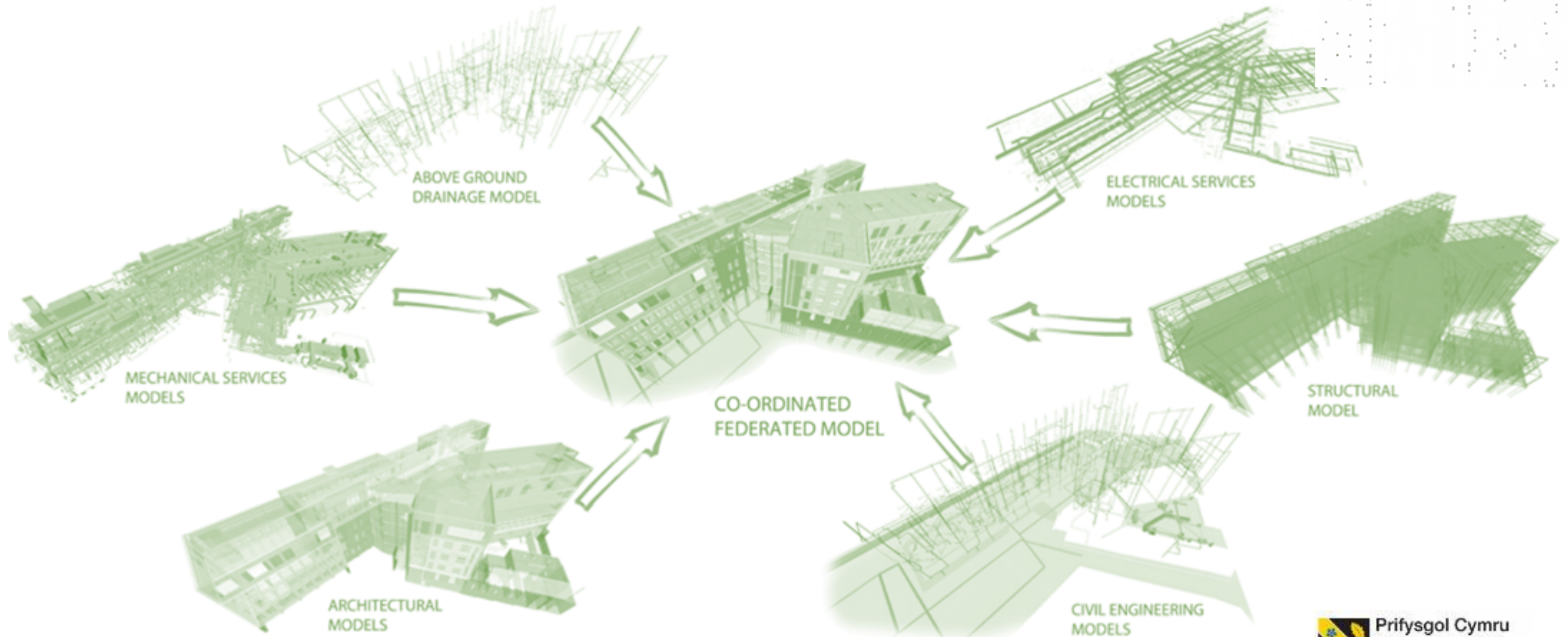


Building Information Modelling

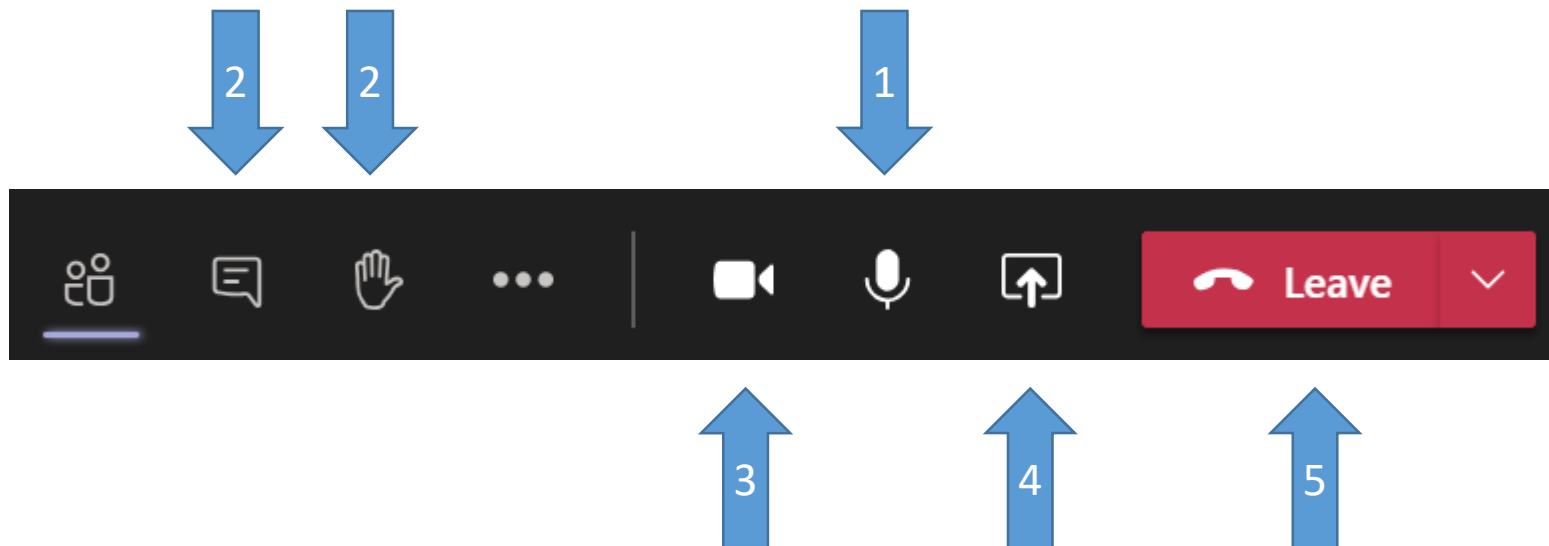


www.onecreativeenvironment.com

NEW

MS TEAMS HOUSEKEEPING

1. Mute your Microphone
2. Use Chat to Ask Questions or Put your hand Up
3. If you have a poor connection switch off Camera
4. I may ask you to share your screen.
5. When the lecture ends please hang up



Week 9: Revision Session

Microsoft Teams interface showing the ACBA 5010 BIM 2020-21_GRP team chat. The chat title is "ACBA 5010 BIM wk9" and the subject is "Week 9 Revision Session". The chat content includes a message from Gavin asking for feedback on the Week 9 revision lecture, with a list of topics to be covered.

ACBA 5010 BIM 2020-21_GRP

General

- Wk 01
- Wk 02
- Wk 03
- Wk 04
- Wk 05
- Wk 06
- Wk 07
- Wk 08
- Wk 09

ACBA 5010 BIM wk9

Week 9 Revision Session

Hi Gavin, when you submit this form, the owner will be able to see your name and email address.

* Required

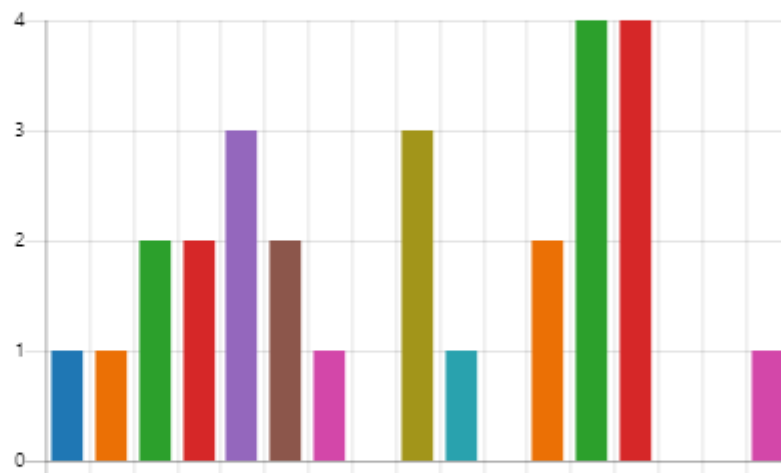
1. What areas would you like to be covered in Week 9 revision lecture? *

- ☐ Interface and Levels
- ☐ Families
- ☐ Walls Floors Roofs Stairs
- ☐ Phasing
- ☐ Revit Rendering & Enscape
- ☐ Views, Callouts and Details
- ☐ True North / Project North
- ☐ BIM Process
- ☐ Annotations, Tags, Room Legends
- ☐ Linking Cad Files
- ☐ Linking Revit Files
- ☐ Project Base Point



Walls Floors Roofs Stairs	1
Interface and Levels	1
Views, Callouts and Details	2
Annotations, Tags, Room Lege...	2
Materials	3
Sheets	2
Linking Cad Files	1
Linking Revit Files	0
True North / Project North	3
Project Base Point	1
Phasing	0
Families	2
Structures - Columns Beams P...	4
Schedules - Take Off Schedules	4
Revizto - Collaboration	0
Revit Rendering & Enscape	0
BIM Process	1

Tags, Annotations - Some are a bit to big for my rooms so just want to know how to get them to fit. Structural - struggling a bit with the beams, columns and Foundations. Car parking, play grounds & drop off points - if you could touch on how to approach these, that would be great.



Feeling quite overwhelmed with most aspects of the software to be honest. I'm continuing to look over revision videos etc

Splash page text input

Does BIM Level 2 still exist? Have been researching and it now seems to be 'BIM according to the ISO 19650 series, maturity stage 2'.

i would personally say all of it but know that is far too much to go through in a lecture.

DON'T PANIC

<

>

Search

—

□

×

Activity

Chat

Teams

Assignments

Calendar

Calls

Files

...

Apps

Help

<

All teams

ACBA 5010 BIM 2020-2... ...

General

Wk 01

Wk 02

Wk 03

Wk 04

Wk 05

Wk 06

Wk 07

Wk 08

Wk 09

General

Posts

Files

Class Notebook

Assignments

1 more

+

+ New

↑ Upload

↻ Sync

🔗 Copy link

🔗 Open in SharePoint

☰ All Documents

General

>

Class Materials

	Name	Modified	Modified By
	Assignments	January 28	Gavin Traylor
	BIM TitleBlocks	January 28	Gavin Traylor
	Class Exercises	January 28	Gavin Traylor
	L4 Revision Videos	January 12	Gavin Traylor
	Lecture Notes	January 28	Gavin Traylor
	Sample BIM Documents	February 4	Gavin Traylor

Moodle - Reading List

← → ↺ 🔒 https://moodle.uwtsd.ac.uk/course/view.php?id=8122

Home My Modules Moodle Archives English (en)

BIM (ACBA5010)

Home > My modules > ACBA5010

Announcements

ExLibris
Leganto Online Resource List

☐ Open all ☒ Close all

Instructions: Clicking on the section name will show / hide the section.

1

Module

W ACBA5010

2

Assessment Briefs 2020/2021

3

Turnitin Submission Links 2020/21

BIM (ACBA 5010)
DRAFT ACBA5010 (2020-50) 12 items in 2 sections

LISTS COLLECTION FIND LISTS REPORTS

Essential reading (8)

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.

book **BIM handbook : a guide to building information modeling for owners, managers designers, engineers, and contractors**
Eastman, Charles M., 2nd ed., Chichester; Hoboken, N.J. : Wiley , 2011., Total Pages xiv, 626 p. :
Essential
Complete Available at Y Fforwm Main Collection : 690.028 BIM

WEBSITE **Little Book of BIM 2020**
BSI, BSI, 2020
British Standard Institution - Guide to BIM documentation. Essential for all students
Essential
Complete Check availability >

WEBSITE **NBS BIM Library**
NBS, NBS, NA
NBS BIM Library of BIM Objects
Essential
Sent Check availability >

book **Building information modeling for dummies**
Mordue, Stefan., Philp, David.; Swaddle, Paul., Chichester, England ; John Wiley & Sons Ltd, 2016., Total Pages 1 online resource (356 p.)
Essential
Complete Check availability >

book **BIM and construction management : proven tools, methods, and workflows**
Gardner, Paul.; Brookfield, Susan; McCall, Peter.; Gardiner, Andrew.; Gardiner, Peter.; 2019. Total Pages 1 online resource (356 p.)

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.

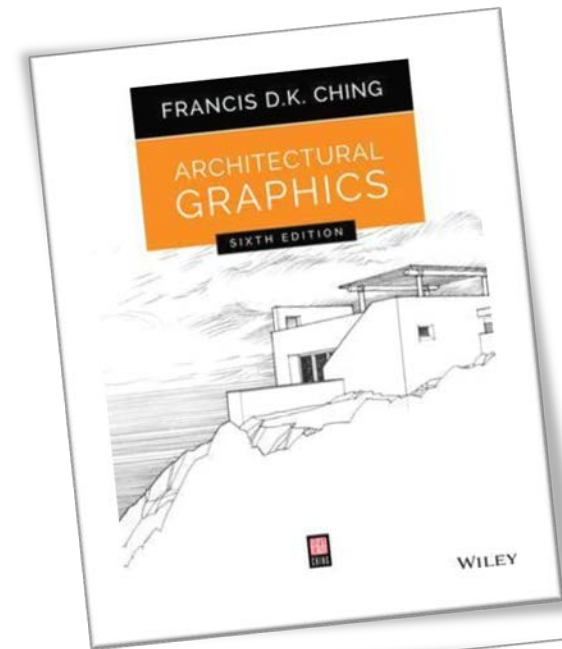
Mordue S Swaddle P and Philp D (2015). *Building Information Modelling for Dummies*. Chichester: John Wiley & Sons Ltd.

NBS National BIM Library

The BIM HUB: BIM Journal

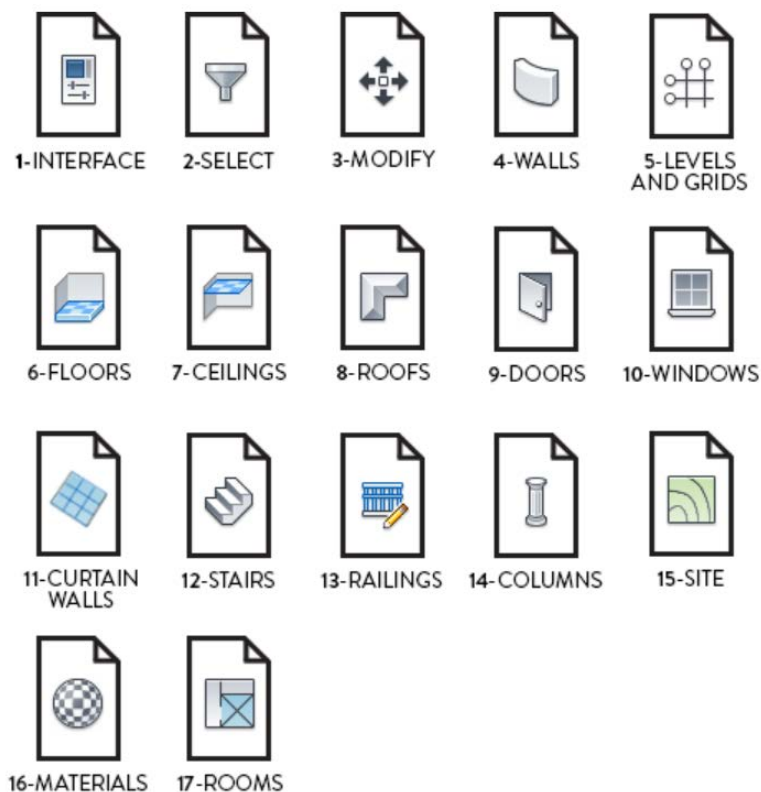
<https://academy.autodesk.com/>
Revit Tutorials - Youtube.

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

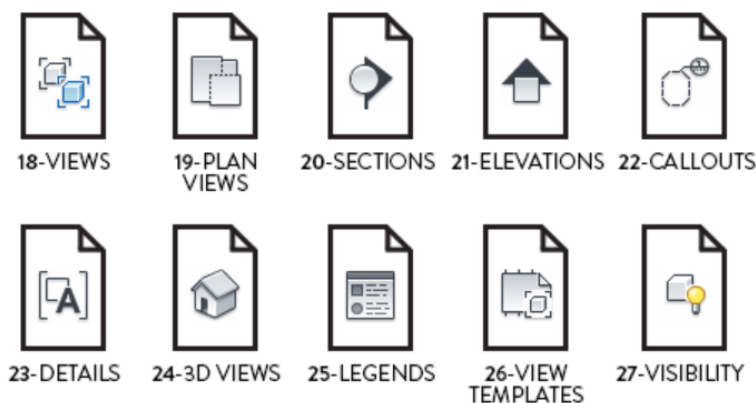


Key BIM Standards, ISO and PAS – refer to 'Little Book of BIM' guide

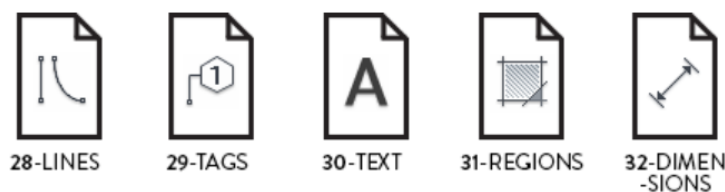
PART 1: MODEL



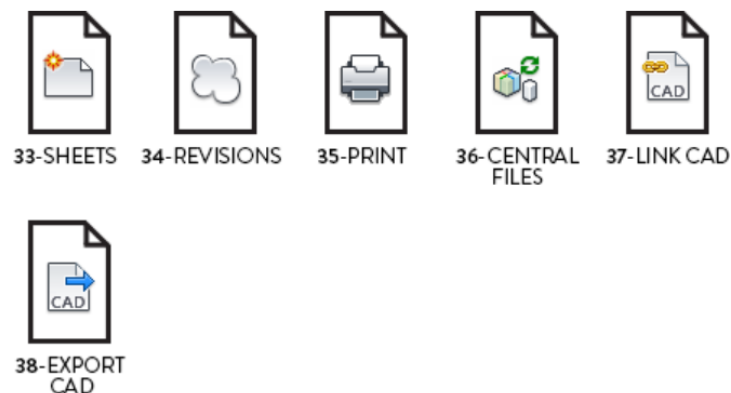
PART 2: VIEWS



PART 3: ANNOTATE



PART 4: PUBLISH AND COLLABORATE



PART 5: ADVANCED TOOLS



<https://revitpure.com/basics>

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

PART 5: ADVANCED TOOLS



39-SCHEDULES



40-PHASES



41-WORKSETS



42-GROUPS



43-MODEL
IN-PLACE



44-FAMILIES

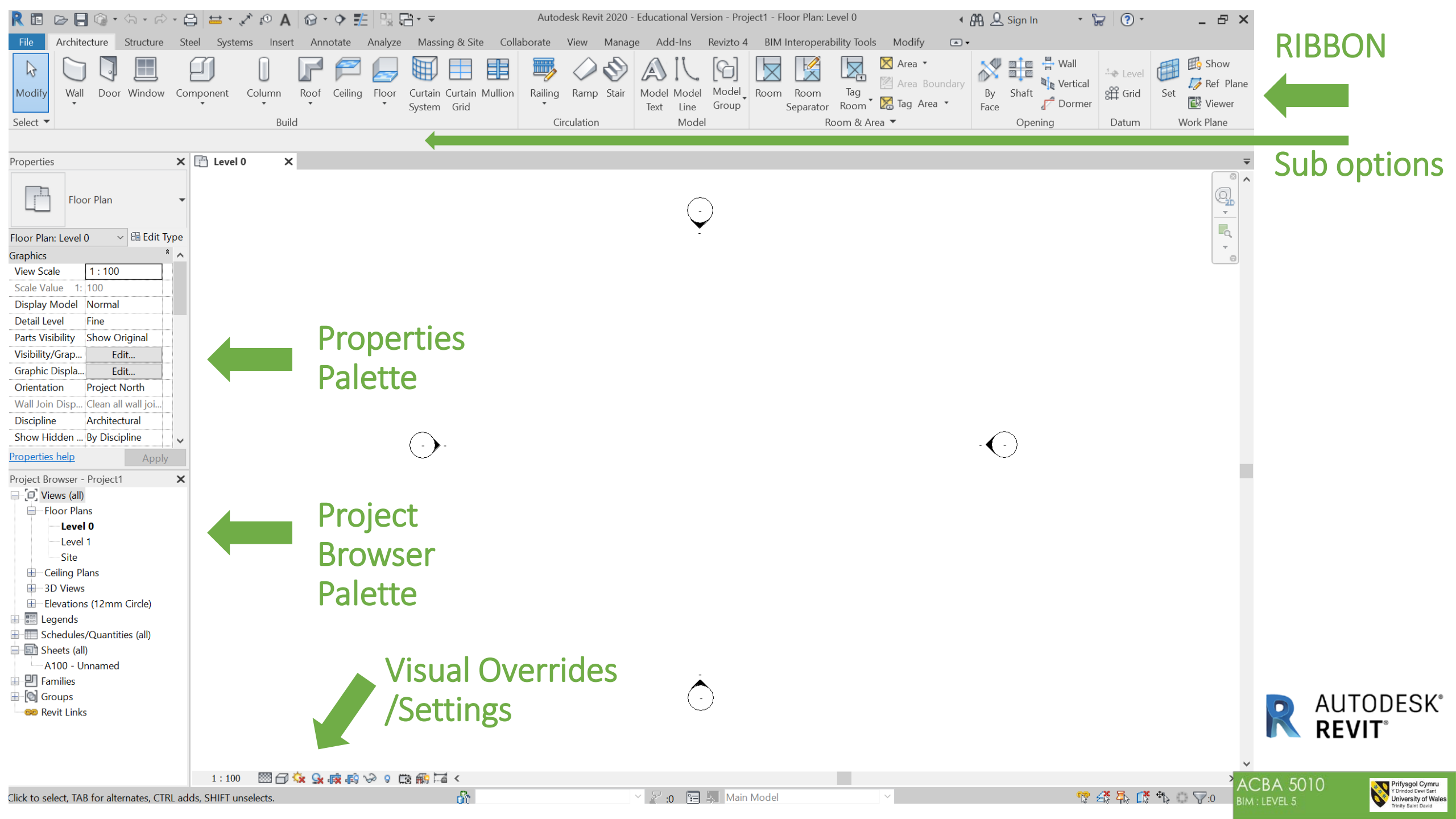


45-DESIGN
OPTIONS



- 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*

● Walls Floors Roofs Stairs	1
● Interface and Levels	1
● Views, Callouts and Details	2
● Annotations, Tags, Room Lege...	2
● Materials	3
● Sheets	2



RIBBON



Sub options

Properties
Palette

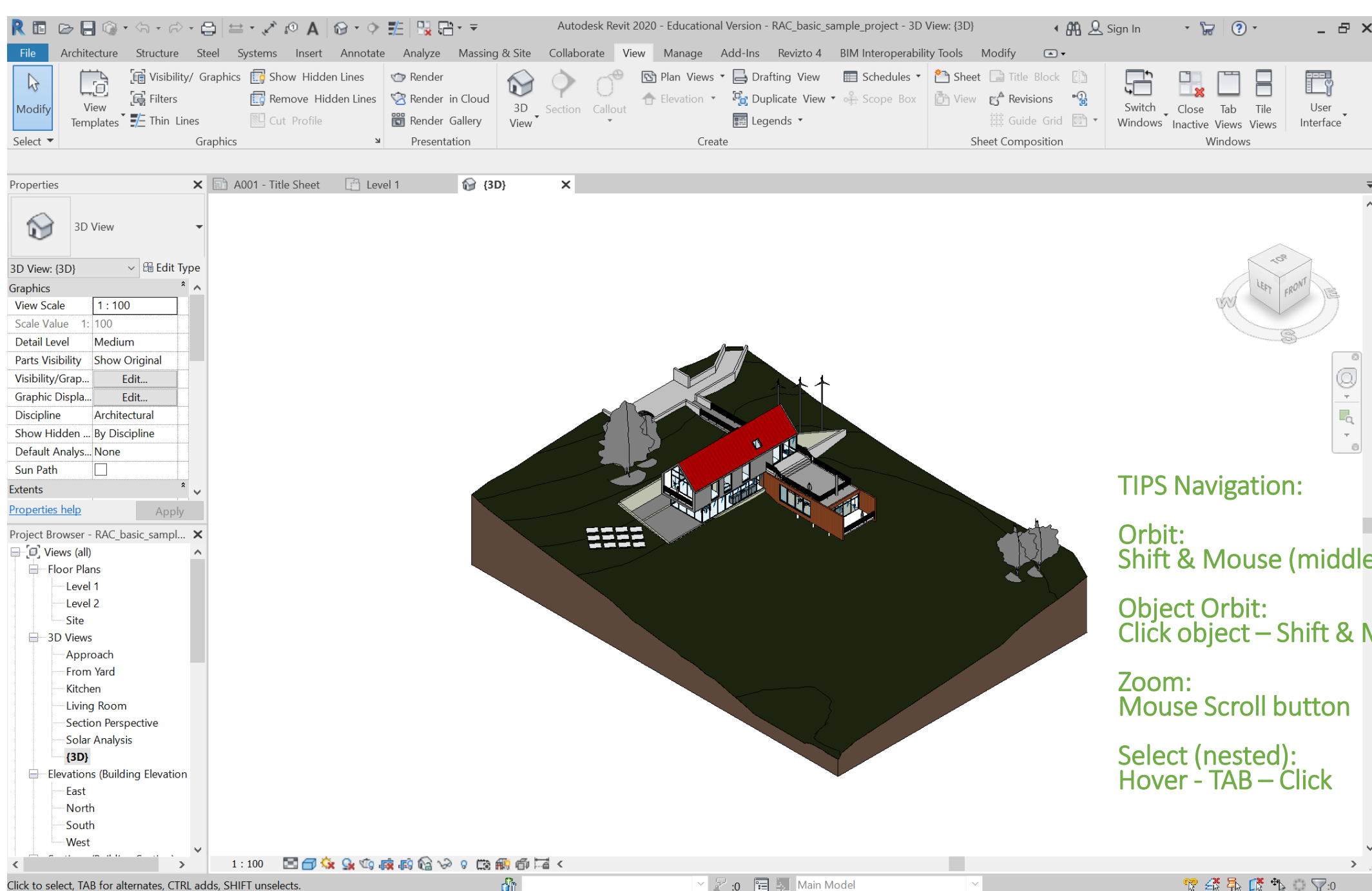


Project
Browser
Palette



Visual Overrides
/Settings





1-INTERFACE



2-SELECT



3-MODIFY

TIPS Navigation:

Orbit:
Shift & Mouse (middle button)

Object Orbit:
Click object – Shift & Mouse (middle button)

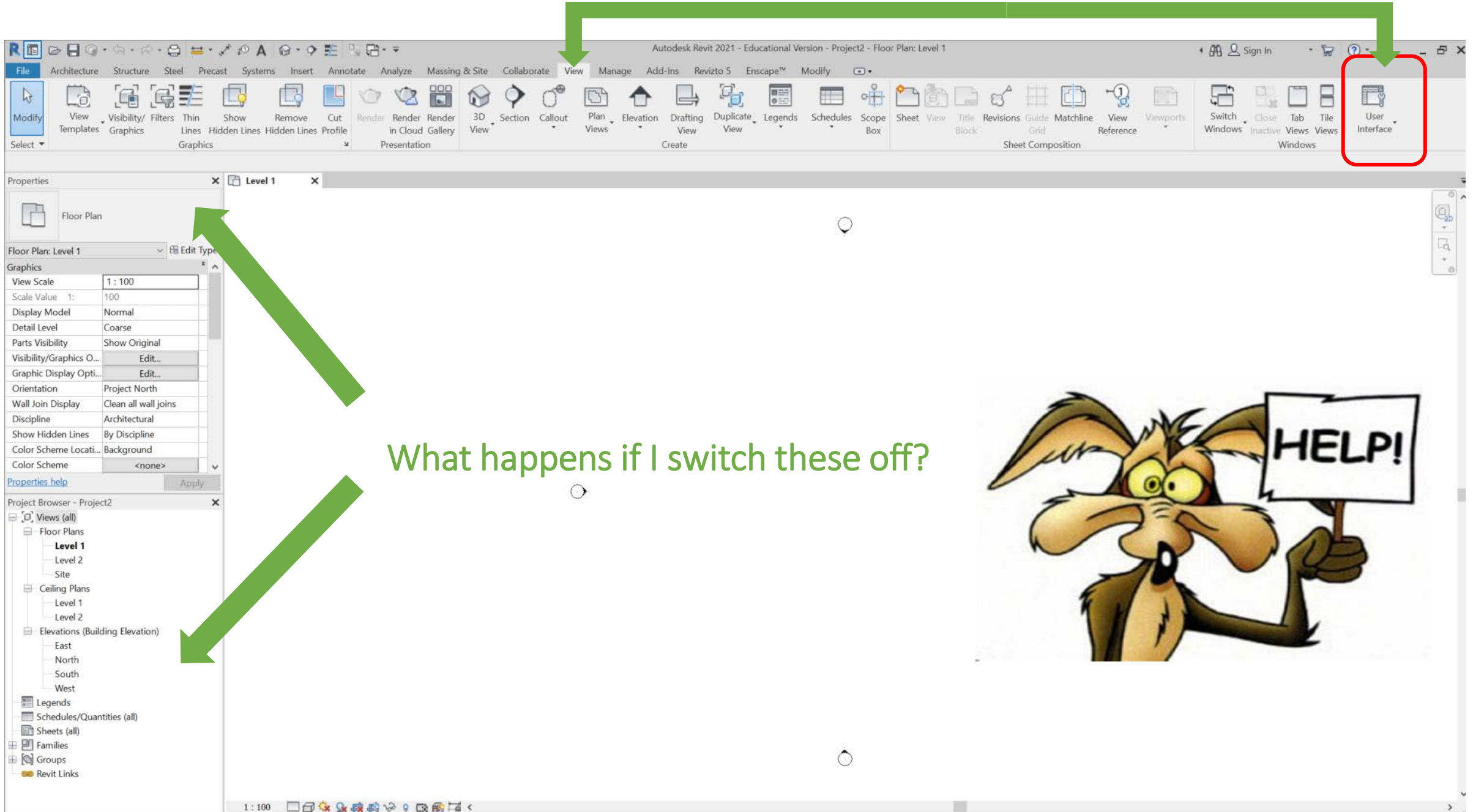
Zoom:
Mouse Scroll button

Select (nested):
Hover - TAB – Click

AUTODESK®
REVIT®

ACBA 5010
BIM : LEVEL 5

Prifysgol Cymru
University of Wales
Trinity Saint David



Autodesk Revit 2021 - Educational Version - Project2 - Floor Plan: Level 1

File Architecture Structure Steel Precast Systems Insert Annotate Analyze Massing & Site Collaborate View Manage Add-Ins Revit 5 Enscape™ Modify

Modify View Templates Visibility/ Graphics Filters Thin Lines Show Hidden Lines Remove Hidden Lines Cut Profile Render Render in Cloud Gallery 3D View Section Callout Plan Views Elevation Drafting View Duplicate View Legends Schedules Scope Box Sheet View Title Block Revisions Guide Matchline View Reference Viewports Switch Windows Close Inactive Views Tile Views User Interface

Properties

Floor Plan

Floor Plan: Level 1 Edit Type

Graphics

View Scale	1 : 100	
Scale Value	1:	100
Display Model	Normal	
Detail Level	Coarse	
Parts Visibility	Show Original	
Visibility/Graphics O...	Edit...	
Graphic Display Opti...	Edit...	
Orientation	Project North	
Wall Join Display	Clean all wall joins	
Discipline	Architectural	
Show Hidden Lines	By Discipline	
Color Scheme Locati...	Background	
Color Scheme	<none>	

Properties help Apply

Project Browser - Project2

- Views (all)
 - Floor Plans
 - Level 1**
 - Level 2
 - Site
 - Ceiling Plans
 - Level 1
 - Level 2
 - Elevations (Building Elevation)
 - East
 - North
 - South
 - West
 - Legends
 - Schedules/Quantities (all)
 - Sheets (all)
 - Families
 - Groups
 - Revit Links

4-WALLS

5-LEVELS AND GRIDS

6-FLOORS

7-CEILINGS

8-ROOFS

9-DOORS

10-WINDOWS

1 : 100

Main Model

Set up Levels

Creating /Editing



4-WALLS



6-FLOORS



8-ROOFS



9-DOORS



10-WINDOWS



Type Properties

Family: System Family: Basic Wall

Type: Wall-Ext_102Bwk-75Ins-100LBlk-12P

LOAD...
Duplicate...

Type Parameters

Parameter	Value
Construction	
Structure	Edit...
Wrapping at Inserts	Both
Wrapping at Ends	None
Width	290.0
Function	Exterior
Graphics	
Coarse Scale Fill Pattern	<Solid fill>
Coarse Scale Fill Color	RGB 192-192-192
Materials and Finishes	
Structural Material	Concrete Masonry Units _Low Density
Analytical Properties	
Heat Transfer Coefficient (U)	0.2359 W/(m²·K)
Thermal Resistance (R)	4.2386 (m²·K)/W
Thermal mass	27.90 kJ/K
Absorptance	0.700000

[What do these properties do?](#)

<< Preview OK Cancel Apply

Properties

Basic Wall
Wall-Ext_102Bwk-75Ins-100LBlk-12P

Walls (1) Edit Type

Constraints

Location Line	Wall Centerline
Base Constraint	Level 0
Base Offset	0.0
Base is Attached	☐
Base Extension Distance	0.0
Top Constraint	Unconnected
Unconnected Height	8000.0
Top Offset	0.0
Top is Attached	☐
Top Extension Distance	0.0
Room Bounding	☒
Related to Mass	☐

Structural

Structural	☐
Enable Analytical Model	☐
Structural Usage	Non-bearing

Dimensions

Length	13700.0
--------	---------

[Properties help](#) Apply

It is the same process for all fabric objects.
Select an object you want to edit.
In the properties click 'Edit Type'
In the 'Type Properties' Window click 'Duplicate'
Click Edit.. tab

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

Editable
Properties

Sample Height: 6096.0



EXTERIOR SIDE					
	Function	Material	Thickness	Wraps	Structural Material
1	Finish 1 [4]	Brick, Common	102.5	☒	☐
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	12.5	☒	☐

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

Click the preview Tab to
show what the object make
up in plan and section.

Click 'OK' and
'Apply' in the
Type Window

View: Floor Plan: Modify typ

Preview >>



18-VIEWS



19-PLAN
VIEWS



20-SECTIONS



21-ELEVATIONS



22-CALLOUTS



23-DETAILS



24-3D VIEWS



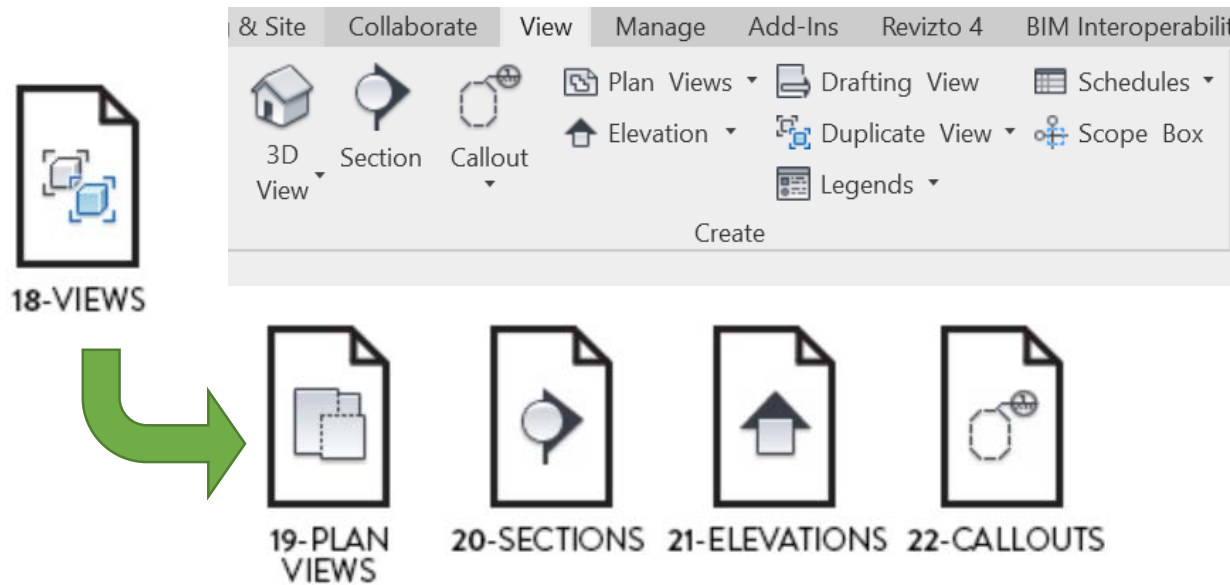
25-LEGENDS



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.

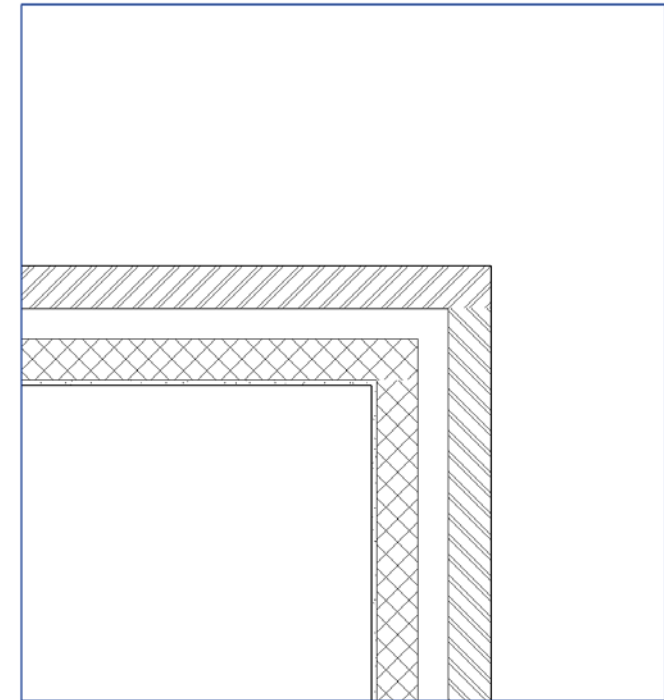
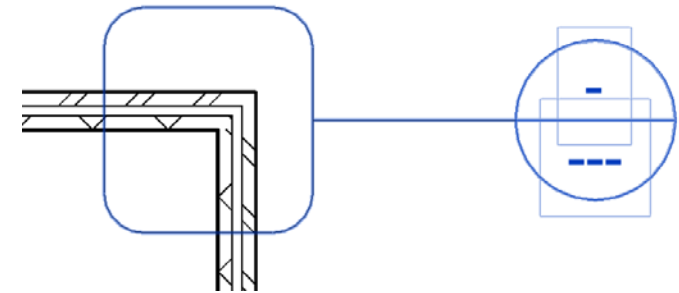
EG.

Ground Floor General arrangement plan 1:100

Ground Floor Setting out plan 1:50

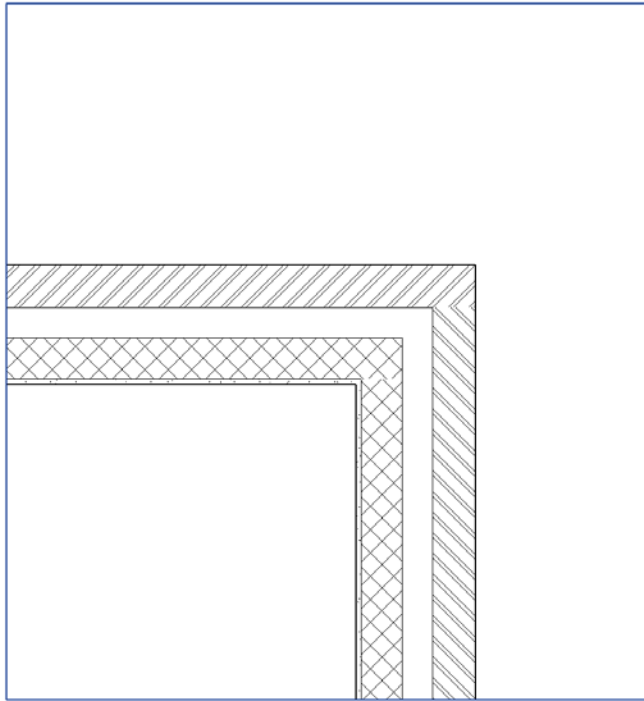
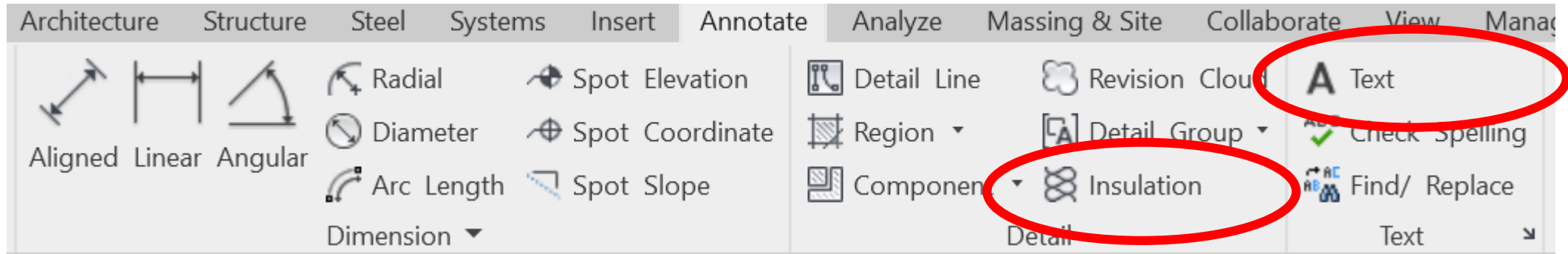
Callout detail of wall junction on plan 1:10

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

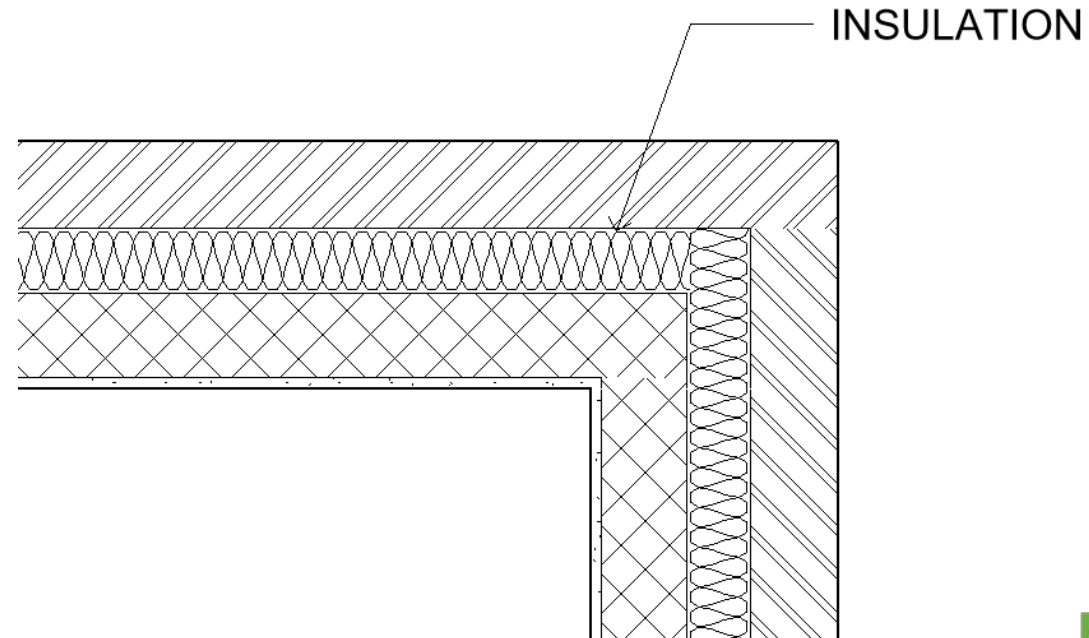




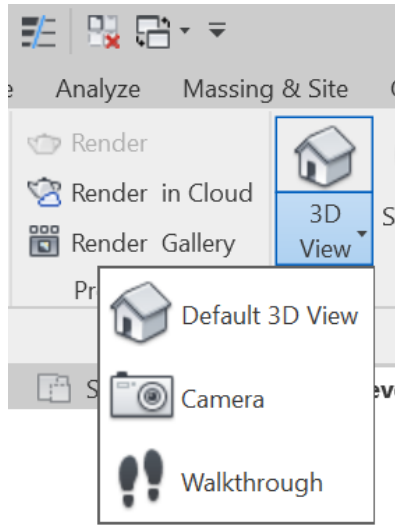
23-DETAILS



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



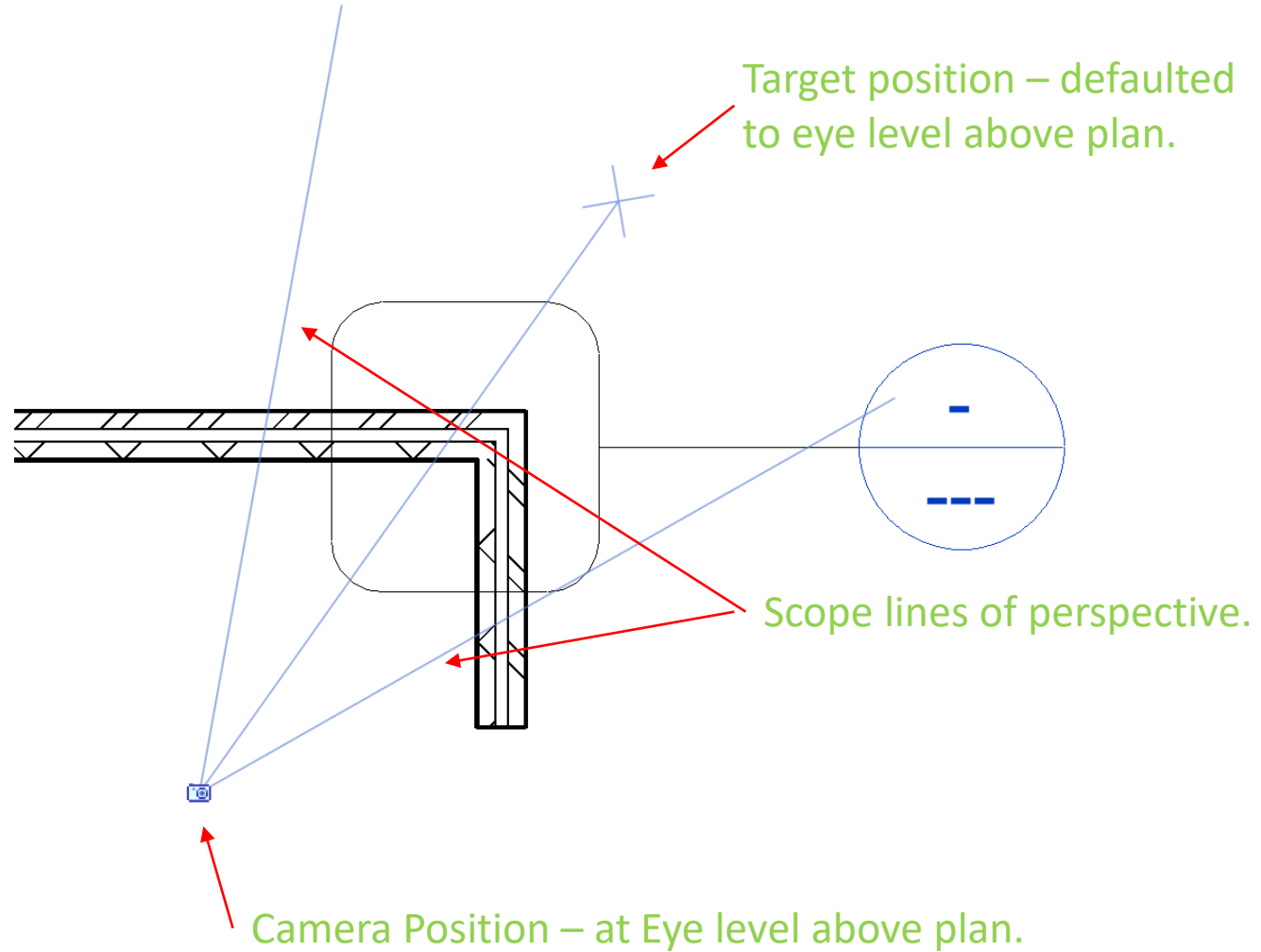
Adding further information to Details



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

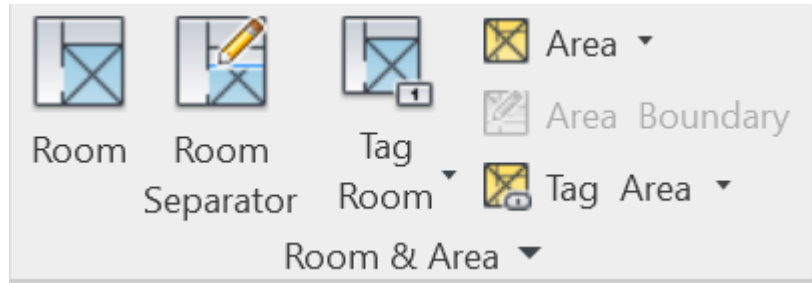




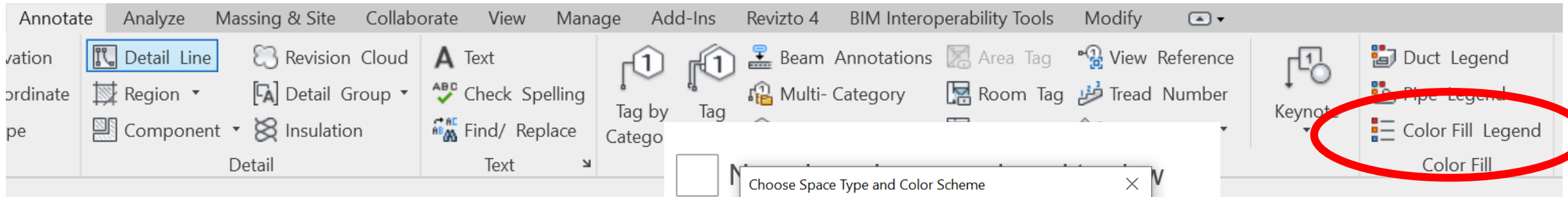
17-ROOMS



25-LEGENDS



Add rooms to your House Plan from the Architecture Menu



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



Properties

Floor Plan

Floor Plan: Level 0 Edit Type

Graphics

View Scale	1 : 100
Scale Value 1:	100
Display Model	Normal
Detail Level	Fine
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

Visibility/Graphic Overrides for Floor Plan: Level 0

Model Categories Annotation Categories Analytical Model Categories Imported Categories Filters

☒ Show model categories in this view If a category is unchecked, it will not be visible.

Filter list: <show all>

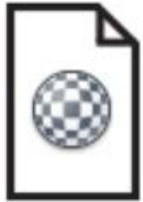
Visibility	Projection/Surface			Cut		Halftone	Detail Level
	Lines	Patterns	Transparency	Lines	Patterns		
☒ Air Terminals	Override...		Override...			☐	By View
☒ Areas						☐	By View
☒ Cable Tray Fittings						☐	By View
☒ Cable Trays						☐	By View
☒ Casework						☐	By View
☒ Ceilings						☐	By View
☒ Columns						☐	By View
☒ Communication Devices						☐	By View
☒ Conduit Fittings						☐	By View
☒ Conduits						☐	By View
☒ Curtain Panels						☐	By View
☒ Curtain Systems						☐	By View
☒ Curtain Wall Mullions						☐	By View
☒ Data Devices						☐	By View
☒ Detail Items						☐	By View
☒ Doors						☐	By View
☒ Duct Accessories						☐	By View
☒ Duct Fittings						☐	By View
☒ Duct Insulations						☐	By View

All None Invert Expand All

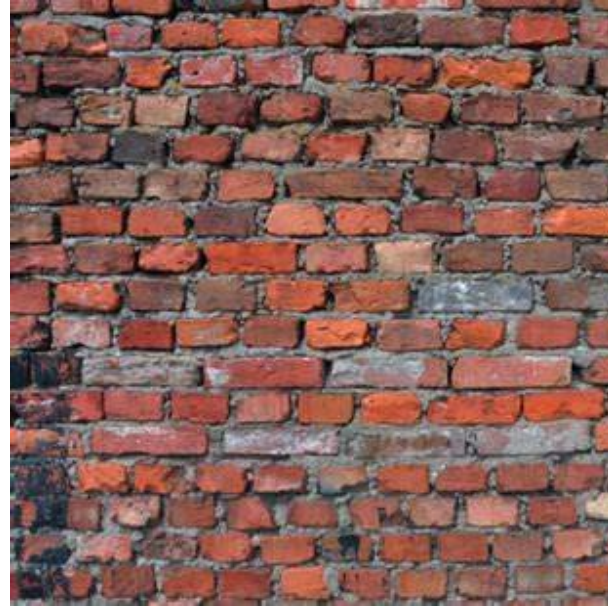
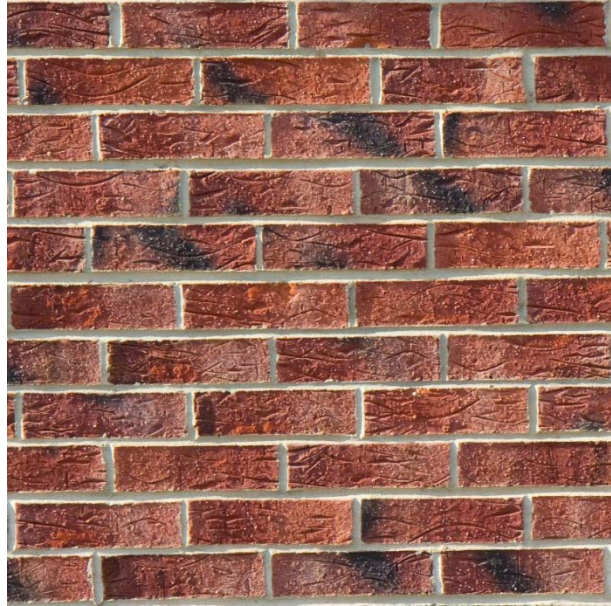
Categories that are not overridden are drawn according to Object Style settings. Object Styles...

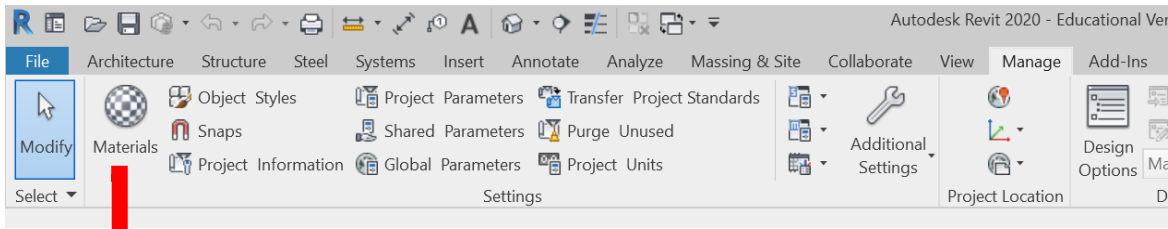
Override Host Layers
☐ Cut Line Styles Edit...

OK Cancel Apply Help

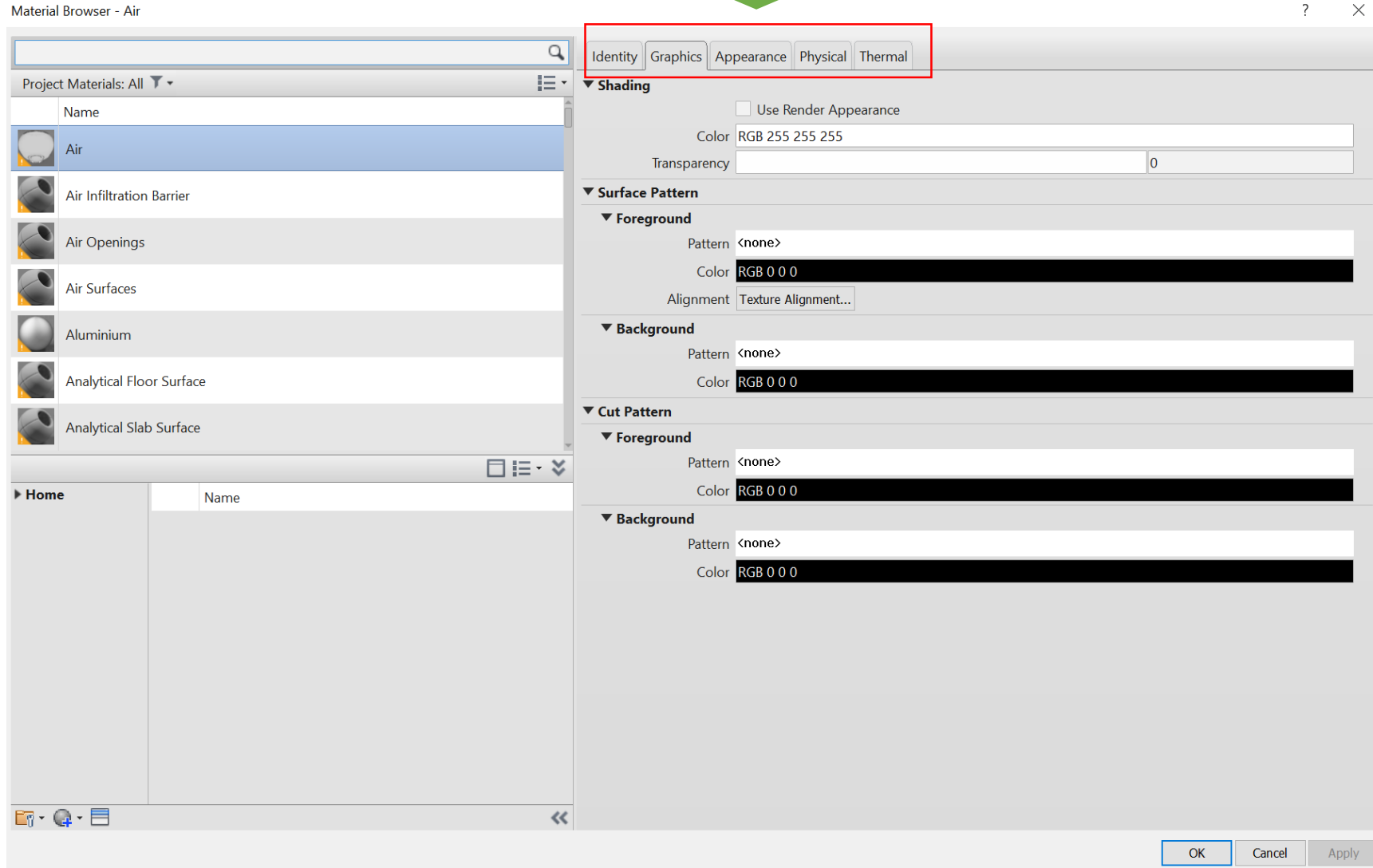


16-MATERIALS

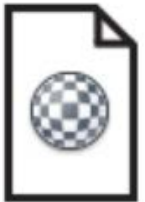




Properties of the Material



Materials
Loaded within
the project



16-MATERIALS

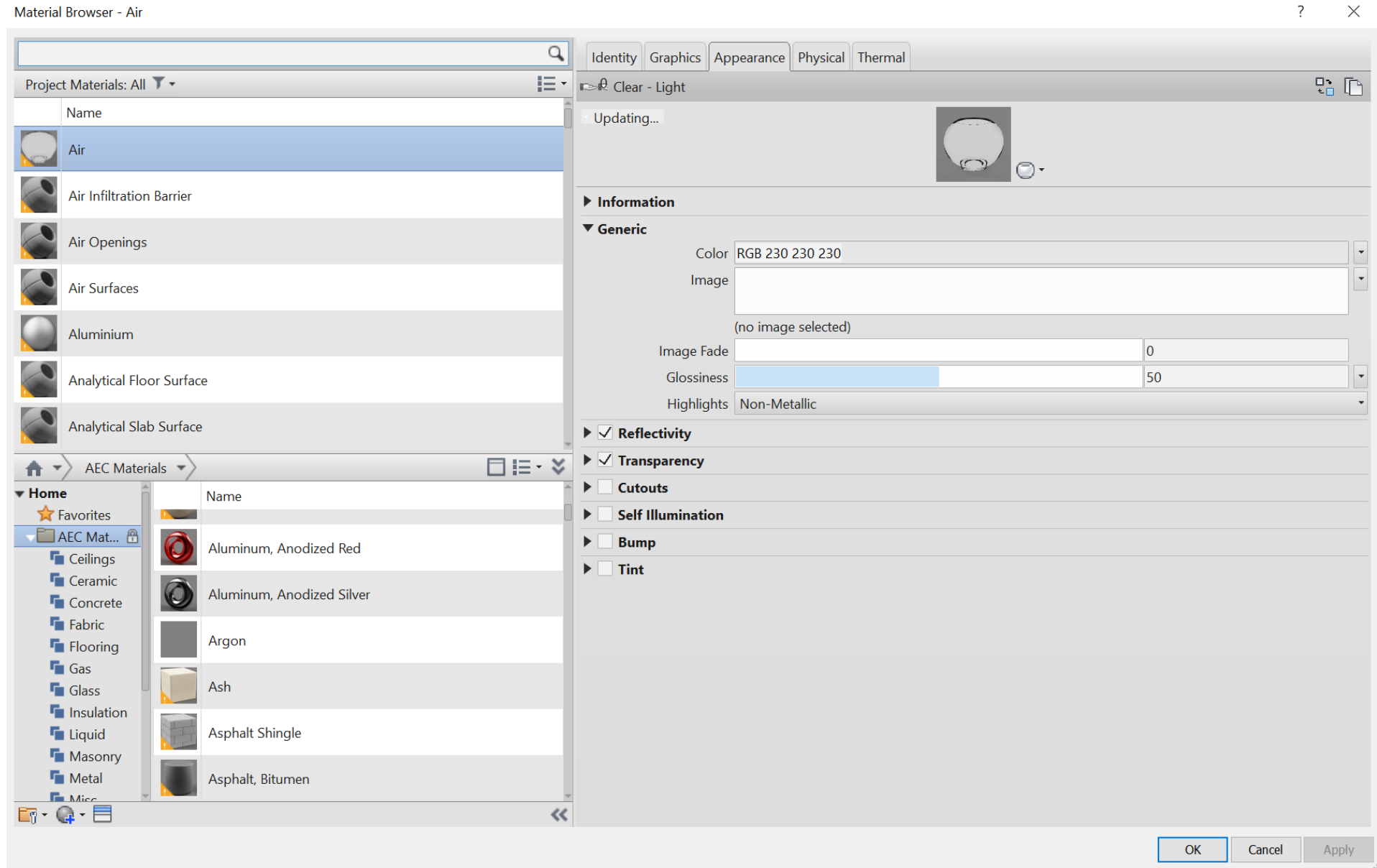


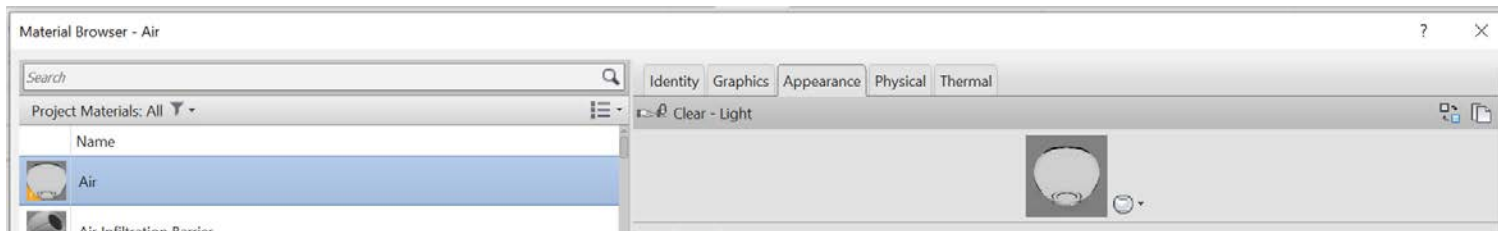
16-MATERIALS

Open the Home
Menu to view
AEC Materials
Library

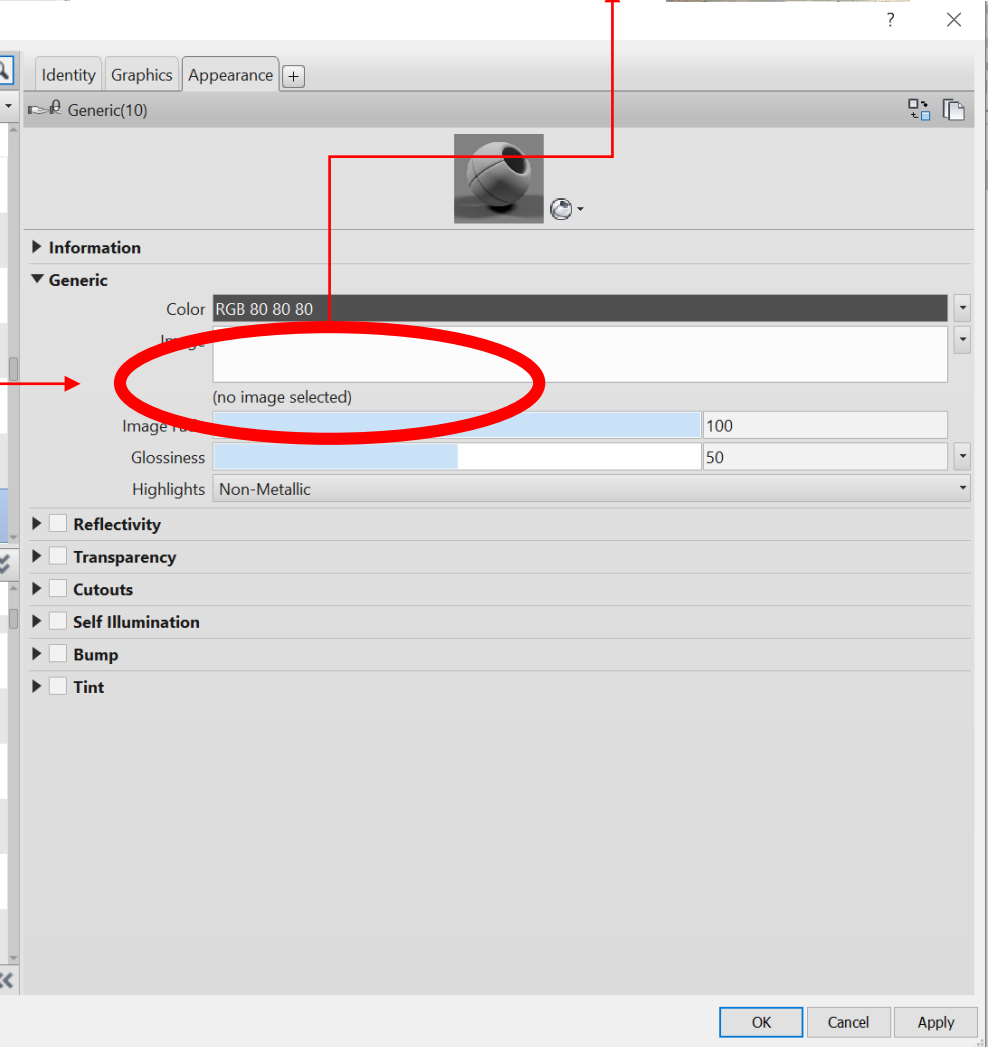
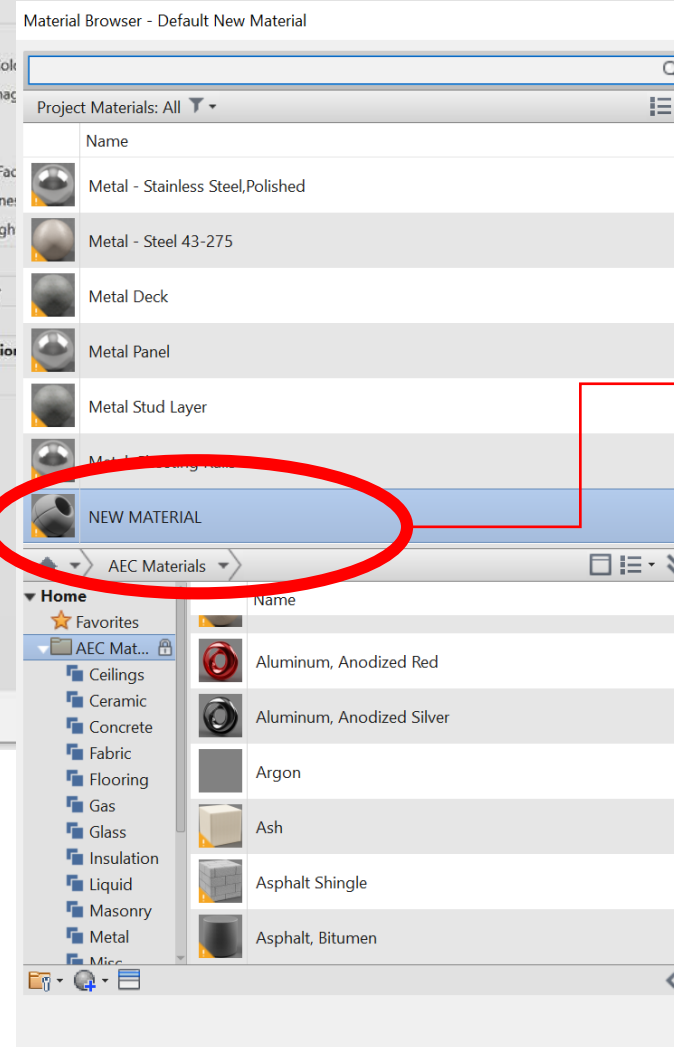
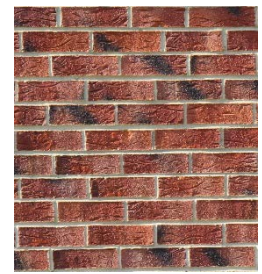


Additional
Materials can be
loaded in to the
project.





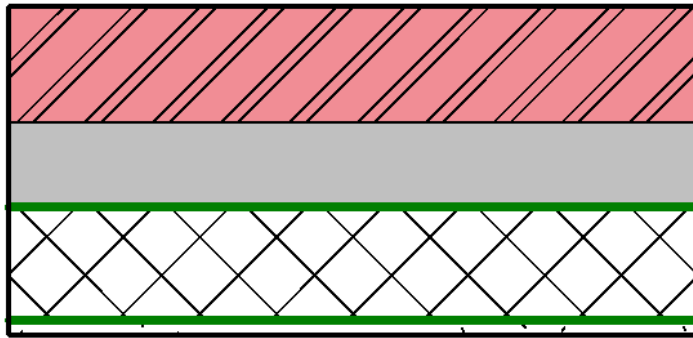
Load your
own image of
the material



Create a New Material and Rename it.
Images for the material can be added



Edit Assembly



Sample Height:	6096.0
----------------	--------

Layers		EXTERIOR SIDE			
	Function	Material	Thickness	Wraps	Structural Material
1	Finish 1 [4]	Brick, Common	102.5	☒	☐
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	12.5	☒	☐

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 >>](#)

PART 4: PUBLISH AND COLLABORATE



33-SHEETS



34-REVISIONS



35-PRINT



36-CENTRAL
FILES



37-LINK CAD



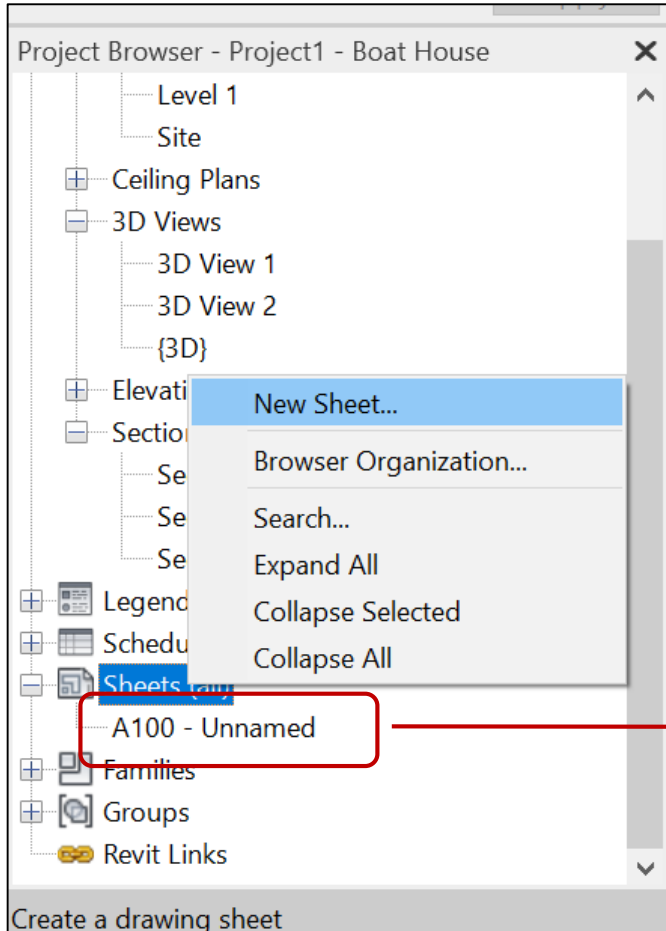
38-EXPORT
CAD



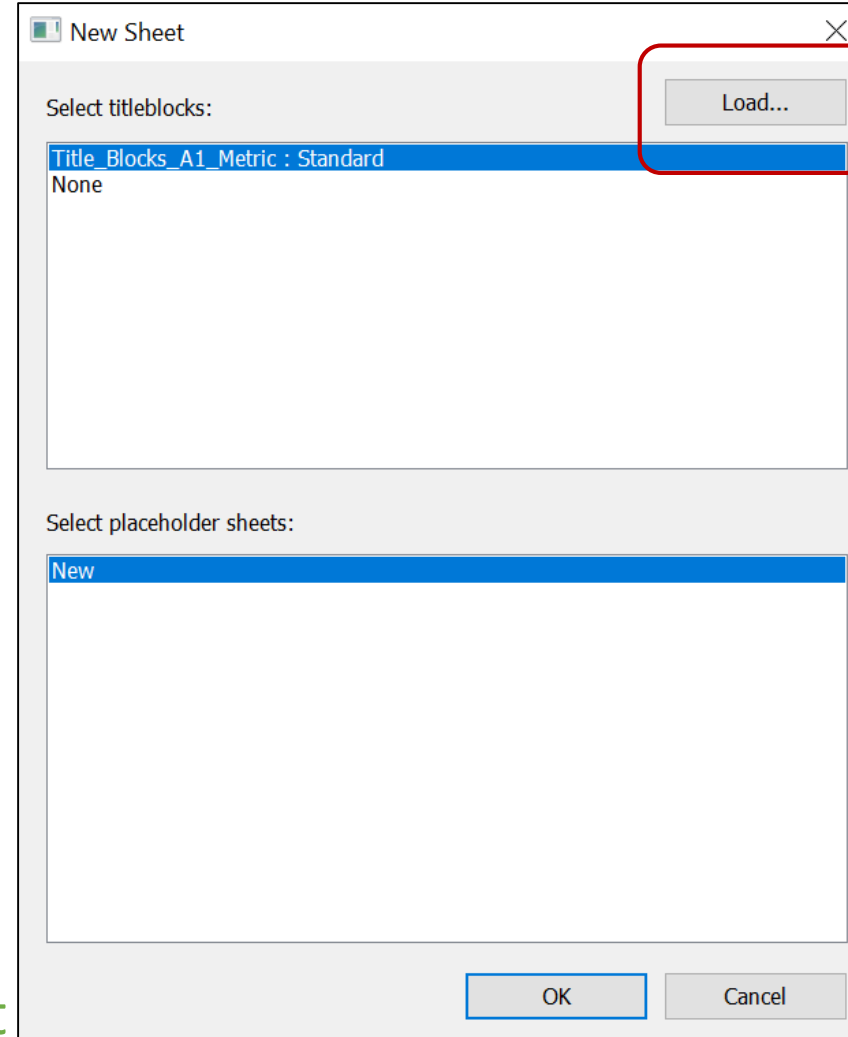
33-SHEETS

Download the UWTSD Splash Page and Titleblock from Teams

Right Click on Sheets
and select New Sheet



Right Click &
Delete
AutoDesk
Default sheet



Load:
Splash Page

Note:
Many practices use
a Splash Page to
hold common data
about the Model.

Project Name: Boat House Fishg

UPRN Code: 5010

Originator Code: UWTSD

Role Code: Designer

Drawn By: Author

Checked By: Checker

Date: 02/18/21

Project Status: S0

C:\Users\g.traylor\OneDrive - University of Wales Trinity Saint David\01 Lectures 2020-21\ACBA 5010 - BIM\01 Lecture notes\Boathouse deec2020.rvt

Prifysgol Cymru

5010

ACBA 5010

LEVEL 5

A

BIM

Project Name: Boat House Fishguard

UPRN Code: 5010

Originator Code: UWTSD

Role Code: Designer

Drawn By: Author

Checked By: Checker

Date: 02/18/21

Project Status: S0

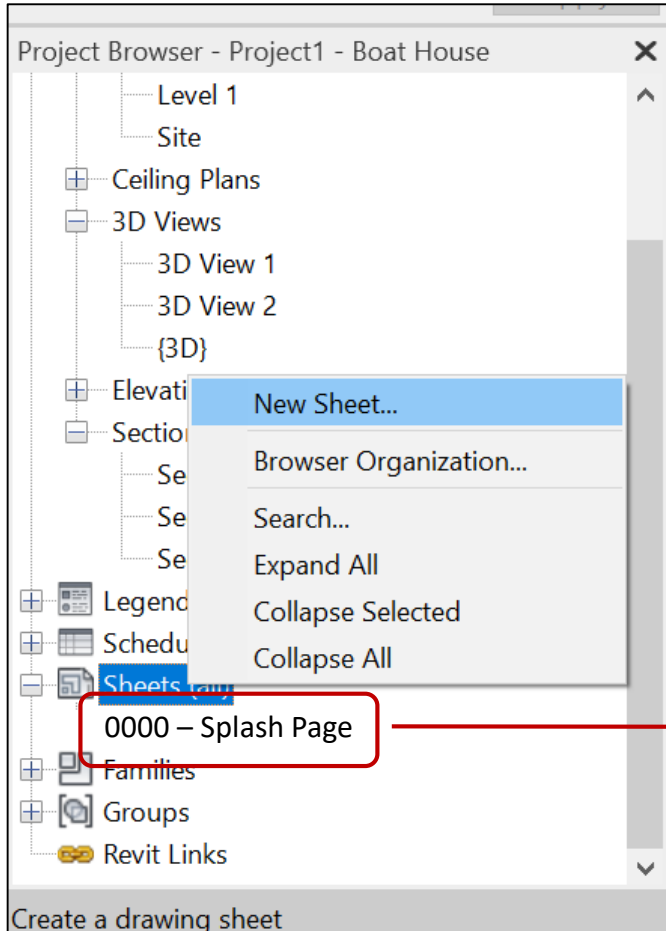
C:\Users\g.traylor\OneDrive - University of Wales Trinity Saint David\01 Lectures 2020-21\ACBA 5010 - BIM\01 Lecture notes\Boathouse deec2020.rvt

These common
BIM fields will be
transferred to all
new sheets

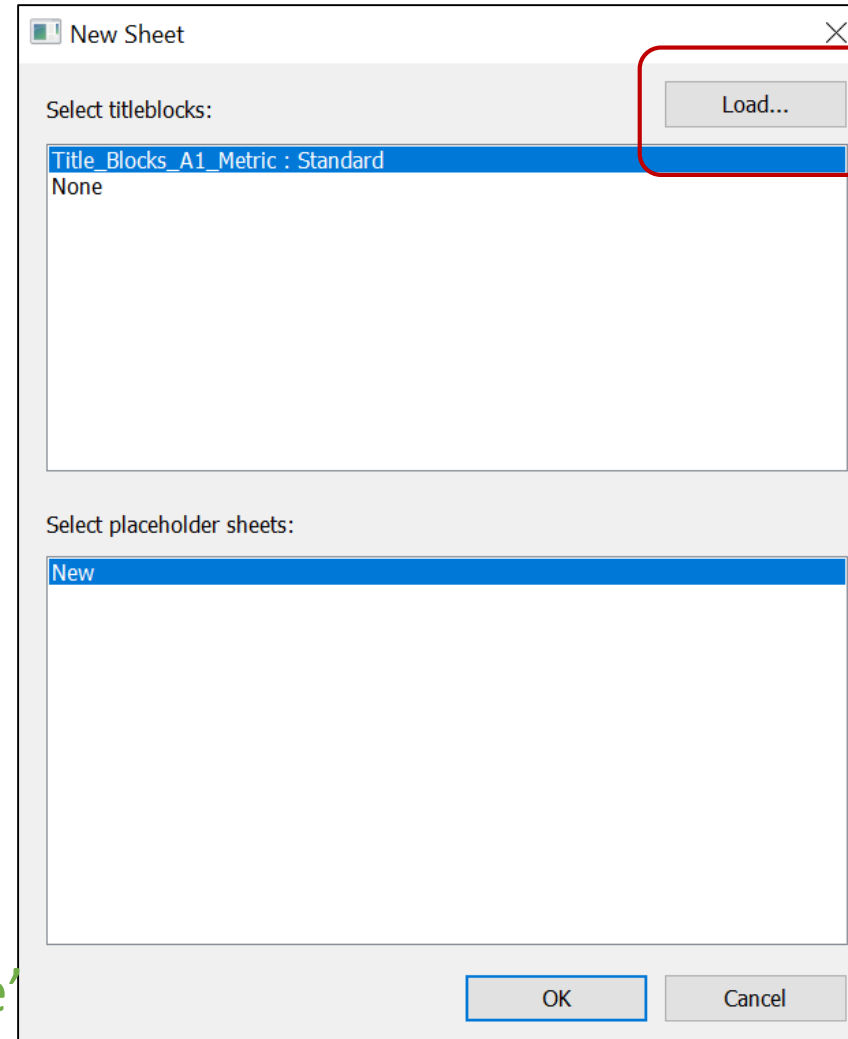


33-SHEETS

Right Click on Sheets
and select New Sheet



Right Click
and Rename
'0000'
'Splash Page'



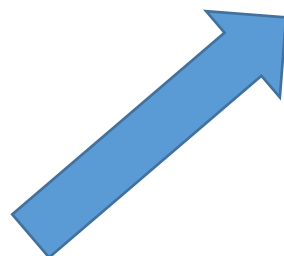
Load:
UWTSD titleblock



33-SHEETS

Fields can be
filled in to suit
the drawing

Property	Originator	Zone	Level	Type	Role	Number	Description	Suitability	Revision
4005	UWTSD	XX	XX	DR	Designer	0004	Unnamed	S0	—
File Path: C:\Users\g.traylor\Documents\Project1 - Boat House.rvt									



Property Title Boat House Goodwick Beach	Detail Unnamed	<table><tr><th>Property</th><th>Originator</th><th>Zone</th><th>Level</th><th>Type</th><th>Role</th><th>Number</th><th>Description</th><th>Suitability</th><th>Revision</th></tr><tr><td>4005</td><td>UWTSD</td><td>XX</td><td>XX</td><td>DR</td><td>Designer</td><td>0004</td><td>Unnamed</td><td>S0</td><td>—</td></tr></table>	Property	Originator	Zone	Level	Type	Role	Number	Description	Suitability	Revision	4005	UWTSD	XX	XX	DR	Designer	0004	Unnamed	S0	—	SC00 25/04/20	Author 27/04/20	 Prifysgol Cymru Y Ddodol Dewi Sant University of Wales Trinity Saint David	(S0) UNCONTROLLED Not to be used as a reference document Check Status Before Quoting	Notified Notes
Property	Originator	Zone	Level	Type	Role	Number	Description	Suitability	Revision																		
4005	UWTSD	XX	XX	DR	Designer	0004	Unnamed	S0	—																		



Scale Value	1: 100
Display Model	Normal
Detail Level	Coarse
Parts Visibility	Show Original
Detail Number	1
Rotation on Sh...	None
Visibility/Graph...	Edit...
Graphic Displa...	Edit...
Orientation	Project North
Wall Join Display	Clean all wall joins

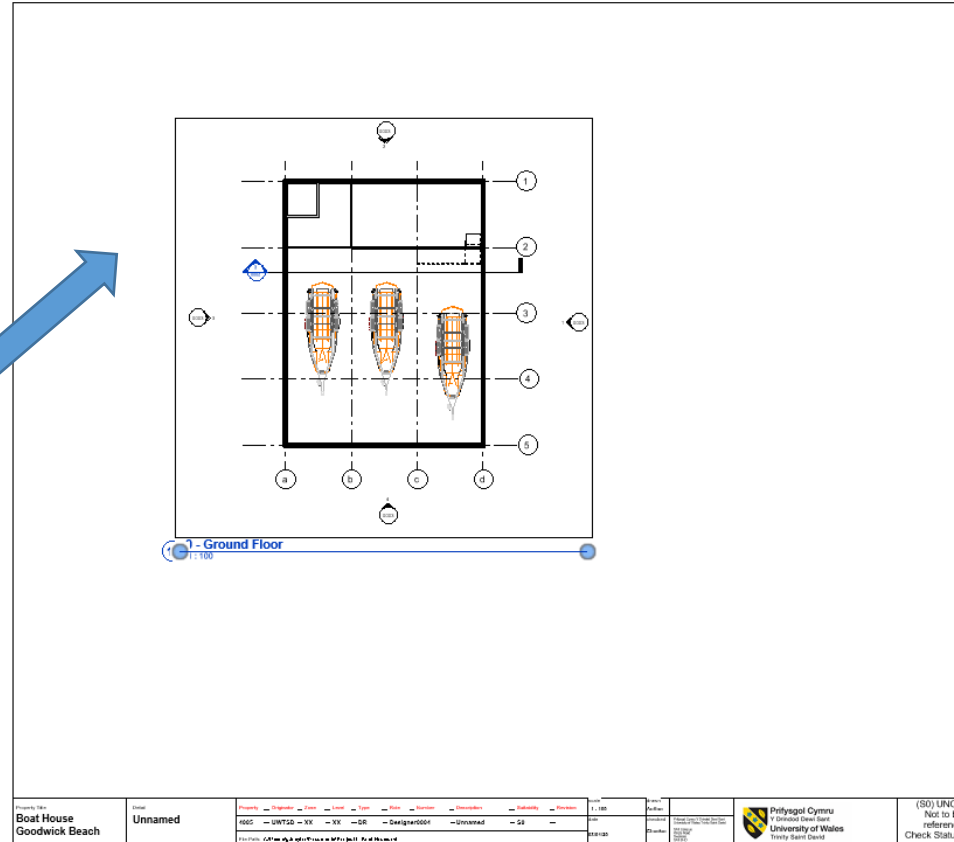
Apply

- Views (all)
 - Floor Plans
 - 0 - Ground Floor
 - 1 - First Floor
 - Site Location Plan 1_500
 - Site Location Plan 1_1250

- Ceiling Plans
 - 0 - Ground Floor
 - 1 - First Floor

- 3D Views
 - 3D View 1
 - 3D View 2
 - 3D View 3
 - {3D}

Elevations (12mm Circle)
NE Facing Elevation
NW Facing Elevation



Note: A view can only appear on one sheet. If you want a view to appear on more than one sheet you have to duplicate the view (right click on the view – duplicate with detailing)

33-SHEETS

Scale

1 : 100

Identity Data

Dependency	Independent
Referencing Sh...	
Referencing De...	
Current Revisio...	☐
Current Revisio...	
Current Revisio...	
Current Revisio...	
Current Revisio...	

Properties help

Apply

Project Browser - Project1 - Boat Ho...

- NW Facing Elevation
- SE Facing Elevation
- SW Facing Elevation
- Sections (Building Section)
 - Section 1
 - Section 1 - Callout 1
- Legends
- Schedules/Quantities (all)
 - Door Schedule
 - Room Schedule
- View List
- Sheets (all)**
 - 0000 - Splash Page
 - 0001 - Site Location
 - 0002 - Plans and Sections
 - 0003 - Elevations & Views**
- Families
- Groups

0003 - Elevations & Views

NE Facing Elevation
1 : 100

NW Facing Elevation
1 : 100

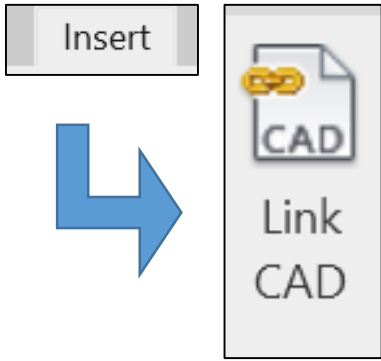
SE Facing Elevation
1 : 100

SW Facing Elevation
1 : 100

Project Title Boat House Goodwick Beach	Sheet Elevations & Views	Project 0003 - Elevations & Views	Client Prifysgol Cymru Y Ddodol Dewi-Sant University of Wales Trinity Saint David	Scale 1 : 100	Author JWG	Check Status Before Quoting
---	-----------------------------	--------------------------------------	---	------------------	---------------	-----------------------------

All Sheets in the Model can be seen in the Project Browser.

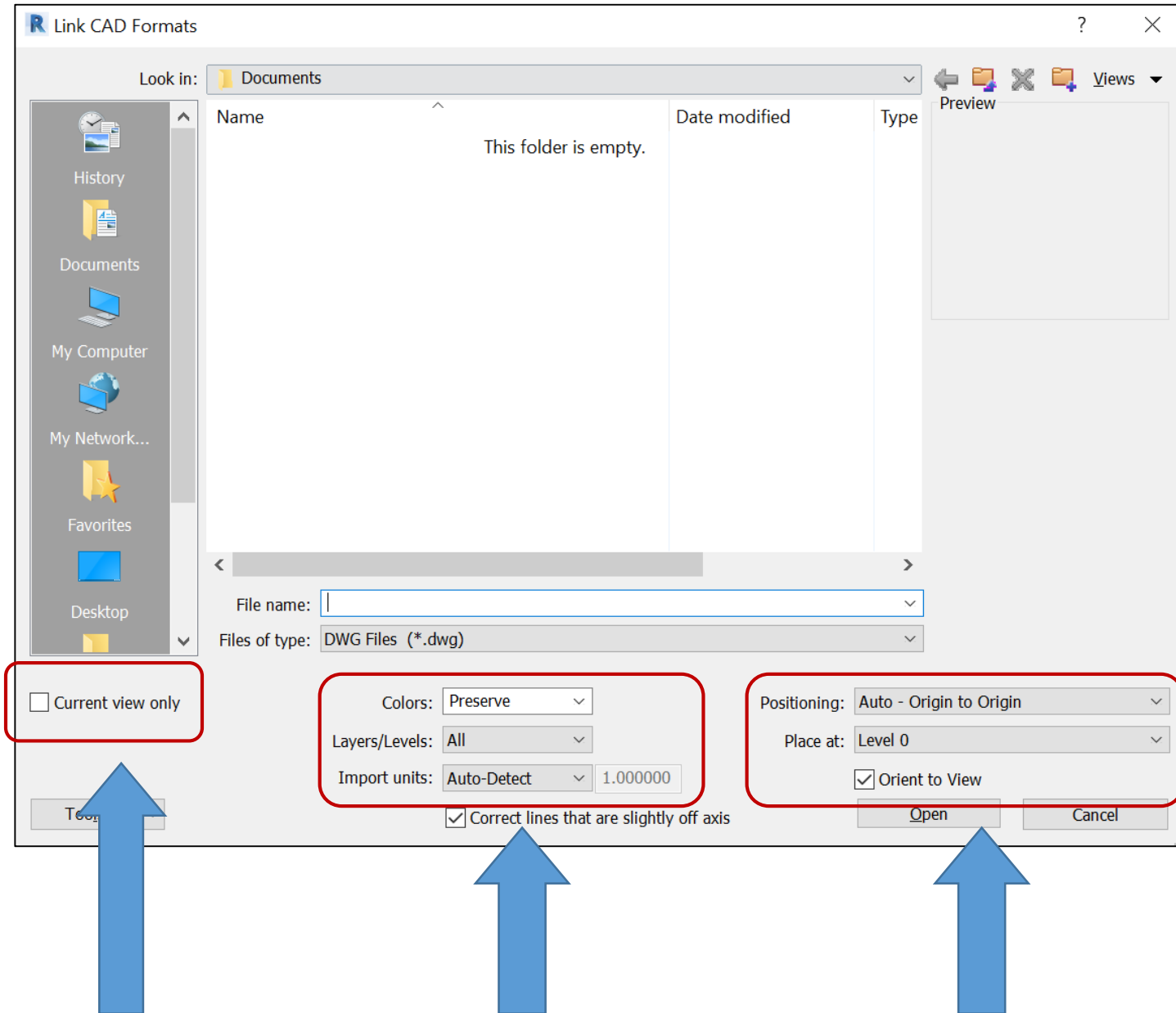
●	Linking Cad Files	1
●	Linking Revit Files	0
●	True North / Project North	3
●	Project Base Point	1
●	Phasing	0



CAD files

Cad files can be linked to Revit through the Insert Menu.

Check the fields highlighted before importing files.



Manage Links

RevitIFCCAD FormatsDWF MarkupsPoint CloudsTopography

Link Name	Status	Positions Not Saved	Size	Saved Path	Path Type
OSMAP BoatHouse.dwg	Loaded	☐	161.9 K	C:\Users\g.traylor\OneDrive - Univers	Relative

Save Positions

Reload From...

Reload

Unload

Import

☒ Preserve graphic overrides

OK

C

Manage Links to unload / load updated linked files

Manage Links

Manage Project

Visibility of Links from Visibility / Graphics – Imported Categories. CAD Layers can be switched on and off.

Visibility/Graphic Overrides for Floor Plan: Site

Model CategoriesAnnotation CategoriesAnalytical Model CategoriesImported CategoriesFilters

☒ Show imported categories in this view

If a category is unchecked, it will not be visible.

Visibility	Projection/Surface		
	Lines	Patterns	Halftone
☒ Imports in Families	Override...		☐
☒ OSMAP BoatHouse.dwg			☐
☒ 0			
☒ Building_Line_Division			
☒ Building_Line_Outline			
☒ Buildings_Or_Structure_T...			
☒ General_Feature_Line			
☒ General_Surface_Line			
☒ General_Surface_Text			
☒ Inland_Water_Line			
☒ Inland_Water_Text			
☒ Landform_Line_Bottom_...			
☒ Landform_Line_Top_Of_...			
☒ Road_Or_Track_Line_Pub...			
☒ Road_Or_Track_Text_Roa...			
☒ Roadside_Text			
☒ Structure_Text			
☒ Terrain_and_Height_Poin...			
☒ Terrain_and_Height_Text			

AllNoneInvertExpand All

Categories that are not overridden are drawn according to this project's Imported Object Style settings.

Object Styles...

OK

Cancel



15-SITE

True North and Project North

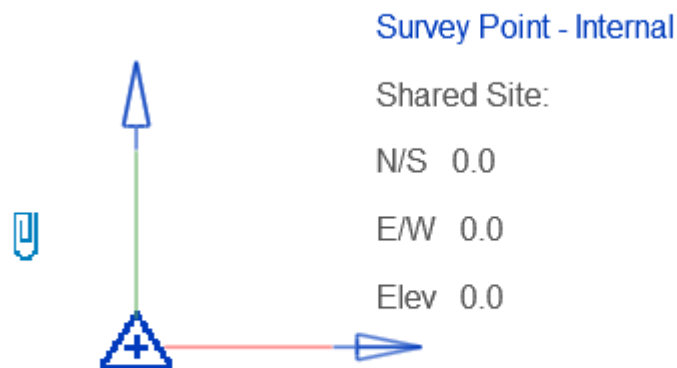
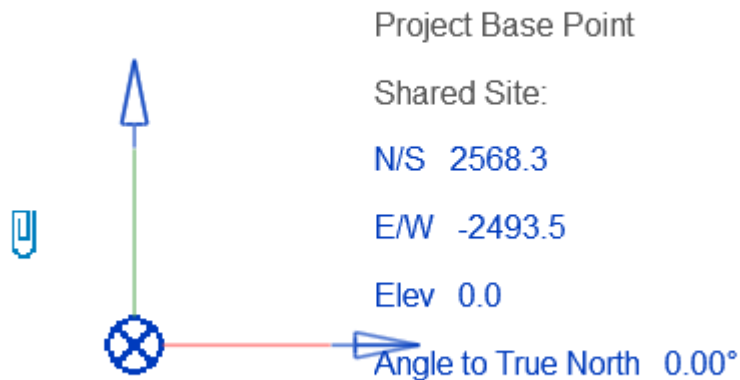


Understanding the use of the coordinate system in Revit is essential for BIM.

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

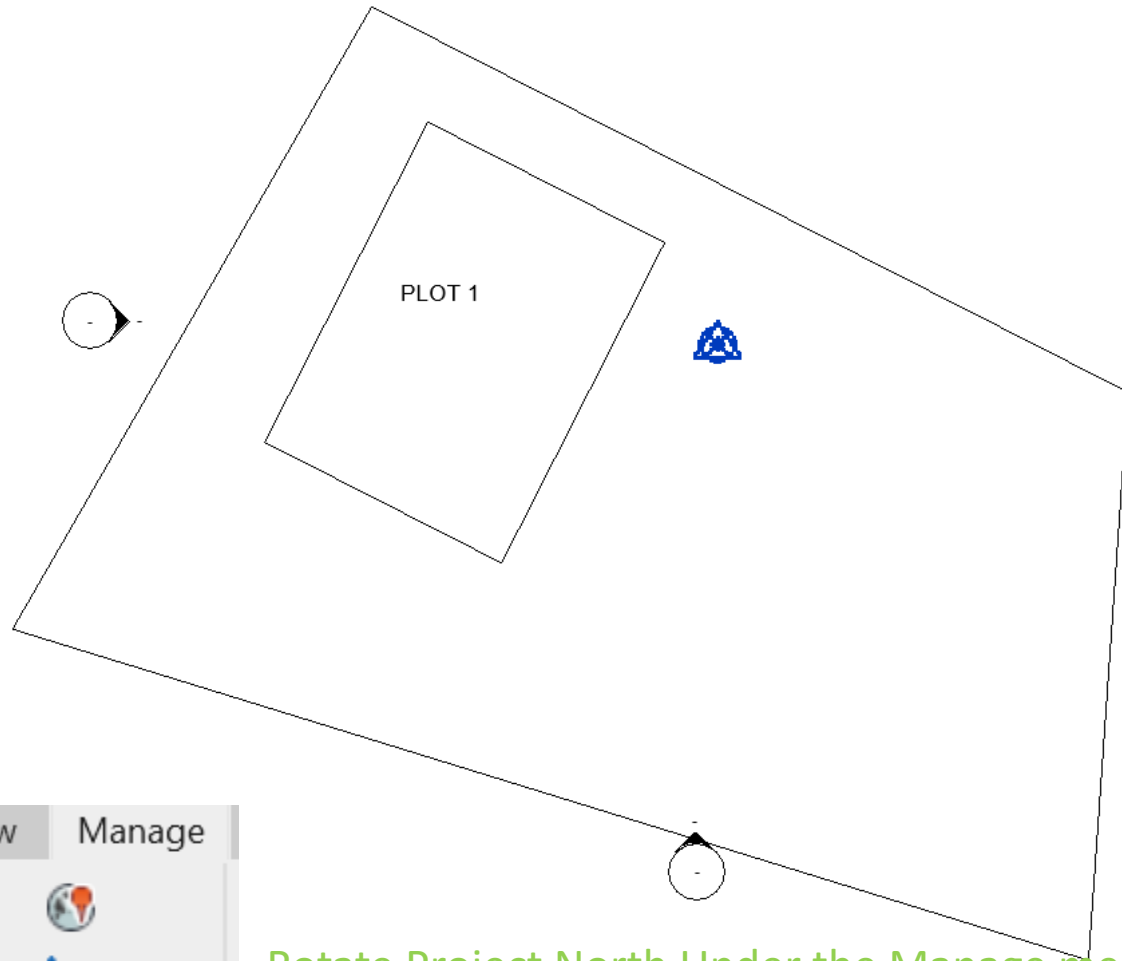
Floor Plan: Site Edit Type

Graphics

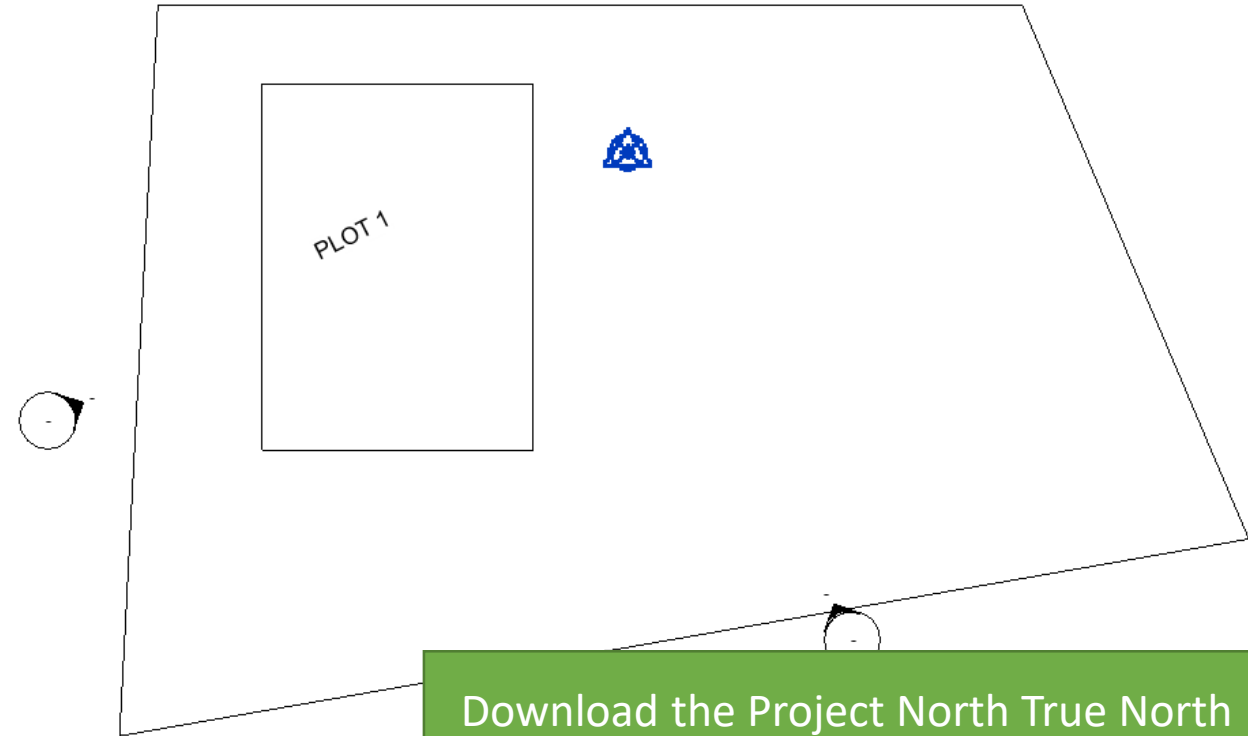
View Scale	1 : 100
Scale Value 1:	100
Display Model	Normal
Detail Level	Coarse
Parts Visibility	Show Original
Visibility/Graphics Ov...	Edit...
Graphic Display Opti...	Edit...
Orientation	True North
Wall Join Display	Clean all wall joins
Discipline	Architectural
Show Hidden Lines	By Discipline

[Properties help](#) Apply

TRUE NORTH

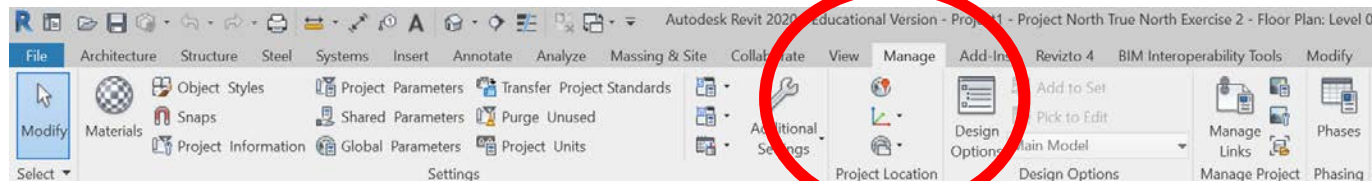
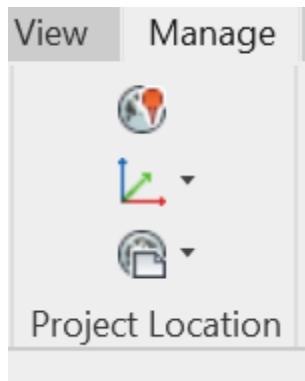


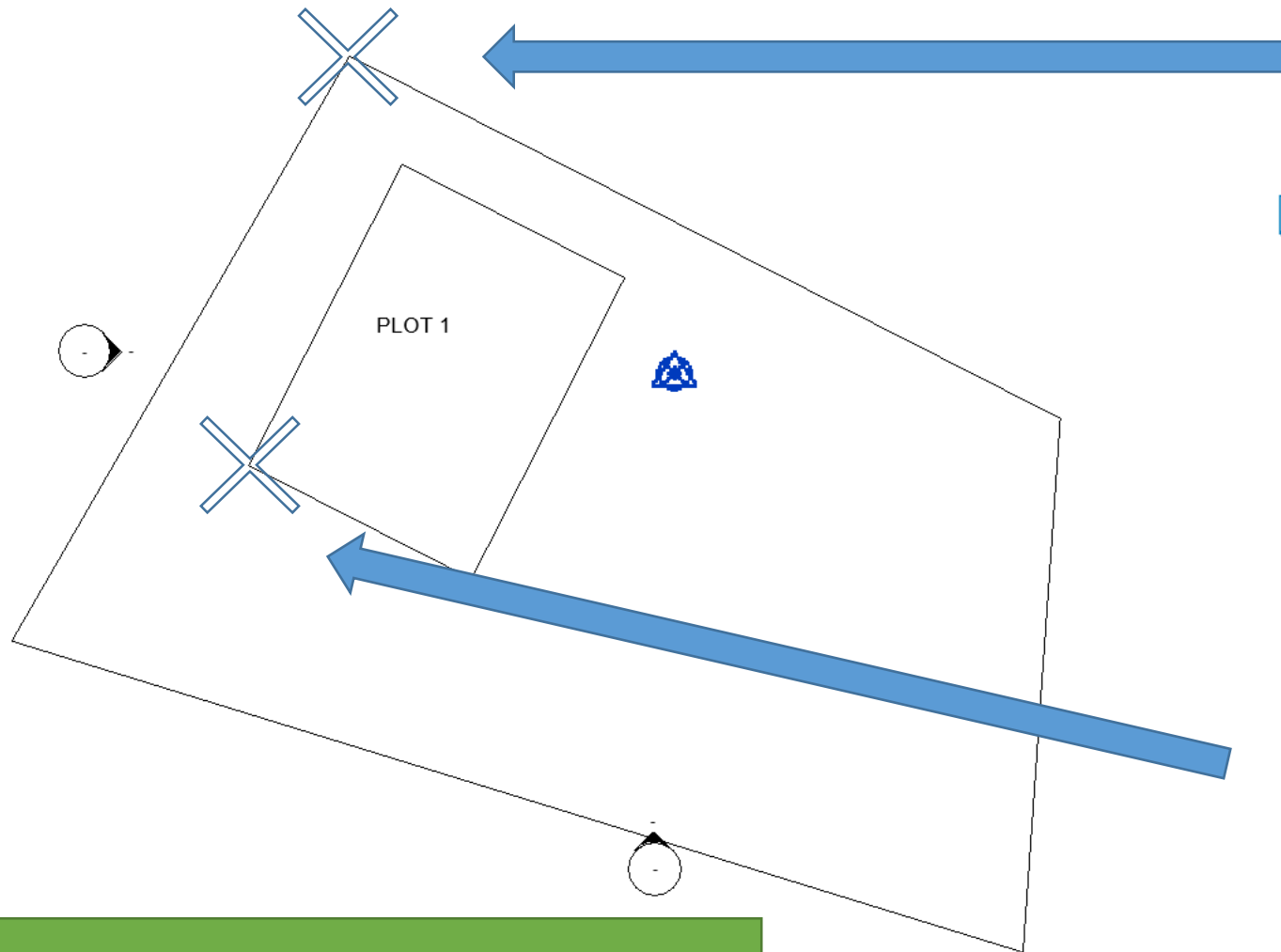
PROJECT NORTH



Rotate Project North Under the Manage menu

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





Relocate Project Base Point and Survey Points

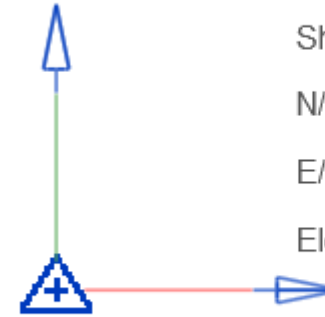
Survey Point - Internal

Shared Site:

N/S 0.0

E/W 0.0

Elev 0.0



Project Base Point

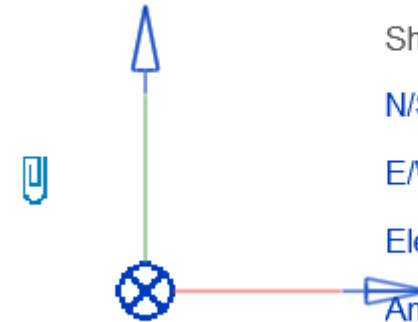
Shared Site:

N/S 2568.3

E/W -2493.5

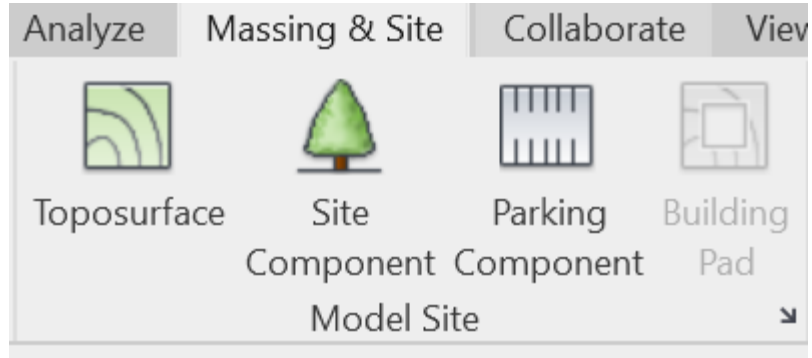
Elev 0.0

Angle to True North 0.00°



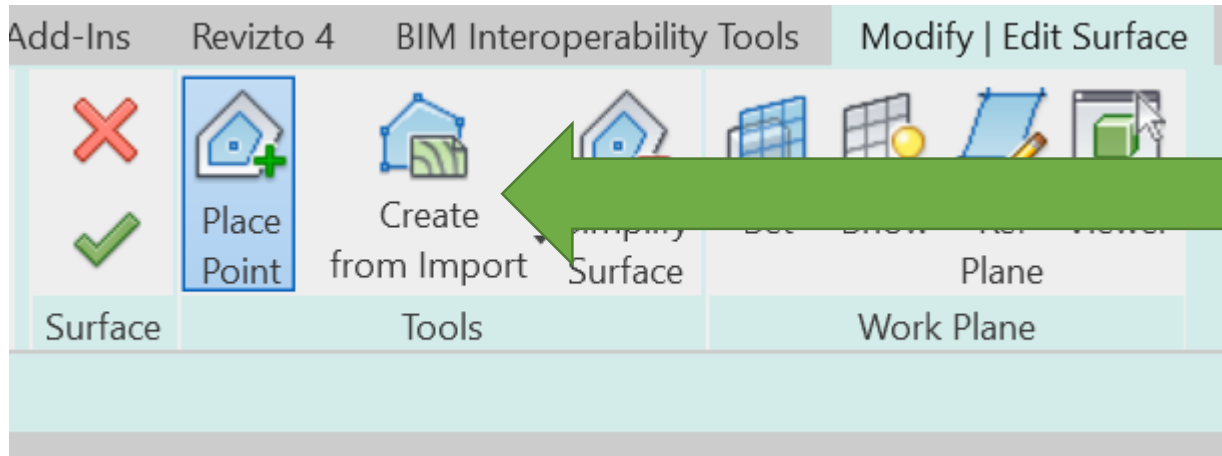


15-SITE



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 a toposurface. Download the sample file and insert the Toposurface exercise from the Teams Files.

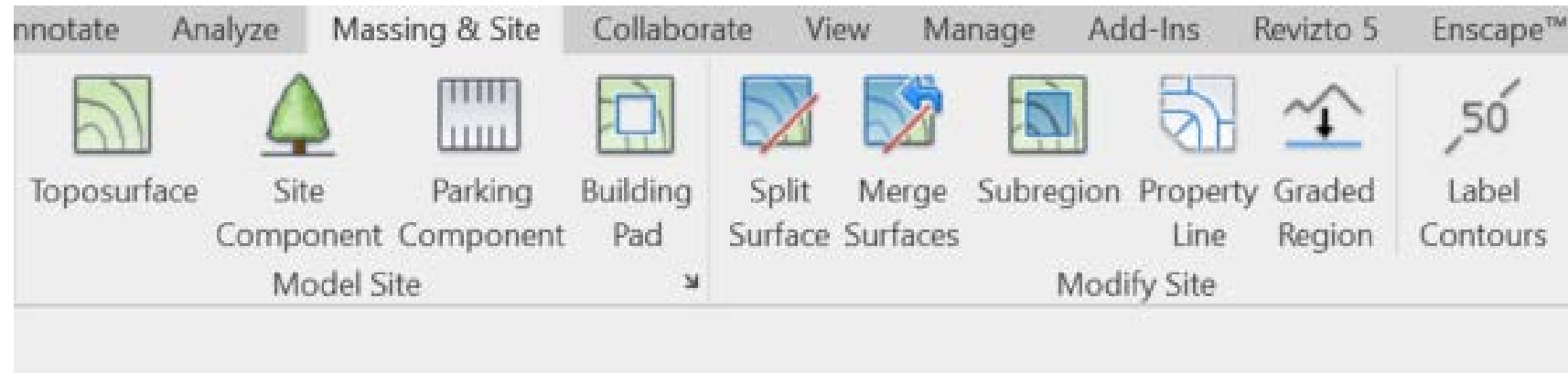




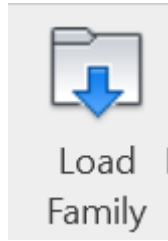
15-SITE

Other site options include:

- Adding site components - eg trees
- Creating parking layouts
- Adding Building Pads,
- Splitting & Merging topography
- Creating Subregions with differing properties



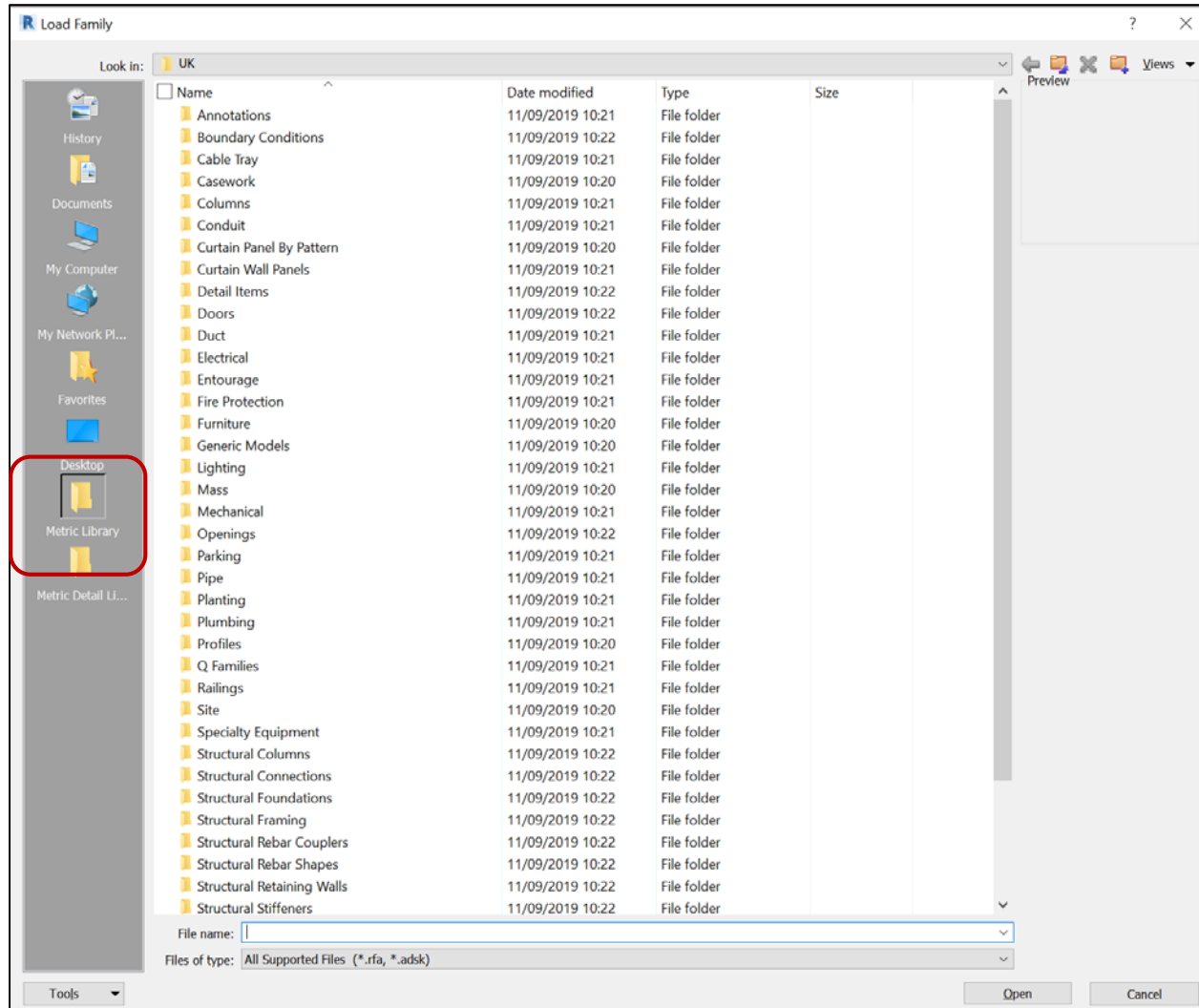
● Families	2
● Structures - Columns Beams P...	4
● Schedules - Take Off Schedules	4



Revit holds a Metric Library of families which can be loaded into a project



<https://source.thenbs.com/>



<https://www.revitcity.com/index.php>

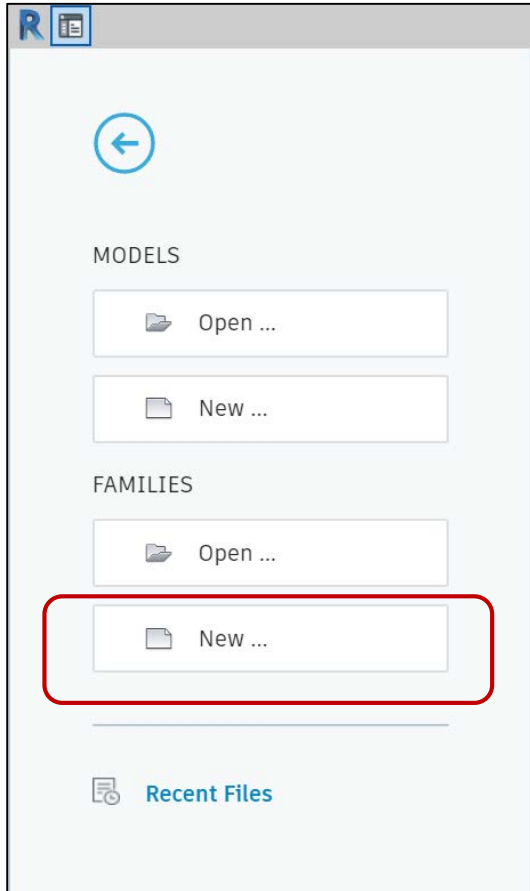
If a family is not available, additional families can be downloaded from online sources such as above, or directly from Manufacturers websites.

NOTE: Remember where you save them

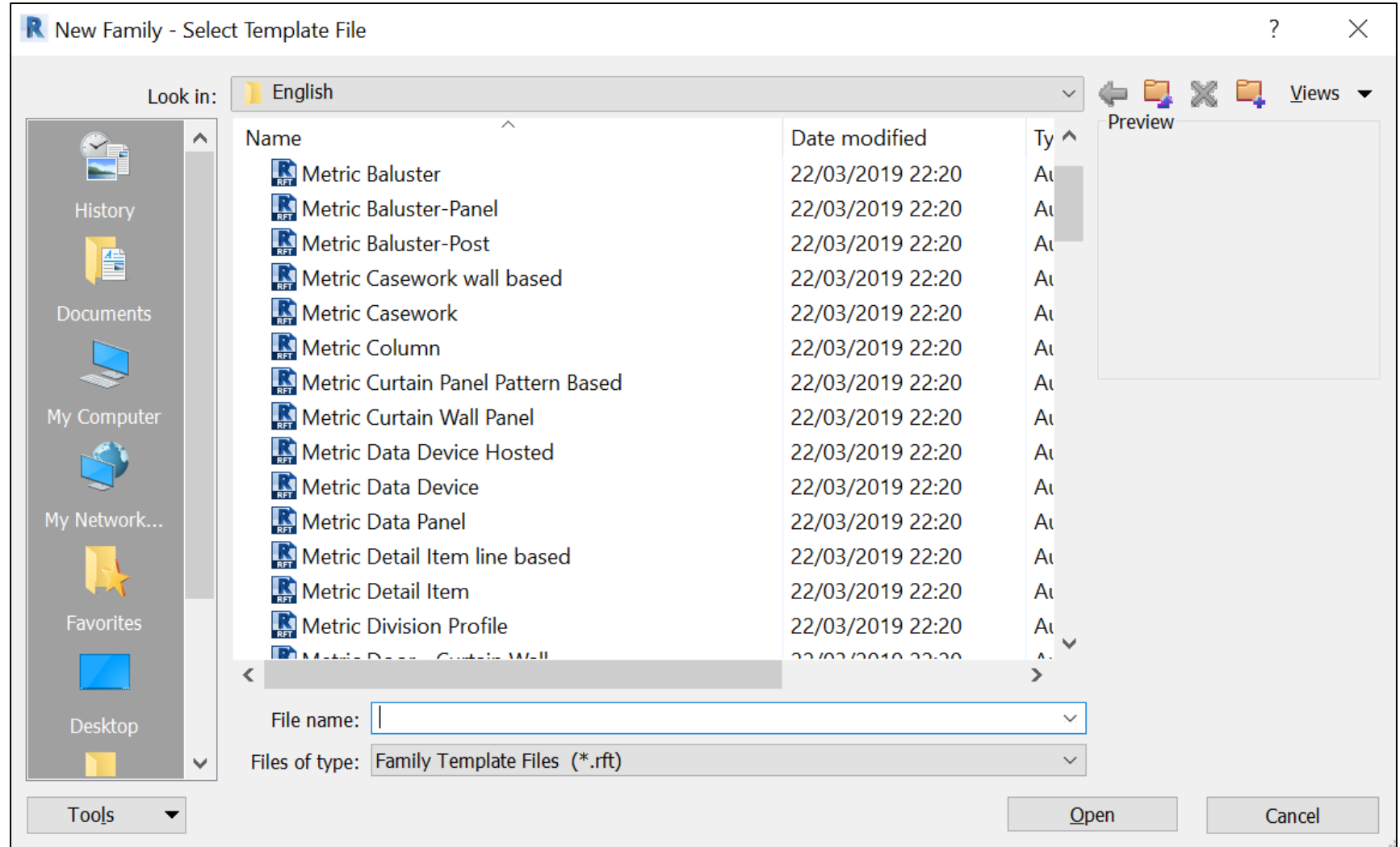


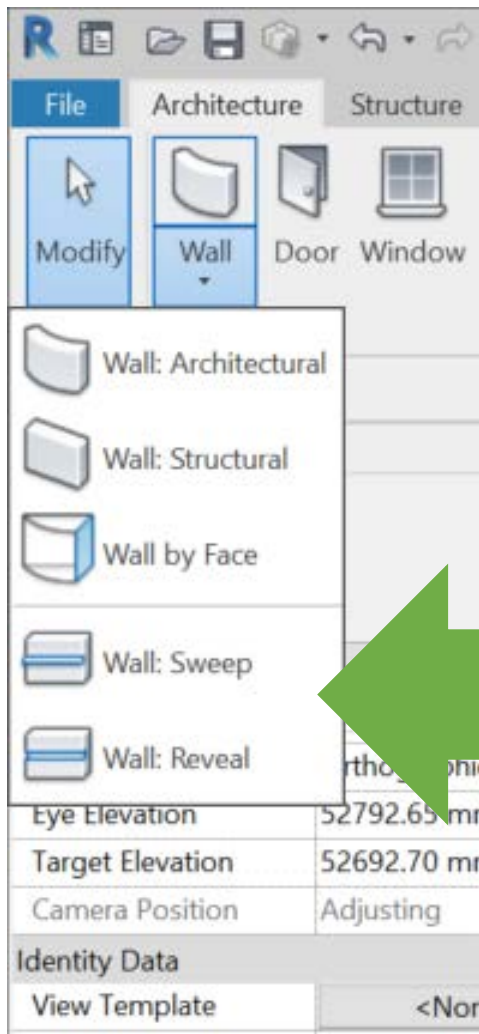


44-FAMILIES

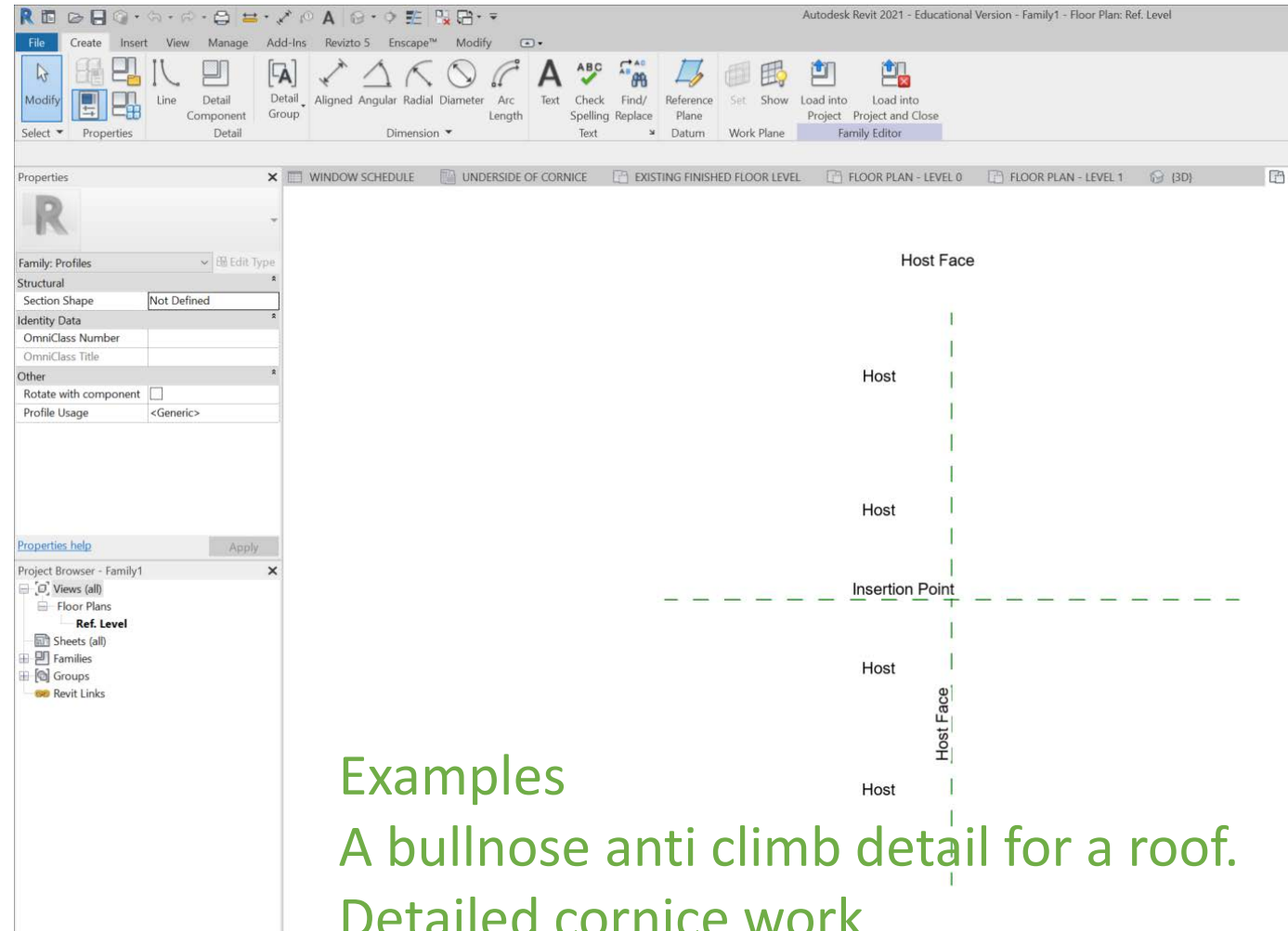


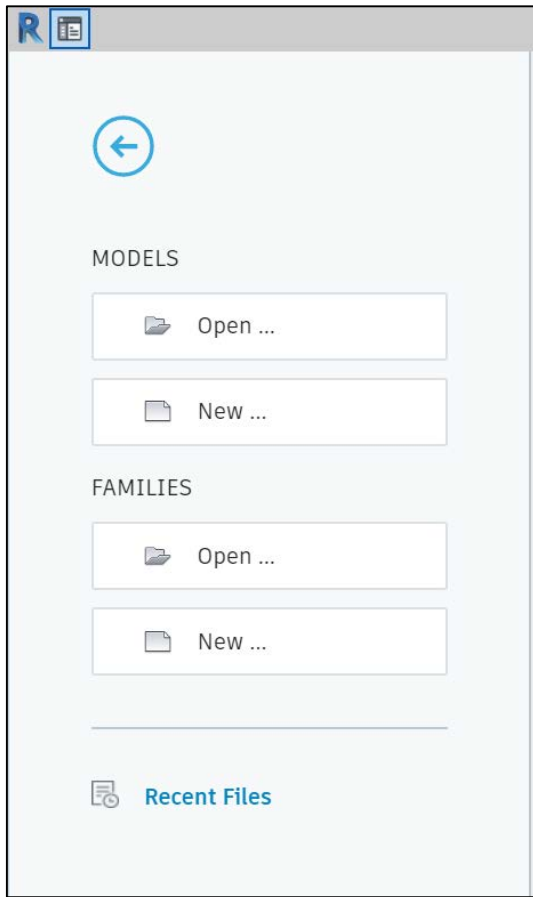
Revit also allows you to create your own families from scratch, and provides template files for each family type to make it easier to create.



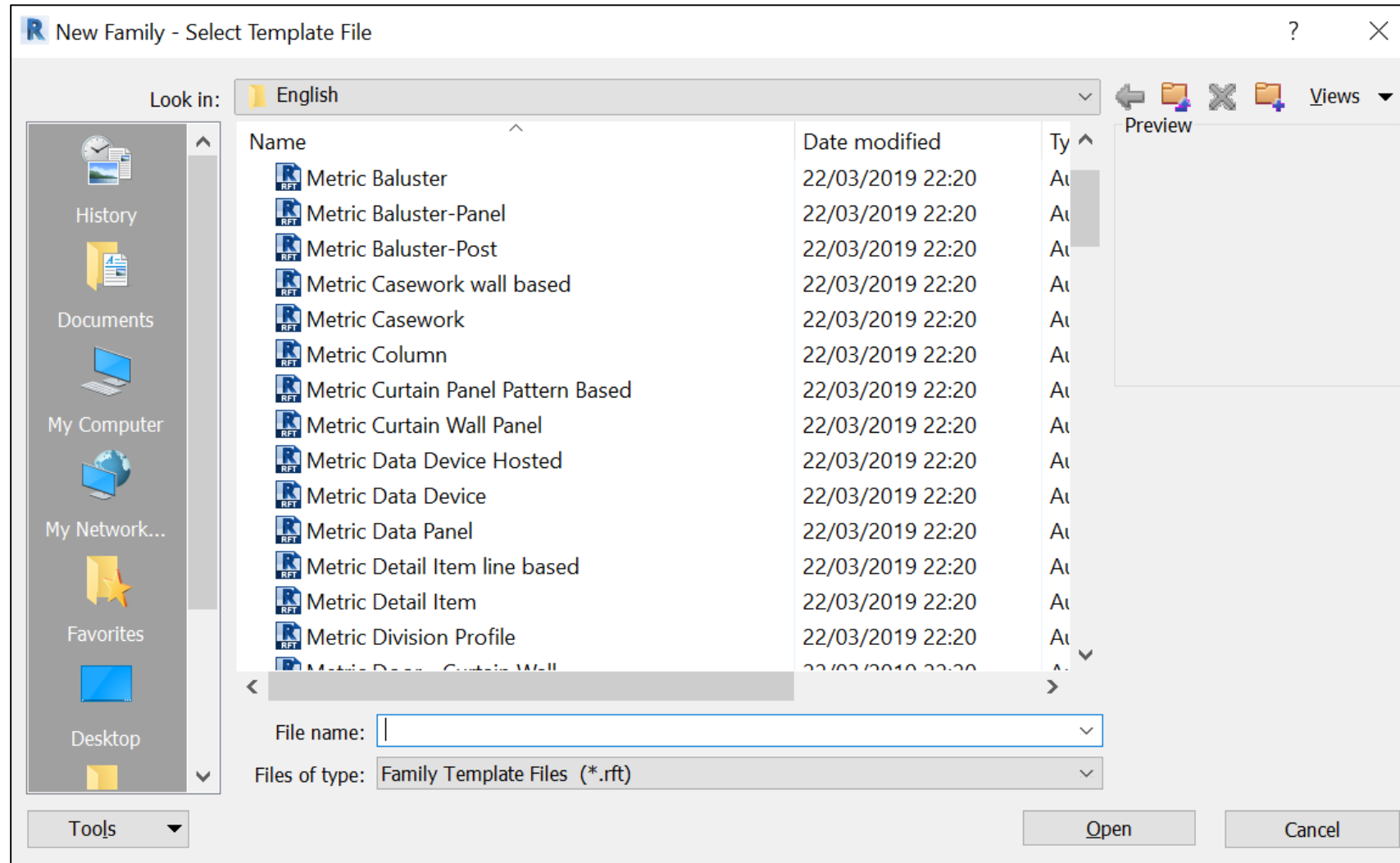


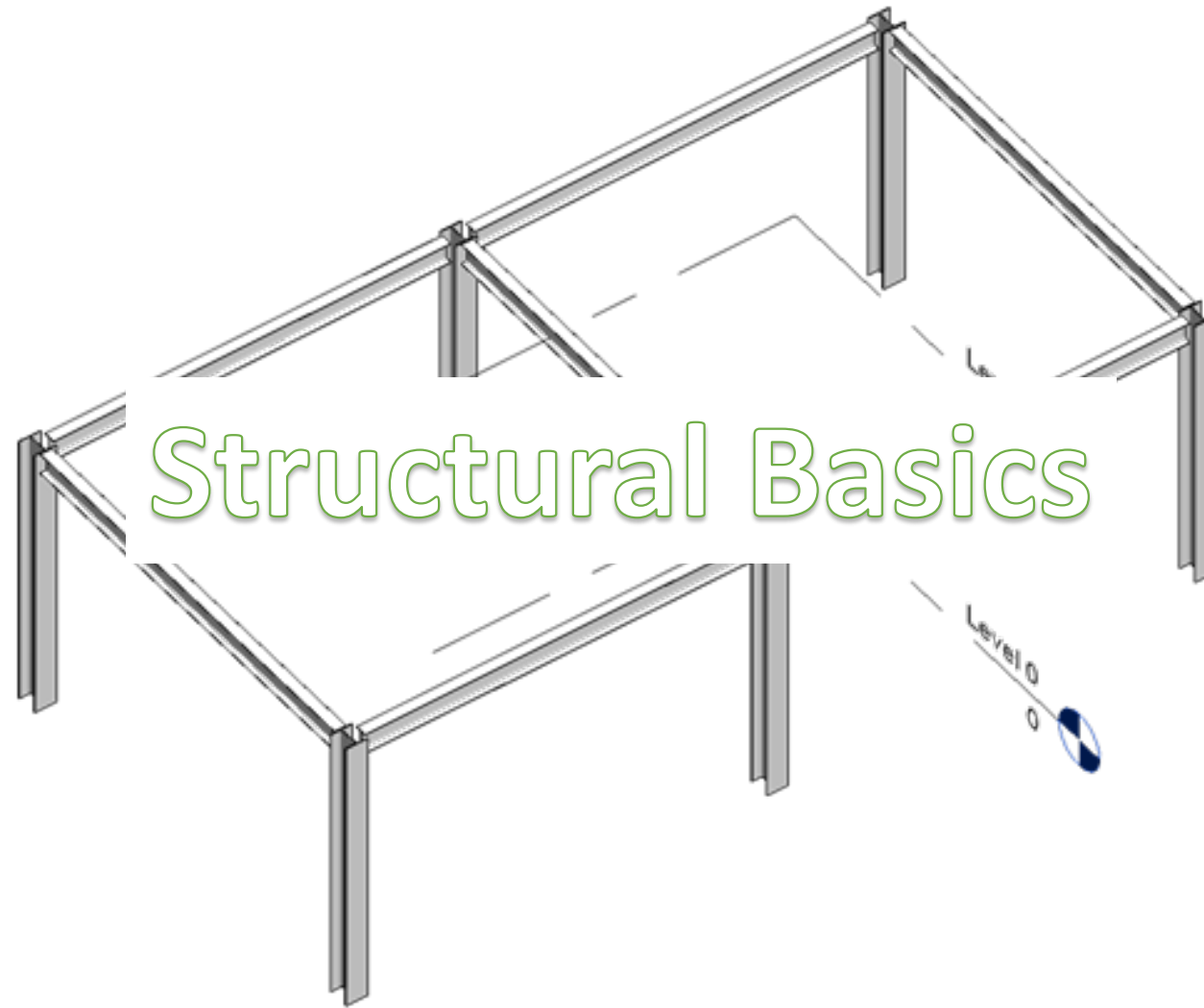
Sweeps and Reveals can help with non standard construction.
Create non standard sweeps and reveals by making a new hosted profile family.





Other families can be created such as windows, doors, furniture where manufacturer's information is unavailable or where the items are bespoke.





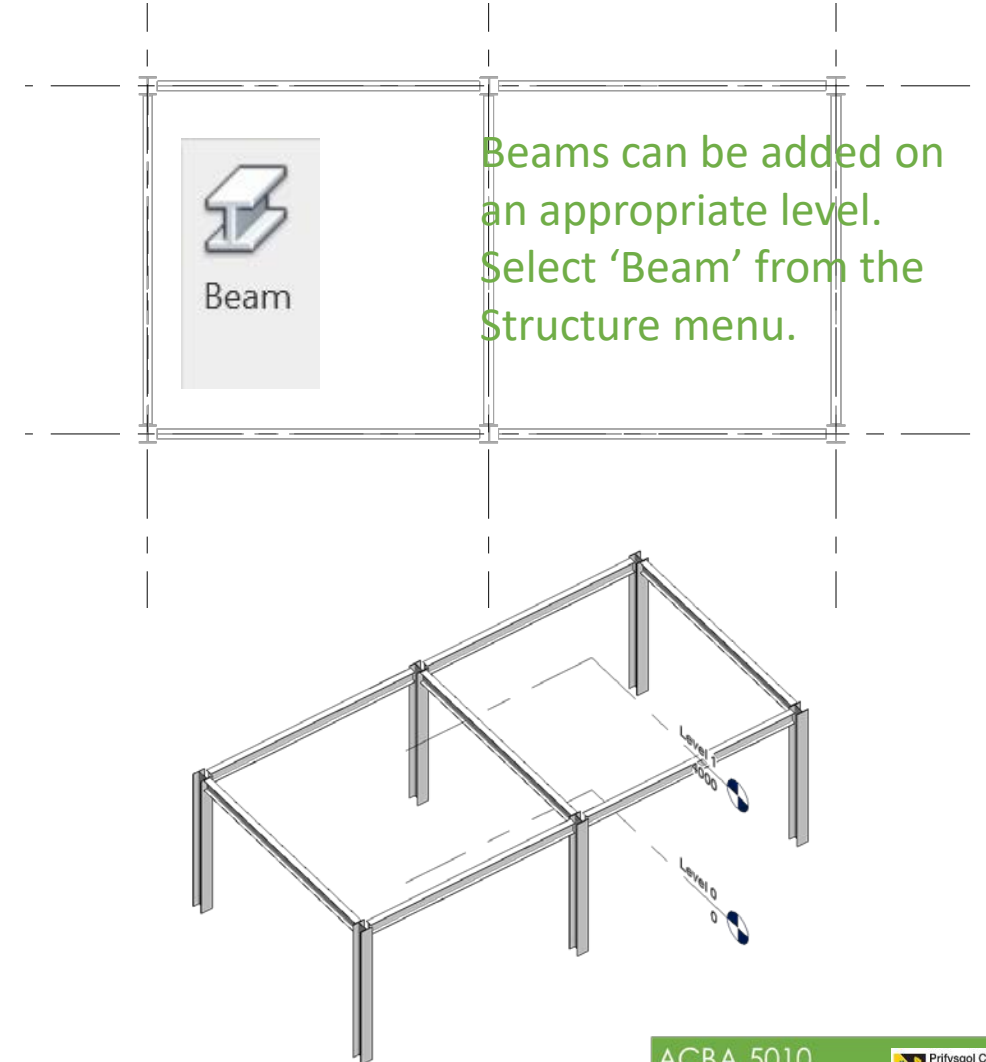
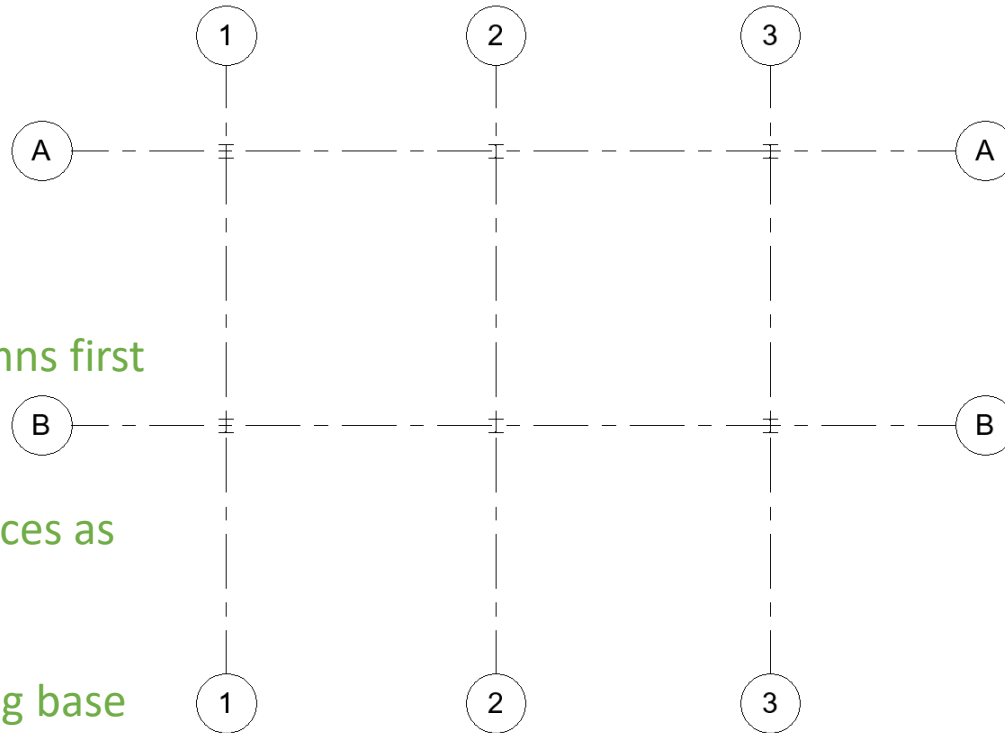


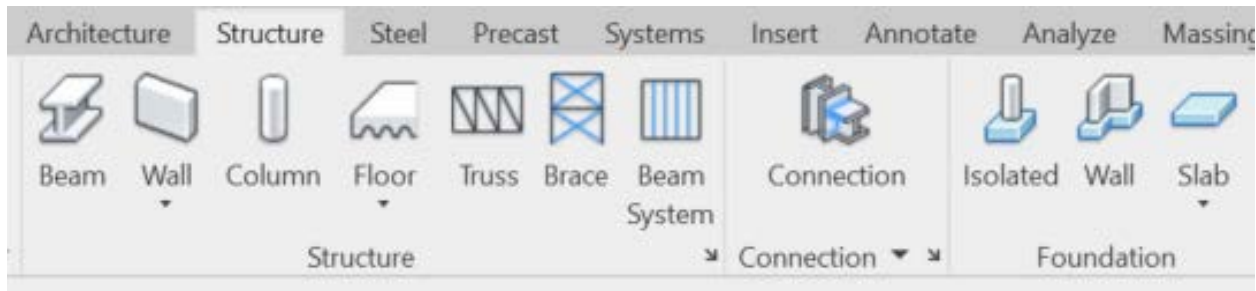
Before placing Columns first
start with a GRID

Rename grid references as
appropriate.

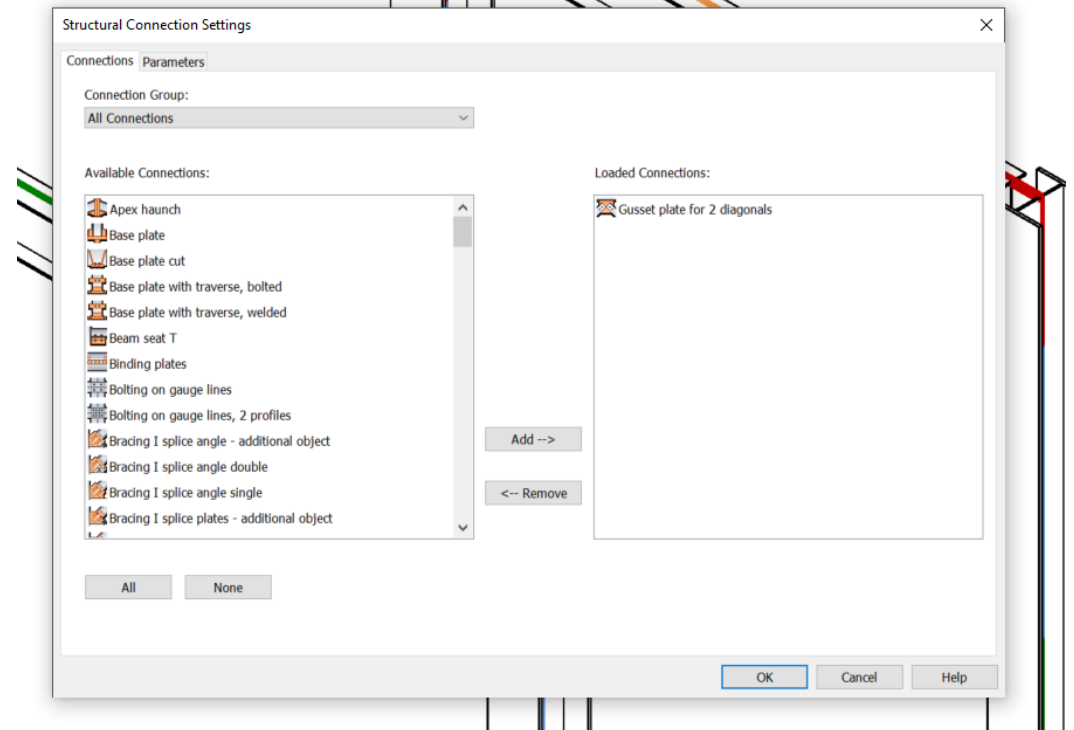
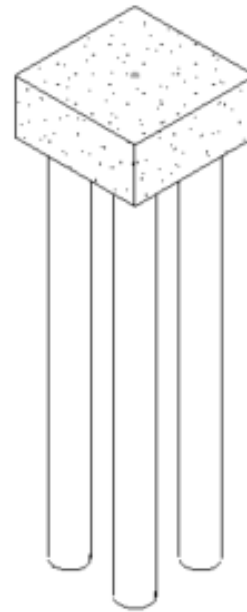
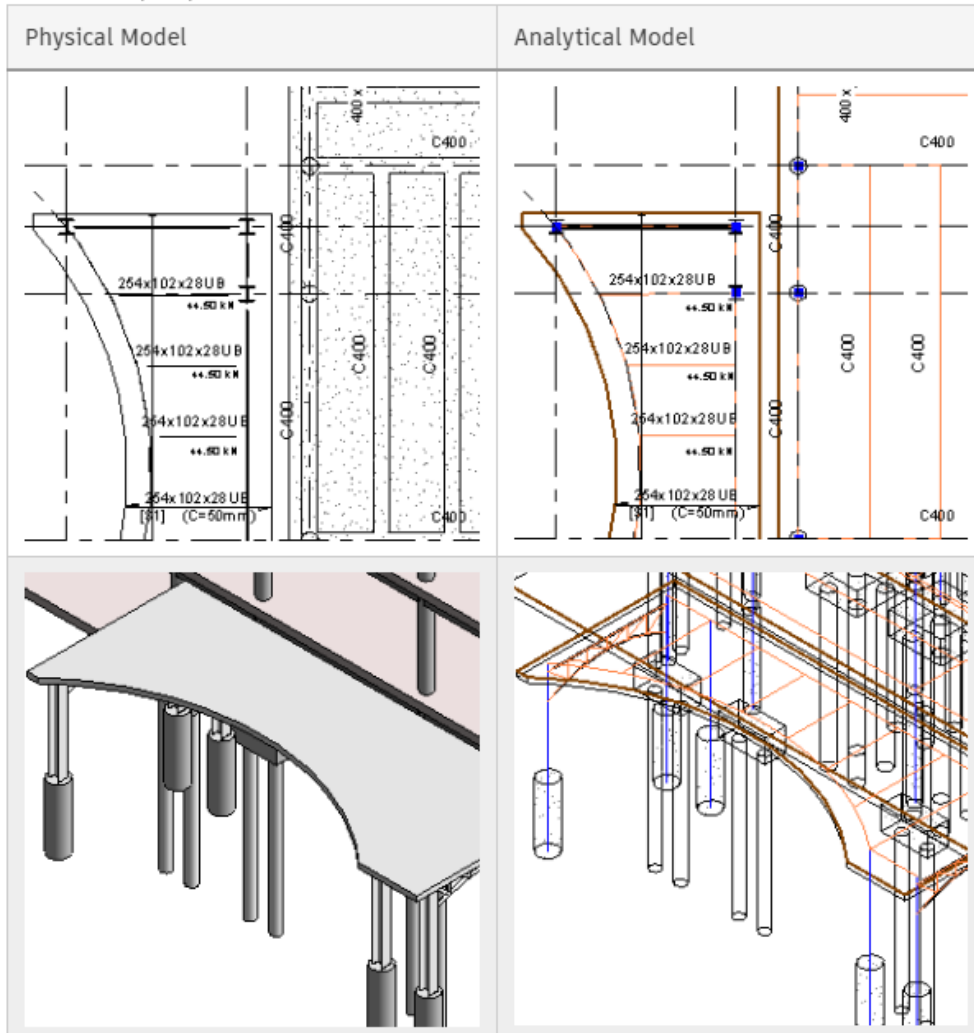
Click Column - noting base
level in the properties palette.

In the sub menu select 'Height'
and Top Constraint (eg Level 1)



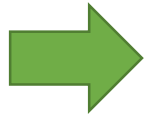
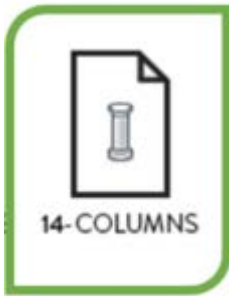


Structural Elements can be created from the Structures Tab. When using the Structural template you are able to view structural elements in both Physical and Analytical mode. Analytical mode can help understand the properties of the structure and element can be set to specific design parameters.

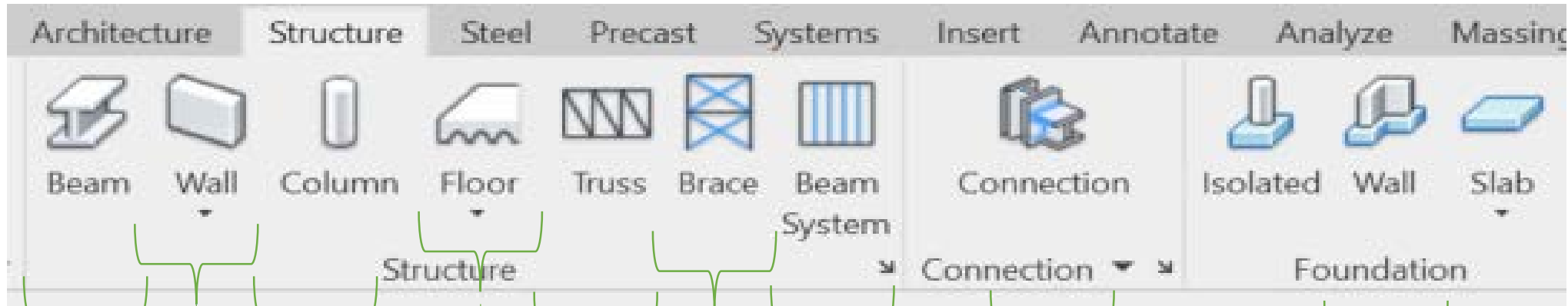


For more on Analytics see the AutoDesk Knowledge Hub;

<https://knowledge.autodesk.com/support/revit-products/learn-explore/caas/CloudHelp/cloudhelp/2021/ENU/Revit-Analyze/files/GUID-05CA5628-12C6-456C-B0B9-D922D22B67D0-htm.html>



Structural Basic:
Columns, Beams, bracing and connections.
Foundations: Pile, Raft, Strip



Structural
Beams

Structural
Columns

Structural
Walls - Cores

Structural
Floors

Truss Systems

Bracing

For larger areas of
Beams a system can
be created

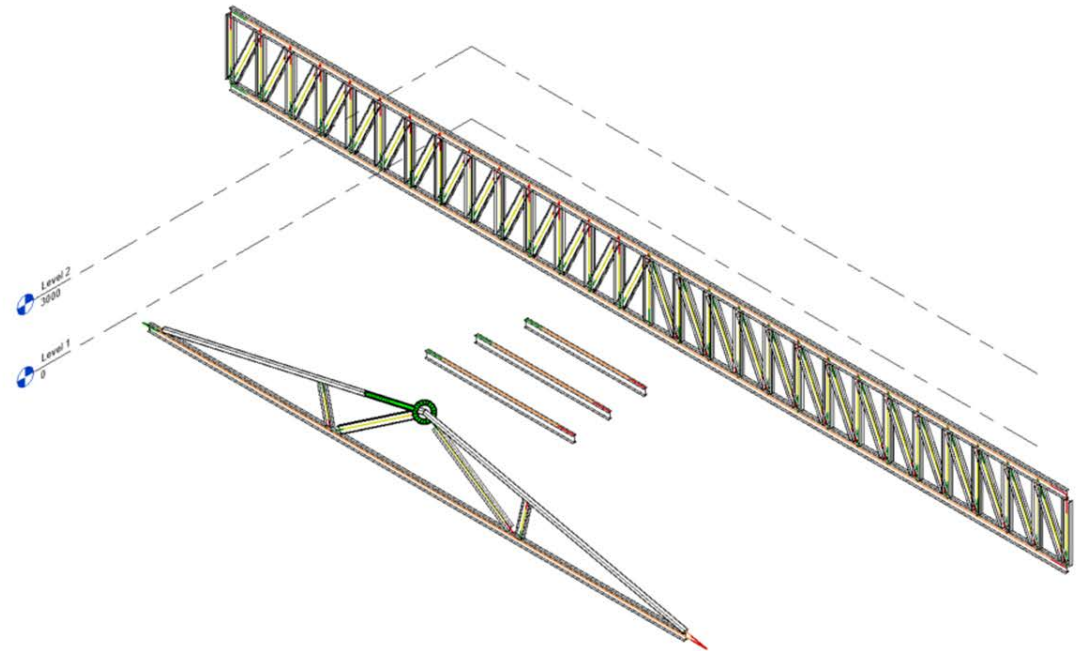
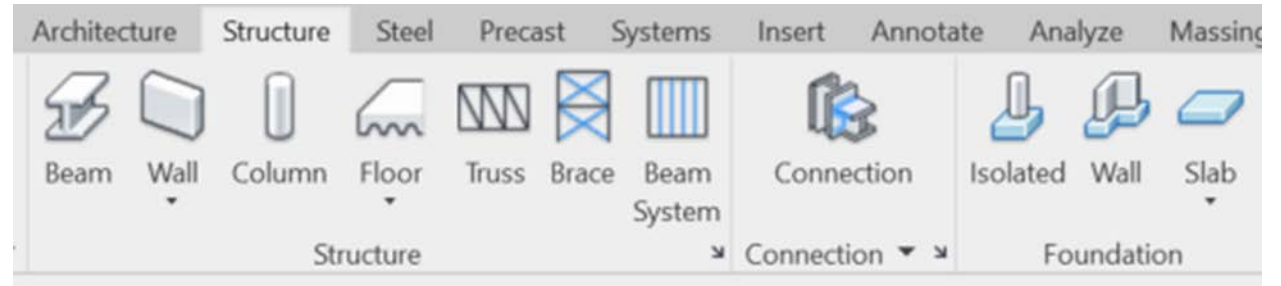
Connections can
loaded and junctions
edited to suit

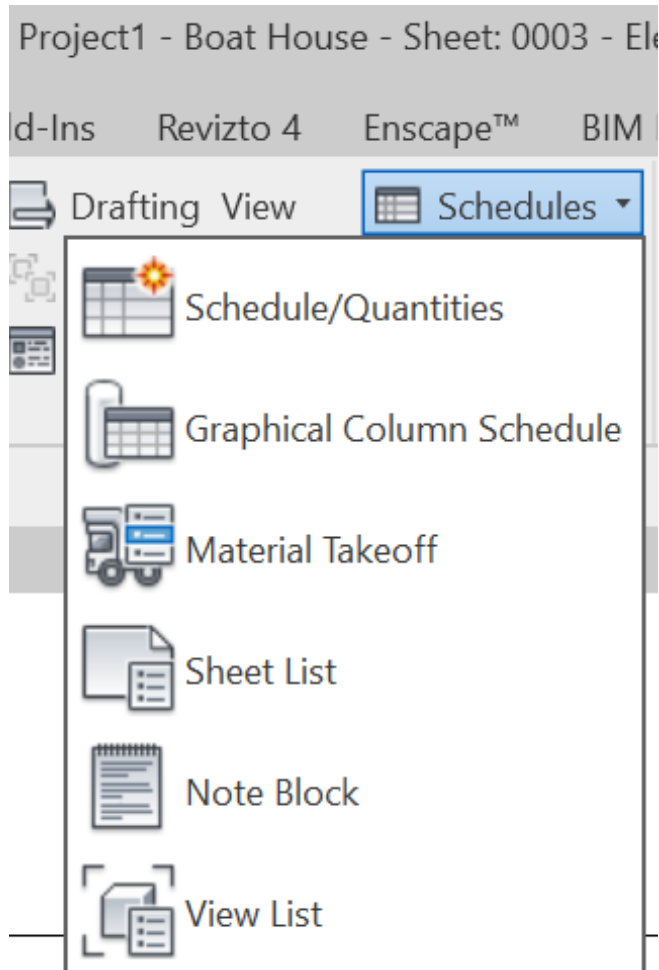
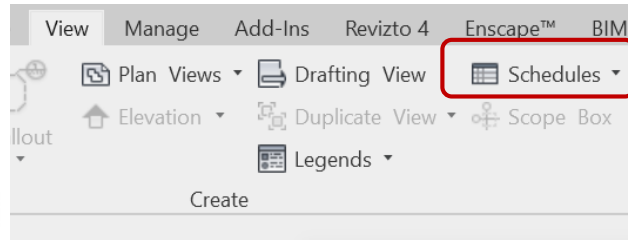
Foundation types
to suit. Pad, pile,
strip, raft etc.

Structural Basics Class Exercise

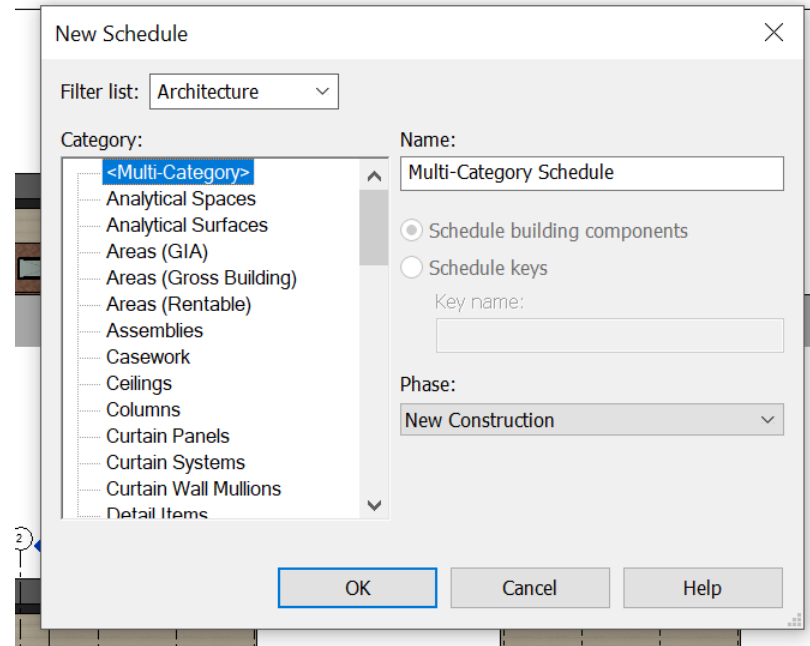
Start a New Project and use the 'Metric – Structural Template'

- Draw columns and beams and change the connection details.
- Draw some walls, and place a strip footings underneath
- Draw a raft foundation and apply an edge strip to each side.
- Draw A beam system – 20m wide by 10m deep.
- Draw a 3 Pile foundation.
- Draw a Fink truss



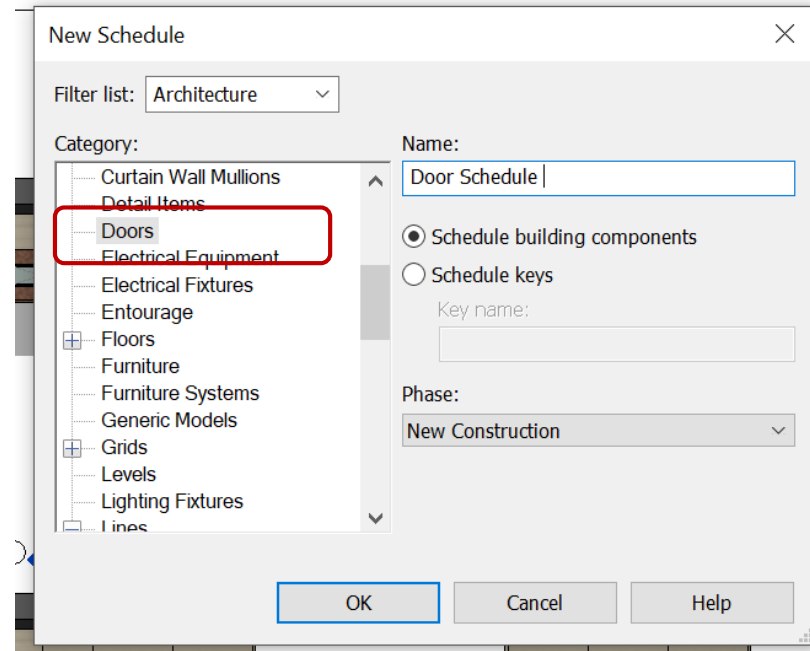


Schedule
types



Schedules can be
created from the
View Menu

Different type of
schedules can be
generated.



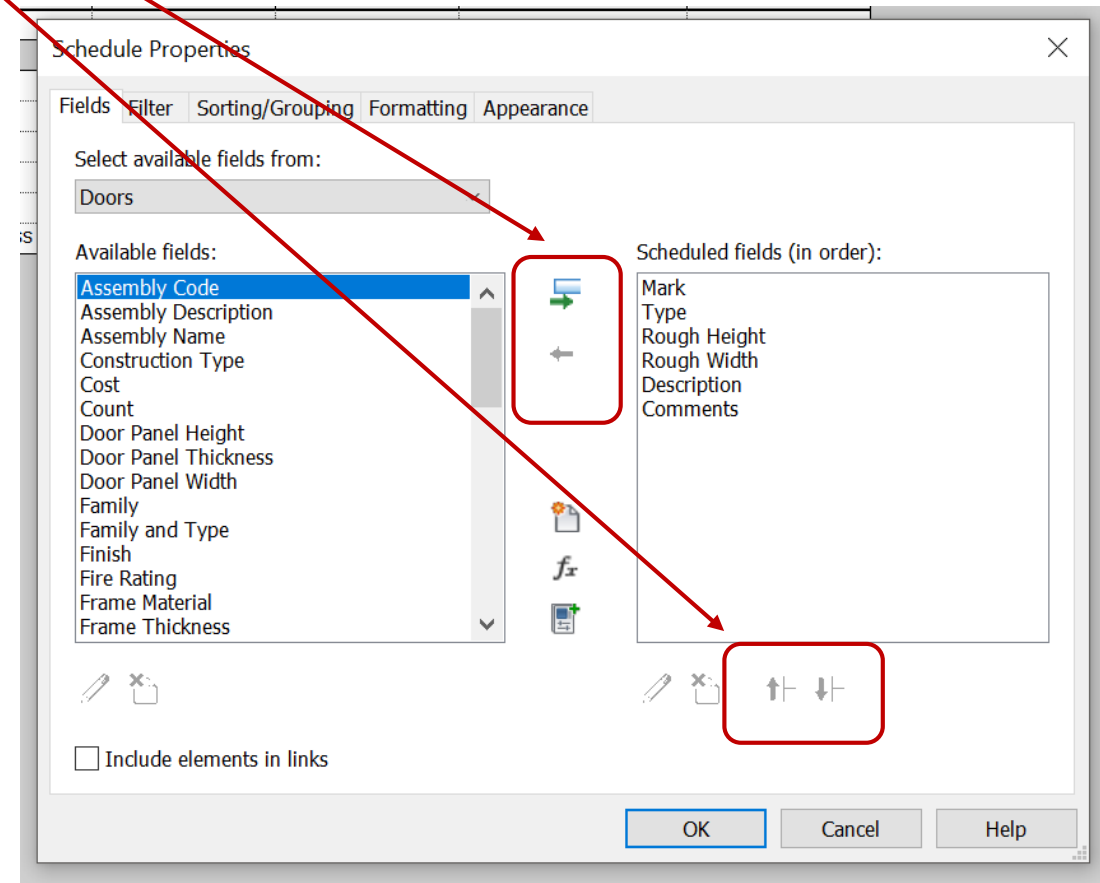
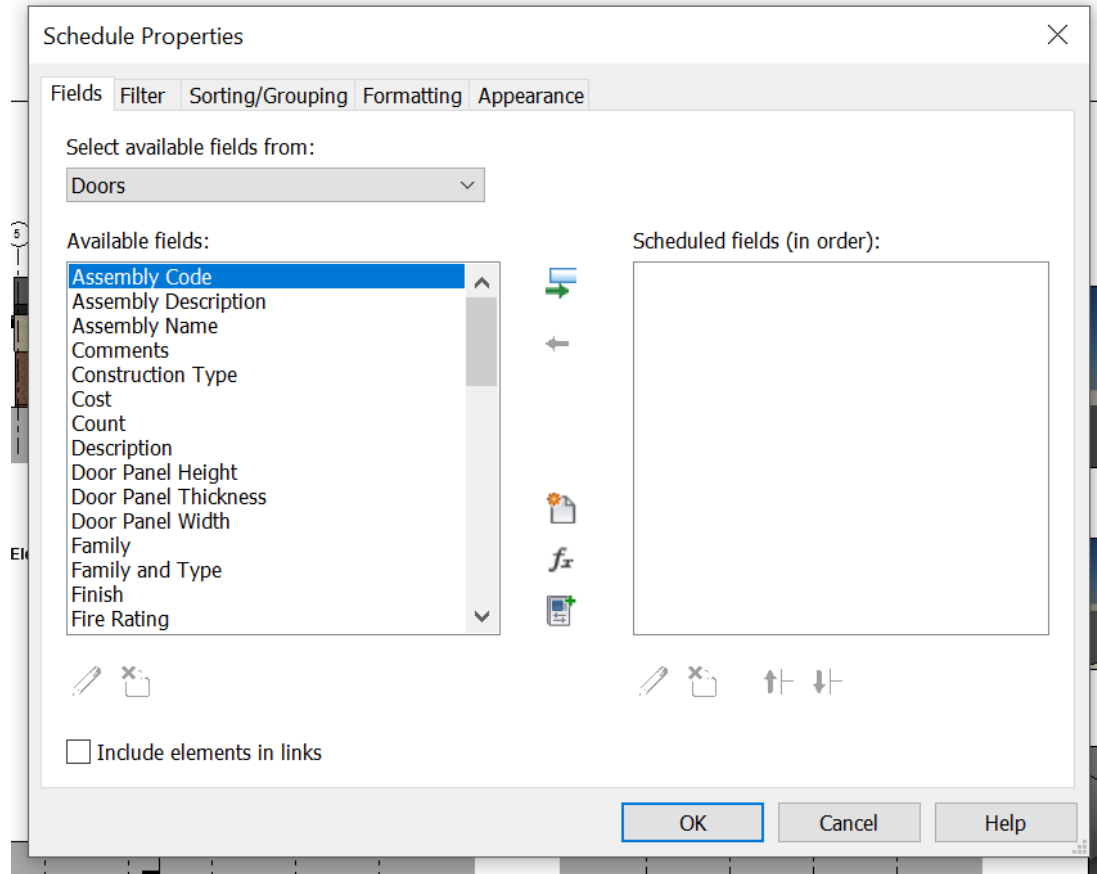
Select Schedule
/Quantities to
create a New
Schedule

In the Category
select your
schedule type



39-SCHEDULES

In the Schedule Properties Dialogue box 'Add' the Fields for the schedule.
Add and Remove Fields
Change order of the Fields





39-SCHEDULES

Edits and
formatting

Properties

Schedule

Schedule: Door Schedule Edit Type

View Name Door Schedule

Dependency Independent

Phasing

Phase Filter Show All

Phase New Construction

Other

Fields Edit...

Filter Edit...

Sorting/Groupi... Edit...

Formatting Edit...

Appearance Edit...

Properties help Apply

Project Browser - Project1 - Boat Ho...

- NW Facing Elevation
- SE Facing Elevation
- SW Facing Elevation
- Sections (Building Section)
 - Section 1
 - Section 1 - Callout 1
- Legends
- Schedules/Quantities (all)
 - Door Schedule**
 - Room Schedule
 - View List

0003 - Elevations & Views Door Schedule X

<Door Schedule>

A	B	C	D	E	F
Mark	Type	Rough Height	Rough Width	Description	Comments
DG01a	3000x2200mm 2	2200	3000		
DG01b	3000x2200mm 2	2200	3000		
DG01c	3000x2200mm 2	2200	3000		
DG02	1010x2110mm	2110	1010	Internal Single Door	
DG03	1010x2110mm	2110	1010	Internal Single Door	
DG04	Glass_Panel-12mm_Thickness				Glazed with manefe

Your Schedule will now appear in the Project Browser.

You can add Schedules to sheet just like any other view



‘Multi Category Material Takeoff’ Schedules can be produced. Cost of materials can be applied and totals calculated.

39-SCHEDULES

Schedule

Schedule: Multi-Category [Edit Type](#)

Identity Data

View Template <None>

View Name Multi-Category ...

Dependency Independent

Phasing

Phase Filter Show All

Phase New Construction

Other

Fields Edit...

Filter Edit...

Sorting/Groupi... Edit...

Formatting Edit...

[Properties help](#) [Apply](#)

Project Browser - Project1 - Boat Ho...

- {3D}
- Elevations (12mm Circle)
 - NE Facing Elevation
 - NW Facing Elevation
 - SE Facing Elevation
 - SW Facing Elevation
- Sections (Building Section)
 - Section 1
 - Section 1 - Callout 1
- Legends
- Schedules/Quantities (all)
 - Door Schedule
 - Multi-Category Material Takeoff**

<Multi-Category Material Takeoff>								
A	B	C	D	E	F	G	H	I
Family and Type	Material: Name	Material: Description	Material: Manufactur	Material: Area	Material: Volume	Material: Cost	Material: Com	Cost of Materials
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Fiberglass Batt	Fiberglass batt insulation	Celotex	36 m²	2.73 m³	5.00		£182.01
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Plaster	Plaster	British Gypsum	36 m²	0.46 m³	4.00		£145.61
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Concrete Masonry Units _Low Density	Concrete masonry units	Forterra	36 m²	3.64 m³	1.00		£36.4
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Brick, Dark Blend, Running	Common Brick, Running, Dark	Instock Facing	36 m²	3.73 m³	20.00		£728.03
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Fiberglass Batt	Fiberglass batt insulation	Celotex	47 m²	3.56 m³	5.00		£237.15
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Plaster	Plaster	British Gypsum	47 m²	0.59 m³	4.00		£189.72
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Concrete Masonry Units _Low Density	Concrete masonry units	Forterra	47 m²	4.74 m³	1.00		£47.43
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Brick, Dark Blend, Running	Common Brick, Running, Dark	Instock Facing	47 m²	4.86 m³	20.00		£948.59
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Fiberglass Batt	Fiberglass batt insulation	Celotex	21 m²	1.55 m³	5.00		£103.5
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Plaster	Plaster	British Gypsum	21 m²	0.26 m³	4.00		£82.8
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Concrete Masonry Units _Low Density	Concrete masonry units	Forterra	21 m²	2.07 m³	1.00		£20.7
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Brick, Dark Blend, Running	Common Brick, Running, Dark	Instock Facing	21 m²	2.12 m³	20.00		£414
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Fiberglass Batt	Fiberglass batt insulation	Celotex	47 m²	3.49 m³	5.00		£232.8
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Plaster	Plaster	British Gypsum	47 m²	0.58 m³	4.00		£186.24
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Concrete Masonry Units _Low Density	Concrete masonry units	Forterra	47 m²	4.66 m³	1.00		£46.56
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Brick, Dark Blend, Running	Common Brick, Running, Dark	Instock Facing	47 m²	4.77 m³	20.00		£931.19
Basic Wall: Wall-Int_12P-100Bk-12P	Concrete Masonry Units	Concrete masonry units	Forterra	10 m²	0.98 m³	36.00		£354.26
Basic Wall: Wall-Int_12P-100Bk-12P	Plaster	Plaster	British Gypsum	20 m²	0.25 m³	4.00		£78.73
Basic Wall: Wall-Int_12P-100Bk-12P	Concrete Masonry Units	Concrete masonry units	Forterra	12 m²	1.23 m³	36.00		£443.53
Basic Wall: Wall-Int_12P-100Bk-12P	Plaster	Plaster	British Gypsum	25 m²	0.31 m³	4.00		£98.56
Basic Wall: Wall-Int_12P-100Bk-12P	Concrete Masonry Units	Concrete masonry units	Forterra	6 m²	0.65 m³	36.00		£232.69
Basic Wall: Wall-Int_12P-100Bk-12P	Plaster	Plaster	British Gypsum	13 m²	0.16 m³	4.00		£51.71
Basic Wall: Wall-Int_12P-100Bk-12P	Concrete Masonry Units	Concrete masonry units	Forterra	3 m²	0.34 m³	36.00		£124.09
Basic Wall: Wall-Int_12P-100Bk-12P	Plaster	Plaster	British Gypsum	7 m²	0.09 m³	4.00		£27.58
Doors_Sgl_Glass_1: Glass_Panel-12mm_Thickness	Glass	Soda Lime Glass	Pilkingtons	3 m²	0.02 m³	29.00		£86.74
Doors_Sgl_Glass_1: Glass_Panel-12mm_Thickness	Metal - Aluminum		Senior Aluminium	2 m²	0.02 m³	1.00		£1.74
Doors_IntSgl: 1010x2110mm	Door - Panel		Leaderflush	4 m²	0.07 m³	14.00		£56.59
Doors_IntSgl: 1010x2110mm	Door - Handle		Dorma	0 m²	0.00 m³	34.00		£1.21
Doors_IntSgl: 1010x2110mm	Door - Frame/Mullion (1)		Leaderflush	2 m²	0.02 m³	56.00		£119.54
Doors_IntSgl: 1010x2110mm	Door - Architrave		Leaderflush	2 m²	0.01 m³	4.00		£7.02
Doors_IntSgl: 1010x2110mm	Door - Panel		Leaderflush	4 m²	0.07 m³	14.00		£56.59
Doors_IntSgl: 1010x2110mm	Door - Handle		Dorma	0 m²	0.00 m³	34.00		£1.21
Doors_IntSgl: 1010x2110mm	Door - Frame/Mullion (1)		Leaderflush	2 m²	0.02 m³	56.00		£119.54
Doors_IntSgl: 1010x2110mm	Door - Architrave		Leaderflush	2 m²	0.01 m³	4.00		£7.02