

Planet Polygon Theme Park Schematic



Schematic Changes:

New Lamp-posts at: (442418, 115531);
(442407, 115215);
(442409, 115300).

New Rubbish bins at: (442397, 115446);
(442353, 115183).

Carousel central point at (442436, 115438) and a radius of 10m.

Botanical garden	north-east corner:	(442479, 115459);
	Top edge	angle (a) 200, length (d) 30
	First left edge	angle (a) 90, length (d) 25
	Lower top edge	angle (a) 90, length (d) 35
	Lower left edge	angle (a) 90, length (d) 35
	Lower edge	angle (a) 90, length (d) 62

Female Toilet Block B extension	Right edge in line with current Left edge of Female Toilet Block B with lengths of 21.5m; Right-angles for corners; Top and bottom edge length of 10m.
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Further Work – Advanced Editing

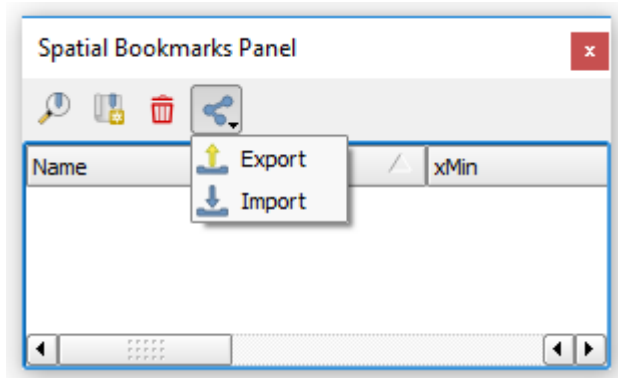
- **Objectives: The purpose of this exercise is to use the Editing Tools.**

The previous pages include a schematic to complete the infrastructure of a Theme Park. You will use this schematic to update the existing GIS dataset.

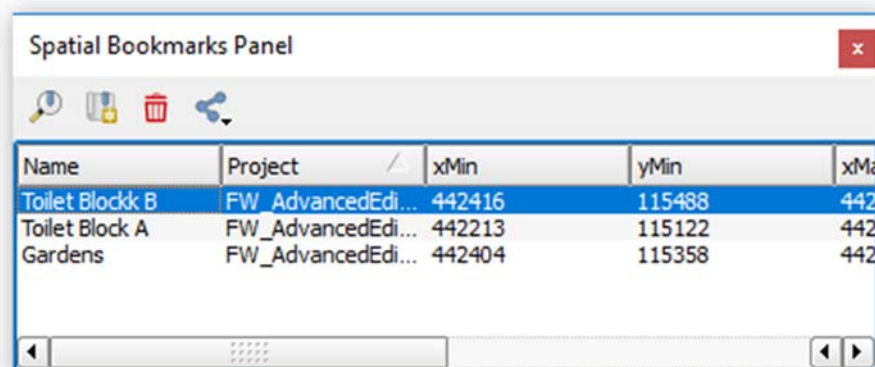
- Open FW_AdvancedEditing.qgs from the location that you saved the **Further Work** directory to
- Before we begin editing bookmarks will need to be imported into the project for use later on in the exercise. QGIS does not currently (v2.8) store bookmarks on a project level, they are stored at the user level on the machine they were created on. You will need to use bookmarks in this exercise to pan around the data to specific locations that require editing.
- Click **View→Show Bookmarks** (or click the “Show Bookmarks” icon)

Please note the bookmarks list should be empty. If this is not the case please highlight all bookmarks and click the delete button.

- From the Spatial Bookmarks Panel click on the Import/Export Bookmarks button and then click import



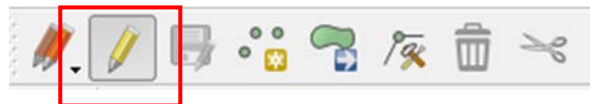
- Navigate to **the Further Work > Data > Bookmarks**
- Click onto **AdvancedEditing.xml** and click **Open** to add the bookmarks to your project.
- Three bookmarks should be added to your project as shown below:



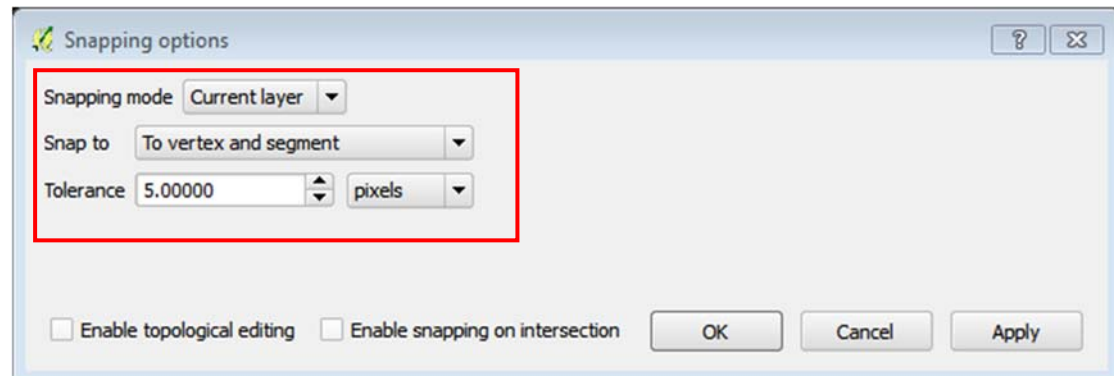
- Now the bookmarks have been added, close the bookmarks panel and continue to follow the exercise instructions below:

Editing

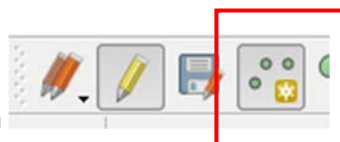
- Click upon the layer named **Schematic Point** in the layers window and from the Editor toolbar choose to toggle editing on:



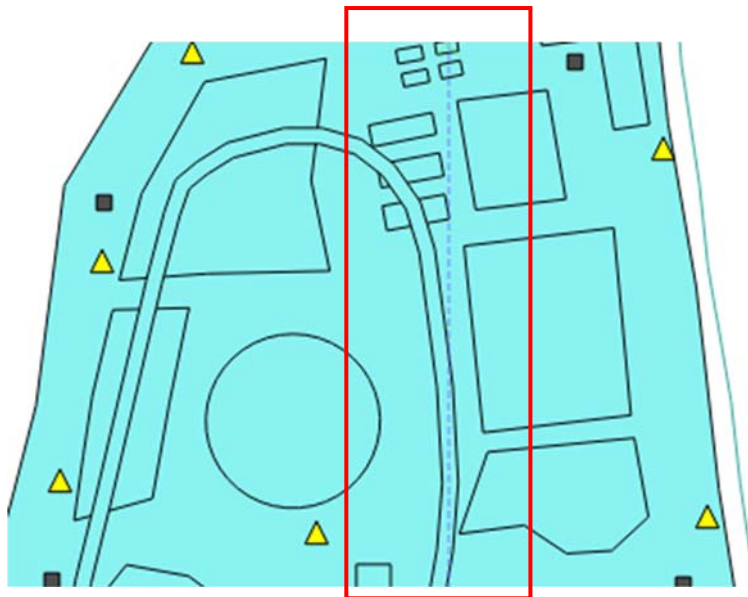
- The schematic for the Theme Park gives you the exact coordinates of 3 new Lamp-posts (see p.2 of this document).
- Navigate to **View → Panels → Advanced Digitising** and activate this panel.
- The next step is very important as we will be setting a snapping tolerance for our digitising. Click on **Settings → Snapping Options**.
- With the **Schematic Point layer highlighted** make sure the snapping options are the same as below:



- Click Apply and OK.



- Click onto the Add feature button
- The Advanced Digitizing Panel should now be active. Click into the x input box and type **442418** then press **Enter** on the keyboard. A line should have been created along the 442418 x value as shown below:



- Click into the y input box and type **115531** then press **Enter** on the keyboard.
- A cross hair should now appear at the intersection of the x and y lines created as shown below:



- These are the coordinates of the first new lamp post.
- Click anywhere in the map to create the lamp post (the coordinates have been locked). (Type Lamp post into the Type field in the pop up form) The point should have been created at the intersection of the cross hair created by the Advanced Digitizing panel as shown below:



- If you make an error click on Edit→ Undo and try again
- Do the same for the remaining 2 new lamp-posts (*N.B Remember to use the Schematic information from the first page of the exercise*).

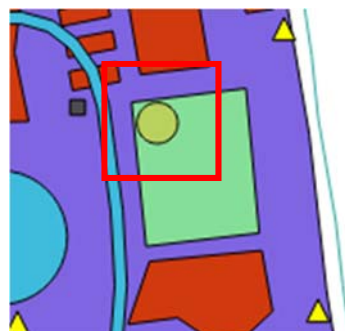
- **Save your edits!**
- Now add the 2 new bins using the coordinates given in the same way as you added the lamp-posts.
- **Come out of edit mode for the Schematic Point layer.**



- Highlight the **Schematic Ride** layer in layers window and toggle editing on.
- We now want to digitise a circular polygon for the Carousel using the information given in the schematic.
- To do this we need to install the **CADDigitize Plugin**. Navigate to Plugins→Manage and Install Plugins.
- Type **CADDigitize** into the Search panel and **install the plugin**.
- A CADDigitize menu should appear in the Vector submenu
- Make sure you are in edit mode for the Schematic Rides layer. Select Vector > CADDigitize→Numerical digitize.
- A pop up dialog box should appear. Change the option under the function drop down menu to be 'Circle by center and radius'.
- Under Point 1 type the central coordinates of the Carousel with a comma between the numbers.
- Under the Option header type 10 as shown below:

	Function	Point 1	Point 2	Point 3	Option
1	Circle by center and radius	442436,115438			10.00000000

- Click OK.
- A circle should appear as shown below (If a circle does not appear you may need to click on the map):



- With the new ride still selected, open the attribute table of the Schematic Ride layer.



- Ensure the table is in edit mode by clicking on the edit button:
- The new carousel feature should appear at the bottom of the table. Add the **type to the Carousel feature as Ride** and Type **Carousel** into the **Name** attribute as shown below:

Attribute table - Schematic_Rides :: Features total: 6, filtered: 6, selected: 0

OBJECTID = [] Update All Update Selected

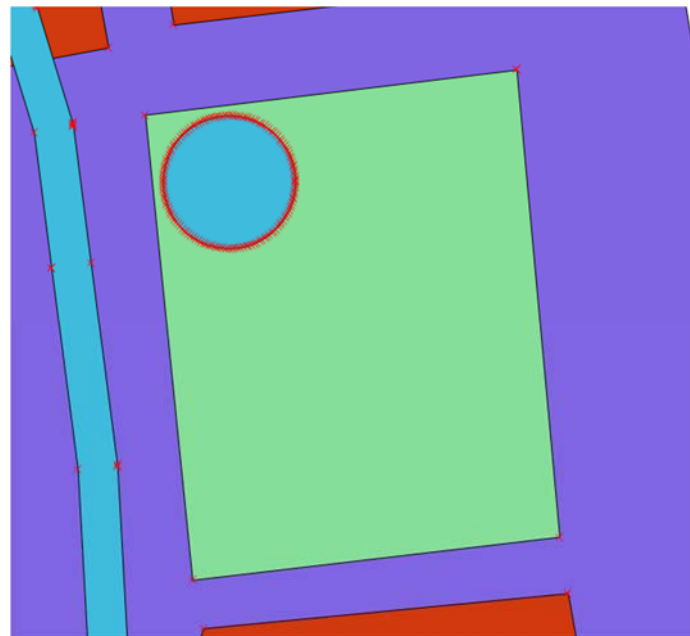
	OBJECTID	Id	Type	Name	Note	Shape_Leng	Shape_Area
0	8	0	Ride	Dodgy Dodgems	NULL	323.59889165400	6497.85588716000
1	18	0	Ride	Big Wheel	NULL	138.80071538400	446.96550702500
2	20	0	Ride	Ideas Pool	NULL	356.72992902500	7846.846864220...
3	21	0	Ride	Symbology Slide	NULL	467.97641222900	1942.752720540...
4	27	0	Ride	Programming Portal	NULL	205.18817845700	3343.826139400...
5	39	0	Ride	The Data Train E	NULL	2367.17321301000	7208.367431050...
6	NULL	NULL	Ride	Carousel	NULL	NULL	NULL

Show All Features

- Save your edits in the table and feature and stop editing.

DELETIONS


- Navigate to View → Show Bookmarks.
- Click onto **Gardens** and select Zoom to:

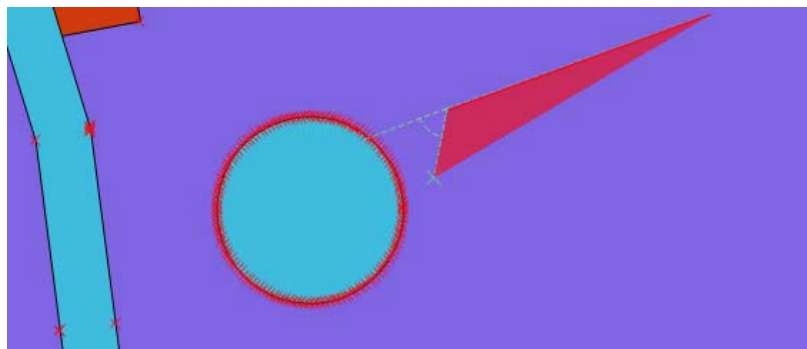


- Highlight **Schematic Features** layer and toggle editing on.
- Find the polygon representing the Botanical Gardens on the map within the **Schematic Features** layer and using the **Selection Tool** click on the Botanical Garden polygon to select it.
- Now tap the **Delete** key on the keyboard and the polygon should disappear.

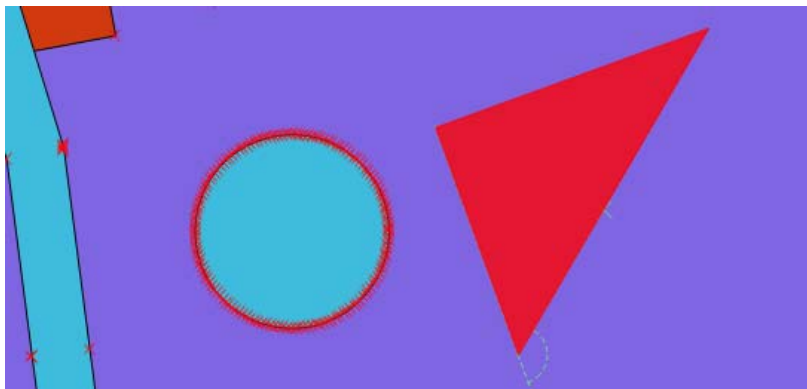
- Using the same method delete Kiosk 6.

LENGTH, DIRECTION AND DEFLECTION

- Navigate back to the **Gardens** bookmark extent.
- Create a new, reshaped Botanical Gardens polygon using the schematic information. Start by highlighting the **Schematic Features** layer in the layers window and toggle editing on.
- Click onto the create feature button  and within the Advanced Digitizing panel type the x and y values of the northeast corner and press enter.
- Next left-click on the map to digitise the first point of the polygon.
- With the digitizing tools still active within the Advanced Digitizing window type **30** into the **d** input box and **200** into the **a** input box. This should create the top edge. Left click into the map to digitise this edge.

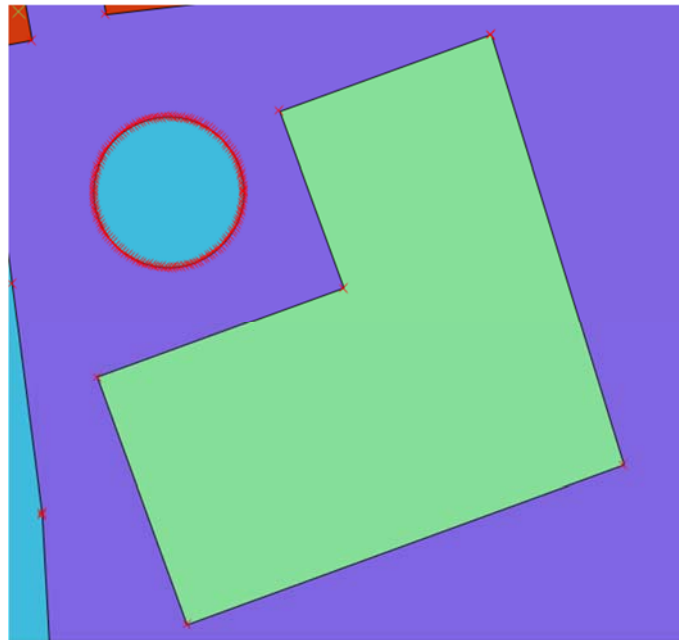


- The next step is to create the first left edge. Type **90** into the **a** input box and press Enter and **25** into the **d** input box then press Enter. This will create an edge the length of 25 metres at an angle of 90 degrees. Remember to left click to digitise the edge. The output should look similar to below:



- Continue following the schematic instructions to complete the new Botanical Gardens shape. Remember to right click at the end to complete the polygon. Complete the Attributes for the new Polygon with the Name **Botanical Gardens** and type **Feature**.

- **Save your edits.** Your final output should look similar to below:



- **Save** your edits from the Editor Toolbar and toggle editing mode off.

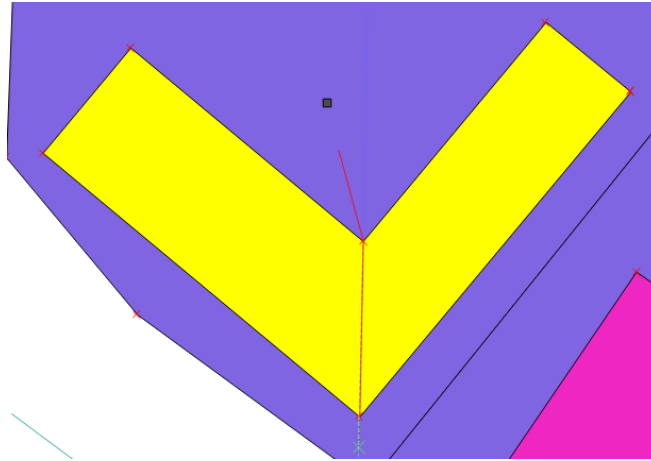
CUT POLYGONS

We are now going to use the cut polygon tool to cut Toilet Block A into 2 parts.

- Zoom to the Bookmark named **Toilet Block A**.
- Select Toilet Block A using the selection tool (ensuring that **Schematic_Buildings** is highlighted in the layers window).
- Make sure the **Schematic Buildings** layer is in edit mode.
- Make sure that the Advanced Digitizing toolbar is showing (View→Toolbars→Advanced Digitizing)



- Choose the **Split Features** tool from the Advanced Digitizing Toolbar.
- Now digitise a line from one corner of the block to the other as shown below (make sure snapping is turned on to get the exact corners):

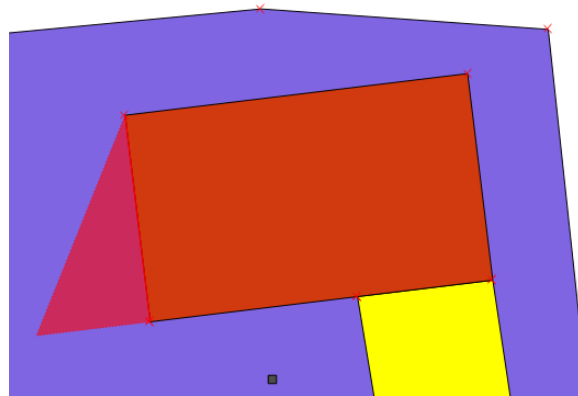


- Left click the second point of the line. Then right click to complete the cut.
- Save your edits to make the edited polygon appear.
- Edit the Attributes of each polygon. Name the left polygon **Female Toilet Block A** and the right polygon **Male Toilet Block A**.
- From the Editor Toolbar click on the Save button to save the edits.

MERGE POLYGONS

We will now add extra facilities to Toilet Block B.

- Zoom to the Bookmark named Toilet Block B.
- Draw the extension as given in the schematic information. Start by creating a new polygon snapping to the corners of the existing left edge of the Female Toilet Block B building.



- Then create a right angle for the corner of the extension ($a = 90$ degrees).
- Then specify the length of the top or bottom edge (depending on which way round you are digitising – both will be the same value as specified).
- Create another right angle, then specify the length of the left-edge and finish the extension.
- Do not worry about adding attributes – click OK.



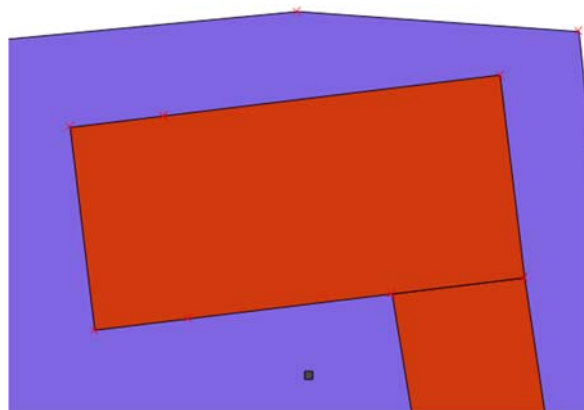
- Select the 2 polygons as shown below:



- Now from the **Advanced Digitizing toolbar** select the **Merge Selected Features** Button



- Within the pop up box click OK to run the merge.



- Click the **save button** on the Editor toolbar to save your edits.
- Come out of edit mode for the Schematic polygon.

Challenge:

- The Speed Digitising Arena have received funding to create an open air courtyard in the middle of their building. The dimensions will be 25mx25m with the top right corner starting at: 442331,115286. Create this courtyard using what you have learnt in this section. The final result should appear the same as below:

