



ALLSHELTER[®]

CONTROL YOUR TOMORROW

Allshelter Revit
**Content Introduction
& User Guide**

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1. Disclaimer

This document provides an overview of the Revit content library supplied by Allshelter. The parametric content is all created natively in Revit, allowing users the ability to design and document a range of Protective Fabric Shelter Components.

Also covered in this document is an overview of the Revit content development methodologies used by IGS BIM Solutions in creating the Revit families, ensuring a consistent, robust and reliable Revit library. Ultimately, the Allshelter Revit families should require minimal, firm-specific localisation / standardisation to become the 'go-to' Revit families when protective shelter structures are required in a Revit project.

Should you require Allshelter options outside the range of products detailed in this Allshelter Revit content library, please contact Allshelter about future ranges to be developed in Revit and one-off requests.

2.0 Family Creation Considerations

Allshelter Revit families have been created to a consistent, high standard with the objective of finding a balance between complexity of use, functionality, documentation output, file size and performance in a project environment. Primary Allshelter Revit content creation insights and considerations are listed below:

1. Families supplied in Revit 2019 format.
2. Native Revit geometry used throughout, including nested families. (E.g. no AutoCAD or SAT files etc.)
3. Loadable families have been created with host types appropriate to their use, this is outlined for each family type in section 2.
4. Consistent family and shared parameters (ANZRS and standard IGS parameters) have been used sparingly, allowing for Allshelter attributes to be scheduled in the Revit project environment.
5. Reference Planes have been applied, named, tidied and set to the correct 'Is Reference'. Thought has been given to the likely end user requirements in placement / alignment and dimensioning of the families. The Origin Point has also been applied accordingly.
6. Detail Level settings applied to 3D geometry improving model performance.
7. All Warnings have been reviewed and removed where possible
8. The families have been fully Purged and all additional Materials, Line Patterns and Fill Patterns removed.
9. Logical and consistent Type naming has been applied across all families.
10. OmniClass and UniClass Classification has been set appropriately
11. The family file sizes have been optimised to be relatively small when the family's overall capabilities are considered, ensuring large Revit projects are not burdened by Allshelter families.

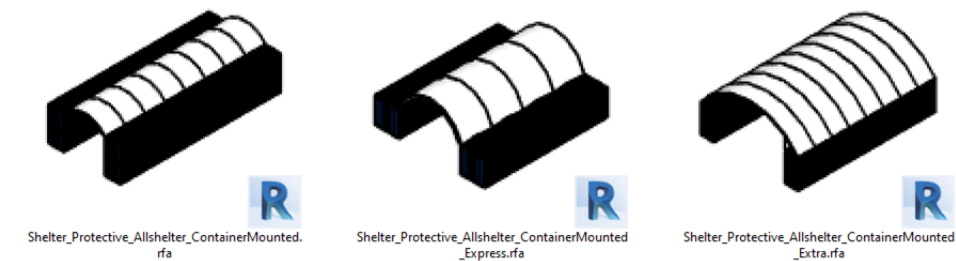
3.0 Revit Content Library Overview

The Allshelter Revit Content Library is comprised of 3 primary product ranges, 7 separate families that can represent their 124 respective variations.

The metrics of the Revit library and intended use of each component are listed below:

3.1 Container Mounted Shelters

3x Container Mounted Shelter families have been included. These are non-hosted Generic models (to allow the plan view cut-plane to interact with family geometry).



3.2 Post Mounted Shelters

1x Post Mounted Shelter family has been included. This is a non-hosted Generic model (to allow the plan view cut-plane to interact with family geometry).



3.3 Free Span Shelters

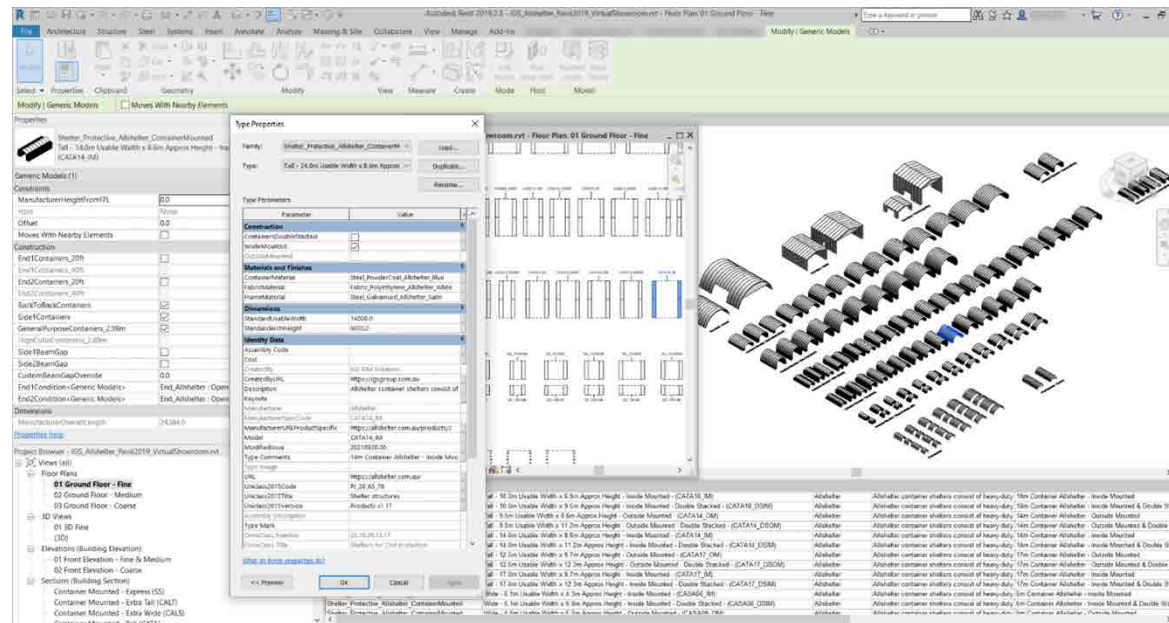
3x Free Span Shelter families have been included. These are non-hosted Generic models (to allow the plan view cut-plane to interact with family geometry).



3.4 Virtual Showroom / QA Project File

A sample Revit project has been created that contains all families and types laid out side by side. This project contains sample Floor Plans, Elevations, Sections, 3D perspectives and a preconfigured Schedule allowing Revit users to quickly assess the families' performance in a project environment.

These Revit assets can be 'Copied & Pasted' into another Revit project as an alternative workflow to loading the separate families into your project.

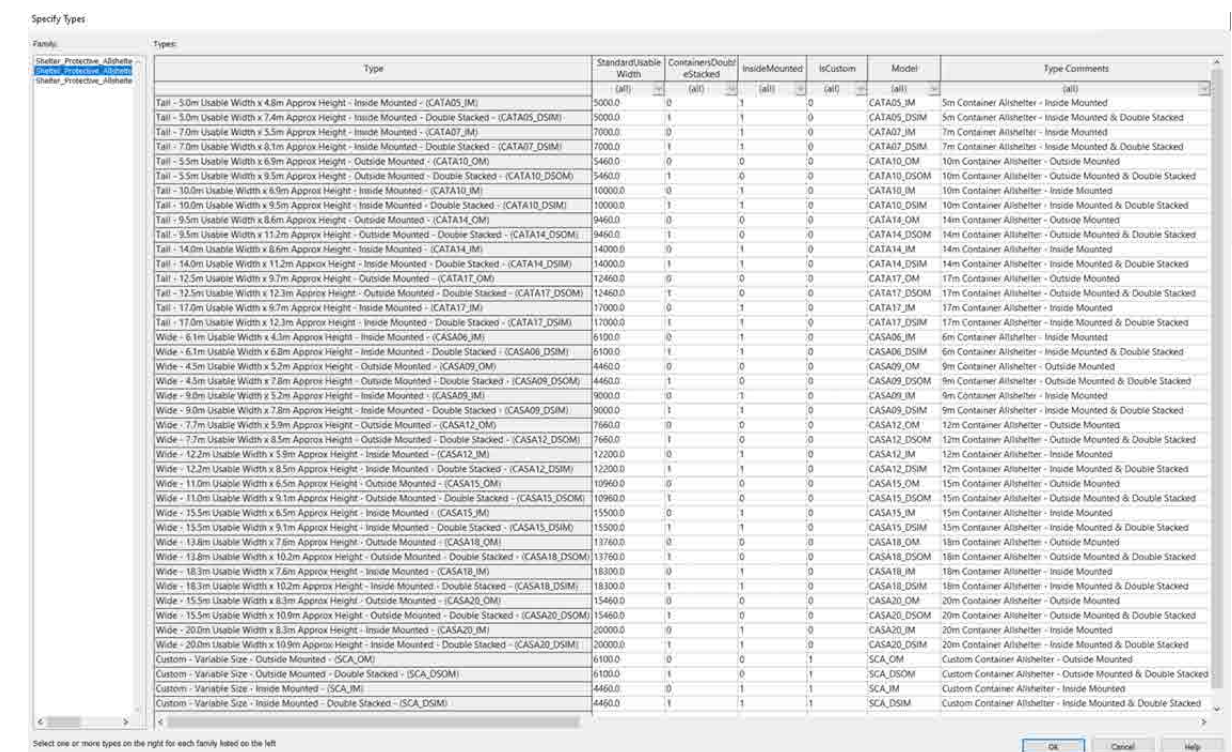


4. Technical Details

4.1 Type Cataloge Families

To minimise unnecessary types being loaded into a Revit project, all families containing 10 or more Types have been created with a corresponding Type Catalog file. When an Allshelter family is loaded into a Revit project, the 'Specify Types' dialog opens. This window allows the user to select only the variations relevant to their project. For example, you may want only the inside mounted shelters with a 5m Usable Width. Properties can be filtered at the top to narrow down your selection.

The 3 x Free Span shelter families each contain only a single Standard type and a single Custom type, and as such they do not have an associated Type Catalog file and will load into the project environment with both default Family Types.



To load a Type Catalog, you must load the family through the Revit ribbon bar 'Insert Family' command and browse to the file location. Dragging and dropping the RFA file into a Revit model will cause Revit to load the family with only a single generic type ignoring the associated Type Catalog list.

- The TXT file must be in the same directory as the RFA file, with the same filename. Take care if moving files into BIM libraries or project folders.
- The RFA family must be opened from a file menu in Revit – not through drag and drop.
- Only load variation you think will be needed to reduce the number of items in the list of available object types.

4.2 Basic Materials Library

Basic, non-intrusive materials have been included in the Revit library.

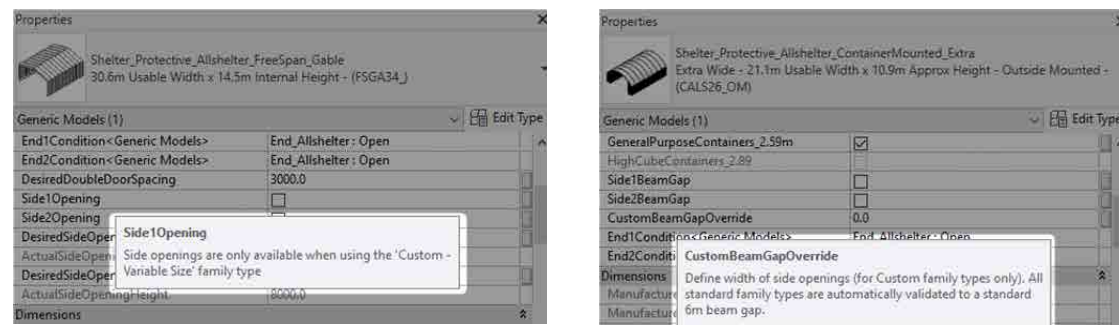
Materials are named with the same hierarchical structure as the families: <Type>_<Manufacturer>_<Descriptor> to fit in with existing material libraries. All unused material assets have been deleted from the families, in addition to purging out all material assets where possible.



4.3 Parameter Tooltips

For some specific Instance Based parameters there has been more context provided via the inclusion of Tooltips that can be accessed directly in the project by hovering the cursor over the parameter name in the properties dialogue.

These are specific to the type of shelter selected and may vary across the library.



4.4 Container Mounted Shelters

The following sections outline the key customisation options for the Container Mounted families, excl. the Express Range (Shelter_Protective_Allshelter_ContainerMounted_Express) which are standardised to ensure decreased lead times.

4.4.1 Container Sizing & Visibility

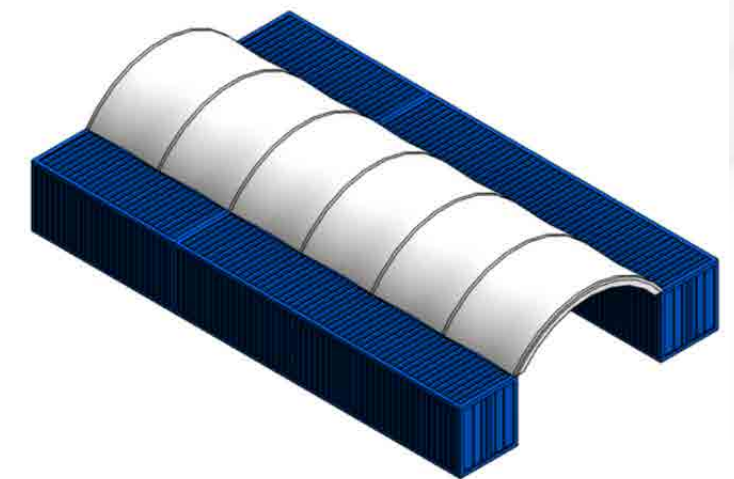
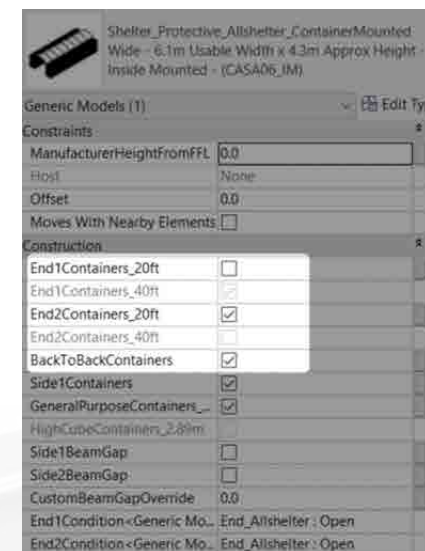
For the Container Mounted families, the Type Catalog controls the usable widths and overall heights of all standard shelters. It also determines if they are double stacked/single stacked, and outside mounted/inside mounted shelters. As these conditions are directly tied to the Family Type these type properties should be left unchanged from their default values.



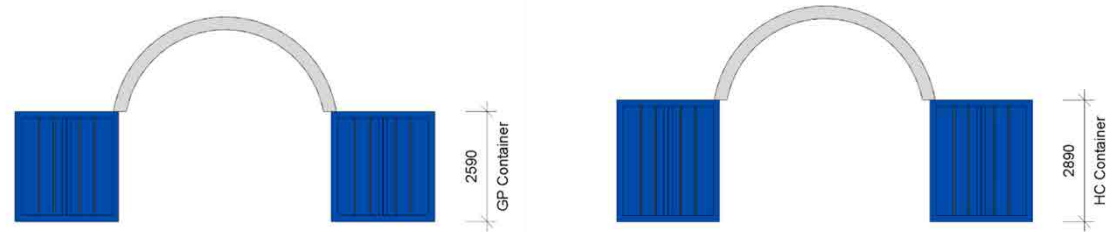
There are, however, a range of additional instance-based parameters that can be applied in the project to control the configuration and sizing of the supporting shipping containers.

Dedicated tickbox parameters exist in the Construction group to allow for controlling the lengths of the supporting containers (either 20ft or 40ft).

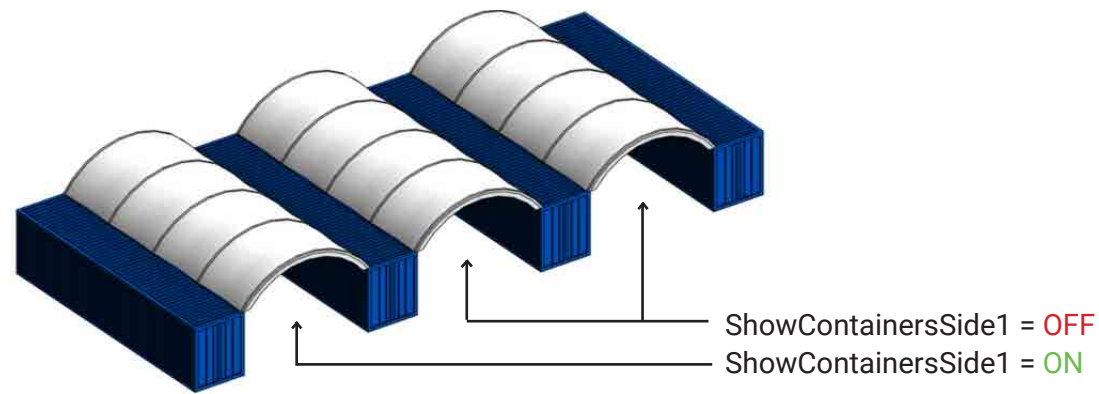
When the **BackToBackContainers** parameter is not active the overall shelter length will be determined by the **End1Containers** parameters. When the **BackToBackContainers** tickbox parameter is active, the lengths of the front and back bay of containers can be controlled independently using the **End1Containers** and **End2Containers** tickbox parameters and the combination of these will influence overall shelter length.



The height of the individual containers can be adjusted via the **GeneralPurposeContainers_2.59m** tickbox parameter, which when active assigns a standard 2.59m container height. When deactivated, the containers update to be 2.89m High Cube containers and overall shelter height increases accordingly.

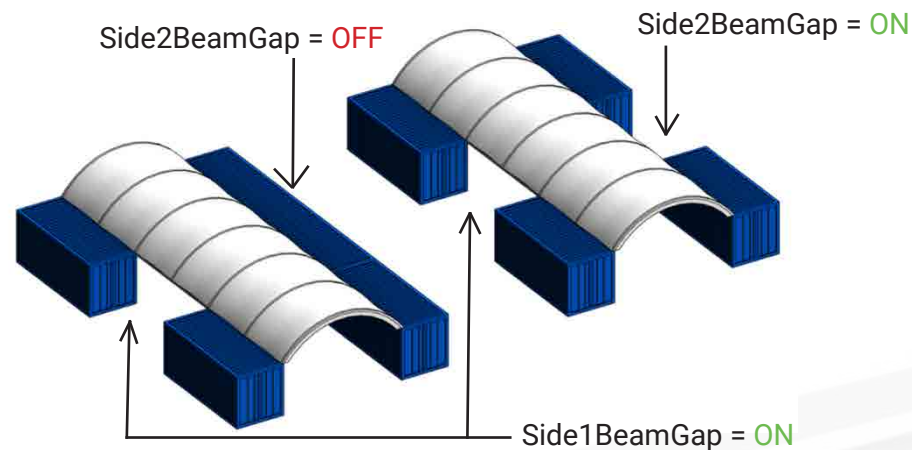
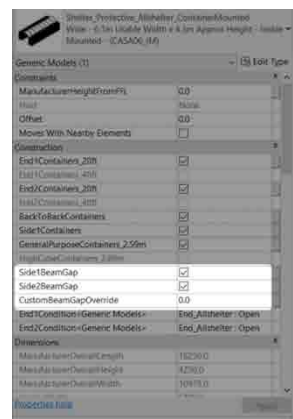


The **ShowContainersSide1** parameter has been included to allow for toggling on/off the visibility of the supporting containers on a single side. This would be activated in applications where shelters sit side by side and share a common container to avoid doubling up of geometry within the project.

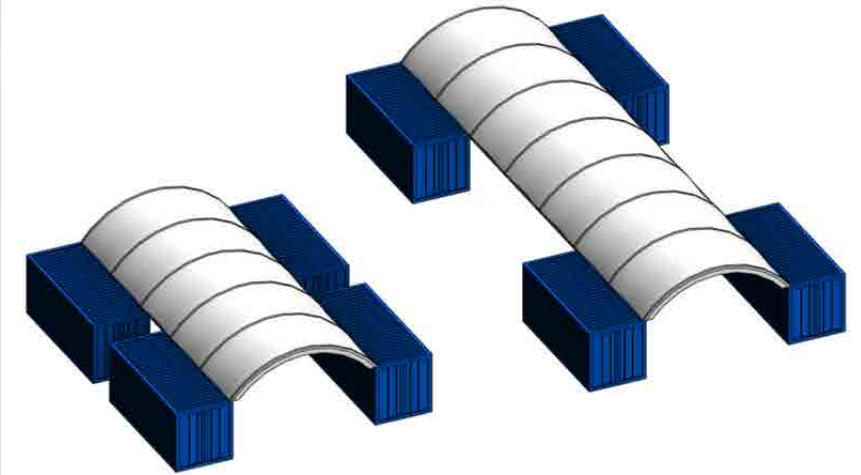
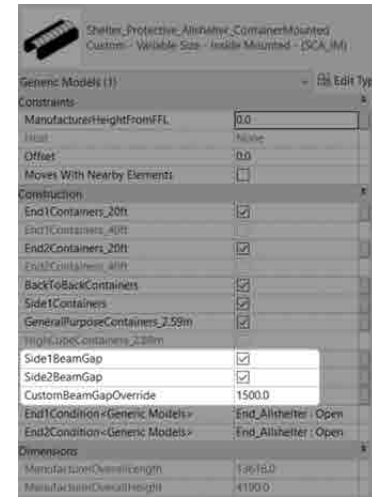


4.4.2 Side Beam Gaps

When the **BackToBackContainers** parameter is active (see **Section 3.4.1**), there is an opportunity to elect if there is a beam gap on either or both sides of the shelter (**Side1BeamGap & Side2BeamGap**). If using a standard Family Type (i.e. a type that does not contain 'Custom' as a type name prefix), the beam gap length will always be locked to a standard 6m (20ft) container length. Overall shelter length will automatically update accordingly based on elected container sizes.



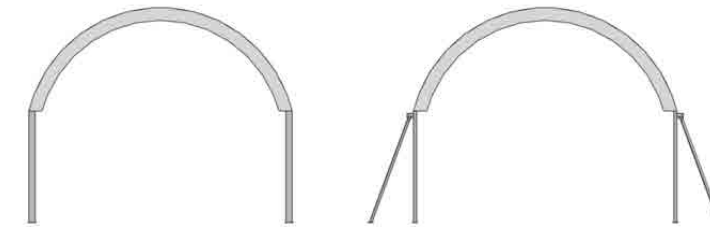
The **CustomBeamGapOverride** parameter can be used on Custom shelter Types to specify a particular desired beam gap when either **Side1BeamGap** or **Side2BeamGap** parameters are active. Due to the variable nature of the custom beam gap lengths, there is a necessity to have any custom beam gap always display on both sides of the shelter.



NOTE: The **CustomBeamGapOverride** parameter has no effect when used on any of the standard shelter Family Types which are always have a 6m (20ft) beam gap when visible.

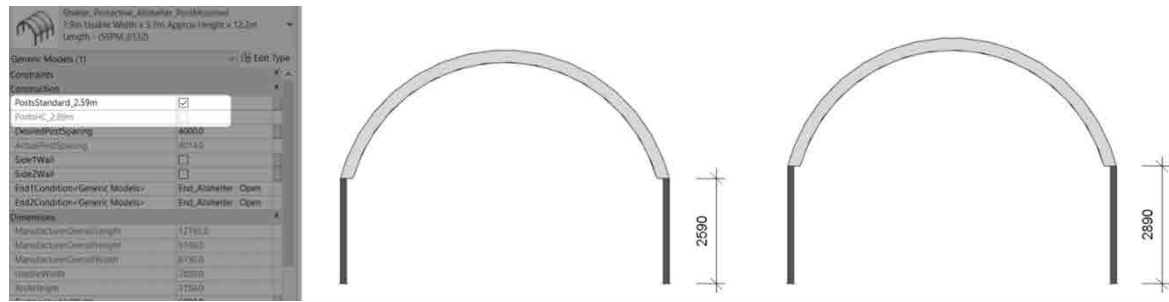
4.5 Post Mounted Shelters

Like the Container Mounted shelters, the Post Mounted family has an accompanying Type Catalog that controls the usable widths, overall heights, and overall lengths of all standard shelters. Additionally, dedicated types exist for diagonally braced shelters that can be used when direct fixing to an existing slab. These type-based parameters should not be adjusted within the project.

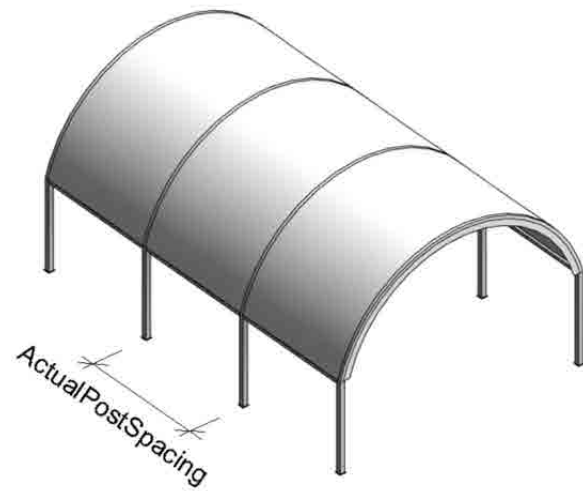
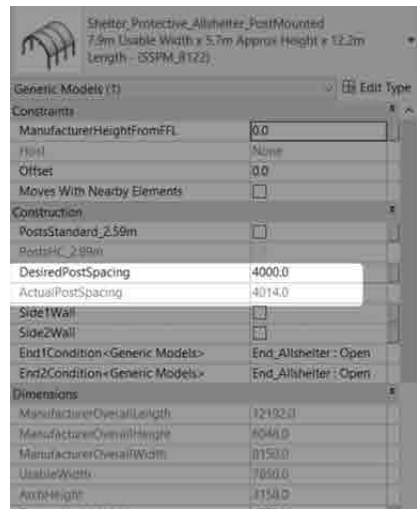


4.5.1 Post Sizing and Spacing

The post height for each instance of shelter is able to be adjusted via the **PostsStandard_2.59m** tickbox parameter. This parameter toggles the heights of all posts to be either 2.59m or 2.89m, which align with the General Purpose and High Cube container heights respectively.

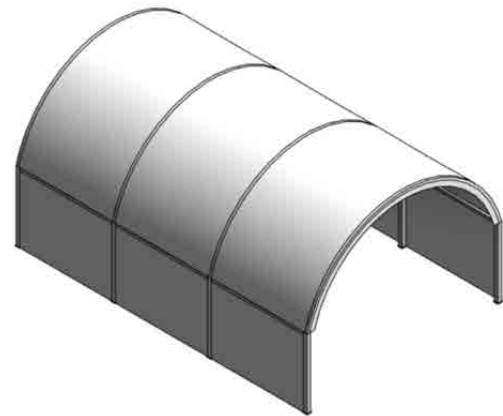
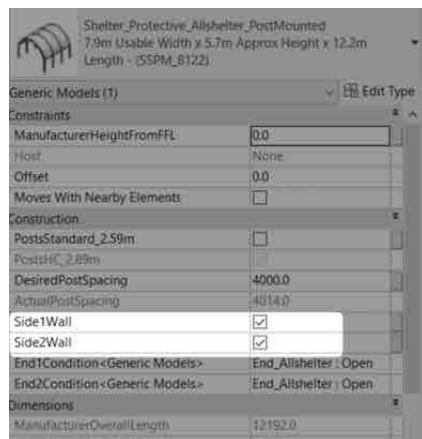


The **DesiredPostSpacing** parameter allows input for the centre spacings of each post element, however, the calculated **ActualPostSpacing** may differ slightly to ensure that all posts are equally spaced along the length of the shelter.



4.5.2 Side Walls

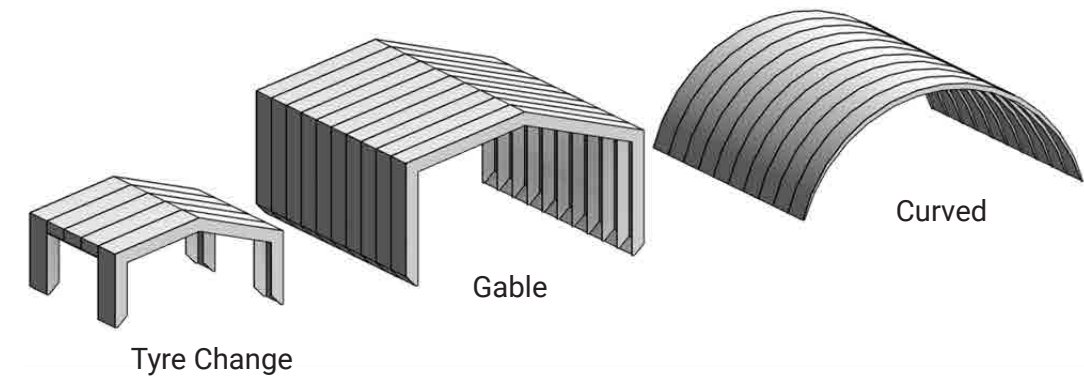
All Post Mounted shelters can be shown with a full-length side wall on either or both sides using the provided **Side1Wall** and **Side2Wall** instance-based tickbox parameters



4.6 Free Span Shelters

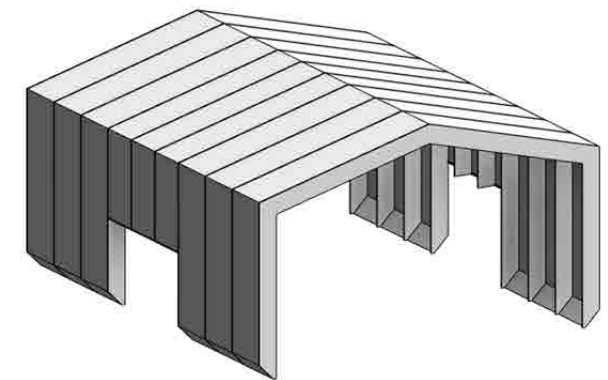
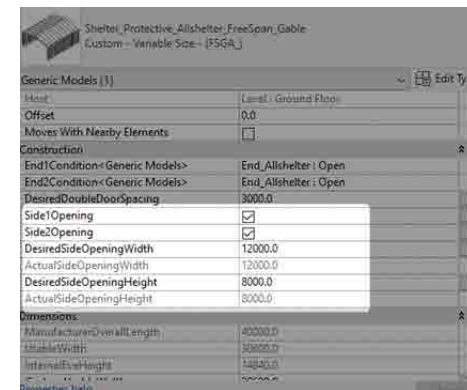
The Free Span shelter families each only contain 2 x default Types (a Standard size and a Custom size), and therefore do not require an accompanying Type Catalog file and can be dragged directly into the project.

The Standard types within all 3 Free Span shelters are locked at a specific size and customisation of these shelters is limited entirely to the End Conditions (see **Section 3.8**)



4.6.1 Side Openings

The Custom Types within each Free Span shelter family can have side openings placed and sized according to project requirements using a range of instance-based parameters located under the Construction group:



The **ActualSideOpeningWidth** and **ActualSideOpeningHeight** parameters are automatically calculated based on input to desired opening sizes. Generally actual and desired values will be equal, however, in some cases may differ to ensure there is always a supporting rib at each end and that the opening height does not exceed the shelter's internal eave height.

4.7 Custom Shelter Types

All families contain at least one dedicated Custom type (excluding the Express Range for the reasons outlined in **Section 3.4**). These are intended to be used when wishing to satisfy specific site conditions that may not be achievable using any of the standard Allshelter sizes.

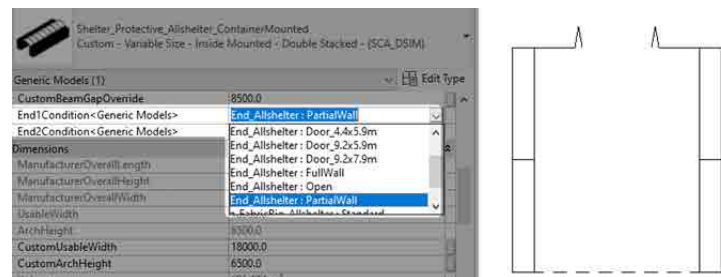
A series of instance-based length parameters can be found under the Dimensions group which will allow for resizing the overall shelter size. These parameters only take effect when applied to a Custom shelter type.

Shelter_Protective_Allshelter_PostMounted Custom - Variable Size - (SSSPM_)		Shelter_Protective_Allshelter_FreeSpan_TyreChange Custom - Variable Size - (FSGA_)		Shelter_Protective_Allshelter_FreeSpan_Curved Custom - Variable Size - (FSCA_)	
Generic Models (1)					
CustomUsableWidth	8500.0	CustomUsableWidth	20600.0	CustomUsableWidth	39600.0
CustomArchHeight	3600.0	CustomInternalEveHeight	8290.0	CustomInternalArchHeight	14449.0
CustomLength	25000.0	CustomOverallLength	22850.0	CustomOverallLength	40000.0

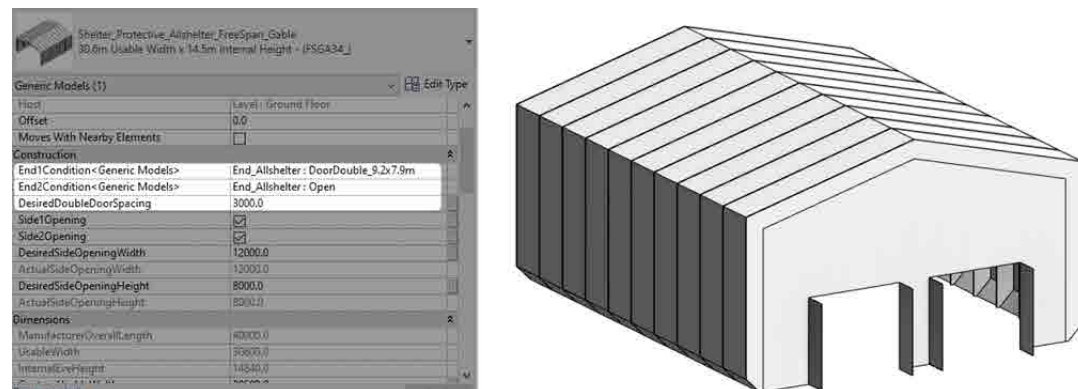
4.8 End Conditions

The **End1Condition** and **End2Condition** parameters are family type selectors that provide control over the conditions at both ends independently. Depending on the shelter type this could include various wall and door options which will be available from the drop-down list. These conditions will display in both 3D and 2D views for ease of documentation.

NOTE: Please ensure to only select Types from the 'End_Allshelter' Family.

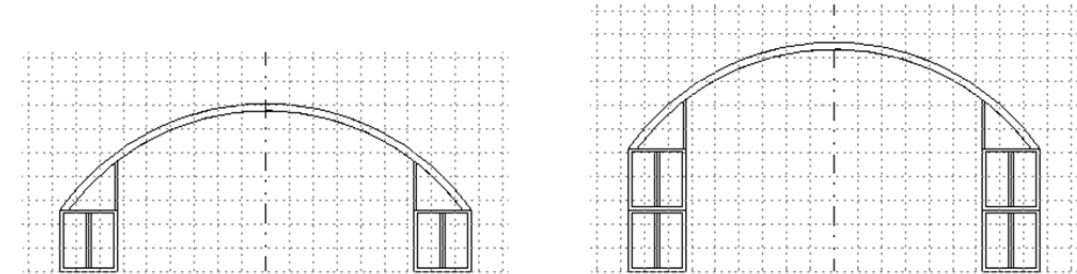


Due to their larger size, the free Span shelters include an option for selecting double doors which can be spaced using the **DesiredDoubleDoorSpacing** parameter.



4.9 End Gridlines

All families by default will display a 1m grid to aid in sizing when viewed in a Front/Back elevation view. These are able to be deactivated if desired using the instance-based **EndElevationGridlines** tickbox parameter found under the Visibility group.



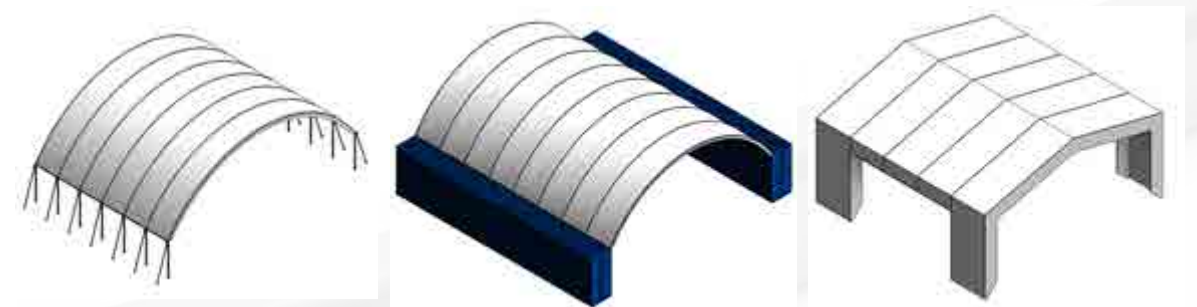
Additionally, these lines reside on dedicated subcategories and can therefore have their line weights, colours or patterns customised as desired.

Detail Items	
Hidden Lines	1
Shelter_Centreline	2
Shelter_Grid	1

5. Closing Statement

The overarching goal in creating this Allshelter Revit content library is to increase the ease in which Revit users can design, document, and specify Allshelter products within the Revit environment. Allshelter is committed to the continued development of this Revit content library as the industry and BIM workflows evolve over time.

We welcome your feedback and insights to ensure we can continue to accommodate your Revit content requirements.



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