AxciScape Drawing Entities – Using Rules

AxciScape drawing entities can have their Layer and Colour definition decided using a Rule. An option also exists to use a Rule to determine whether the entity is drawn at all!

A Rule is simply a statement which compares selected data, makes a decision and carries out a task.

Setting up a Rule is not over complicated and is stored automatically with the drawing entity.

As an example ,for tree work a Rule could be used to decide whether an RPA circle is drawn. This would work by first looking to see if a trees category is U (unretainable). If it is then the circle is not drawn.

A Rule can also be used to assign a layer to an entity. Again this would use the category to trigger the appropriate layer name to be used by the entity. So as an example, the canopy entity for a category B tree can automatically be assigned a layer such as 'Tree_Canopy_B'.

If a single layer is to be used for all canopies (or other items) then a Rule could be used to just change its individual colour based again on a category.

The DRAW Rule.

This type of rule controls whether an entity is drawn to the map. By default all entities are set to be drawn so this only needs to be used if you wish to specifically control the item. To create the rule you first need to click the 'Set Rule' button to open its window. Once a rule has been defined you need to tick the small box to make it active.
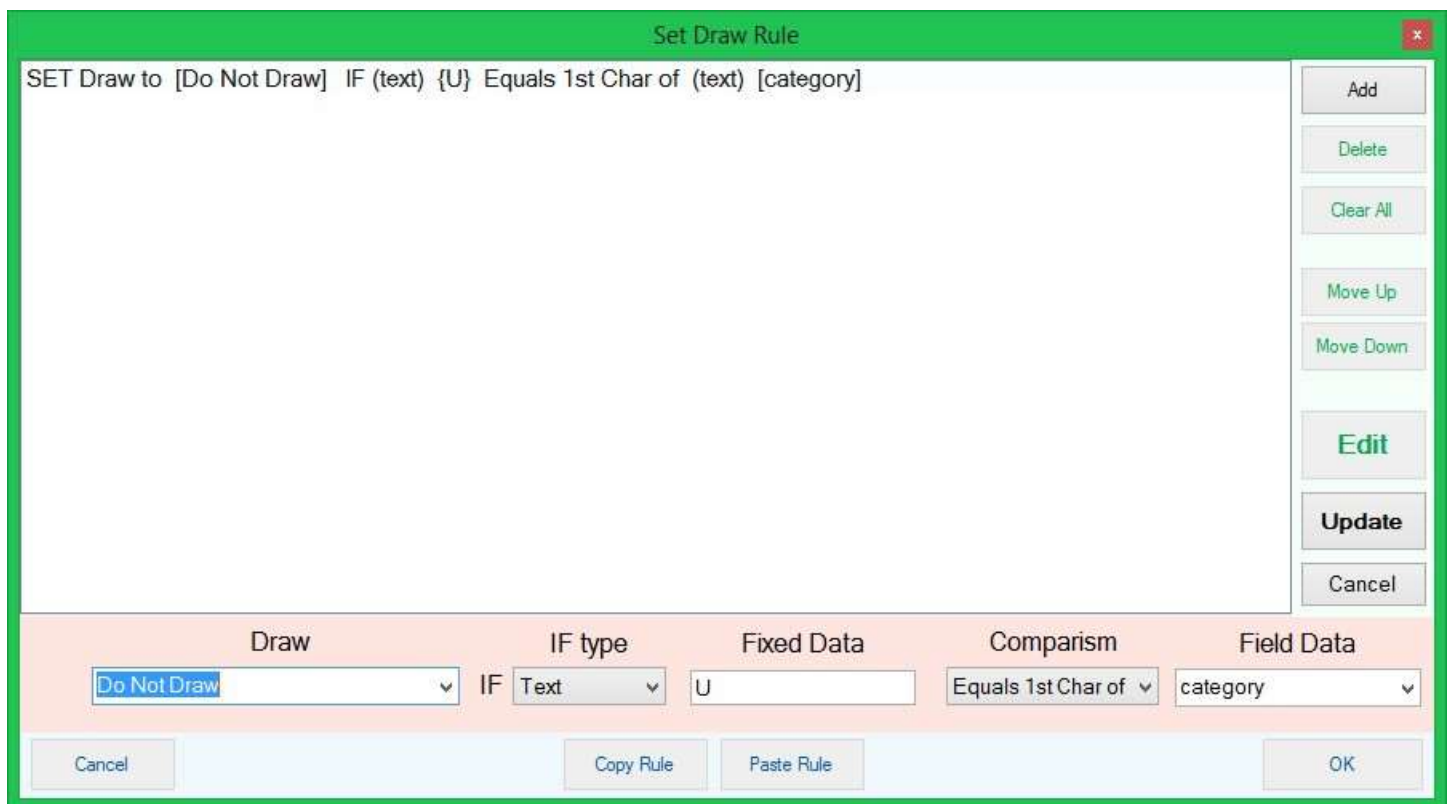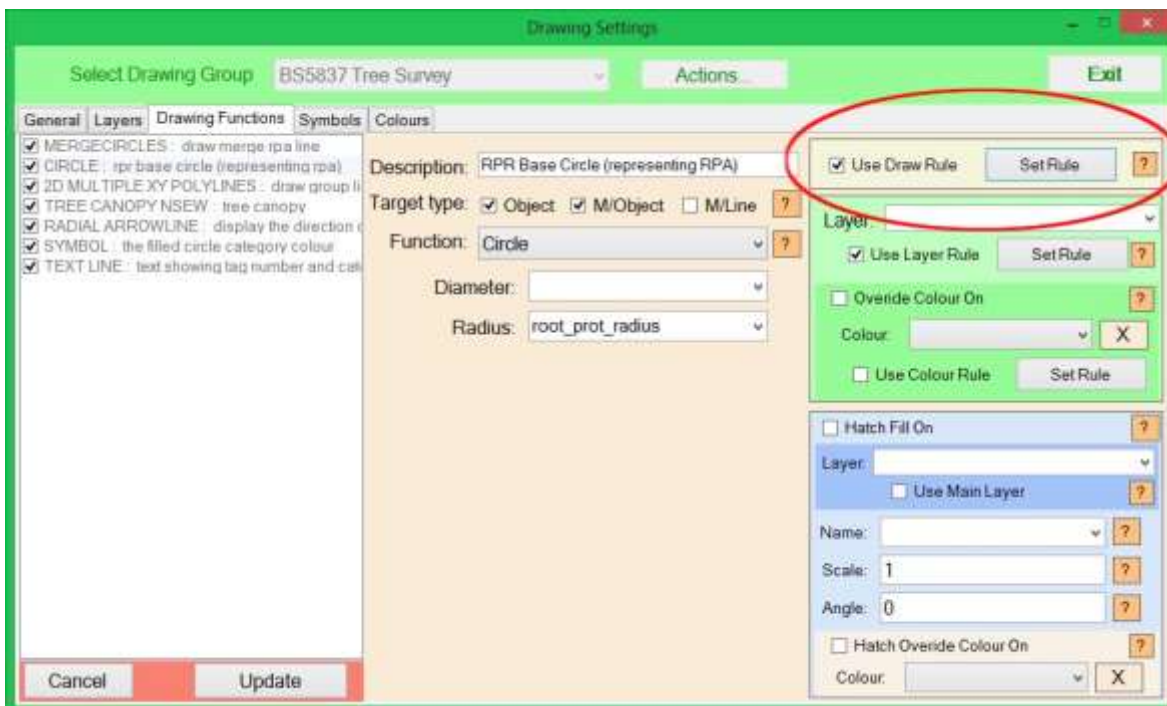
The Draw Rule window consists of a list of statements and the edit control buttons. Each line of the list represents one statement and processing begins at the top and flows downwards executing each statement in turn. Remember that the result of the statements is simply 'To Draw' or 'Not to Draw' as that is the question! One statement may have set the result to 'To Draw' while a following statement may change the result to 'Not to Draw'. At the end of the list, when processing is complete, the state of the draw flag decides whether an item is drawn.

Each statement consists of five elements which are used to carry out a comparison of two items of data to determine a result. These can be seen at the bottom of the window.

The first element (Draw) determines the result of the statement should the comparison be true. So this is simply set to either 'draw' or 'do not draw'. The second statement (IF Type) sets the type of data we intend to compare. It just needs to know if we are comparing a number or text. This also has an option called 'No Rule' which if selected means you do not wish to carry out any comparison at all; if this is used then the result of the statement will equal the first element setting.

The third element (Fixed Data) holds one of the comparison items such as a number or text. The 5th element (Field Data) is set to the field which you wish to compare the fixed data against. The 4th element decides the type of comparison to be carried out.

The comparison type has five choices with two of the choices applying to both text and numbers. You can choose here to decide whether a number or text should exactly equal or not equal each other. In the case of comparing numbers you have two more options where the result is decided if the fixed data value is higher or lower than the field value. The Text option has one additional choice where a comparison is made against only the first character of the text contained within the field. To do this you must only state a single character of text in the fixed data element.
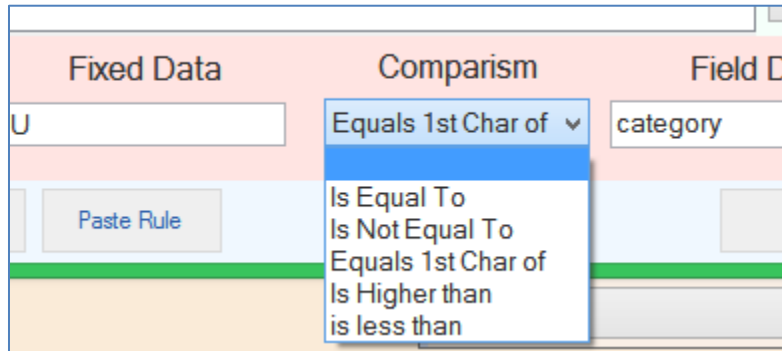
So, let's run through a typical statement and one which is used within the tree demo file to prevent RPA circles from being drawn for U category trees. I have clicked on the statement in the main window and its elements are shown in the edit boxes (see below). They are laid out for readability so starting from the left you would say "Do not draw if the text letter U is the same as the first character of whatever text is inside the category field for this tree". So if the category is U then don't draw it!

In another example, the following statement simply says 'Do not draw' with no rule defined. This would normally be used at the start of a list of statements where following statements would decide specifically what can be drawn. If this statement was just used on its own then you wouldn't draw the item at all, ever!

If I followed the above statement with the one below, then the result of both statements is to **only** draw trees which have a mean diameter equaling 750mm. Note how this statement is using 'draw' on result of the comparison.
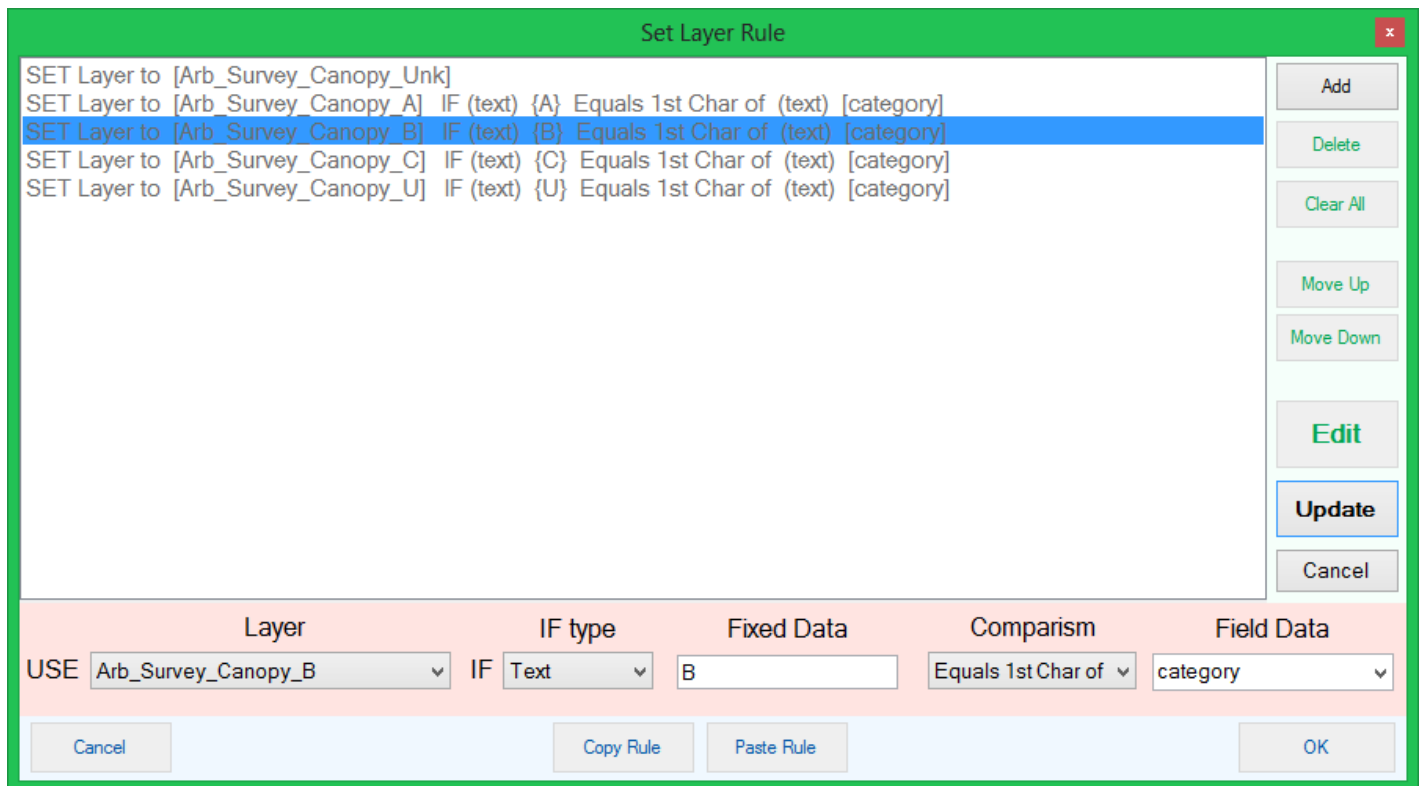
The LAYER Rule.

This type of rule sets a particular Layer in response to the result of the comparison. It works in much the same way as the Draw Rule except the first element defines the layer to be used should the result be true. If 'No rule' is used as the 'IF type' then this simply sets the defined layer as the result.

The following example contains 5 statements with the first statement setting the layer to 'Arb_Survey_Canopy_Unk'.

Should any of the following 4 statements not prove to be true then the first statement will be used as the result. In this particular example, the rule decides which layer is to be used for the tree canopy based on the first letter of the category field. We are using the first letter because a category could have a sub category (B1, B2 etc). I could of course add extra statement's to place the entity in a layer for sub categories as well if it was required.

The selected statement (below) would be interpreted as 'Set the resulting layer to 'Arb_Survey_Canopy_B' if the first letter of the category field is a B'.

The COLOUR Rule.

This colour rule works in exactly the same way as for the layer rule except colours replace layers for the first element.