Halliday Fraser Munro Technical Work Experience

THE DRAWING PROCESS

NOTE

Before getting started, make sure to check out the Autodesk Revit Starter's Guide in order to develop a basic understanding of Revit and all its design tools at https://academy.autodesk.com/atom/121181

PLANNING DRAWINGS

Our client has come to you with the intension of renovating and extending their current living space. They wish to design and construct a new-build contemporary extension onto the rear of their semidetached amily home. The client has also noted that they are flexible on the final design so long as their new extension can provide the following rooms and design requests;

Planning drawings are architectural drawings that need to be submitted as part of any planning permission application. These drawings are an essential tool for architects and clients to communicate their proposed vision so that planners can understand an accurate representation of how the proposed project fits into the existing area and landscape as a whole.

PL(00)001: Existing Plans & Elevations.
The purpose of existing plans and elevations drawings are to show the planner what the current building's design and Layout looks like prior to any works taking place.

PL(00)002: Proposed Plans.
The aim of this drawing is to show an initial concept of the proposed design and layout of the new extension from a Ground Floor Plan View and a Roof Plan View.

A plan drawing shows a view from above. This is often used to depict the layout of a building showing locations of rooms and windows, walls, doors, stairs etc. Although plan drawings can be drawn from above a building, they are often drawn cutting through the building with horizontal plane at each relevant level in order to show a clear representation of the design.

A Roof Plan is a plan of a building or house that is not cutting through the building but drawn from above. This shows everything on top of the building including the roof layout, stair bulkheads, parapets, roof lights and potentially any other roof equipment.

Once you are ready to start on your proposed extension design, select the relevant view you wish to work on and begin drawing using all the necessary tools and skills learned from the 'Starter Guide'. The Revit model has been set up with all relevant views already created, you will notice as you develop your design in each view other views will automatically generate as well. We have also organised each drawing sheet to populate as your design develops and you complete each drawing.

Note: In order to show a clearer image of the new proposed area of your design, often Architects will add a light pink hatch over the 'new' area - Annotate > Region (make sure in the drop-down menu 'Filled Region is selected) >Draw around desired area you wish to hatch and select confirm > Select filled region and change design in the 'Properties' box to 'Extension' for Pink Hatch.

THE DRAWING PROCESS

PLANNING DRAWINGS (CONTINUED)

PL(00)003: Proposed Elevations.

The proposed elevations drawing at planning stage is to show an initial concept of the new extension's design and proportion in context to the existing building.

Select 'Planning Elevations' Elevation View

As you draw your floor plan, Revit will automatically generate the proposed walls, doors, windows and roof at your desired design and height. At this stage, similar to the floor plans, add a Pink Hatch over the new extension in order to clearly identify the area that is new. Annotate > Region (make sure in the drop-down menu 'Filled Region is selected) > Draw around desired area you wish to hatch and select confirm > Select filled region and change design in the 'Properties' box to 'Extension' for Pink Hatch.

PL(00)004: Proposed Building Section.

Section drawings illustrate a building or portion of a building. A building section is drawn from the perspective of slicing through a building, creating a view as if you cut through a space vertically and stood directly in front looking straight at it.

Select 'Planning Building Section' Section View

Using the 'Section Line' tool, your aim is to draw a section through the existing building and the new extension to clearly show how the new extension connects and integrates with the existing building from a vertical point of view.

Once you have drawn your section line, a section through the building will generate. Similar to the other planning drawings created, a Pink Hatch will need to be added to clearly indicate the area of the new extension.

- Pink Hatch - Annotate > Region (make sure in the drop-down menu 'Filled Region is selected) > Draw around desired area you wish to hatch and select confirm > Select filled region and change design in the 'Properties' box to 'Extension' for Pink Hatch.
- Section Line – View tab > Section > Select first point of section > Select end point of section > To View section > Select section line > Right Click > Go to View.

THE DRAWING PROCESS

BUILDING WARRANT DRAWINGS

The granting of permission for building regulation compliant work to be carried out is referred to as a 'building warrant' in Scotland. Building warrant applications are produced and submitted to local authorities for approval prior to any works being allowed to commence. The building warrant application should contain information about the proposed design and construction as well as being in complete compliance with the building standards.

For the purpose of this project, the plans should be to scale of not less than 1:100 and should provide the following:

- sufficient plans, elevations, and a building section in order to give a complete representation of the design proposal,
- construction details of all relevant parts of the building,

L(20)001: Proposed GA Plan.

General arrangement drawings (also referred to as GA Plans) present the overall arrangement of a layout of a building in a plan view. Therefore, the plan will show the overall relationship between the main elements of the proposed works and key dimensions. The level of detail will increase as the project progresses through design stages to which often results in additional more detailed drawings being needed to show specific elements and assemblies.

A GA Plan would often include a lot if primary information regarding the proposed building such as; Key Dimensions between new partitions (internal walls), Furniture to show how each room will be used, Door & Window Tags, Electrical & Lighting Fixtures, Activity & Manoeuvring Spaces, Drainage Layouts etc. However, for the purpose of this project and to allow you to become more familiar with the different drawings and level of detail required at a Building Warrant stage, we will divide all this desired information up across several drawings allowing each drawing you generate easier to read and understand.

Select 'General Arrangement' Floor Plan View.
At this stage, your GA Plan will become a more detailed version of your Proposed Planning Drawing already drafted.
We would like you to add in;

- Room Tags to show what each room represents. – Go To Architecture > Room > Select Room you'd like to tag and rename to suit.
- Furniture – Go To Architecture > Component > Select Item you wish to bring into the model OR > Load Family > Select from list of folders to browse components in the Revit Metric Library.
- General Dimensions between all openings and all new walls – Go To Modify > Dimension > Select instance you'd like to dimension from > Select instance you'd like to dimension to > Place Dimension.

THE DRAWING PROCESS

BUILDING WARRANT DRAWINGS (CONTINUED)

L(20)002: Proposed Activity Plan.

Guidance on design of domestic buildings recommends that the size of individual rooms should be designed by the way a room will function and the activities that this room will provide. Therefore certain rooms within a building require activity spaces to be set out in order for the room to show it can perform to it's desired purpose, for example every bedroom should be of a size that will accommodate at least a bed, a wardrobe and a chest of drawers, this being the minimum furniture that may be expected for this room to serve its purpose and function.

Select 'Activity Plan' Floor Plan View

For this drawing your task is to consult the building regulations, Technical Handbook (remember and check out the list of regulations in the brief for an idea of where to look), and identify which rooms and where require activity spaces to be shown in order for your proposed layout and each room to function properly. This can be shown by drawing a dashed detail line to the correct sizes and labelled to which activity space it then represents. - Annotate > Detail Line > Line Style > Select Activity > Draw desired Activity box.

L(20)003: Proposed Elevations.

Similar to the GA Plan, the Proposed Elevations drawing at Building Warrant stage will become a more detailed drawing to the Planning stage drawing. To which the drawing will need to include information regarding Wall finishes, Window and Door types and dimensions to identify finished sizes throughout the new building extension.

Select each allocated Elevation; 'North Elevation' etc. Elevation View

For this stage you will be required to add dimensions to each elevation to indicate the height and length of all new walls, doors, and windows. - Go To Modify > Dimension > Select instance you'd like to dimension from > Select instance you'd like to dimension to > Place Dimension.

You will also be required to provide a basic specification of the type of Doors and Windows you have chosen for your proposed extension as well as your desired wall construction and finish. This can be shown as text to the side of each elevation. – Go to Annotate > Text > Type desired text > Drag to location.

L(22)001: Proposed Partition Layout.

A proposed partition (internal wall) layout drawing is used to identify the build up of internal walls that may be required for different rooms within the building. For example, rooms with different functions may require an alternate wall build up to suit its function; a bathroom will require additional moisture resistance compared to a bedroom would not require this additional protection within the wall.

Select 'Partition Layout' Floor Plan View

Using a coloured line and a key, clearly identify on the floor plan what new proposed internal partition build ups are required in each room to suit their function.

Coloured Detail Line – Annotate > Detail Line > Line Style > Select 'HFM Dashed Blue' > Draw a centred line through the desired partition.

Key Text - Go to Annotate > Text > Type desired text > Drag to location.

THE DRAWING PROCESS

BUILDING WARRANT DRAWINGS (CONTINUED)

L(31)001: Internal Door Schedule.

Door schedules in a drawing are important as they can provide all the additional information about a selected door that a drawing cannot show, such as, the Door Manufacturer, Opening Height & Width, Thickness, Location etc. Revit makes this easier as each door component can store as much or as little information about itself as you wish, therefore all that's required is to Tag or Select that door to see all that information whenever you want – check it out, select a door and scroll through the 'Properties' box on the left to see all the information a component can provide – this can be extremely useful when several different designers and contractors are all using the same model and can easily access a single components information whenever they wish.

Select 'Proposed Door Schedule' Floor Plan View

For this plan you will be required to 'Tag' each new door (both external and internal) you have added into your design and provide a 'Schedule' of information about each door supplied. In order to make this process easier to understand we have already set up and placed the 'Schedule' into the drawing sheet for you, therefore as you tag each door the schedule will populate the desired information for you.

Door Tags – Annotate > Tag by Category > Select each desired door.

L(42)001: Internal Wall Finishes Layout.

Similar to the Partition Layout drawing, the Internal Wall Finishes Layout is a drawing designed to show the wall finishes allocated to each room, looking at this drawing you will then be able to easily identify what the finish in each room will be.

Select 'Proposed Wall Finishes' Floor Plan View

Again, using a coloured line and a key, clearly identify on the floor plan what finish you would like each new partition and wall to have, whether you would like a wallpaper finish, paint finish etc. This can easily be shown by drawing a coloured line on either side of a partition that then refers to a key with information regarding the wall finish. In the key feel free to add a small picture of each wall finish in order to give the client an accurate representation of what each proposed finish will look like.

Coloured Detail Line – Annotate > Detail Line > Line Style > Select 'HFM Dashed Blue' > Draw Over desired partition.

Key Text - Go to Annotate > Text > Type desired text > Drag to location.

L(43)001: Internal Floor Finishes Layout.

Similar to the previous Wall Finishes drawing, the Internal Floor Finishes Layout is a drawing designed to show the desired floor finishes allocated to each room. Looking at this drawing you will then be able to easily identify what the floor finish in each room will look like.

Select 'Proposed Floor Finish' Floor Plan View

Using the 'Region' tool, you will draw a light-coloured hatch over the floor area of each room in order to refer back to the key with information regarding the allocated floor finish represented by the coloured hatch. In the key feel free to add a small picture of each floor finish in order to give the client an accurate representation of what each proposed finish will look like.

Coloured Hatch – Annotate > Region (make sure in the drop-down menu 'Filled Region is selected) > Draw around desired floor and confirm > Select filled region and change design in the 'Properties' box to suit. Key Text - Go to Annotate > Text > Type desired text > Drag to location.

THE DRAWING PROCESS

DETAIL DRAWINGS

Details in architectural drawings are large scale drawings that typically show how something is built. Details identify all the materials and connections for construction. Details are normally drawn at a scale of 1:5 or 1:10.

A(20)001: External Wall Build-Up.
The aim of this drawing is to create a detailed representation of your chosen proposed wall finish and build up.

Select 'External Wall Build Up' Drafting View
Using the allocated Detail Lines and Region tools, your aim is to draft up a 1:1 detail of your chosen external wall build up of your new Extension, whether you've chosen to go with a clad finish, brick or even render finish, these will all have different wall build ups.
As well as the above tools, Revit also offers a 'Component' tool that allows you to place and repeat a component, for example, when drawing a timber kit you can place a batten and then set at 600 centres and Revit will automatically place the component every 600mm apart for your desired length.
Remember and refer to the included 'Accredited Details' in order to get a clear understanding of what level of information is required within your detail.

A(20)002: Window / Door Detail.
The aim of this drawing is to create a detailed representation of how your door / window sits within the proposed wall build up and how it is fixed and secure.

Select 'Window/Door Detail' Drafting View
As before, using the allocated Detail Lines and Region tools, your aim is time is to draft up a 1:1 detail of your chosen Door or Window design and fixing within your new Extension.
Refer to the included 'Accredited Details' in order to get a clear understanding of what level of information is required within your detail.

A(20)003: Roof Build-Up.
The aim of this drawing is to create a detailed representation of your chosen proposed roof build up and finish, whether it is pitched or flat and how it connects to your proposed external wall.

Select 'Roof Build Up' Drafting View
Using the allocated Detail Lines and Region tools, your aim is to draft up a 1:1 detail of your chosen roof build-up of your new Extension, whether this is pitched or flat and how your design affects the different build ups required to create such a roof design and finish..
Refer to the included 'Accredited Details' in order to get a clear understanding of what level of information is required within your detail.

Halliday Fraser Munro
Technical Work Experience

THE DRAWING PROCESS

ADDITIONAL HELP

Autodesk Design Academy:
https://academy.autodesk.com/software/revit?_ga=2.64077423.1951623407.1599577209-1148717892.1599478292

Initial Starter / Introduction to Revit: https://academy.autodesk.com/atom/121181

Accredited Details: See additional information available to download.

Technical Handbook:
https://www.gov.scot/publications/building-standards-technical-handbook-2019-domestic/

Technical Handbook, Call Outs: See additional information available to download.

Example Drawings: Struggling to visualise what each drawing needs to look like? Check out the Example Drawings available to download.

YOUR NOTES

Use this space to make any notes