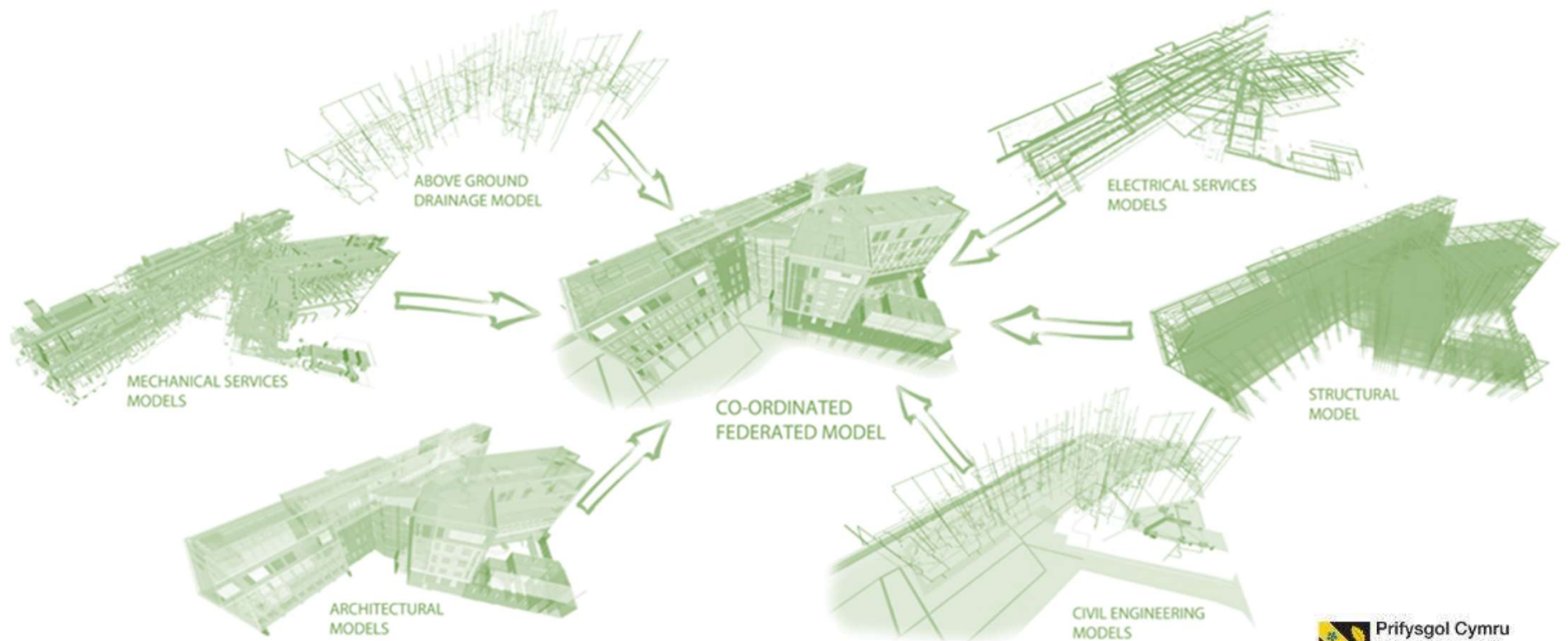


Building Information Modelling



www.onecreativeenvironment.com

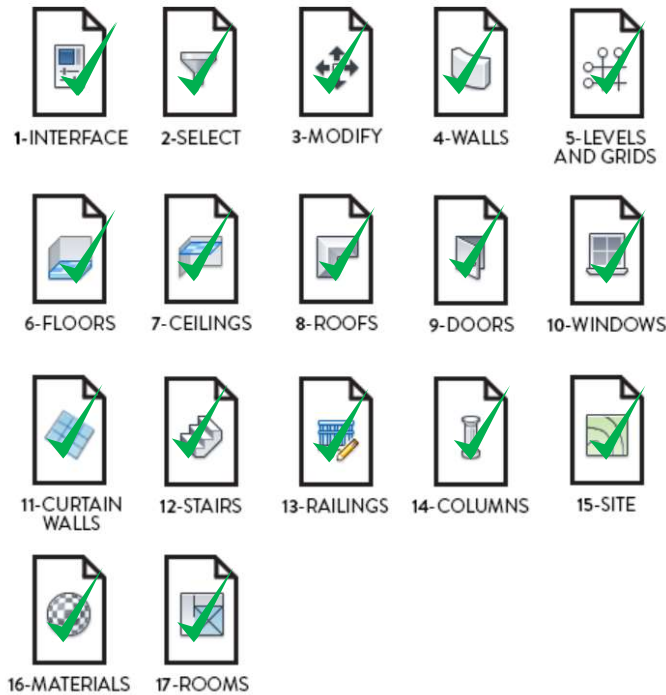
Week 13:

- Advanced Modelling
- Exercise 6
- Schedules and groups



AUTODESK® REVIT® the basics

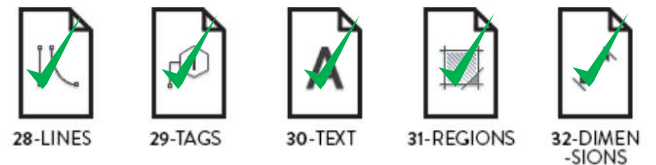
PART 1: MODEL



PART 2: VIEWS

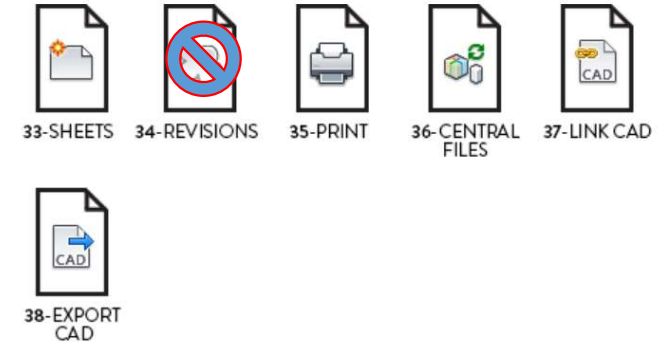


PART 3: ANNOTATE

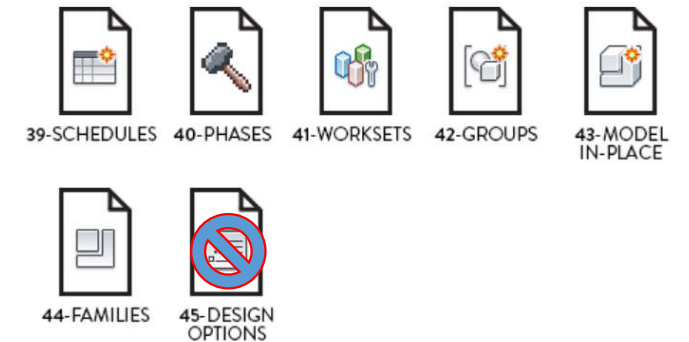


Covered in notes:

PART 4: PUBLISH AND COLLABORATE



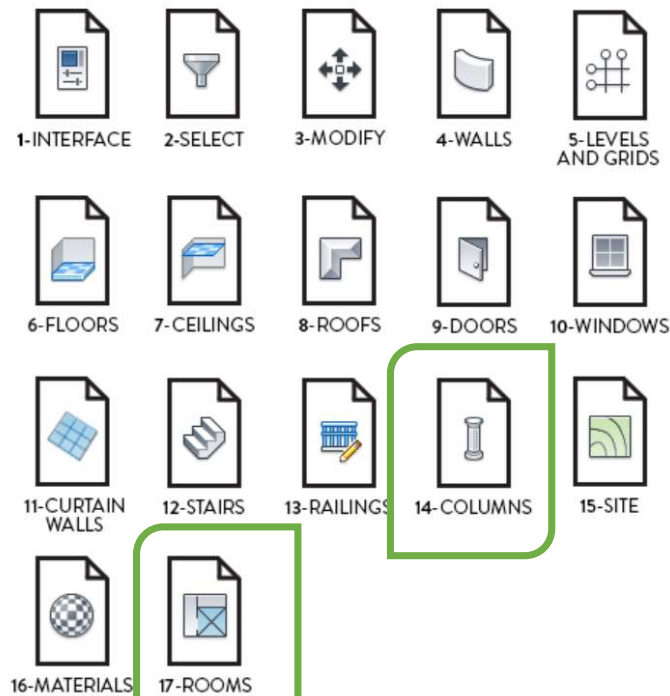
PART 5: ADVANCED TOOLS



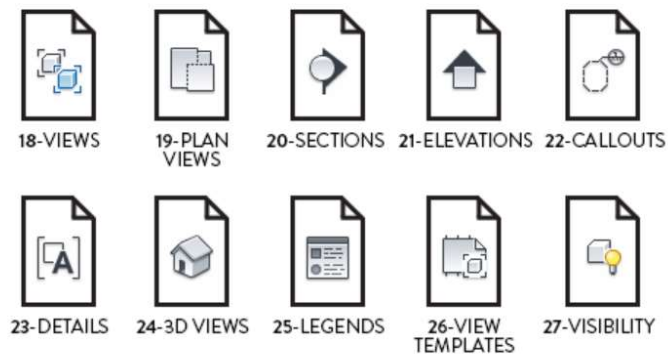
<https://revitpure.com/basics>
<https://academy.autodesk.com/>

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

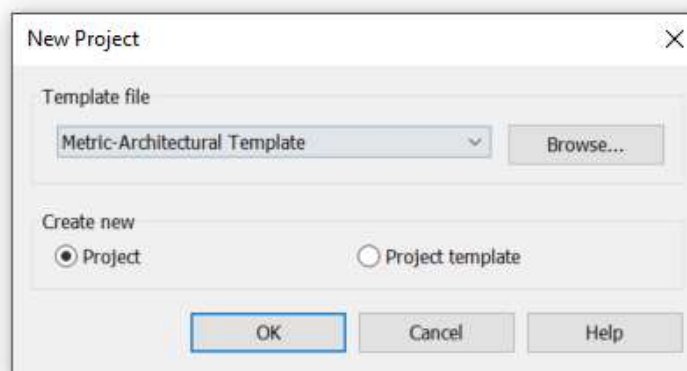


- Creating Schedules for pricing
- Phased Works
- Central Models / Worksets / Federated Models
- Families
- Advanced Modelling:
Sweeps Reveals and Model In Place
- *Collaboration and interoperability*
- *VR Visualisation*





File > New > Project



Note: Revit 2025
Browse to Default
Metric

Exercise 5

PHASING:

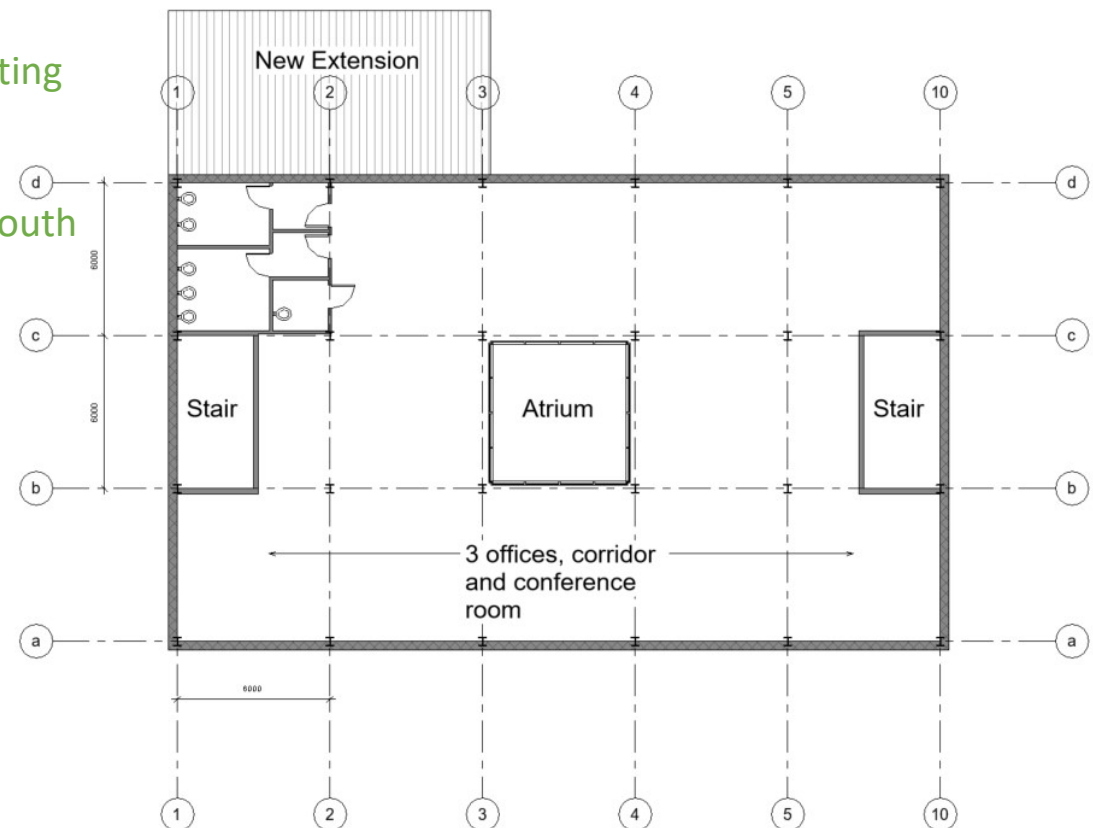
2 storey Office block refurbishment and extension.
Remove existing WC from ground and first floor to creating work open plans office space. New WCs and Kitchen /breakout facilities on both floors of the extension.
3 new offices access corridor and conference room to south elevation with conference room.

Set up your levels in Elevation view.
Distance between levels of 3500mm

Set up Phasing (existing proposed and works plans)
Set up Grids

Assumptions:

External walls your choice.
Flat roof. External Windows distributed evenly per bay.
Framed structure with columns at 6m centres
Staircase at either end with central glazed atrium.
Apply, room names, legends, grids. create plans, section and elevation views. 3D views existing and proposed



Non Standard Modelling

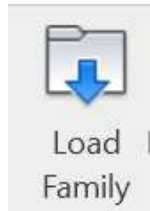
Families, Sweeps & Reveals
In Place Mass





<https://thumbs.dreamstime.com/b/man-to-blow-his-own-mind-cartoon-illustration-ready-head-dynamite-42010251.jpg>

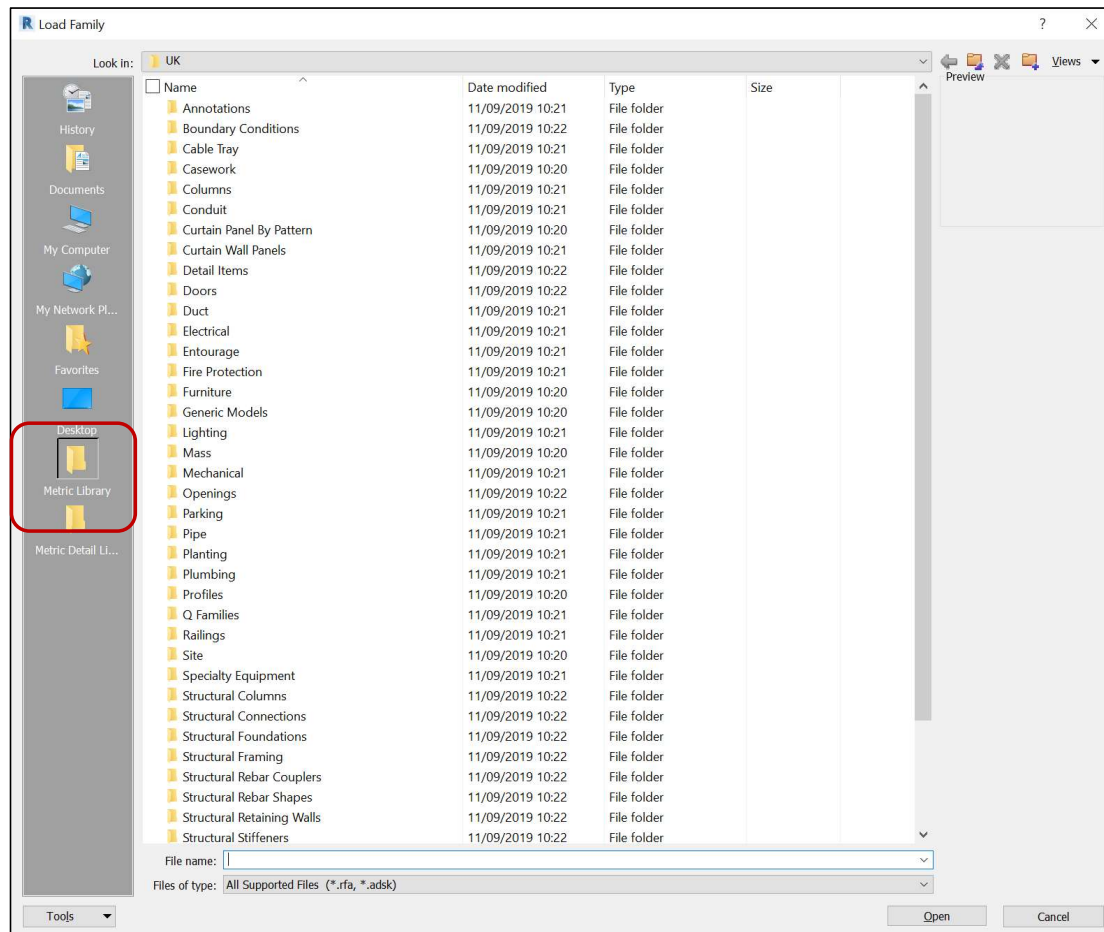




Revit holds a Metric Library of families which can be loaded into a project



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



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

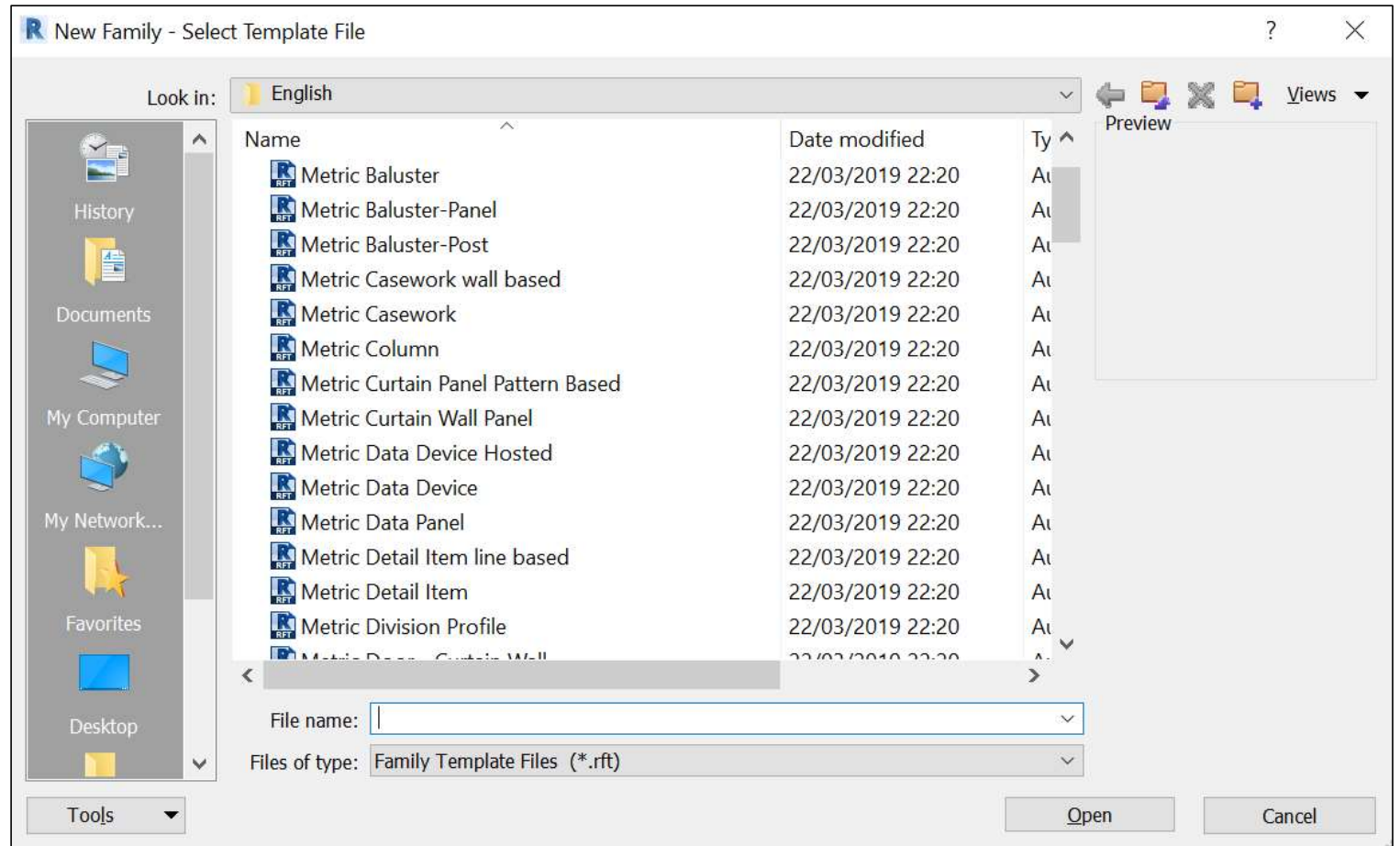
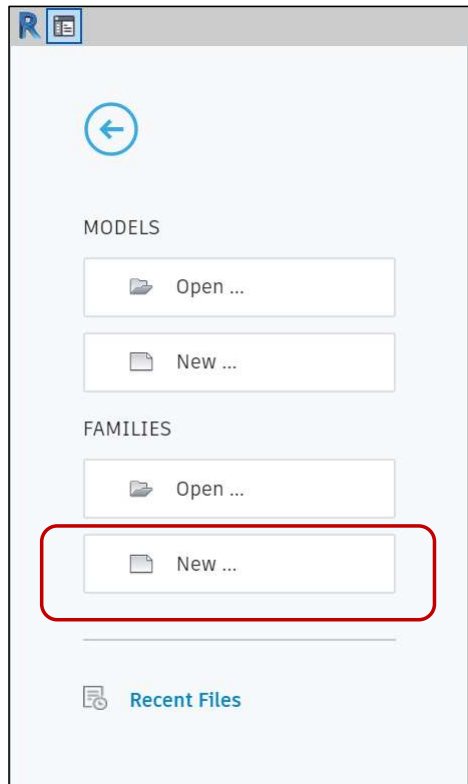
If a family is not available, additional families can be downloaded from online sources such as above, or directly from Manufacturers websites.

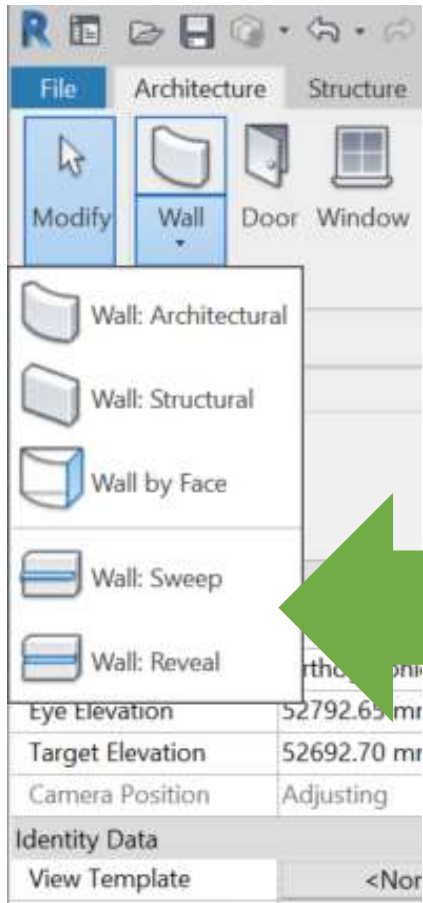
NOTE: Remember where you save them



44-FAMILIES

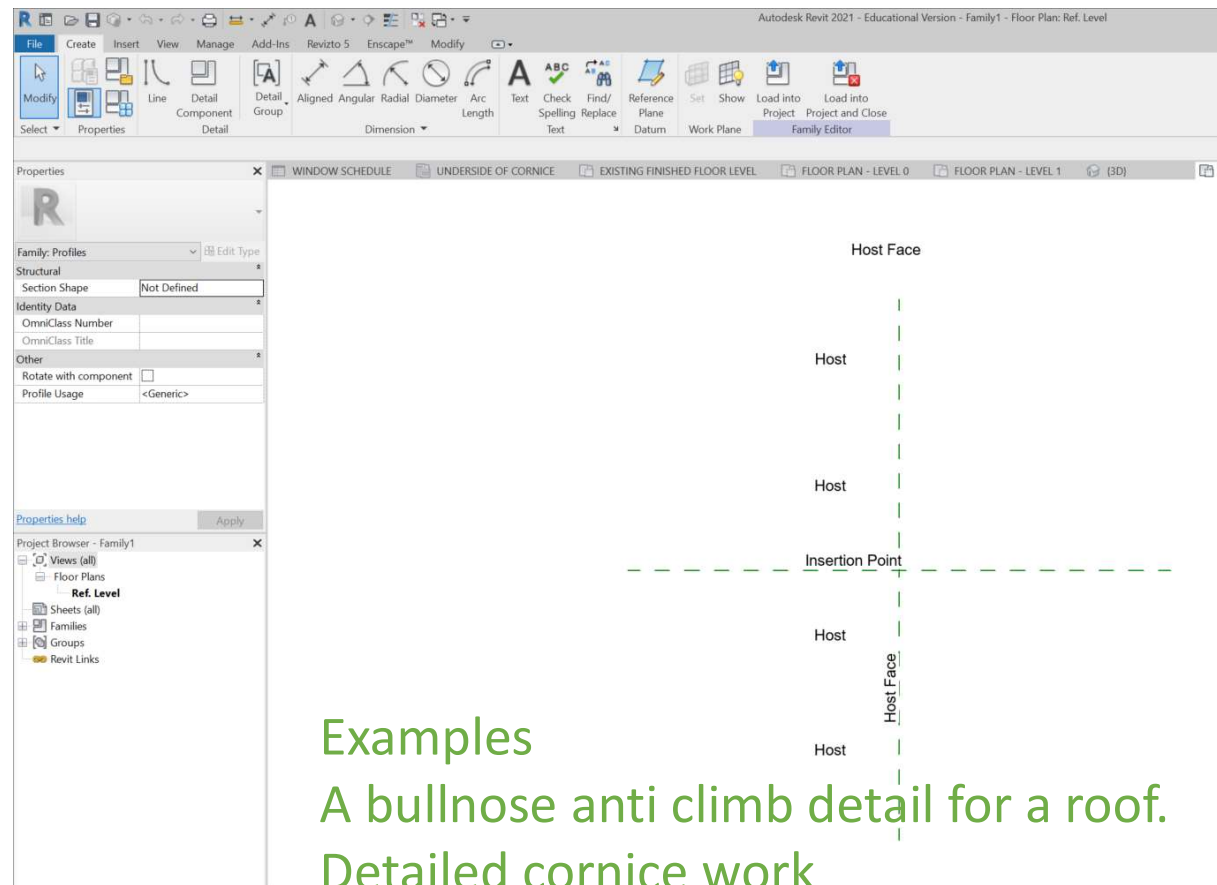
Revit also allows you to create your own families from scratch, and provides template files for each family type to make it easier to create.

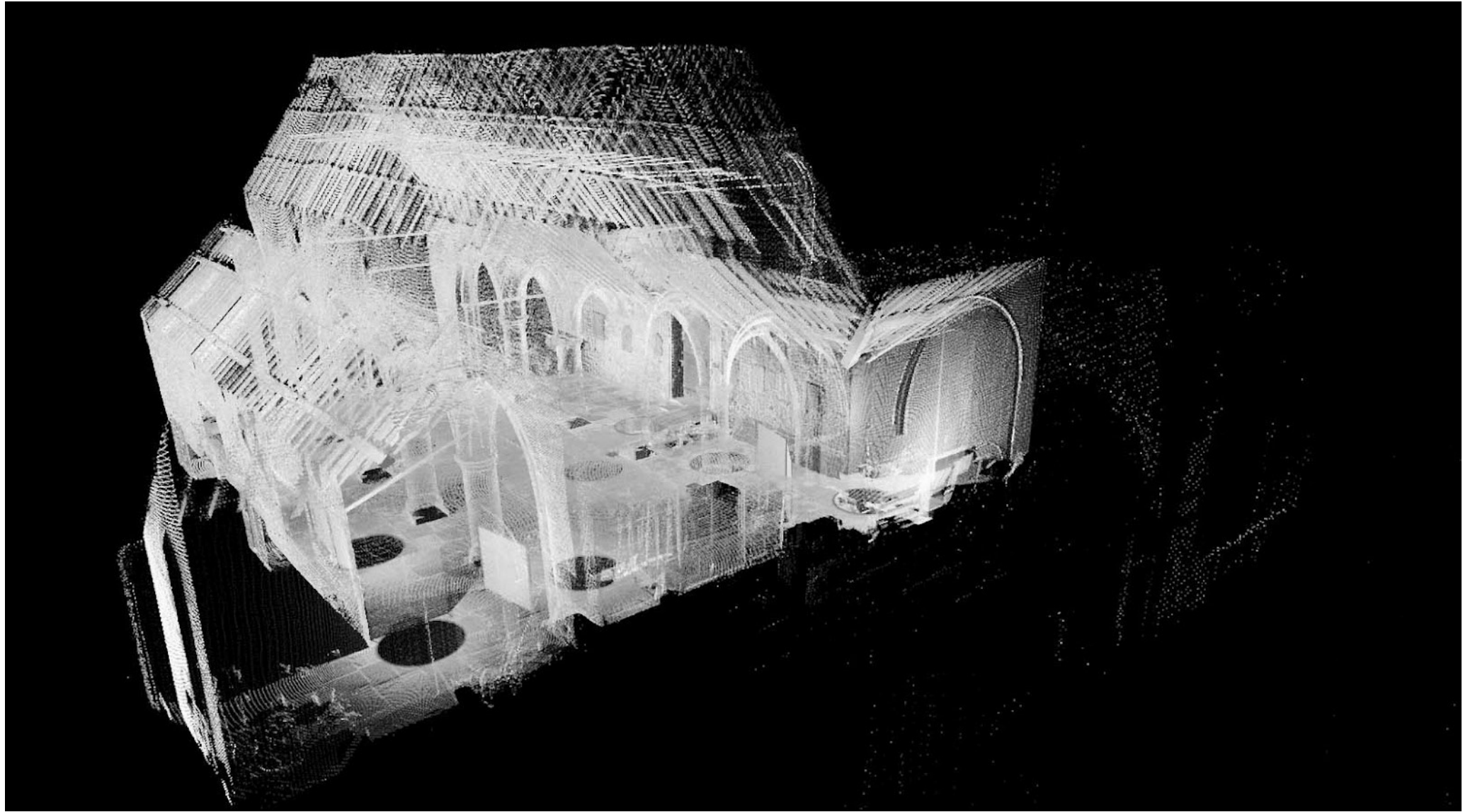


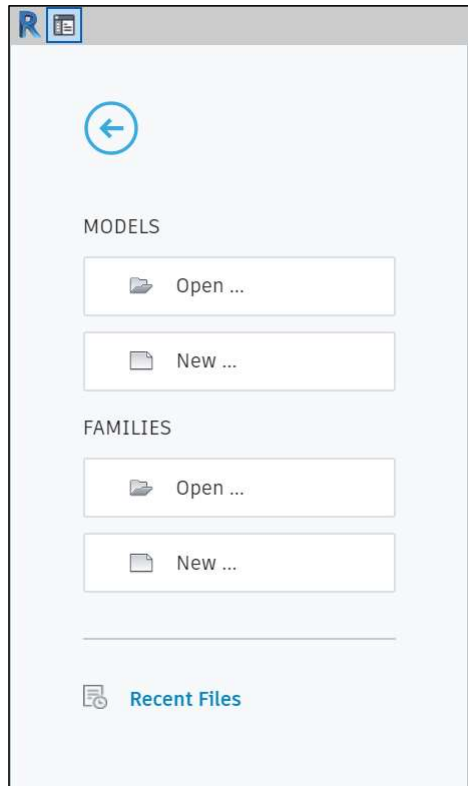


Sweeps and Reveals can help with non standard construction.

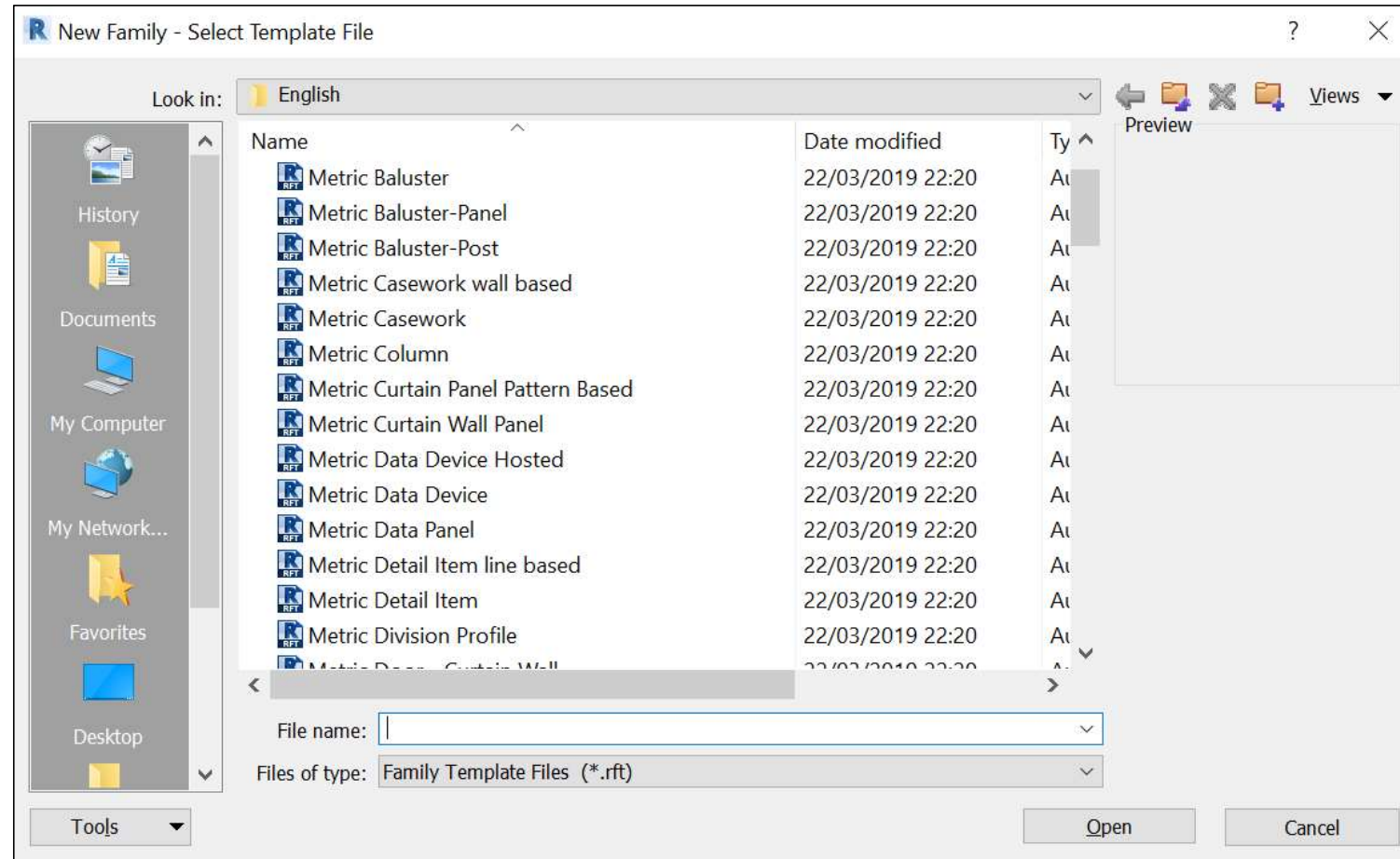
Create non standard sweeps and reveals by making a new hosted profile family.

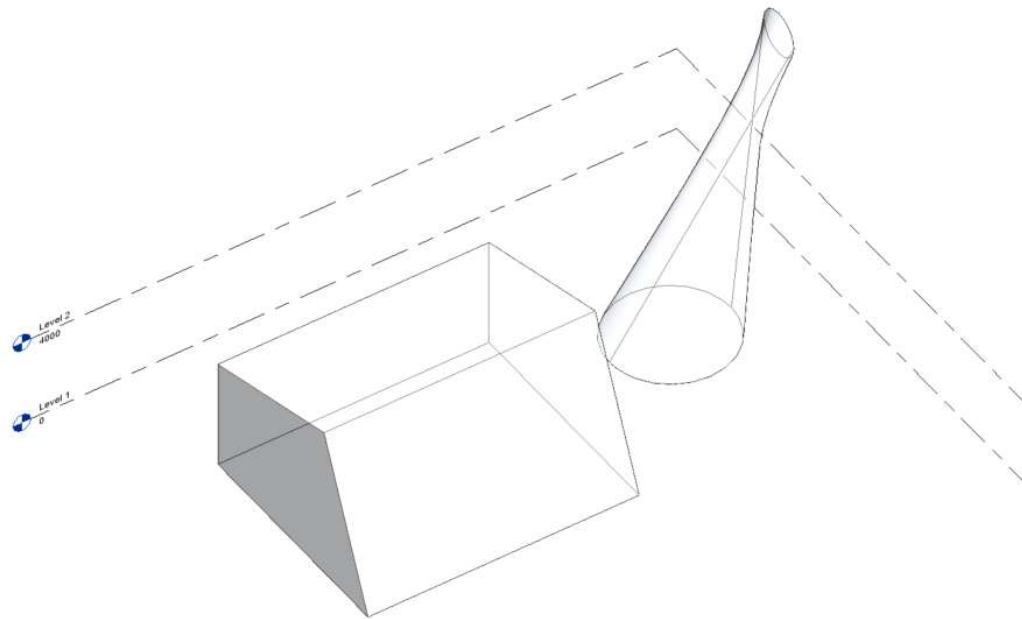
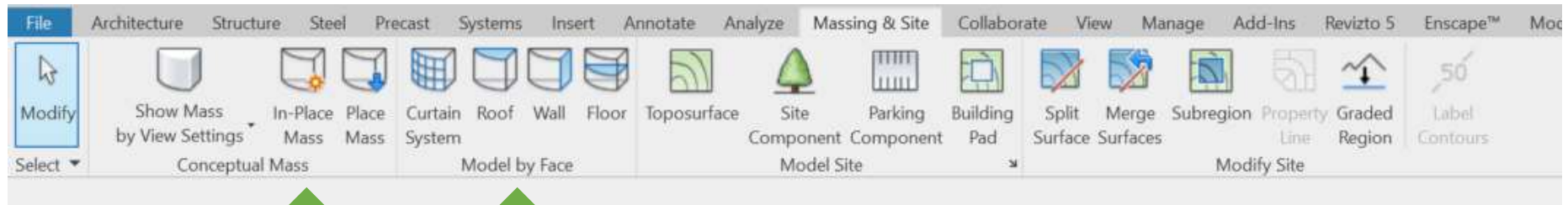






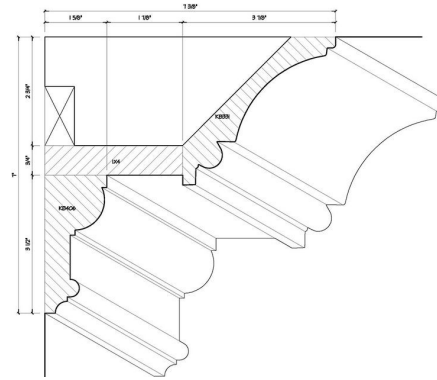
Other families can be created such as windows, doors, furniture where manufacturer's information is unavailable or where the items are bespoke.



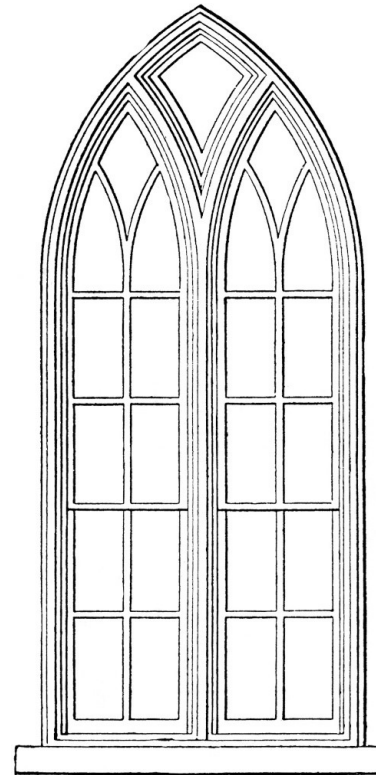


Exercise 6

Create your own Cornice Detail.
File > New > Family > Hosted Profile



Create your own Window.
File > New > Family > Window



PART 5: ADVANCED TOOLS



39-SCHEDULES



40-PHASES



41-WORKSETS



42-GROUPS



43-MODEL
IN-PLACE



44-FAMILIES



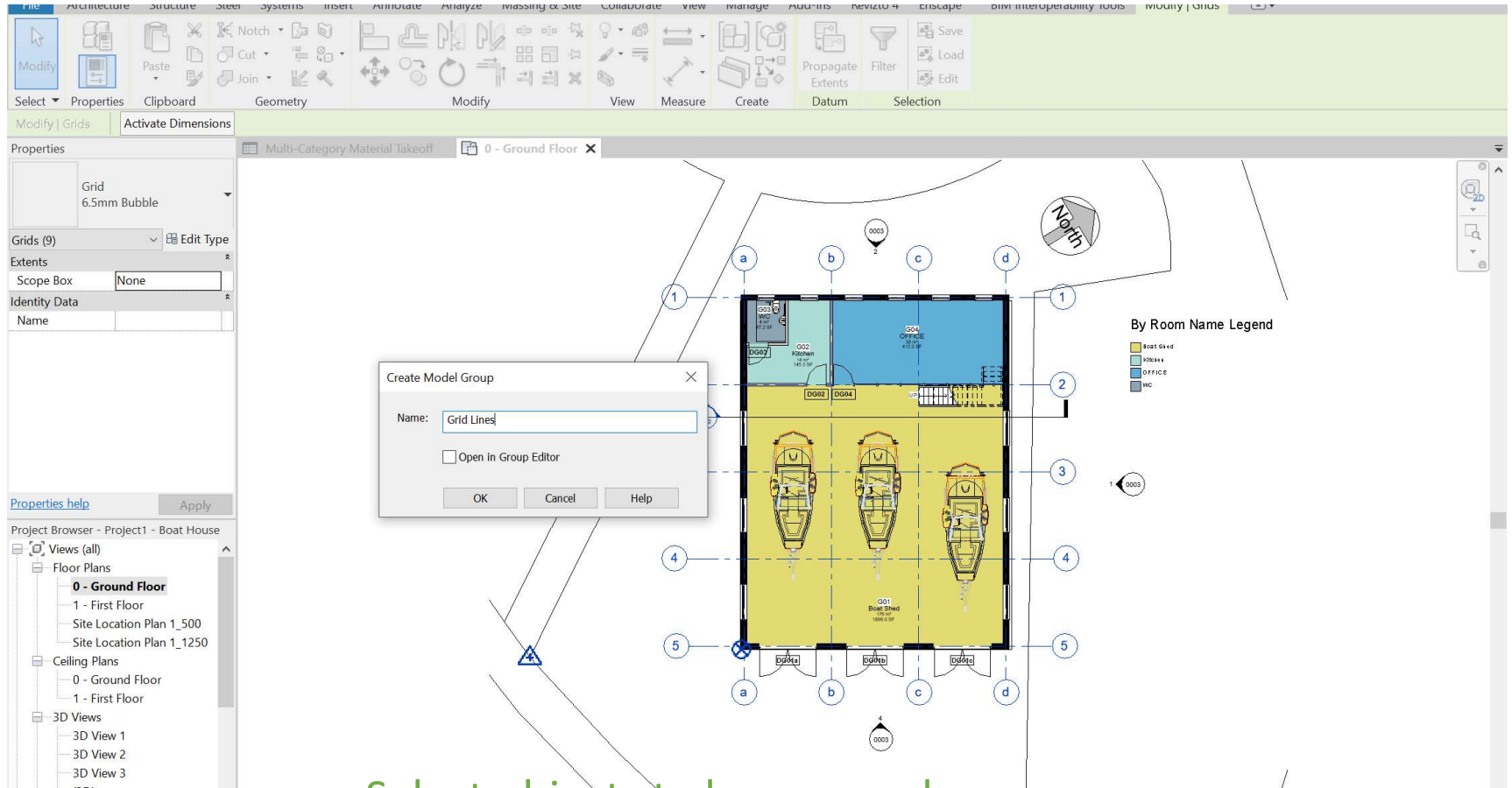
45-DESIGN
OPTIONS



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 Revizto 4 Enscape™ BIM Interoperability Tools Modify | Model Groups

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

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

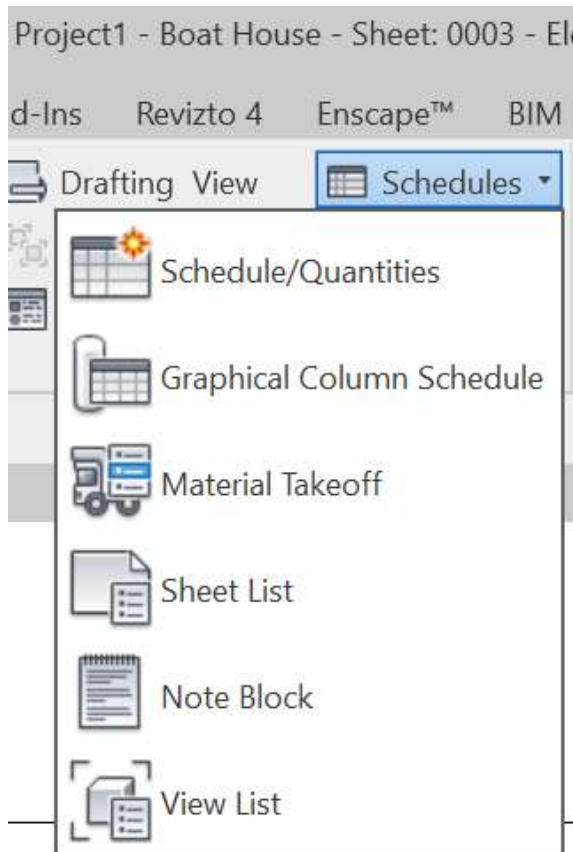
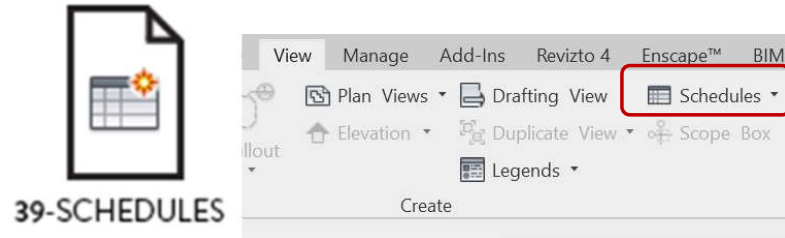
3D Views

3D View 1

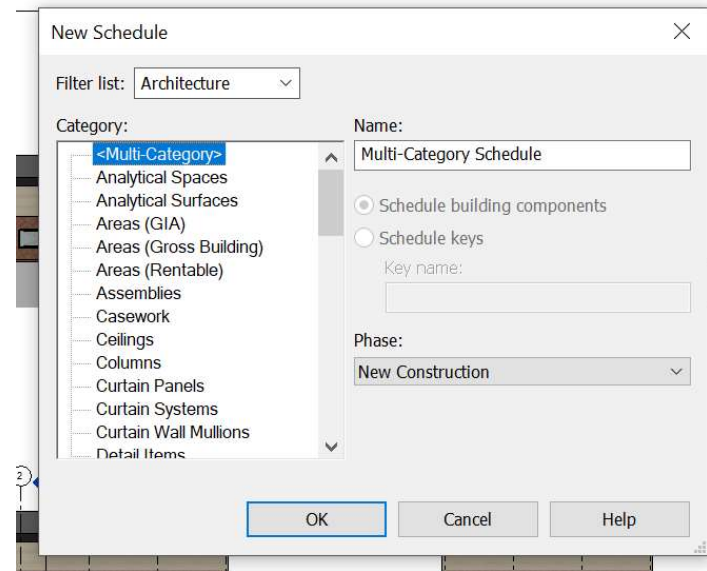
3D View 2

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

Additional Edits are now available for the Group.

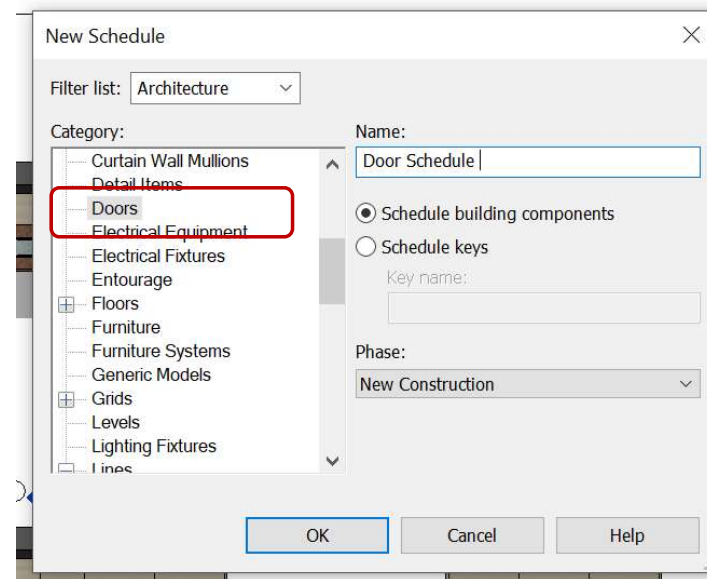


Schedule
types



Schedules can be
created from the
View Menu

Different type of
schedules can be
generated.



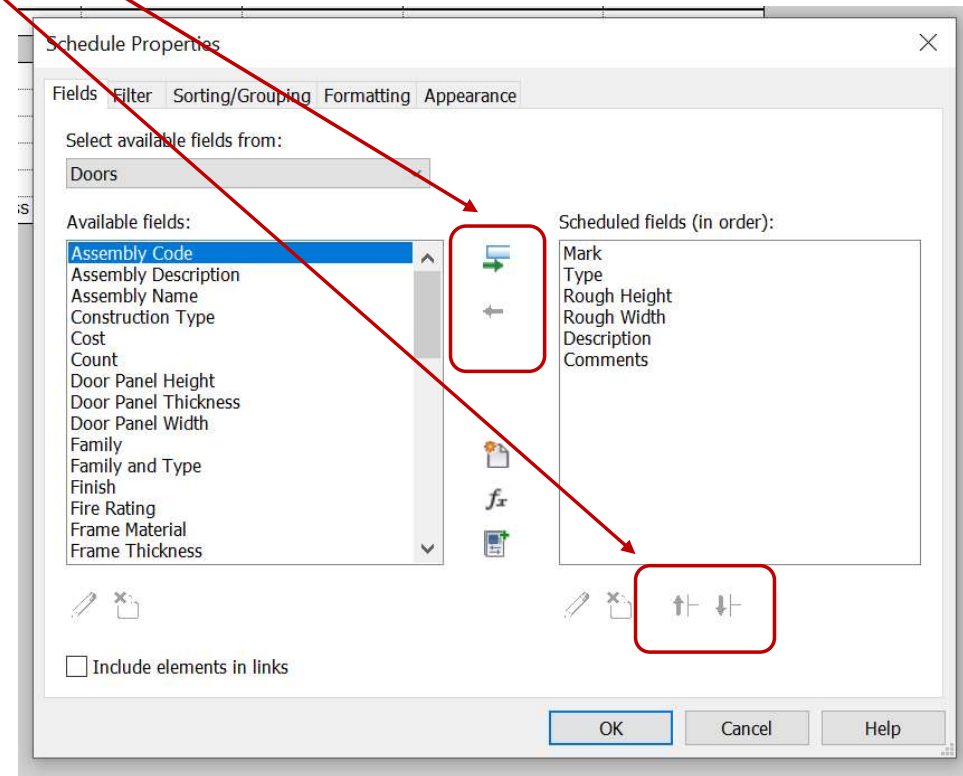
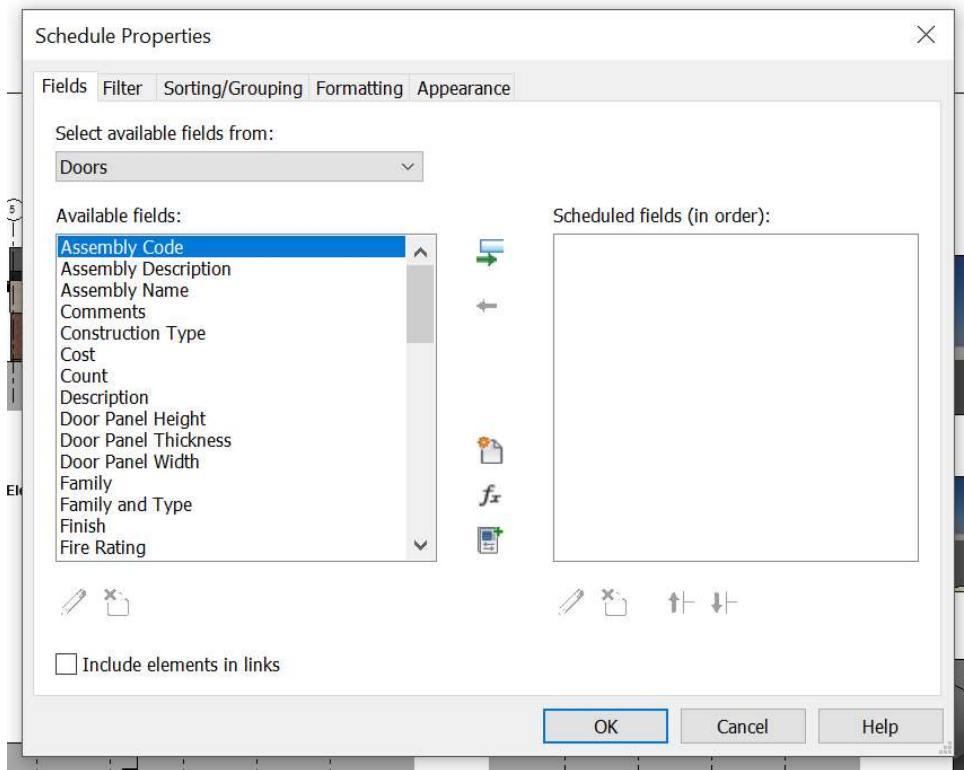
Select Schedule
/Quantities to
create a New
Schedule

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...

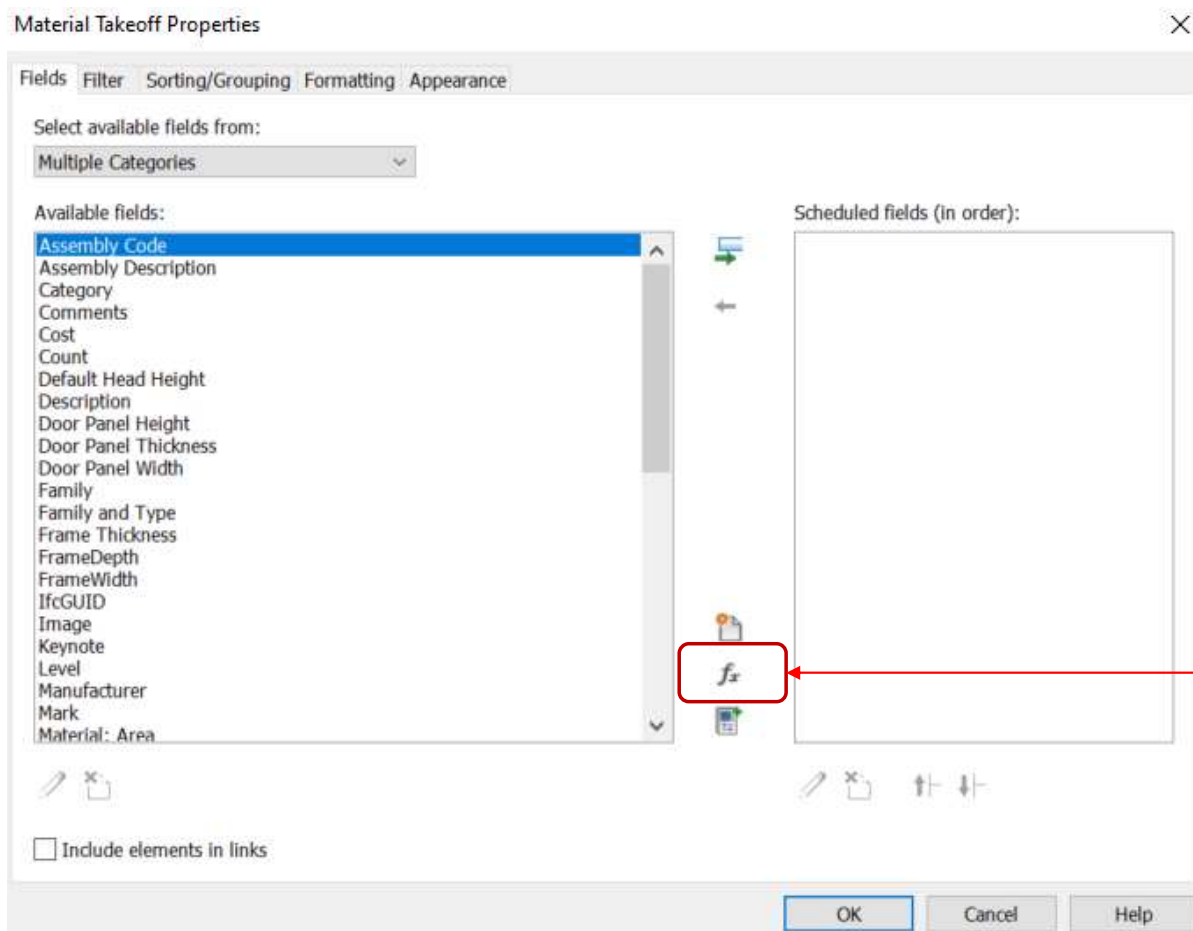
Properties help Apply

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-100LBik-12P	Fiberglass Batt	Fiberglass batt insulation	Celotex	36 m²	2.73 m³	5.00		£182.01
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBik-12P	Plaster	Plaster	British Gypsum	36 m²	0.46 m³	4.00		£145.61
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBik-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-100LBik-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-100LBik-12P	Fiberglass Batt	Fiberglass batt insulation	Celotex	47 m²	3.56 m³	5.00		£237.15
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBik-12P	Plaster	Plaster	British Gypsum	47 m²	0.59 m³	4.00		£189.72
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBik-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-100LBik-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-100LBik-12P	Fiberglass Batt	Fiberglass batt insulation	Celotex	21 m²	1.55 m³	5.00		£103.5
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBik-12P	Plaster	Plaster	British Gypsum	21 m²	0.26 m³	4.00		£82.8
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBik-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-100LBik-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-100LBik-12P	Fiberglass Batt	Fiberglass batt insulation	Celotex	47 m²	3.49 m³	5.00		£232.8
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBik-12P	Plaster	Plaster	British Gypsum	47 m²	0.58 m³	4.00		£186.24
Basic Wall: Wall-Ext_102Bwk-75Ins-100LBik-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-100LBik-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-100Bik-12P	Concrete Masonry Units	Concrete masonry units	Forterra	10 m²	0.98 m³	36.00		£354.26
Basic Wall: Wall-Int_12P-100Bik-12P	Plaster	Plaster	British Gypsum	20 m²	0.25 m³	4.00		£78.73
Basic Wall: Wall-Int_12P-100Bik-12P	Concrete Masonry Units	Concrete masonry units	Forterra	12 m²	1.23 m³	36.00		£443.53
Basic Wall: Wall-Int_12P-100Bik-12P	Plaster	Plaster	British Gypsum	25 m²	0.31 m³	4.00		£98.56
Basic Wall: Wall-Int_12P-100Bik-12P	Concrete Masonry Units	Concrete masonry units	Forterra	6 m²	0.65 m³	36.00		£232.69
Basic Wall: Wall-Int_12P-100Bik-12P	Plaster	Plaster	British Gypsum	13 m²	0.16 m³	4.00		£51.71
Basic Wall: Wall-Int_12P-100Bik-12P	Concrete Masonry Units	Concrete masonry units	Forterra	3 m²	0.34 m³	36.00		£124.09
Basic Wall: Wall-Int_12P-100Bik-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

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



Add fields and 'Fx' calculated formula

Material Area * Material Cost/1m²

Or

Material Volume * Material Cost/1m³

Exercise 5 cont...

- ADD SHEETS
- ADD GROUPS
- ADD A DOOR SCHEDULE
- ADD A MULTI CATEGORY SCHEDULE

