

# Cells as Models Exercise

## Metric Measure

### Level 2 Module 7



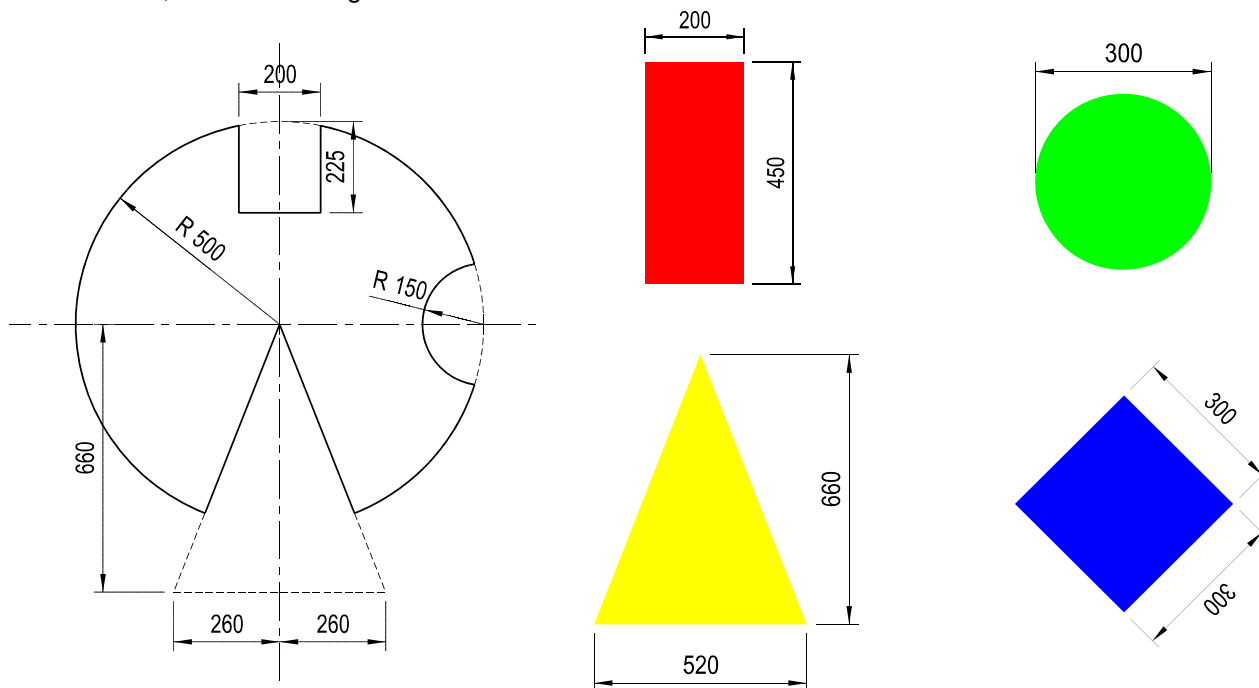
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This exercise is best done after completing Module 7 of our MicroStation 2D Level 2 Training Manual.

This is a simple exercise designed to reinforce the use of *models as cells* in design files. It assumes that you have read and understood the cell, reference and model information in Modules 6 and 7 and know how to make and attach references and to place cells.

If you have already drawn the objects used for the Module 6 Reference Exercise you can ignore Steps 1-5. Otherwise, do the following:



- Step 1** Open a new *Design file* called: **RefEx**.  
Set *Working Units* to *millimeters* so that you can work in millimeter units (see Level 1, end of Module6).  
Make any other settings you think necessary.  
Open a new *Design model* named **Plate** and setting the “Can be placed as a cell” option to ON.  
Draw the *circular plate* shown above at the left in the Plate model.
- Step 2** In the *RefEx* file, open a new *Design model* named **Red Rectangle** and set the “Can be placed as a cell” option to ON.  
Draw the *rectangle* shown above with the Block tool. Use a **red** fill color.
- Step 3** In the *RefEx* file, open a new *Design model* named **Green Circle** and set the “Can be placed as a cell” option to ON.  
Draw a *circle* with a radius of 150 mm. Use a **green** fill color.

- Step 4** Open a new *Design file* called: **Triangle**.  
 Set *Working Units* to *millimeters*.  
 Open a new *Design model* called **Yellow Triangle** but "forget" to set the "Can be placed as a cell" option to ON.  
 Draw the *triangle* shown above. Use a **yellow** fill color.
- Step 5** Open a new *Design file* called: **Diamond**.  
 Set *Working Units* to *millimeters*.  
 Do *not* open a new model - draw in the **Default** model.  
 Draw the *diamond* shape shown above. Use a blue fill color..

Since you are using the elements in models as cells you need to ensure that each model is capable of being a cell. If you have just followed Steps 1 to 5 above you will have noticed that, except for the Yellow Triangle model, you turned on the "Can be placed as a cell" option which allows models to act as cells. To turn this option on for the Yellow Triangle model do the following:

- Step 1** Open the *Triangle* design file and display the list of models.  
**Step 2** Right-click on the *Yellow Triangle* model and select **Properties**.  
**Step 3** In the model setting box, turn ON the "Can be placed as a cell" option.

What about the Default model in the Diamond design file? Do you need to turn on the "Can be placed as a cell" option in that model?

If you are *reusing* the design files and models from the Models and References Exercise you will need to repeat Steps 1 to 3 immediately above to turn on the "Can be placed as a cell" option in each model. Obviously, it is a good idea to turn this option on in all models you create even though you may not intend to use it as a cell.

With the files, models, and elements in place you can now assemble the objects.

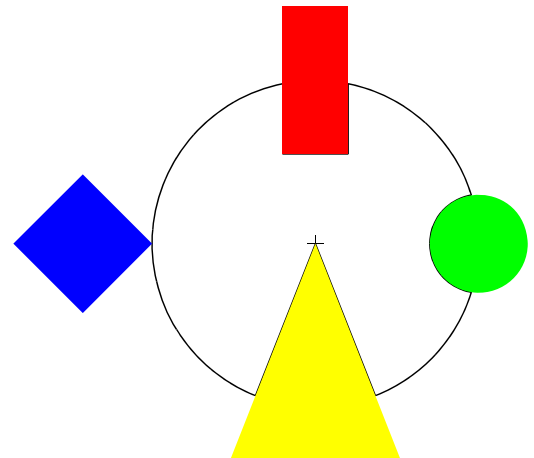
- Step 1** Open the first design file "RefEx".  
 Open a new **Sheet model** named: **Cell Assembly**. Turn off the *Display Sheet Layout* option.

You are going to assemble the Plate as a reference, and the rectangle, circle, triangle, and diamond shapes as cells from their models. Obviously, the first three shapes fit into the Plate, while the Diamond shape will be attached to the left side of the Plate.

- Step 2** Reference-in the **Plate** model to the sheet model.  
**Step 3** Open the *Cell Library* dialog box.  
**Step 4** Click on *File/Attach File* and attach the RefEx design file.

The list of models from the RefEx design file now display as cells.

- Step 5** Select the *Red Rectangle* cell for *Placement*.  
**Step 6** Start the *Place Cell* tool and place an instance of the cell in the Plate model near the Plate drawing.  
**Step 7** Move the cell into the slot at the top of the plate as shown at the right.  
**Step 8** Repeat this process to place the remaining cells.



Note that the Diamond cell is called "Default" because you drew the blue diamond in a the default model, not in a new named-model. Notice also that it would be an advantage to place a cell *origin* on the elements in design models that you intend to be used as cells.