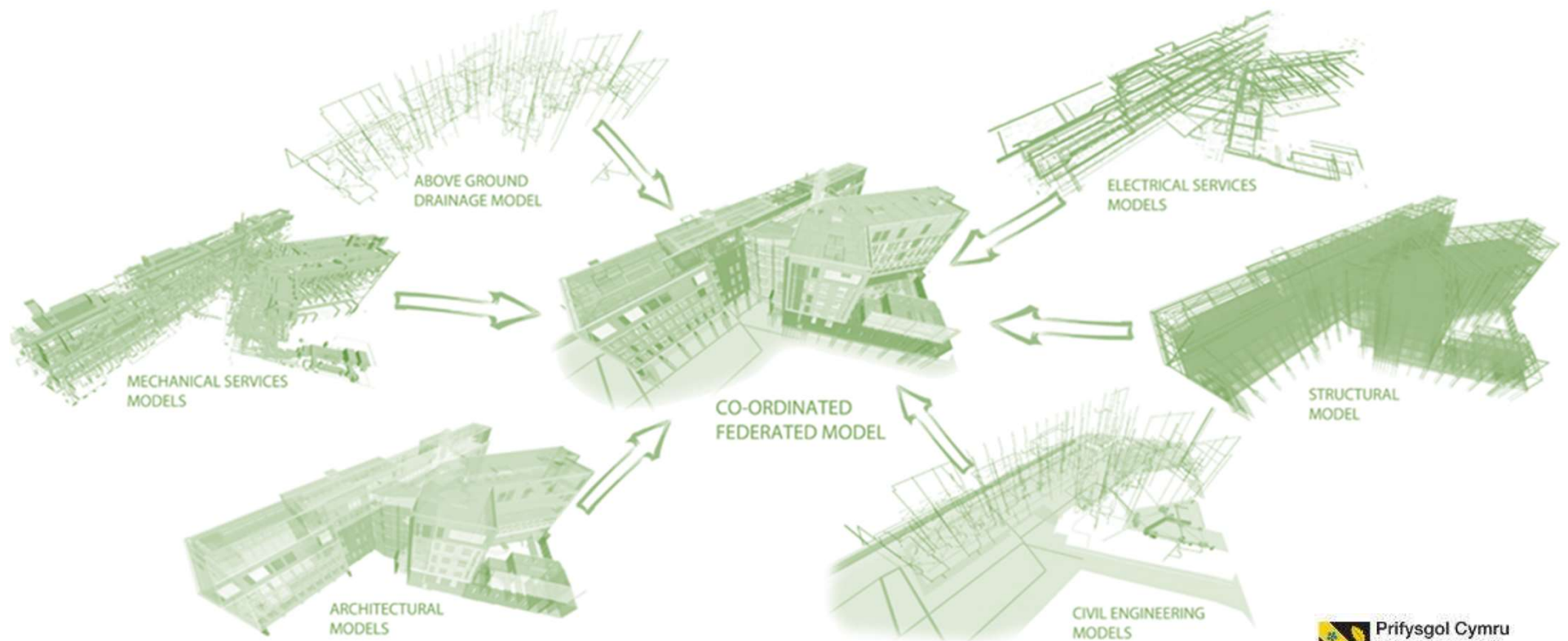


Building Information Modelling



www.onecreativeenvironment.com

Exercise 3

Malibu beach house 2 storey, plus roof terrace

Set up your levels in Elevation view.

Distance between levels of 2700mm

Assumptions.

Concrete finish to the external walls – all other material your choice.

Framed structure with columns at 5m centres and 4m centres

Curved staircase

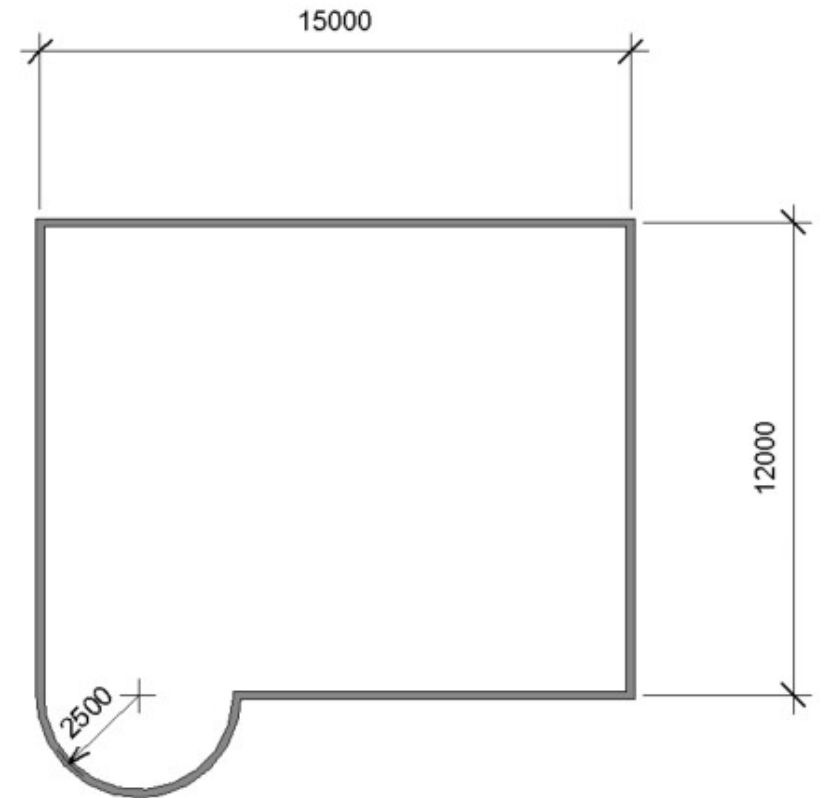
Curtain walling to southern view

GF: open plan living area, hall, kitchen / dining / WC

FF: 2 bedrooms with ensuite facilities

Roof: sun deck, wc / shower

Apply, room names, legends, grids. create plans, section and elevation views. 3D views.





15-SITE

True North and Project North

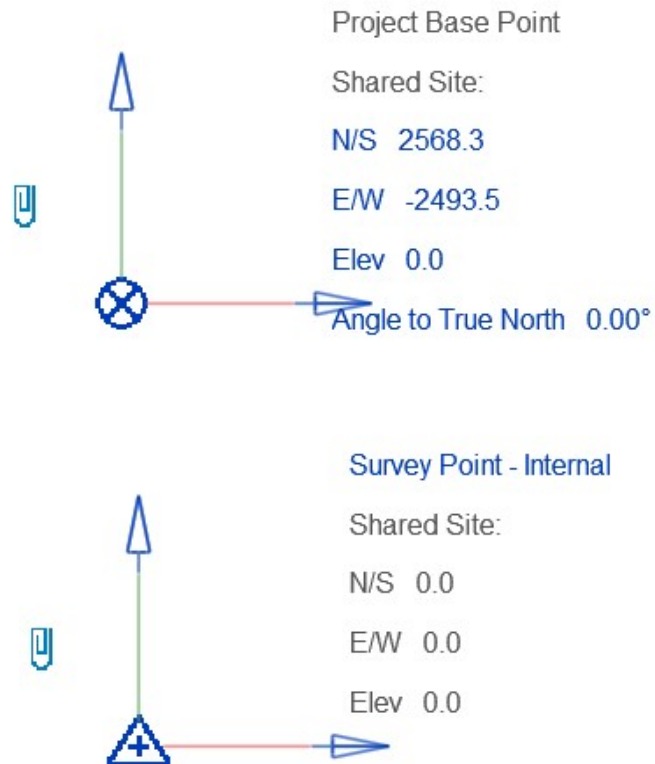


Understanding the use of the coordinate system in Revit is essential for BIM.

Shared coordinates / Project Base point from the outset enable consultants to coordinate information.

Although it helps coordination, it does not help presentation.

Revit can use True and Project North to orientate plans.





15-SITE

Properties

Floor Plan

Floor Plan: Site Edit Type

Graphics

View Scale	1 : 100
Scale Value 1:	100
Display Model	Normal
Detail Level	Coarse
Parts Visibility	Show Original
Visibility/Graphics Ov...	Edit...
Graphic Display Opti...	Edit...
Orientation	Project North
Wall Join Display	Clean all wall joins
Discipline	Architectural
Show Hidden Lines	By Discipline

[Properties help](#) Apply

Properties

Floor Plan

Floor Plan: Site Edit Type

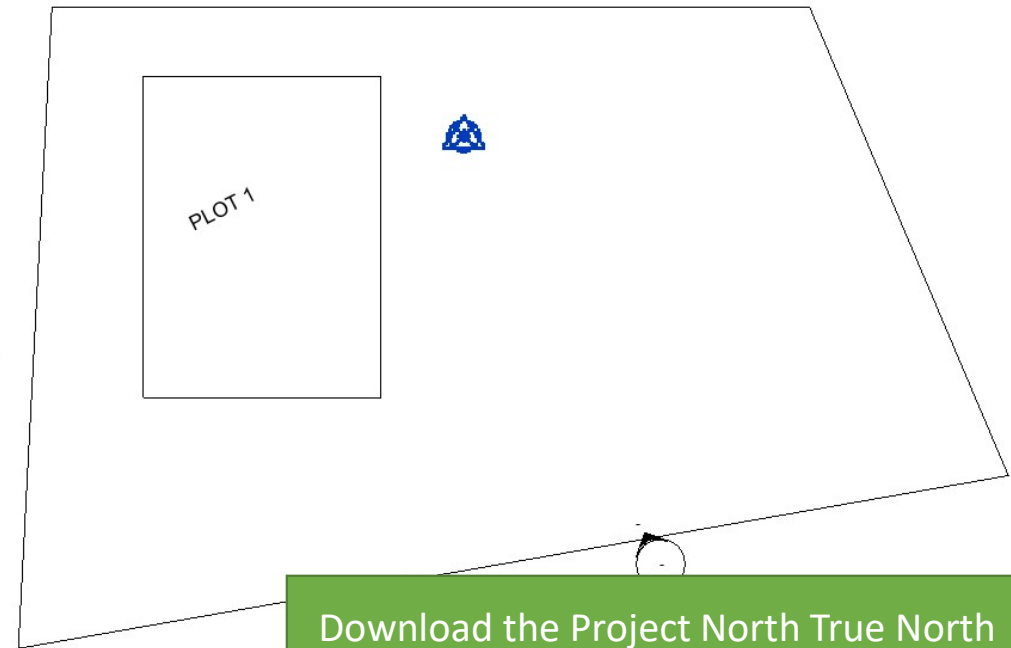
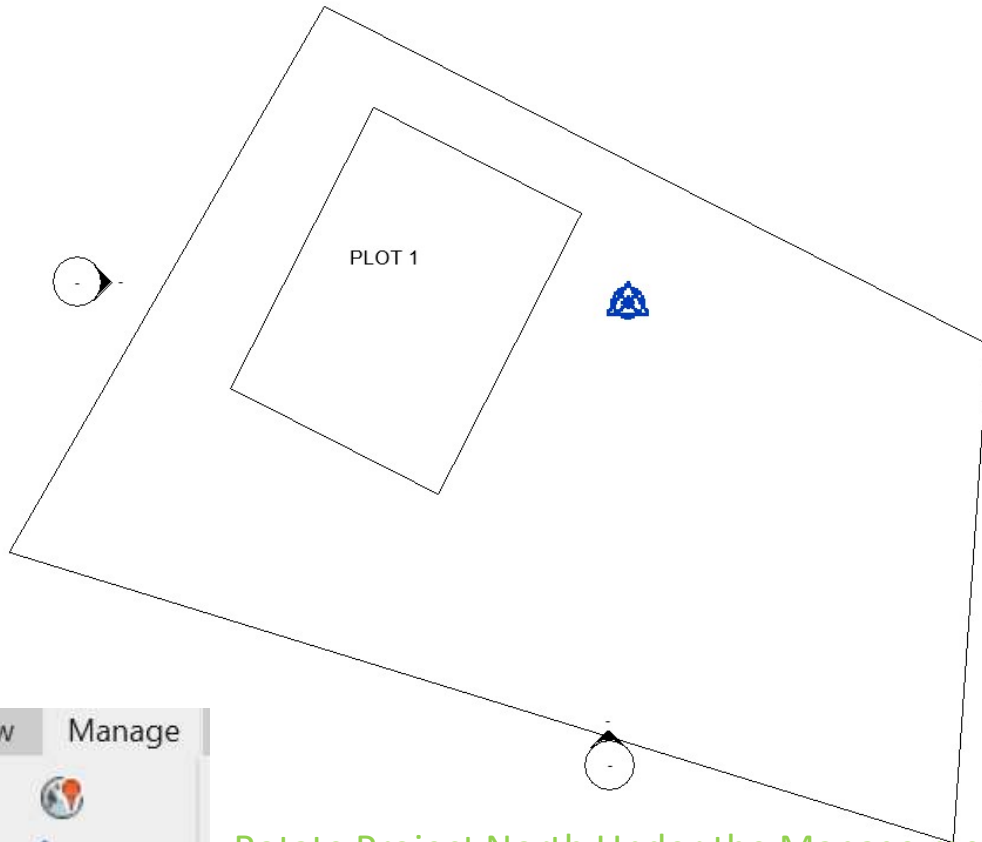
Graphics

View Scale	1 : 100
Scale Value 1:	100
Display Model	Normal
Detail Level	Coarse
Parts Visibility	Show Original
Visibility/Graphics Ov...	Edit...
Graphic Display Opti...	Edit...
Orientation	True North
Wall Join Display	Clean all wall joins
Discipline	Architectural
Show Hidden Lines	By Discipline

[Properties help](#) Apply

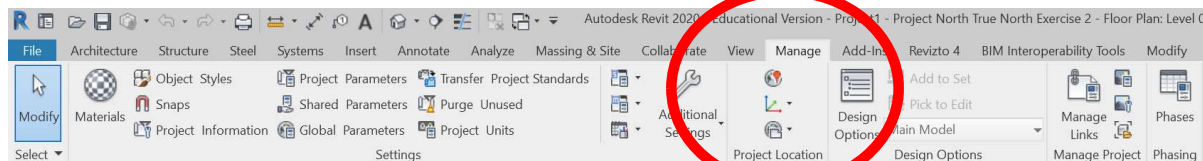
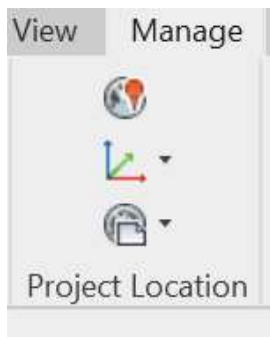
TRUE NORTH

PROJECT NORTH



Rotate Project North Under the Manage menu

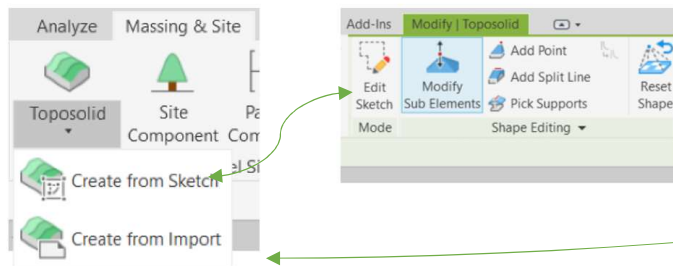
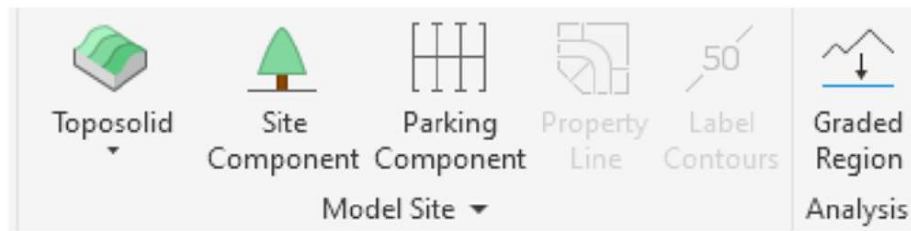
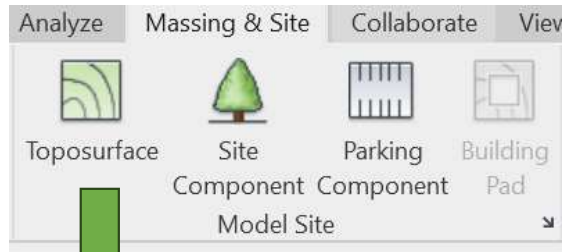
Download the Project North True North Exercise Projects 1 & 2 Teams Files





15-SITE

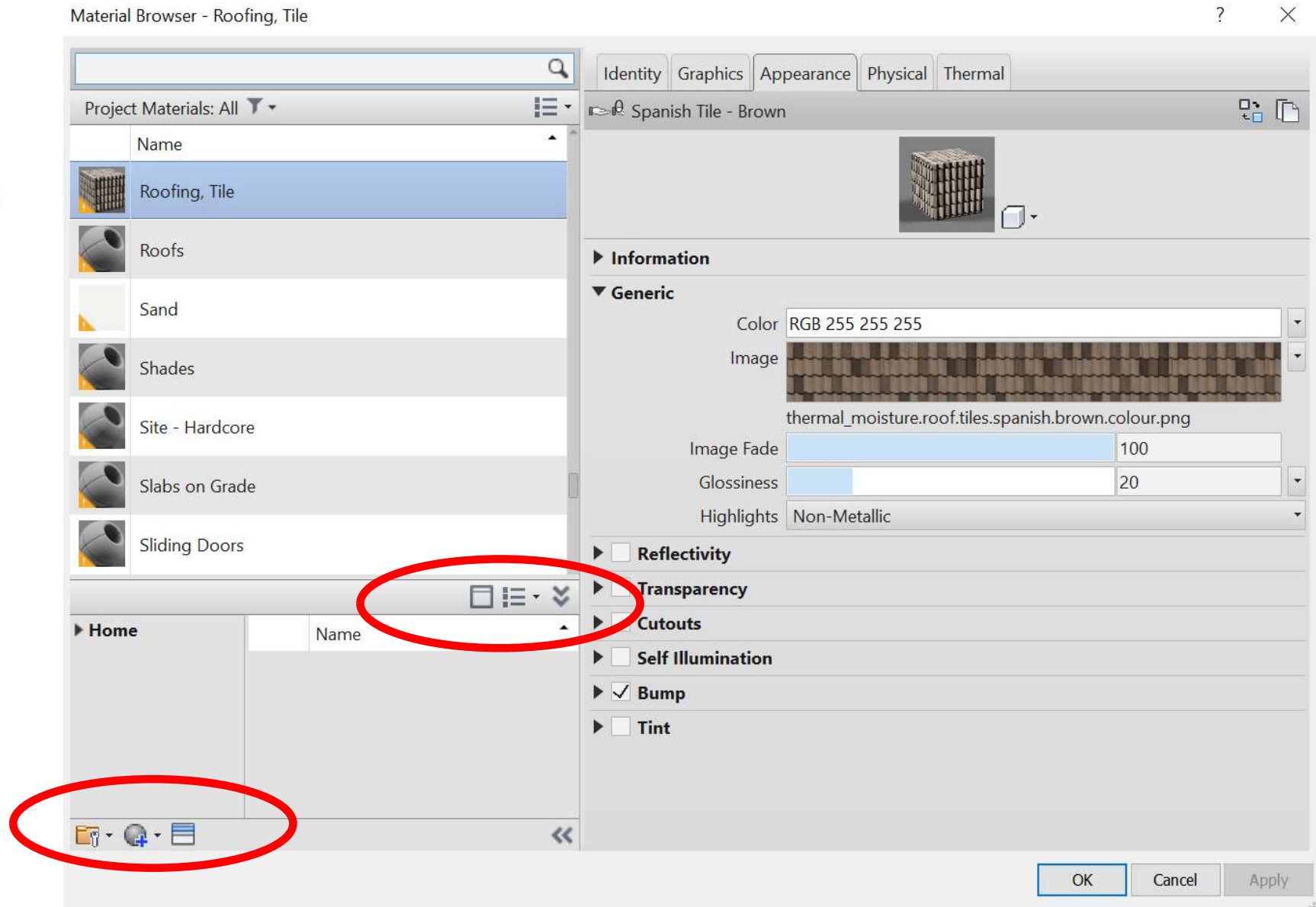
Revit 2024: Toposurface – replaced by Toposolid



Topography can be created by placing points of the correct elevation value or from an imported site survey.

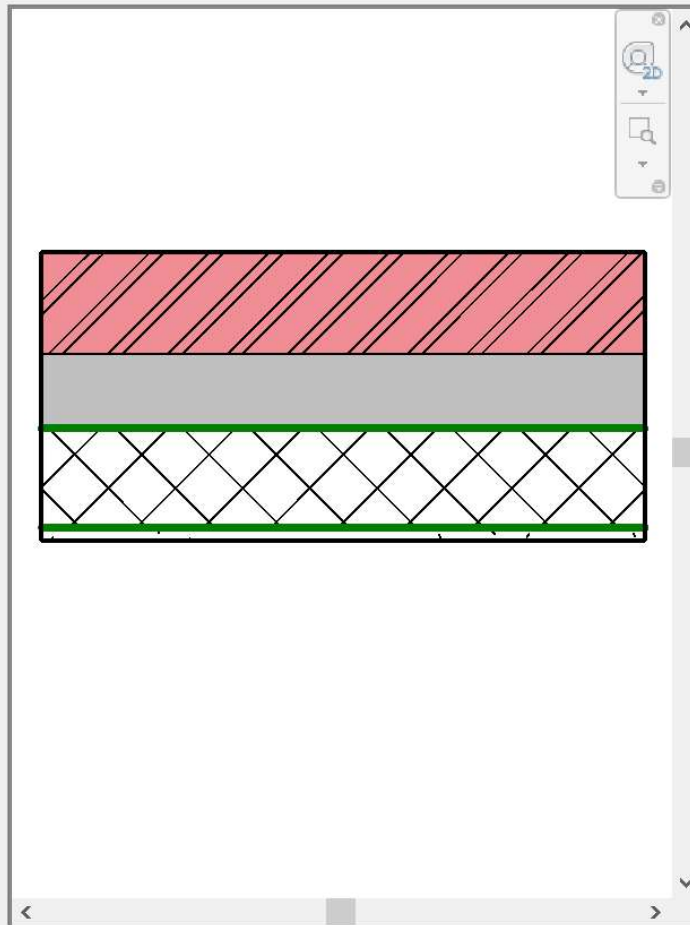
Use the digimap contours plan to create Toposolid. Download the sample file and Insert the Toposolid exercise from the Teams Files.







Edit Assembly



Family: Basic Wall
Type: Wall-Ext_102Bwk-75Ins-100LBk-12P 2
Total thickness: 290.0
Resistance (R): 4.2386 (m²·K)/W
Thermal Mass: 27.90 kJ/K

Sample Height: 6096.0

Layers

EXTERIOR SIDE

	Function	Material	Thickness	Wraps	Structural Material
1	Finish 1 [4]	Brick, Common	102.0	☒	☒
2	Thermal/Air Layer [3]	Fiberglass Batt	75.0	☒	☐
3	Core Boundary	Layers Above Wrap	0.0		
4	Structure [1]	Concrete Masonry Uni	100.0	☐	☒
5	Core Boundary	Layers Below Wrap	0.0		
6	Finish 2 [5]	Plaster	12.0	☒	☐

INTERIOR SIDE

Insert

Delete

Up

Down

Default Wrapping

At Inserts:

Both

At Ends:

None

Modify Vertical Structure (Section Preview only)

Modify

Merge Regions

Sweeps

Assign Layers

Split Region

Reveals

OK

Cancel

Help

View: Floor Plan: Modify typ

Preview >>



18-VIEWS



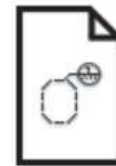
19-PLAN
VIEWS



20-SECTIONS



21-ELEVATIONS



22-CALLOUTS



23-DETAILS



24-3D VIEWS



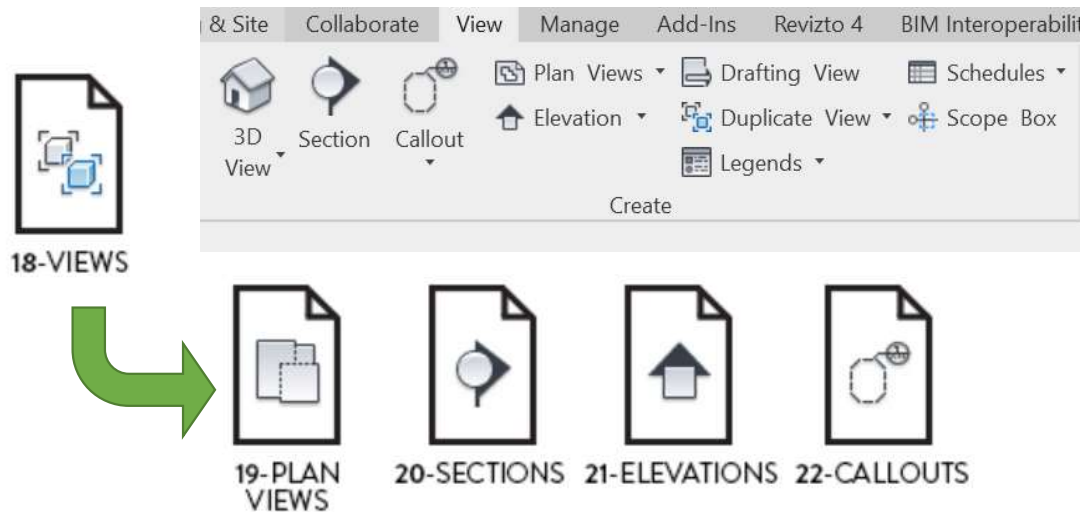
25-LEGENDS



26-VIEW
TEMPLATES



27-VISIBILITY



Revit allows you to create multiple views of your project. As you are working on one model, Revit coordinates all the information which can be presented in a varies levels of scale and detail.

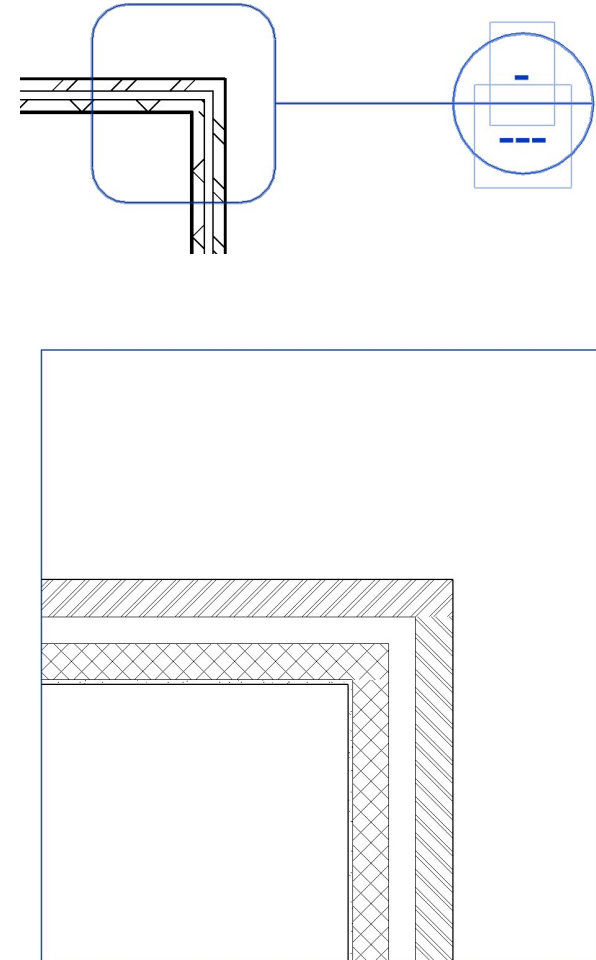
EG.

Ground Floor General arrangement plan 1:100

Ground Floor Setting out plan 1:50

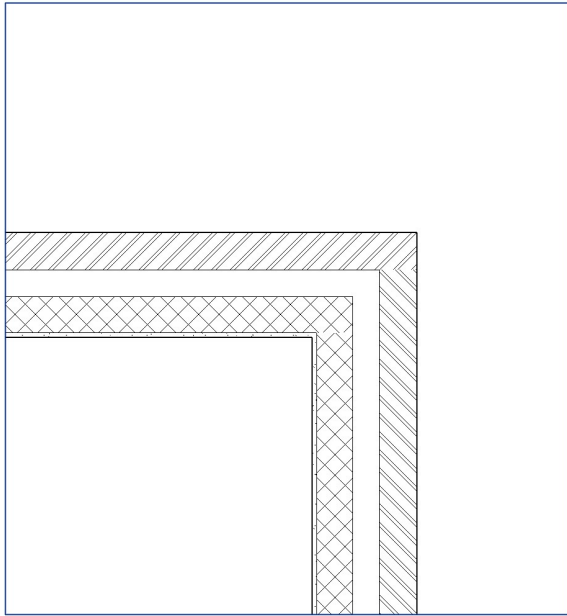
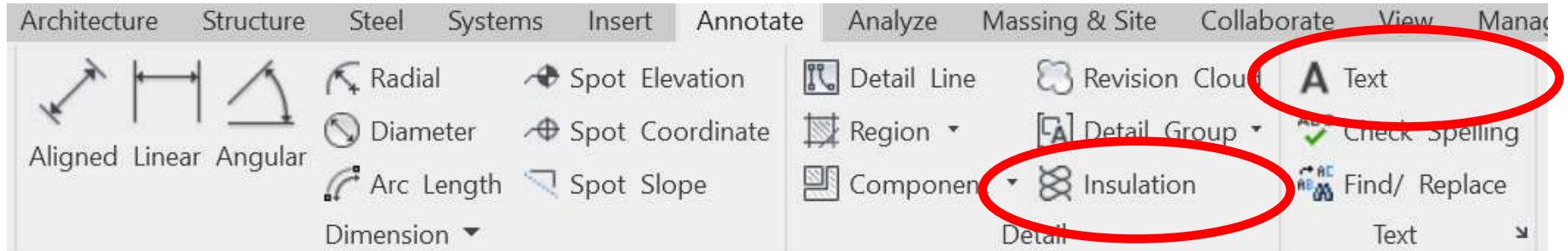
Callout detail of wall junction on plan 1:10

Views can be duplicated 'with detail' allowing multiple representations of the same view.

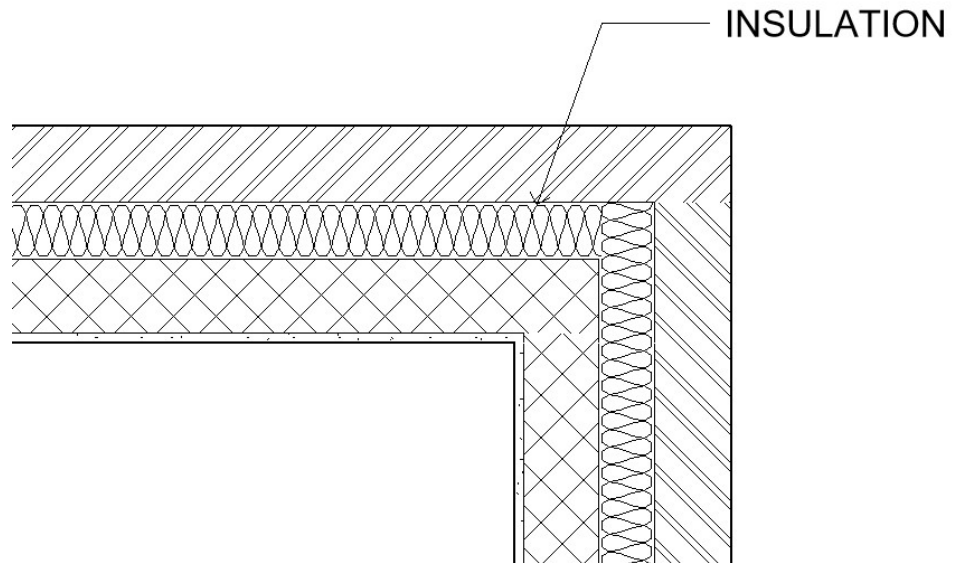




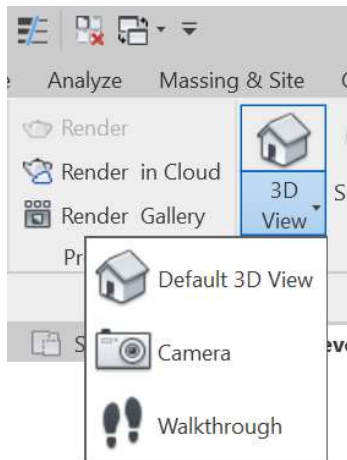
23-DETAILS



Create a Callout Detail for your house and add some annotations.



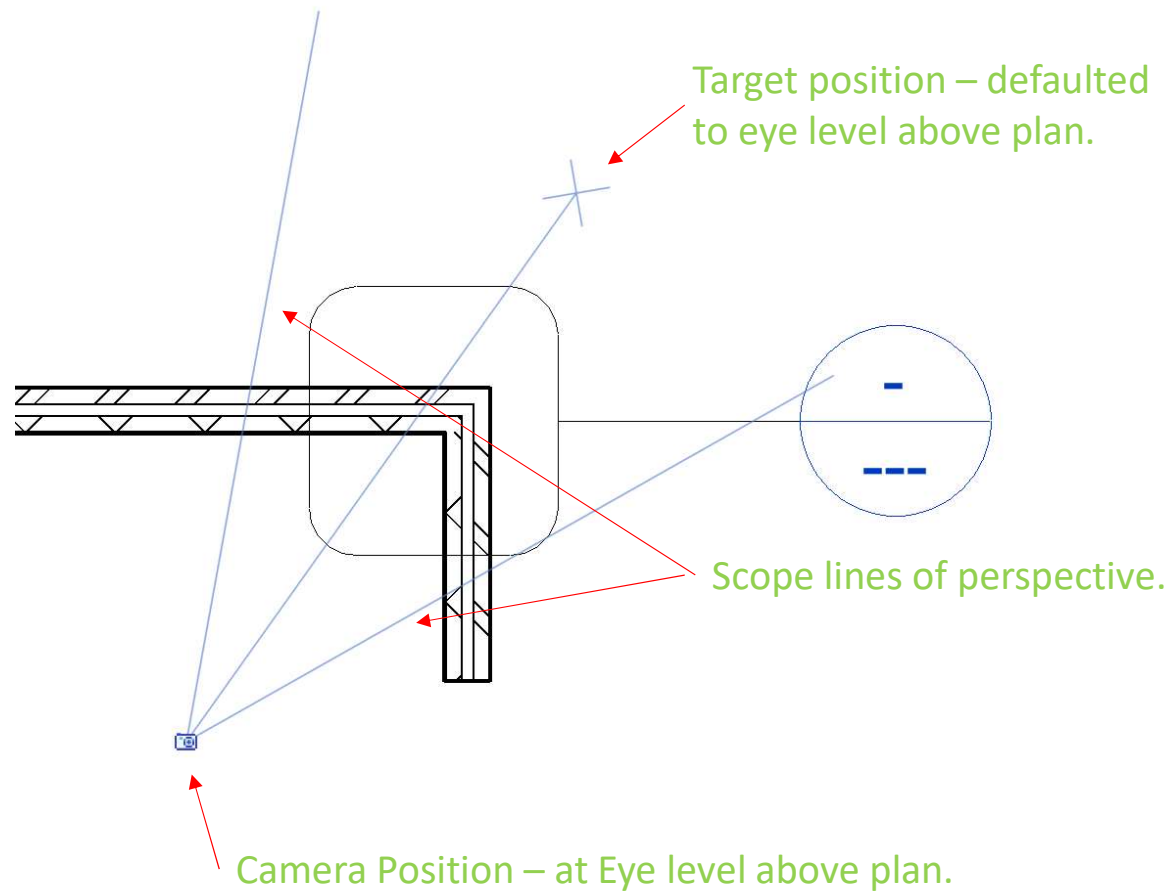
Adding further information to Details

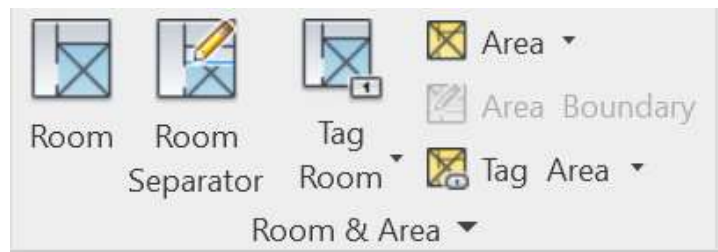
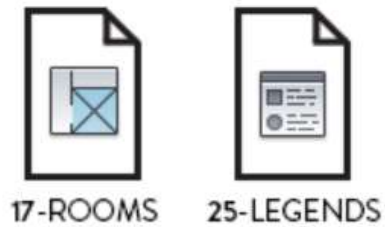


Place Camera Views in PLAN

Click to place camera and drag to show the scope of the perspective view.

A new view will appear in the Project Browser Palette

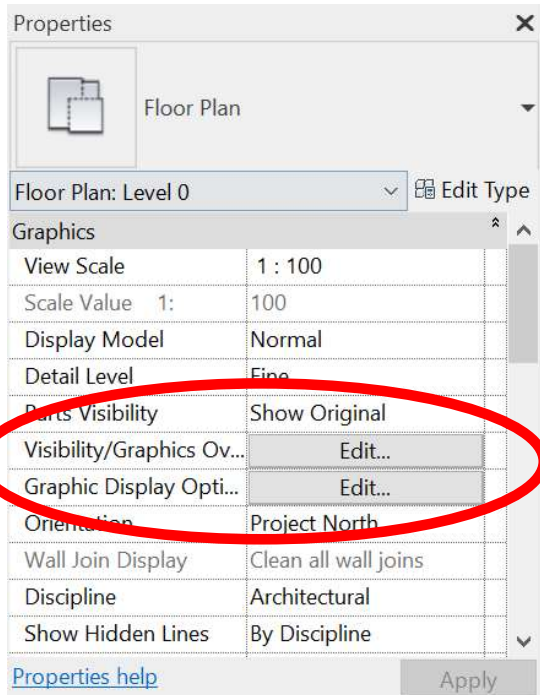
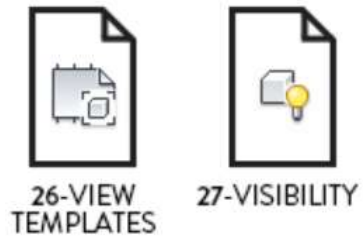




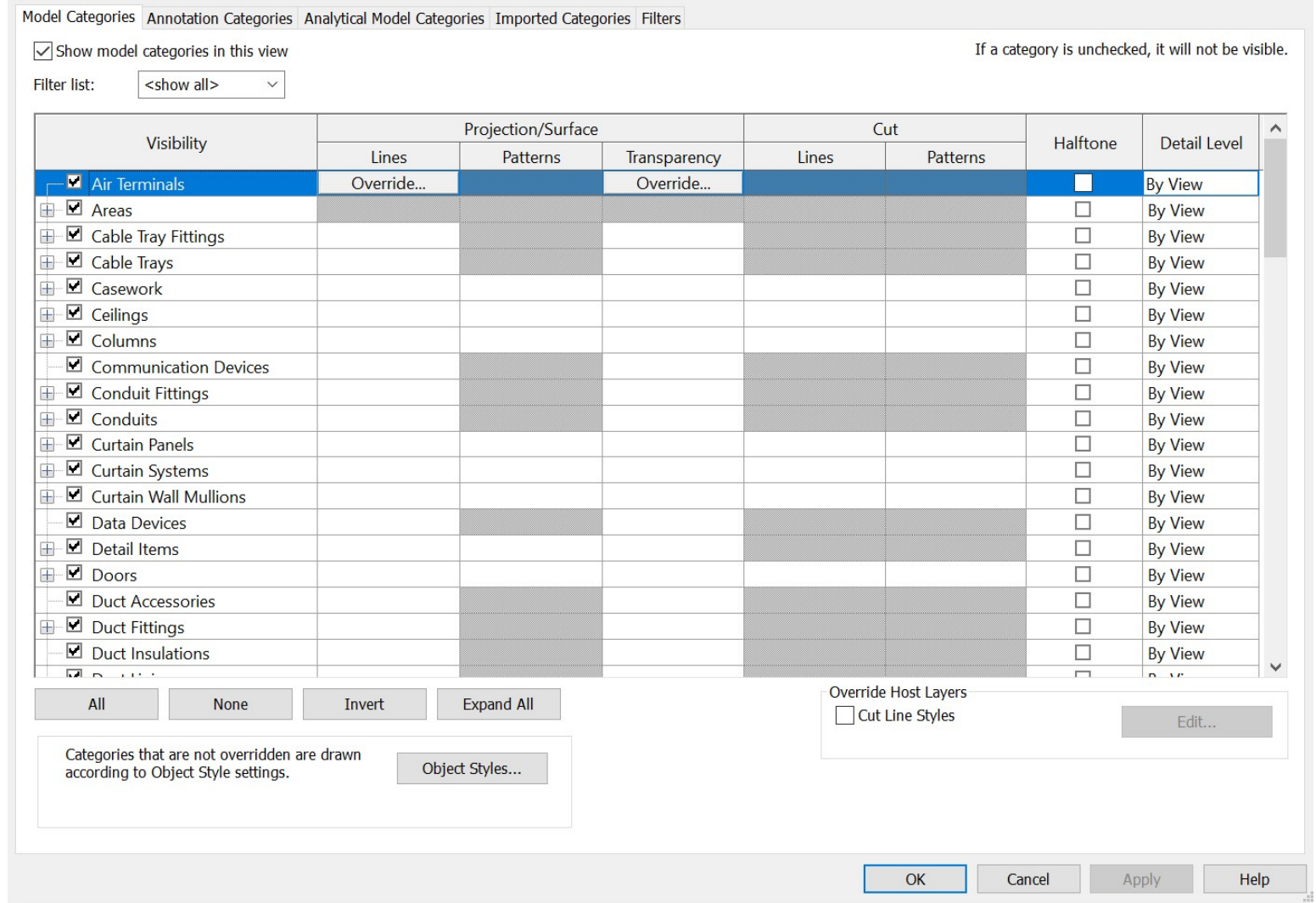
Add rooms to your House Plan from the Architecture Menu



Add a colour fill legend to your house Plan from the Annotate Menu



Visibility/Graphic Overrides for Floor Plan: Level 0



Exercise 3

Malibu beach house 2 storey, plus roof terrace

Set up your levels in Elevation view.

Distance between levels of 2700mm

Assumptions.

Concrete finish to the external walls – all other material your choice.

Framed structure with columns at 5m centres and 4m centres

Curved staircase

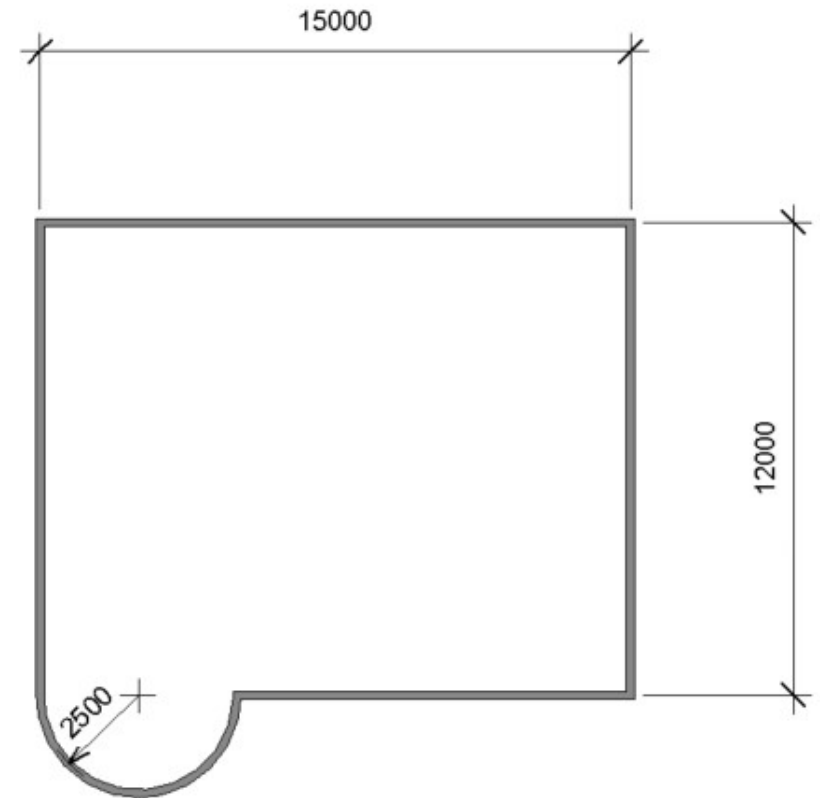
Curtain walling to southern view

GF: open plan living area, hall, kitchen / dining / WC

FF: 2 bedrooms with ensuite facilities

Roof: sun deck, wc / shower

Apply, room names, legends, grids. create plans, section and elevation views. 3D views.



Assessment 1

Module Learning Outcomes (from module syllabus)

- comprehend and manage the life cycle of a built structure in a Building Information Modelling environment and subsequently to produce digital data through the collaborative process.

Moodle - Reading List

 Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Dashboard My modules Moodle archives Useful links

Announcements

Online reading List

Assessment Specification 2...

Turnitin Links

Building Information Modelling (ACBA5016)

Course More

 You are viewing this course currently with the role: **Student**
Return to my normal role

 Announcements

 Online reading List

 Assessment Specification 2024-25

 Turnitin Links

BIM (ACBA 5016)

 Published  Multiple List info  

 + Add  Manage sections  Filter  Search  Expanded view

 Essential reading (9)

Material which is an essential part of the course and students are expected to draw on as a core part of their learning. Must be available from the library and should be available online.

- ☐  **CIS (Construction Information Service) [electronic resource].**
Database | IHS, Total pages Database
 Note: Link to the Construction Information Service where you can access the ISO Standards for BIM
 Essential
 View online
- ☐  **BIM handbook : a guide to building information modeling for owners, managers designers, engineers, an...**
Book | Eastman, Charles M., 2nd ed., Chichester.; Hoboken, N.J. : Wiley , 2011., Total pages xiv, 626 p. :
 Essential
 View online 
- ☐  **Little Book of BIM 2020**
Website | BSI, BSi, 2020
 Note: British Standard Institution - Guide to BIM documentation. Essential for all students
 Essential
 View online
- ☐  **NBS BIM Library**
Website | NBS, NBS, NA
 Note: NBS BIM Library of BIM Objects
 Essential
 View online

Suggested Reading List

Francis Ching (2015) *Architectural Graphics*

BSi (2019) *The Little Book of BIM*

BSi (2019) *Introduction to the New International Standard ISO 19650*

Eastman C, Teicholz P, Sacks R and Liston K (2011)
BIM Handbook: A Guide to BIM for Owners, Managers, Designers, Engineers & Contractors. Hoboken: John Wiley & Sons Inc.

Mordue S Swaddle P and Philp D (2015). *Building Information Modelling for Dummies*. Chichester: John Wiley & Sons Ltd.

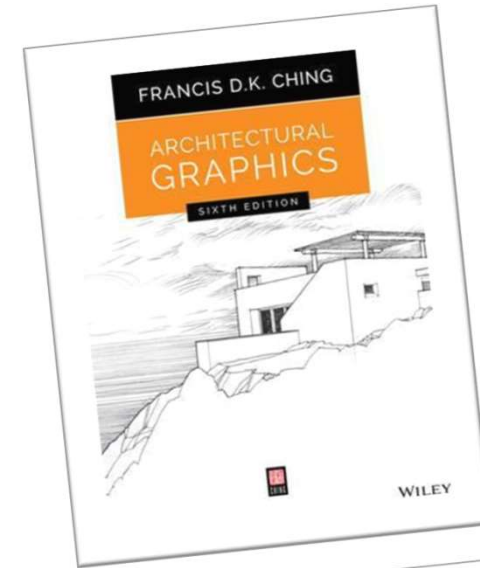
NBS National BIM Library

The BIM HUB: BIM Journal

<https://academy.autodesk.com/>

Revit Tutorials - Youtube.

<https://bimblog.house/> Dan Rossiter (BSi)



Key BIM Standards, ISO and PAS – refer to 'Little Book of BIM' guide

Assessment 1

Submission
deadline:

9th December 2025

Scenario:

Caerphilly Council has commissioned you as lead consultant for the of delivery of a ‘state of the art’ infant school in the heart of the town centre. The project is a joint funded venture with the Welsh Government, under the Sustainable Communities for Learning Programme and is required to meet the appropriate standard of BIM maturity.

The school will also require additional community facilities that include a small community hall and Caerphilly Story gallery.

For the outline business case the client requires your company to set up your holistic approach to BIM that provides reassurance to WG that the funding requirements are sufficiently met.

(Set up a company name, business address, company details and imagined employers and consultant partners)

STUDENT FEEDBACK FORM

This section details the extent to which the assessment criteria are demonstrated by you, which in turn determines your mark. The marks available for each category of skill are shown. Lecturers will use the space provided to comment on the achievement of the task(s), including those areas in which you have performed well and areas that would benefit from development/improvement.

Generic Assessment Criteria	Marks available	Marks awarded
1. Engagement with Literature Skills		
	10	
2. Knowledge and Understanding Skills		
	25	
3. Cognitive and Intellectual Skills		
	25	
4. Practical Application Skills		
	25	
5. Transferable Skills for Life and Professional Practice		
	15	

Assessment Mark (Assessment marks are subject to ratification at the Exam Board. These comments and marks are to give feedback on module work and are for guidance only until they are confirmed.)	Late Submission Penalties (if appropriate)	%
	Up to 1 week late (40% Max)	
	Over 1 week late (0%)	

Assessment 1 cont..

Submission
deadline:

9th December 2025

Assessment 1 (50%) 2500 words

Produce an analytical appraisal for Caerphilly Council highlighting your BIM strategy for the project. This should include how themes of BIM Maturity and Whole life monitoring through CAFM are applied in the given scenario. You should use industry examples to demonstrate Definitions of LOIN, adhering to Key standards and the practical approach to coordination and collaboration that will be applied to the Sustainable Communities project.

Your response should be project specific and make reference to examples from industry.

Digital Submission:

Appropriate naming conventions should be applied to your report

Assumptions:

UPRN: 5016

Project Title: Ysgol Y Twyn

Description: 1 form entry infant school for 90 pupils, with 48 PT Nursery provision, and Twyn Community Hall and Caerphilly Story Gallery.

It is envisaged that the functions can be operated independently.

STUDENT FEEDBACK FORM

This section details the extent to which the assessment criteria are demonstrated by you, which in turn determines your mark. The marks available for each category of skill are shown. Lecturers will use the space provided to comment on the achievement of the task(s), including those areas in which you have performed well and areas that would benefit from development/improvement.

Generic Assessment Criteria	Marks available	Marks awarded
1. Engagement with Literature Skills		
	10	
2. Knowledge and Understanding Skills		
	25	
3. Cognitive and Intellectual Skills		
	25	
4. Practical Application Skills		
	25	
5. Transferable Skills for Life and Professional Practice		
	15	

Assessment Mark (Assessment marks are subject to ratification at the Exam Board. These comments and marks are to give feedback on module work and are for guidance only until they are confirmed.)	Late Submission Penalties (if appropriate)	%
	Up to 1 week late (40% loss)	
	Over 1 week late (0%)	

Guidance specific to this assessment: Where techniques are suggested make reference to the sources such as the BIM ISO Standards and Good Practice. Use sources such as the CIS and BSI.

Guidance specific to this assessment: Demonstrate your understanding of the process and application. This will be assessed by the depth and awareness of a professional context within this scenario.

Guidance specific to this assessment: Demonstrate your knowledge and skills regarding BIM and the Production of a BEP, and present the work in a coherent and professional manner.

Guidance specific to this assessment: This will be assessed via the scenario and how your knowledge has been applied.

Guidance specific to this assessment: The letter and appended information should be presented in a professional manner with all work clearly labelled and cross-referenced.

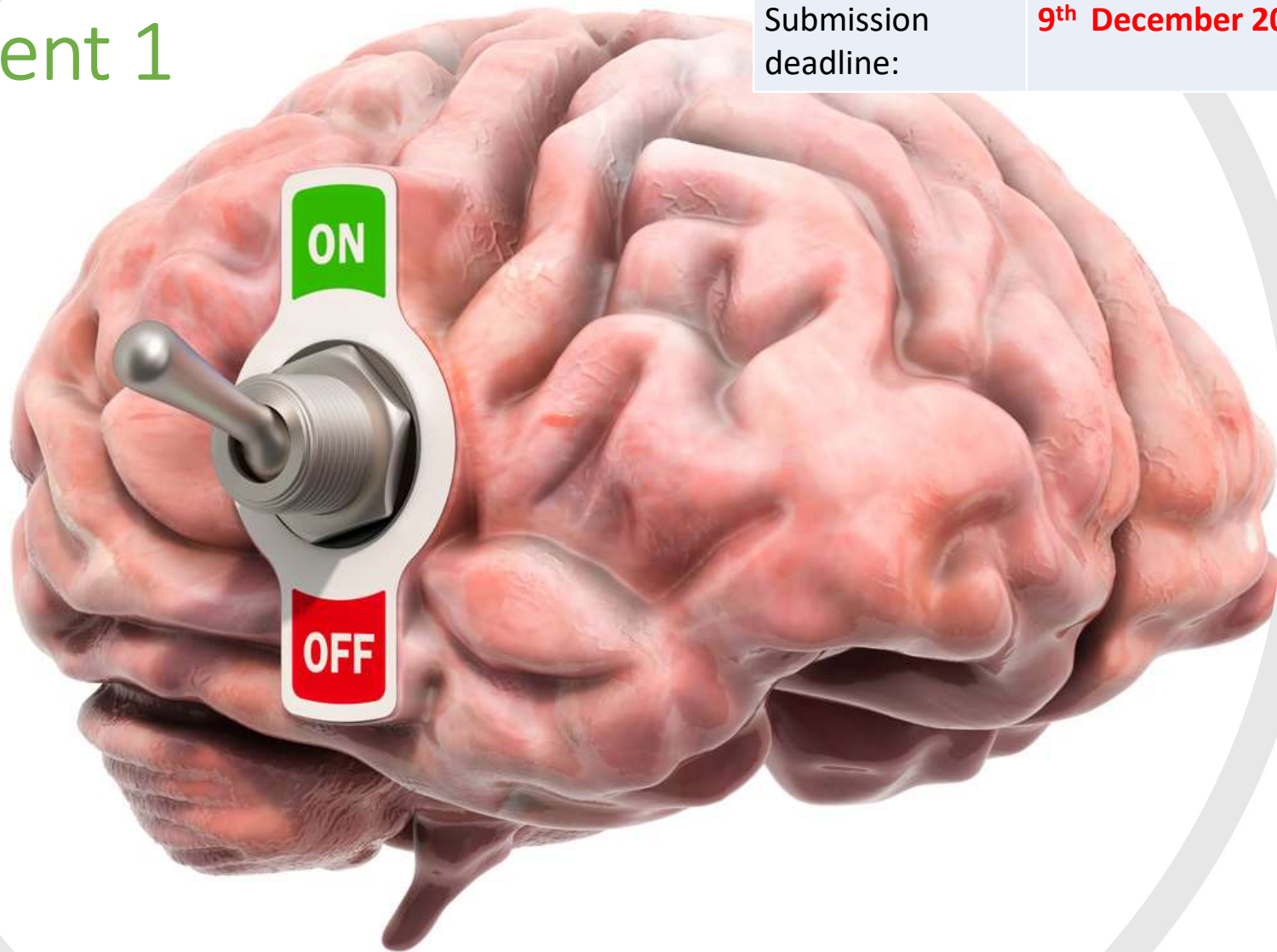
STUDENT FEEDBACK FORM		
This section details the extent to which the assessment criteria are demonstrated by you, which in turn determines your mark. The marks available for each category of skill are shown. Lecturers will use the space provided to comment on the achievement of the task(s), including those areas in which you have performed well and areas that would benefit from development/improvement.		
Generic Assessment Criteria	Marks available	Marks awarded
1. Engagement with Literature Skills		
	10	
2. Knowledge and Understanding Skills		
	25	
3. Cognitive and Intellectual Skills		
	25	
4. Practical Application Skills		
	25	
5. Transferable Skills for Life and Professional Practice		
	15	
Assessment Mark (Assessment marks are subject to ratification at the Exam Board. These comments and marks are to give feedback on module work and are for guidance only until they are confirmed.)		Late Submission Penalties (tick if appropriate) Up to 1 week late (40% Max) Over 1 week late (0%)
		%

Assessment 1

Discussion:

Submission
deadline:

9th December 2025

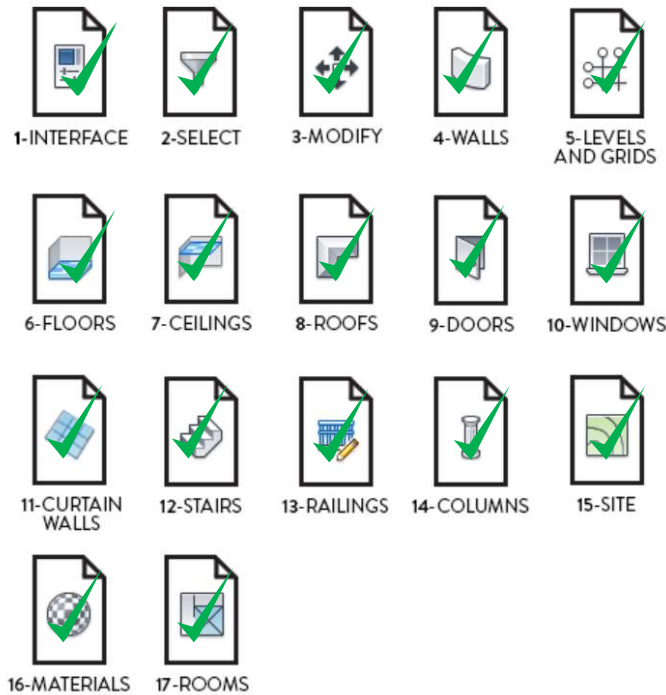


Whiteboard exercise



AUTODESK® REVIT® the basics

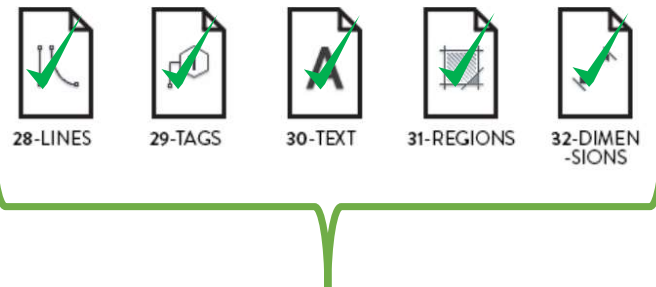
PART 1: MODEL



PART 2: VIEWS

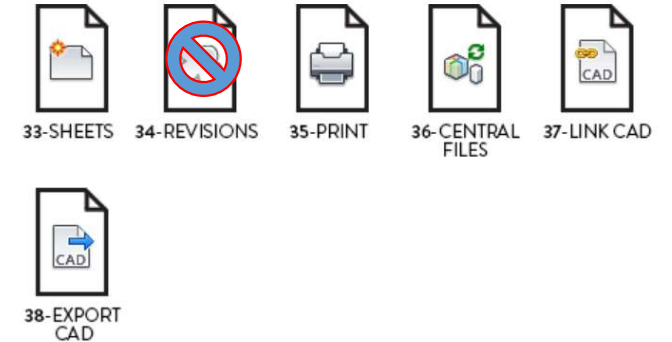


PART 3: ANNOTATE

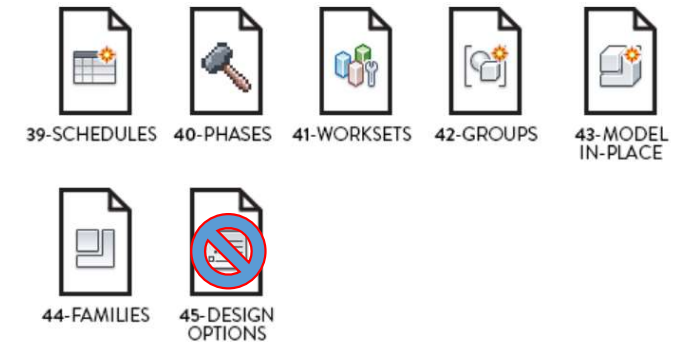


Covered in notes:

PART 4: PUBLISH AND COLLABORATE



PART 5: ADVANCED TOOLS

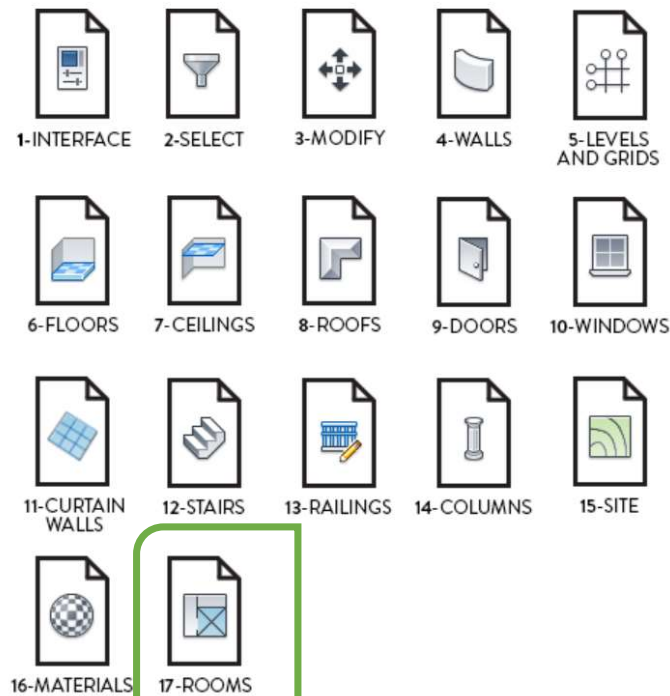


<https://revitpure.com/basics>

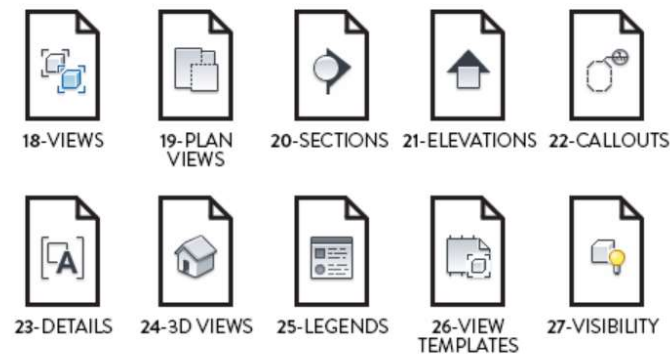
<https://academy.autodesk.com/>

the basics: plus

PART 1: MODEL



PART 2: VIEWS



PART 5: ADVANCED TOOLS



- Creating Schedules for pricing
- Phased Works
- Central Models / Worksets / Federated Models
- Families
- Advanced Modelling: Sweeps Reveals and Model In Place
- Collaboration and interoperability
- VR Visualisation

PART 5: ADVANCED TOOLS



39-SCHEDULES



40-PHASES



41-WORKSETS



42-GROUPS



43-MODEL
IN-PLACE



44-FAMILIES



45-DESIGN
OPTIONS

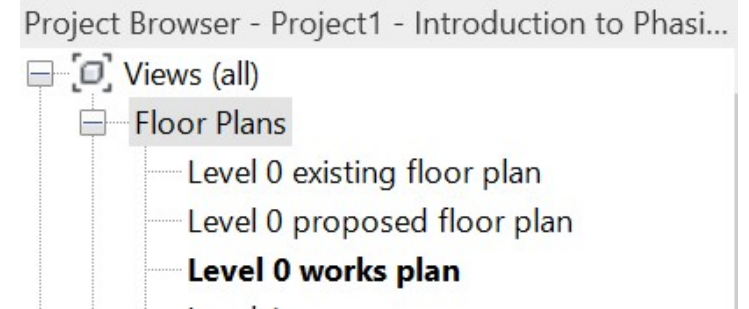


- Creating Schedules for pricing
- Phased Works
- Central Models / Worksets / Federated Models
- Families
- Advanced Modelling:
Sweeps Reveals and Model In Place
- *Collaboration and interoperability*
- *VR Visualisation*

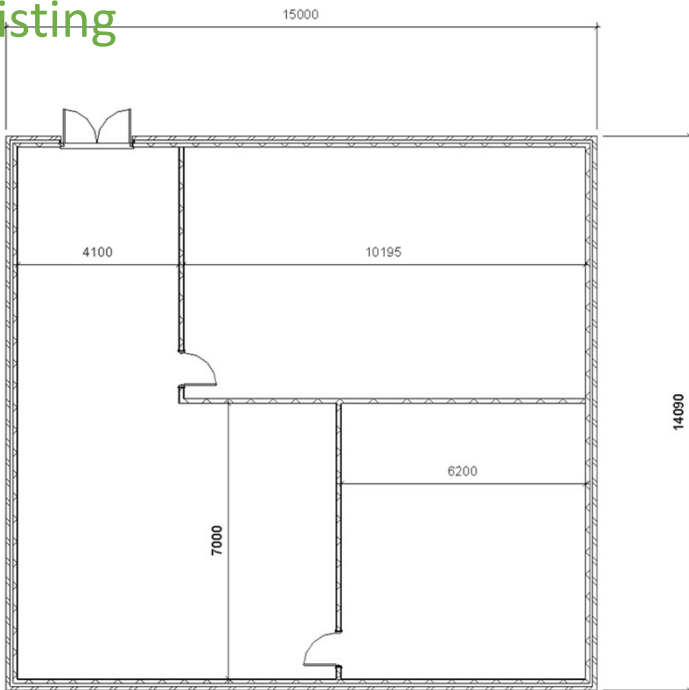


Phasing in Revit (Exercise 4)

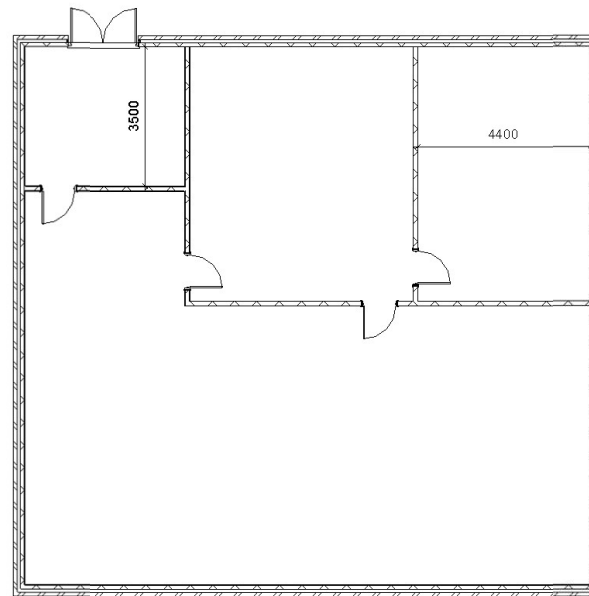
Revit enables you to show both existing and proposed plans using Phase Filters and Graphical Overrides



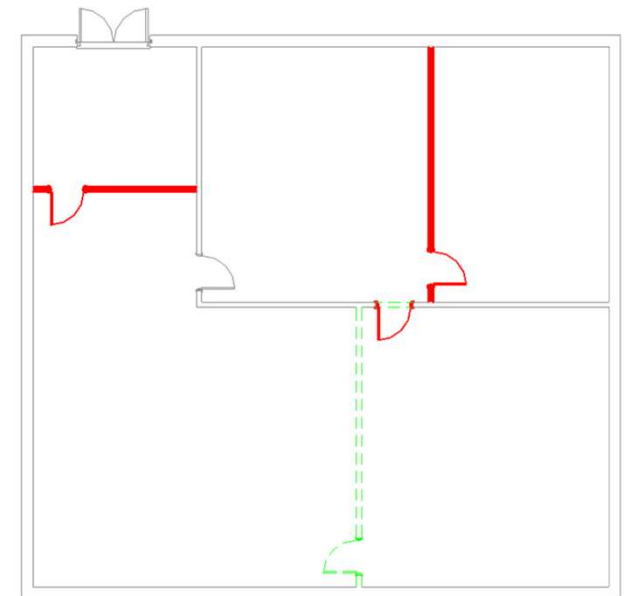
Existing



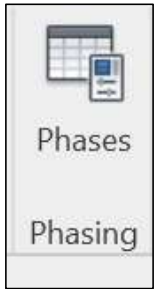
Proposed



Works Plan



Manage



Phasing

Project Phases Phase Filters Graphic Overrides

PAST

	Name	Description
1	Existing	
2	New Construction	

Insert

Before

After

Combine with:

Previous

Next

Phasing

Project Phases Phase Filters Graphic Overrides

	Filter Name	New	Existing	Demolished	Temporary
1	Show All	By Category	Overridden	Overridden	Overridden
2	Show Complete	By Category	By Category	Not Displayed	Not Displayed
3	Show Demo + New	By Category	Not Displayed	Overridden	Overridden
4	Show New	Overridden	Overridden	Overridden	Not Displayed
5	Show Previous + Demo	Not Displayed	Overridden	Overridden	Not Displayed
6	Show Previous + New	By Category	Overridden	Not Displayed	Not Displayed
7	Show Previous Phase	Not Displayed	Overridden	Not Displayed	Not Displayed

New Delete

OK Cancel Apply Help

Phasing

Project Phases Phase Filters Graphic Overrides

Phase Status	Projection/Surface		Cut		Halftone	Material
	Lines	Patterns	Lines	Patterns		
Existing				Hidden	☐	Phase - Exist
Demolished				Hidden	☐	Phase - Demo
New					☐	Phase - New
Temporary					☐	Phase - Temporary

OK Cancel Apply Help

Phasing in Revit

Revit enables you to show both existing and proposed plans using Phasing Filters and Graphical Overrides

Existing

Floor Plan

Floor Plan: Level 0 existing floor plan

Edit Type

Depth Clipping

No clip

Identity Data

View Template

<None>

View Name

Level 0 existing floor p...

Dependency

Independent

Title on Sheet

Referencing Sheet

Referencing Detail

Phasing

Phase Filter

Show All

Phase

Existing

Proposed

Floor Plan

Floor Plan: Level 0 proposed floor pl...

Edit Type

Depth Clipping

No clip

Identity Data

View Template

<None>

View Name

Level 0 proposed floo...

Dependency

Independent

Title on Sheet

Referencing Sheet

Referencing Detail

Phasing

Phase Filter

Show Complete

Phase

New Construction

Works Plan

Floor Plan

Floor Plan: Level 0 works plan

Edit Type

Depth Clipping

No clip

Identity Data

View Template

<None>

View Name

Level 0 works plan

Dependency

Independent

Title on Sheet

Referencing Sheet

Referencing Detail

Phasing

Phase Filter

Show New

Phase

New Construction