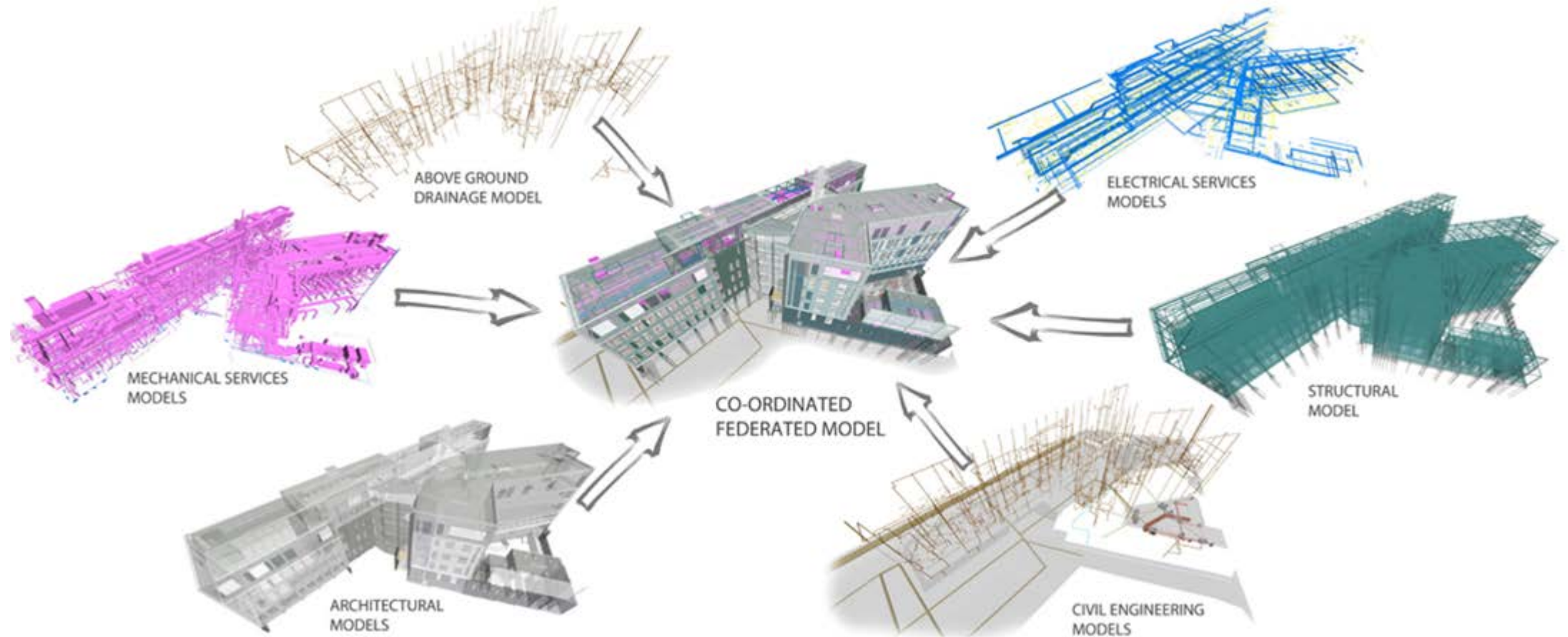


Working with Digital Technologies & BIM

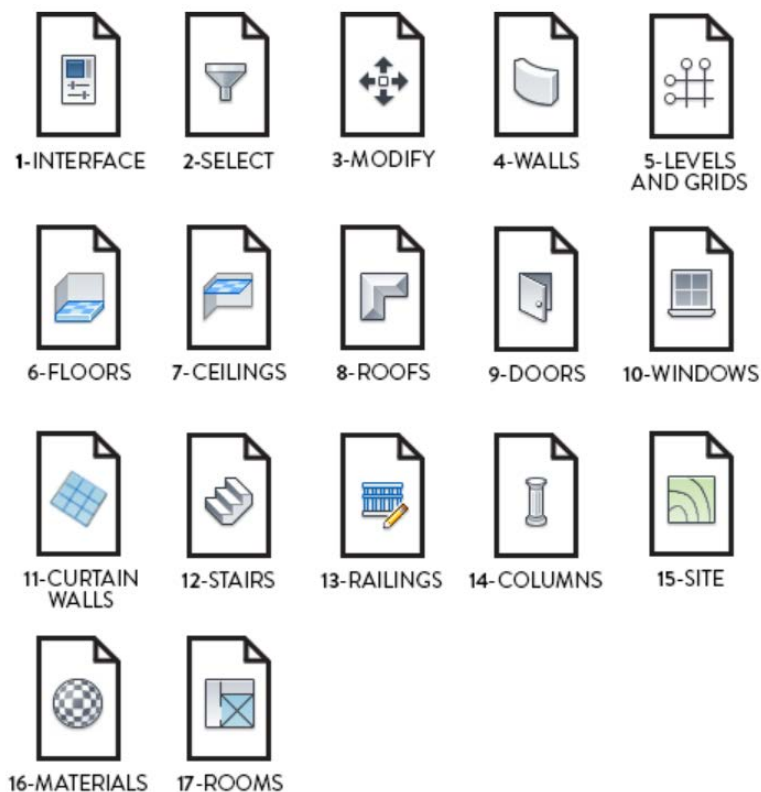




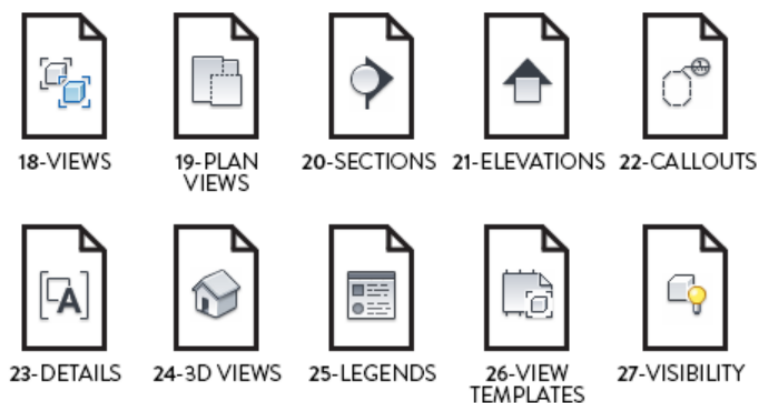
AUTODESK®
REVIT®

AUTODESK® REVIT® the basics

PART 1: MODEL



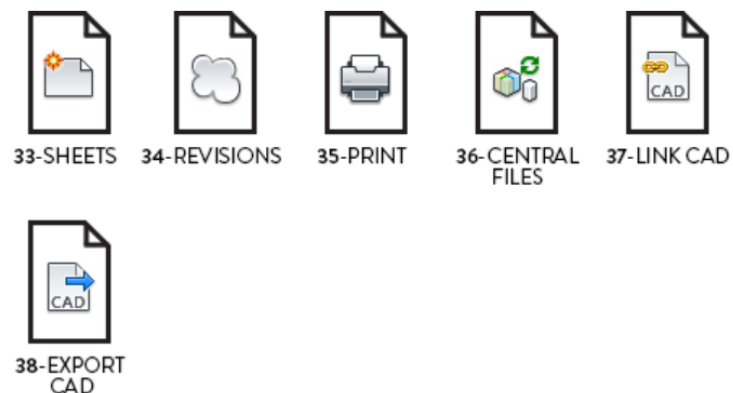
PART 2: VIEWS



PART 3: ANNOTATE



PART 4: PUBLISH AND COLLABORATE



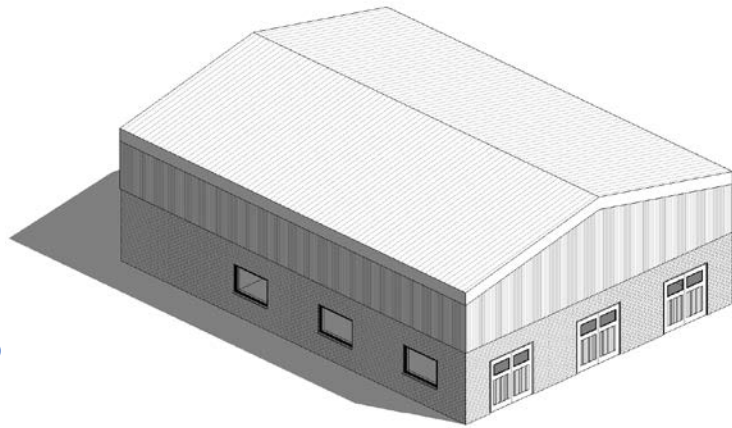
PART 5: ADVANCED TOOLS



<https://revitpure.com/basics>

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

Boat House



Create a new project

Download the OSMAP
from Moodle

Insert the OSMAP

Create Project North.

Set up Levels

Prepare Model:

Add Grids

Boat house with Glazed Office

Add Columns

Brickwork to First Floor and

Timber Cladding to upper areas

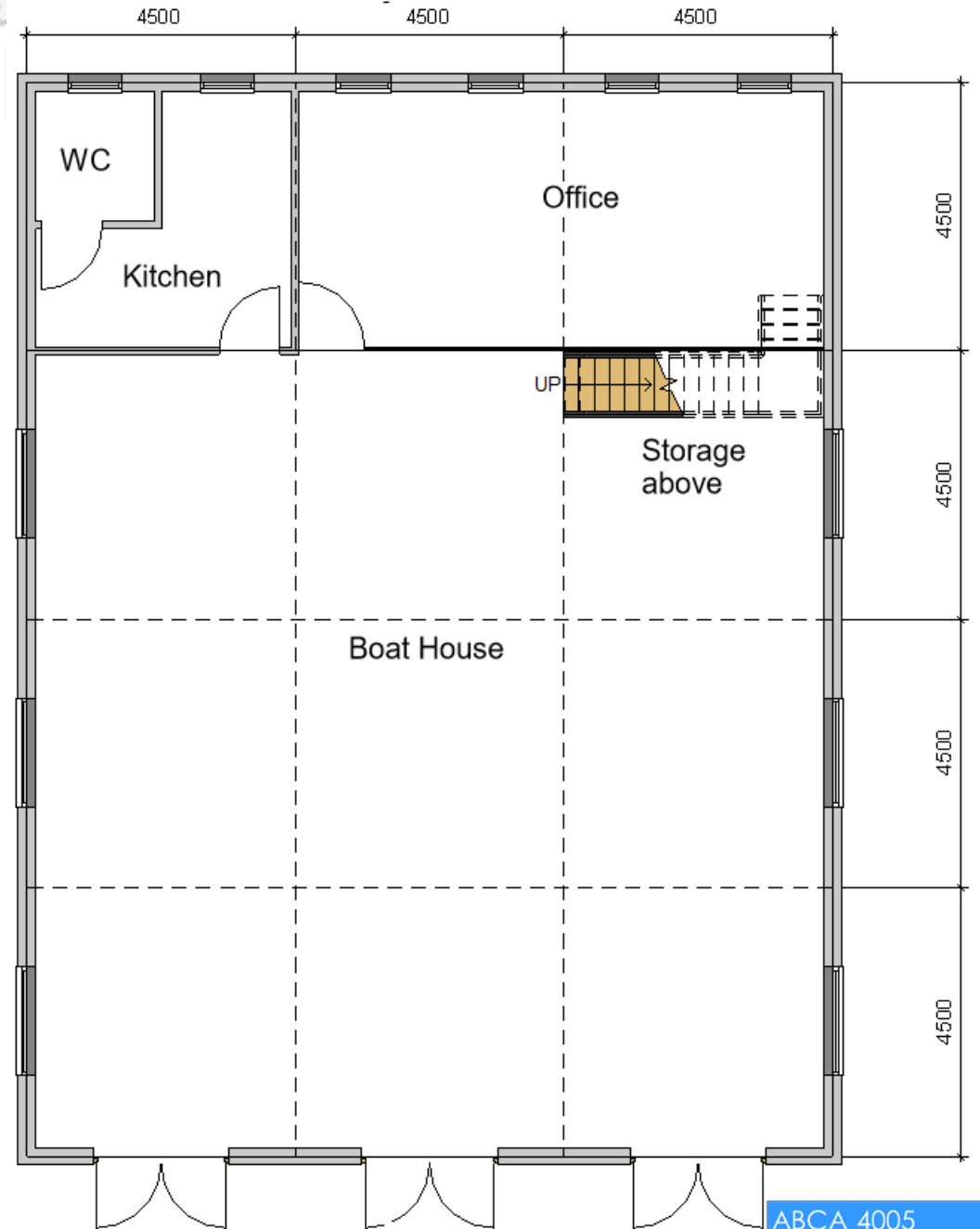
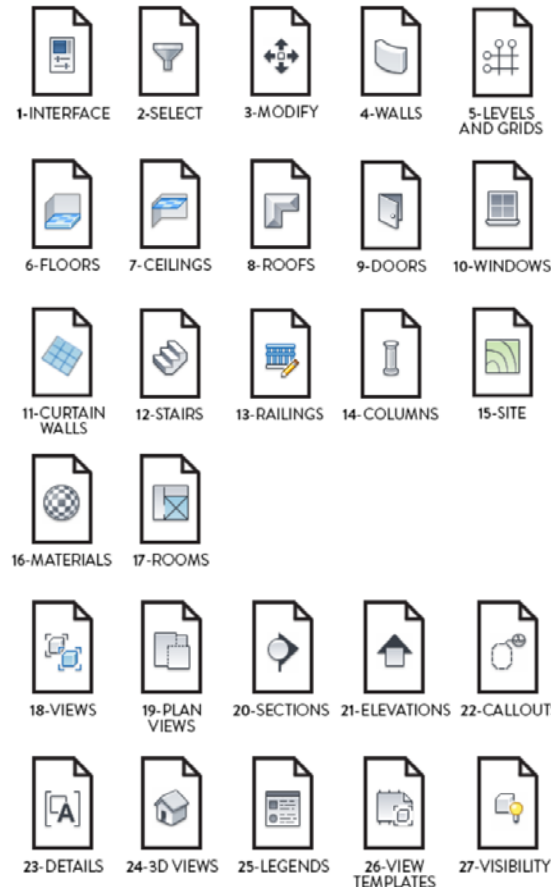
Add windows doors and Rooms

Add Sections / Elevations and

Callout details

Set up 3D camera views & render

Add Site Topography



PART 4: PUBLISH AND COLLABORATE



33-SHEETS



34-REVISIONS



35-PRINT



36-CENTRAL
FILES



37-LINK CAD



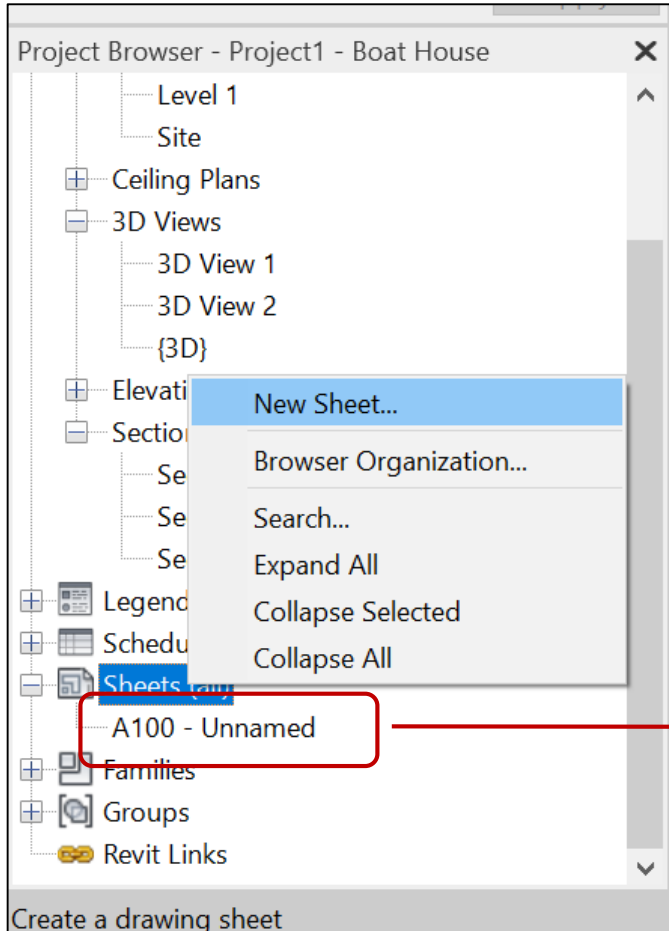
38-EXPORT
CAD



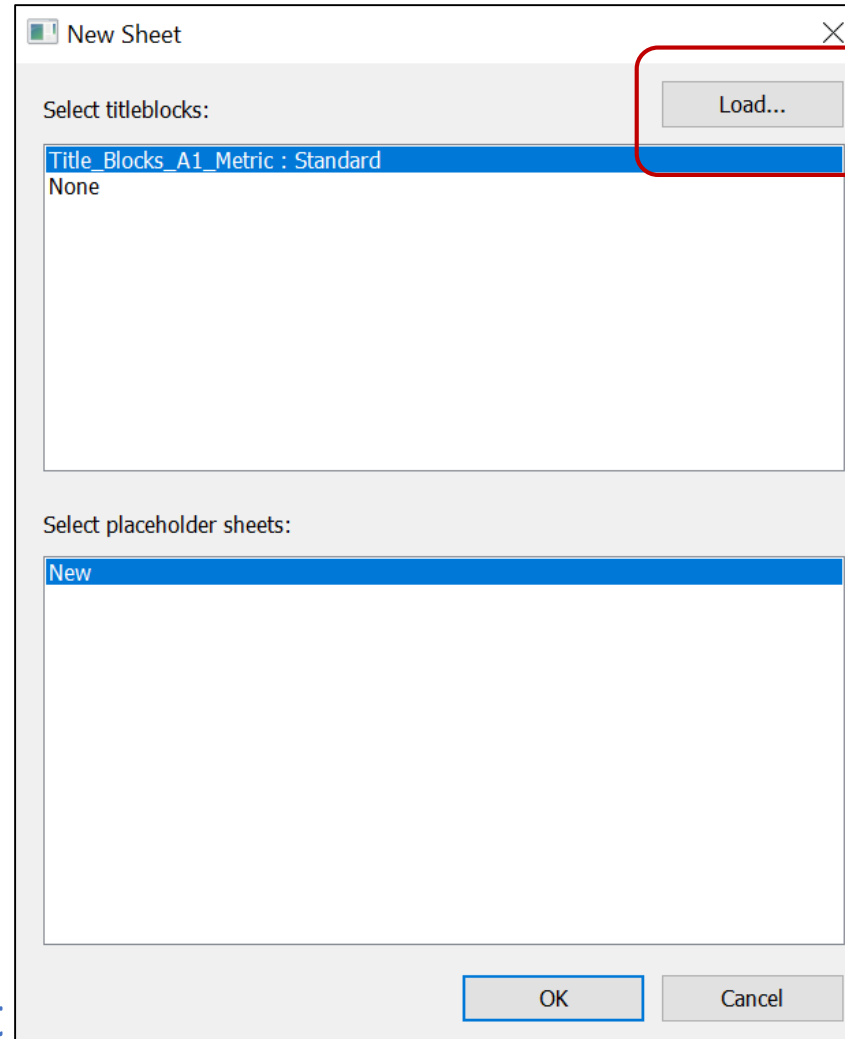
33-SHEETS

Download the UWTSD Splash Page and Titleblock from Moodle

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: Project Name

UPRN Code: Project Number

Originator Code:

Role Code: Designer

Drawn By: Author

Checked By: Checker

Date: 03/04/20

Project Status: Project Status

C:\Users\lg.traylor\Documents\Project1 - Boat House.rvt

Project Name: Boat House Goodwick Beach

UPRN Code: 4005

Originator Code: UWTSD

Role Code: A

Drawn By: GMT

Checked By: ANO

Date: 03/04/20

Project Status: S0

C:\Users\g.traylor\Documents\Project1 - Boat House.rvt



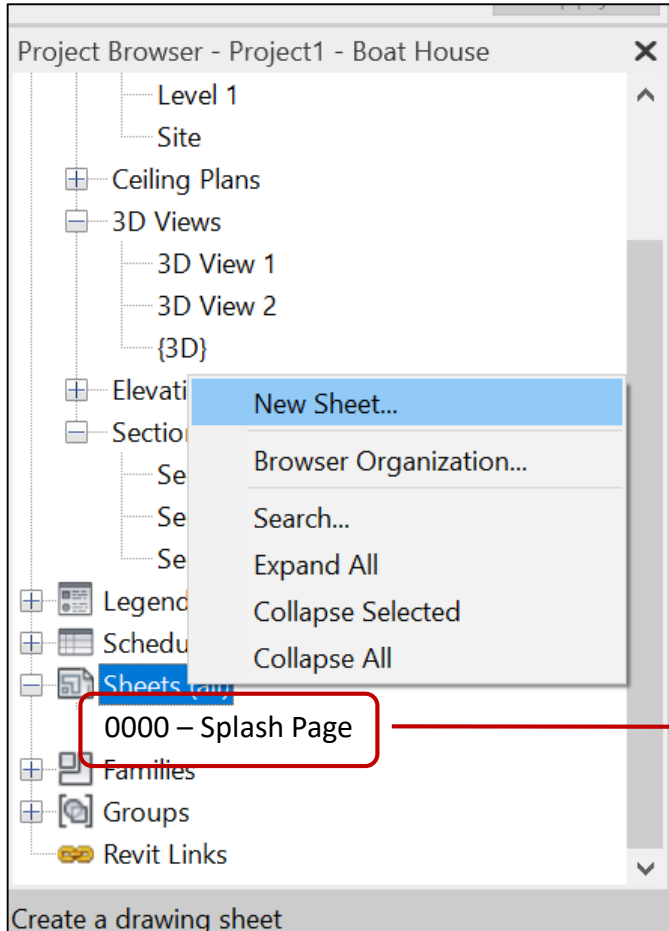
ABCA 4005
DIGITAL TECHNOLOGIES & BIM : LEVEL 4

These common
BIM fields will be
transferred to all
new sheets

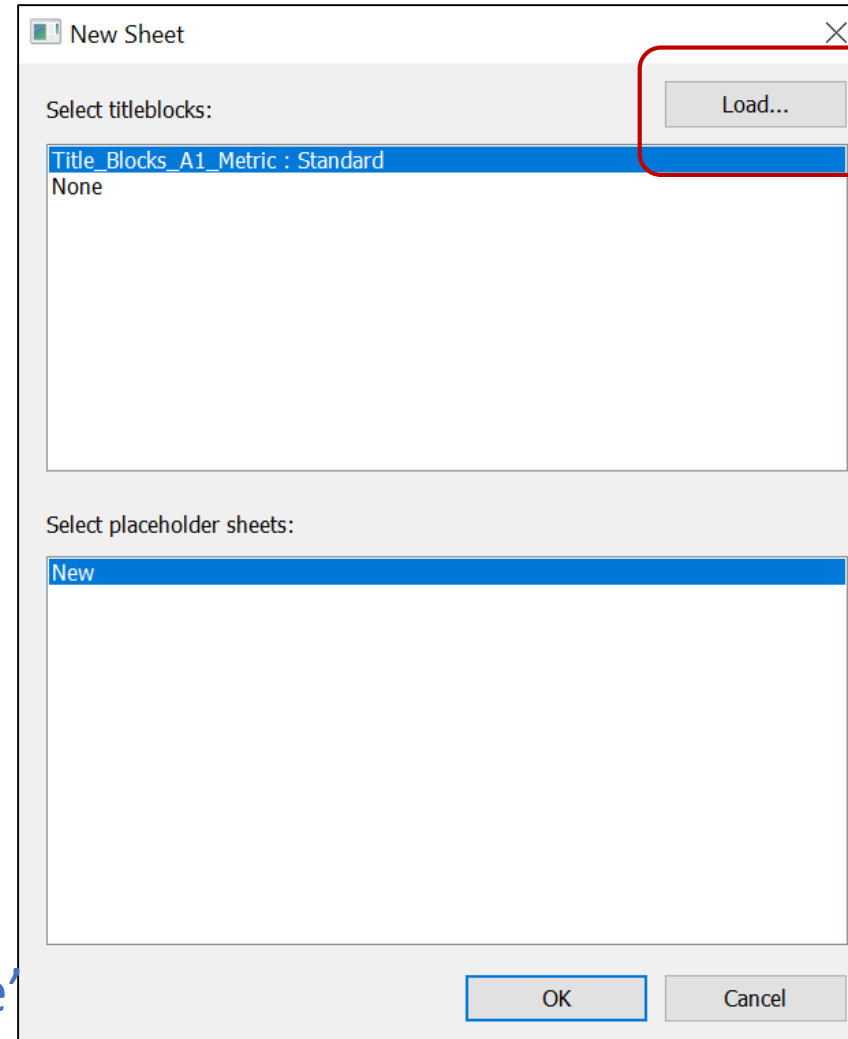


33-SHEETS

Right Click on Sheets
and select New Sheet



Right Click
and Rename
'0000'
'Splash Page'



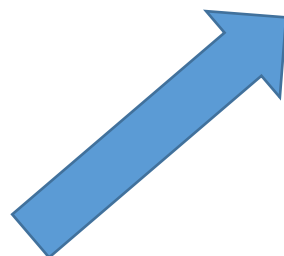
Load:
UWTSD titleblock



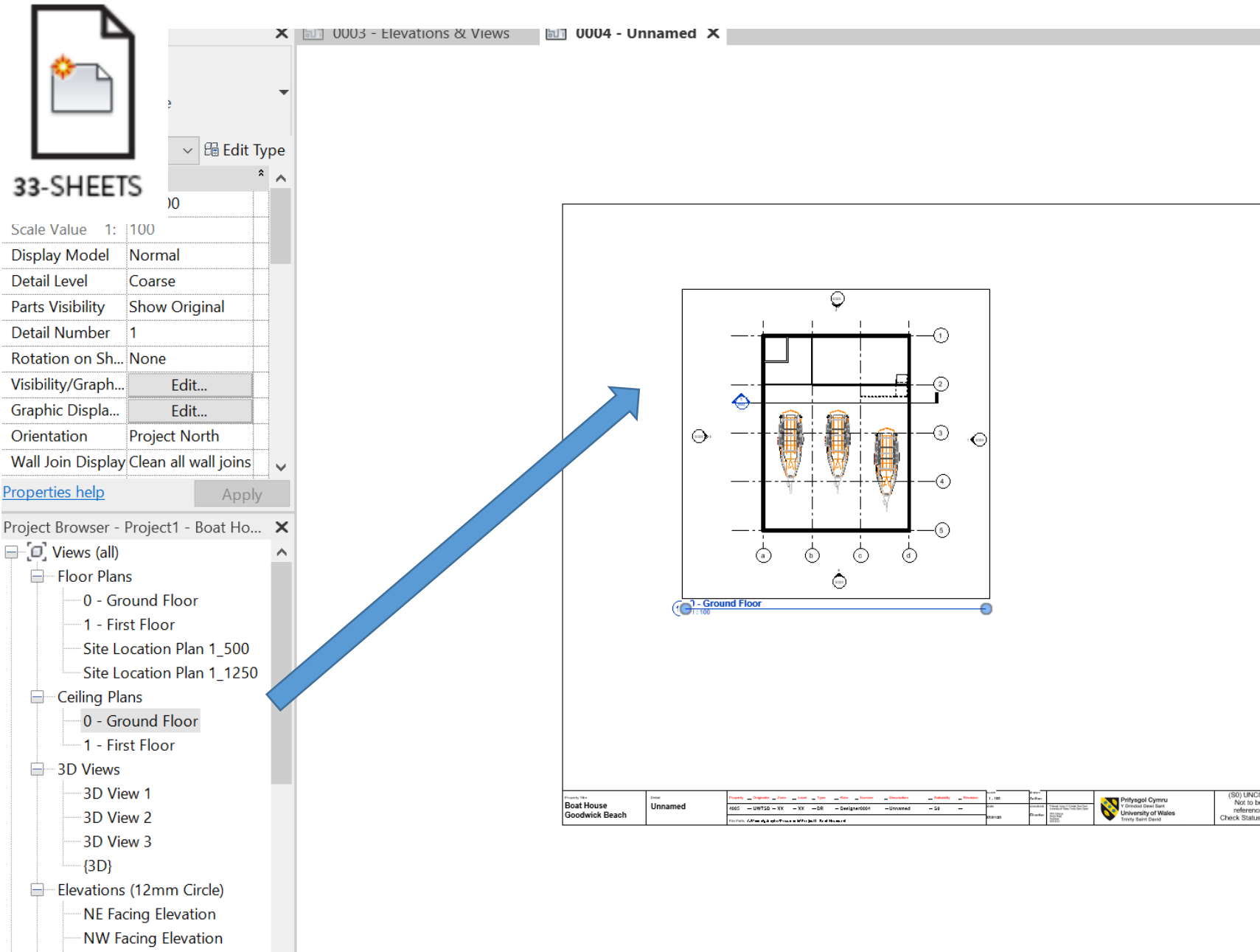
33-SHEETS

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	Property Originator Zone Level Type Role Number Description Suitability Revision	10/01/2020	Author	 Prifysgol Cymru Y Drindod Dewi Sant University of Wales Trinity Saint David	(S0) UNCONTROLLED Not to be used as a reference document Check Status Before Quoting	Notified Notes
		4005 -- UWTSD -- XX -- XX -- DR -- Designer0004 -- Unnamed -- S0 --	27/01/2020	Checker			
		File Path: c:\Users\jared\Documents\Boat House.dwg					



Drag and drop Views from the Project Browser onto the sheet.

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)



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... X

..... 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 - Spl

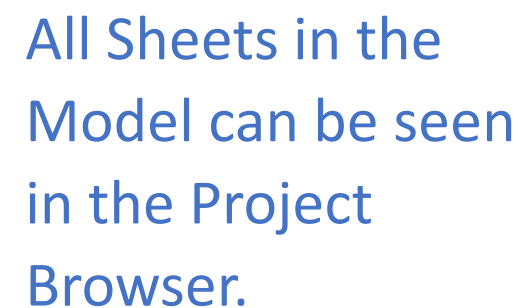
—0001 - Site Location

0002 - Plans and Sec

0003 - Elevations & View

Families

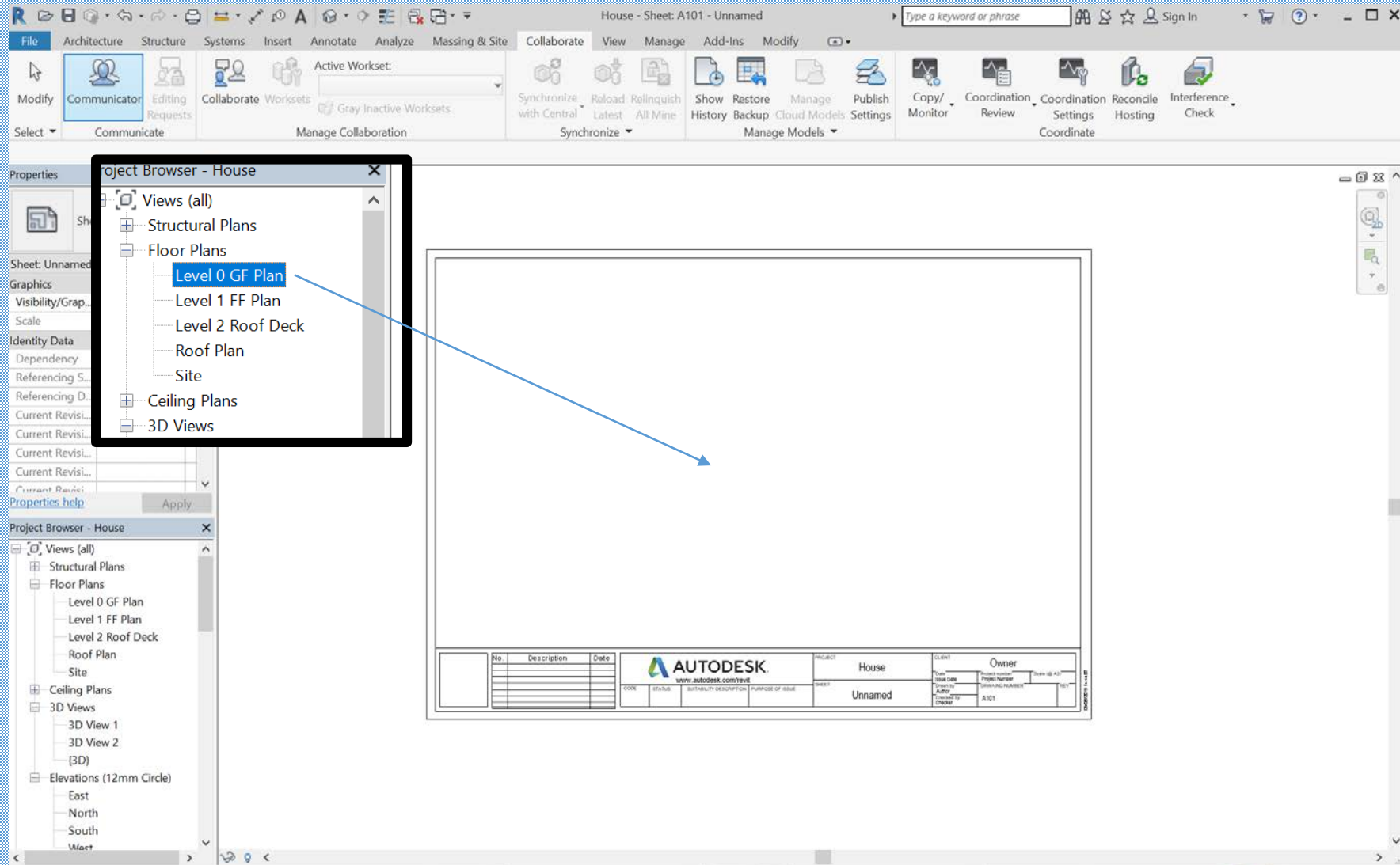
  Groups



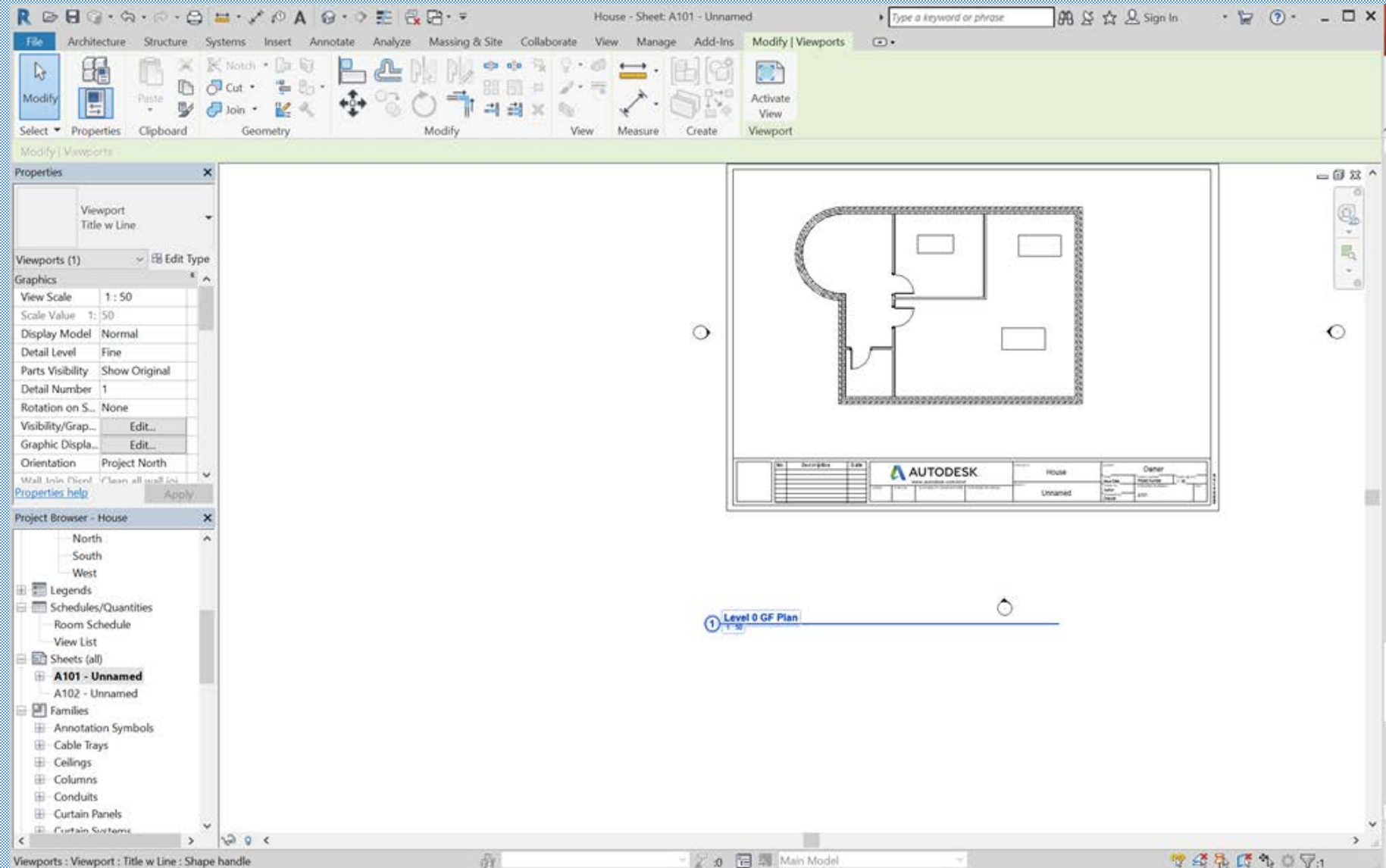


Additional Notes on Placing and Editing Views on Sheets.

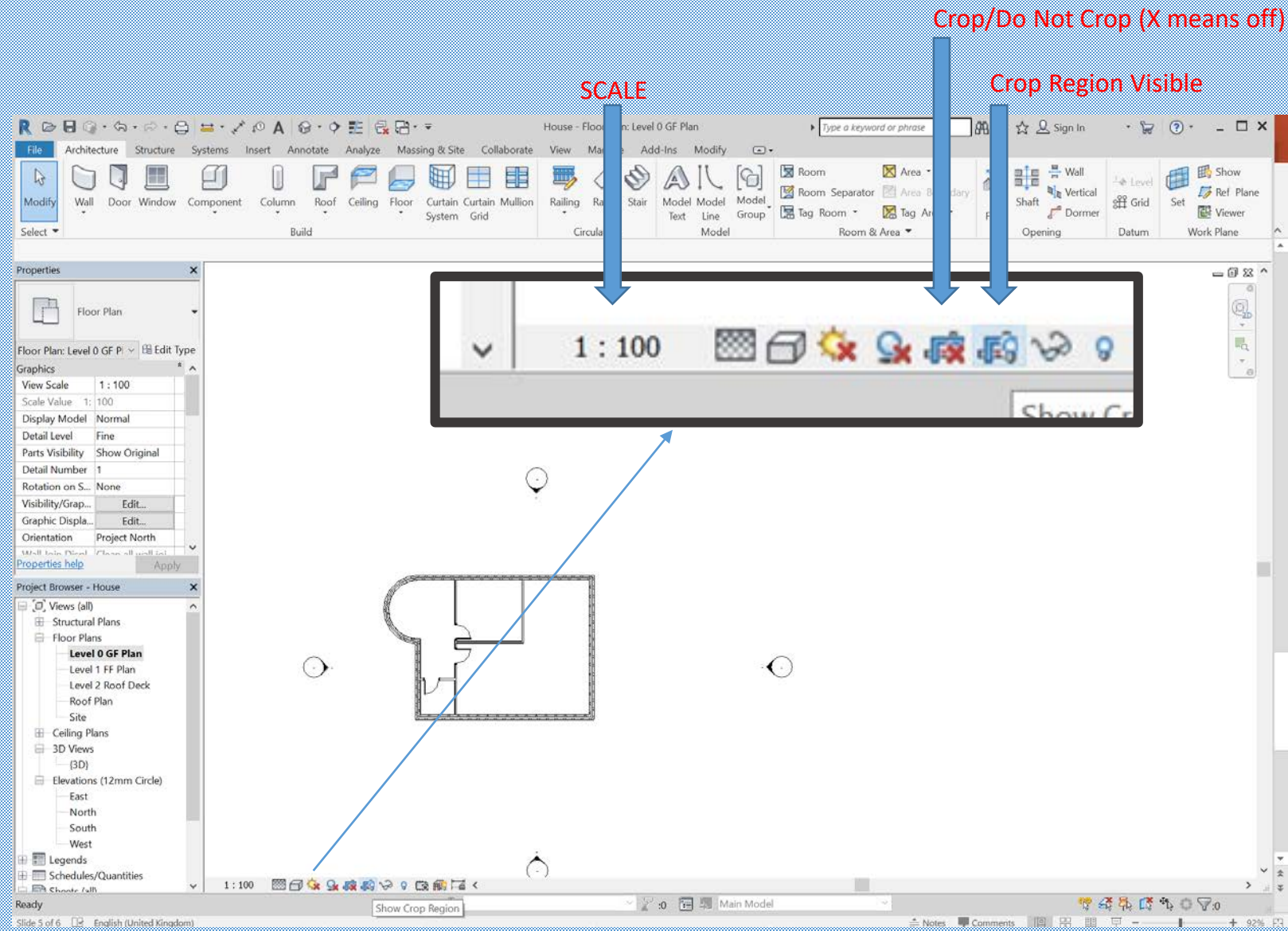
1. In the titleblock view, scroll the project browser to the View that you want to place on the titleblock.
2. Click on the view – Hold – and drag the view onto the titleblock page



3. The view will appear on the titleblock page but may need editing to fit.

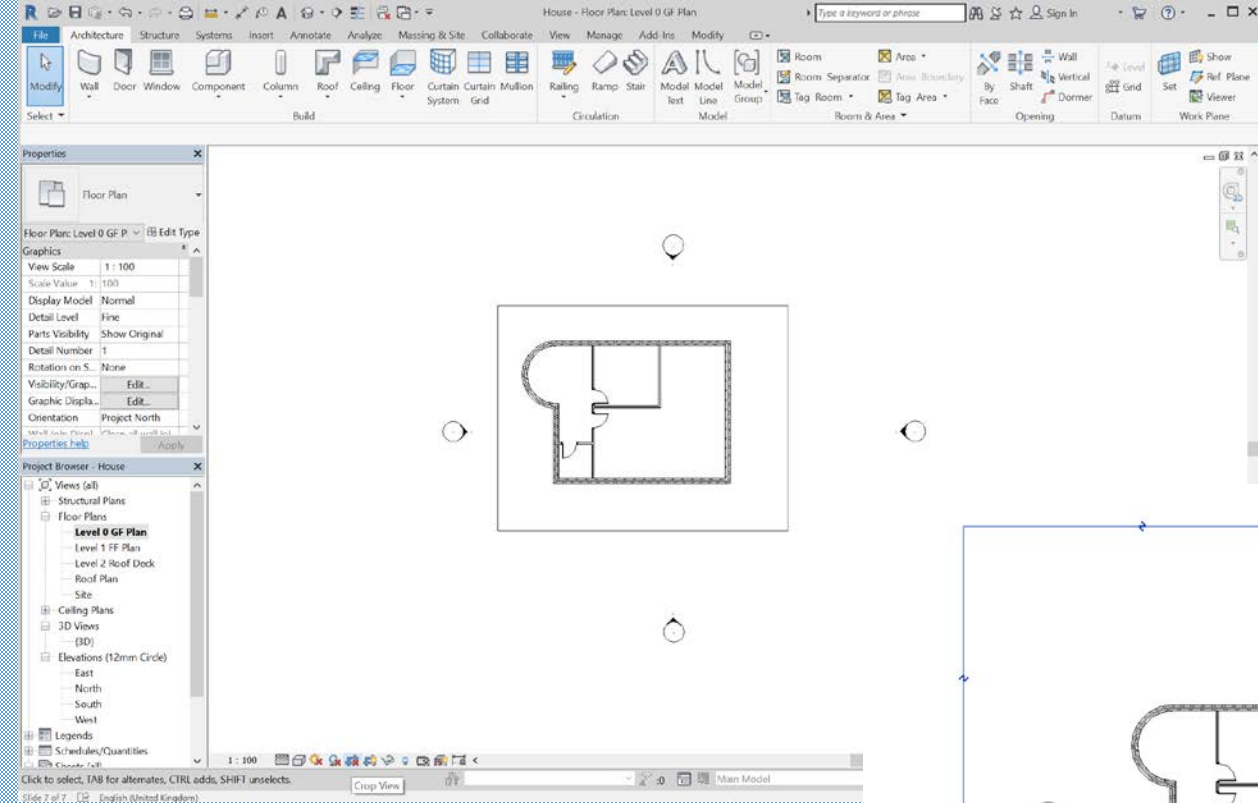


4. You can Edit but changing the Scale or Cropping the View.

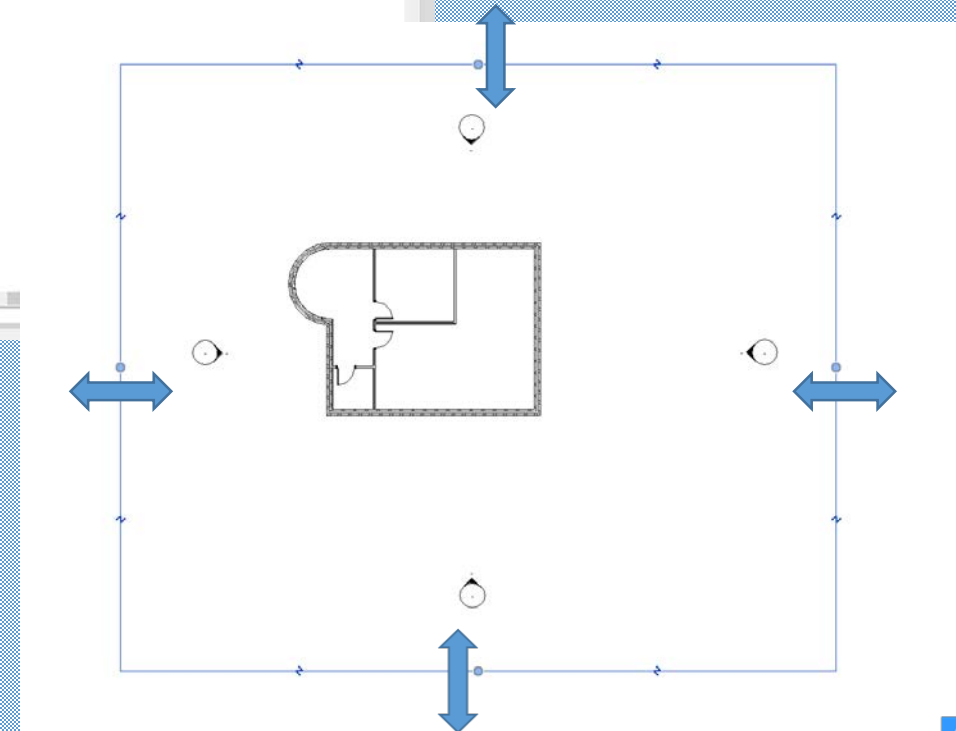
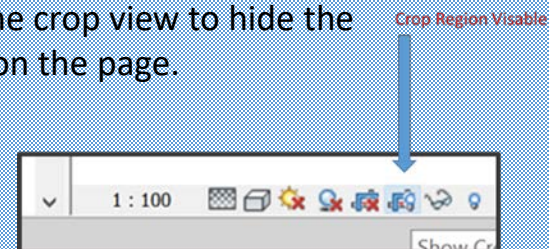


5. Switch on the crop region – it will appear as a rectangle on your screen.

6. Click on the crop region and use the Grips to move your crop region.

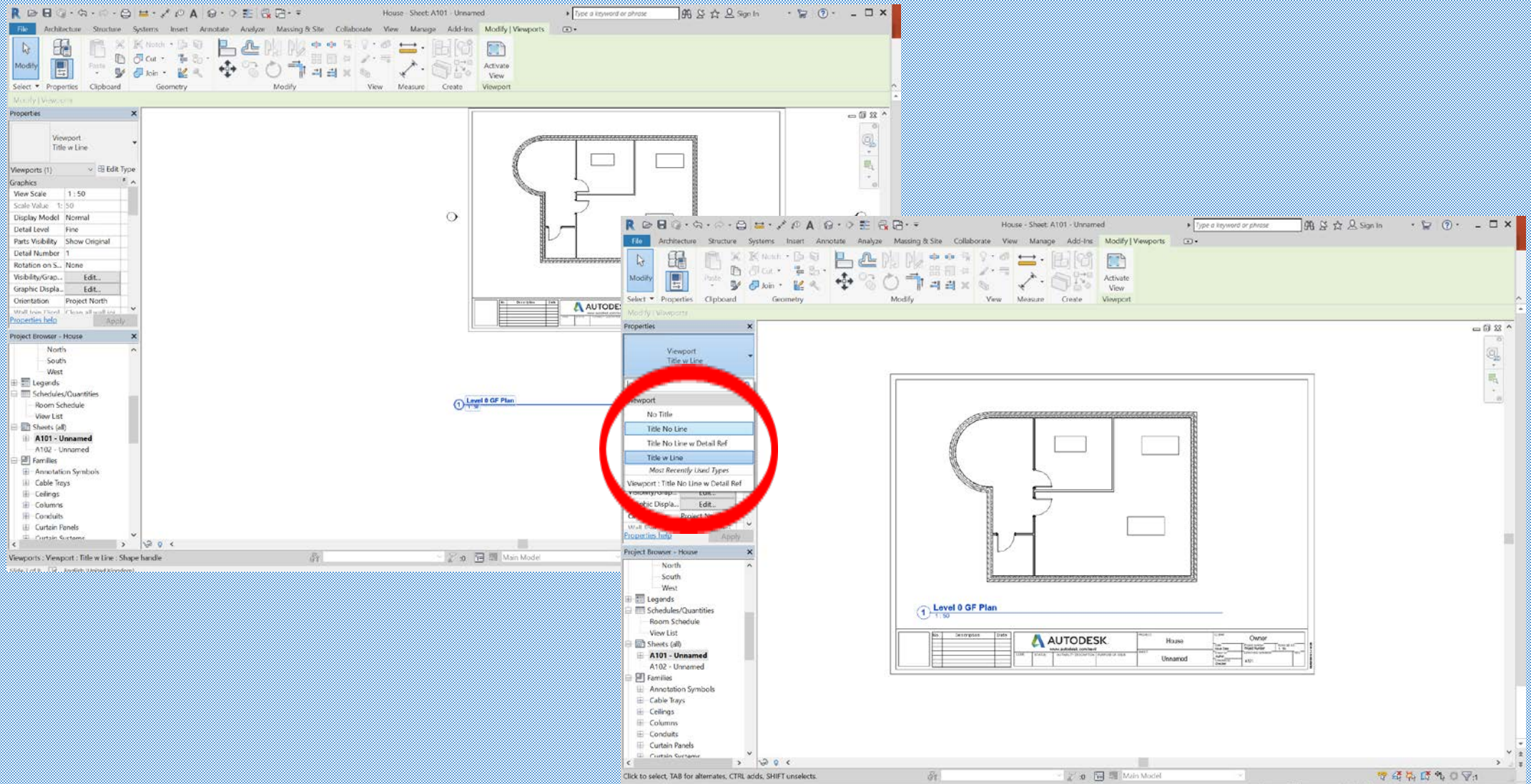


7. Once you are happy with the view. Hide the crop view to hide the crop region on the page.



8. You may also need to relocate the Title of your view. Click on it to highlight it in Blue and drag it to the location you want.

9. To change the Title (type) use the dropdown in the Properties to select Title with NO LINE



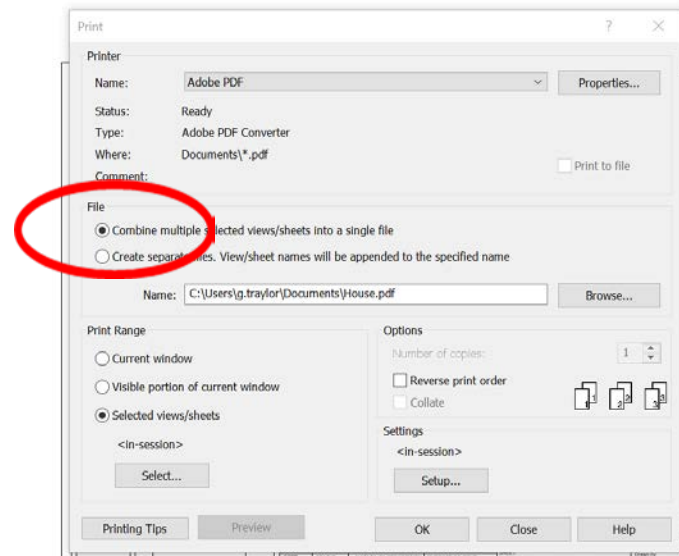
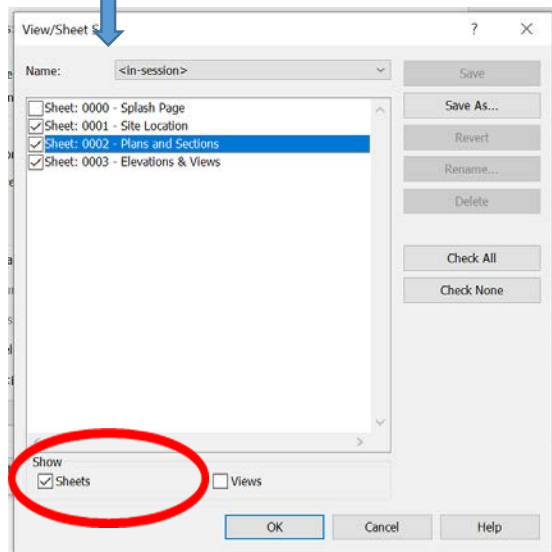
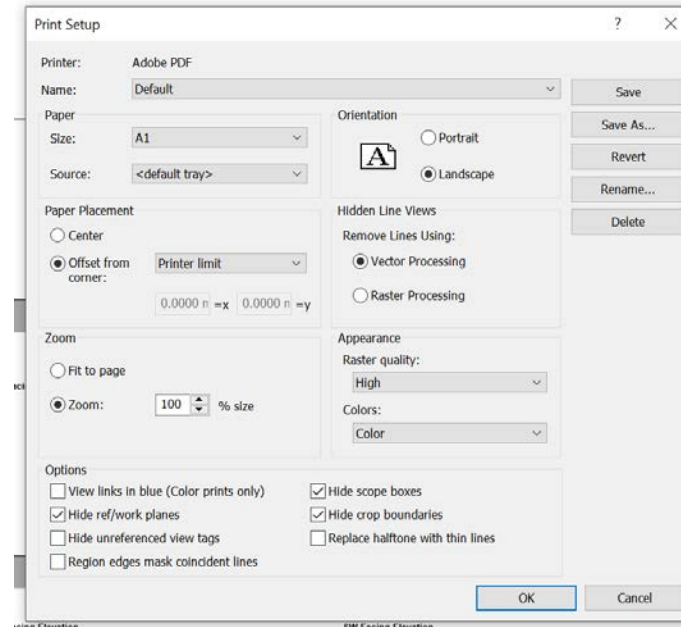
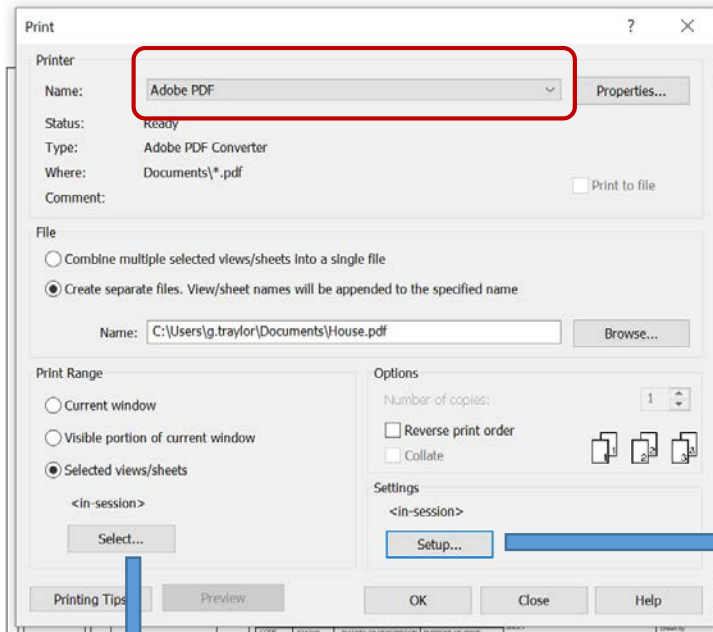


Ready

Print Dialogue: Use the **Setup** button to change Size – ensure Zoom is set to 100%. Click OK
Use **Select** button to select sheets to print – ensure Sheets is ticked. Click OK



35-PRINT



To combine into One PDF ensure the COMBINE MULTIPLE is selected.

PART 5: ADVANCED TOOLS



39-SCHEDULES



40-PHASES



41-WORKSETS



42-GROUPS



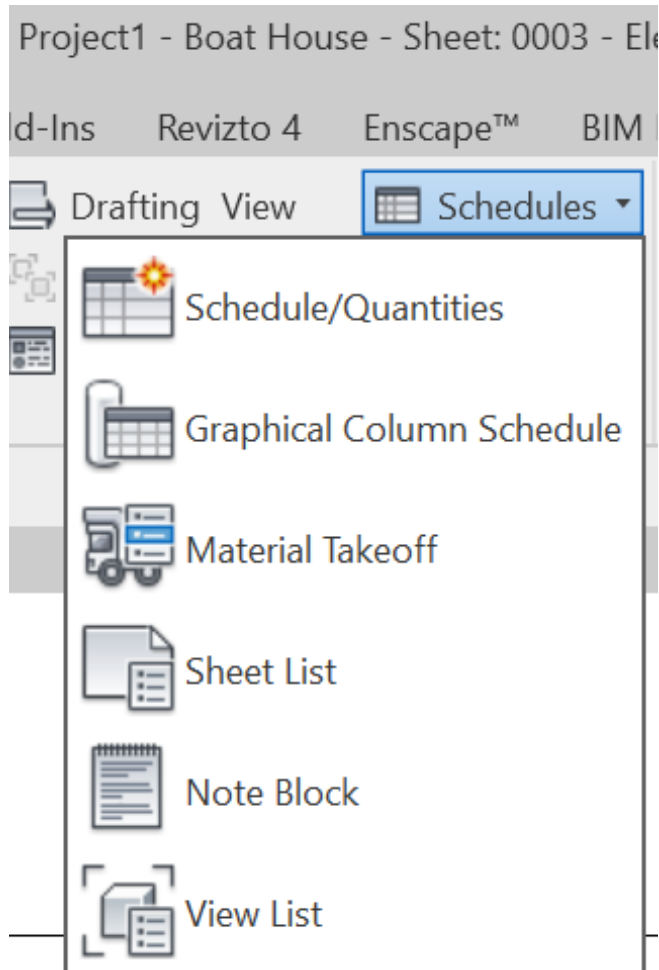
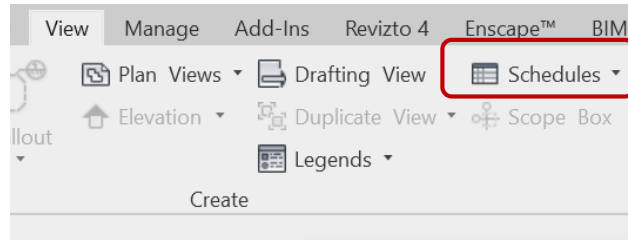
43-MODEL
IN-PLACE



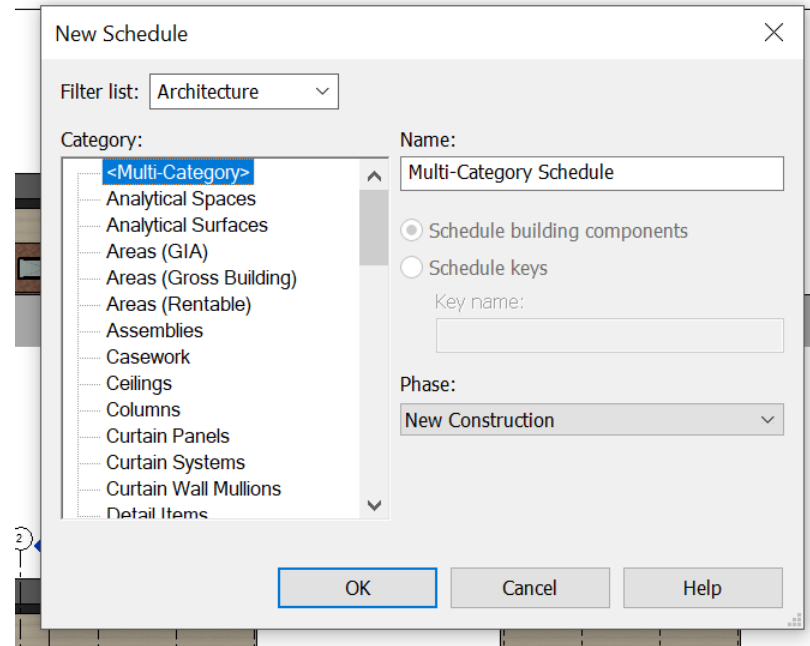
44-FAMILIES



45-DESIGN
OPTIONS

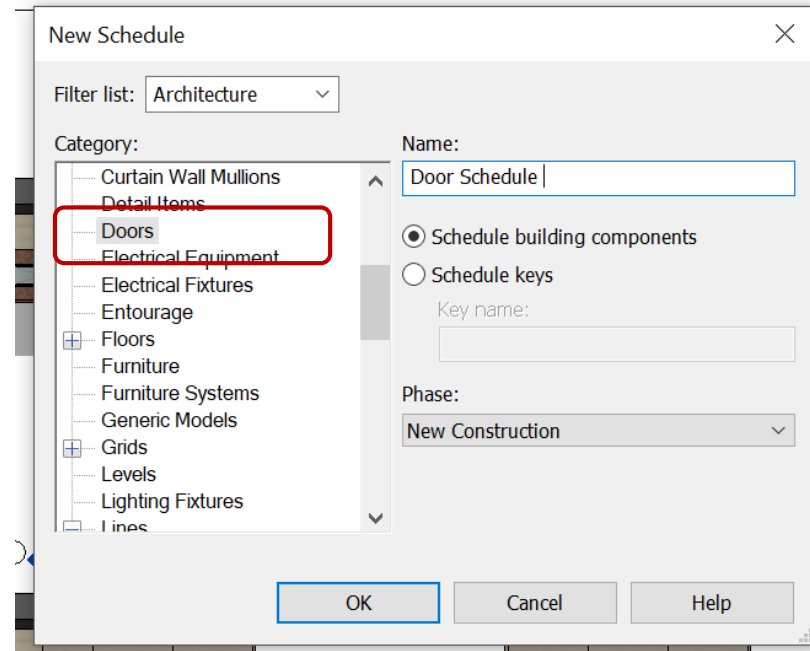


Schedule
types



Schedules can be
created from the
View Menu

Different type of
schedules can be
generated.



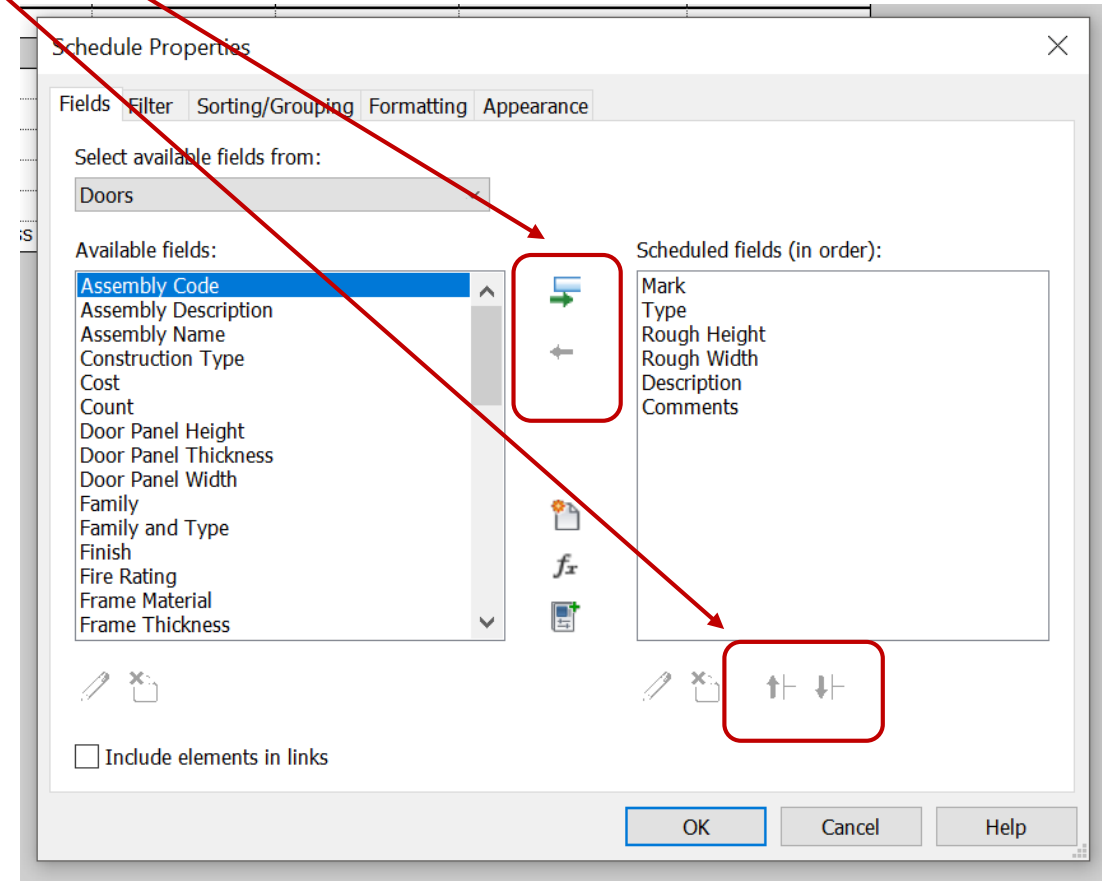
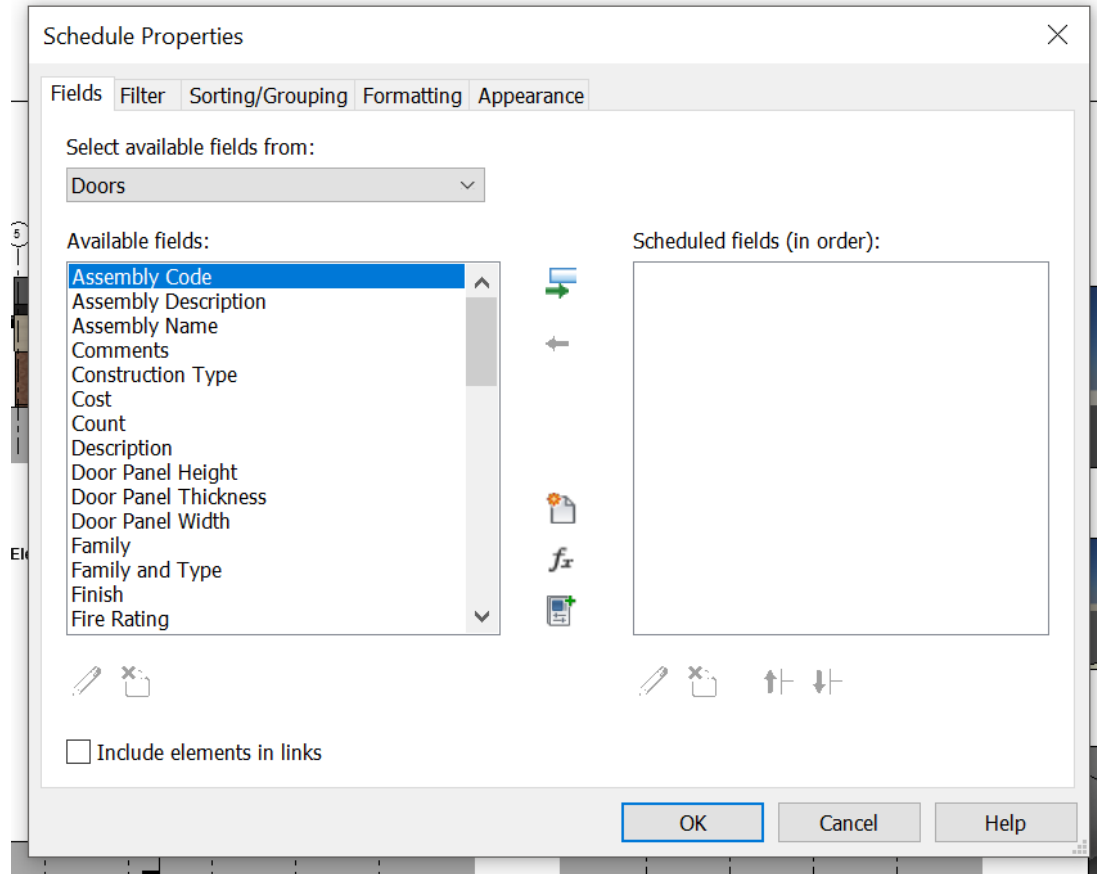
Select Schedule
/Quantities to
create a New
Schedule

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

<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**

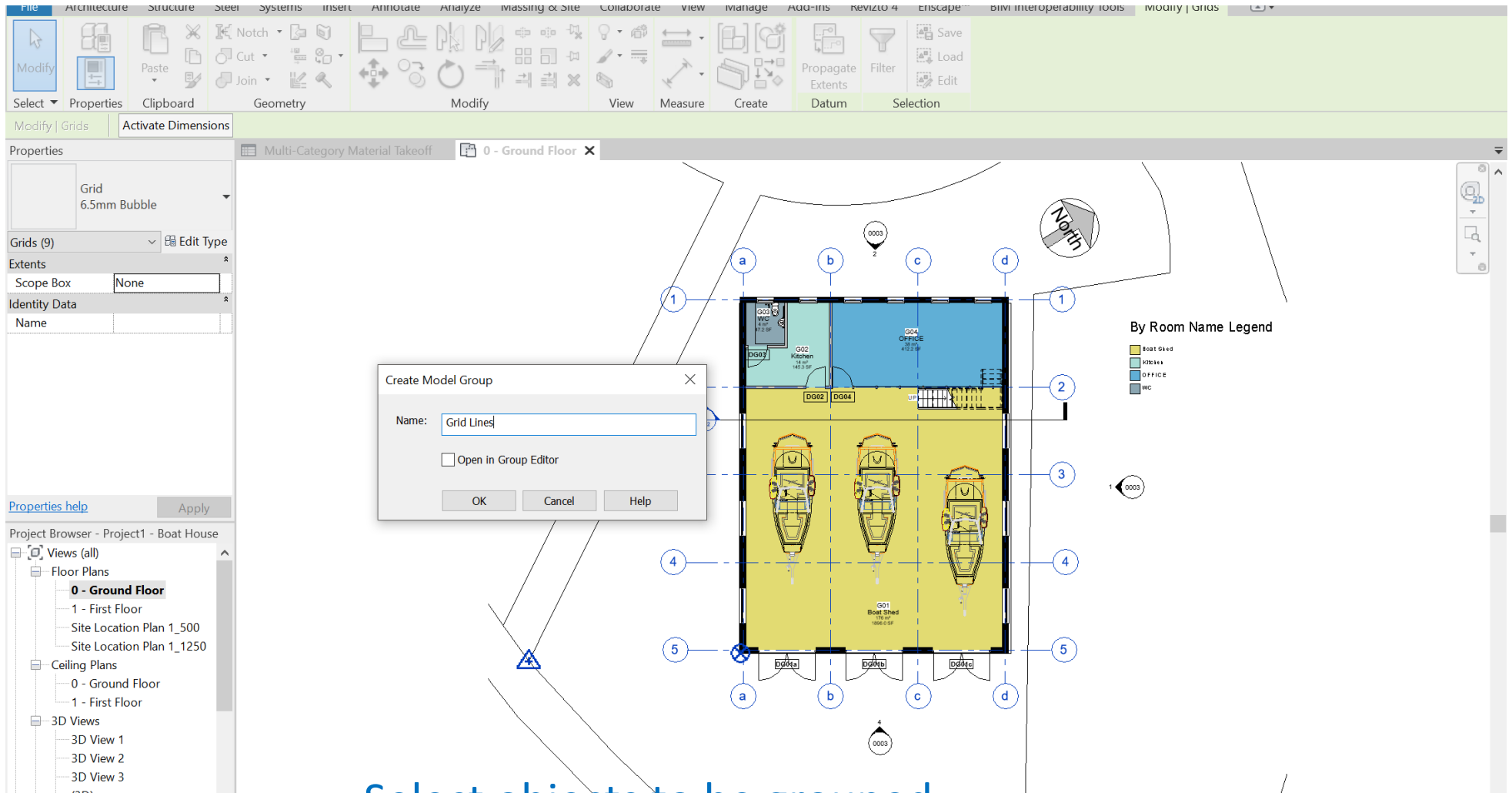
<Multi-Category Material Takeoff>								
A	B	C	D	E	F	G	H	I
Family and Type	Material: Name	Material: Description	Material: Manufactur	Material: Area	Material: Volume	Material: Cost	Material: Com	Cost of Materials
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBk-12P	Fiberglass Batt	Fiberglass batt insulation	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



42-GROUPS



Objects
can be
Grouped
in Revit.
These are
similar to
Blocks in
AutoCAD



Select objects to be grouped
and Click the Group Button
& Name your Group

File Architecture Structure Steel Systems Insert Annotate Analyze Massing & Site Collaborate View Manage Add-Ins Revit 4 Enscape™ BIM Interoperability Tools Modify | Model Groups

Modify Select Properties Clipboard Geometry Modify View Measure Create Edit Ungroup Link Group

Modify | Model Groups Activate Dimensions

Properties Multi-Category Material Takeoff 0 - Ground Floor

Model Group Grid Lines

Model Groups (1) Edit Type

Constraints Reference Level 0 - Ground Floor Origin Level Offset 1500.0

Properties help Apply

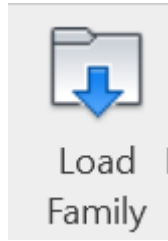
Project Browser - Project1 - Boat Ho... Views (all) Floor Plans 0 - Ground Floor 1 - First Floor Site Location Plan 1_500 Site Location Plan 1_1250 Ceiling Plans 0 - Ground Floor 1 - First Floor 3D Views 3D View 1 3D View 2

Once objects are group a dashed blue line will appear when they are selected.

Additional Edits are now available for the Group.

By Room Name Legend

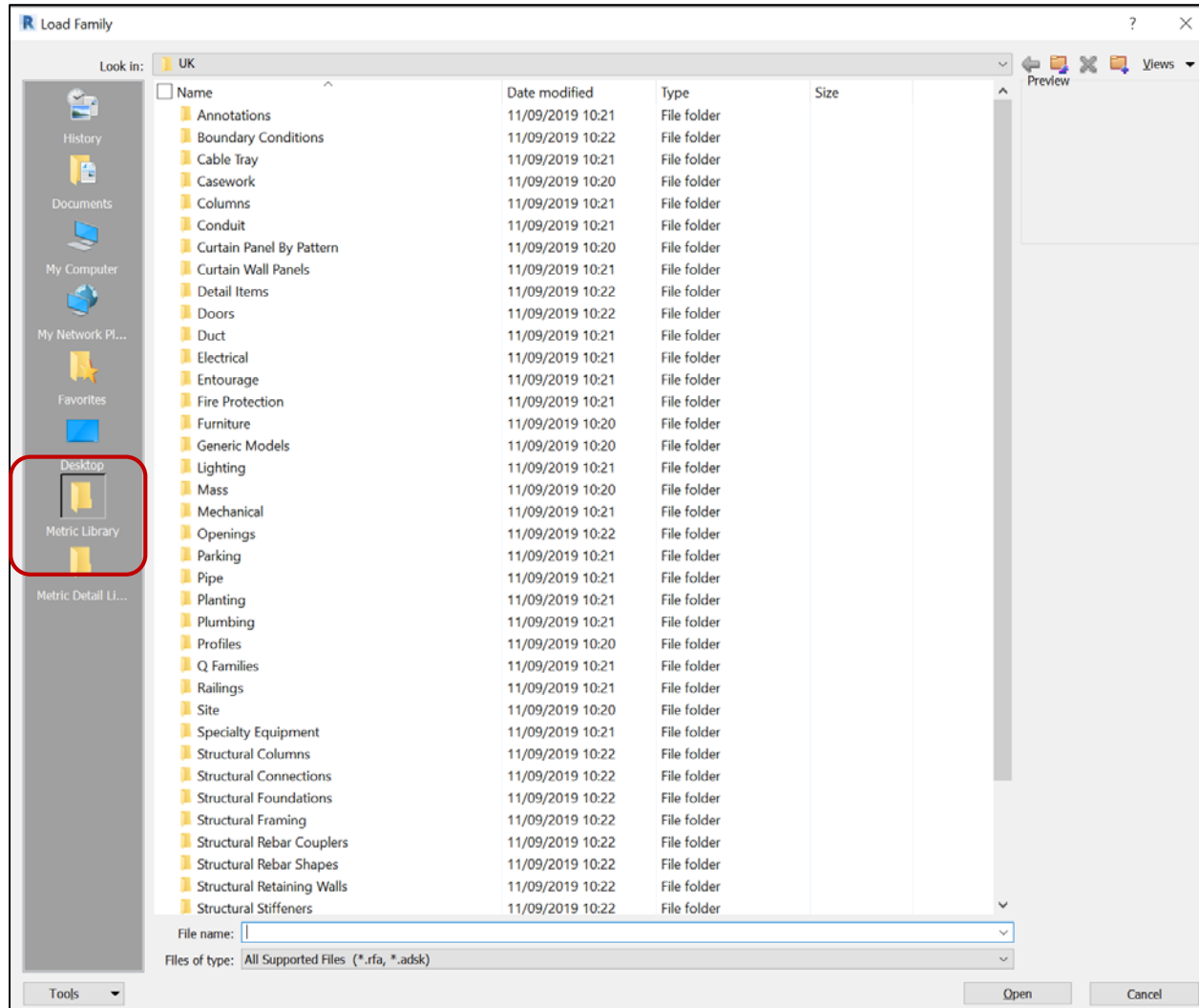
- Boat Shed
- Kitchen
- Office
- WC



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



<https://www.nationalbimlibrary.com/en-gb/>



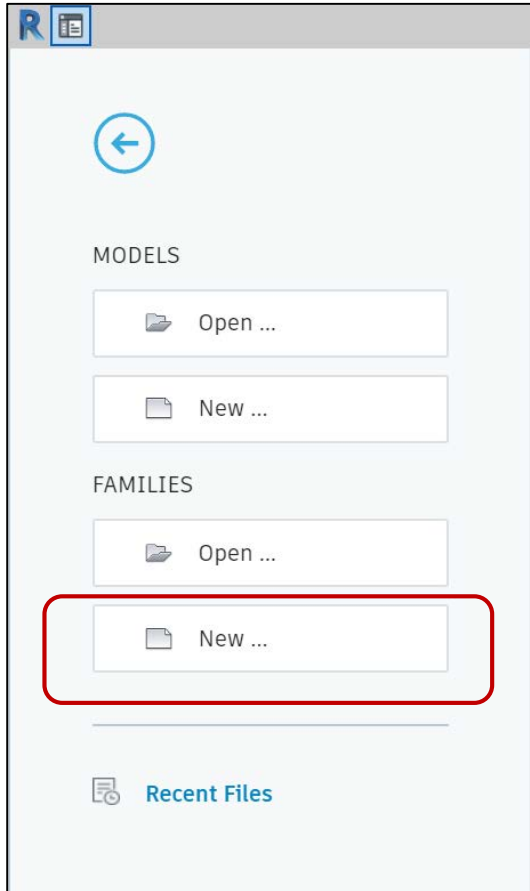
<https://www.revitcity.com/index.php>

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

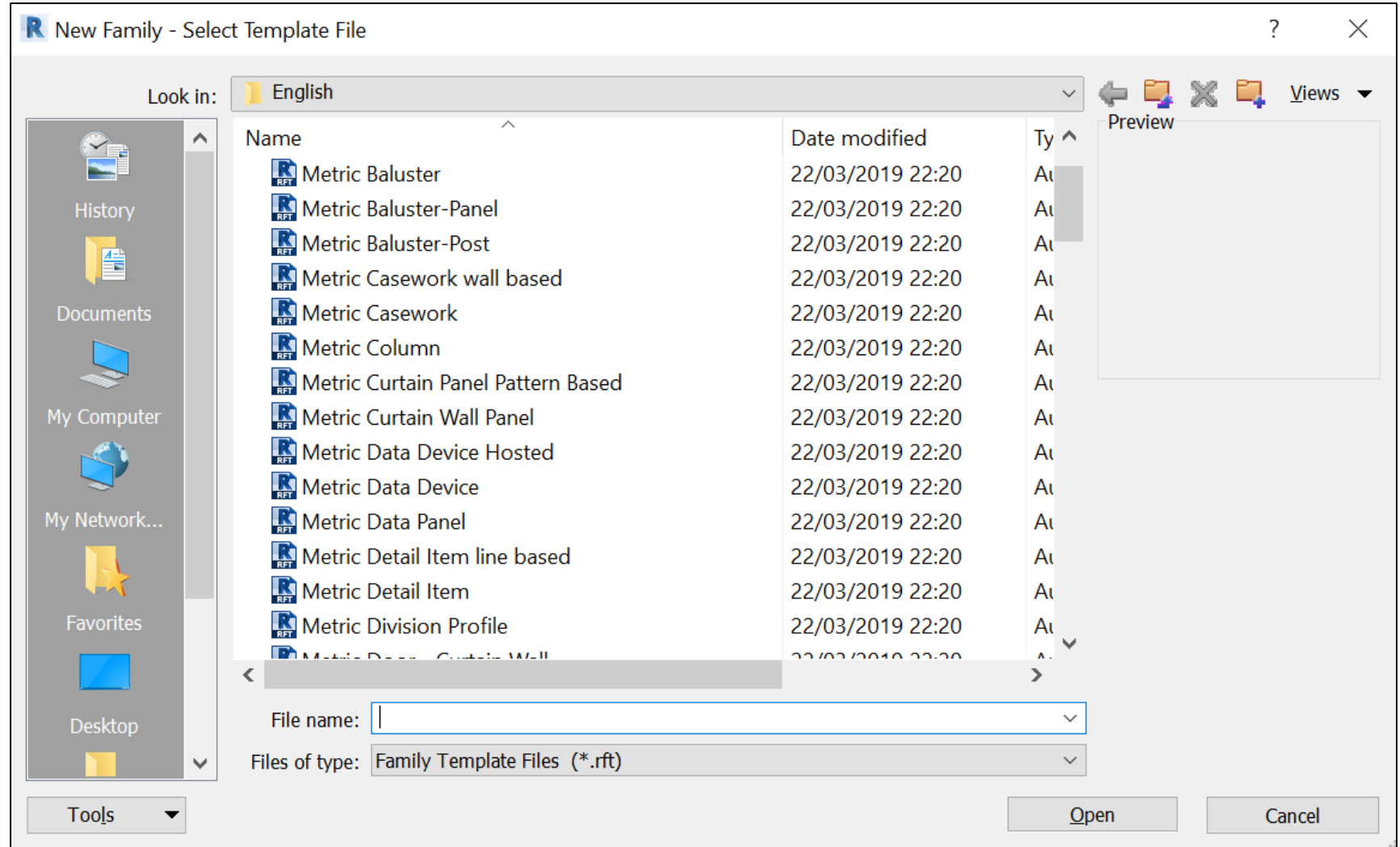
NOTE: Remember where you save them



44-FAMILIES



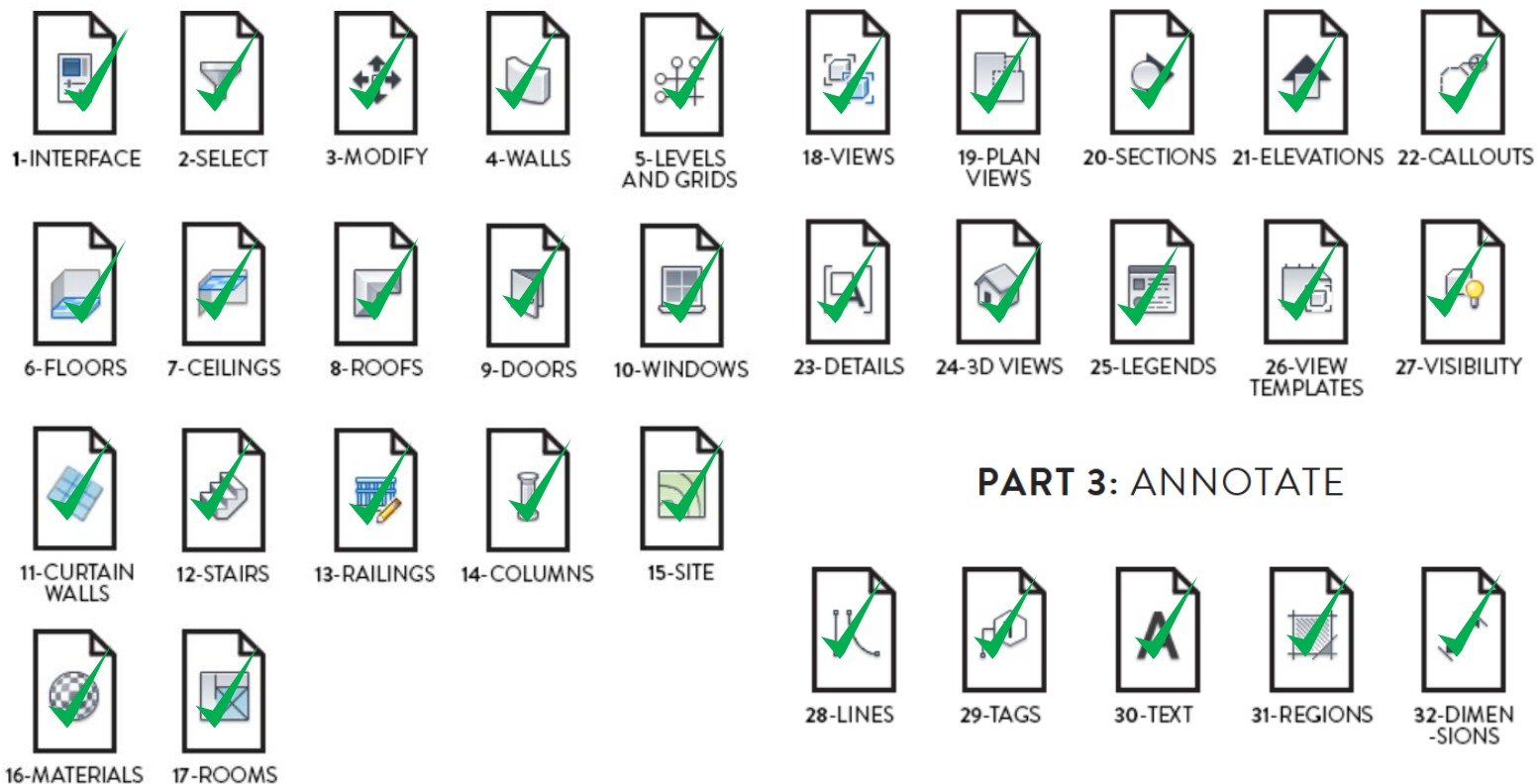
Revit also allows you to create your own families from scratch, and provides template files for each family type to make it easier to create.



PART 1: MODEL

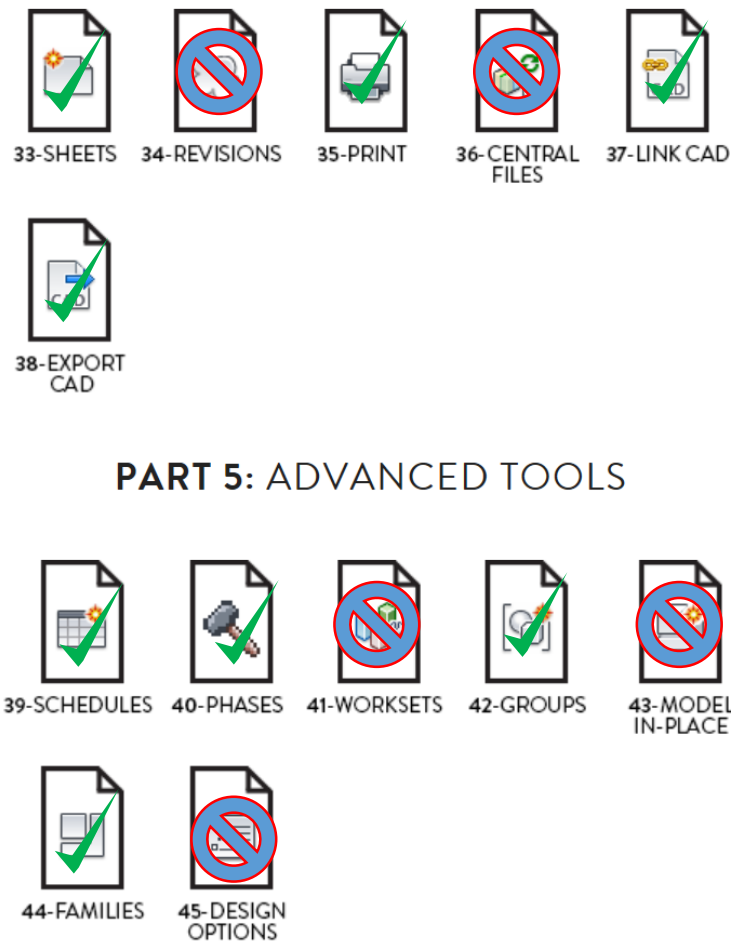
PART 2: VIEWS

PART 4: PUBLISH AND COLLABORATE



PART 3: ANNOTATE

PART 5: ADVANCED TOOLS



<https://revitpure.com/basics>

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

Assessment 2

Submission
deadline:

4th May 2020

PART 1 Essay: (weighting 20%)

What is BIM and how is it used within the Construction Industry?

Explain your understanding of the digital processes that are used as part of a CDE?

The essay can incorporate the use of diagrams and figures to illustrate the text.

A list of references is required and all referencing is to be clearly indicated throughout the essay.

Assessment 2

Submission
deadline:

4th May 2020

PART 2 Drawings A1 Digital Submission: (weighting 80%)

Scenario:

You have been approached by a client who wishes to extend their house. They have provided you a set of 2D CAD drawings prepared when they purchased the house and have asked you to design a two storey extension to the side of the property.

They would like you to consider providing:

- A new double bedroom
- ensuite bathroom
- dressing room
- small study / sun room with views to the garden.

Convert the 2D drawings into a 3D model using Revit.

Assessment 2

Submission
deadline:

4th May 2020

PART 2 Drawings A1 Digital Submission: (weighting 80%)

Prepare a set of existing & proposed drawings of the property that includes.

Site Location Plan @1:1250

Existing Site Plan @ 1:500

Existing Floor Plans@ 1:100

Proposed Site Plan @ 1:500

Proposed Floor Plans@ 1:100

Proposed Elevations:@ 1:100

Proposed Long and Short Section @ 1:50

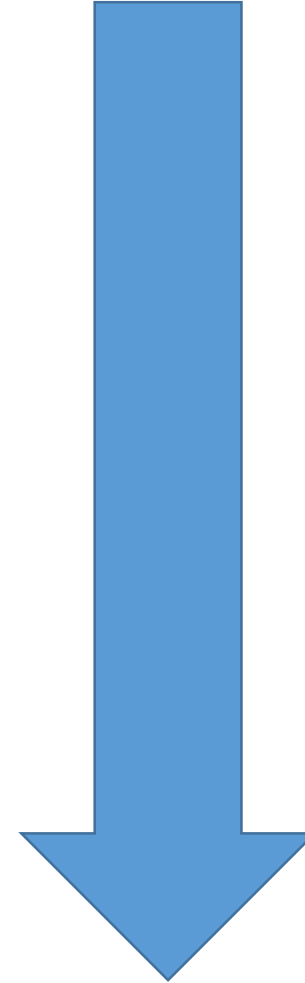
Proposed Section Callout Detail @ 1:5

Proposed Visualisation. (NTS)

The project **must** include. Project Base point. Room names, Legends, Tags & Annotations, Dimensions, Levels, North Point. Project Phasing in Revit is recommended.

All Drawings must be appropriately scaled at A1 size and presented in the **uwtsd BIM titleblock format with the appropriate naming conventions. Digital Submission required in RVT and PDF format.**

- **Start a new project in REVIT**
- **Set up levels**
- **Insert CAD OSMAP in site view**
- **Set up project north**
- **Insert CAD plans to appropriate level views**
- **Set up phasing**
- **Reposition project base point**
- **Load Splash Page Titleblock**
- **Load UWTSD Titleblock**



NOW START DRAWING