MicroStation CONNECT QuickStart

This is an initial introduction to the fundamental concepts and tools that you need to efficiently use MicroStation CONNECT Edition and related applications such as OpenBuildings Designer or OpenRoads Designer. Changes made in MicroStation 2023 have been incorporated.

- Keystroke sequences are indicated by the > symbol, e.g. Esc then 4 will be shown as **Esc > 4**.
- Keystroke combinations will be shown by the + symbol, e.g. **Ctrl + O** (capital letters are used for clarity, either case will take effect). They are generally highlighted in bold text.
- For help use the Help menu. Press **F1** for help at any time, the help document will normally open at a page relevant to the active command.

Searching the Bentley Communities wikis and forums for more information is highly recommended, for example the MicroStation wiki.

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MicroStation CONNECT QuickStart – *Updated for MicroStation 2023*

Opening MicroStation and Choosing Your WorkSet

It is always best to open MicroStation from a shortcut rather than by double clicking a file. This is because there are many settings that are WorkSet specific such as paths to reference files, default output locations and WorkSet specific libraries. It is important that the correct WorkSet is selected before working on your designs.

Note for V8i users: a V8i Project is now a WorkSet, WorkSets are contained in WorkSpaces.

On opening MicroStation you are brought to the Work page where you can select your WorkSpace, WorkSet and open or create a file. From Update 17 onwards you may also be able to select different configurations, connections to configurations are made using the Manage Configuration utility:
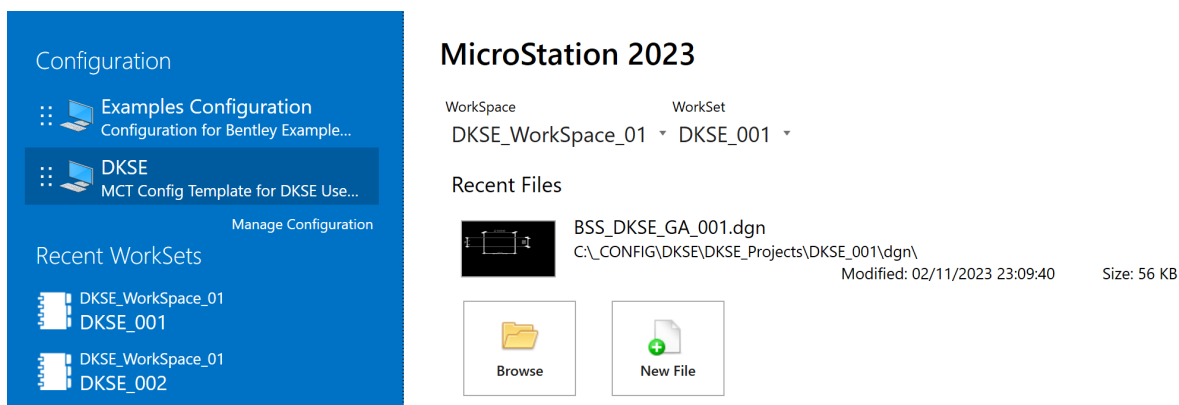
The Work Page shows recently used WorkSets on the left, recent files in the active WorkSet and their properties in the centre and the WorkSet properties on the right. See the CONNECT Edition help page tilted 'Using Work page' for more information on the features available here.

Creation of Configurations, WorkSpaces and WorkSets is normally manged by a CAD system administrator. We have wizards that can be used to create WorkSpaces and WorkSets. Please see the help topics 'Create WorkSpace Dialog' and 'Create WorkSet Dialog' for more information.

Click Browse to (or **Ctrl + O**) to open a file, note the File and Directory (aka Folder) history drop down menus. A well configured system will offer a DGN folder for the selected WorkSet:
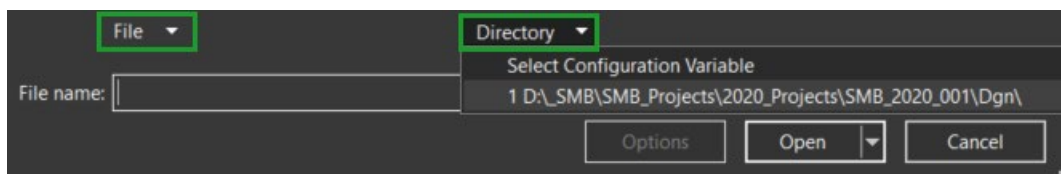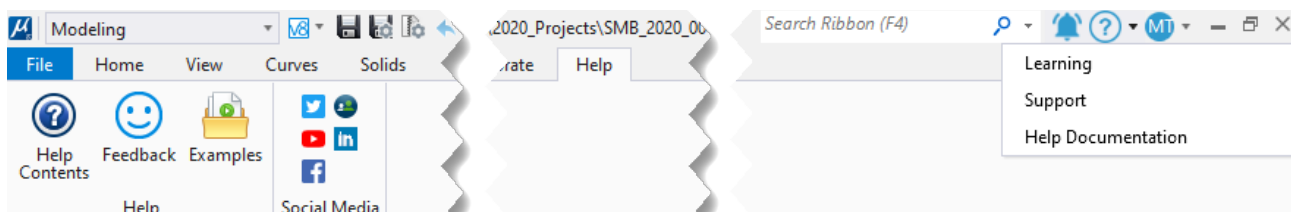

Once MicroStation is open click the ribbon File tab to go to the Backstage where you can open other files. Selecting the Close item will return to the Work Page.

MicroStation CONNECT QuickStart
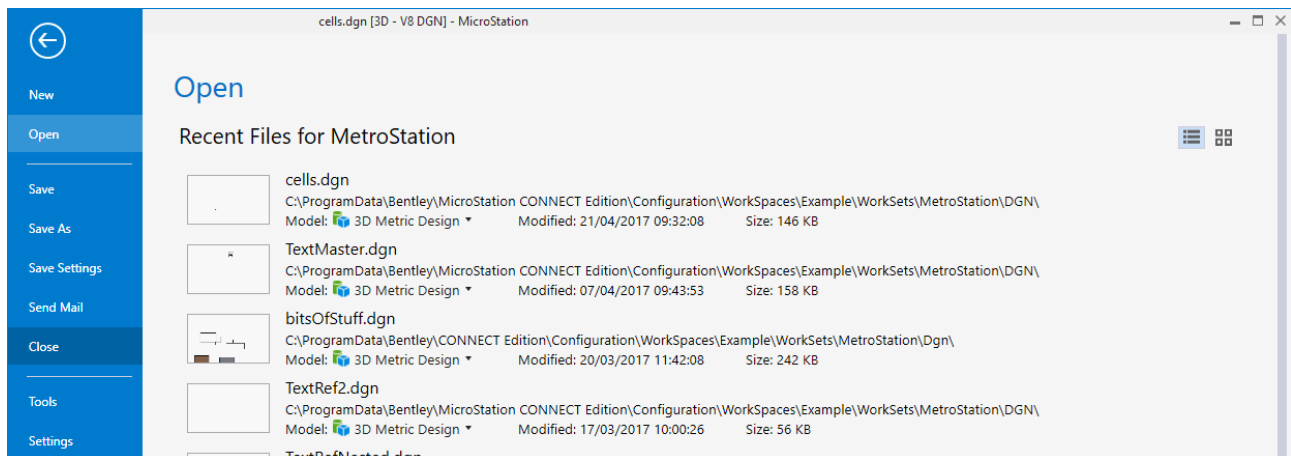
Ctrl + N will open the new File dialog.

The Welcome Page present prior to Update 13 has been replaced by the Help tab and Title Bar pop-down menus:

File Formats

MicroStation's file format is DGN.

The DGN file format has not changed since 2000 so older files can simply be opened and used. Note that while the file format itself is unchanged some file content, for instance some content created by OpenBuildings Designer's tools, will need to be upgraded to synchronize with newer application schema and datasets.

DGN files can be 2D or 3D. This simplifies life when working on 2D only information, there is no Z dimension.

Note that 3d Files can be referenced into 2D files when composing drawings. This is used by Dynamic views and also allows 3D views to be presented alongside conventional 2D views.

MicroStation can open, edit or create .DWG files using Autodesk RealDWG libraries. A DWG created in MicroStation is the same as one created by an Autodesk application. The Autodesk RealDWG libraries have been built into MicroStation since the early 2000's. Bentley maintain compatibility with DWG versions every time Autodesk change the format, update 16 adds DWG 2022 to the compatible versions.

MicroStation can import/export or reference a range of other vector formats including 3DS, SketchUp, and Rhino as well as a wide range of other file formats.

File Open:

```
CAD Files (*.dgn;*.dwg;*.dxf)
MicroStation DGN Files (*.dgn)
MicroStation Cell Libraries (*.cel)
DGN Library Files (*.dgnlib)
Sheet Files (*.s*)
Hidden Line Files (*.h*)
Autodesk(R) DWG Files (*.dwg)
Autodesk(R) DXF Files (*.dxf)
Redline Files (*.rdl)
TriForma DocumentFiles (*.d)
3D Studio Files (*.3ds)
Shapefiles (*.shp)
MIF/MID Files (*.mif)
TAB Files (*.tab)
i-model 1.5 files (*.dgndb;*.idgndb;*.imodel)
i-model 1.6 files (*.dgndb;*.idgndb;*.imodel)
Autodesk(R) FBX Files (*.fbx)
IFC FileIO (*.ifc)
Common Raster Formats (*.tif;*.tiff;*.iTIFF;*.bmp;*.jpg;*.jpeg;*.jpe;*.sid;*.pdf;*.png)
Common Geo Ref Raster Formats (*.tif;*.tiff;*.hmr;*.iTIFF;*.iTIFF64;*.cit;*.tg4;*.ecw;*.jp2;*.j2k;*.doq;*.img)
JT File (*.jt)
Obj Files (*.obj)
Autodesk(R) RFA Files (*.rfa)
OpenNurbs (Rhino) Files (*.3dm)
SketchUp Files (*.skp)
Reality Mesh (*.3mx;*.3sm)
All Files (*.*)
```

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MicroStation CONNECT QuickStart

Mouse Buttons

Please remember this MicroStation terminology, it is used extensively in the help documents as well as these notes:

- Left Mouse button = **Data**
- Right Mouse button = **Reset**
- Wheel button/wheel = Various view controls and combinations with function keys
- Left + Right Mouse buttons = **Tentative** (now rarely used, AccuSnap supersedes it.)

(Older versions of MicroStation used the Middle Button as Tentative to snap with. AccuSnap does virtually all your Tentative snapping work for you so don't change your Button Assignments. Tentative is available via simultaneous Left + Right Mouse button press. Do not remap Tentative to the Middle Button as this will affect the default view control.
If snap points do not appear try holding down Ctrl + Shift while moving the cursor over potential snap points; in a small number of circumstances AccuSnap is supressed.)

- Middle button pans by dragging; hold it down and drag

(In these notes Key + middle button indicates clicking or holding down the mouse wheel. Key + mouse wheel indicates rolling the mouse wheel)

- Zoom in and out using mouse wheel
- Shift + Right-click to show pop-up View controls
- Alt + mouse wheel to Pan Left/Right
- Shift + mouse wheel by default is the Pan with Zoom action, you may find changing this combination to Pan Up/Down is more useful. From MicroStation's Workspace menu pick Preferences > Mouse Wheel > Shift + Wheel = Pan Up/Down:
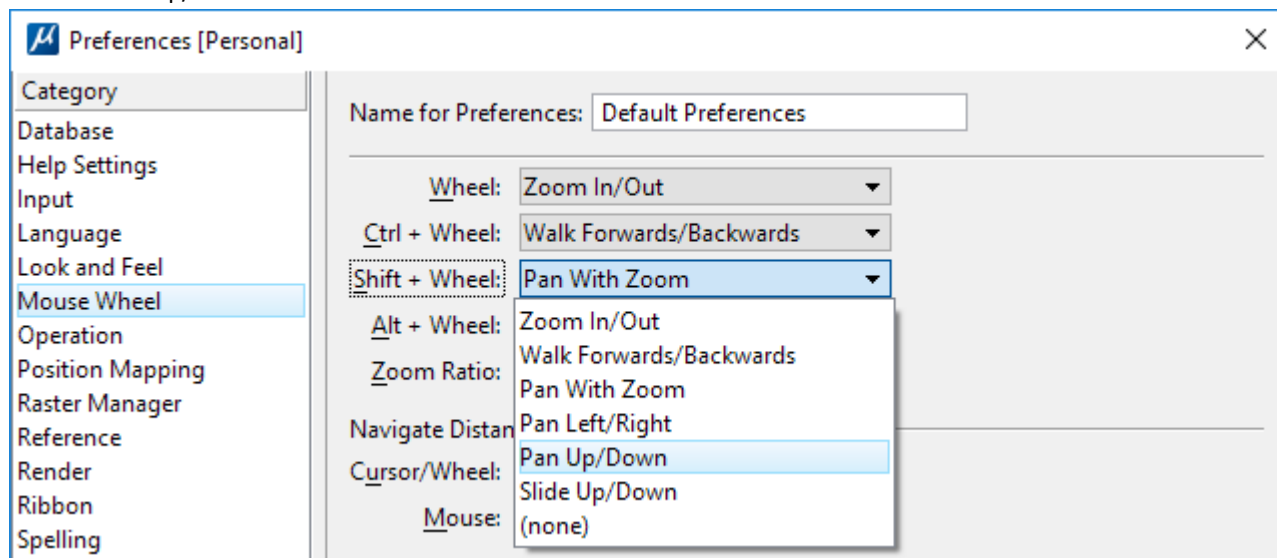
In 3D Only

Rotate view around a point. This has the following steps:

Alt + middle button produces a fine white cross, drag this around with the mouse until it snaps to a suitable point around which to rotate the model. While being dragged the cross will thicken, it will snap to points with AccuSnap. Once snapped the cross will revert to fine thickness and mouse cursor will revert to the navigation icon. Then hold down **Data** and drag the view around.

Try this out, it's easier done than described.
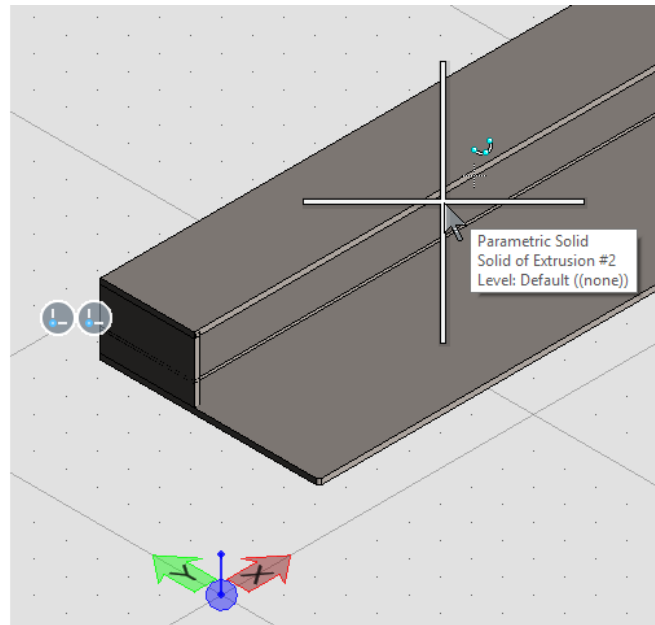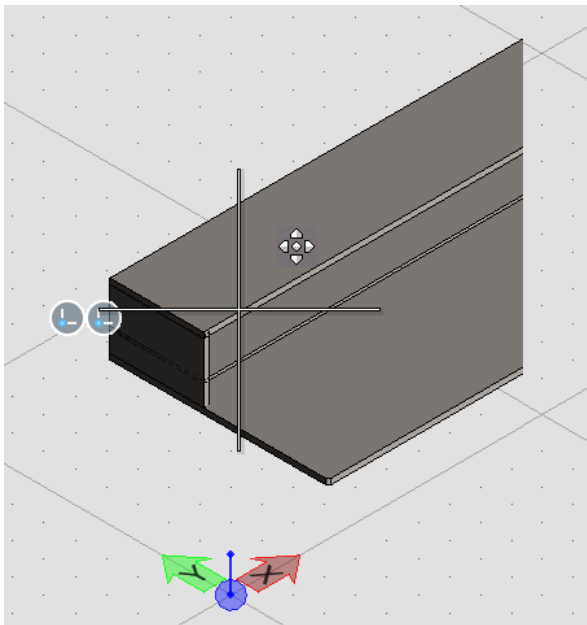
Shift + Data to pan around the active plane (i.e. in 2D) with a direction indicator.

Getting Started

Using every MicroStation tool involves a basic sequence:

Pick the tool, adjust the settings, follow the prompts and Draw...

Pick your Tool

Pick your tool by using the Ribbon, pop-up menus/keystrokes or F-keys. See sections below for more on these methods. For many tools their use is fairly self-evident once you have established efficient ways of accessing them and become used to the basic sequence.

Adjust the Settings

Adjust the Settings in the Tool Settings dialog (see below).

Prompts in the Status Bar

The Status Bar at the bottom left of the MicroStation application window tells you what command or tool you are currently using and prompts for the next input from you. Always look out for this and refer to it when using unfamiliar tools or when in doubt what to do next. This is a lot quicker than guessing!
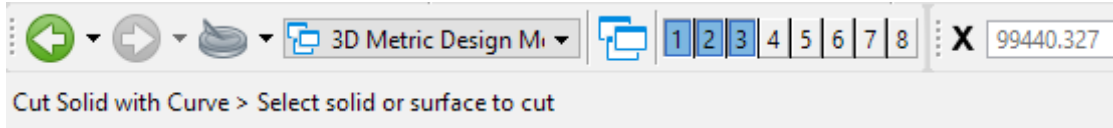
Focus

Focus is where input from the keyboard will take effect. Unlike most applications, MicroStation has several points where keyboard input can be applied, you need to be sure you are at the right point before entering your input keystrokes. It is important to be familiar with the focus scheme:

Icon	Name	Keystroke	What it does
	Home	F12	With the focus at Home you can use the Keyboard Shortcuts and, if enabled, Position Mapping keys.
	AccuDraw	F11	This gives access to all the familiar AccuDraw shortcuts and a series of new ones.
	Tool Settings	F10	Pressing F10 takes you to the Tool Settings dialog. Once there you can use the up/down arrow or Tab keys to move up and down the available options, Spacebar to display pop-up option menus followed by up/down arrow to select from the pop-up menu.
	Key-in	F9 or Enter	Opens the Key-in dialog at the cursor, moving the mouse away from the Key-in window closes it.
	Home	Esc	From MicroStation 2023 we enable Esc to exit commands by default in DWG workmode.

- In CONNECT Edition when focus is on other dialogs the icon for that dialog will generally be displayed in the Status Bar, in this case the Cell library dialog has focus:

Closing a dialog will return focus to Home.
- Generally pressing the appropriate key will move between focus inputs, if they do not, press **Esc** followed by the appropriate focus key.
- If in doubt about where your focus lies, press **Esc** to get to Home, then the appropriate key to move away from Home.
- If you frequently use DWG files in may be better to set to 'ESC exits command' On in Preferences for a consistent experience across all formats:
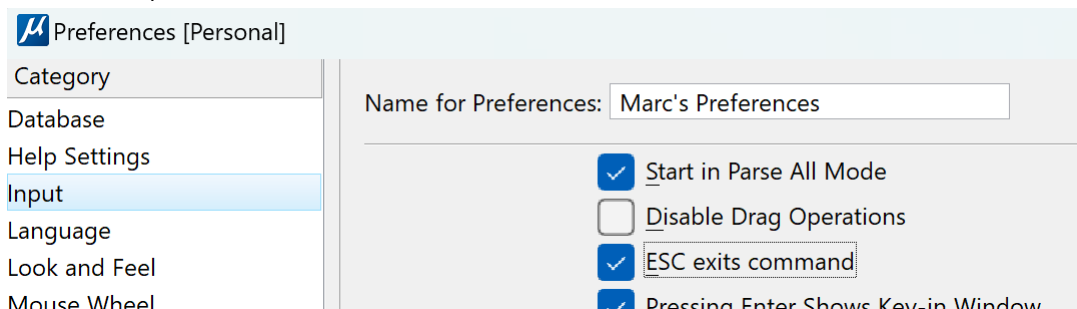
Tool Pop-ups

Spacebar

The **Spacebar** activates the Popups dialog; it will appear at the mouse cursor offering quick access to a wide range of tools. From MicroStation 2023 we also offer the Recents tab, this lists up to 10 recently used tools from the active session, use the tab key to switch between the two.
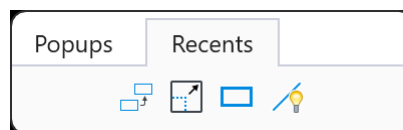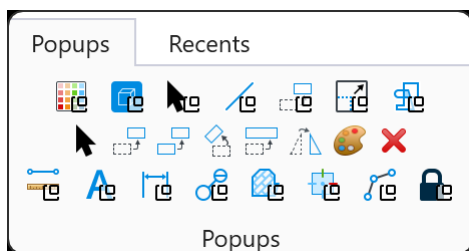

The Popups tab contains:

- Top row: frequently used Ribbon Group shortcuts from the Home tab
- Middle row: the most frequently used tools
- Bottom row: other frequently used Ribbon Groups

This popup content can be customised (described in Help topic "Customizing the Ribbon Group Pop-ups").

The number of recent tools saved can be set from 5-10 in preferences > Input > Max Recent Icons.
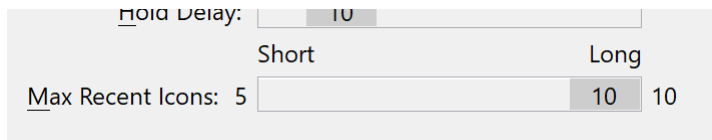
Q or [

These keys open popup menus with different selector characters suited to left or right hands:

e.g.: **[** followed by **P** will start the Move tool.

|				
1	Attributes		6	Attributes
2	Primary		7	Primary
3	Selection		8	Selection
4	Placement		9	Placement
5	Manipulate		0	Manipulate
6	Modify		-	Modify
7	Groups		=	Groups
Q	Select		Y	Mirror
W	Move		U	Scale
E	Copy		I	Rotate
R	Rotate		O	Copy
T	Scale		P	Move
Y	Mirror		T	Delete
U	Delete		[	Select
A	Measure		D	Measure
S	Text		F	Text
D	Dimensioning		G	Dimensioning
G	Detailing		H	Detailing
F	Patterns		J	Patterns
H	AccuDraw		K	AccuDraw
J	Snaps		L	Snaps
K	Locks		;	Locks
L	View Tools		'	View Tools

The Ribbon

CONNECT Edition applications use a Ribbon interface. This adheres closely to Microsoft standards for Ribbon interfaces providing a feel that will be familiar from other applications such as Microsoft Office. The basic techniques for using the Ribbon are similar to those in Microsoft Office and other Ribbon based user interfaces.

Like most Ribbon based applications there are many shortcuts that enable access to tools by key-in, these are listed below, some may be useful. Using **F4** to search the Ribbon is the quickest way to find a tool.
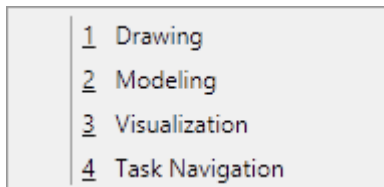
Here are a few tips that apply to all MicroStation based products:

Changing Ribbon Workflow

MicroStation includes a number of different Ribbon layouts that we call Workflows. To change Workflow either pick the Workflow name from the pop-down menu:
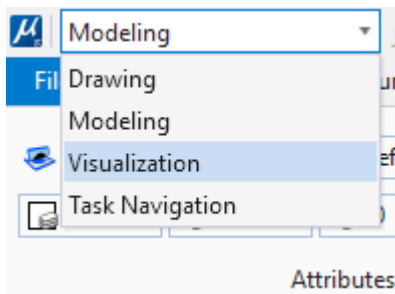
Or more easily, press a key to pop this menu up at the cursor, then press the number of the Workflow that you want:
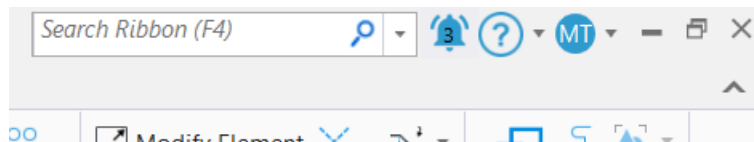

The key to open this menu varies by region/keyboard, some examples are listed below.

| Region	Keystroke
UK (QWERTY)	#
US (QWERTY)	\
France (AZERT)	*
Germany (QWERTZ)	#
Denmark (QWERTY)	'

e.g.: in the UK # > 2 will switch to the Modeling tab (in a 3D file).

F4 – Quickly Find a Tool

Press F4 to search for tools in the Ribbon, Backstage, and Quick Access Toolbar:


- Results will appear as you type
- Click on the tool name to start it
- Hovering over a result will display the locations of the tool, there are often several; click on the path to go to that location and start the tool
- Most Recently Used items can be deleted by clicking the red x
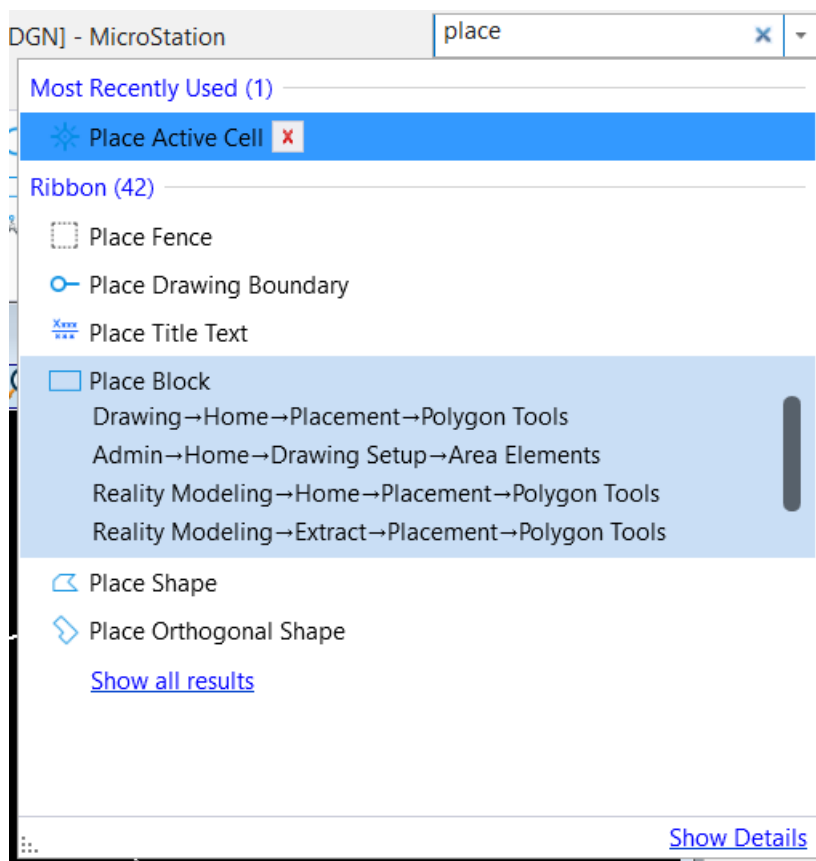
Select the Show/Hide Details option to see additional information about the listed tools.

Add to Quick Access Toolbar (QAT)

The Quick Access Toolbar (QAT), like Microsoft Office, provides an easy way for individuals to have their most used tools immediately to hand; just click the down arrow at the right-hand end, then pick Customize Quick Access Toolbar:
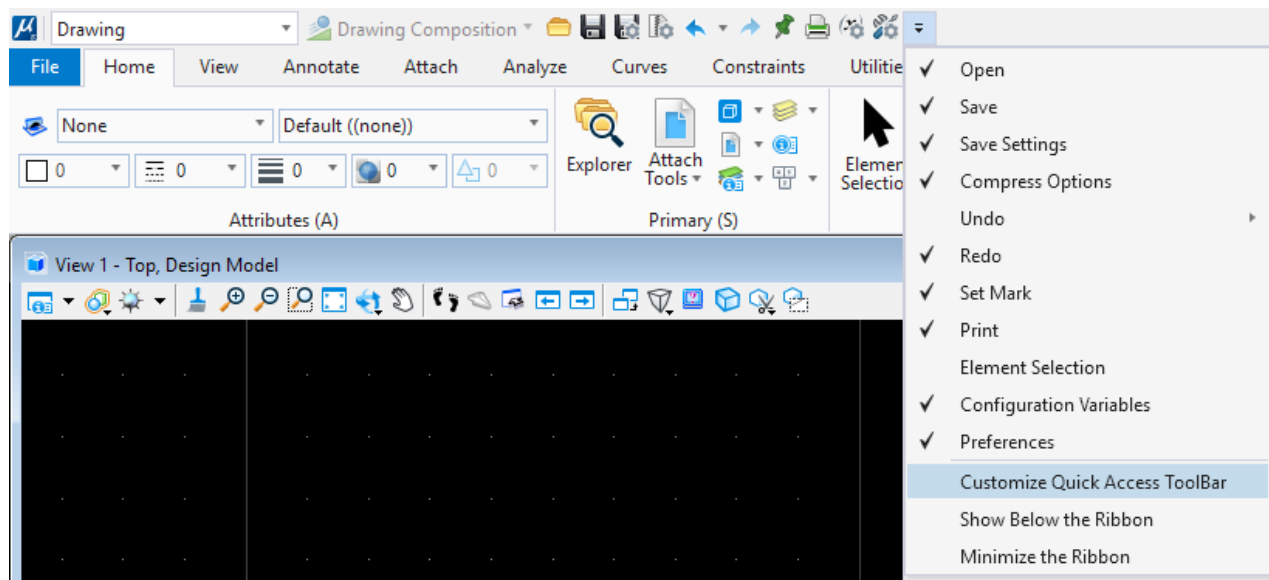

Show/Hide Ribbon Tools
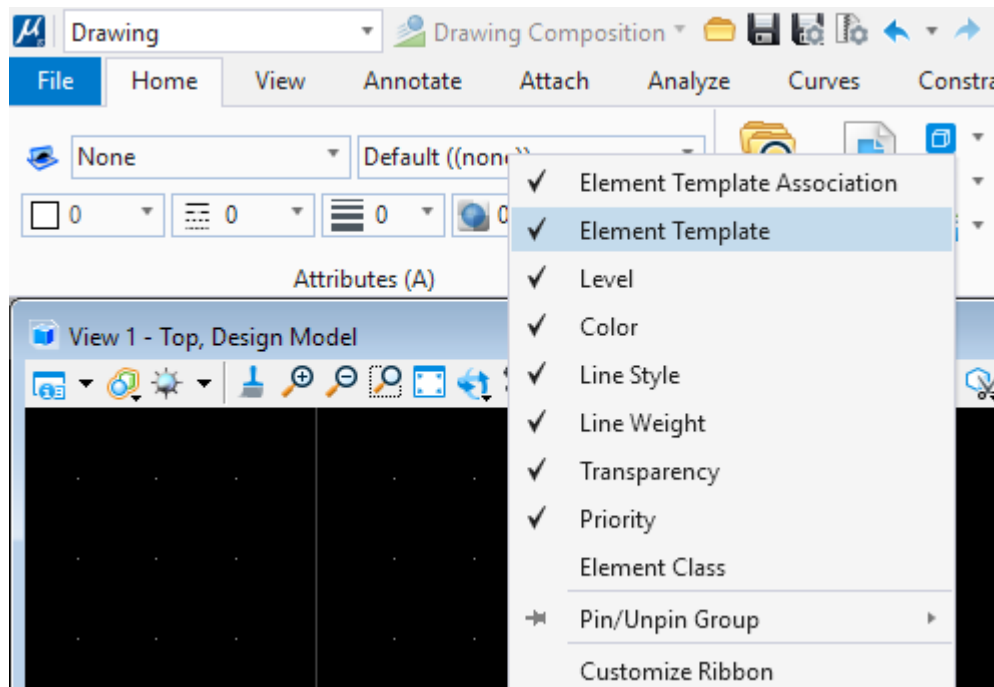
Right-clicking on a Ribbon Group displays a pop-up menu listing all the tools where they can be ticked on/off. Any changes made are stored in each user's preferences.

Ribbon Preferences

The Ribbon preferences offer controls for the size and display of Ribbon items, the default Ribbon Size, Medium, displays 24 x 24 pixel icons for the smaller buttons.
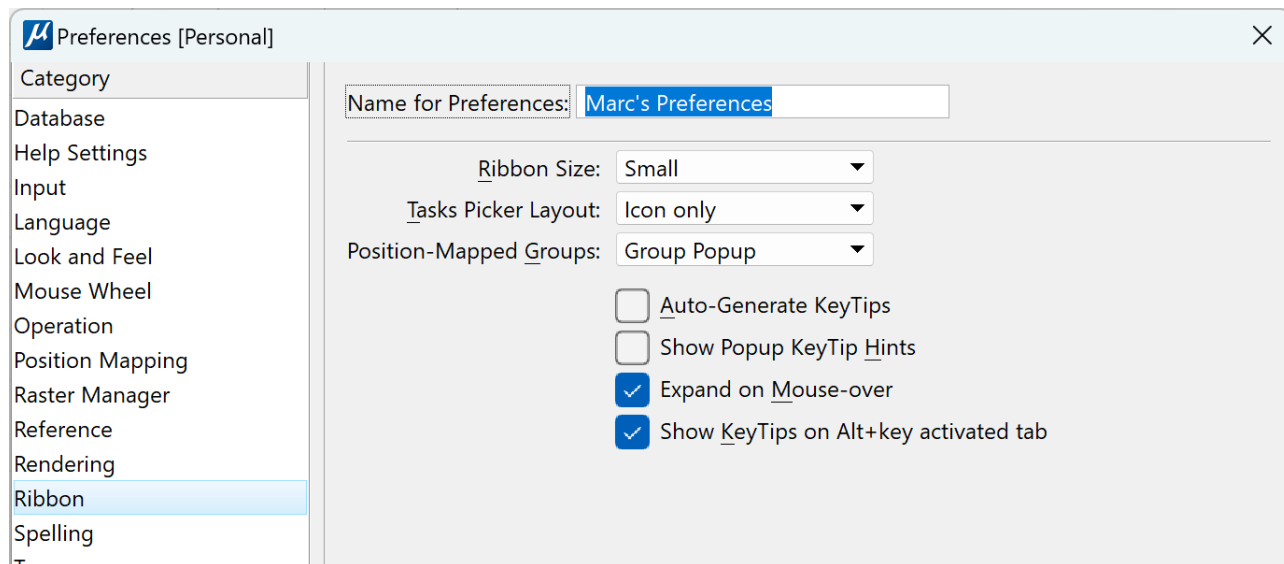
Show Popup KeyTip Hints controls whether KeyTips are initially shown for Ribbon Group Popups. This may be useful to gain initial familiarity, but as pressing Alt when the popups are open shows the KeyTips, this can generally be left unchecked.
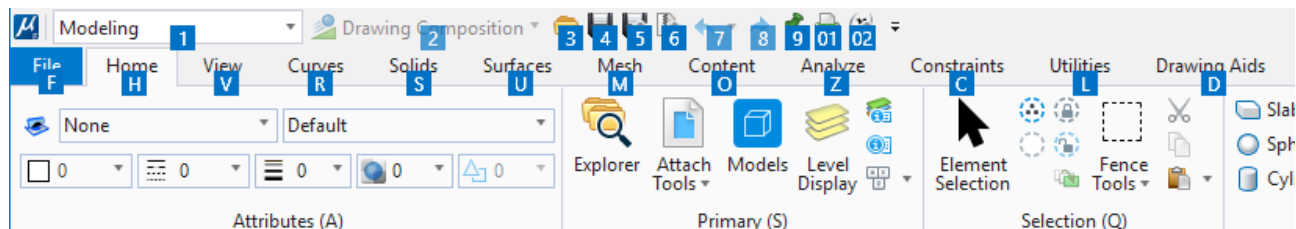
Additional Information

Look in the top-level topic "The Ribbon" in CONNECT Edition help documents.

Other Ribbon Shortcuts

F2

Displays the KeyTips for Ribbon Tabs and Quick Access Toolbar (QAT)

Press the appropriate letter to activate the desired Ribbon Tab or number (combination) to activate a QAT tool.
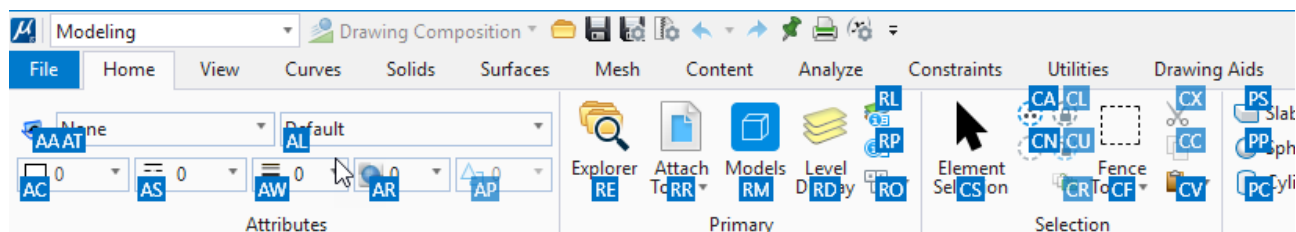
ALT + <Letter>

These combinations can be used as an alternative to F2 to open tabs or go to the backstage. For example, **Alt+F** can be used to open the Backstage and **Alt+H** can be used to switch to the Home tab. These shortcuts are shown in the tooltips for all ribbon tabs, this display when the cursor hovers over a tab.
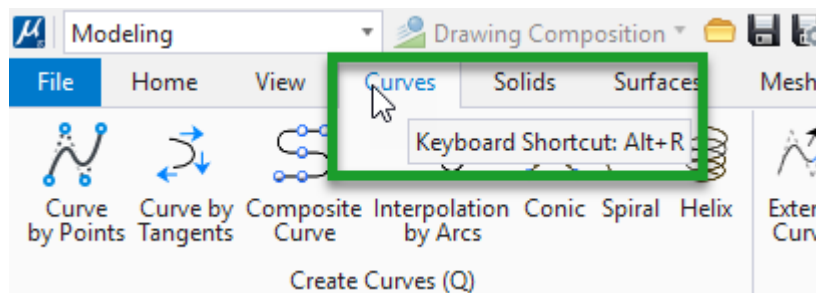
F3

Displays the KeyTips for the open Ribbon Groups:

Press the appropriate letter combination to activate the desired tool.

Clearing the KeyTips

The KeyTips will clear once a tool is selected, to clear without selecting a tool press **Esc** or right-click to **Reset**.

Tool Settings

The Tool Settings dialog floats or can be docked. Docking it is not a good idea as this generates a huge blank grey area! The name of the Tool Settings dialog will echo the currently active tool:
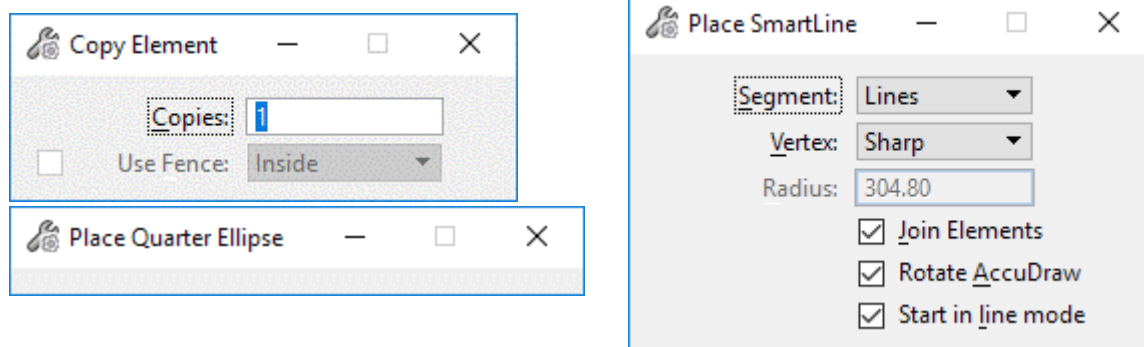
The size and content will vary significantly depending on the options available for the active tool.

- If the Tool Settings dialog is not visible press **F10** to bring it back.
- Use the PopSet (see below) shortcut **Ctrl + Spacebar** to bring it to your mouse cursor.

The Tool Settings are crucial; virtually every tool has additional settings that allow you to get the result that you want.

Some are very obvious; Place Circle for example, gives you options for the placement method: Center; Edge; Diameter, amongst other things.
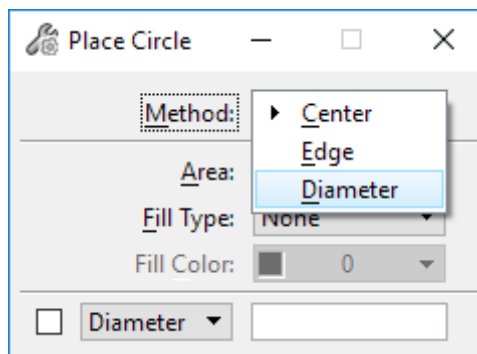
Create Region is typical of a tool where several previously separate tools have been consolidated into one that contains all the available options.
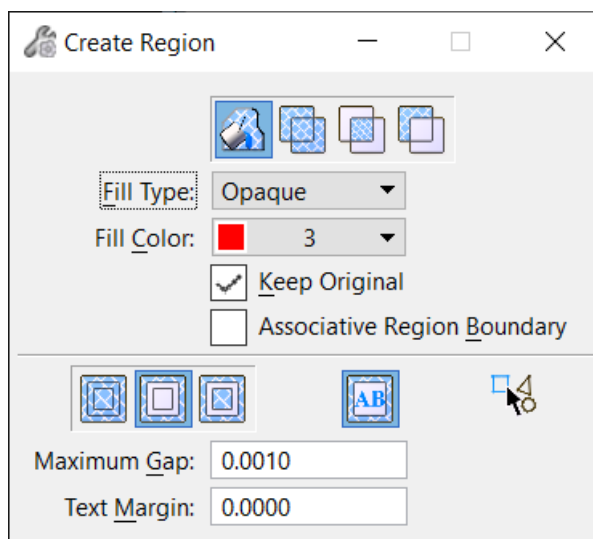
Element Dimensioning is another example. Here a range of dimensioning methods have been consolidated into one tool. Element Dimensioning is also a smart tool that will present different options according to the element being dimensioned.
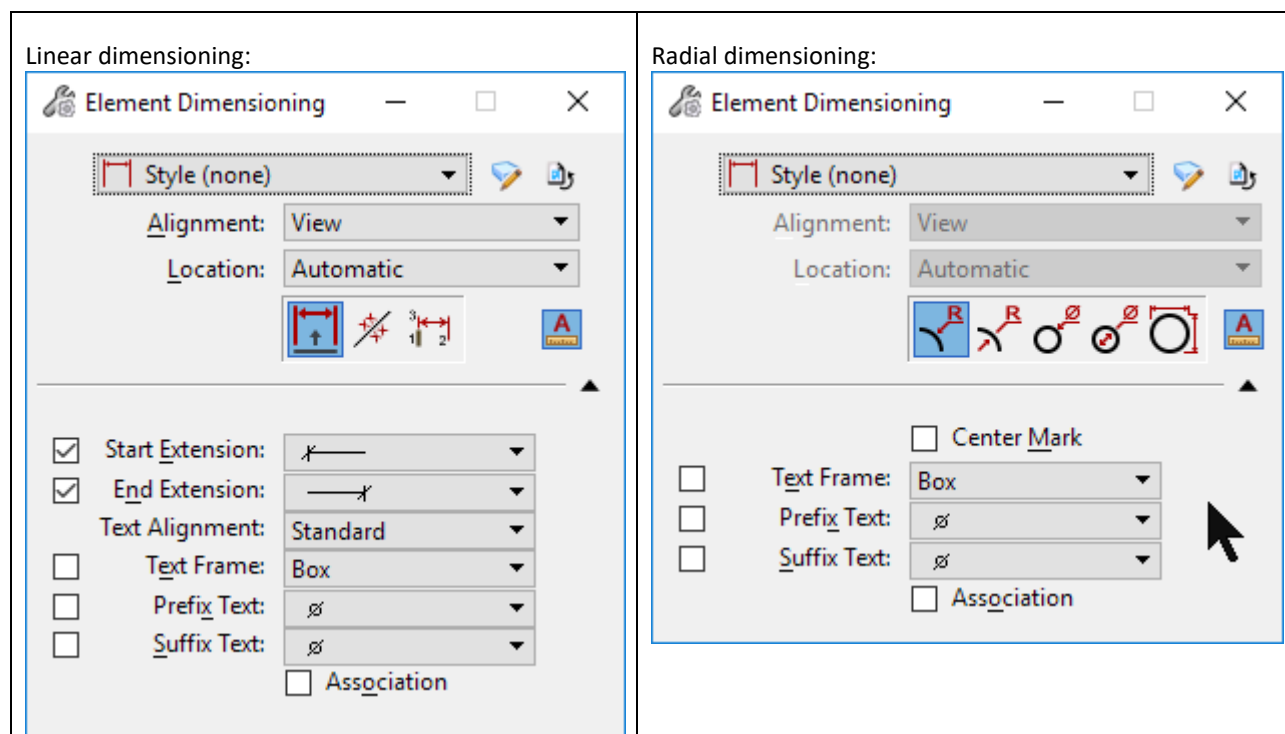
The tool settings switch between these automatically going to radial when you dimension an arc, circle or ellipse.

Always look for the little black arrows on the Tool Settings (and other dialogs), these pop-out additional options as shown above.

The collapsed Element Dimensioning Tool Settings dialog looks like this:
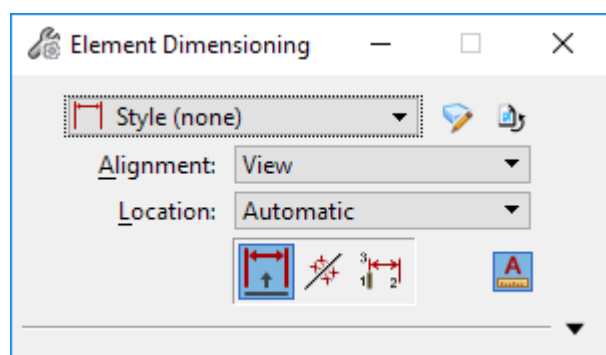
Explorer Dialog

The Explorer dialog has been significantly enhanced in CONNECT Edition, the full details are beyond the scope of this QuickStart, more information can be found in the help documentation.
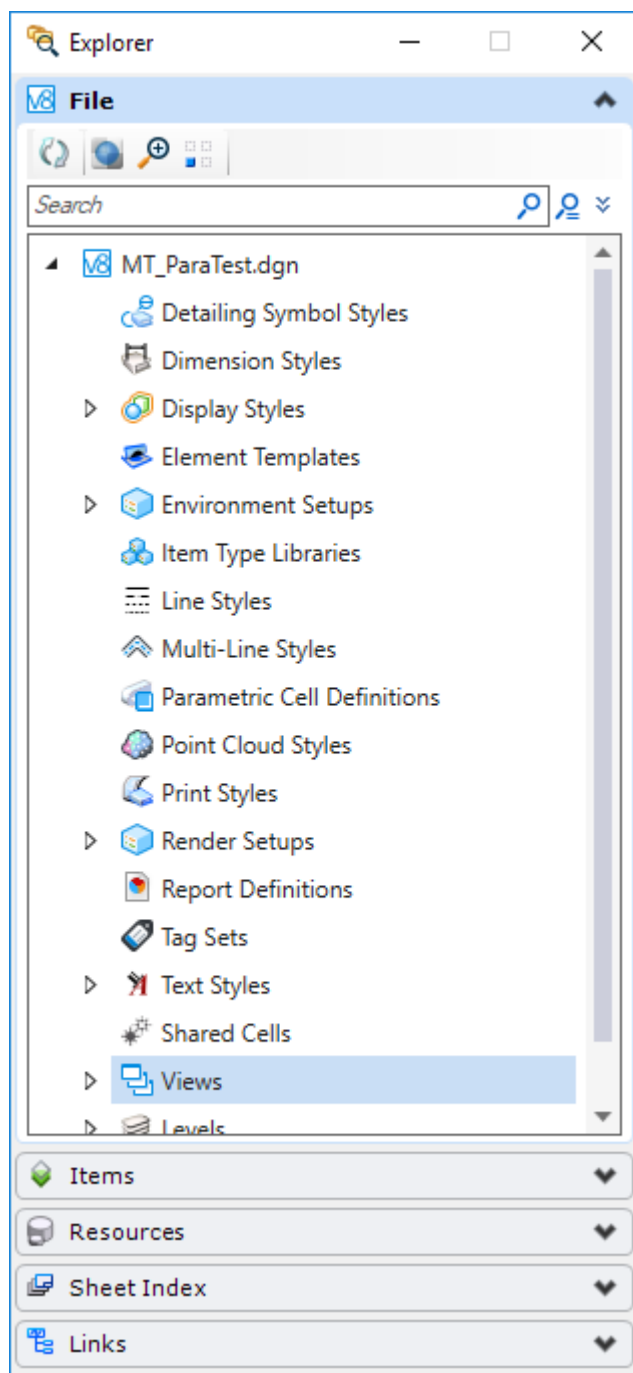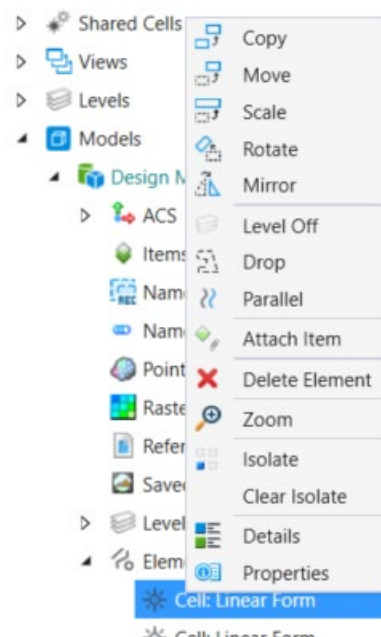

This dialog exposes additional information about files, their contents and project resources.

Where files contain multiple Models, expanding the Models list offers a quick way to change Model, double-click the required Model to open it:
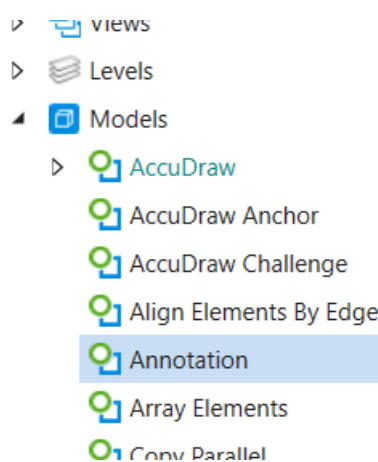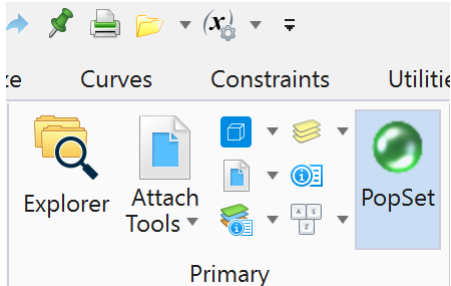

There are many right-click menus that enable direct access or actions relevant to the selected item:

PopSet

PopSet has been added to the Ribbon Primary tools in MicroStation 2023:

Settings to control PopSet's behaviour are found in File > Settings >User > PopSet Settings:
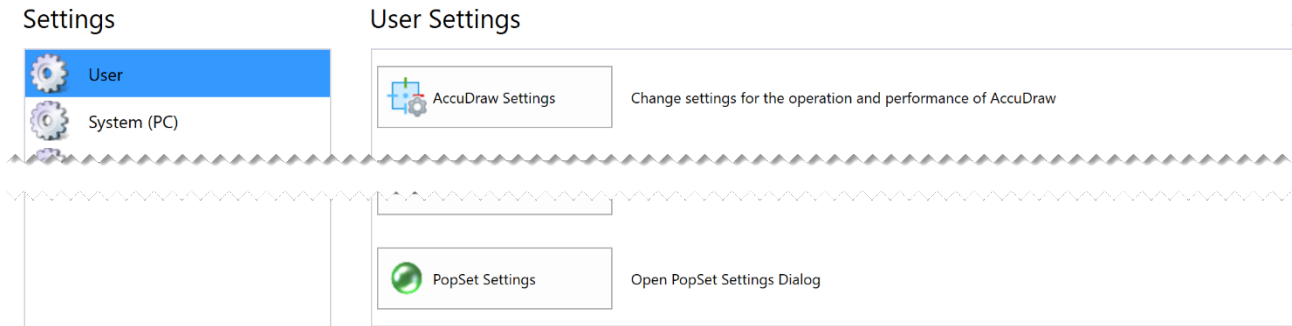
By default, they are set as shown here, the timings and hide border can be changed to suit your own preferences if desired. The Hide Border is the zone around the dialog that is sensitive to the mouse. When the mouse enters this zone slowly the Tool Settings will be hidden. For more modern higher resolution monitors change the Hide Border to a higher value say 30-45.

Leave the Auto-Position Tool Settings box unticked for best behaviour by PopSet.
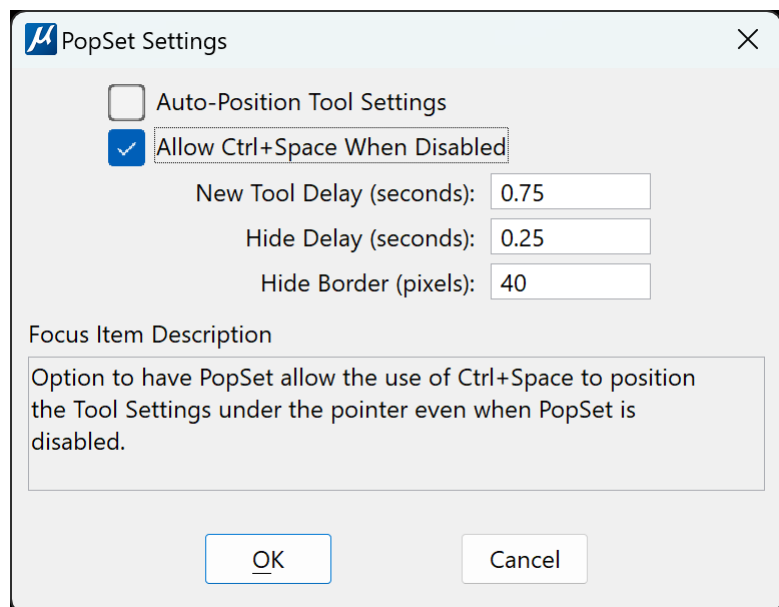
PopSet in Update 17 or earlier

Prior to MicroStation 2023 PopSet has to be opened as a toolbox, press **Ctrl + T** to open the Toolboxes dialog, then scroll down to PopSet, tick the box and click OK. Dock the PopSet toolbox in a convenient place, maybe above the Status Bar.
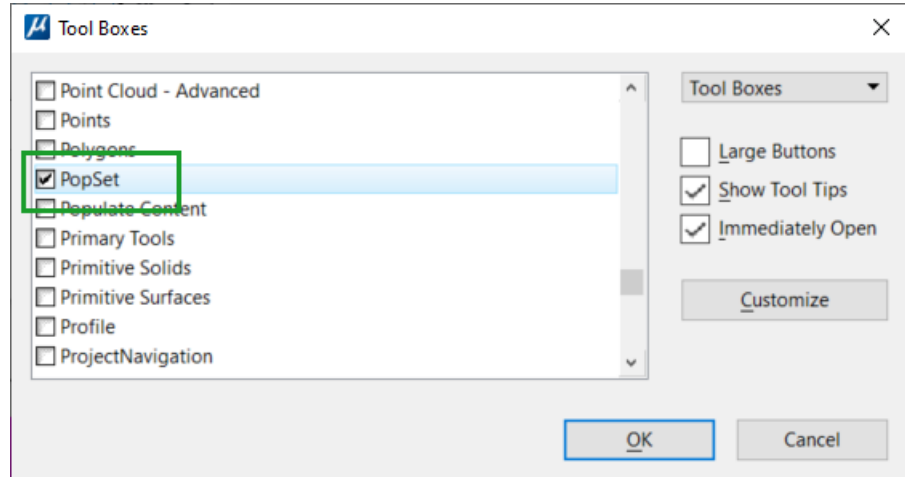
PopSet will automatically hide the Tool Settings dialog if you need to draw in the part of the screen it is occupying. Right-click on the PopSet icon to see the PopSet options.
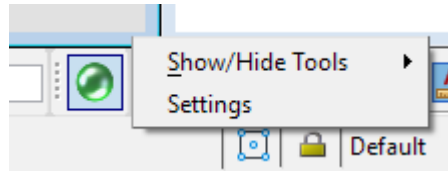
To dock PopSet, place the cursor over the left hand edge of the title bar, press and hold the left button to drag, or right-click and pick Move from the pop-up menu:

Element Selection

Quick Selection methods:

- **Drag** with the **Data** button (Left button) from Left to Right to select elements within the shaded marquee.
- **Drag** with the **Data** button (Left button) from Right to Left to select elements overlapping the shaded marquee, note the marquee will be dotted in this case.

Both of these methods will be affected by the mode selected in Element Selection Tool Settings, see below.

Right-press on the drawing background for a pop-up menu including: Select All, Select None (very useful!) or Select Previous. Select Previous will recall the previous selection, very useful if a selection is accidentally lost.

The Element Selection Tool Settings have two rows:

- The top row is the **Method**, how you select.
- The bottom row is the **Mode**, what you select.

Using appropriate combinations of these options can really speed things up. For example:
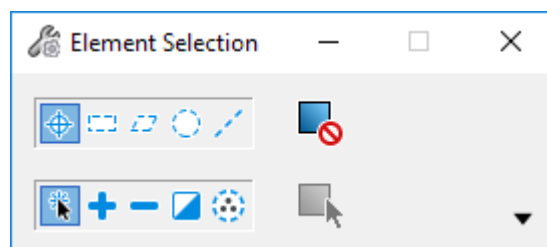
If you want to select everything in an area apart from one or two elements, set the mode to New or Add, **Drag + Data** over the elements. Then set Method to individual and Mode to Subtract and pick those one or two elements to remove them from the selection.

Or

Select the one or two elements then change the Mode to Invert and then **Drag + Data** across the whole area.

Element Handles

The display of handles can be toggled on/off by the button at top right. They can be used to directly manipulate elements, hold down Ctrl to select multiple handles for manipulation.

Alternate Text Handles

Blocks of text display two handle types, the "normal" blue square handles and the "alternate" green circle handles.

- Select a green circle handle to modify the line length of the text element and dynamically change the word wrap of the paragraph.
- Select a blue square handle to alter the size of the text block proportionally, however this results in non-standard text sizes so is best avoided.
- AccuDraw can be used in conjunction with handles to maintain alignments of text blocks.
- Having selected a block of text you can use the **Alt** key to toggle between the "normal" and "alternate" handles, although this has the limitation already described

Snapping

The snaps menu is accessed by left-clicking (**Data** button) on the snaps icon in the status bar.

Data button on a snap mode to set it for the next action. It will then revert to its previous setting.

Data button on the Default Snaps pop-up to select the required default snap from the list.

Shift + Data to set a snap mode to be active for multiple actions.
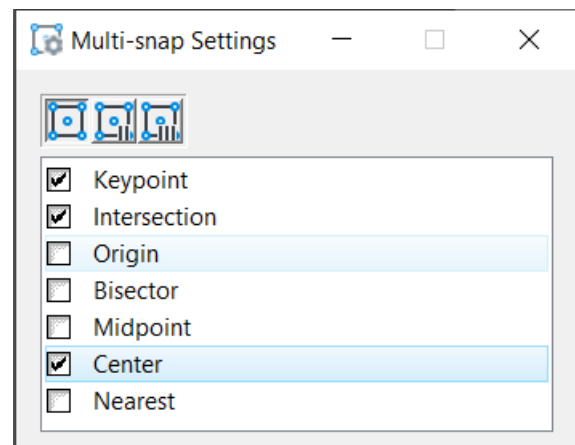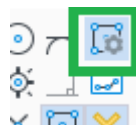
Shift + Tentative (left + right buttons) to pop-up the Snaps tool panel at the cursor.
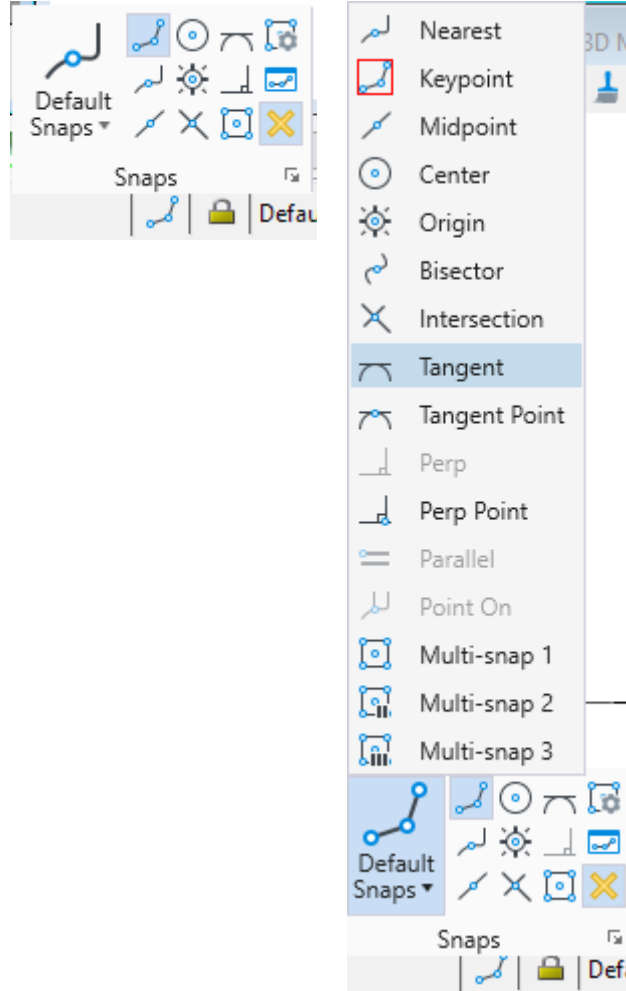
Multi-snaps:

Data button on the Multi-snaps icon (highlighted above) to open the multi snaps settings window.

You can tick any of the snap modes listed. They will apply in order of priority as listed. Each snap mode can be moved up or down the list to suit your preferences.

AccuSnap

AccuSnap is an essential tool that brings a range of snap functions to your cursor automatically.

AccuSnap is turned on and off from this dialog. Settings menu > Snaps > AccuSnap.

Working with AccuSnap off is usually a huge waste of time, don't do it!

The default settings work quite well but can be tweaked to suit your preferences.

Enable for Fence Create allows AccuSnap to work with Fences.

Hold down **Shift + Ctrl** to turn AccuSnap off temporarily if you want to manually snap to something. Also use to enable for Fence Create if you have not ticked Enable for Fence Create
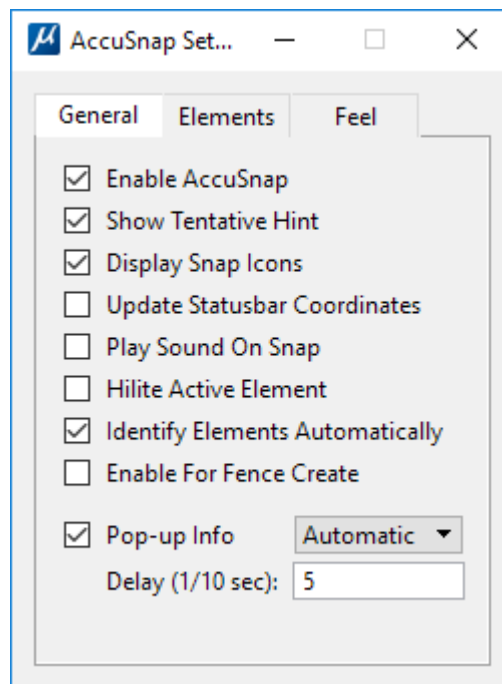
The Elements tab offers options for what AccuSnap identifies. In complex files you may wish to turn some of these off.

Sort hits by element class prioritises Primary elements over Constructions, then Patterns and Dimensions so should be left on.

Here are some examples of AccuSnap in action locating keypoints.

The icon next to the yellow cross shows the current snap mode. If you are using a multi-snap this icon will vary as the available snap points are located.
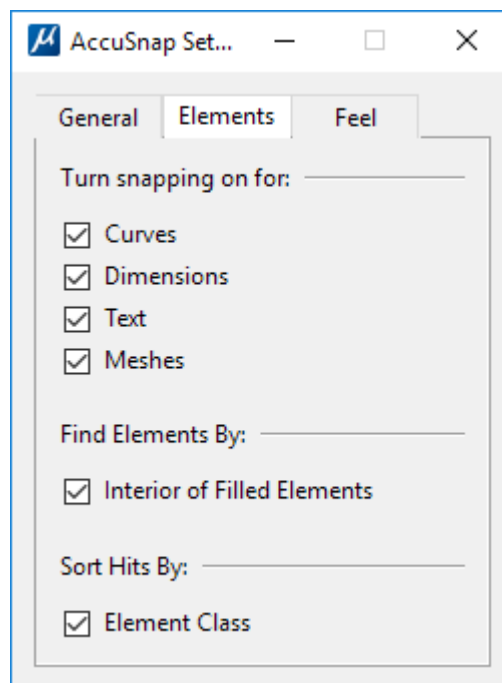
Right-clicking

Right-click is set by default to **Reset** (aka Cancel, reject, stop) **Reset** is used throughout this document.

On the drawing background

Reset and **hold**:

Brings up this Pop-up tools menu at the cursor

On the drawing background

Shift + **Reset**:

Brings up a View Control menu at the cursor

Isolate/QuickSet

QuickSet uses MicroStation's Graphic Group functionality to enable selections of elements to be isolated. To use select the elements that you want to see, right-press and pick Displayset Set. All elements outside the selection will be hidden. To revert right-press and pick Displayset Clear.

Alternatively, right-click on element in the Explorer dialog and pick Isolate. To revert right-click and pick Isolate Clear.

Right-press pop-up menu
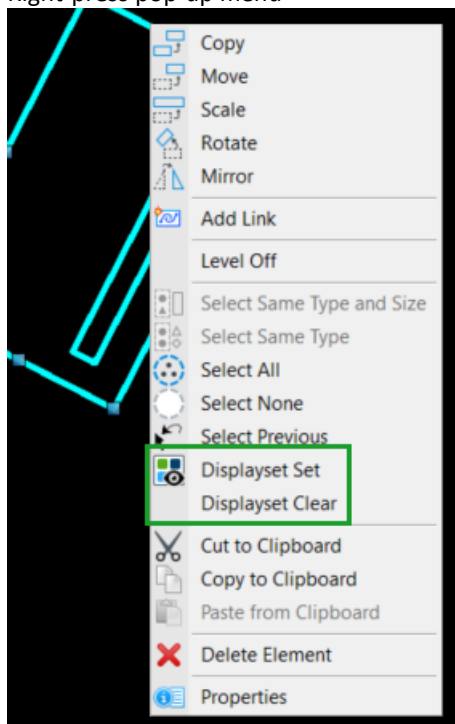
Right-click in Properties menu
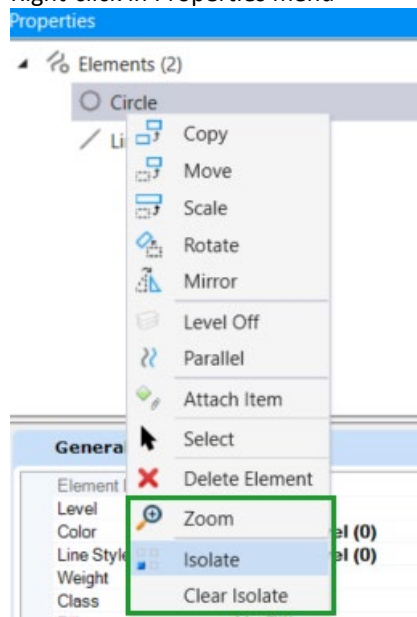
Properties (or Element Information)

The Properties dialog is a powerful tool not only for establishing the current state of elements but also for making changes. It has the great advantage when making changes of enabling you to be sure of the current state before changes are applied.

You can open it either from the Primary Toolbox or by pressing **Ctrl + I**.

A quick modification sequence is to select one or more elements then press **Crtl + I**, as shown alongside:

When you select multiple elements, they will be listed at the top of the dialog.

The selection will be highlighted, in the various sections below some attributes will be shown as "Varies". This is very useful for identifying inconsistencies.

Clicking on an individual element in the list will show all the attributes for that element.

Any attribute that is shown in black can be modified either by over-typing or by picking from a pop-down list. If over-typing does not work use the pop-down, this operation of this dialog is not totally consistent yet.

Where this comes in really useful is for modification of several or many elements.

In this example, in the Contents panel the Text String property can be modified, changing all of the selected elements.
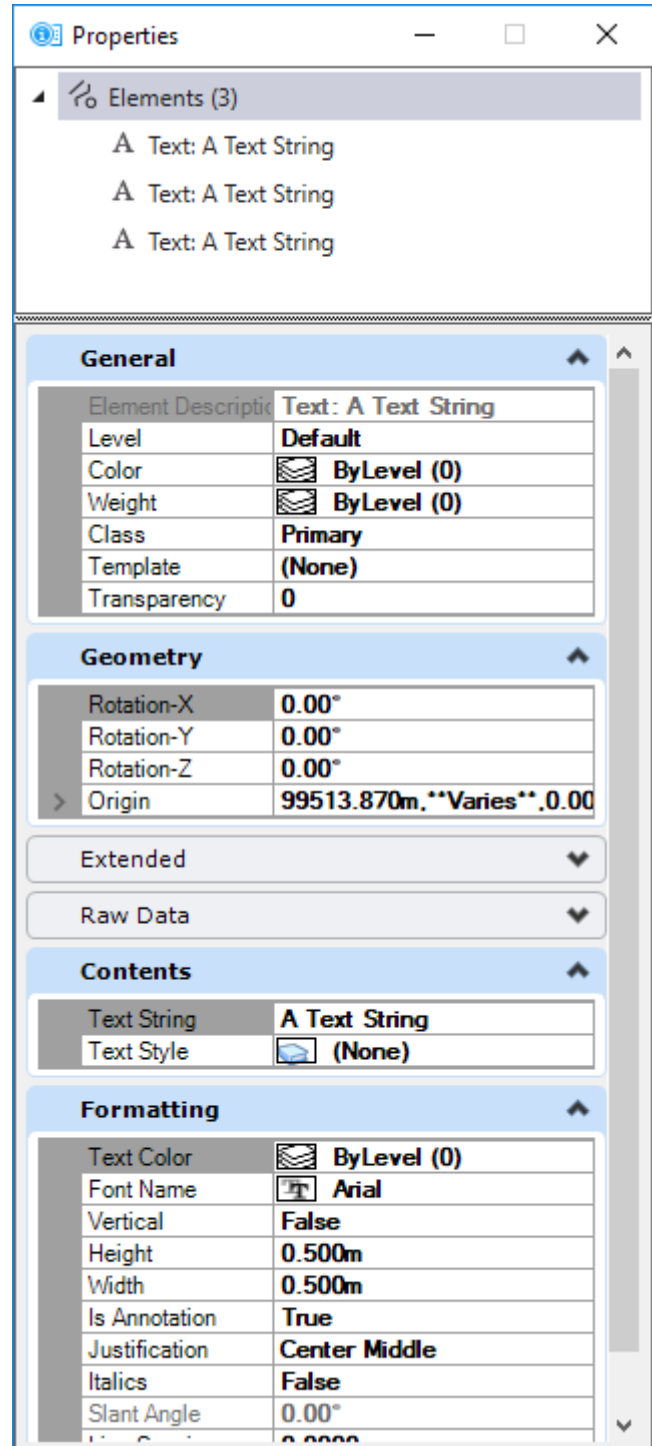
Another example:

- Place some text elements at varying angles then select them all.
- Press **Ctrl + I**
- Note that in the Geometry section the angle "Varies".

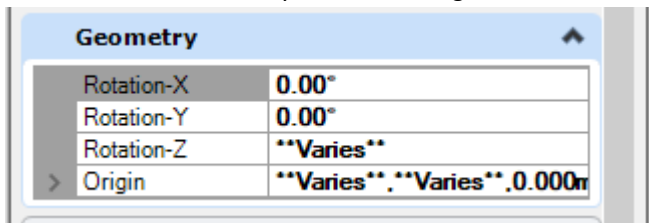- Double-click to select **Varies**, type 30 then Enter.
- All the selected text items will be rotated to 30 degrees.

Now draw three random diameter circles try modifying their attributes.

Note: for circles to remain circular both primary and secondary axes must be the same, there is no attribute for radius.

If too much information is displayed you can right-click on a field to Hide it or, right-click on the grey background of the dialog and turn things on and off from the pop-up menus. To see the grey background, either expand the dialog or collapse some of the sections. On the basis that you never know when things will come in handy, I leave these alone most of the time.

Changing Element Attributes

The Change Attributes tool is packed with functions, the eyedropper is particularly useful, but a quick tip to change the primary active attributes is hold down the Alt key then click on an element. This will set the active attributes to match that element.

MicroStation CONNECT QuickStart
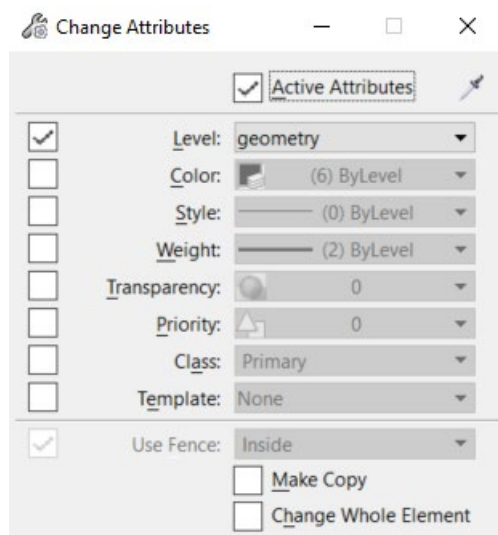
AccuDraw

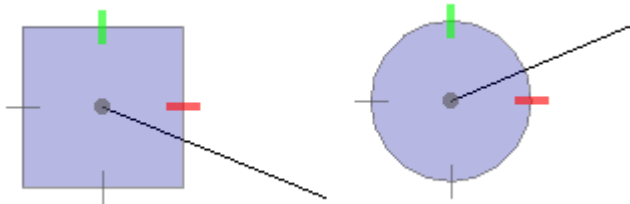In most instances AccuDraw replaces the need to use several manipulation commands. It does require perseverance to become familiar with the shortcuts and exact syntax of some operations.

AccuDraw adds two features to the interface:

- A graphic indicator called the "compass" at any active data point on a drawing.

- A precision input window, the AccuDraw window, with fields for entry of x,y (and z in 3d drawings) coordinates or polar (distance,angle) coordinates as appropriate.
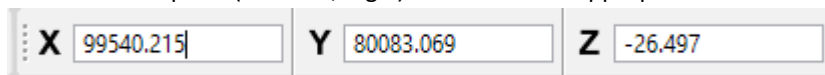
The active field will be determined by the cursor direction/location relative to the compass. For example, move the cursor in the x direction, the x field will become active automatically, just type in the dimension and click the left mouse button.

Keyboard short cuts offer single key operation when the focus is in the AccuDraw window (focus = highlighted field or button). With AccuDraw in focus press '?' to see a list of AccuDraw shortcuts, see below for more on these.

AccuDraw Settings

Generally, the default settings work well but if you wish to explore further, press F4 and start to type 'AccuDraw Settings', then open the dialog:
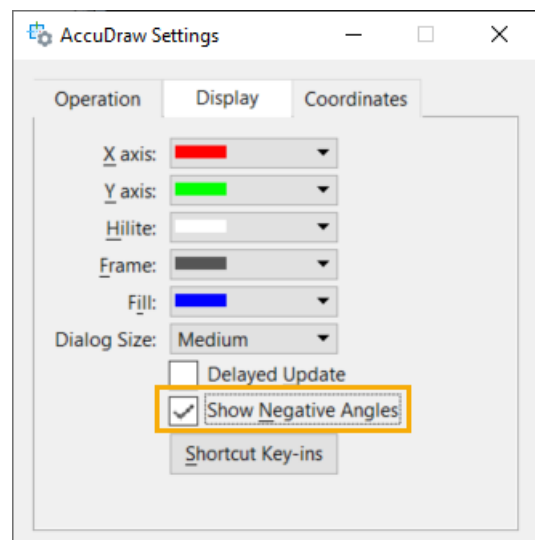
One setting that you may wish to change is:
'Show Negative Angles'
This is on by default so angles must be input with positive or negative values relative to the active axis:
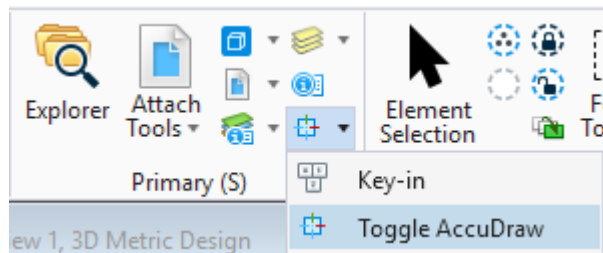

Turning this off results in angles being displayed from 0-360° which may be more intuitive in some situations:

Starting AccuDraw

AccuDraw is set to be on by default in user preferences.

If it has been turned off click the AccuDraw button in a Ribbon Primary Group (**F4** to search the Ribbon).

Controlling the Compass

The Compass operates in two modes, rectangular and polar. In rectangular mode x and y dimensions are input. In polar mode angle and distance are input.

Switching from one mode to the other is achieved by pressing '**M**'.

The compass will rotate as elements are drawn so that the angles are always relative to the last element. This becomes apparent when elements are placed at non-orthogonal angles.

The compass can be rotated back to x,y orientation to the view by pressing **V**, i.e. y vertical, x horizontal to the right.

Basic Drawing with the Compass

Try drawing a line with AccuDraw on (if focus is not in the AccuDraw dialog, press **F11)**. At the start of the line the compass appears. Notice that when the cursor is within about 3° of the x or y axes the line will snap to the axis.

When the line is snapped to an axis, press Return. The line will then be locked to that axis, its length can be set either by keying in a dimension or by snapping to another element, note that the line remains on axis wherever the element being snapped to is located.

Pressing **X** or **Y** will lock the current value entered into the AccuDraw window X or Y fields. This value can either be typed in or obtained by snapping to an element.

AccuDraw remembers the last dimension you used, draw a line, then another and watch for the grey bar that appears when you get to the previous length:

MicroStation CONNECT QuickStart – *Updated for MicroStation 2023*
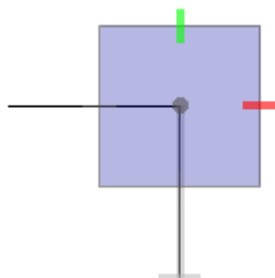
AccuDraw's Shortcuts

These are some of the most useful standard Shortcuts:

Enter Smart Lock

Press **Enter** key to lock elements onto the AccuDraw axes. For example, once **Enter** is pressed a line will remain locked on the selected axis regardless of the mouse position.

M Change Mode

Press M to switch from X Y Z rectangular coordinates to polar (angle and distance) coordinates.

View Rotation

V View Rotation

Press **V** to rotate the AccuDraw compass back from an angle to orthogonal x,y orientation aligned with the view. Use **V** when the view has been rotated.

T, F and S Rotation

In 3D rotate the compass to Top, Front and Side planes with these keys. In 2D T will rotate to the true XY. Note that if the 2D view is rotated this will be different to the View orientation.

E Cycle Rotation

In 3D press **E** repeatedly to cycle through the rotations.

O Set origin

Press **O** to set the start point (origin) for a command relative to a snap point or data point.

To use this, snap to a point, then press **O**, you will then be able to input dimensions using AccuDraw to move the origin (or start point) of the next step in the operation which you are performing.

This function can replace many operations where an element is initially located by snapping to an existing element and then moved by distance to a new position. It will be equally useful in many other situations. The following simple example will explain:

The sequence is:

- Start AccuDraw.
- Select the tool which you wish to use, Place Block for example.
- Snap to the first point.
- Then *before you do anything else*, press **O** (the letter not the number, note that it isn't case sensitive)
- Now move the cursor, see that the dimensions in the AccuDraw window are following the cursor and that when the cursor moves near to an axis a white guideline appears. What you are moving is the start point for the block.

For example, to place a block 300 x 300 away from the first snap point enter 300 into both AccuDraw window fields and accept with the data button. The first point of the block will now be 300 x 300 away from the start point.

This can be used in sequences, in the example above the start point of the block is placed relative to a point, the opposite corner of the block could be placed relative to another point with a similar sequence. It takes a little getting used to but once you have become familiar with the sequence offset can save a lot of copying around of elements and eliminates the need for most construction lines.

Snaps

AccuDraw has several shortcuts to temporarily override the current Snap Mode.

- Intersect snap, press **I**.
- Centre snap, press **C**.
- Keypoint snap, press **K**. This will bring up a small dialogue box where the number of keypoints can be changed.
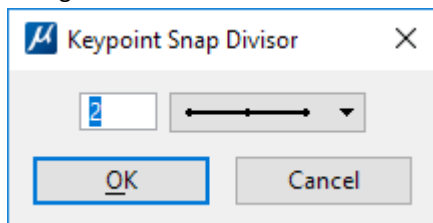
- Nearest snap, press **N**.

The override will revert to the current Snap Mode once the current snap action has been accepted.
For instance: place a line with Keypoint as your current Snap Mode, use AccuDraw I to override to Intersect snap, snap to the intersection, accept that snap and the snap will immediately revert to Keypoint.

Rotating the Compass

The compass can rotate to align with the normal orthogonal grid but can also be rotated in several ways to other grids that relate to buildings or other real-world features.

Rotating the AccuDraw grid.

When drawing objects that are not aligned to a normal grid e.g., existing buildings, the compass can be rotated to the desired alignment. This can be done either temporarily for a single operation or set for a series of operations. These take a little getting used to but once you get the sequence right are very useful.

RE

This rotates the compass to align with an existing element. Type **RE** then hover over and click on the element that you wish to align with.

RA

RA does two things, it either rotates AccuDraw to the active ACS, if there is one, or allows you to set rotation for a series of operations. RE is quicker and easier to use in most cases.

Enter a data point at one end of the element whose orientation you wish to match, type RA, when prompted, snap again to the same point, then snap to the other end of the existing element and accept with the left button. The compass will remain in this orientation until either another RA is executed or any of V, T, F, S and E are used to rotate the compass back to normal x,y (,z) orientation.

RQ

To set rotation for a single operation enter a data point, type **RQ** and then snap to another point to define the rotation. This rotation will persist until the next time the reset button is pressed.

B Base Rotation

Potentially useful in 3D. If you have used RQ or RA this returns to the plane that you are working in. i.e. if you were in the F rotation when you used RQ to do a quick rotate in that plane, **B** will unrotate you back to F, whereas pressing T, V or E will take you to another plane. Worth playing with.

PP/PM

It can be useful to specify data point by coordinates. MicroStation has a precision input function which in AccuDraw is invoked by **P**, offering the choice of inputting a single point or a series of points:

M	Point Keyin (Multi)
P	Point Keyin (Single)
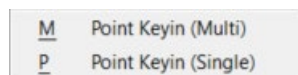
Press **P** again to open the Data Point Keyin dialog for one point to be entered. Enter the coordinates in the format x,y,z then press Enter. The dialog will close.

Data Point Keyin

Absolute (xy=) ▼
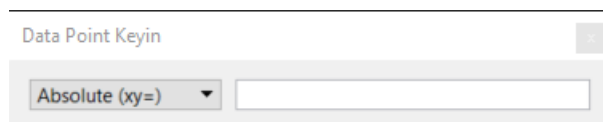
Press **M** to enter multiple points, the dialog will remain open for input of a sequence of coordinates.

Combining AccuDraw functions

Any of the AccuDraw shortcut keys can be used in sequence. For example, try **O** to offset an element position followed by **I** to snap the endpoint of the element to an intersection.

` Bump Tool Settings

The first pop-down menu in Tool Settings can be toggled through using the accent key (for English and European keyboards, other regions can vary).

Place Block

Method: ▶ Orthogonal
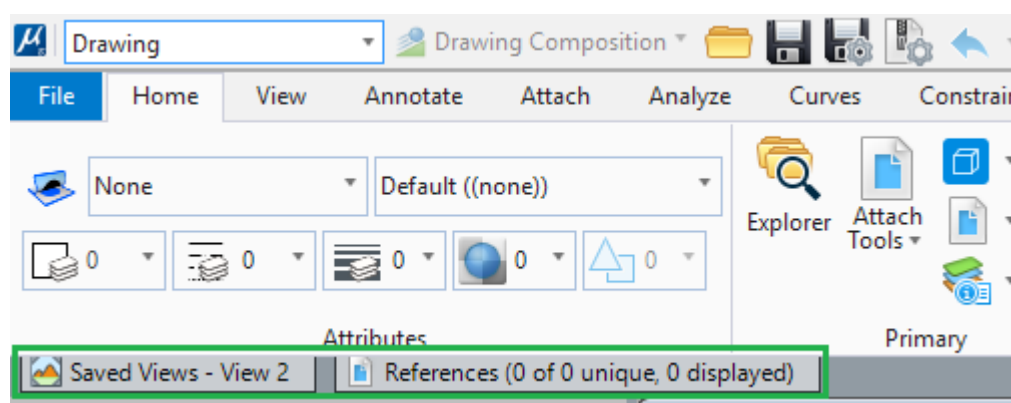Edge 1:   Rotated   *(x)*
Edge 2:   Centered   *(x)*
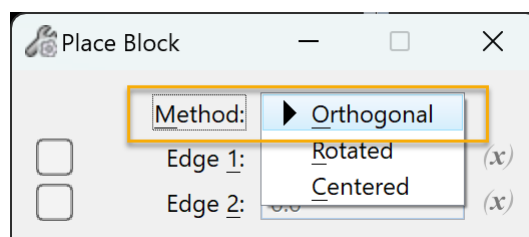
Docking

Many dialogs can be docked, icons showing the available options will display when a dialog is dragged.

They include the available positions and tabbed options, drag the cursor over the icon to see a preview of the docked location:
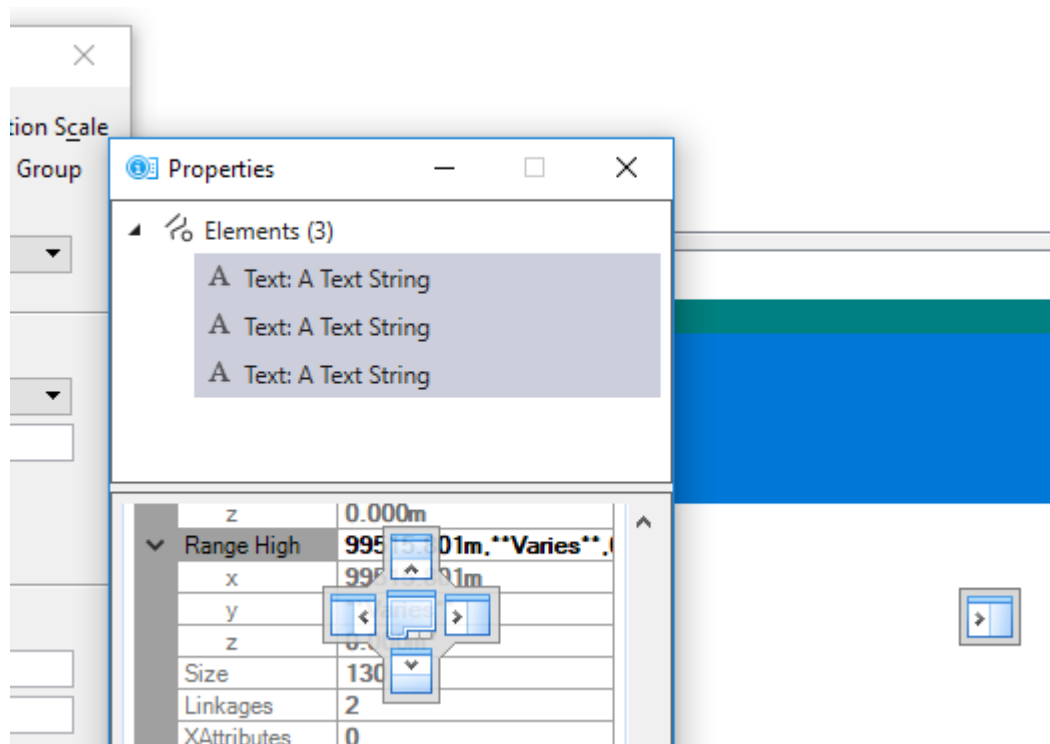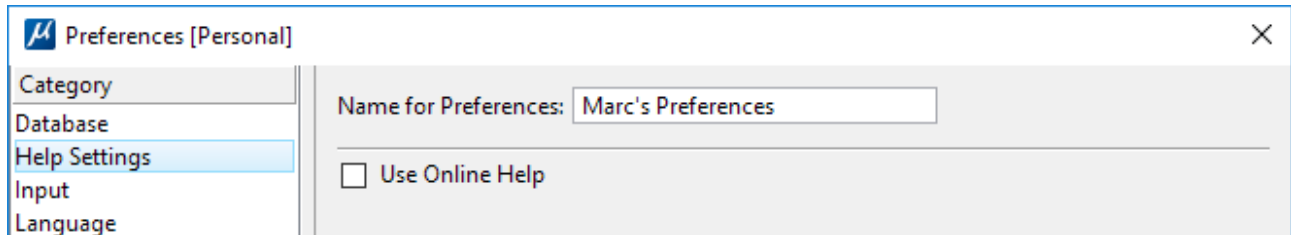

Once docked dialogs can be pinned as tabs:

Setting your User Preferences:

From MicroStation's Workspace menu pick Preferences where a couple of useful options are:
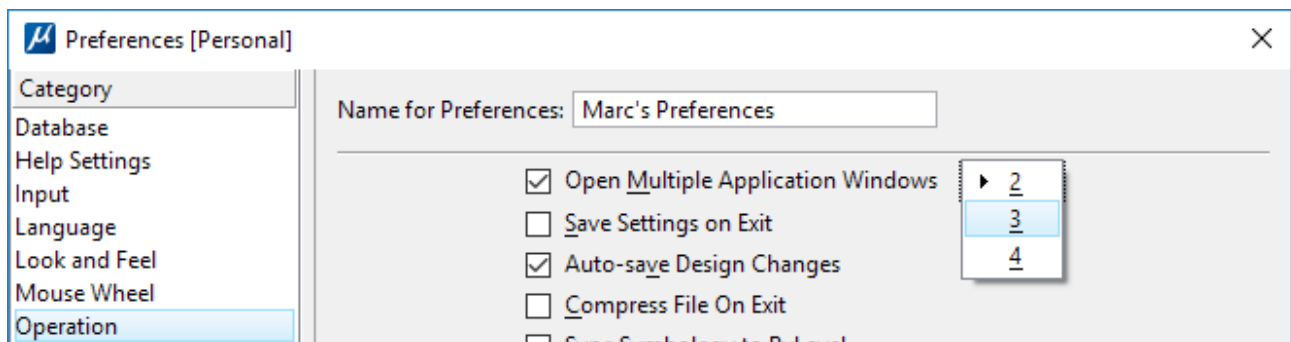
Help

Turn off Use Online Help, this will speed up access to the help documents as it uses the local files.

Multiple Monitors

If you have multiple monitors MicroStation can be set to open a separate window for each monitor (up to four) that can be maximised to each avoiding a single window stretched across multiple monitors:

View Options

View Options: Tick the two boxes shown changing Selection Set Colour to Cyan (or another of your preference), these will override whatever colours are set in each design file giving you consistent colours.