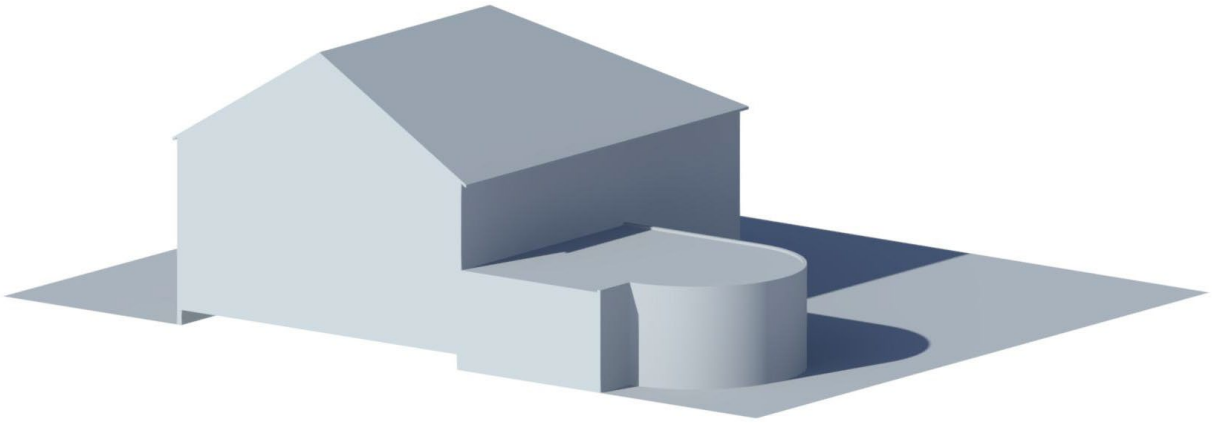
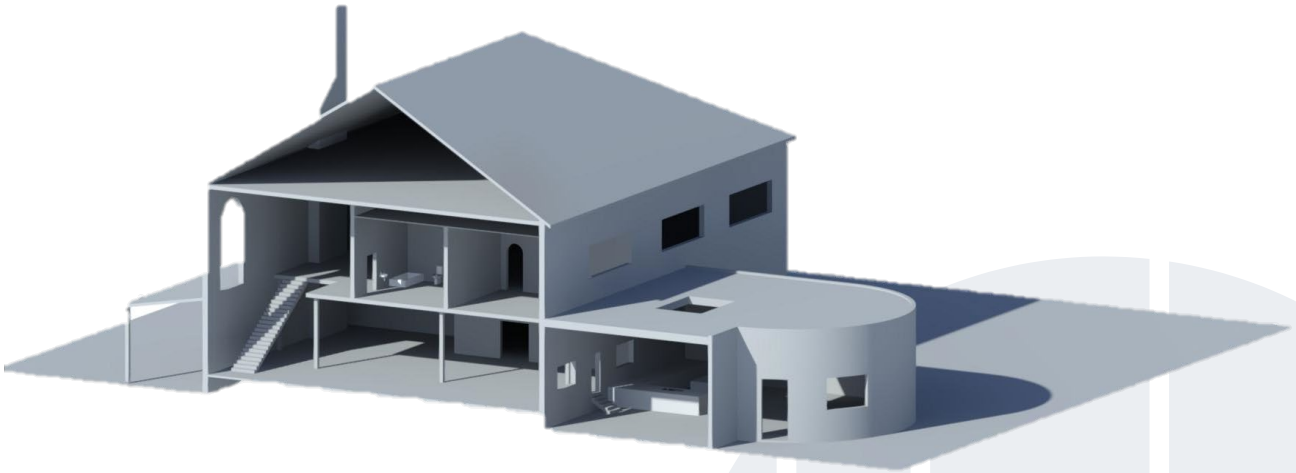
Levels Of Detail

The information set out in this document describes the different Levels Of Detail (LOD) for our Revit projects. It is not uncommon for a project to use a combination of LOD's, for example a project may require the external façade to be modelled to LOD3 and the internals to LOD2.

LOD 0



LOD 1



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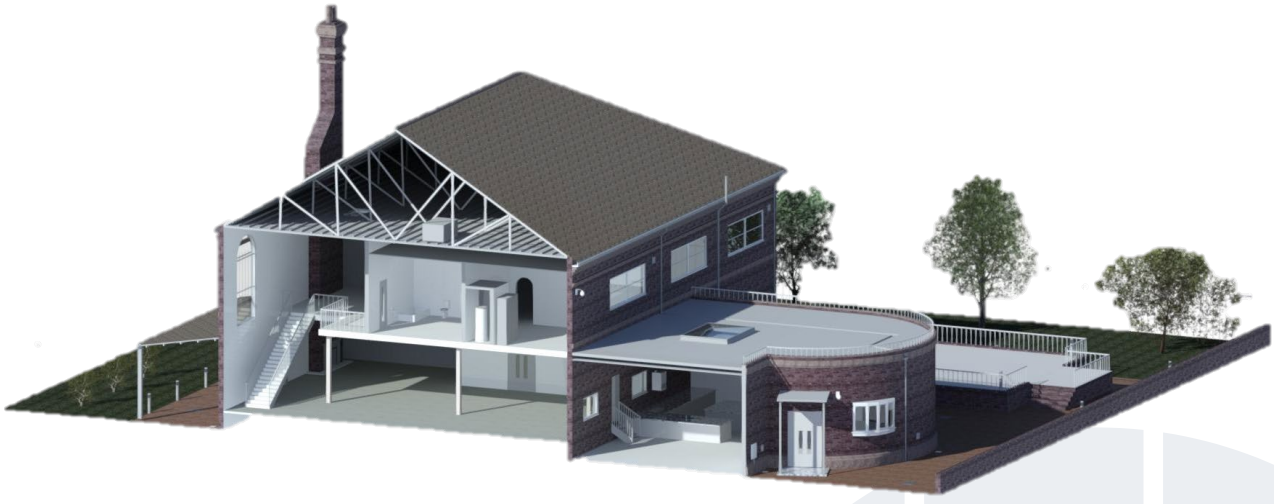
LOD 2

LOD 3



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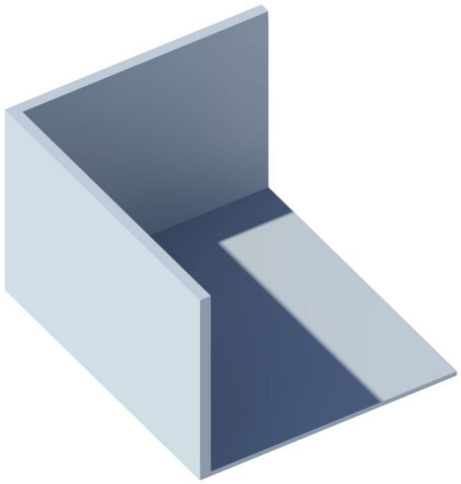
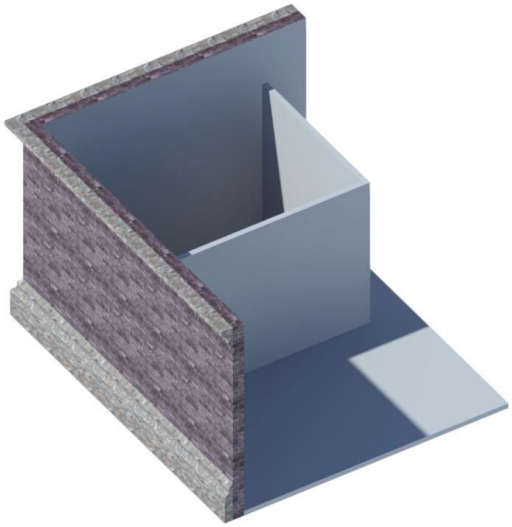
Walls



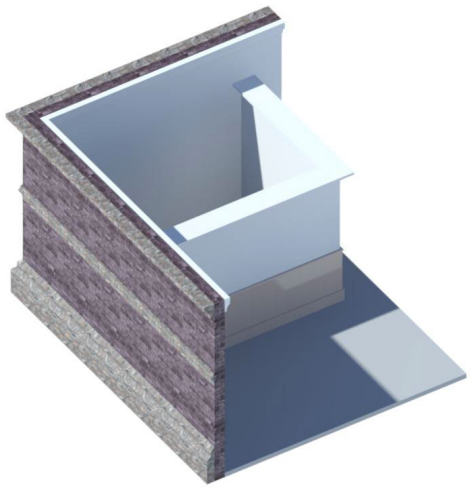
LOD 1

All structural walls and main internal walls will be modelled with a correct thickness based on the collected data. Walls in which it was not possible to measure both sides will be labelled as approximate with the side in question made clear within the model. Voids/openings will be shown but ornate detail will be left off. All finishes will be left as default. Walls will generally be shown as straight and flat.



LOD 2

All walls will be modelled internally and externally including curtain walls. Ornate features such as plinths and capping will be shown externally as well as surface finishes that best resemble the makeup of the wall. Sloping or bowing will generally only be modelled when exceeding a tolerance of (+/-30mm) as it can affect the performance of the model. Finish will be added upon request only.



LOD 3

All walls will be modelled internally and externally including curtain walls. All ornate features such as plinths, capping and other decorative features will be shown externally & internally as well as surface finishes that best resemble the makeup of the wall. Sloping or bowing will generally only be modelled when exceeding a tolerance of (+/-30mm) as it can affect the performance of the model.

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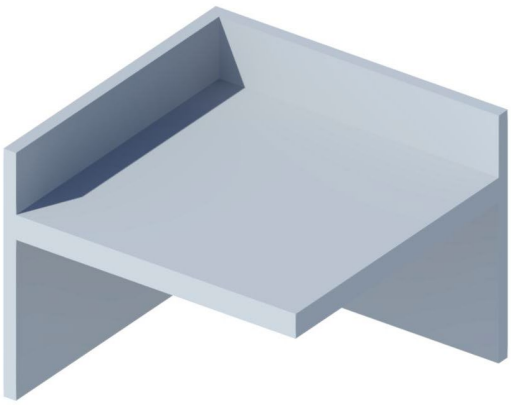
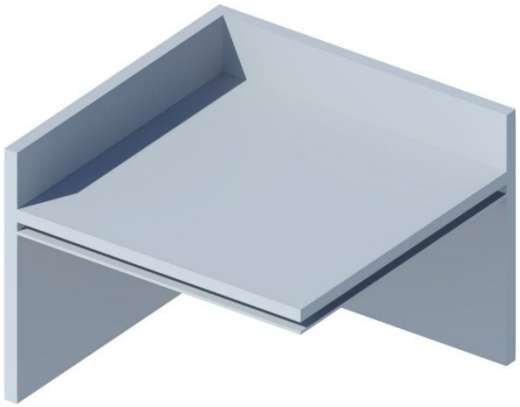
Floors & Ceilings



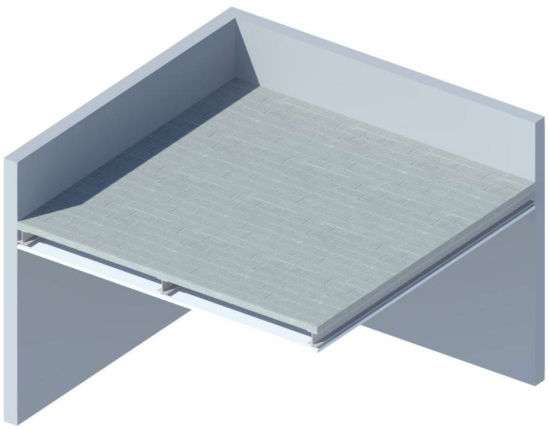
LOD 1

Overall thickness of a floor and the ceiling below will be shown as one slab. Slopes and falls will generally not be shown.



LOD 2

Floors and ceilings will be shown as separate elements and correct overall thicknesses will be given to them where it has been possible to identify. Slopes and falls will generally not be shown unless they exceed a tolerance of (+/- 30mm) as it can affect the overall performance of the model. Hatches will be shown as generic in place families.



LOD 3

Floors and ceilings will be shown as separate elements with correct overall thicknesses. This includes an accurate floor structure when it has been possible to identify. Slopes and falls will generally not be shown unless they exceed a tolerance of (+/- 30mm) as it can affect the overall performance of the model. Surface finishes will also be added. Hatches will be shown as generic in place families.

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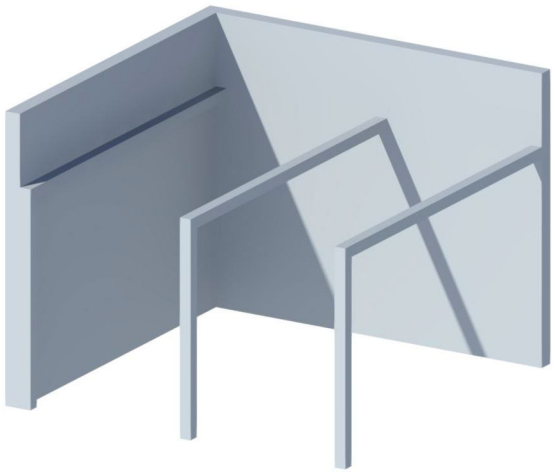
Structural Elements



LOD 1

All main structural elements such as columns and beams will be modelled with generic profiles that represent the overall geometry of each element. Structural elements located above false ceilings and therefore obstructed from view will likely not be modelled unless they are made visible prior to us collecting data. No finishes will be added. Columns and beams will be placed on grid lines when possible.

LOD 2

All main structural elements such as columns and beams will be modelled with correct profiles. Structural elements located above false ceilings and therefore obstructed from view will likely not be modelled unless they are made visible prior to us collecting data. Materials will be identified where possible. Columns and beams will be placed on grid lines when possible.

LOD 3

All main structural elements such as columns and beams will be modelled with correct profiles. Ties beams, braces and trusses will also be shown. Structural elements located above false ceilings and therefore obstructed from view will likely not be modelled unless they are made visible prior to us collecting data. Materials will be identified where possible. Columns and beams will be placed on grid lines when possible.

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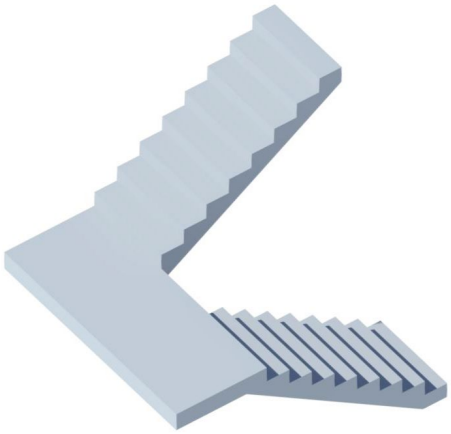
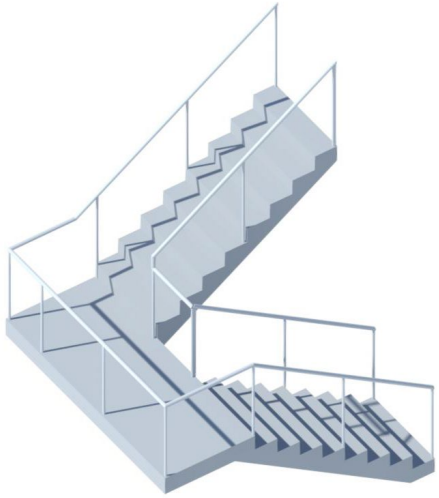
Stairs & Ramps



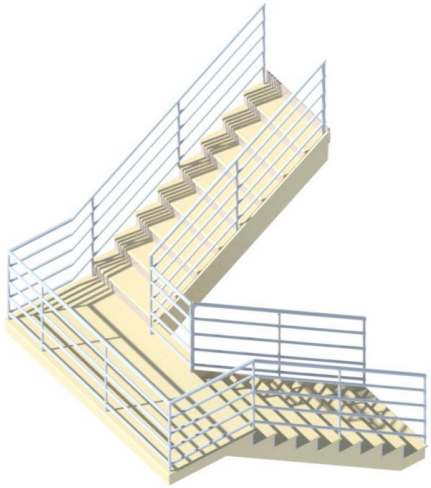
LOD 1

All stairs & ramps will be modelled as monolithic stairs with correct riser heights, tread depths, structural depths, and widths. Risers will be placed accurately where possible however risers in straight runs will be evenly spaced across the overall length of the run. No handrails or finishes will be added.



LOD 2

All stairs & ramps will be modelled as monolithic stairs with correct riser heights, tread depths, structural depths, and widths. Risers will be placed accurately where possible however risers in straight runs will be evenly spaced across the overall length of the run. Basic handrails will be added. No finishes will be added.



LOD 3

All stairs & ramps will be modelled as monolithic or open steel or timber where relevant with correct riser heights, tread depths, structural depths, and widths. Risers will be placed accurately where possible however risers in straight runs will be evenly spaced across the overall length of the run. Stingers and supports will also be shown. Accurate handrails will be added. Finishes will be added.

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Roofs

LOD 1

Roofs will be modelled as a footprint with defined slopes where possible but may also be modelled by footprint or with modified sub elements. An overall thickness will be shown with no joists.

LOD 2

Roofs will be modelled as a footprint with defined slopes where possible but may also be modelled by footprint or with modified sub elements. A correct thickness of the roofs structure will be shown including key roof joists. Finishes will be added upon request.

LOD 3

Roofs will be modelled as a footprint with defined slopes where possible but may also be modelled by footprint or with modified sub elements. A correct thickness of the roofs structure will be shown including all roof joists, braces and supports. Soffits and fascia's will also be shown. Finishes will be added.

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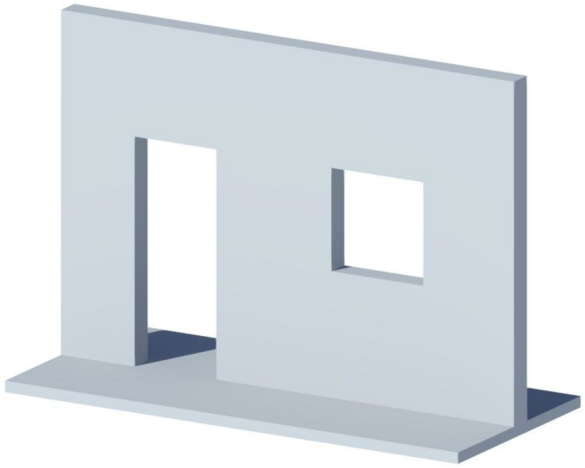
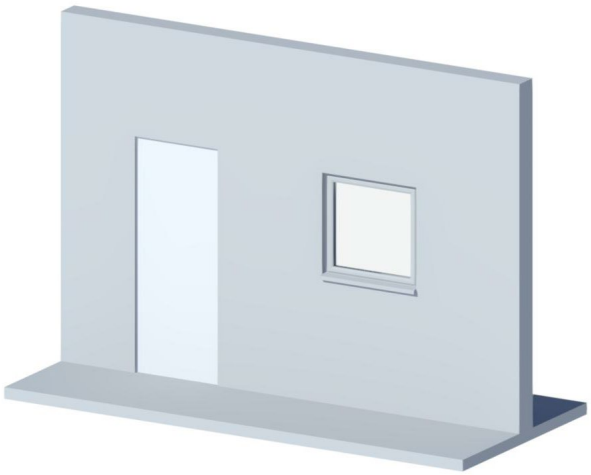
Windows & Doors



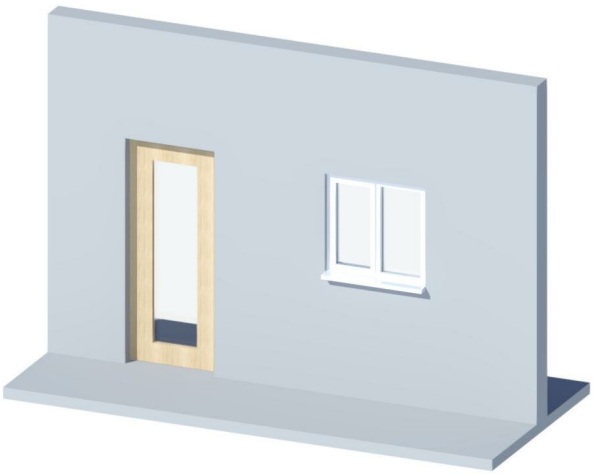
LOD 1

Windows and doors will be modelled to the correct size as openings.



LOD 2

Windows and doors will be modelled to the correct size and depth within the wall as generic families, showing the swing direction with no finishes.



LOD 3

Windows and doors will be modelled to the correct size and depth within the wall as families with accurate fenestration, showing the swing direction and finishes.

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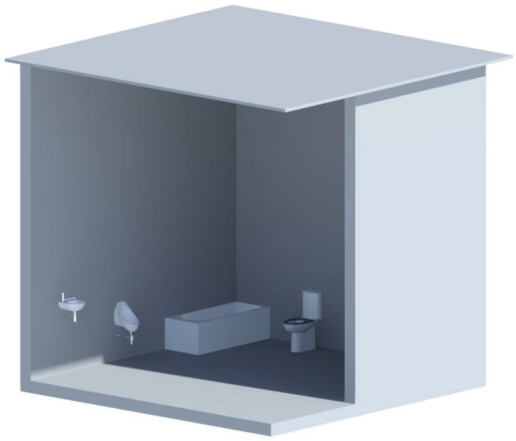
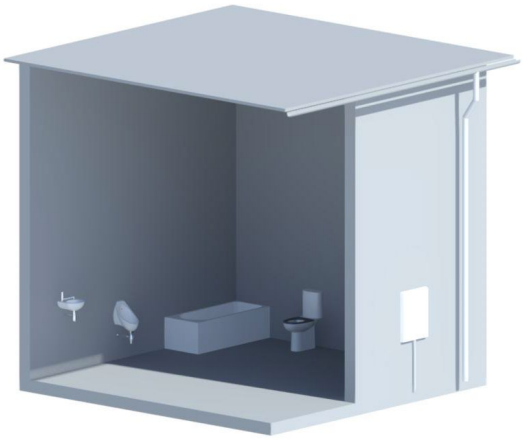
Services



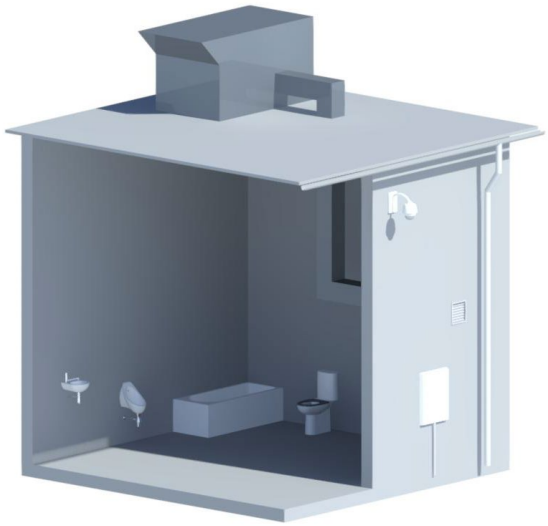
LOD 1

Sanitary fittings will be shown as generic families. This includes sinks, water closets, urinals, baths, and showers. Including vanity units and kitchen units modelled as generic masses with no finishes.



LOD 2

Sanitary fittings will be shown as generic families. This includes sinks, water closets, urinals, baths, and showers. Including vanity units and kitchen units modelled accurately as in place families with no finishes. Service entry points, gutters, rainwater pipes, soil vent pipes, tanks, boilers and ACU's will also be shown.



LOD 3

Sanitary fittings will be shown as generic families. This includes sinks, water closets, urinals, baths, and showers. Including vanity units and kitchen units modelled accurately as in place families with no finishes. Service entry points, gutters, rainwater pipes, soil vent pipes, tanks, boilers, ACU's, vents and any other external services such as alarms, lights, cameras etc will also be shown. Main MEP plant will be modelled as generic in-place models and main ducting will also be shown.

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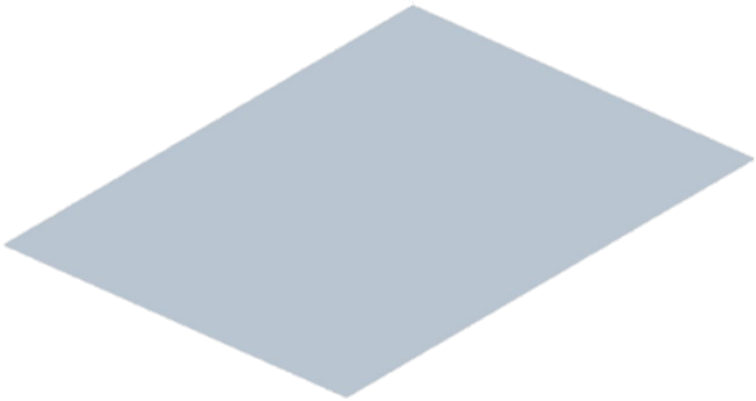
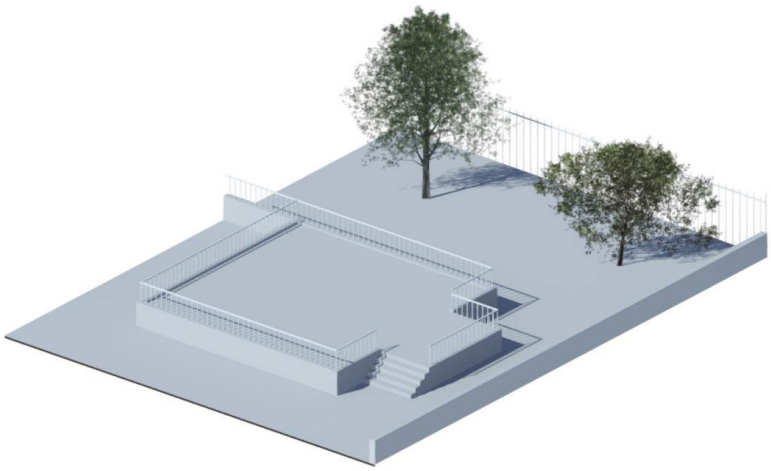
Topography



LOD 1

Basic topographic surface will be created using contours. If a full building model has not been requested all buildings on site will be modelled to either LOD 0 or LOD 1.



LOD 2

Topographic surface will be created using points to give an accurate representation of the land. Steps, walls, kerbs, fences, and trees will also be shown. No finishes will be added. If a full building model has not been requested all buildings on site will be modelled to either LOD 0 or LOD 1.

LOD 3

Topographic surface will be created using points to give an accurate representation of the land. Changes of surface will be shown. Steps, walls, kerbs, fences, and trees will be shown as well as all street furniture and other fixed features. Finishes will be added. . If a full building model has not been requested all buildings on site will be modelled to either LOD 0 or LOD 1.

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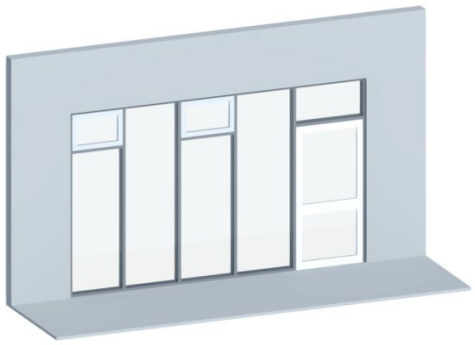
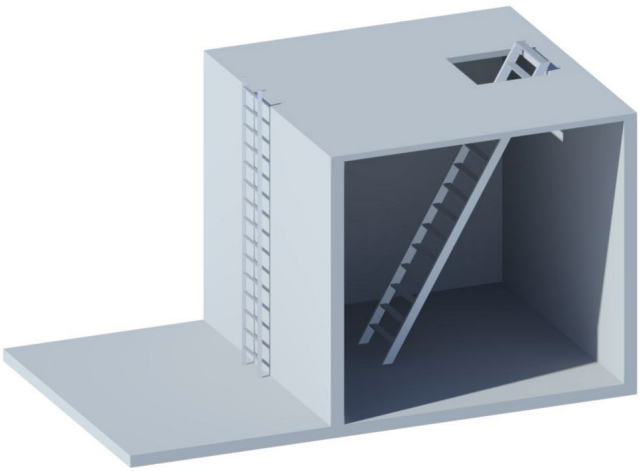
Curtain Walls



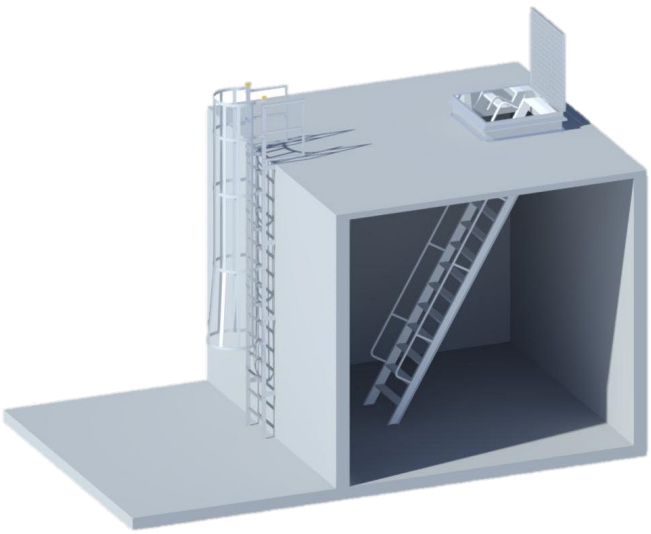
Curtain walls will be modelled to include accurate mullion positions and sizes. The location line will be placed so the glass sits in the correct position. Glass panels will be replaced accordingly by spandrel panels, doors or windows that accurately represent the feature of the curtain wall.

Ladders



LOD 2

Ladders will be shown as generic in place families without handrails and cages. No finishes will be added.



LOD 3

Ladders will be shown as generic in place families with handrails and cages. Finishes will be added.

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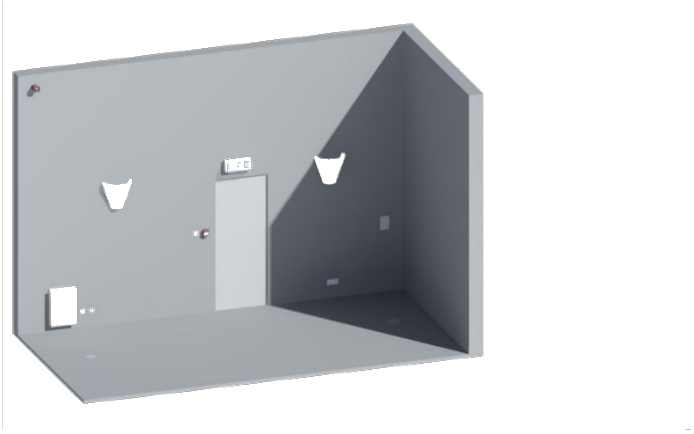
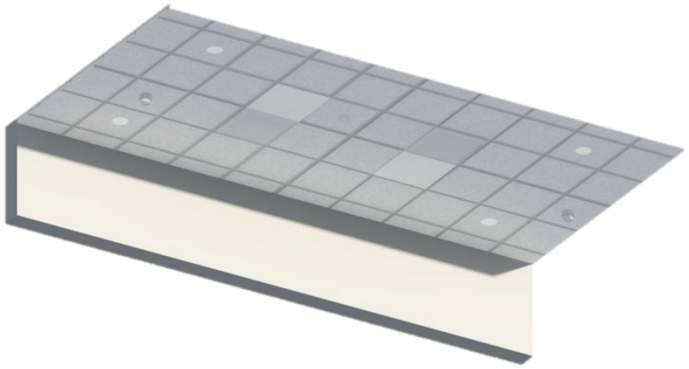
Additional Features

Internal Services



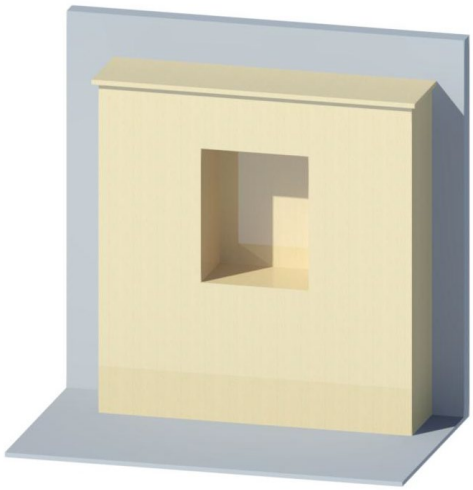
We can include all internal services or a select group based on a project's specific needs. We would liaise with the client to ensure the appropriate level of detail is achieved. All services will be shown as in-place families that give an accurate representation of each service.

Ceiling Plans



We can include all ceiling services or a select group based on a project's specific needs. We would liaise with the client to ensure the appropriate level of detail is achieved. All services will be shown as in-place families that give an accurate representation of each service. Where appropriate the ceiling tile grid will be shown accurately.

Furniture



Furniture will be modelled as in-place families. Finishes will be added or not added based on the overall LOD of the model.

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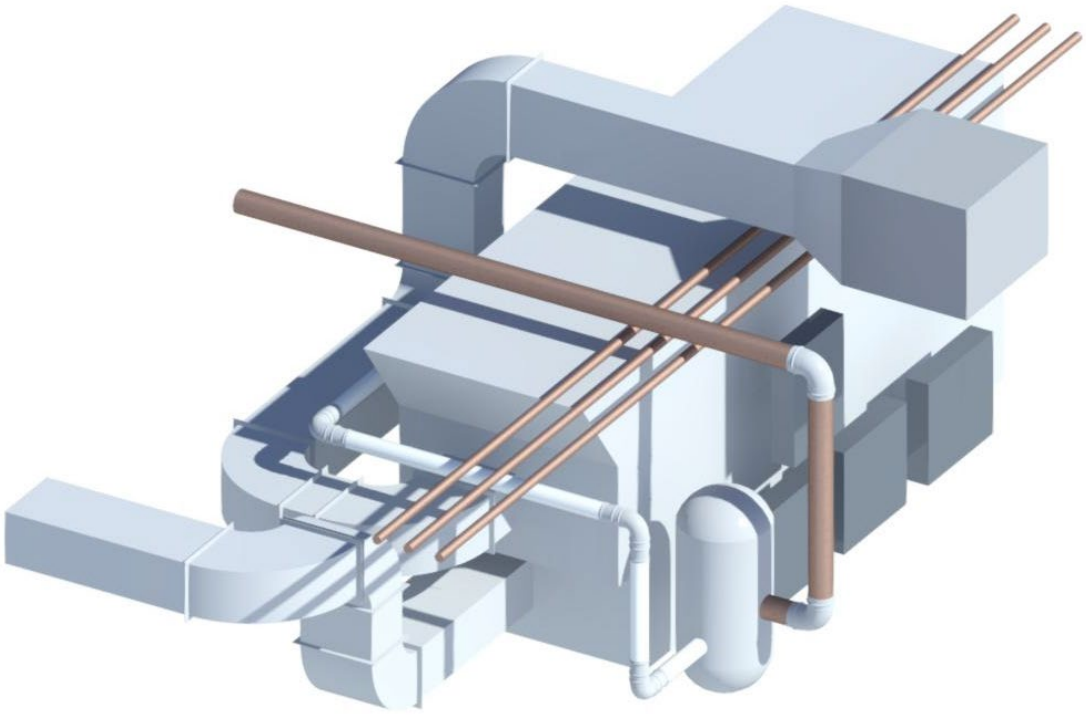
MEP

Mechanical, Electrical & Plumbing



MEP can be modelled as an additional extra.

This would include all ducting will be modelled using the ducting tool within Revit.

Pipe work with a diameter of 60mm or more will be modelled using the pipe tools within Revit.

All electrical equipment such a switch gear, junction boxes, sensor boxes, electrical cupboards will be shown as generic in-place models.

Tanks, boilers, and other plumbing fixtures would be shown as generic in place models. All plant including mechanical equipment and air terminals will be shown as generic in-place models.

Lighting, Sockets, switches, and other devices will be shown as in places families.

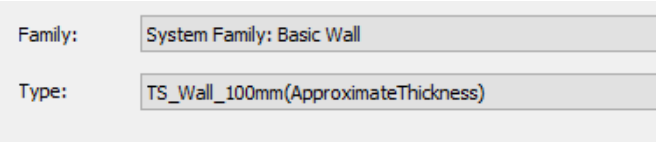
As standard be would not model cables trays or conduits but this can be included if essential to the project, however this can prove a costly addition to MEP. Loose and temporary fittings would not be modelled.

Service identification is generally not including however if information was provided this could be included within the model.

There are often certain limitations when surveying and collecting data for MEP elements within a building. We will always make our best efforts to provide a full model however these limitations should be considered.

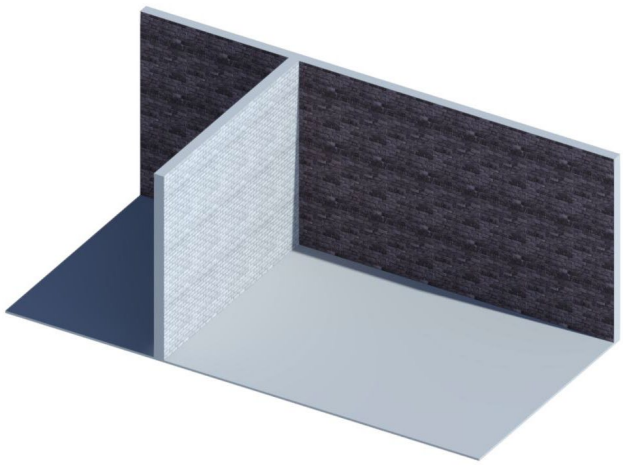
Additional Information

Approximations



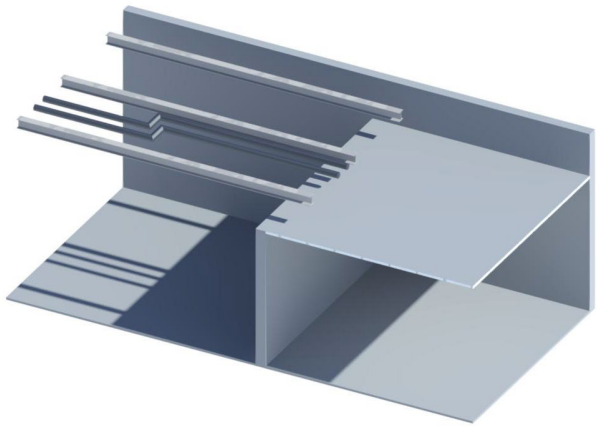
These will be kept to a minimum. The family type will be renamed to include (Approximate Thickness) or (Approximate Location) so that it stands out within the properties bar when selected.

Materials



Terrain will not assume the structural makeup of a wall. However, best efforts will be made to match the materials when applicable to the spec. Walls will still be left with a default material within the construction of the wall. If an external survey has been carried out to determine wall structures, then we can liaise with the external party to create structurally correct walls. Same applies for any other elements that would require a finish.

Visibility & Access



It is not up to Terrain Surveys to remove panelling or false ceiling tiles that may be covering up structural information or MEP. If this information is critical to a project it will need to be removed prior to carrying out the survey. We do have the ability to scan up through ceiling tiles using extendable legs however this will only allow us to scan small amounts of information per scan and will add significant time to site work which can prove costly.

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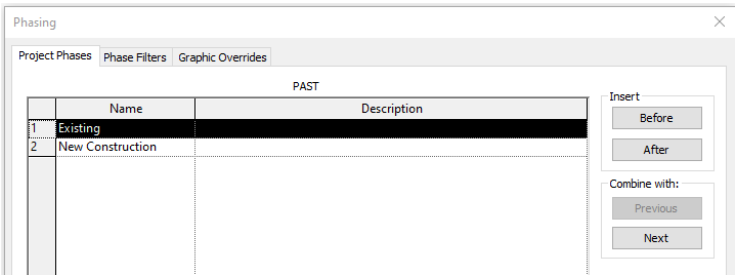
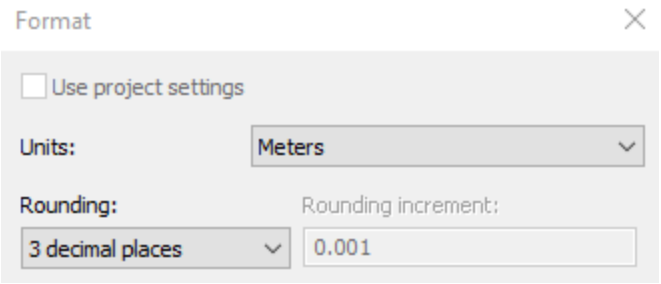
Phasing



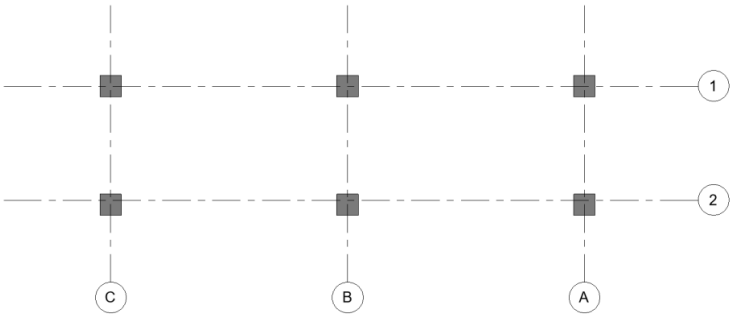
Typically, Terrain will model all elements in Existing phase however this can be adjusted as per the client's request.

Units



As standard Terrain model are set to **Meters** so the project would be issued in meters unless requested otherwise by the client.

Grids

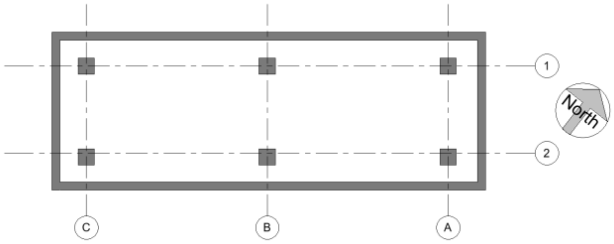


Grids will be used to aid modelling depending on the project. They can be removed as per a client's request. Clients can also provide grids for Terrain to add to a model however these are asked to be provided before modelling commences.

In-Place Families

In-place families will be kept to an absolute minimum. Loadable families will be used wherever possible.

True North/ Project North



Project North

As standard a Project North will be set up. If a specific Project North is required, it would need to be specified before work commences.

Project Base Point

The Project Base Point will be set to a defined location, ideally one of our fixed stations from site and placed at a 0.00m Datum.

Naming Conventions

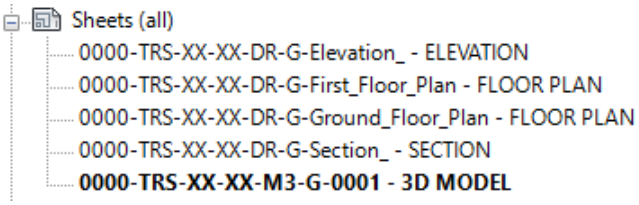
Terrain uses the **PS1192** naming convention for all models, sheets, components, and families.

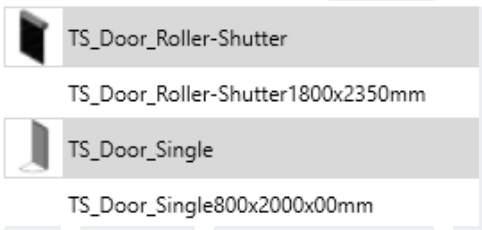
For models and sheets this is as follows:

0000-TRS-XX-XX-M3-G-0001, 0000-TRS-XX-XX-DR-G-Elevation_A

For components this is as follows:

TS_Component_Component-Information(WhereApplicable)Size(mm)





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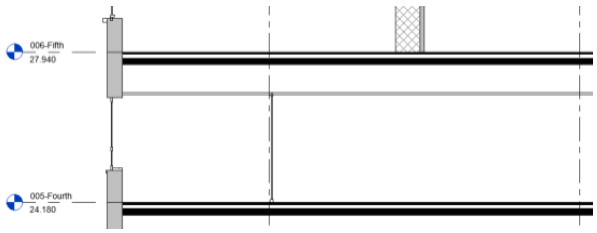
Reference Levels



Reference Levels (Floor Plans) will be named according to PS1192.

Example:

0000-TRS-XX-XX-DR-G-Ground_Floor_Plan

Software

Revit 2021 will be used as standard unless a previous version is stated prior to commencement. This is important information to clarify as models cannot be backdated to a previous version. 2019 is our other available version however it is preferred to use 2021 where possible.

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Terrain Surveys is a user of **BIM Collaborate Pro** which means all our models are uploaded to the construction cloud and are available for docs, design collaboration, model coordination and any other features of the application that may aid the project.

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We can export our models to a variety of other programs such as AutoCAD, SketchUp or PDF.

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