BIMPURE

PAMPHLETS

by: Nicolas Catellier, Architect
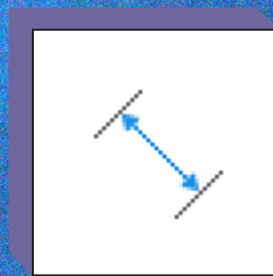
ISSUE #31
FAMILY
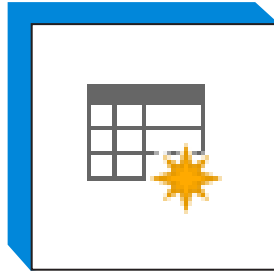# DIMENSIONS

PAMPHLETS COLLECTION
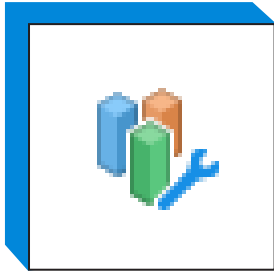
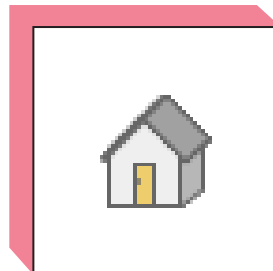ISSUE #1
WORKSETS

ISSUE #2
SCHEDULE

ISSUE #3
PHASES
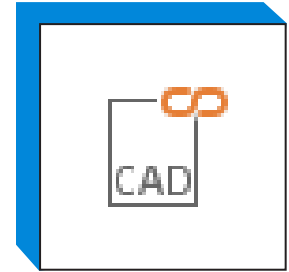
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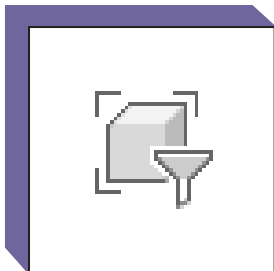
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ISSUE #7
3D VIEWS
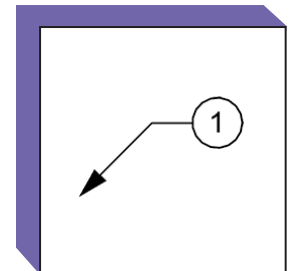
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PLAN NOTES
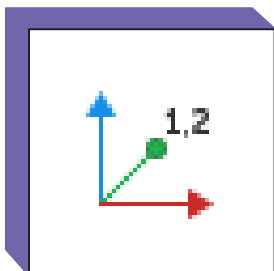
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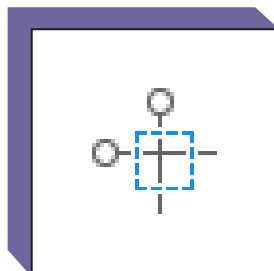
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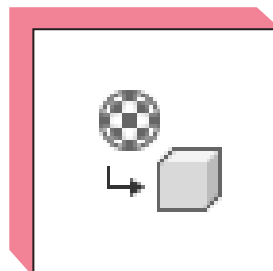
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FINISHES

ISSUE #12
LINE WEIGHTS

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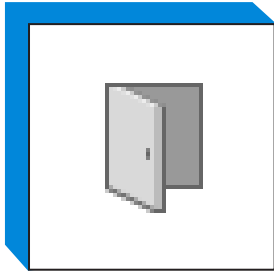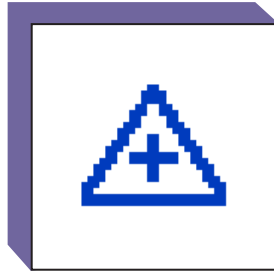
ISSUE #13
DOORS

ISSUE #14
SHARED SITE
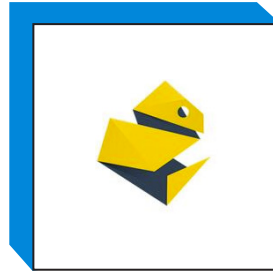
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PYREVIT

ISSUE #16
ADD-INS
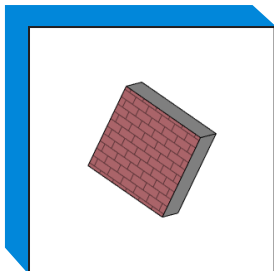
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SLANTED WALLS

ISSUE #18
RAILINGS PART 1

ISSUE #19
RAILINGS PART 2

ISSUE #20
PHASES PART 2
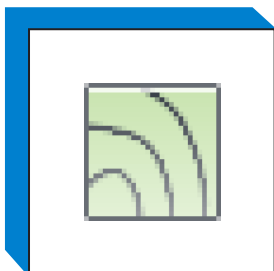
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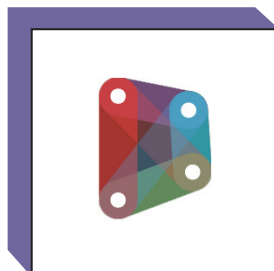
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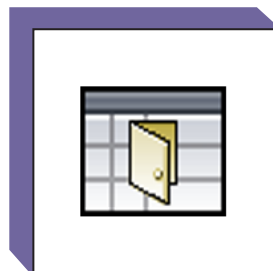
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DOOR SCHEDULES
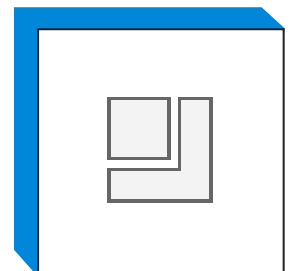
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FAMILIES

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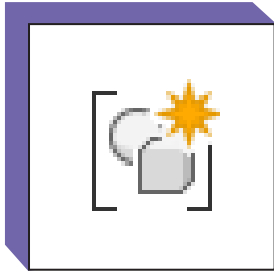
ISSUE #25
GROUPS PART 1
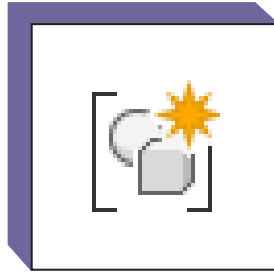
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GROUPS PART 2
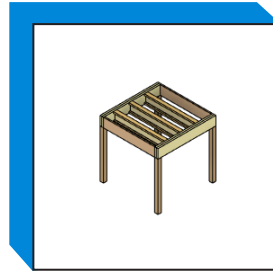
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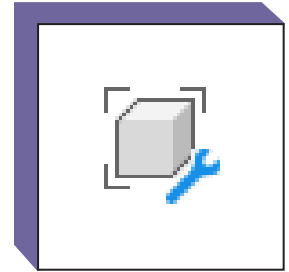
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FAMILY VISIBILITY

ISSUE #29
AUTO NUMBERING

L1-101A
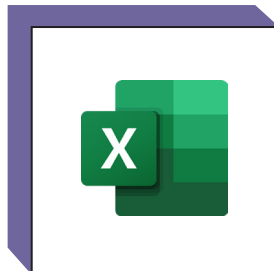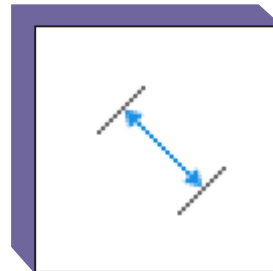
ISSUE #30
EXCEL

ISSUE #31
FAMILY DIMENSIONS

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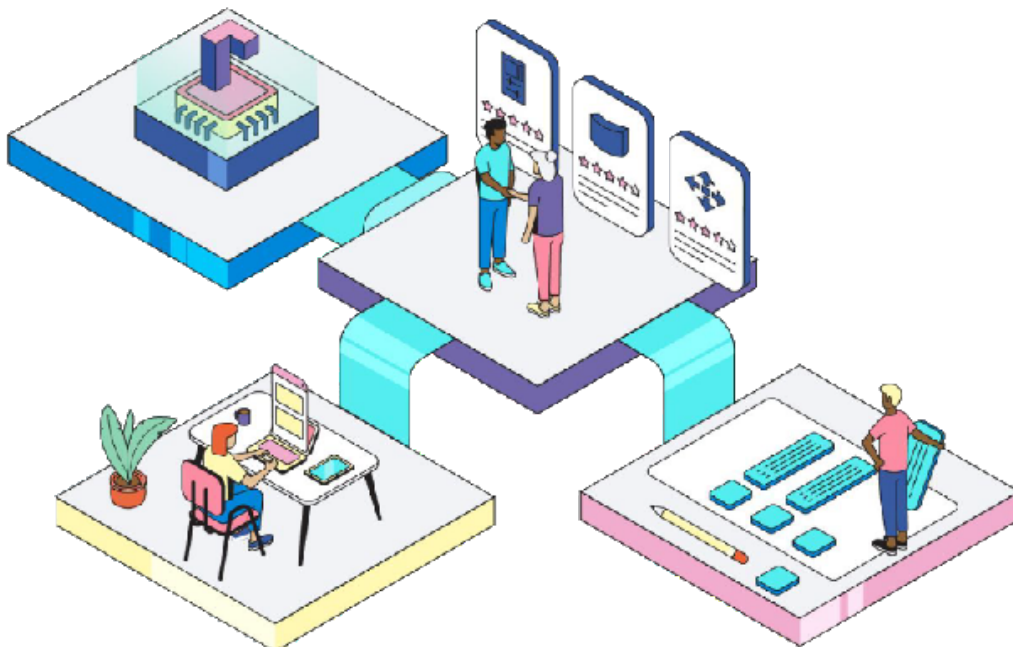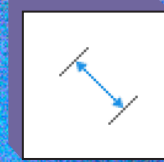
WHAT IS THIS "PAMPHLET"?

BIM Pure Pamphlets are published 4 times a year by email. Each edition covers a particular Revit theme. We like to pick themes that are complex and confusing. Our job is to make these topics simple for you.

ABOUT FAMILY DIMENSIONS

This is part of our upcoming course about Revit families called HEROIC FAMILIES. This course will be part of the new BIM Pure platform.
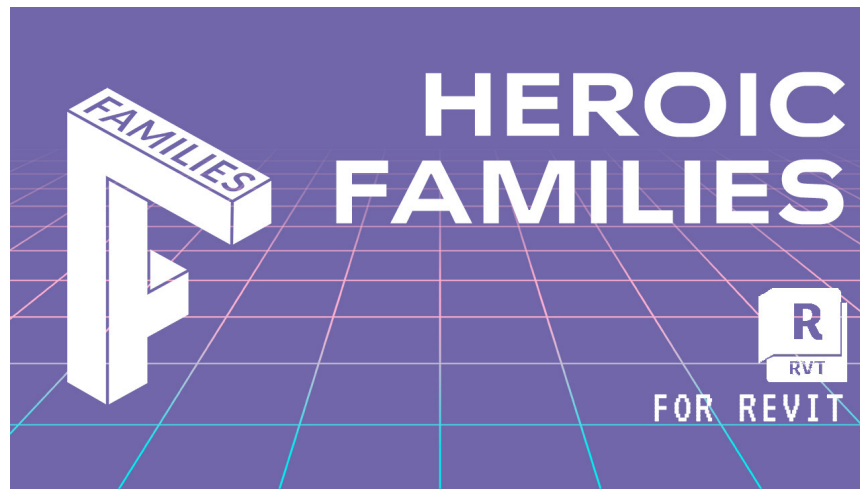
This pamphlet covers multiple ways to control the dimensions more easily. That includes:

1- Adding blue grips to control family dimensions in 3D views.
2- Rounding the dimensions to specific increments.
3- Show a 3D text warning if acceptable dimensions are exceeded.

Click here to watch the video tutorial of this pamphlet

ROUNDING DIMENSIONS

In this example, we'll add dimension features to this casework family. First, we'll create a rounding feature to the width parameter. This way, the family width is going to be limited to 50mm increments.
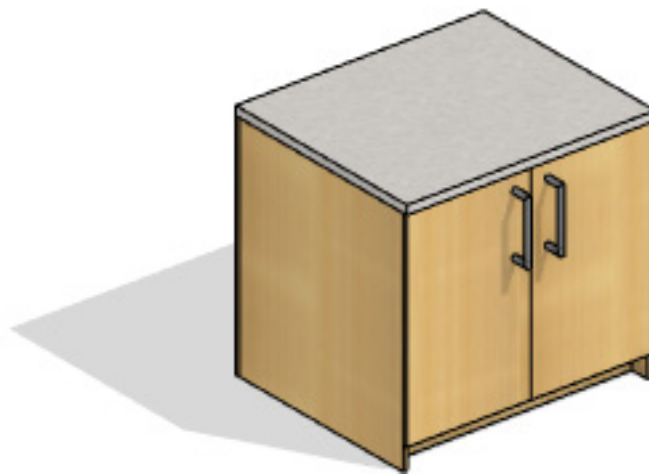
#1 - CREATE A NEW "ACTUAL WIDTH" PARAMETER

Inside the family, you need two parameters:

1- **User Width**: this parameter is controlled by the user.
2- **Actual Width**: this parameter is driven by a formula.

Rename Width to **User Width**. Create the new parameter called Actual Width. It should be a **Length**, Instance parameter.
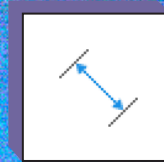
#2 - ADD THIS ROUNDING FORMULA

Now, you can add a rounding formula to the **Actual Width** parameter. Use this:

*round(User Width/50mm)*50mm*

Dimensions		
Actual Width (default)	1050.0	=round(User Width / 50 mm) * 50
User Width (default)	1040.0	=

As you can see, Actual Width is now rounded to the nearest 50mm increment. Of course, you can replace 50mm by any value you want.

For example:

1010mm is rounded to 1000mm.

1040mm is rounded to 1050mm.

Congrats, the **Width** value is now linked to increments. You can add this option to any length parameter you want in the family.

CREATE GRIPS IN 3D VIEWS

By default, families with instance length parameters will show blue grips in 2D views. For example, you can see grips in the plan view:
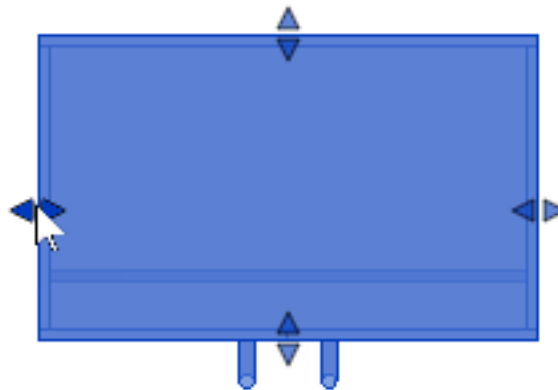
But if you go to a 3D view, there are no grips.
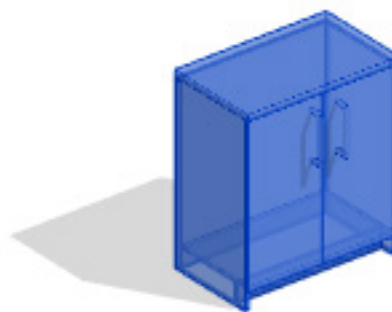
To add grips, you'll have to add constrained reference lines or model lines to the family.
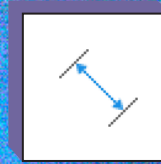
#1 - ADD 4 REFERENCE LINES TO THE FAMILY

Use the reference line tool, and place a line for each side of the family. Place the line slightly beyond the reference plane, just like this:
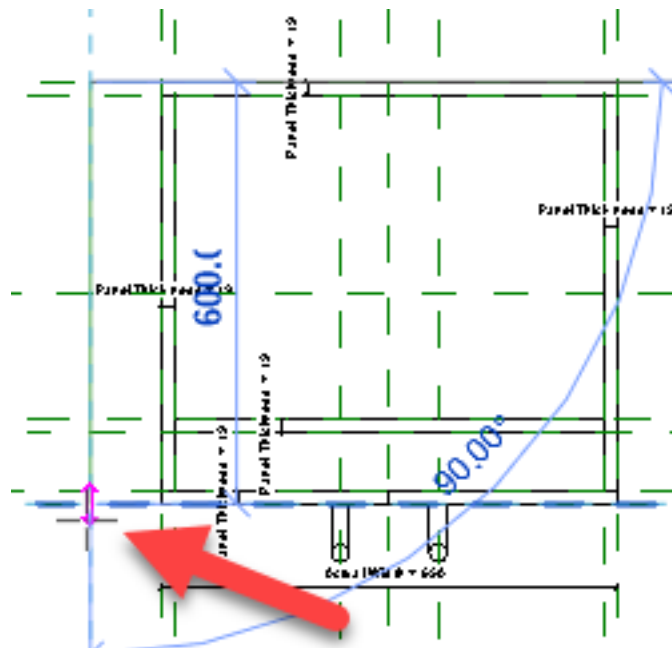
#2 - CREATE A NEW REFERENCE LINE SUBCATEGORY

Properly visualizing the reference lines can be rough, since they are the same color as the reference planes. Select the first reference line, and create a new subcategory:
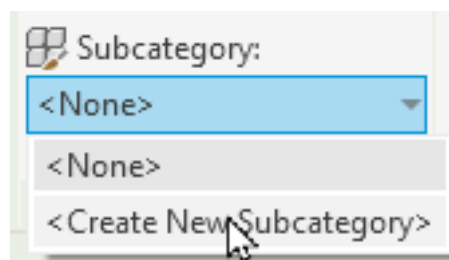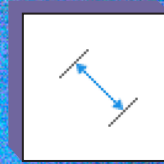
Enter a name such as Dimensions for this subcategory:

Name:

Dimensions

Subcategory of:

Reference Lines

Then, set a flashy color:

Reference Lines	1	■ RGB 000-127-000
Dimensions	1	■ RGB 128-000-255
Reference Planes	1	■ RGB 000-127-000

You should see the 4 reference planes just like this:

#3 - ADD DIMENSIONS LABELS FROM THE REFERENCE LINE TO A REFERENCE PLANE

Now, add a dimension from each reference line to the reference plane on the other side.
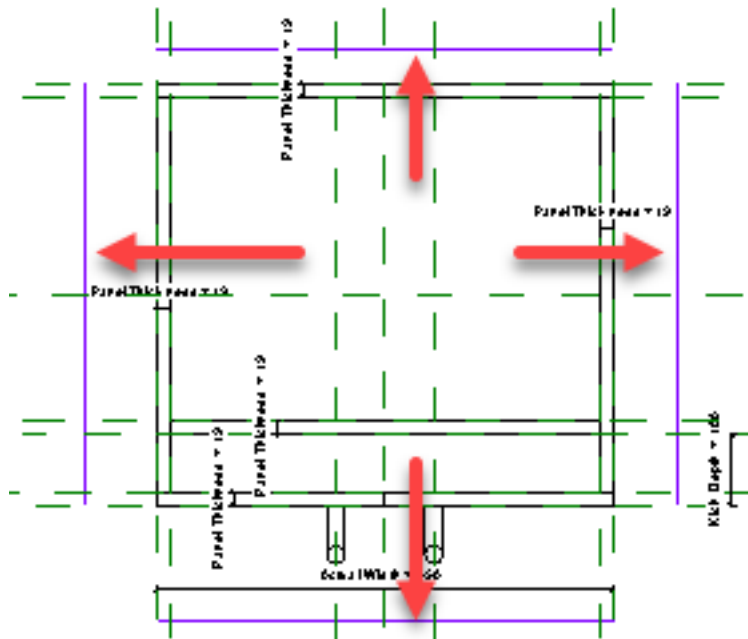

For each dimension, add the correct label. In the case of the Width, you can use the **User Width** dimension. The reference line will be on top of the reference plane. Except for the User Width, which will be the unrounded value, so not exactly on top of the Actual Width.

Repeat this for the 4 dimensions. In the image below, the 4 dimensions linked to reference lines are in red, while the other dimensions are in black.
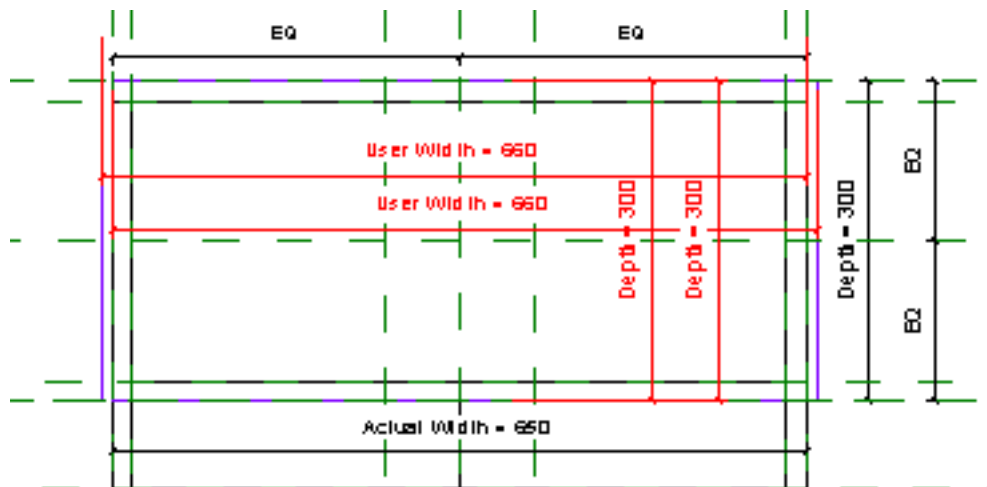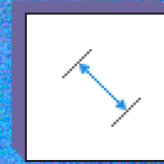
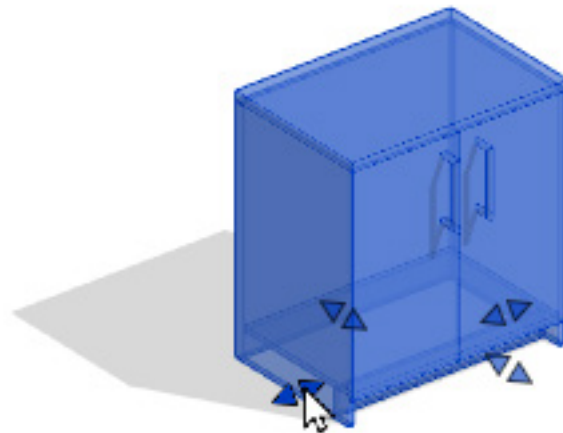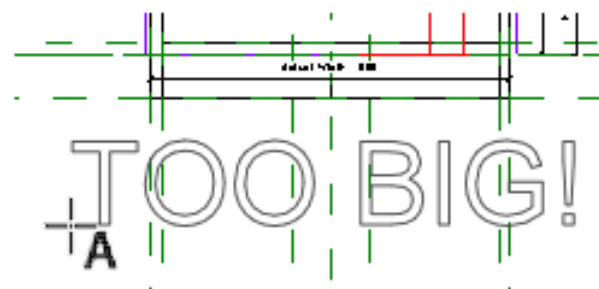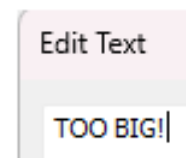## #4 - LOAD THE FAMILY INTO THE PROJECT AND TEST

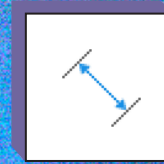Once loaded in the family, you should see the grips in 3D views:

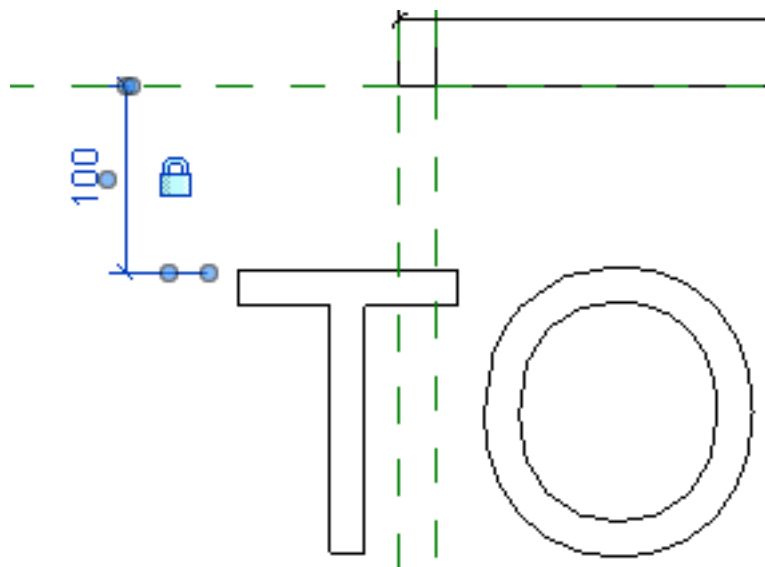# CREATE 3D TEXT WARNING

#1 - MODEL THE 3D TEXT

In the family, use the "Model Text" tool. Enter a text, such as "too big" or something else. Place the instance in front of the family.
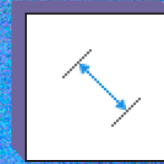
#2 - CONSTRAIN THE MODEL TEXT

Add a dimension between the model text and the front reference plane. Lock the dimension. This is to ensure the 3D text doesn't intersect the geometry if the depth gets too big.
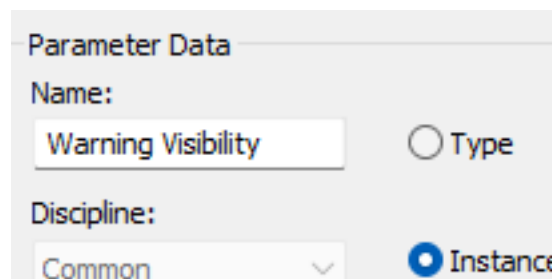
#3 - ADD A VISIBILITY PARAMETER

Click here to assign a visibility parameter to the model text.

Call it "Warning Visibility" or something similar. This should be an instance parameter.

#4 - ADD A VISIBILITY FORMULA

Add a formula such as *Actual Width > 1200mm*. Adjust the value to fit the maximum you want.
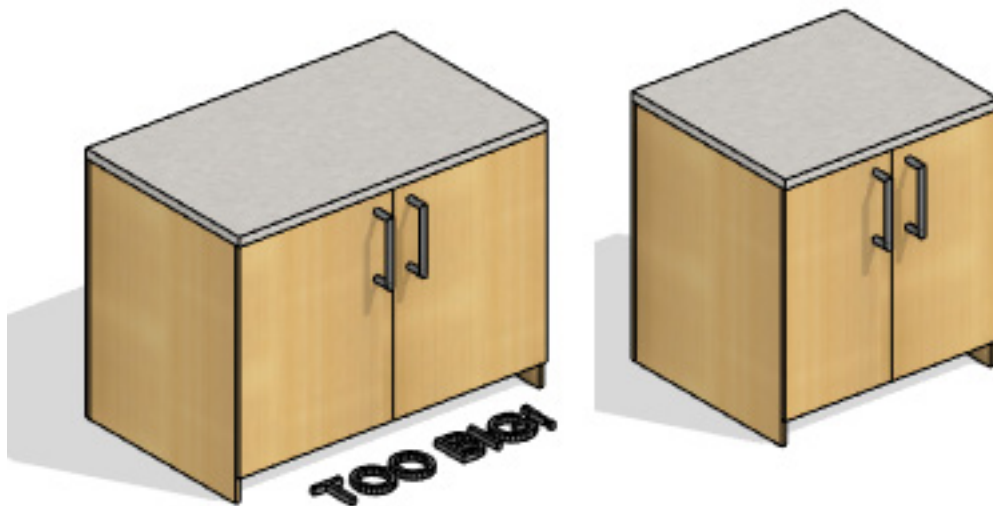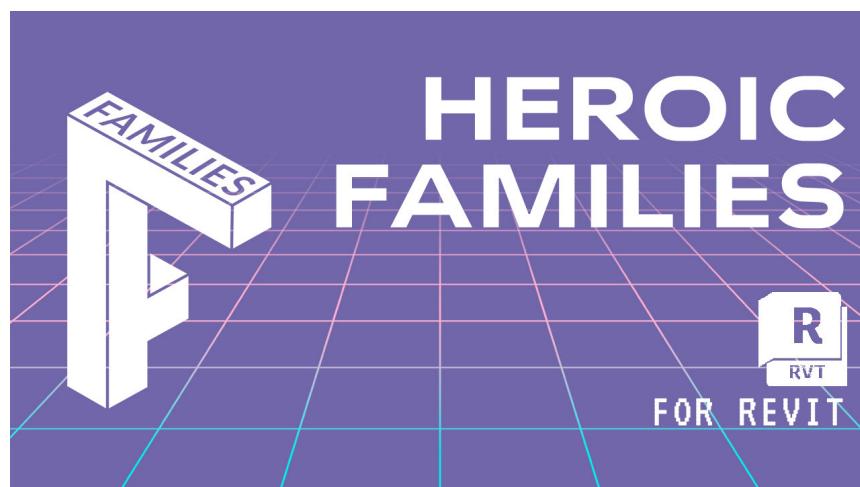
#5 - LOAD THE FAMILY BACK INTO THE PROJECT

Load the family back and test it. You should see this 3D text when the width gets too big.

That's it for now. There are even more special tricks like this you can learn in our new HEROIC FAMILIES course for Revit, which will be released in February 2024. Click here to get on the course waitlist, and receive a coupon when it is released.

THANKS FOR READING!

As always, send your thoughts to pamphlets@bimpure.com. We read and answer all emails. Also, please send us your request for upcoming pamphlets.