Revit Content Introduction & User Guide

V25.3

Rylock WINDOWS & DOORS®

rylock.com.au

Overview

This document provides an overview of the Revit content libraries supplied by Rylock.

The zip file available on /specify-rylock includes two separate .rvt files for Specifiers, one for windows and one for door products. The parametric content is all created natively in Revit 2021, allowing users the ability to design and document a range of windows and doors in various configurations.

Also covered in this document is an overview of the Revit content development methodologies used by IGS BIM Solutions and BIM Store - the two companies who created the Revit families, ensuring a consistent, robust, and reliable Revit library. Ultimately, the Rylock Revit families should require minimal, firm-specific localisation / standardisation to become the 'go-to' Revit families when windows and doors are required in a Revit project.

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

Contents

1.0 Family Creation Considerations

Rylock 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 Rylock Revit content creation insights and considerations are listed below:

1. Families supplied in Revit 2021 format.
2. Native Revit geometry used throughout, including nested families. (E.g. no AutoCAD or SAT files etc.)
3. Where appropriate, 3D geometry has been hidden in plan views with masking regions and 2D line work applied to ensure documentation consistency and regeneration speed in plan views.
4. Loadable families have been created with host types appropriate to their use, this is outlined for each family type in Section 2.
5. Consistent family and shared parameters have been used sparingly, allowing for Rylock attributes to be scheduled in the Revit project environment.
6. 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.
7. Detail level settings applied to 3D geometry and plan views improve model performance.
8. All warnings have been reviewed and removed where possible.
9. The families have been fully purged and all additional materials, line patterns and fill patterns removed.
10. Logical and consistent family and type naming has been applied across all families.
11. OmniClass and UniClass classification has been set appropriately.
12. 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 Rylock families.

2.0 Revit Content Library Overview

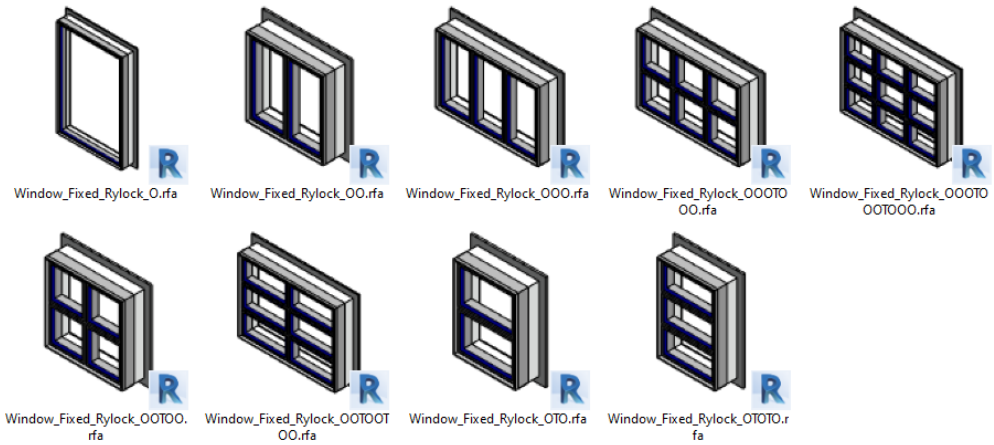
The Rylock Revit Content library is comprised of 10 primary product ranges, with 73 separate families that can represent a wide range of overall size variations based on project requirements.

Dedicated families have been created for each standard configuration of window and door to reduce complexity and size of the files, allowing users to control only those properties that are relevant for the selected element.

The metrics of the Revit libraries and intended use of each component are listed here within:

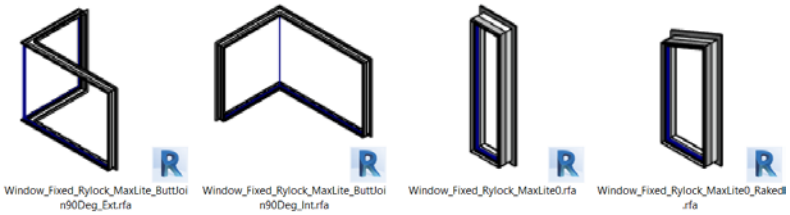
2.1 Fixed Lite Windows

9 x Fixed Window families have been included.



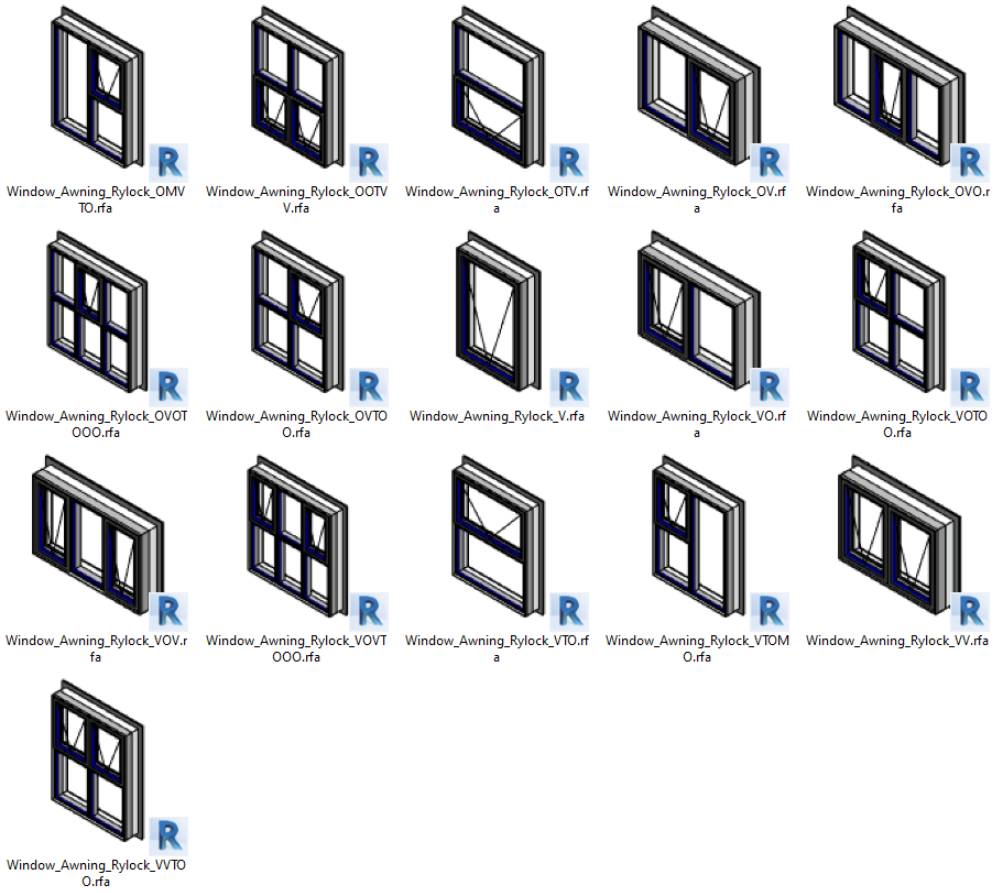
2.2 Max Lite Windows

4 x MaxLite Window families, inclusive of a Fixed, Raked, and 90° internal and external corner windows.



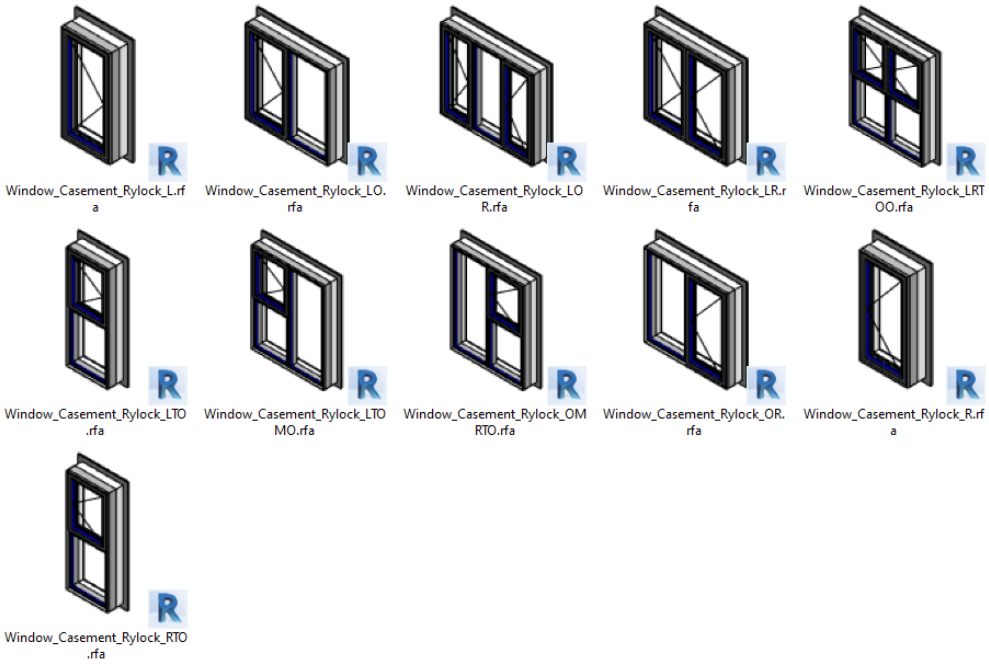
2.3 Awning Windows

16 x Awning Window families have been included.



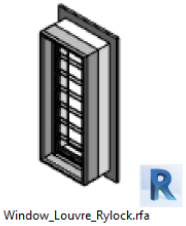
2.4 Casement Windows

11 x Casement Window families have been included.



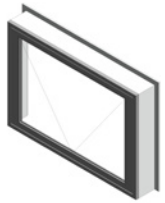
2.5 Louvre Windows

1 x Louvre Window family has been included.



2.6 Electric Strut Servery Windows

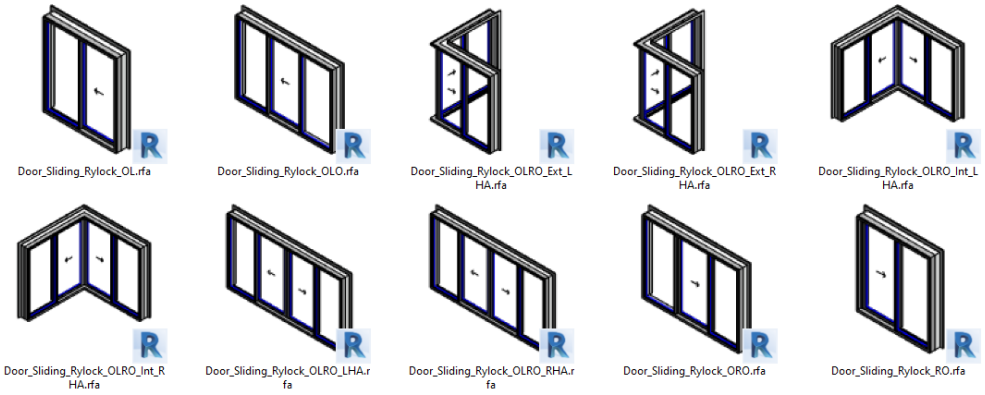
1 x Electric Strut Servery Window family has been included.



Electric Strut Servery

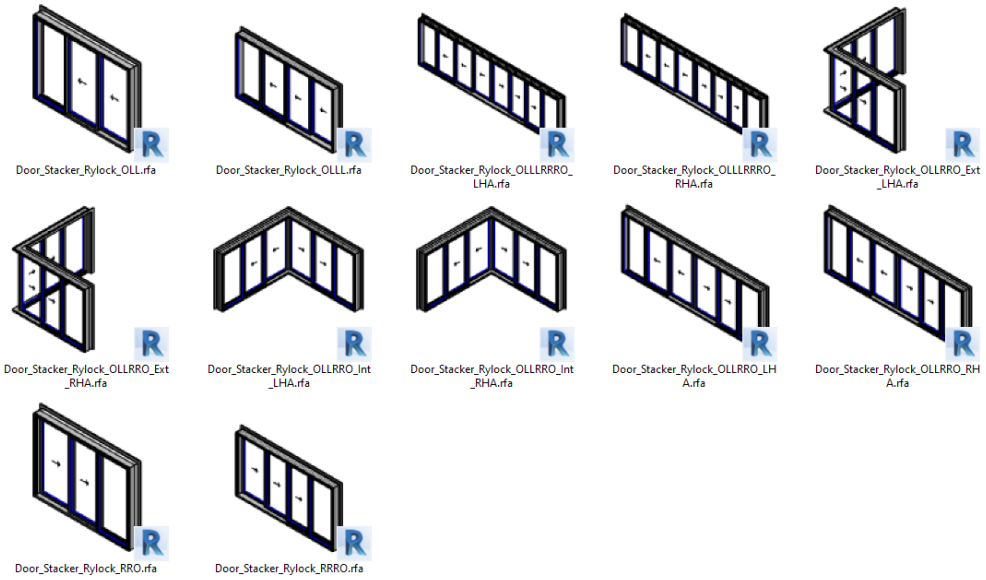
2.7 Sliding Doors

10 x Sliding Door families have been included.



2.8 Stacker Doors

12 x Stacker Door families have been included.



2.9 Hinged/French Doors

4 x Hinged/French Door families have been included.

Hinged Door Open-In

Hinged Door Open-Out

French Door Open-In

French Door Open-Out

2.10 Bifold Doors

5 x Bifold Door families have been included.

Door_Bifold_Rylock_2P anel.rfa

Door_Bifold_Rylock_3P anel.rfa

Door_Bifold_Rylock_4P anel.rfa

Door_Bifold_Rylock_5P anel.rfa

Door_Bifold_Rylock_6P anel.rfa

2.11 Family Name Configuration Codes

As can be seen in the screenshots above, all families have been saved with a logical thumbnail image to easily identify the panel configuration of each family.

Additionally, for families consisting of more than a single panel, the filenames themselves reference the contained configuration using a unique identifier code specific to each, as outlined below:

Panel Elements:
O = Fixed Window/Door Panel
V = Awning Window Panel
L = Left Opening Window/Door Panel
R = Right Opening Window/Door Panel

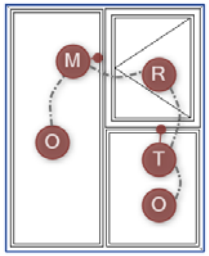
Frame Division Elements
T = Transom (Horizontal)
M = Mullion (Vertical)

NOTE: M (mullion) is only used when the number of 'rows' of panels is not equal across the entire width of the window.

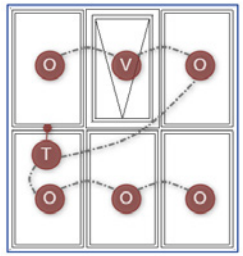
Primary Panel (Handle Location):
_RHA = Right Panel Primary
_LHA = Left Panel Primary

The combined configuration code is intended to correspond to the function of each individual panel when viewed from the Exterior side from left to right, and top to bottom (as per examples below):

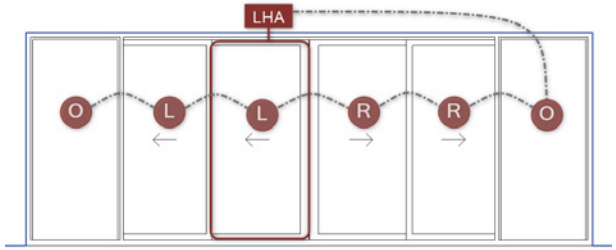
OMRTO



OVOTOOO



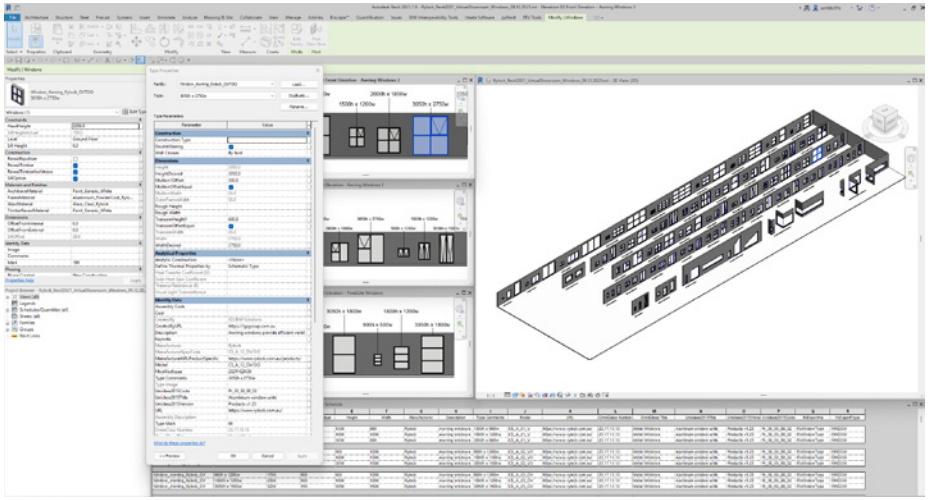
OLLRRO_LHA



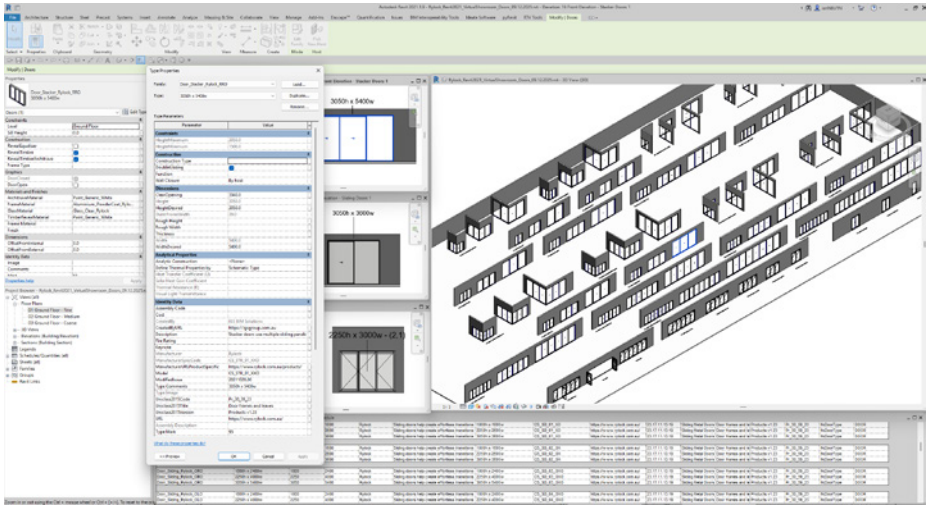
2.12 Virtual Showrooms / QA Project File

Two sample Revit projects have been created that contains all window and door families and types laid out side by side. These projects contain 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.

Window Showroom



Door Showroom



The Virtual Showroom also features a Material Editing Schedule which allows for batch updating materials for any of the 3D geometry of all Door and Window types across all loaded family types simultaneously.

<Material Editing Schedule>

A	B	C	D	E
Category	FrameMaterial	GlassMaterial	TimberRevealMaterial	ArchitraveMaterial
Doors	Aluminium_PowderCoat_Rylock_MetallicSilver	Glass_Clear_Rylock	Paint_Generic_White	Paint_Generic_White
Windows	Aluminium_PowderCoat_Rylock_MetallicSilver	Glass_Clear_Rylock	Paint_Generic_White	Paint_Generic_White

3.0 Technical Details

3.1 Default Family Types

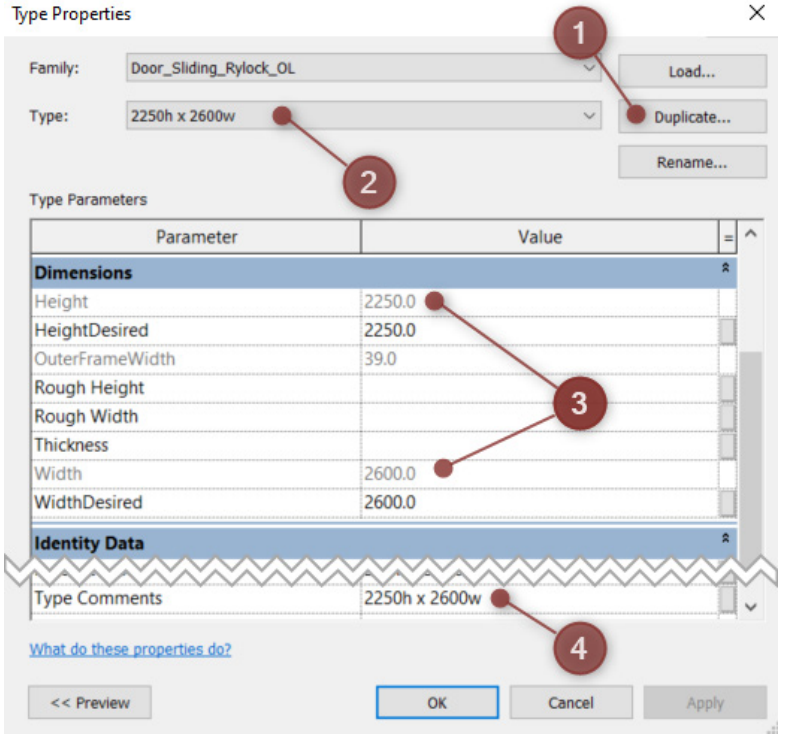
Due to the flexible nature of Rylock's suite of Window and Door systems, a selection of default Types has been included within each Family to represent a Small, Medium, and Large version of each.

Consideration has been given to all Type based parameters that will allow the standard "Type Mark" parameter to be populated with "W1" for window type 1 in the project.

These existing Types can be duplicated directly within the Project as many times as required to achieve any overall sizing that is achievable within the height and width limitations of each product.

As is commonplace when duplicating Family Types within the Project, it is important to ensure that the names of any new Types are assigned appropriately and reflect the size values that are to be assigned to it. Additionally, it would be good practice to copy/paste any new Type Name to the Type Comments parameter to ensure accurate data flow.

1. Select an instance of the desired Window or Door configuration and within its Type Properties select 'Duplicate' to begin creating a new size.
2. Assign a new Type Name that is consistent in format to the existing Type, ensuring to accurately reference the overall dimensions.
3. Input desired Height and Width values via the ***HeightDesired*** and ***WidthDesired*** parameters.
4. Copy and paste the new Type Name to the ***Type Comments*** parameter to ensure consistency.



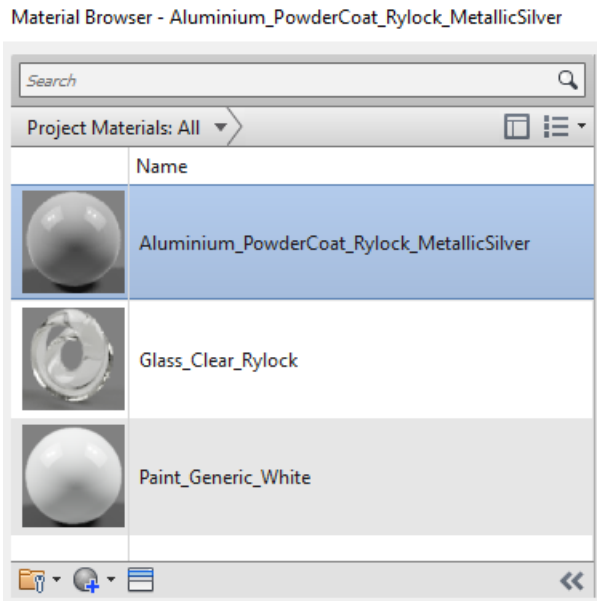
3.2 Basic Materials Library

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

Materials are named with the same hierarchical structure as the families:

<Type>_<SubType>_<Manufacturer>_<Descriptors> 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.

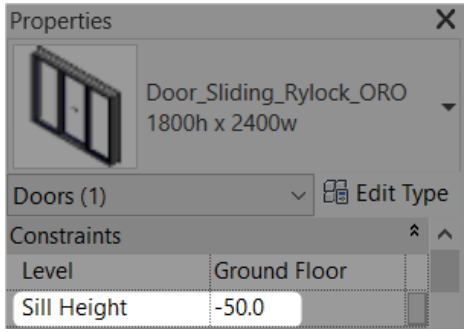


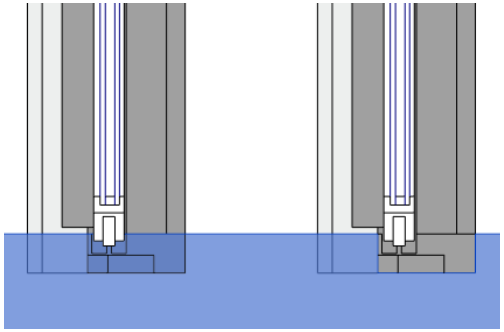
3.3 Component Placement

3.3.1 Door Placement

The Rylock Door families are placed in an identical fashion to the out-of-the-box Revit door families. As such, the process involves simply clicking at the desired location of the centre of the door within the hosting basic wall.

The instance-based ***Sill Height*** project parameter can be used to define the vertical position in relation to the associated level by applying a bottom offset if required (either positive or negative). When a negative Sill Height is entered, the Modify > Cut Geometry tool can be used to have the Door's sill track geometry cut into the floor as shown below.





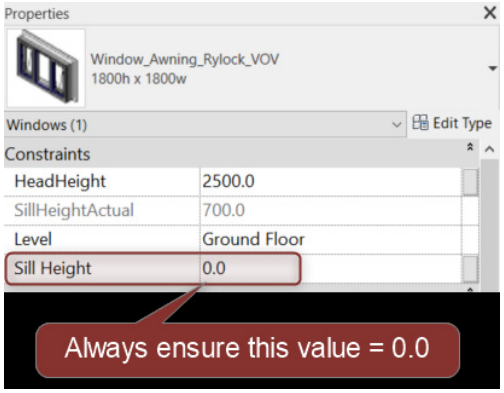
3.3.2 Window Placement

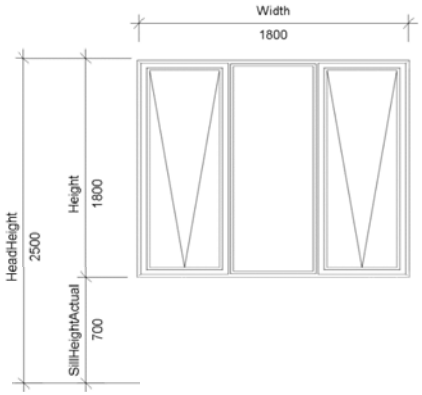
The Rylock Window families adopt a slightly different methodology in terms of placement than the Door families.

For windows, the critical dimension is commonly the head height (distance from associated level to top of window frame). This value can be defined via the custom ***HeadHeight*** instance-based shared parameter either before placing the component or retrospectively.

The intent is that the head height remains at a fixed value based on user input, with the calculated ***SillHeightActual*** parameter automatically updating with any changes made to the overall window height.

An important consideration with this workflow is that the built-in ***Sill Height*** project parameter must remain at the default value of '0' to avoid potentially competing data causing inaccuracies.





To schedule or tag sill heights of Rylock Window families, ensure that the calculated ***SillHeightActual*** parameter is used, as opposed to the built in ***Sill Height*** project parameter:

Family	Type	HeadHeight	SillHeightActual	Height	Width	Manufacturer
Window_Awning_Rylock_V	1350h x 900w	2300	950	1350	900	Rylock
Window_Awning_Rylock_V	1800h x 1200w	2300	500	1800	1200	Rylock
Window_Awning_Rylock_V	3050h x 800w	3200	150	3050	800	Rylock
Window_Awning_Rylock_VO	900h x 1200w	1700	800	900	1200	Rylock
Window_Awning_Rylock_VO	1800h x 1300w	2300	500	1800	1300	Rylock
Window_Awning_Rylock_VO	3050h x 1500w	3200	150	3050	1500	Rylock

3.4 Component Sizing

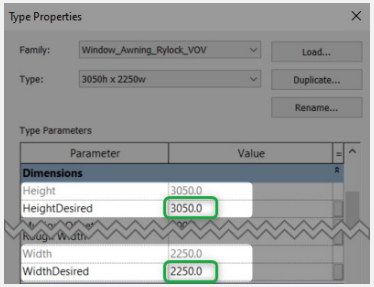
The ***DesiredHeight*** and ***DesiredWidth*** type-based parameters allow for input of the desired overall Height and Width of a Door or Window family type.

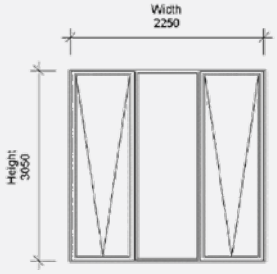
The built-in ***Height*** and ***Width*** parameters that are used for tagging and scheduling are automatically validated to not exceed the associated minimum/maximum allowable overall dimensions of the selected elements framing members.

All Rylock Window families (excluding Louvre and Projecting Sash) have a maximum frame extrusion length of 6m. When a length over 6m is input to DesiredHeight or DesiredWidth for these families, the Window geometry will automatically validate to this maximum value. Minimum frame dimensions for the Rylock Window content will depend on the panel configuration and quantity and therefore are specific to each family.

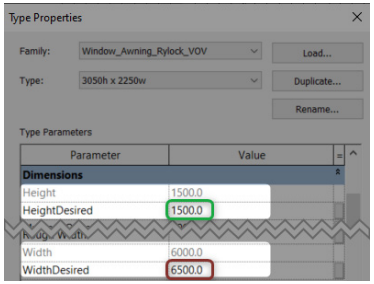
All Rylock Door families have a maximum height of 3.05m and a minimum height of 1.5m. The built-in ***Height*** parameter that controls the Door geometry will automatically validate to an acceptable value if ***DesiredHeight*** falls outside this size range. Width limitations of Doors are determined by the panel quantity and configuration, and therefore are specific to each family.

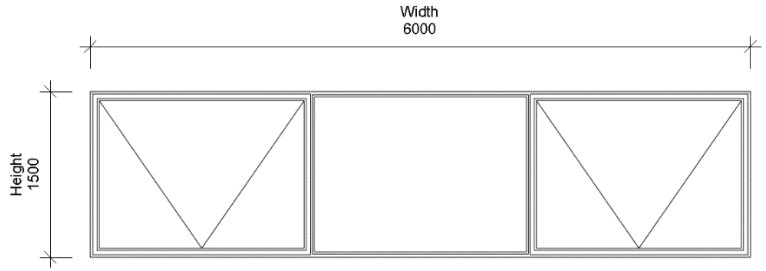
- Accepted DesiredHeight
- Accepted DesiredWidth





- Accepted DesiredHeight
- Unsuitable DesiredWidth





3.5 Options and Adjustments

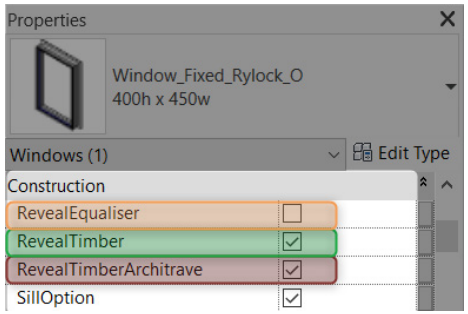
3.5.1 Framing Options

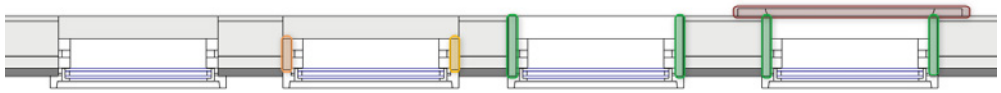
By default, all Door and Window families have a Timber Reveal and internal Architrave element active. These elements have their visbility controlled via dedicated instance-based tickbox parameters located under the Construction Group ***(RevealTimber & RevealTimberArchitrave).***

NOTE: The architrave visibility via the ***RevealTimberArchitrave*** parameter relies on the ***RevealTimber*** parameter also being active.

Activating the ***RevealEqualiser*** parameter will increase the size of the wall opening to match the overall Height and Width of the selected Door/Window, and introduce an additional framing element around the perimeter to create a flush frame around all 4 sides.

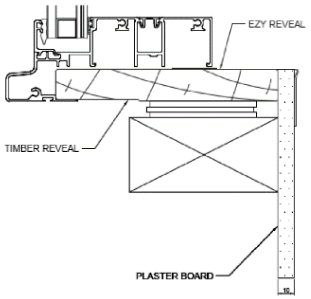
NOTE: *RevealEqualiser* tickbox parameter will only have an effect when ***RevealTimber*** is not active.





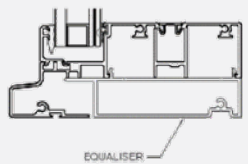
RevealEqualiser = OFF
RevealTimber = OFF
RevealTimberArchitrave = OFF

PLASTER REVEAL OFFSET



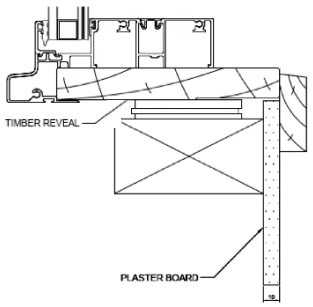
RevealEqualiser = ON
RevealTimber = OFF
RevealTimberArchitrave = OFF

REVEAL EQUALISER



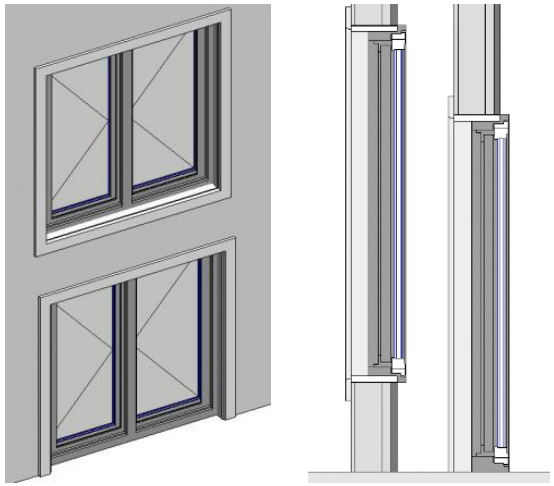
RevealEqualiser = OFF
RevealTimber = ON
RevealTimberArchitrave = ON

PRIMED/ RAW HARDWOOD REVEAL



For all Window families, there is an additonal tickbox (also found under the Construction Group) called ***SillOption***. This can be toggeled off in situations where the window is intended to terminate flush with the floor level beneath (i.e. ***HeadHeight*** = Window ***Height***).

As can be seen in the images below, turning ***SillOption*** off will deactivate visibility of the bottom architrave and timber reveal elements (if visible) to ensure all elements terminate cleanly at ***SillHeightActual***.

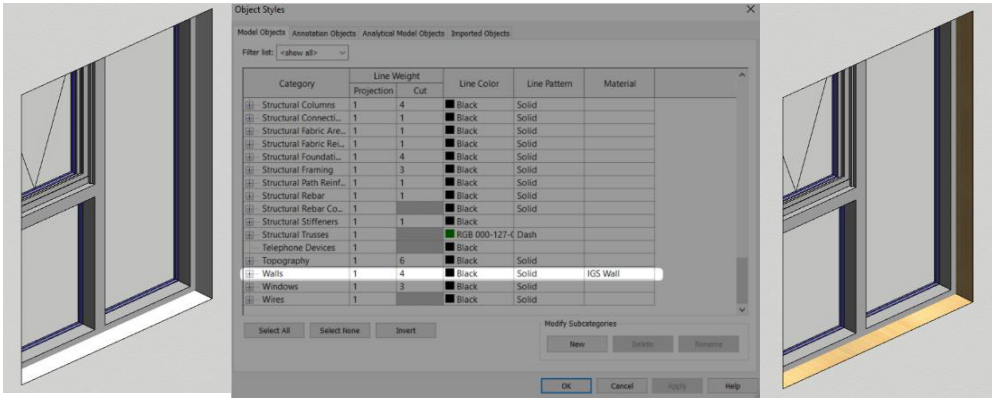


3.5.2 Controlling Wall Wrap Appearance

The material assigned to the Walls category within the Object Styles dialogue can be used to update the appearance of the inside faces of Door or Window wall openings.

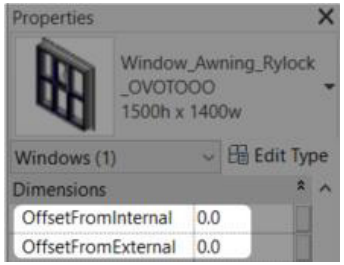
This is relevant to the Rylock library when the Timber Reveal is not used.

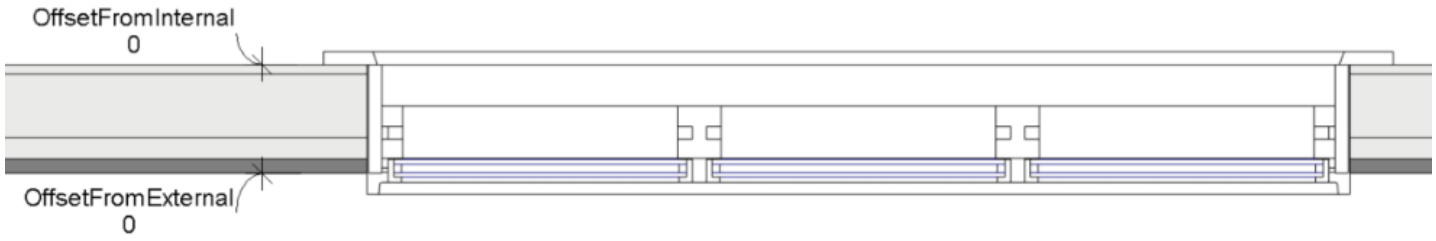
The below screenshots show that by default the inside faces of the wall opening are using the IGS Wall material (below left). This can be updated via Object Styles to be any material within the Revit project environment to provide an alternate wall wrap appearance (below right).

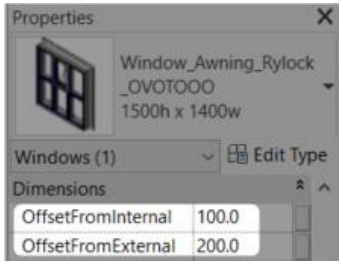


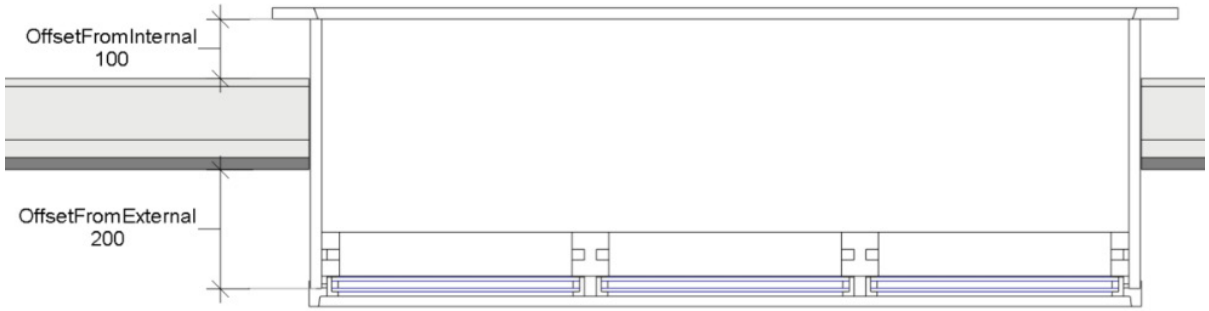
3.5.3 Wall Offsets

By default, the timber reveal will match the thickness of the hosting wall, however, a positive or negative value can be entered to the ***OffsetFromInternal*** and/or ***OffsetFromExternal*** parameters to manually position where the frame is situated in relation to the host wall.







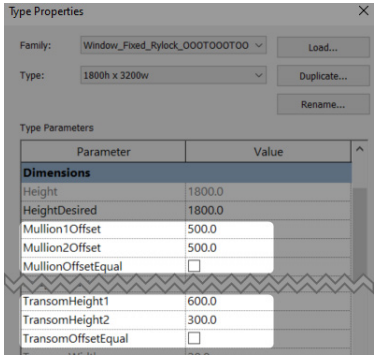


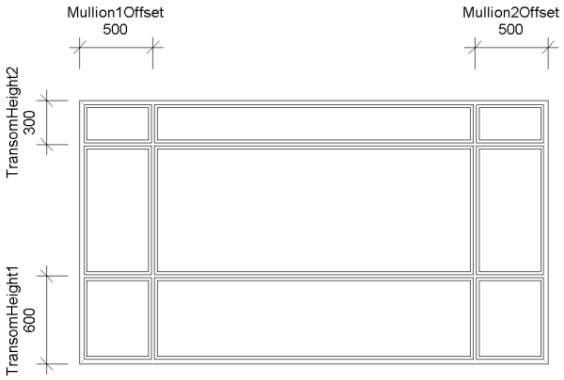
3.5.4 Controlling Window Mullions & Transoms

For Window families that contain more than a single panel, any mullions/transoms have been located by default to ensure each individual panels have equal heights and widths.

Controls have been provided to manually override the location of these frame division elements as desired using a dedicated set of type-based parameter within the Dimensions group.

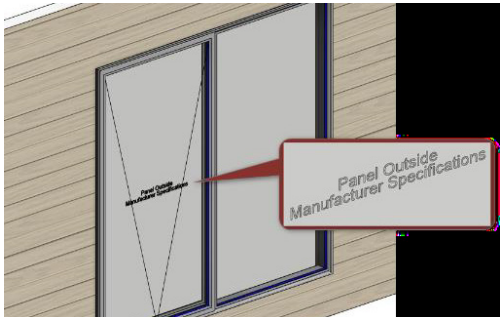
By deactivating the ***MullionOffsetEqual*** and ***TransomOffsetEqual*** tickbox parameters, the location of each division element will begin to be controlled by the corresponding ***MullionOffset*** and ***TransomHeight*** inputs.





A 3D warning message will automatically display if any contained panel's size exceeds the product limitations (see table below). This is to visually prompt a review of the overall sizing, or the mullion/transom locations until acceptable panel sizing is achieved.

Awning Panel
Panel Height = 400 - 3050mm
Panel Width = 400 - 2750mm
Max Area = 2.75m2



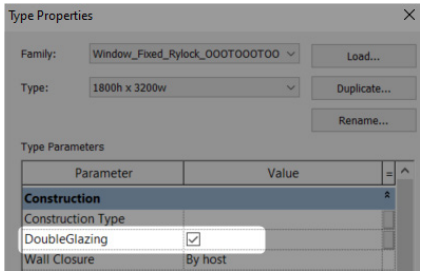
Casement Panel
Panel Height = 600 - 2750mm
Panel Width = 400 - 800mm
Max Area = 1.6m2

Fixed Panel
Minimum Panel Height = 150mm (SG) | 190mm (DG)
Minimum Panel Width = 150mm (SG) | 350mm (DG)
Max Area = 8m2 (SG) | 6m2 (DG)

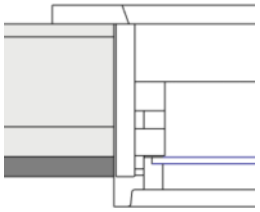
- SG: Single Glazed
- DG: Double Glazed

3.5.5 Double Glazing

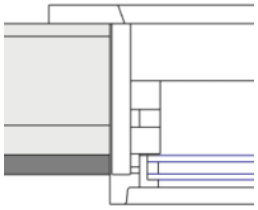
All Rylock Door and Window families (excluding Louvre Windows), feature the type-based tickbox parameter ***DoubleGlazing***. This can be used to update the glazing geometry and linework in all associated Plan, Section, and 3D views to represent either a single or double layer of glazing.



DoubleGlazing = OFF



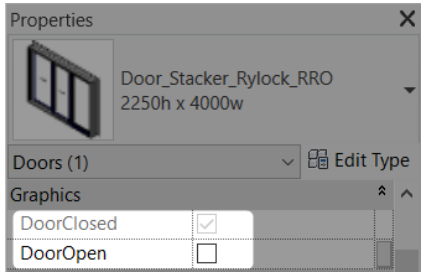
DoubleGlazing = ON



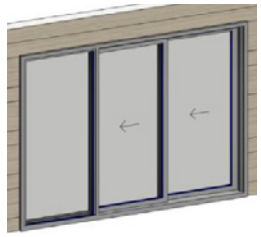
3.5.6 Display Open Door Panels

All Rylock Door families feature the **DoorOpen** instance-based tickbox parameter, which when active will update the position of individual panels in all associated Elevation and 3D views.

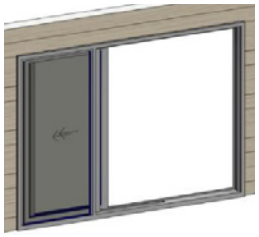
Please note that to ensure consistency in all floor plans, the Plan View representation of door panel positions remain in the closed position regardless of input to ***DoorOpen*** parameter.



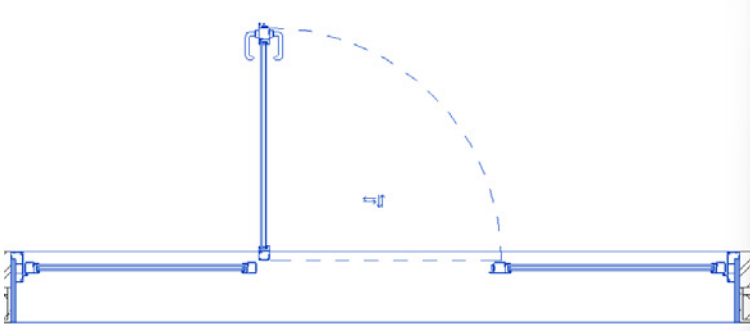
DoorOpen = OFF



DoorOpen = ON



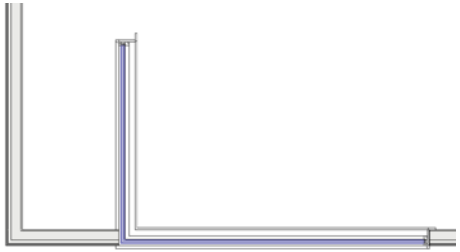
Note: Select products can display a partially open state - *where applicable*. Example below features the Bifold Door.



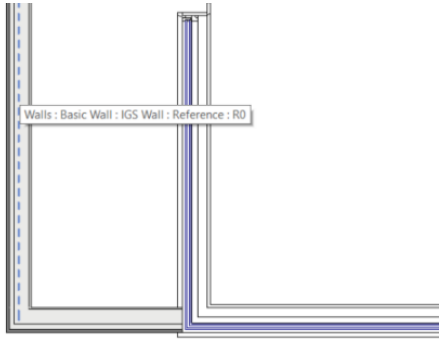
3.6 Corner Door/Window Placement

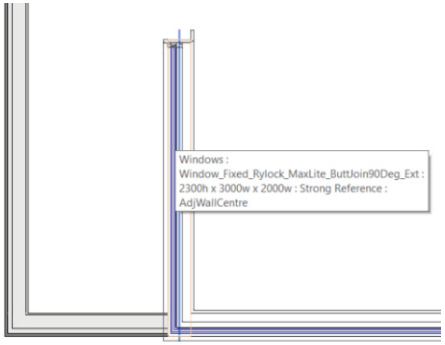
Placement of Rylock's range of Corner Doors and Windows requires a specific workflow to have the component cut an opening through both the primary hosting wall and the return length of wall as outlined below:

1. Place the Corner Door or Window family on the main host wall as per usual placement method (outlined in earlier sections).



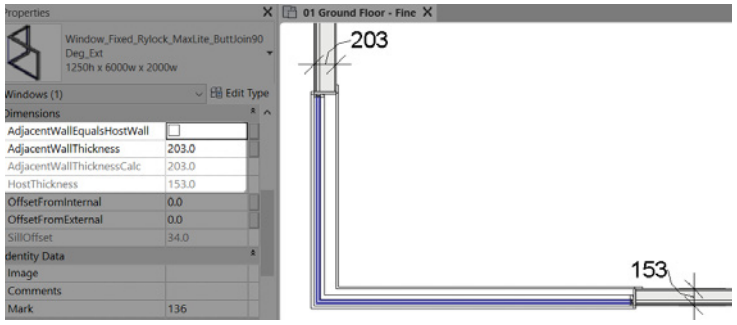
2. Using the Align tool in a Plan View, first select the centre of the adjacent wall, and then the ***AdjWallCentre*** reference located in the return length of the Door/ Window family.





3. Toggle the padlock icon to lock AdjWallCentre reference to the wall centre to have the Door/Window move automatically with the aligned and locked wall element.

4. If the primary hosting wall and the adjacent return length of wall are different thicknesses, the ***AdjacentWallEqualsHostWall*** tickbox parameter can be unticked. This will allow for manual input of the adjacent wall's thickness using the ***AdjacentWallThickness*** parameter.



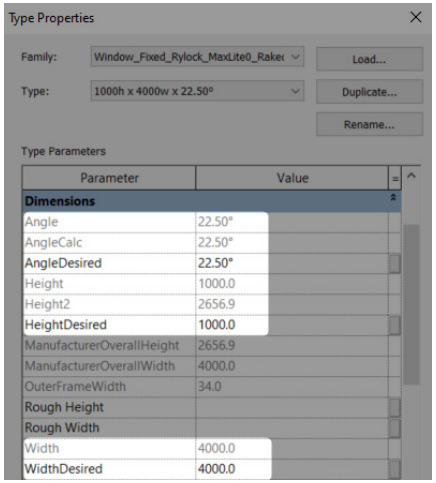
3.7 Raked Windows

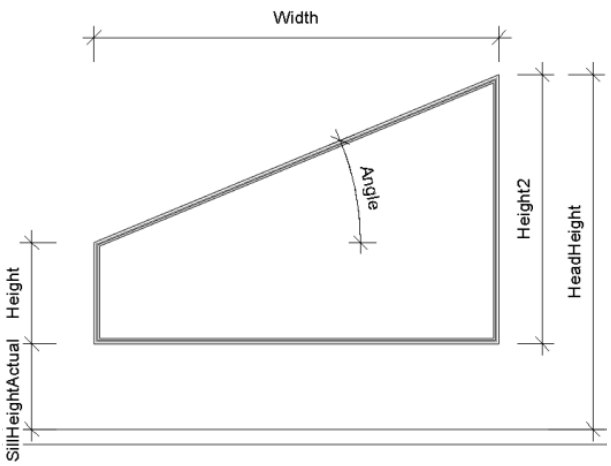
The workflow for controlling overall Width of the MaxLite Raked Window family is the same as standard windows via ***DesiredWidth*** parameter **(Section 3.4)**.

The ***DesiredHeight*** parameter is used to control the lower height of the Raked Window, with the larger height ***(Height2)*** being automatically calculated based on inputs to ***DesiredHeight, DesiredWidth,*** and the type-based ***AngleDesired*** parameter.

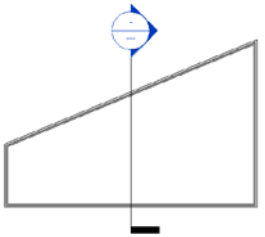
If the raked window size reaches the maximum height of 6m, the calculated ***Angle*** parameter will automatically validate to ensure an achievable panel size is maintained.

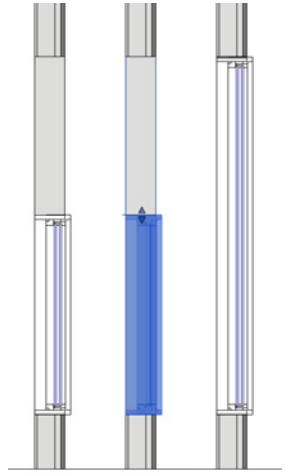
The sectional view of the Raked Window family comprises of a combination of both 3D model geometry and 2D linework. Revit cannot automatically detect where a section has been cut through the window and present the relevant detail, a dedicated workflow is required to address this issue.





1. Draw Section at desired location and open view.
2. Select Raked Window instance and locate the grip arrows.
3. Select and drag grip arrows up to the underside of the wall opening as shown in images to the right.





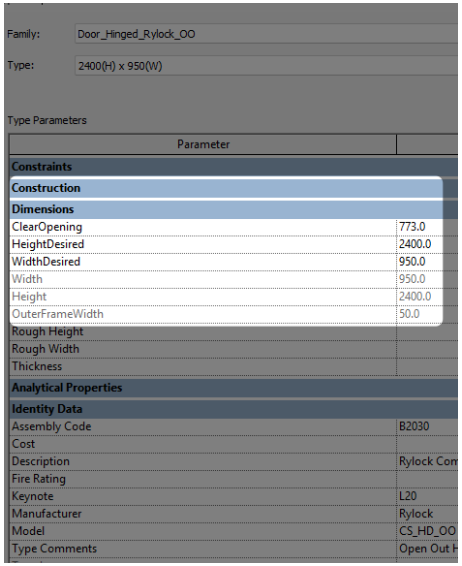
3.8 Clear Openings

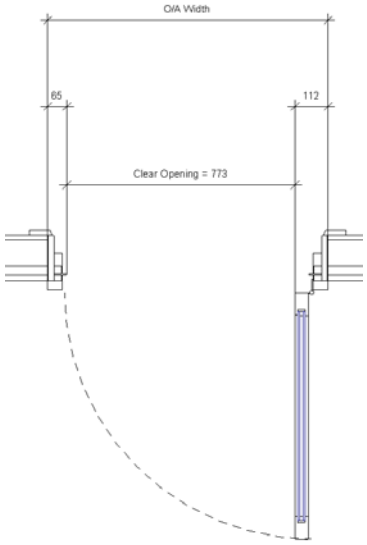
Clear openings are often a key consideration—whether for compliance or practical design outcomes.

All standard* Rylock door families include a ClearOpening parameter, displaying the actual clear width at the specified size. This allows Revit users to work with confidence, knowing exactly what clearance is available. Reference planes are also included, making it easy to annotate clear openings in plan view where required.

Note: Compliance requirements for entryways can vary depending on the standard being referenced (e.g., NCC vs AS 1428.1).

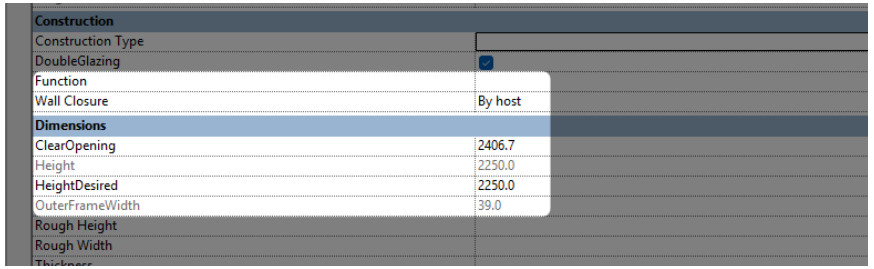
*The "ClearOpening" paramater is not displayed on **corner** sliding/stacker door configurations.*

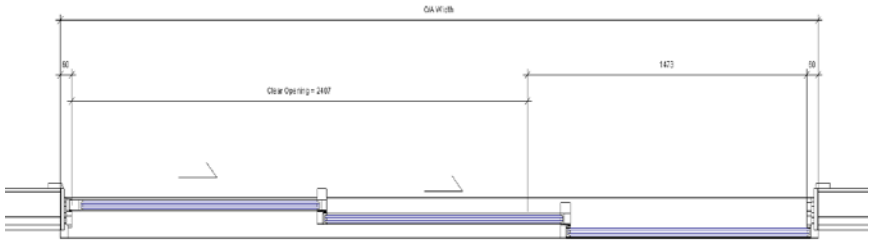




NCC 2022 - Liveable Housing Design Standard
Minimum clear opening: 820mm
Applies to at least one entrance door to the dwelling
Measurement taken when all door panels are fully open

AS 1428.1:2021 - Design for Access and Mobility
Minimum clear opening: 850mm
Must apply to any doorway within a "continuous accessible path of travel"
Measures the clear opening of the active door panel ONLY
Includes other factors (e.g. hardware clearance, operating force) that may impact the final clear opening depending on configuration.
Contact your Rylock Sales Consultant for assistance with AS 1428.1 compliance.





4.0 Closing Statement

The overarching goal in creating this Rylock Revit content library is to increase the ease in which Revit users can design, document, and specify Rylock products within the Revit environment. Rylock 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.

For further information and to download the Rylock window and door Revit Library Showrooms, visit the website:

https://www.rylock.com.au/resources/specify-rylock/