

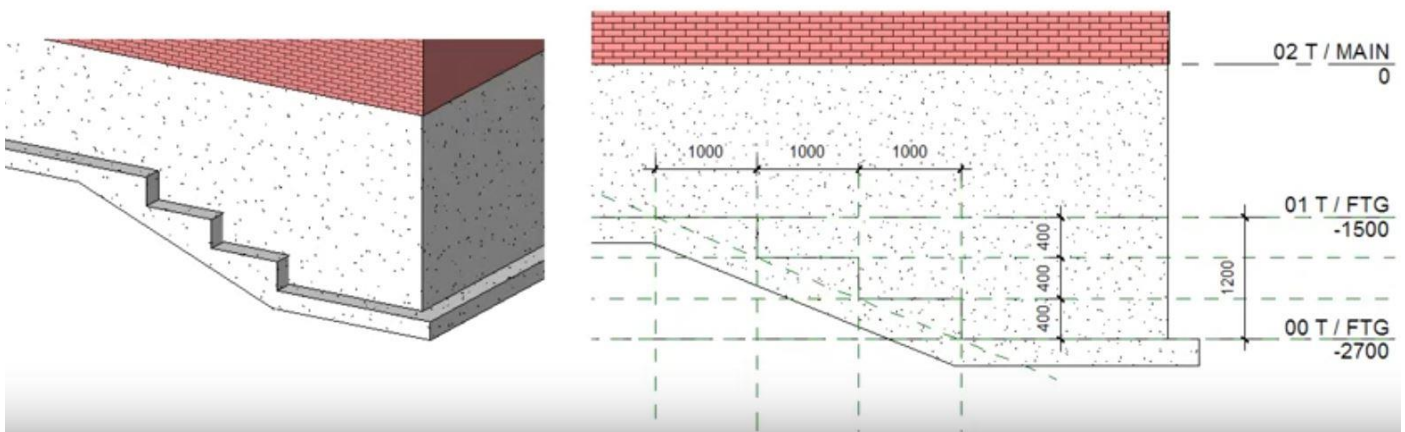
# Revit Architecture 2017 – Stepped Foundations

## Revit Architecture 2017: Stepped Foundations

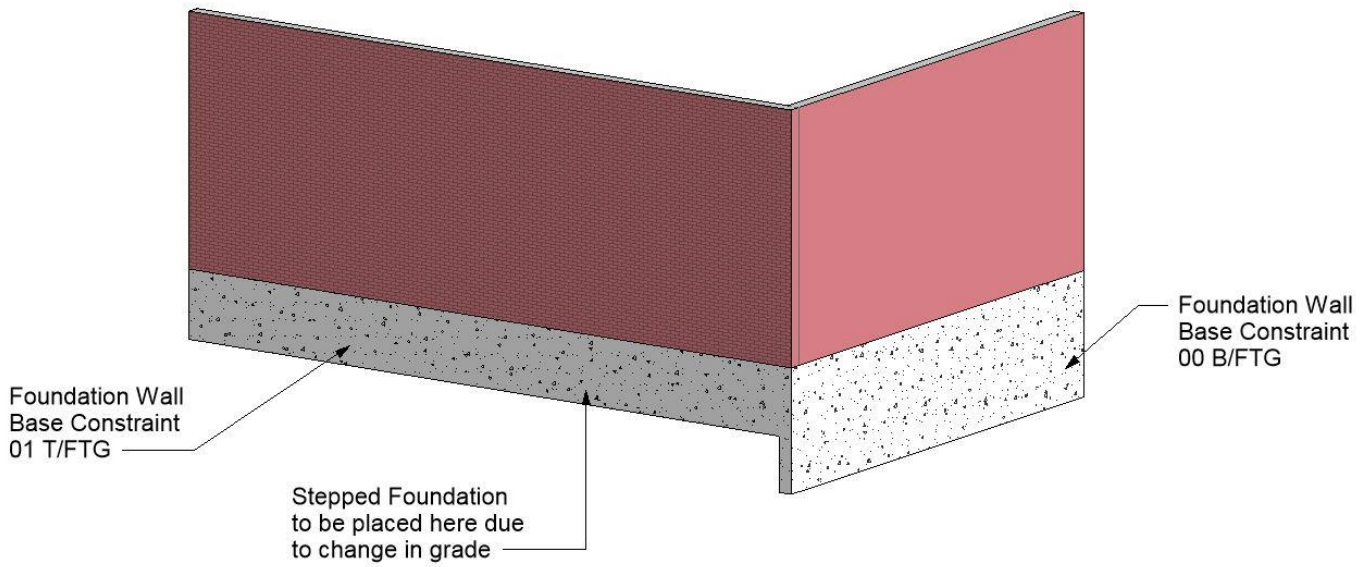
This White Paper shows us how to create a stepped footing/foundation where there is a change of grade.

### Introduction

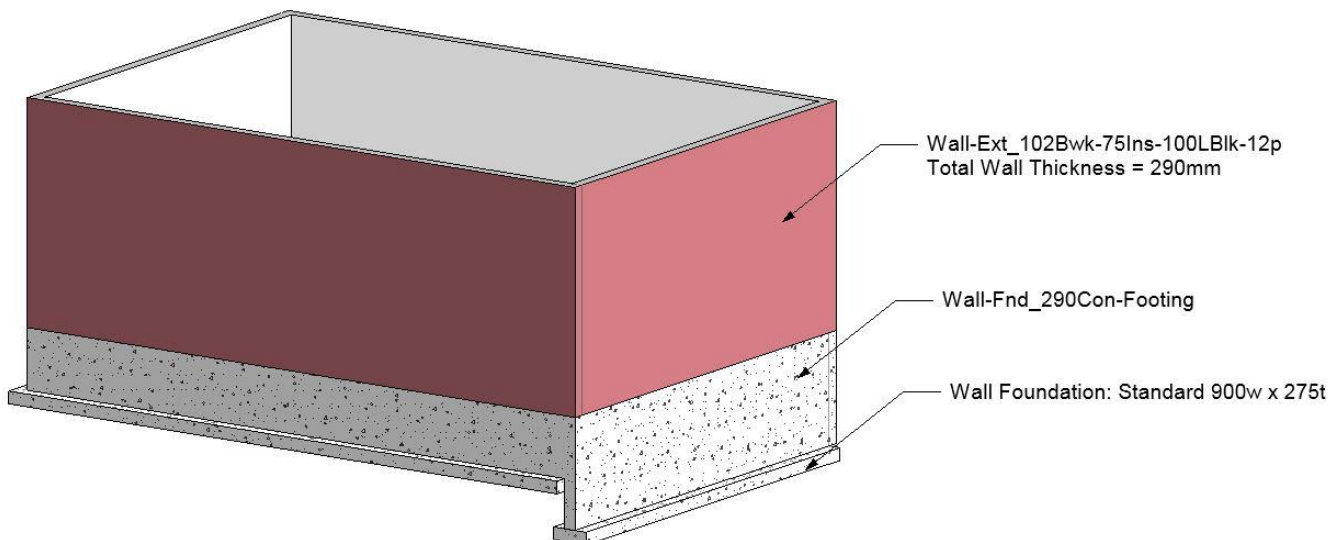
Follow the steps and illustrations to create a stepped footing/foundation as shown on the left. Use reference planes to create the framework for the stepped foundation as shown on the right.



### Stepped Foundation: Stage 1



### Stepped Foundation: Stage 2

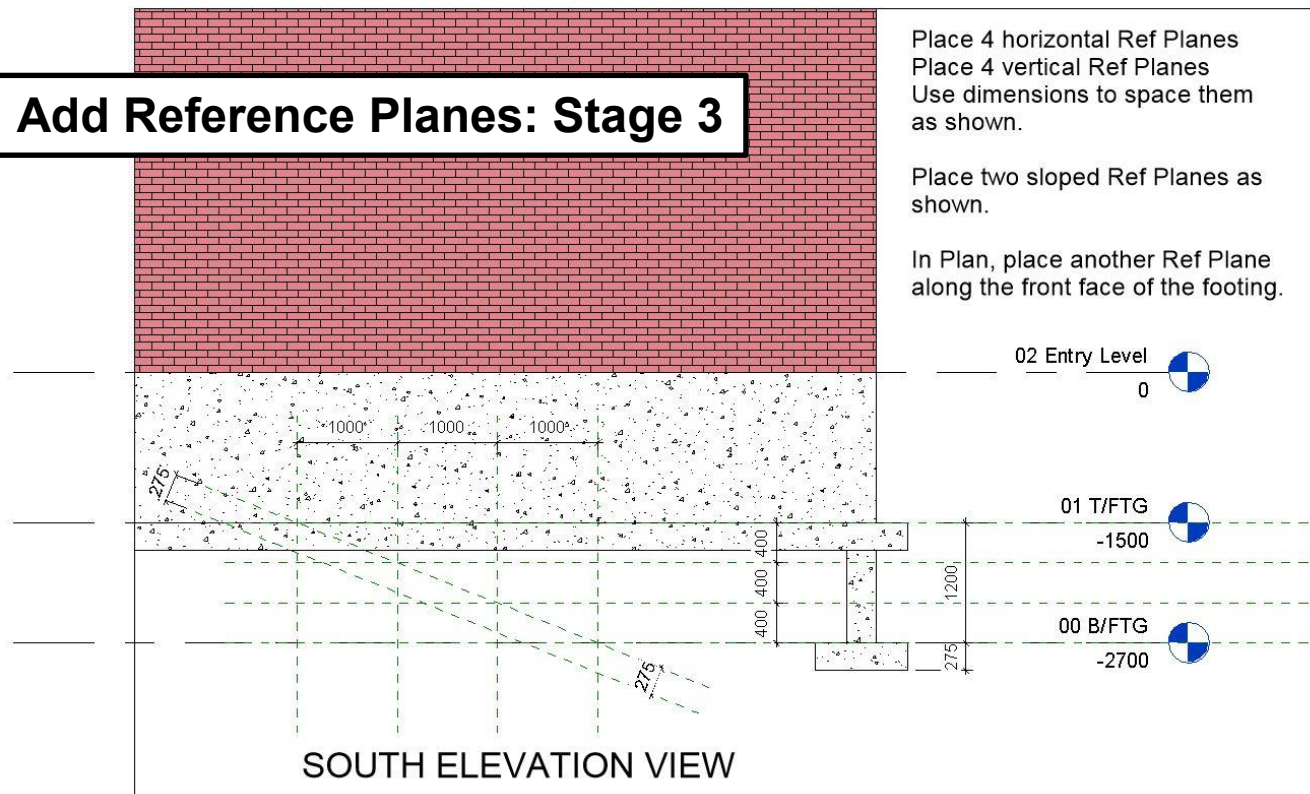


## Add Reference Planes: Stage 3

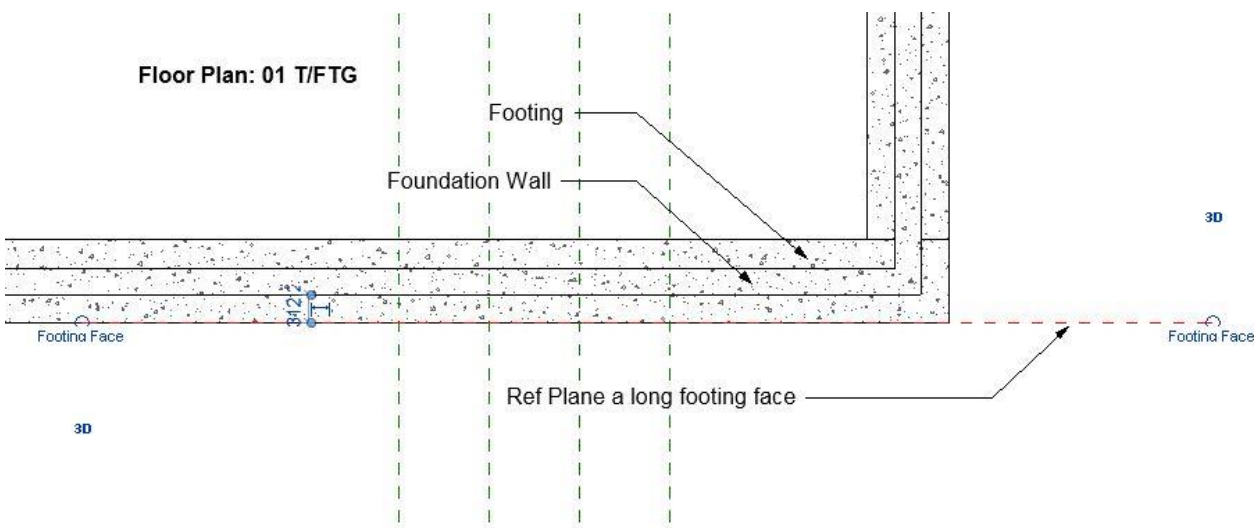
Place 4 horizontal Ref Planes  
Place 4 vertical Ref Planes  
Use dimensions to space them as shown.

Place two sloped Ref Planes as shown.

In Plan, place another Ref Plane along the front face of the footing.

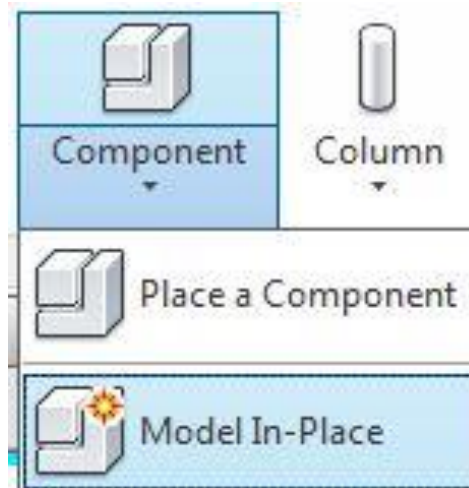


## Add Reference Planes: Stage 3

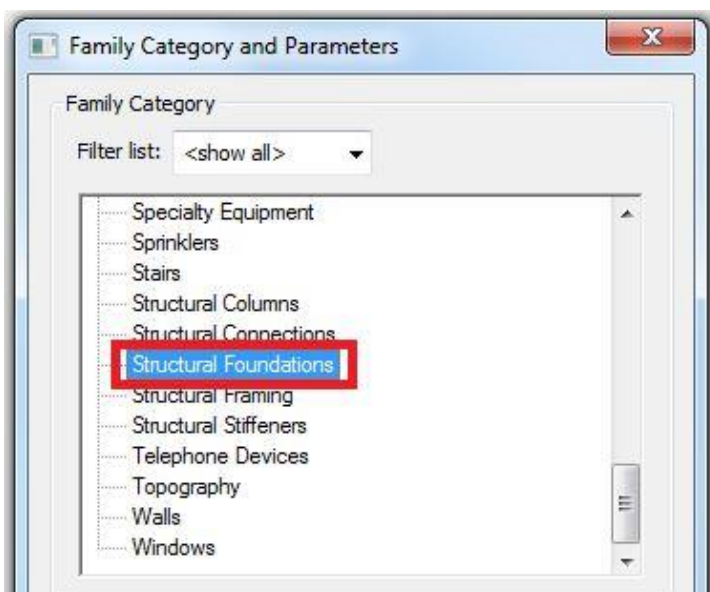


This Reference Plane (Footing Face) is where we will draw the stepped footing profile.

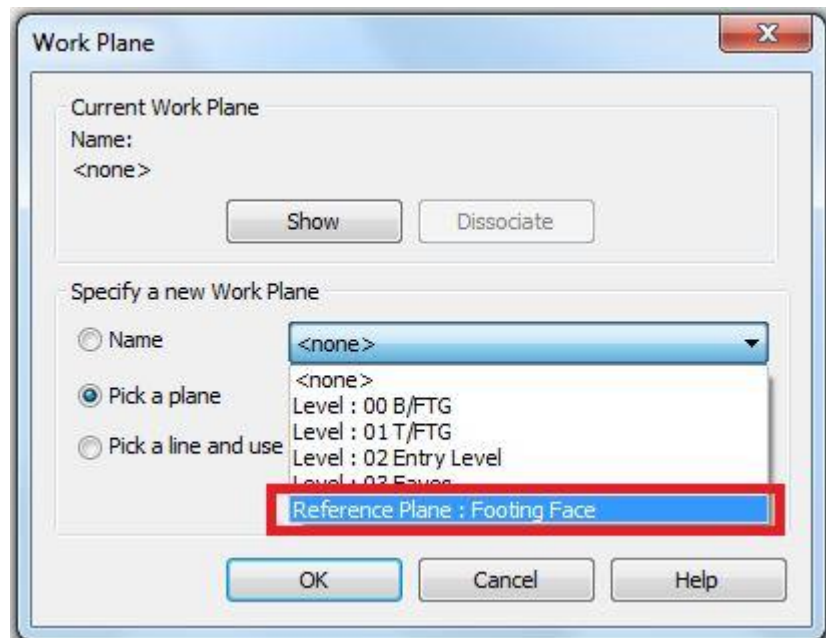
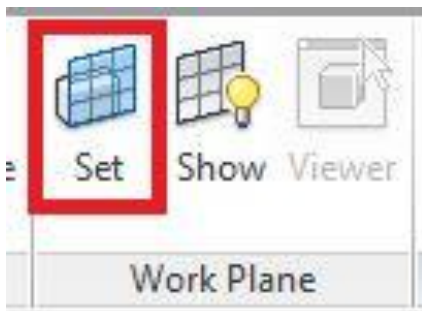
## Model In Place: Stage 4



On the Ribbon, click the drop down on Component and select **Model In-Place** (this creates a component that is unique in the project).  
 Select the correct category – **Structural Foundation**.  
 Name it: **Stepped Footing 1**.



## Model In Place: Stage 4



In Sketch Mode, select the set button from the Wok Plane panel.

Select Reference Plane: Footing Face. Click OK.

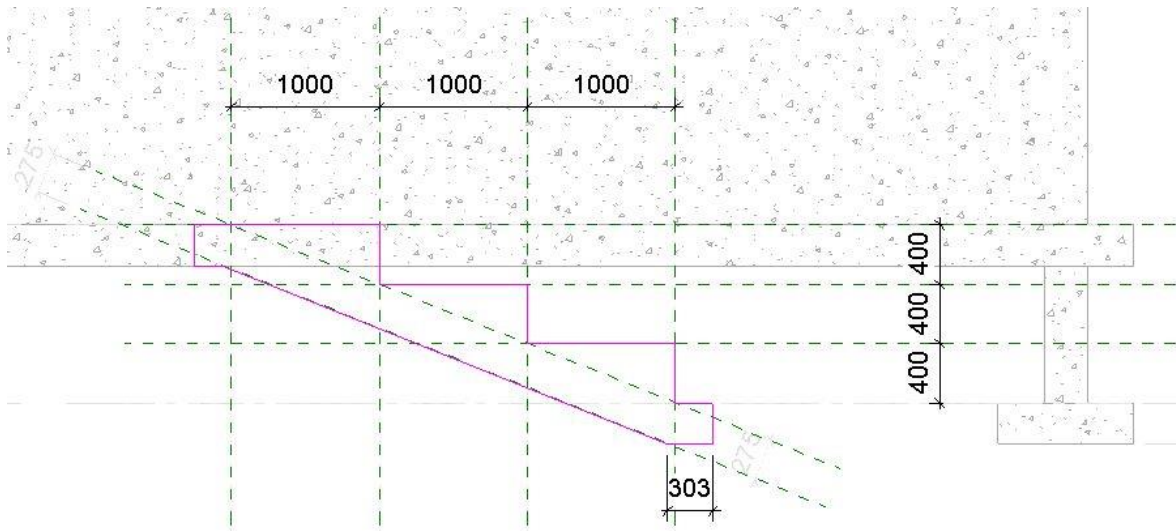
From the Create Forms Panel, select **Extrusion**.



Set extrusion depth in properties – set extrusion end to be 900mm.

Use the line tool to sketch the stepped footing profile.

# Model In Place: Stage 4

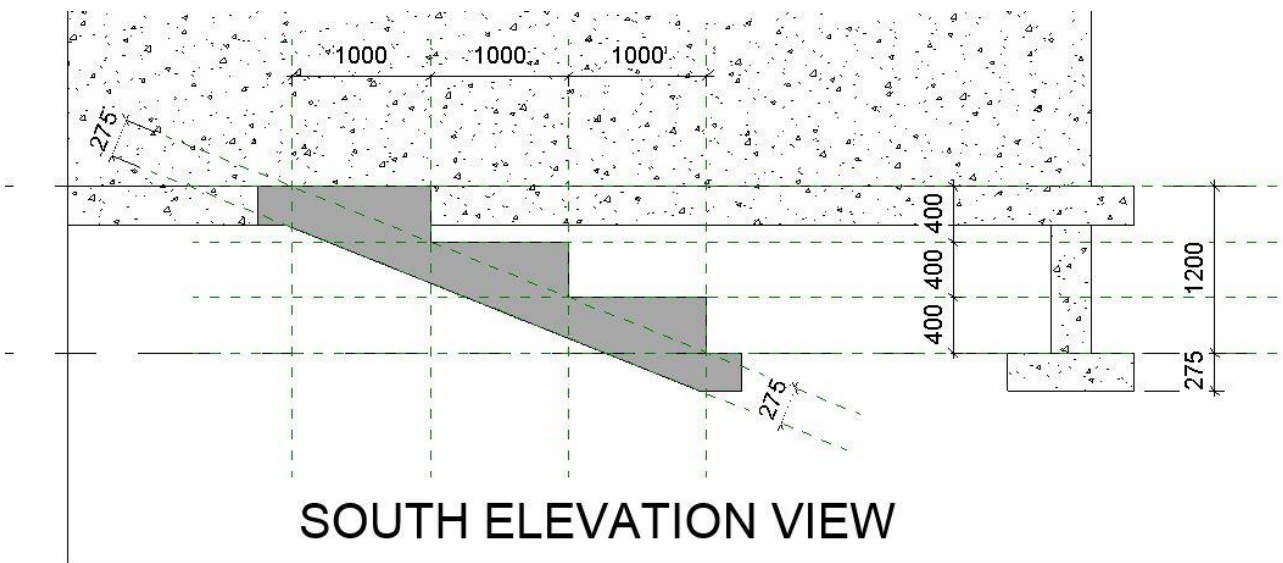


SOUTH ELEVATION VIEW

Click Finish Edit Mode. Click Finish Model

# Model In Place: Stage 4

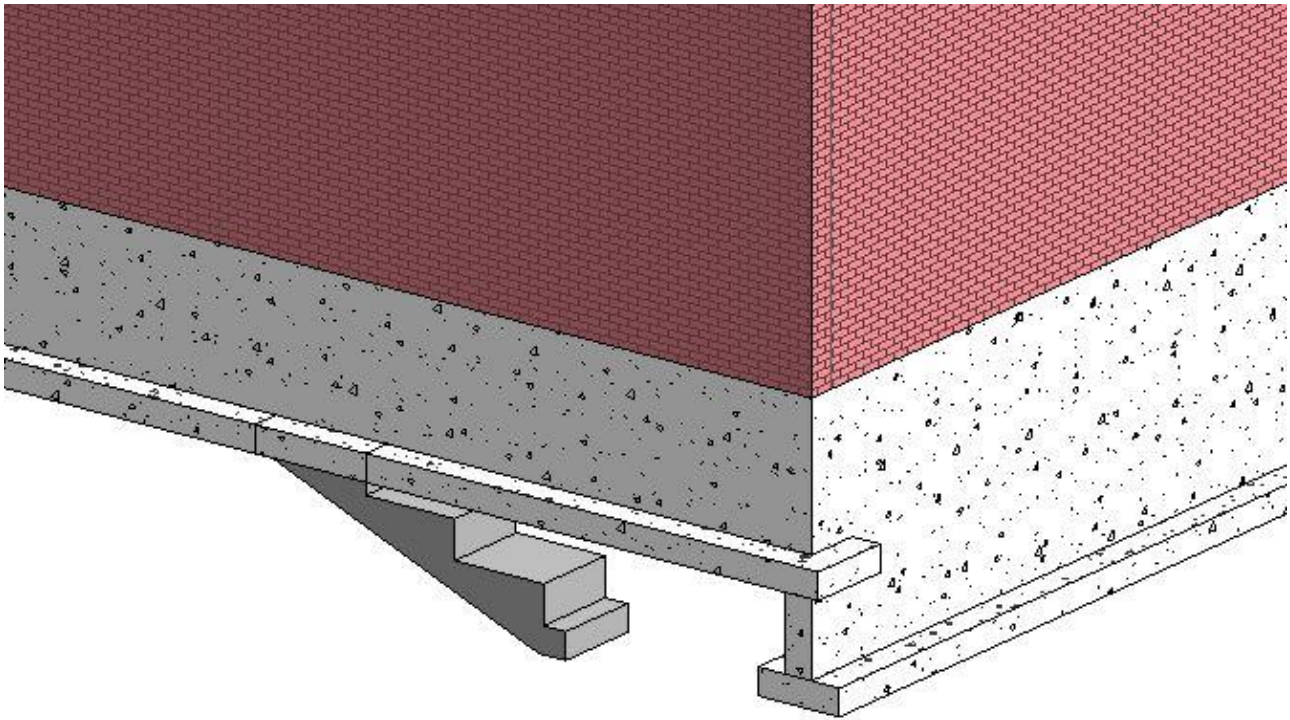
The extruded form should look like this.



SOUTH ELEVATION VIEW

## Model In Place: Stage 4

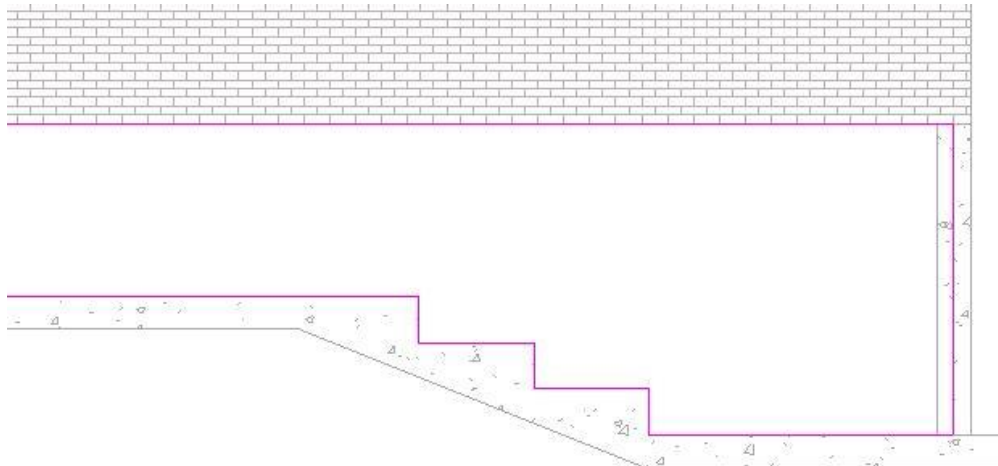
The extruded form should look like this in 3D



Use the align tool if necessary to align the back and front faces of the extrusion to the front and back faces of the strip footing. You can align and lock them.

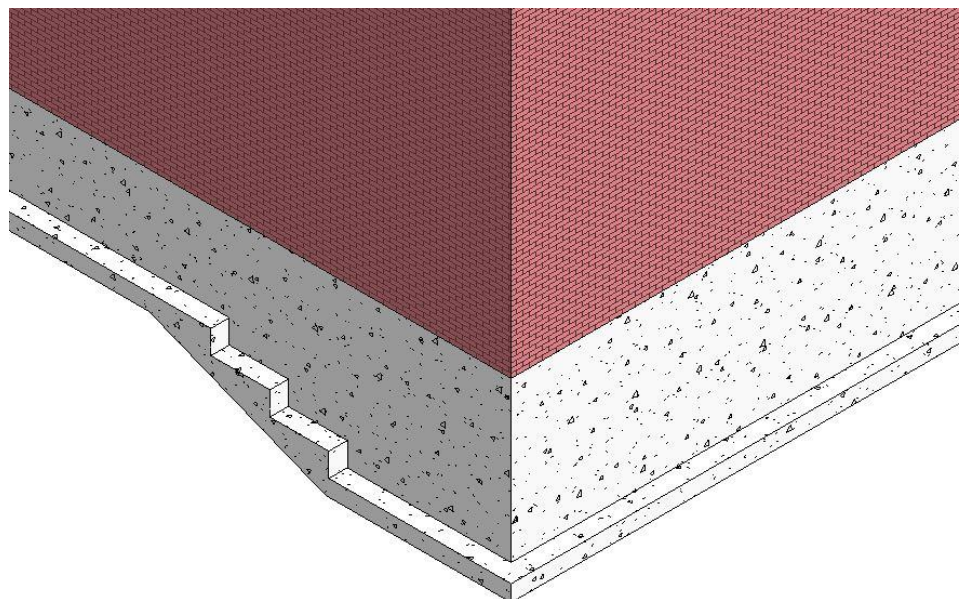
## Edit Wall Profile: Stage 5

Edit the wall profile to follow the profile of the stepped footing.



Finish edit mode and apply the same material to the new stepped footing as the foundation wall. In this example both are concrete cast in situ. Use the join geometry tool to blend everything together.

## Stepped Footings 3D View



**Date: December 2016**