Placing a recess in a slab

## How to create in place void family for Slabs

Revit Architecture, Revit MEP, Revit Structure

When you create a void through a slab whether that's by editing the slab profile or placing a shaft through the building, it won't create a recess in the slab just a void straight through the slab(s) in question. So to get around this I would recommend you create a void family which can place into the slab to form a recess. I have put this White Paper together to explain how to do this.

How to create in place void family

To create a slab recess you need to go to the *Application Menu* , *Select New > Family,* Select *Metric Generic Model floor based.rft* and click *Open*.

1. Start by adding Reference Plane *Ribbon Create (TAB) > Datum > Reference Plane.*
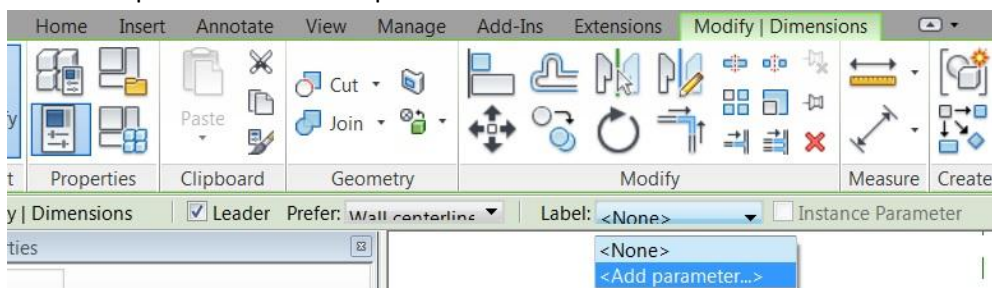2. Add four Reference Planes as shown in below image.
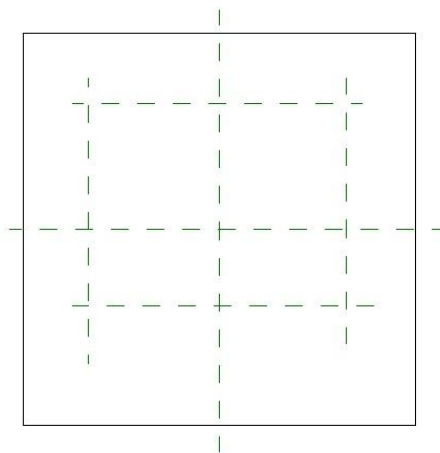
3. Switch a front view and add a Reference Plane about in the middle of the slab below the Ref. Level, as shown in following image.
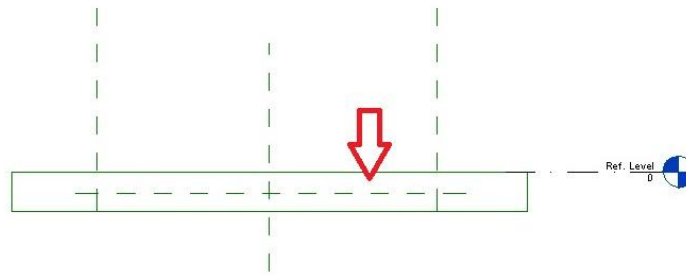
4. In the **Front** view add a dimension from *Reference Plane* to *Ref. Level/top of slab*, as shown in below image. If you select the Reference Plane and move it up and down the dimension will update.
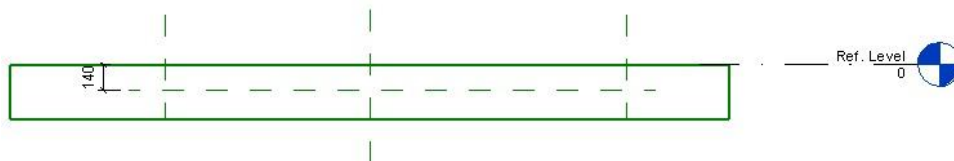

5. If you pick the dimension and under the Ribbon you should see on the options bar Label and a drop down menu, select Add parameter from drop-down menu.

6. In the *Parameter Properties dialog* box under *Parameter Data: Name:* **Recess Depth,** *Group parameter under:* **Dimensions** and select **Instance**. As shown in below image.
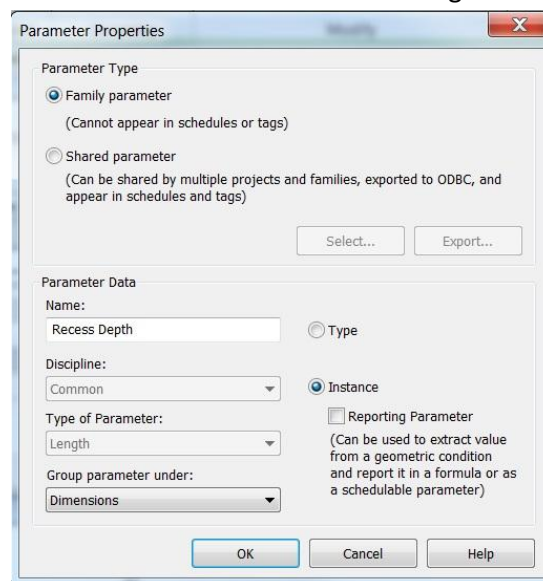
7. Switch back to the *Ref. Plan* view and add dimensions from the new Reference Planes you added to centre Reference Plane and make them equal and overall dimensions as shown below.
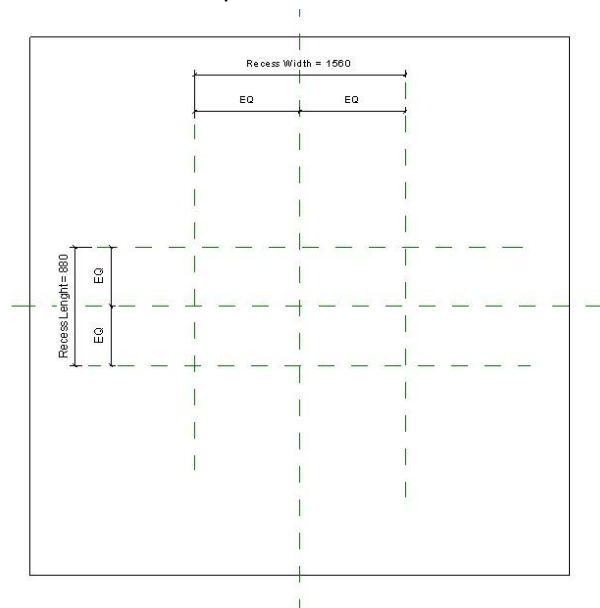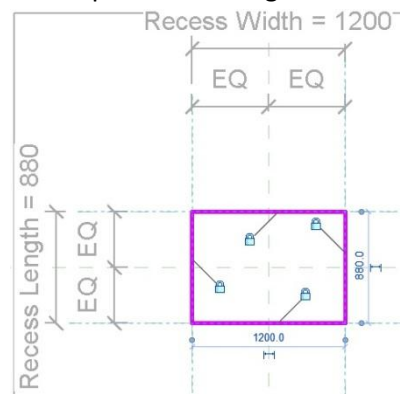

8. Doing the same as noted in 5 & 6 add labels **Recess Width** and apply it to the overall horizontal dimension, and **Recess Length** and apply it to the overall vertical dimension. So it should look something like the above image.

9. If you click on the Family Types icon which can be found **Ribbon Create (Tab) > Properties >** 🔲 **Family Types** or **Ribbon Modify (Tab) > Properties >** 🔲 **Family Types.** In the Family Types dialog box you can adjust the value and everything should update automatically in the family.

10. We now need to add an extrusion from **Ribbon Home (Tab) > Forms >** Extrusion **Extrusion,** the view should now grey out everything in view. Select either a line of rectangle tool and pick the Reference Plane lines you have drawn to create a box/rectangle.
    You should see a padlock along every line, click on each padlock to lock them to the Reference Plane. As shown in below image.
   In the Properties dialog box or on the option bar change the Extrusion Depth to **-50**, then click **OK**.

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11. Switch to a *Front* view select the Extrusion and use the *Align* tool and then align it and lock it to the *Reference Plane* you placed earlier and lock it. As shown in the below image.
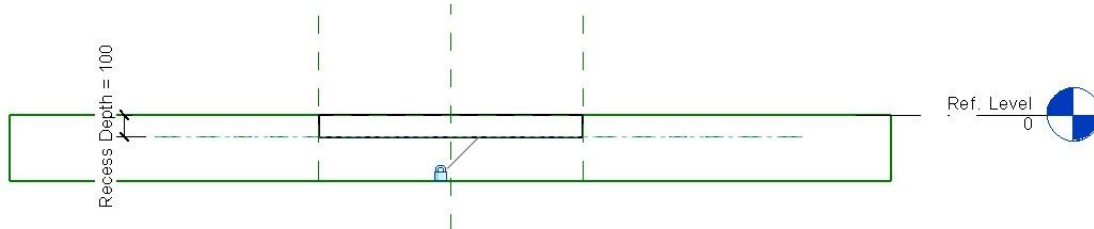

12. Do the same with the top of the Extrusion and align and lock it to *Ref. Level*.
13. If you want to check everything is working ok, then either just grab the Reference Plane and move them or change the Parameter value from the Family Types dialog box.
14. The Extrusion is currently a Solid so we need to change it to a Void, so select the Extrusion and in the *Properties dialog* box scroll down to *Solid/Void* and change it to *Void*.
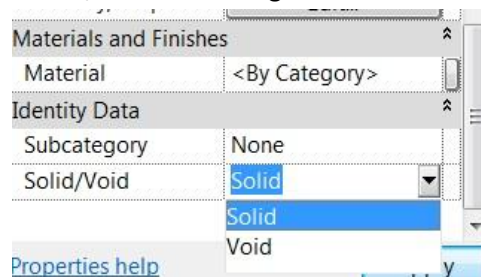

15. We need to cut the Extrusion to the slab so we can use it. So select the Extrusion and select *Cut* from the *Modify|Extrusion Ribbon*, now select the Extrusion and then the slab.
16. If you switch to 3D view you should be see a void in the slab.

17. Now save the family, click on the ![icon] *Application Menu (BIG R) > Save As > Family*, called it *Slab Recess*.

18. To load it into a Project simply click ![Load into Project icon] *Load into Project* icon from any of the *Ribbon (Tabs)* and place it on a floor slab.

19. *Ribbon Structure (Tab) > Model >* ![Component icon] *Component,* place the void into the slab and adjust the width, length and depth.
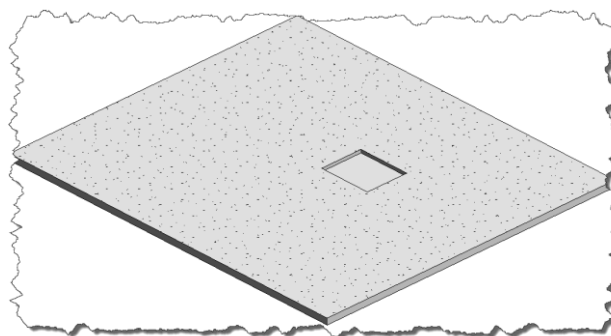
Please note I have created the above family as a simply square box but you could do this any shape you wish.