



**UNIVERSITÀ DI PARMA**

DIPARTIMENTO DI INGEGNERIA E ARCHITETTURA  
CORSO DI LAUREA IN ARCHITETTURA E CITTA' SOSTENIBILI

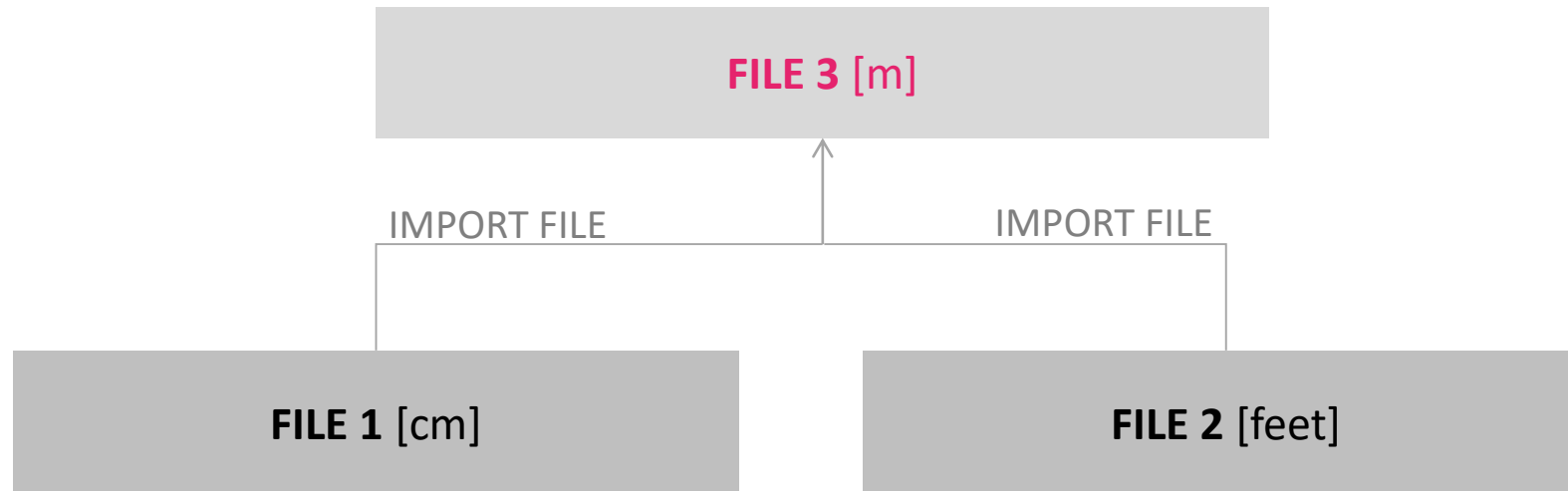
**BUILDING INFORMATION MODELING:  
DIGITAL MODELING OF ARCHITECTURE  
DIGITAL VISUALIZATION OF PROJECT**

A.A. 2022-2023, Prof. Sandra Mikolajewska  
28/03/2023

## **TOPICS OF TODAY:** Revit. Part 2.

- HOW TO MANAGE FILES WITH DIFFERENT UNIT OF REFERENCE;
- HOW TO INSERT AND CUSTOMIZE WALLS [example of exterior and interior wall];
- HOW TO INSERT AND CUSTOMIZE FLOORS [example of structural floor and finishing floor];
- HOW TO CREATE A NEW MATERIAL;
- VISIBILITY DIALOG;
- HOW TO MANAGE GRIDS, WALLS AND FLOORS;
- HOW TO CREATE A VERTICAL SECTION;
- HOW TO MANAGE INTERSECTION PROBLEMS.

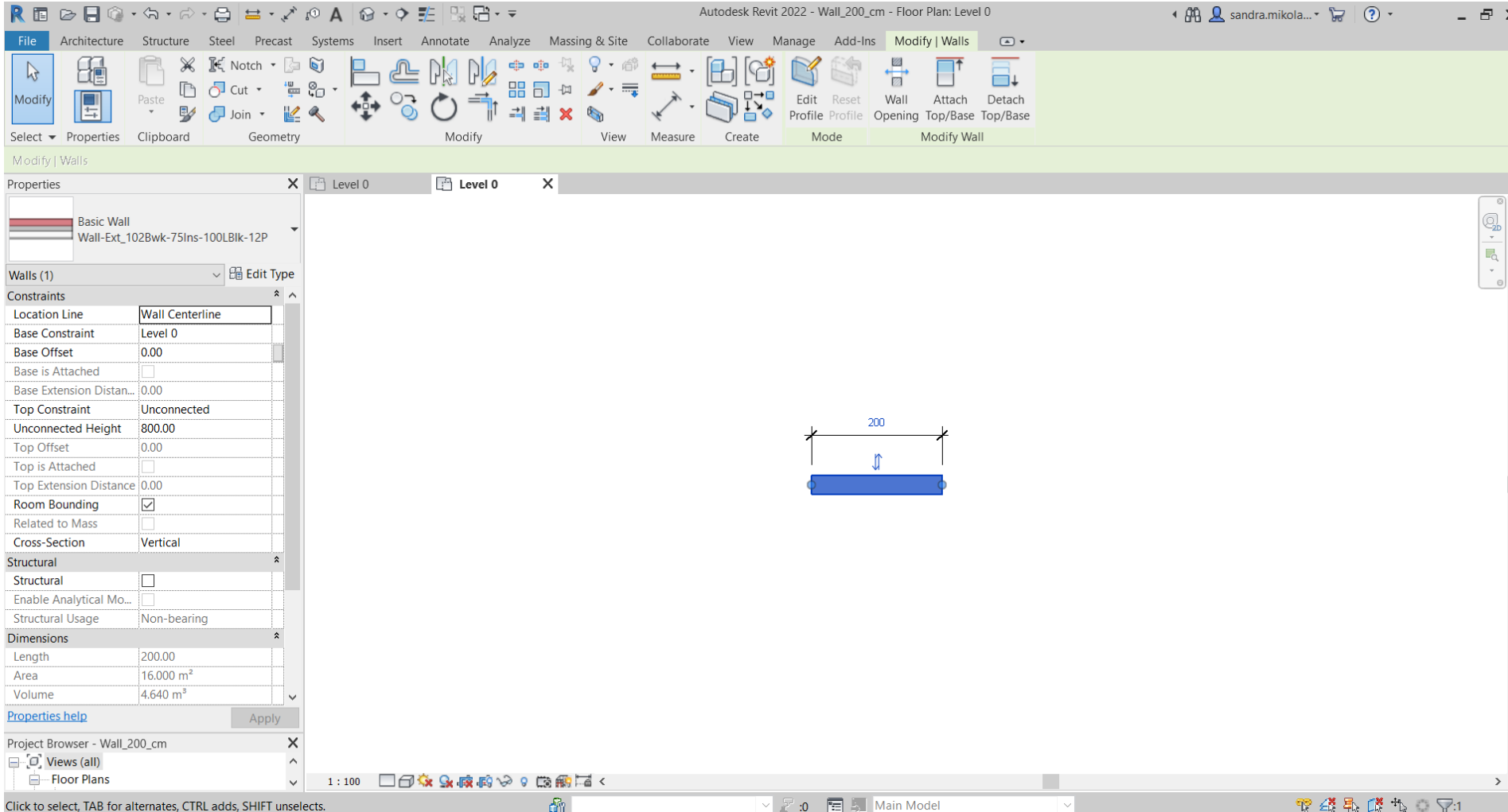




# FILES WITH DIFFERENT UNIT OF REFERENCE

## FILE 1

Unit of reference: cm  
Length wall: 200 cm



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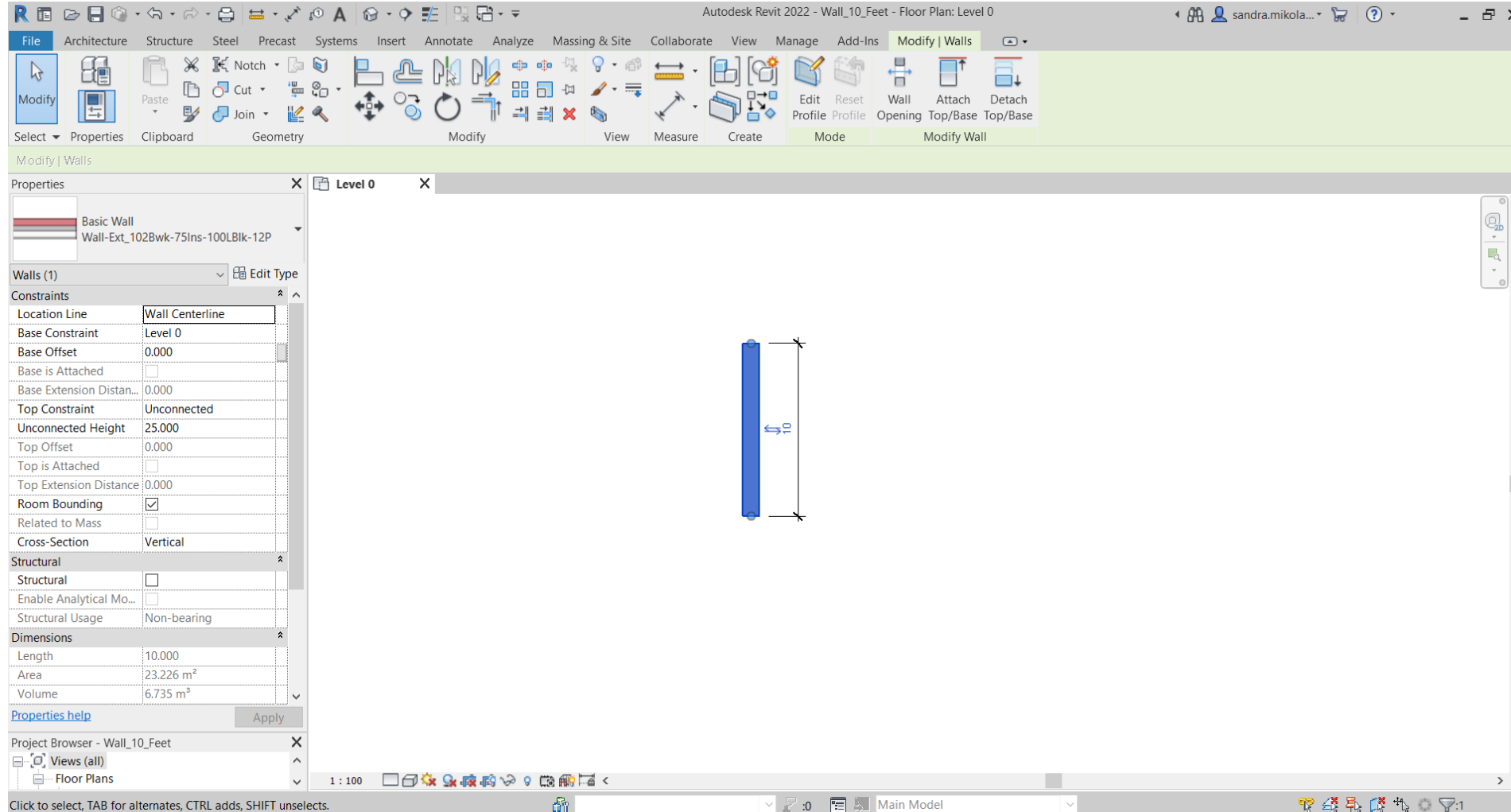
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# FILES WITH DIFFERENT UNIT OF REFERENCE

## FILE 2

Unit of reference: foot  
Length wall: 10 feet



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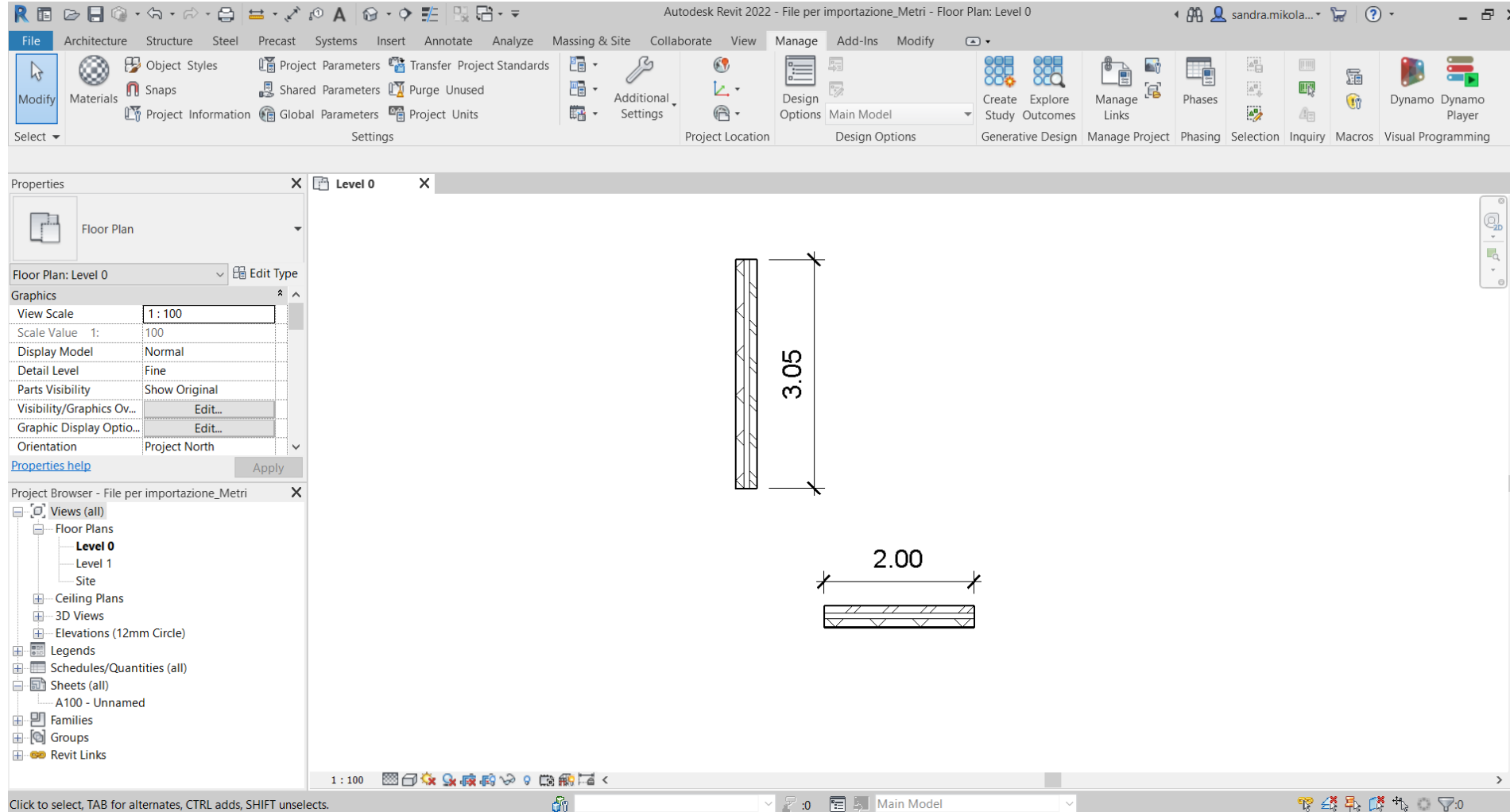
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# FILES WITH DIFFERENT UNIT OF REFERENCE

## FILE 3

Unit of reference:  
meters



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# WALLS & FLOORS - EDIT ASSEMBLY DIALOG

Edit Assembly
✕

Family: Basic Wall  
 Type: Wall-Ext\_37 cm  
 Total thickness: 29.00 cm (Default)  
 Resistance (R): 0.2707 (m<sup>2</sup>·K)/W  
 Thermal Mass: 421.01 kJ/(m<sup>2</sup>·K)

Sample Height:

Layers

EXTERIOR SIDE						
	Function	Material	Thickness	Wraps	Structural Material	Variable
1	Finish 1 [4]	Plaster	2.00 cm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<b>Core Boundary</b>	<b>Layers Above Wrap</b>	<b>0.00 cm</b>			
3	Structure [1]	Cellular concrete	25.00 cm	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	<b>Core Boundary</b>	<b>Layers Below Wrap</b>	<b>0.00 cm</b>			
5	Finish 2 [5]	Plaster	2.00 cm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INTERIOR SIDE						

Default Wrapping

At Inserts:  At Ends:

Modify Vertical Structure (Section Preview only)



# WALLS & FLOORS - EDIT ASSEMBLY DIALOG

	Function
1	Membrane Layer
2	Structure [1]
3	Substrate [2]
4	Thermal/Air Layer [3]
5	Finish 1 [4]
	Finish 2 [5]
	Membrane Layer

**Edit Assembly** ✕

Family: Basic Wall  
 Type: Wall-Ext\_37 cm  
 Total thickness: 29.00 cm (Default)  
 Resistance (R): 0.2707 (m<sup>2</sup>·K)/W  
 Thermal Mass: 421.01 kJ/(m<sup>2</sup>·K)

Sample Height:

Layers

EXTERIOR SIDE						
	Function	Material	Thickness	Wraps	Structural Material	Variable
1	Finish 1 [4]	Plaster	2.00 cm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<b>Core Boundary</b>	<b>Layers Above Wrap</b>	<b>0.00 cm</b>			
3	Structure [1]	Cellular concrete	25.00 cm	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	<b>Core Boundary</b>	<b>Layers Below Wrap</b>	<b>0.00 cm</b>			
5	Finish 2 [5]	Plaster	2.00 cm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

INTERIOR SIDE

Default Wrapping

At Inserts:  At Ends:

Modify Vertical Structure (Section Preview only)



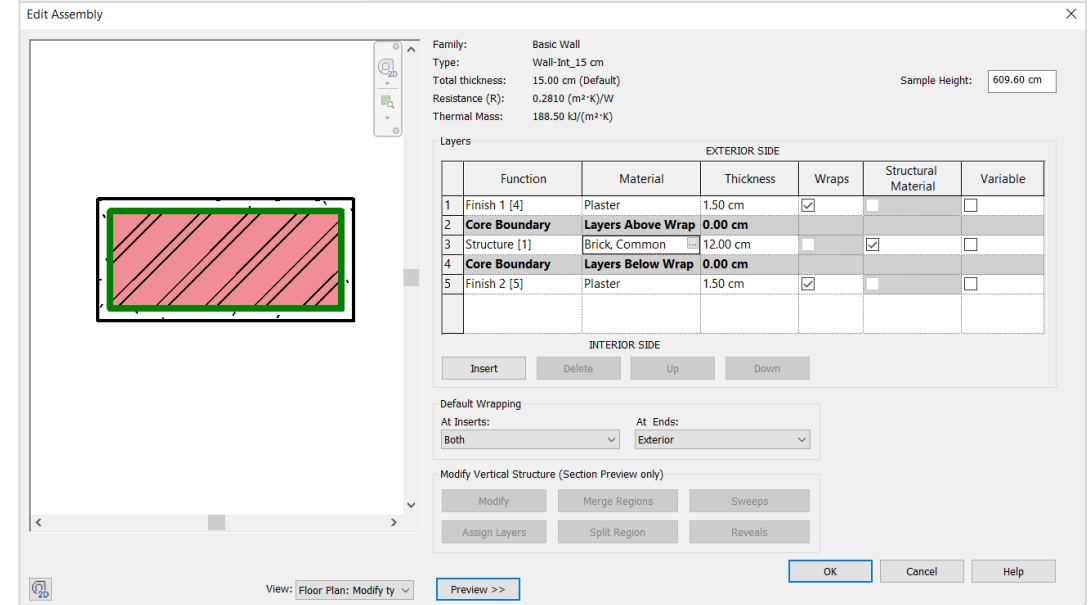
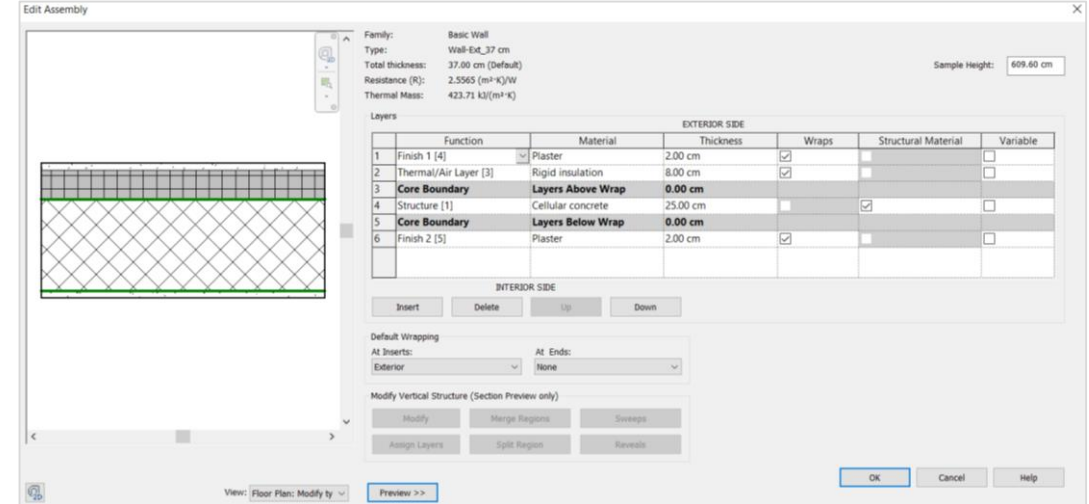


## EXAMPLE 1 – EXTERIOR WALL [37 cm]

- 2 cm - plaster
- 8 cm - external insulation
- 25 cm - structural part
- 2 cm - plaster

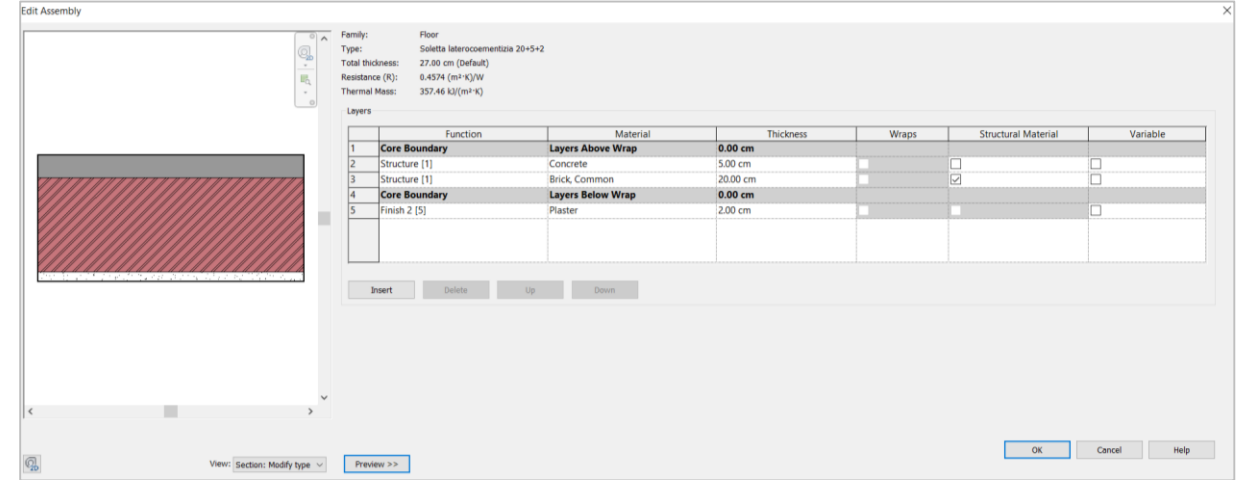
## EXAMPLE 2 - INTERIOR WALL [15 cm]

- 1,50 cm - plaster
- 12 cm – brick
- 1,50 cm - plaster



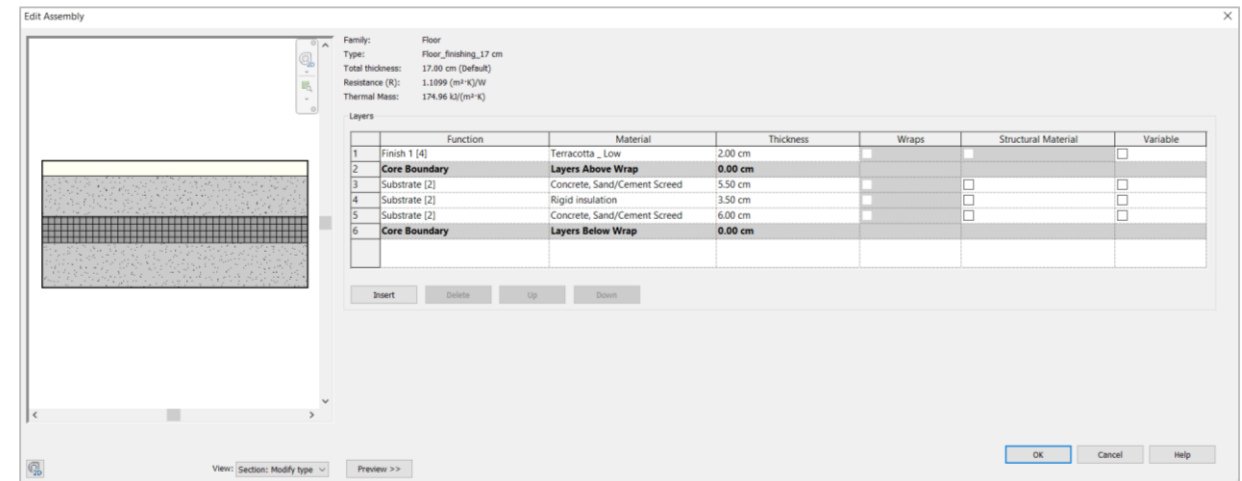
## EXAMPLE 1 - STRUCTURAL FLOOR [27 cm]

- 5 cm - concrete slab
- 20 cm - hollow block
- 2 cm - plaster

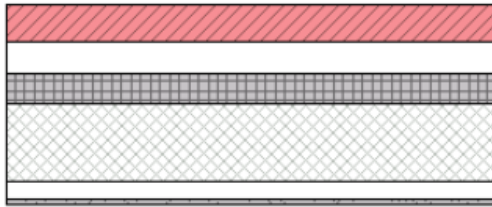


## EXAMPLE 2- FINISHING FLOOR [17 cm]

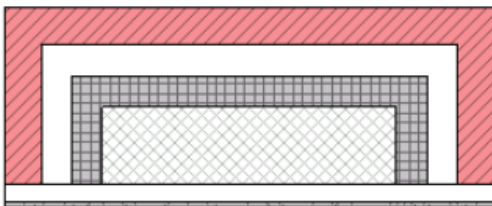
- 2 cm - finishing part - terracotta
- 6 cm - sand and cement screed
- 3,50 cm - rigid insulation
- 5,50 cm - sand and cement screed



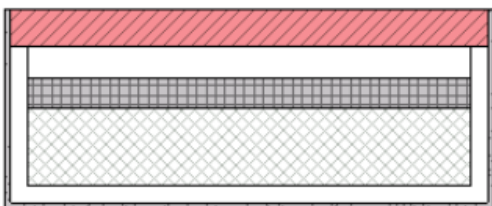
End conditions of walls can be set to Interior or Exterior to control which side of the wall the materials will wrap to. If you do not want the layers of the wall to wrap, set end conditions to None.



Compound wall with no end-cap wrapping



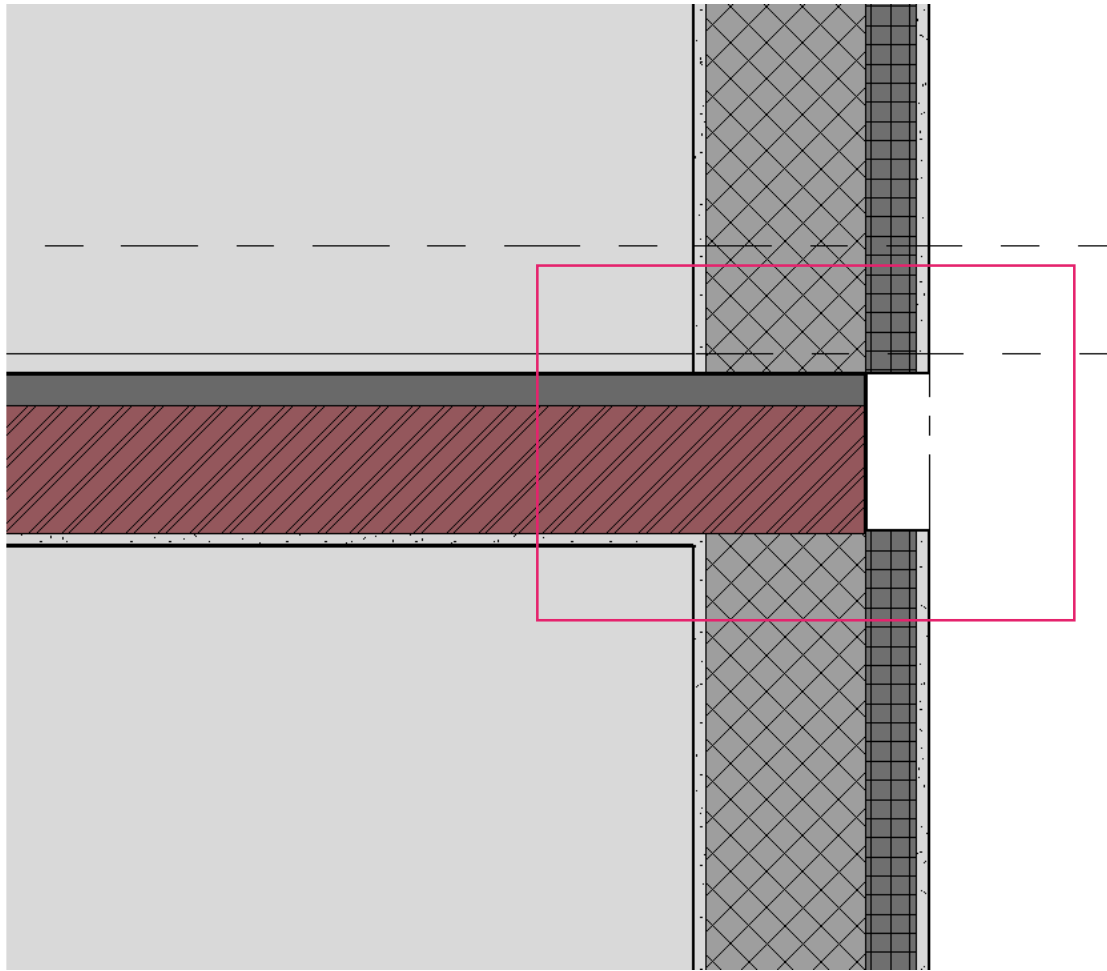
Exterior wrapping at a wall's end caps



Interior wrapping at the end caps

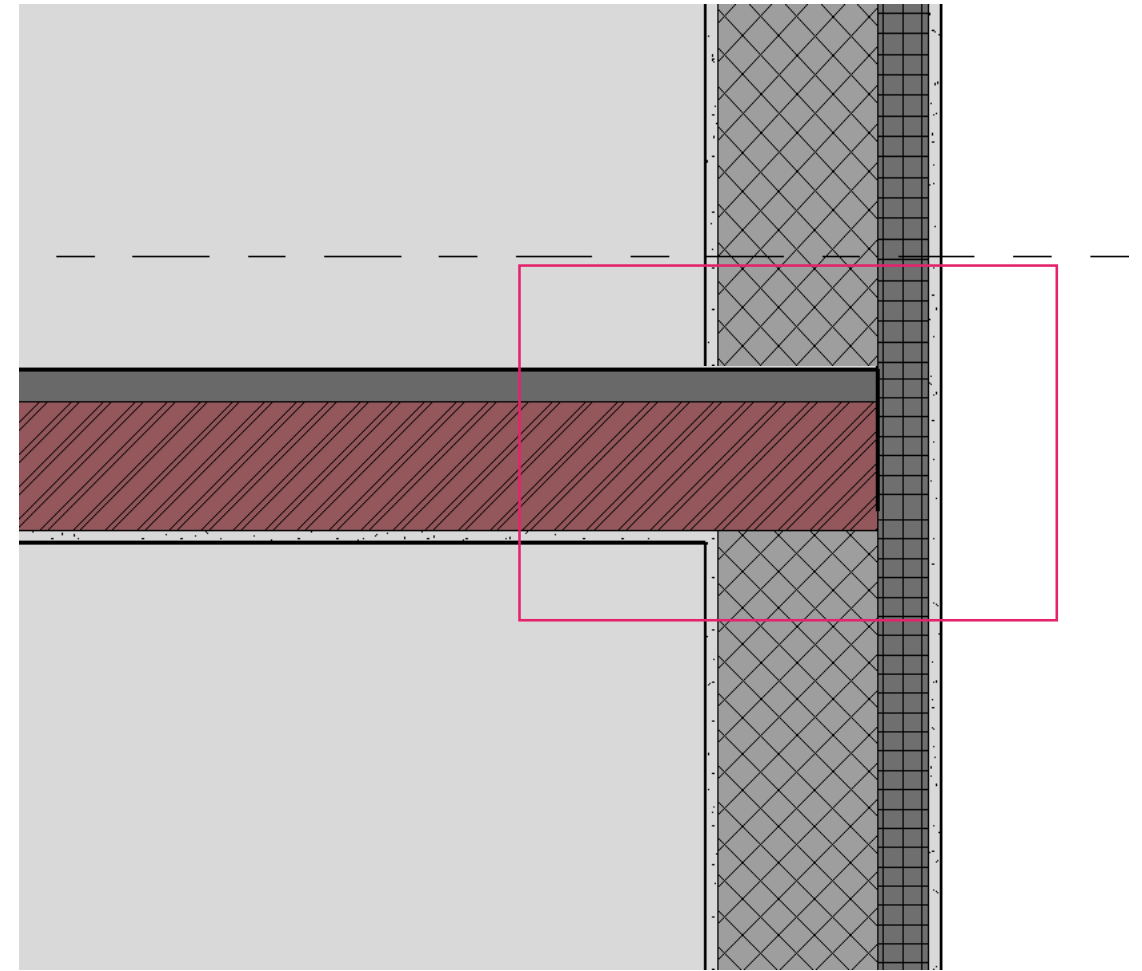
<https://help.autodesk.com/view/RVT/2021/ENU/?guid=GUID-69B6DC75-56A9-4F35-BE24-80048360E2BB>

**WRONG INTERSECTION:** [external walls-floor]

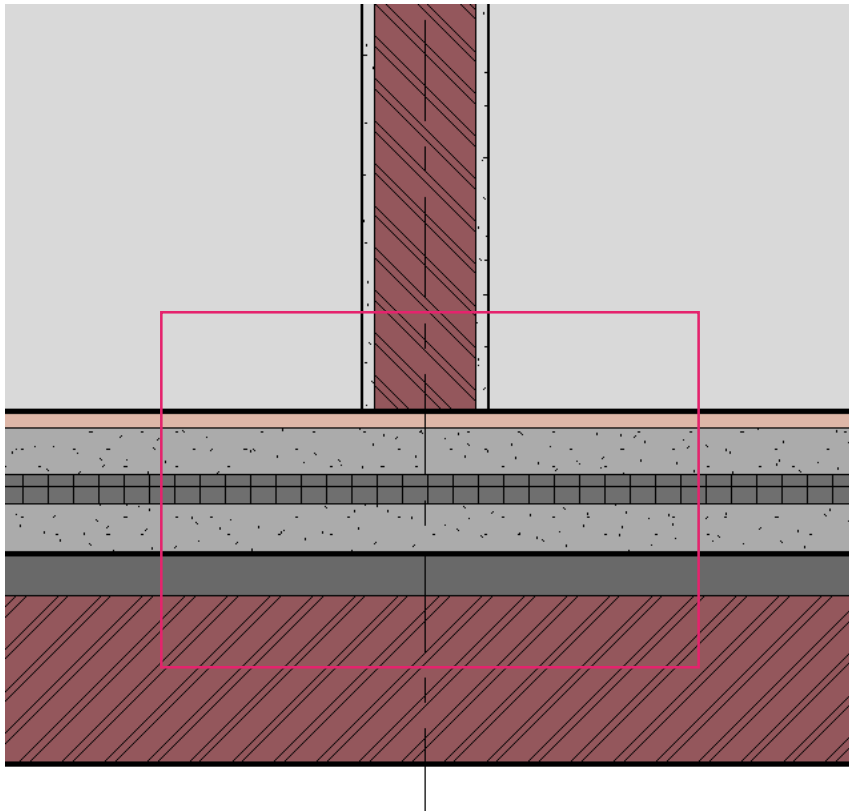


VERTICAL SECTION

**CORRECT INTERSECTION:**

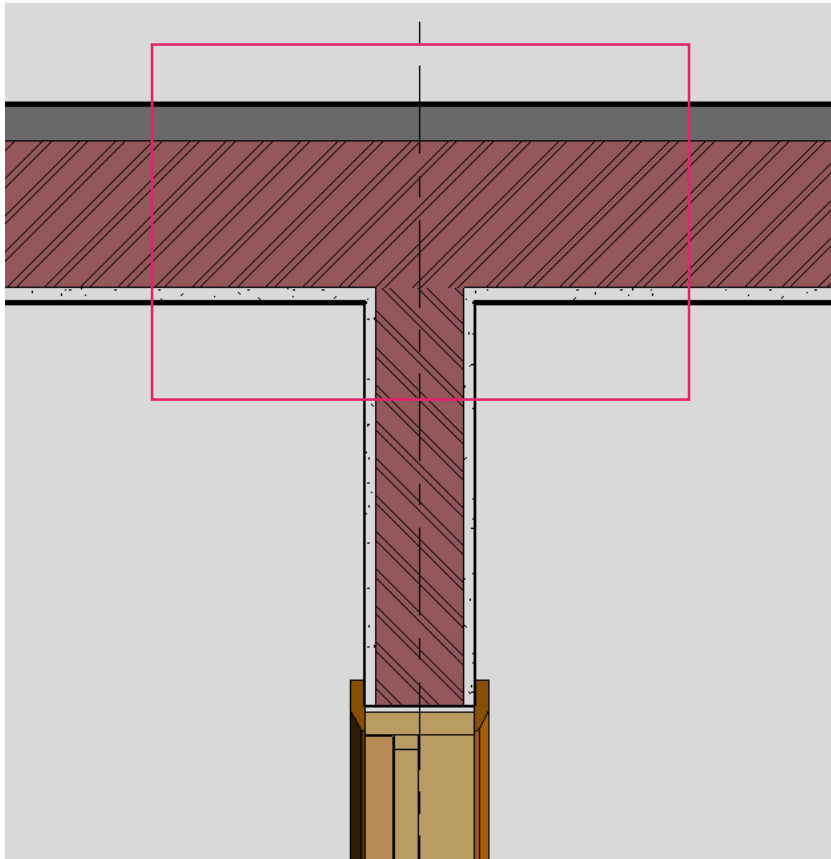


**WRONG INTERSECTION:** [internal wall-floor]



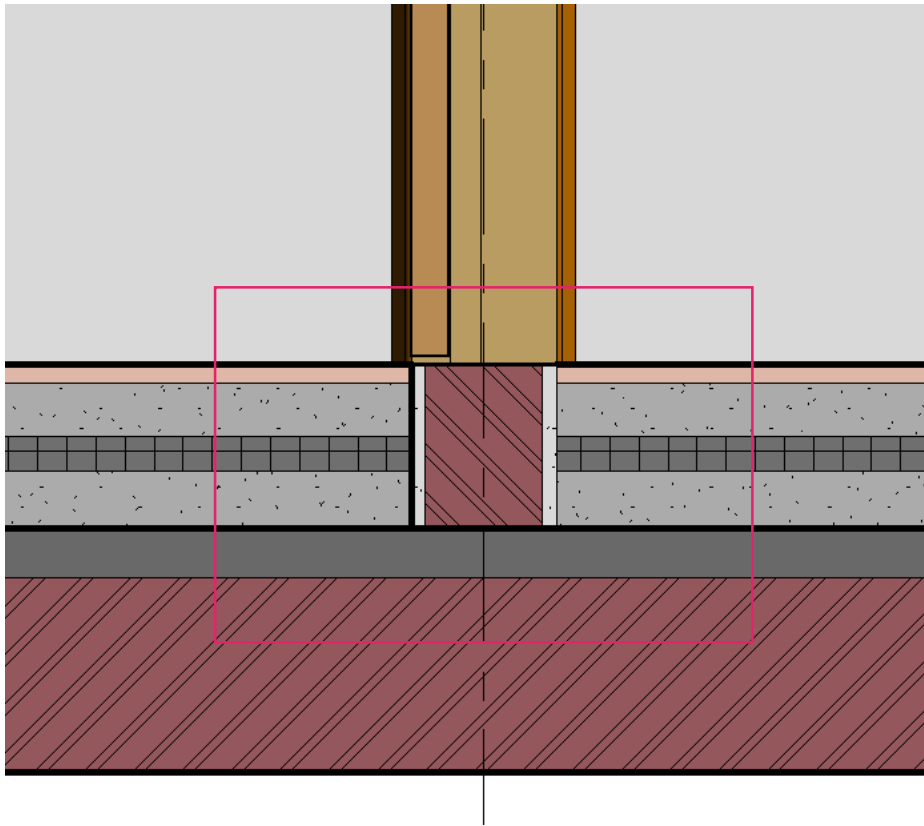
VERTICAL SECTION

**CORRECT INTERSECTION: [internal wall-floor]**



VERTICAL SECTION

**WRONG INTERSECTION:** [door-floor]



VERTICAL SECTION