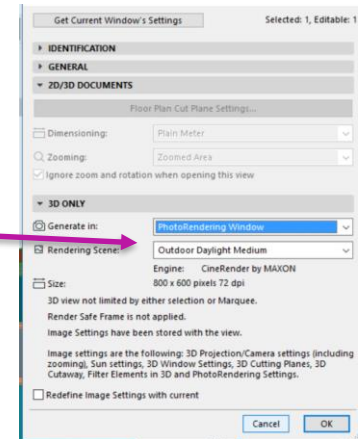
Select "outdoor daylight medium" scene

Check preview



2  
Right click "SE rendered view" and Select "redefine with current window settings"

3  
Right click and select "view settings"  
Select "generate in - photorendering window" and click ok



4 Repeat the process for "SE white model" view (Tick mark "use white model effect" for it)

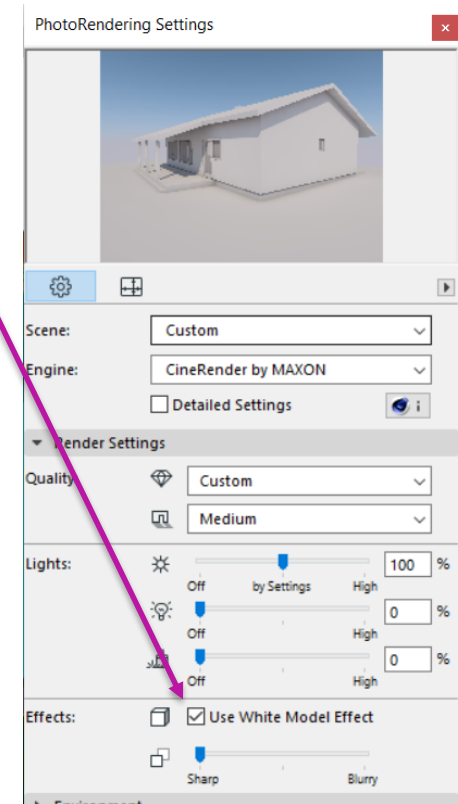
1. Select "white model effect" in photorendering settings

2. Right click "SE white model view" and "redefine with current window settings"

3. Update "generate in Photorendering window" from view settings

- Remember to press *Ctrl + S* to save the project

Check the result in 04 3D views layout (might take a little bit time for rendering)

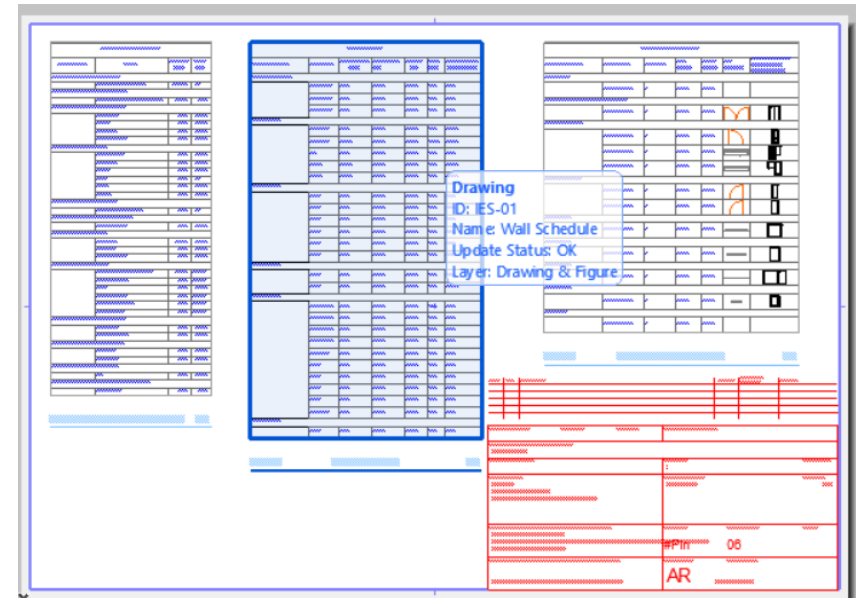


**Once the rendering is done – go to the individual view's drawing settings (in layout) for both and change the update type to "manual" (so that it does not render everytime you open the layout.**

# Update project info (your name and details)

Check the layout of schedule and organize the schedule tables (drawings)

Remember to update cell size if it does not fit in the A3 paper



File > info > project info

Contact full name : your name

contact role: student id

Also put an imaginary "site details for rakennuskohde"



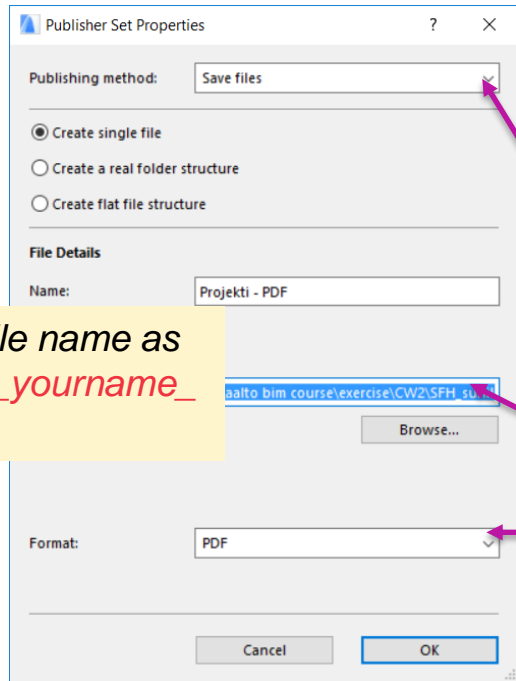


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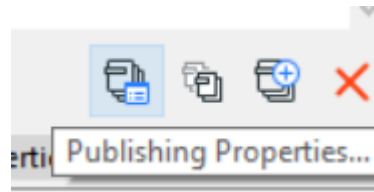
# Publishing PDF files of the project

Go to the publisher set (on the right) and Layout book (on the left)

- Create new publisher sets "PFD" and "IFC"
- Select PDF publisher set and then click on publishing properties (To define where to publish)

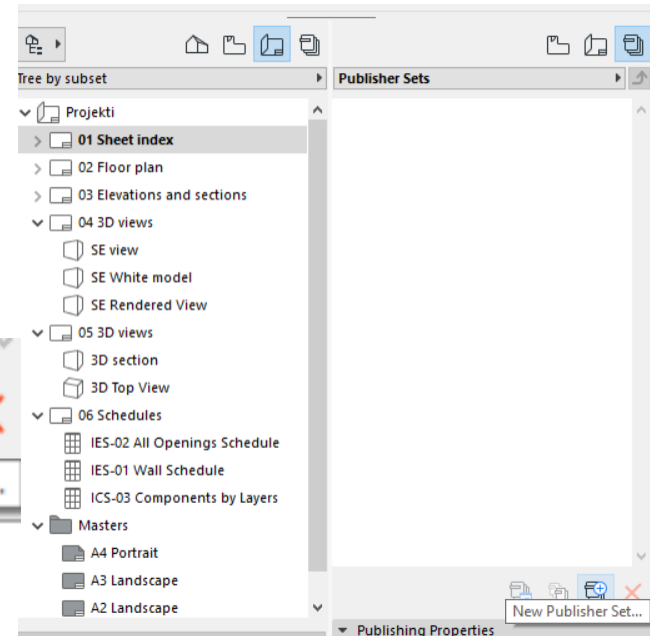


Define file name as  
"Project\_yourname\_  
PDF"



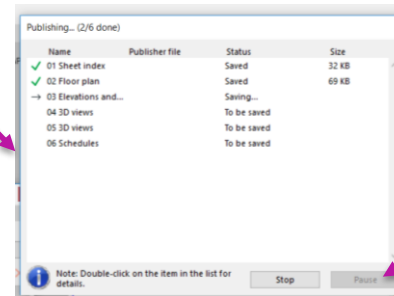
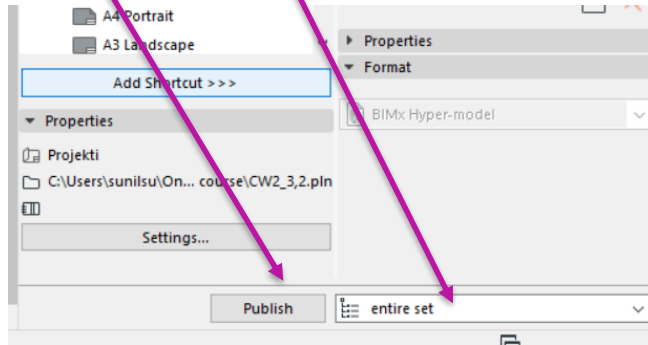
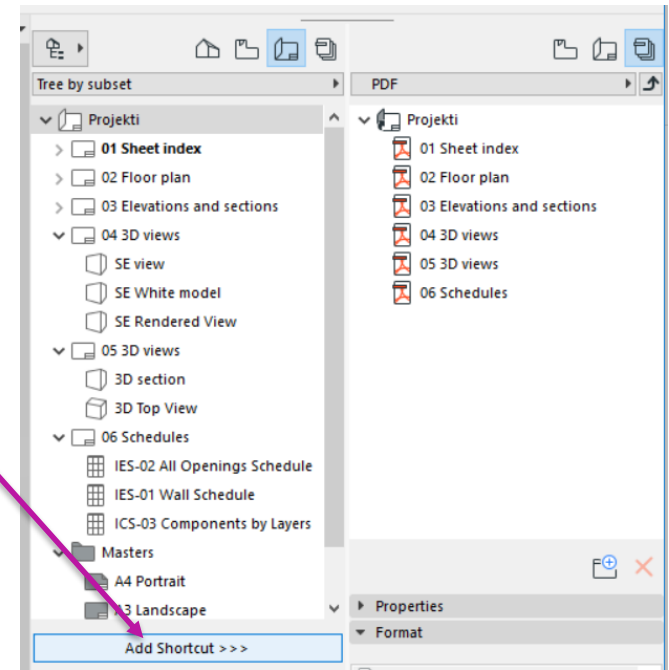
Define publishing method "save files"

- Create a single file
- Define path
- Click ok



## PDF publishing

- Double click "PDF" sets to open
- Select "project" from "Layout book" and place a shortcut
- Select the project in publisher set and click "Publish" - entire set



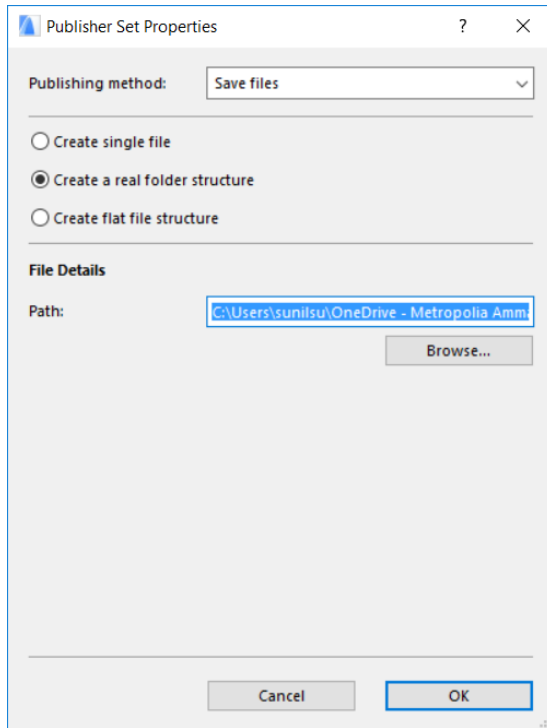
Click close once done

## "IFC" Publishing

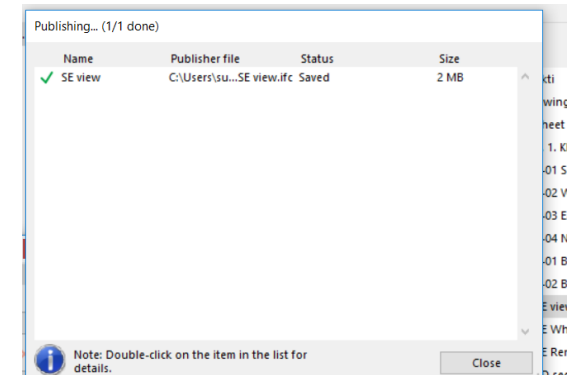
- Set the settings to either "create a real folder structure" or "create a flat file structure"

## "IFC" Publishing

- Place a 3d view "SE View" from view map to "IFC" publisher set
- Select the placed view and change the file type to "IFC file"
- Publish entire set



*Rename file as "Project\_yourname\_IFC" from the published folder once published*



# BIMx

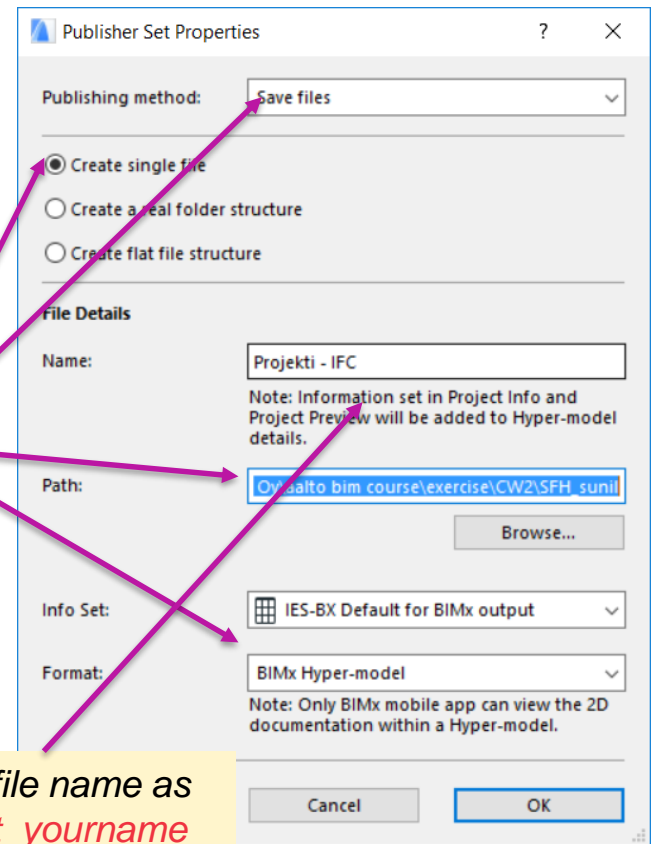
Create "BIMx" publisher set

"BIMx" publisher sets

- From view map
  - *Place "SE view"*
- From layout book
  - *01 Elevation and sections*
  - *02 floor plan" from layouts*

Click publish (entire set) to publish "BIMx"  
File

Publishing method for BIMx

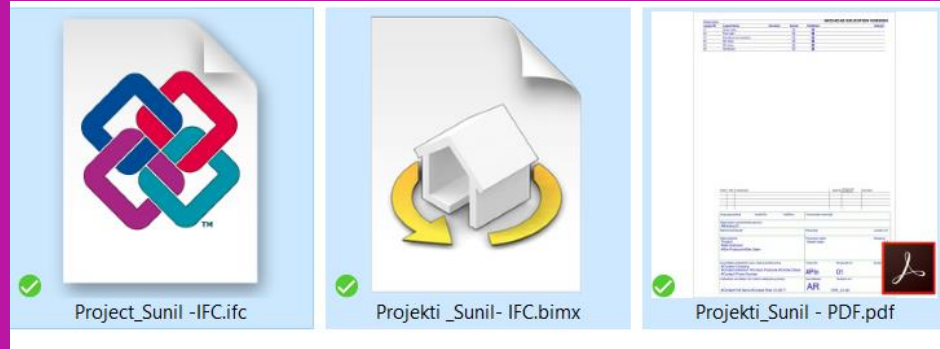


Define file name as  
"Project\_yourname\_  
BIMx"

BIMx hypermodel - <https://www.youtube.com/watch?v=ze3y6dqqqsXs>

*Submit the published files through mycourses*

**”Pdf”**  
**”BIMx”**  
**”IFC”**



**Thank you**