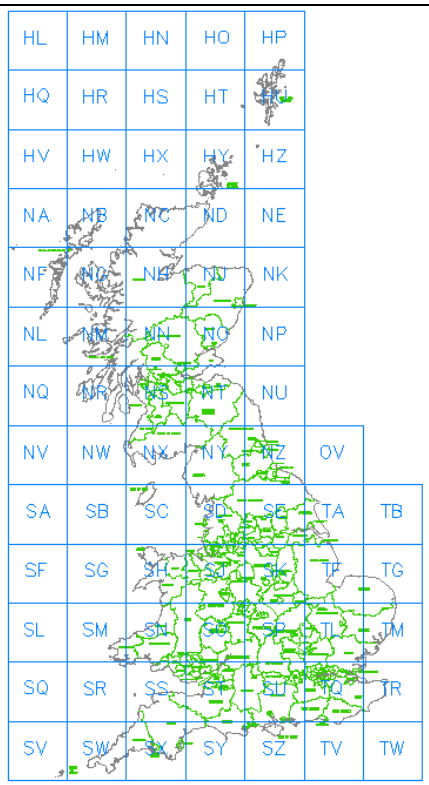
CONE 12 MAPPING TOOLS – USER GUIDE

Contents

Mapping Tools – Introduction

The CONE Mapping Tools provide the facility to add a variety of background maps to your schemes. The background mapping tools are complemented with a range of map querying tools and many other features along with tools to assist the design of Route Directions and Diverted Traffic diagrams.

All of the mapping tools are designed exclusively for the British National Grid Coordinate system where the 0,0 datum is fixed at the bottom left corner of the SV tile.



Your drawing setup needs to be set to:

WCS (World Coordinate System)

Plan View in WCS

The drawing units to Metres or Unspecified,

The ANGBASE to be 0

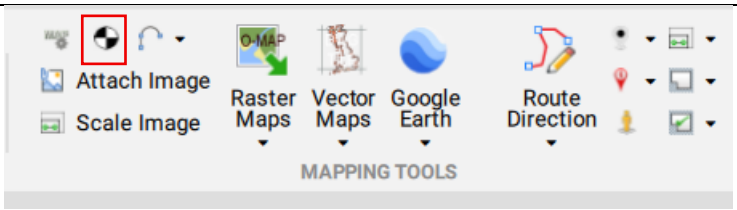
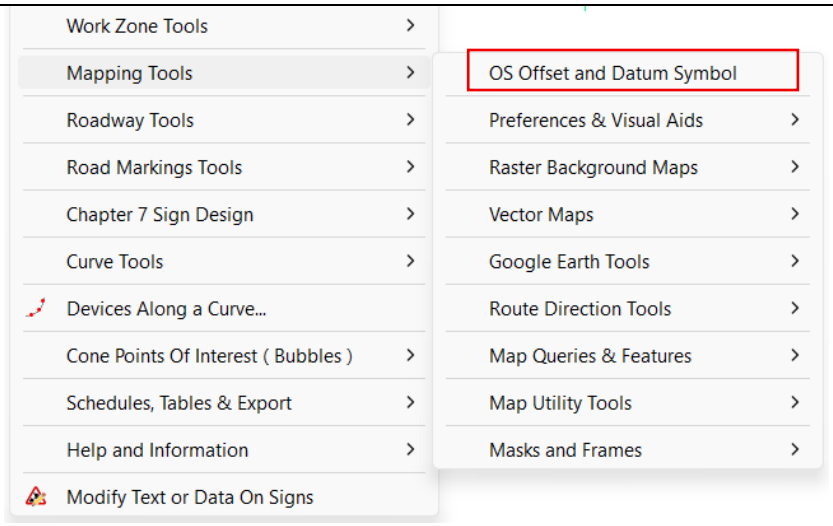
The ANGDIR to be Anti-Clockwise

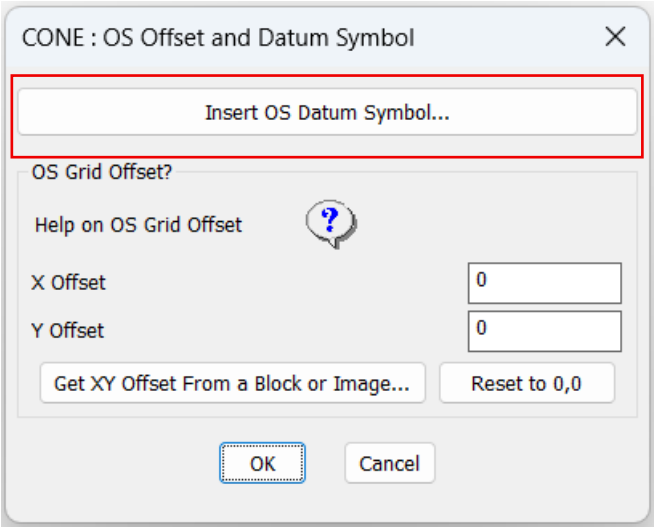
The Angular Units to be Decimal Degrees

All the above are the normal historical recommended settings for CONE users

There is NO requirement for your drawing to be georeferenced

Mapping Tools – OS Offset and Datum Symbol

Command CUKOSDATUM RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPING1	

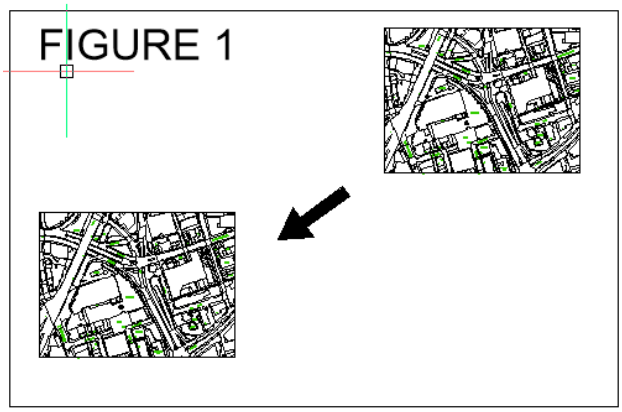


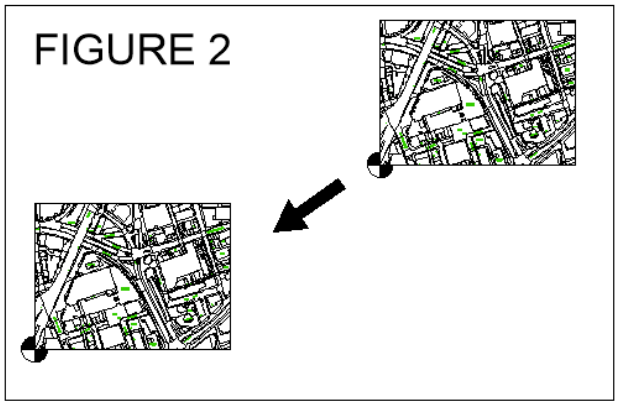
Adding a OS Datum Symbol can add Spatial awareness to your maps

Consider this scenario: You have a Vector Map placed on your drawing that is correctly spatially referenced (Ie. If you used one the Mapping Query tools or the Streetview tool the correct positional information is returned) and you then choose to MOVE or COPY the map to a more convenient location on your drawing then its spatial awareness will be lost. This does not matter if you don't need the map to be spatially aware, but if you do then inserting a OS Datum symbol BEFORE you MOVE or COPY the map will add the spatial awareness

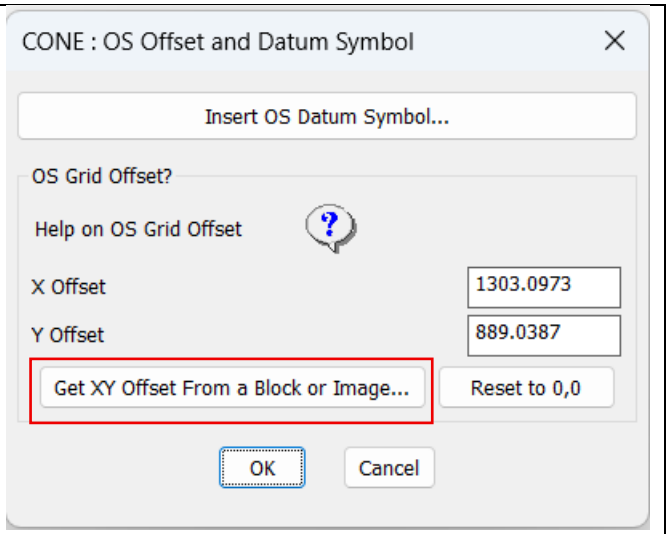
Example: In Figure 1 the map has been moved or copied in the direction shown
The map in at the bottom left is no longer spatially aware.

In Figure 2 an OS Datum Symbol was inserted prior to the MOVE or COPY
The map at the bottom left of Figure 2 is out of position but the OS Datum symbol is spatially aware





The OS Offset can be returned by selecting the [Get XY Offset From a Block or Image].button. In this example the OS Datum symbol at the bottom left of Figure 2 was selected and the values were added to the edit boxes.
The majority of CONE Mapping tools take the current OS X and Y Offset into account when performing spatial calculations



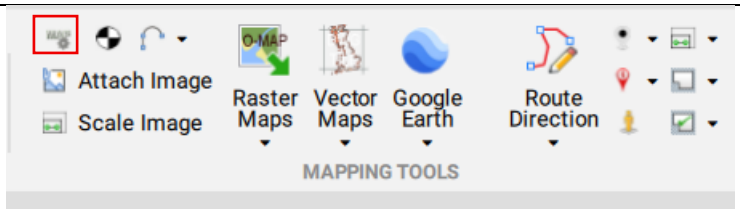
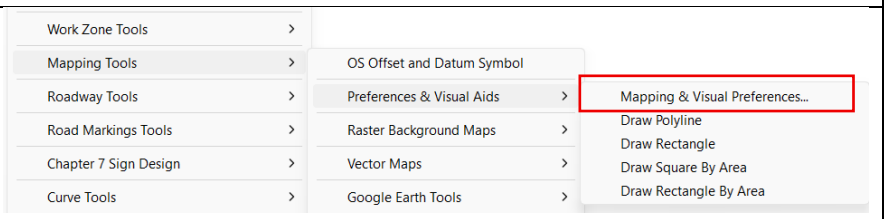
Note: 1

OS XY Offsets are returned without the need for additional spatial referencing from:
OS Open Map 5k and 10k raster image tiles
OS Open Plan Raster Image Maps .if the Create a Block option was selected when these type of maps were created
OS Open Premium Raster Image Maps if the Create a Block option was selected when these type of maps were created
Google Raster and Satellite Images if the Create a Block option was selected when these type of maps were created

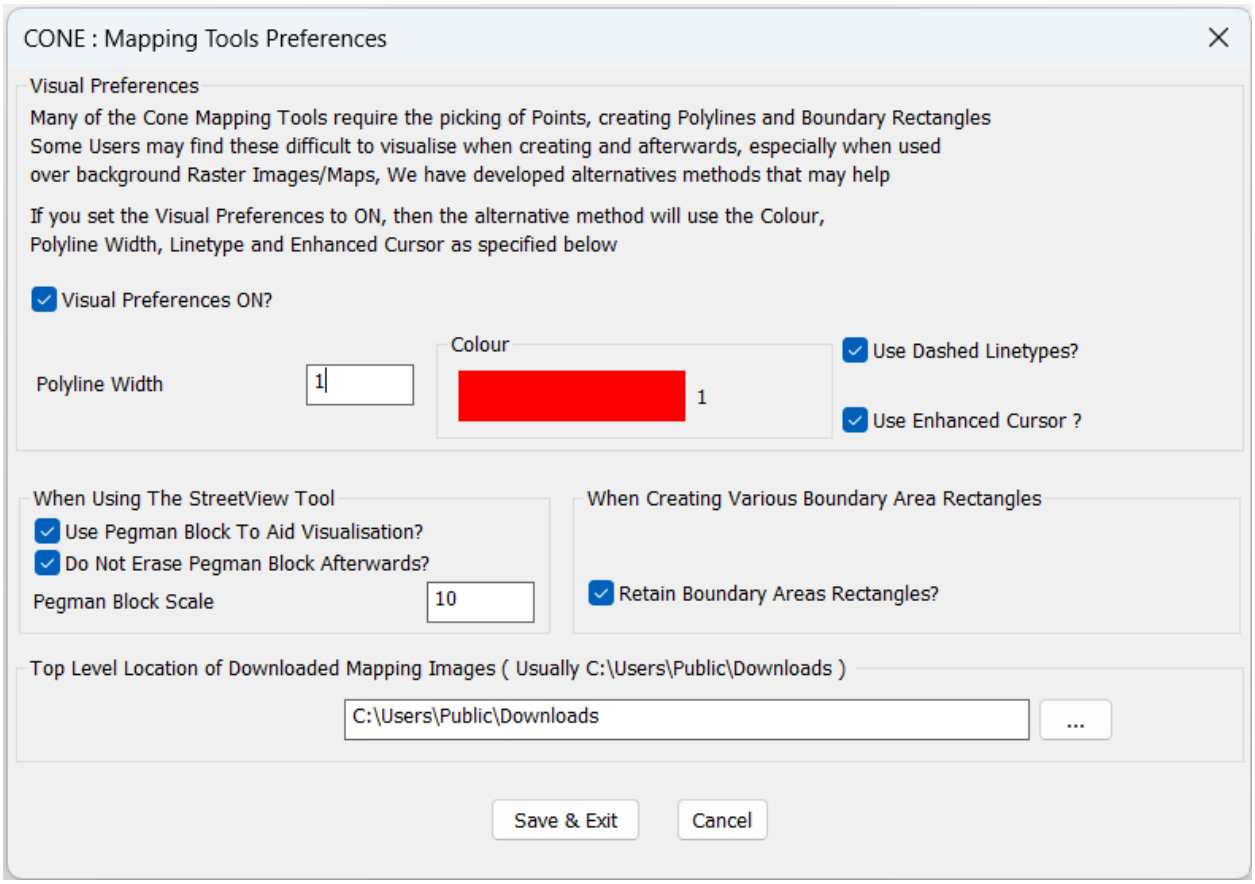
For all the above simply select the image after selecting the
[Get XY Offset From a Block or Image] button

Note 2:
If you Scale or Rotate your maps then all spatial referencing will be lost

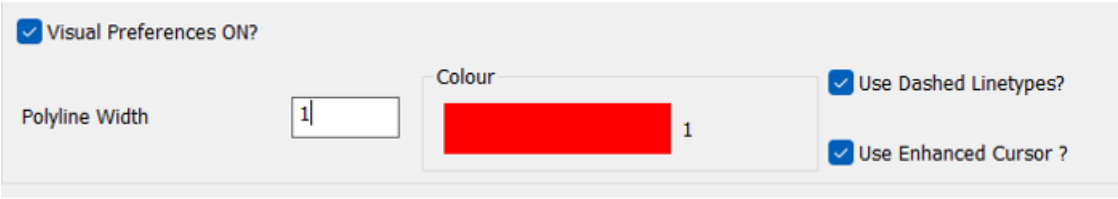
Mapping Tools – Visual Preferences

Command CUKVISPREFS RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPING1	

DIALOG WINDOW



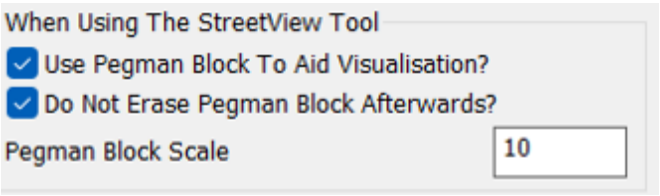
Many of the Cone Mapping Tools require the picking of Points, creating Polylines and Boundary Rectangles. Some Users may find these difficult to visualise when creating and afterwards, especially when used over background Raster Images/Maps, We have developed alternatives methods that may help



If you set the Visual Preferences to ON, then the alternative method will use the Colour, Polyline Width, Linetype and Enhanced Cursor as specified in the dialog

NOTE: Visual Preferences adds a significant overhead to the display list processing and the cursor movement will be slower,

When Using The StreetView Tool



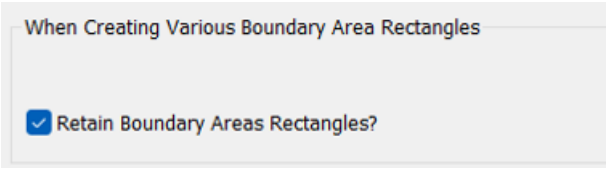
Use Pegman Block to Aid Visualisation


When using the StreetView tool you can choose to insert the Pegman block to aid picking of a point and showing the direction

If you would like to leave the Pegman block on the drawing then select the
Do Not Erase Pegman Block Afterwards

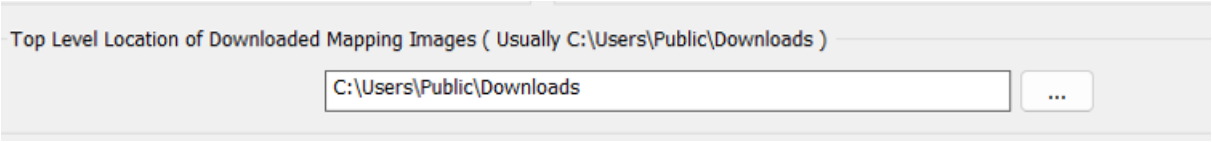
The Pegman Block Scale can be set by entering a value in the Edit box

When Creating Various Boundary Rectangles

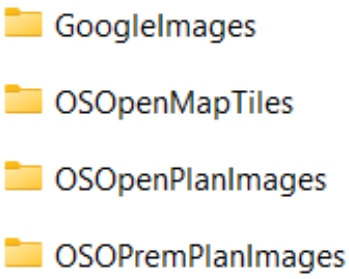


Many of the Mapping Tools that import Images and Vector require the selection of a Boundary Rectangular Area on you drawing/map. This rectangle created during the process will be retained if this setting is turned ON

Downloaded Mapping Images Folder Location

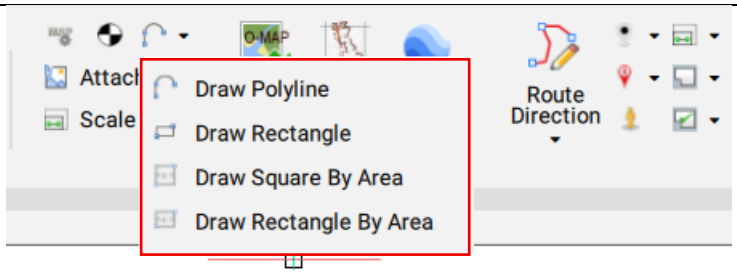
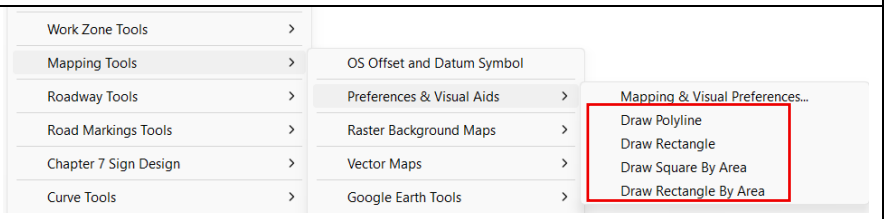
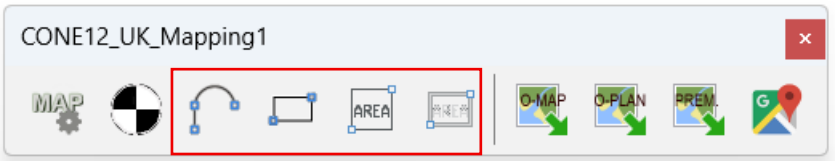


The Mapping tools that add image background tiles to your drawing are located in the following sub folders below the **Downloaded Mapping Images Folder Location**



If you wish to change the Downloaded Mapping Images Folder Location then select the 3 little dots button and choose a different folder.
Note: You must ensure READ/WRITE access to your selected folder

Mapping Tools – Draw Polylines, Rectangles and Squares

Commands CUKPLINE CUKRECTANGLE CUKSQAREA CUKRECTAREA RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPING1	

All four tools support CONE Visual Preferences, if CONE Visual Preferences are turned ON then the geometry is drawn using the Visual Preferences Colour, Width and Linetype settings

Draw Polyline

The CONE Polyline tool simply draws straight segment polylines only

Draw Rectangle

Issue the Rectangle command

DRAW A SQUARE BY AREA

Area Of Square in SqM or type L to enter length : L

Length of Square in Meters: 100

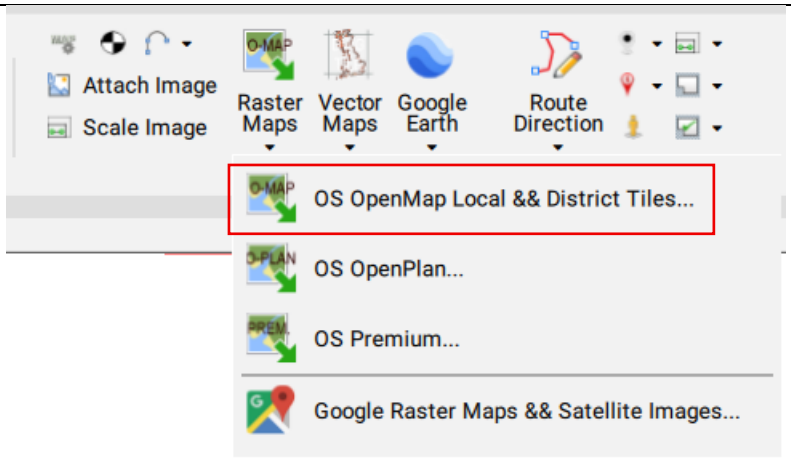
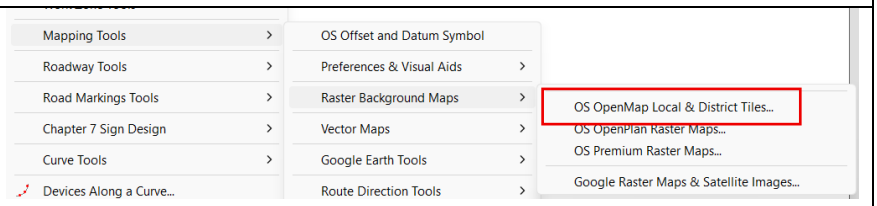
Pick Square Corner Point: then pick a second point: to show where you wish to place the square

DRAW A RECTANGLE BY AREA

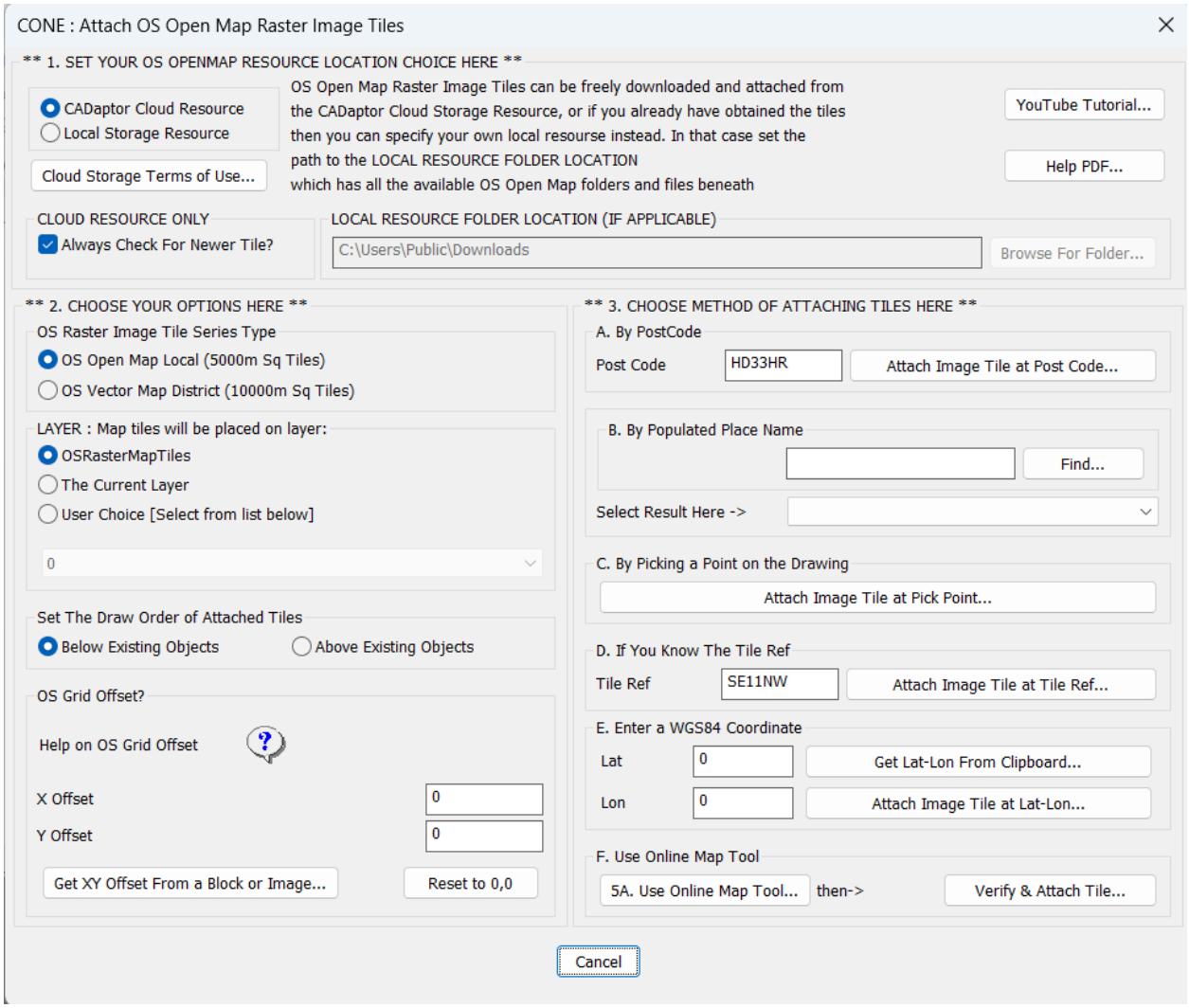
Enter Area Of Rectangle in Sq Metres : example 10000

Pick Rectangle Corner Point: hen pick a second point: to show where you wish to place the rectangle

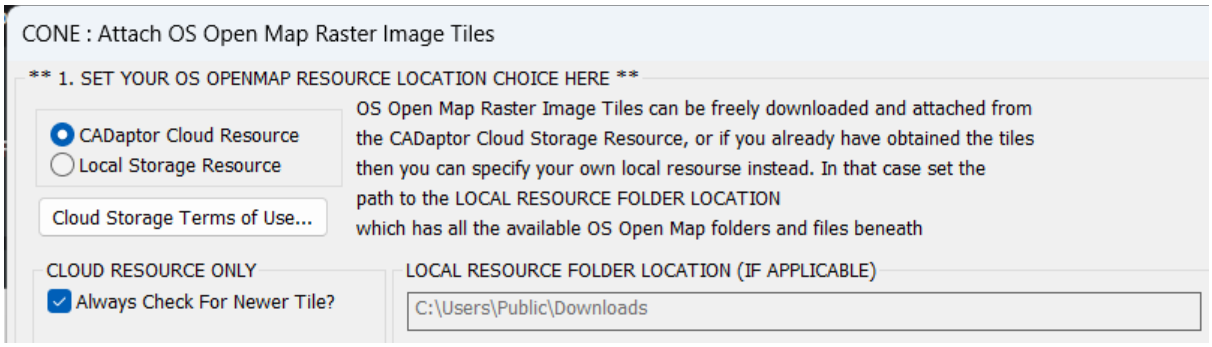
Mapping Tools – OS OpenMap Local & District Tiles

Command CUKOSRASTERTILES RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPING1	

OS Open Map Raster Image tiles backgrounds are an excellent starting point for all the other CONE Mapping tools and are perfect for most Route Diversion diagrams.
OS Open Map Raster Image 5K and 10k Tiles can be freely downloaded and attached from the CADaptor Cloud Storage Resource, or if you already have obtained the tiles yourself, then you can specify your own local resource instead.



1 SET YOUR OS OPENMAP RESOURCE LOCATION CHOICE HERE



Choose where the raster image tiles will be attached from, either **the CADaptor Cloud Resource** or your own **Local Storage Resource**.

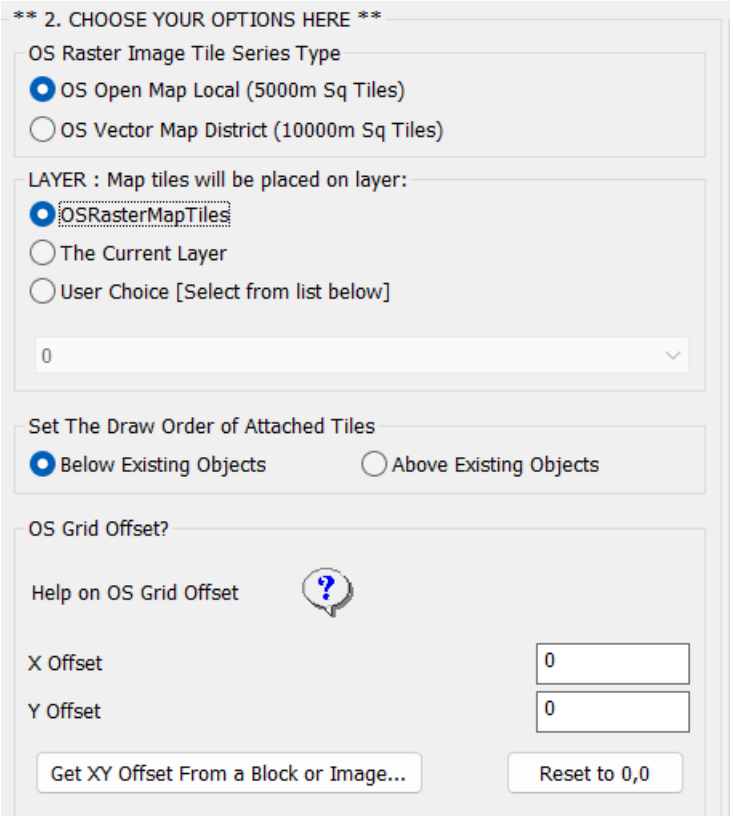
If you choose the CADaptor Cloud Resource option, then each image file will be downloaded and placed by default in your Users\Public\Downloads folder.

Note: You can change this setting via the CONE mapping preferences tool.

Always Check For Newer Tile?

If you choose this and the tile has already been downloaded, then the tool will check for a newer version and download and overwrite if applicable.

** 2 CHOOSE YOUR OPTIONS HERE



OS Raster Image Tile Series Type

Choose between 5K (5000m Sq Tiles) or 10k (1000m Sq Tiles) tiles.

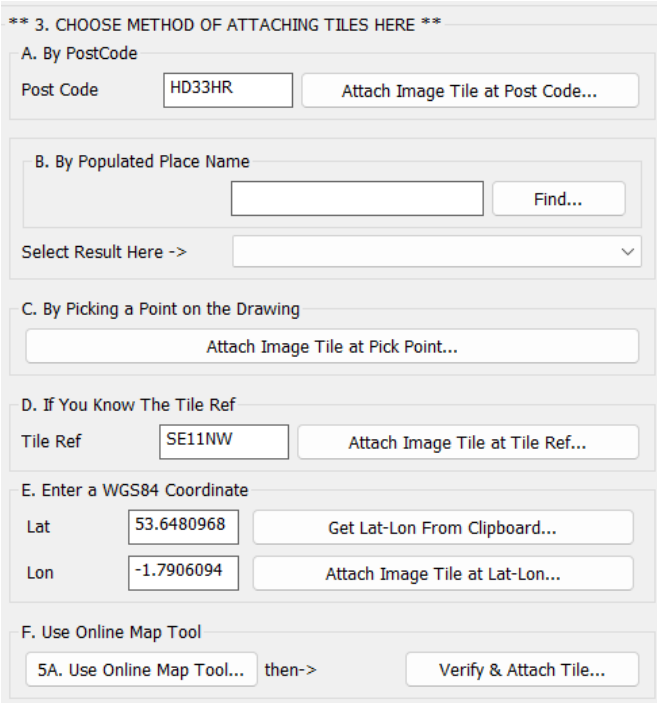
LAYER: Map tiles will be placed on layer:

Choose either the **OSRasterMapTiles** layer, the **Current Layer** or select from the list of available layers in your drawing.

Set The Draw Order of Attached Tiles:

Either above or below any existing objects in your drawing.

**3 CHOOSE THE METHOD OF ATTACHING TILES



There are six methods to choose, with by Post Code and by Pick Point being the simplest.

A. By Post Code:

Enter a valid post code and pick the [Attach Image Tile at Post Code...] button.
If the post code is valid and the tile was found, then the tile will be downloaded and attached to your drawing. The dialog will be re loaded in case you need to add additional tiles. Otherwise Select the **Cancel** button to close the dialog.

B. By Populated Place Name

Enter a populated place such as Leeds, London, Burnley etc.
Pick the [Find] button and if the place name was found, the list box will be populated with choice(s), Pick the desire place name from the **List** next to **Select Result Here ->**
If the tile was found then it will be downloaded and attached to your drawing.

C. By Picking a Point on the Drawing

Useful option to pick a point on your drawing,
For example: Above, Below, to the Left or to the Right of an existing tile.

When you pick this option, the dialog will be temporarily hidden, and you will prompted to pick a point on your drawing. If a tile was found, then it will be downloaded and attached to your drawing and the dialog will be re-loaded.

D. If You Know The Tile Ref

5K tiles have a six-character reference such as TQ67NE

5K tiles have a four-character reference such as TQ77

Enter the tile reference and pick the [Attach Image Tile at Tile Ref...] button.

E. Enter a WGS84 Coordinate

If you know the latitude and longitude, then enter values into the edit boxes.

Example Lat 53.64, Lon -1.79

Pick the [Attach Image Tile at Lat-Lon...] button.

An easier option is to launch Google Maps on an Internet Browser and Zoom to your desired location. Then copy the URL to clipboard.

Close or leave your browser window and back in CAD.

Pick the [Get Lat-Lon From Clipboard...] button

F. Use Online Map Tool

Pick the [Use Online Map Tool...] button,

This will launch https://conesoftware.com/OS-Data-Hub/open-street-map.html in a browser window

Zoom in or search to display the desired location

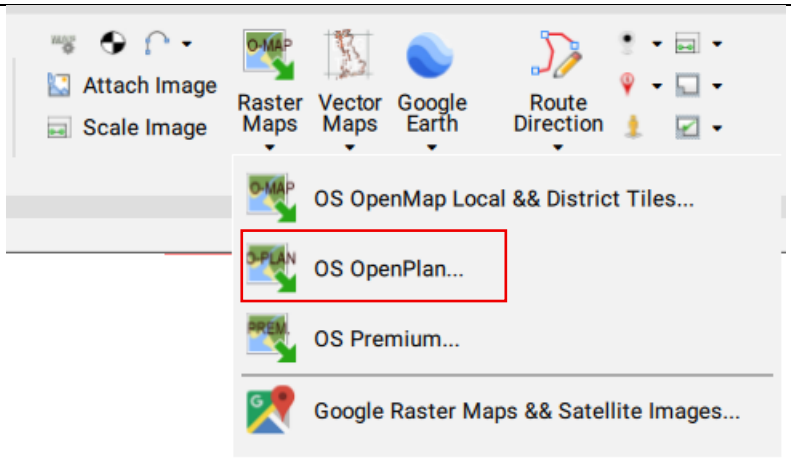
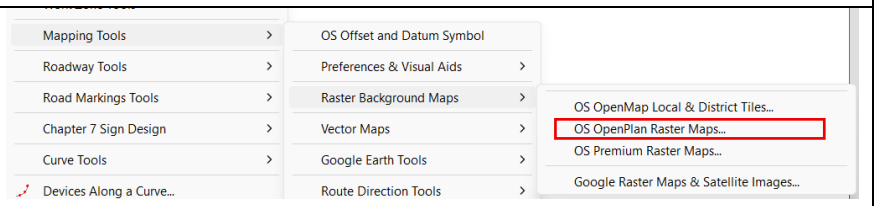
Use the Draw Rectangle tool and pick 2 points on the map

Close or leave your browser window and back in CAD

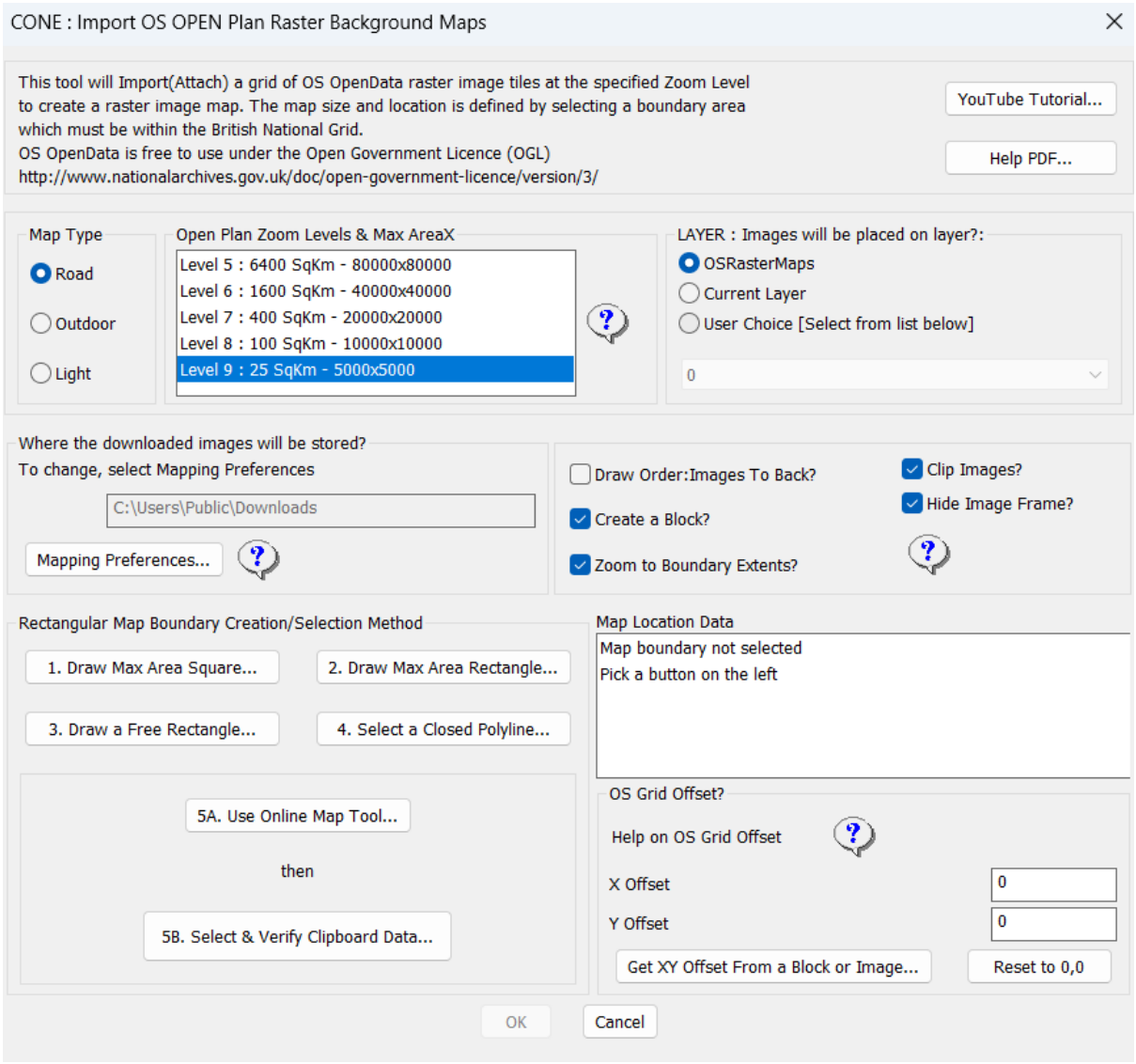
Pick the [Select & Verify Clipboard] button.

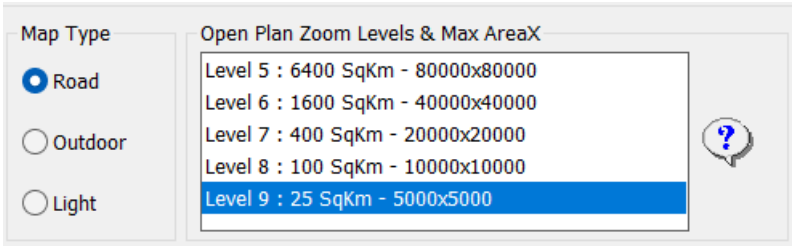
OS Grid Offset: See Mapping Tools – OS Offset and Datum Symbol

Mapping Tools – OS OpenPlan Raster Maps

Command CUKOSOPENMAPS RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPING1	

This tool will Import(Attach) a grid of OS OpenData Open Plan raster image tiles at a specified zoom level to create a raster image map. The map size and location is defined by selecting a boundary area which must be within the British National Grid."
OS OpenData is free to use under the Open Government Licence (OGL)http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/



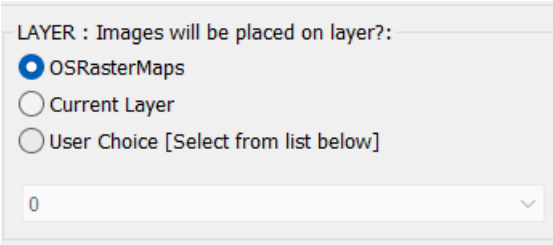


Map Type

Choose between Road, Outdoor or Light

Zoom Levels and Max Area: Level 9 is the highest zoom level, and the results are similar to OS Raster Map Tiles

A maximum area of 5 Sq Km can be selected at Zoom Level 9



Choose the layer for the attached images,

Images can be place on the OSRasterMaps layer, the current layer or select from a list of the current layers in your drawing.

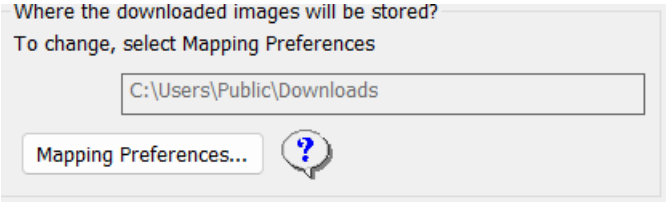
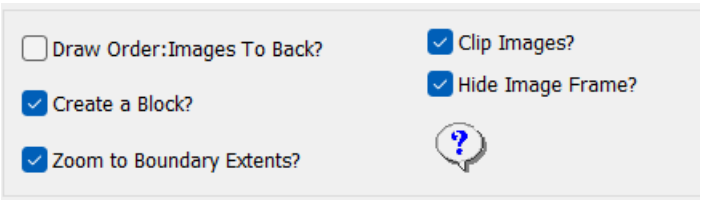


Image files will be downloaded and placed in unique folders one level down from the top level location specified. By default, this is your Users\Public\Downloads folder.

Note: You can change this setting via the [Mapping Preferences] button.



Set The Draw Order of Attached Tiles:

Either above or below any existing objects in your drawing.

Draw Order: Images to Back?

If this option is UNCHECKED and the images overlap existing entities, then they will display and print ABOVE the existing entities.

If this option is CHECKED then the images will be sent to the BACK and the existing entities will be visible.

Create a Block?

If this option is CHECKED then a uniquely named BLOCK will be created from the attached images. The BLOCK will be GEO-REFERENCED enabling it to return its XY Offset if the block is moved to a different XY location

Zoom to Boundary Extents?

If this option is CHECKED the drawing view will be zoomed to the extents of the images after attachment in the drawing

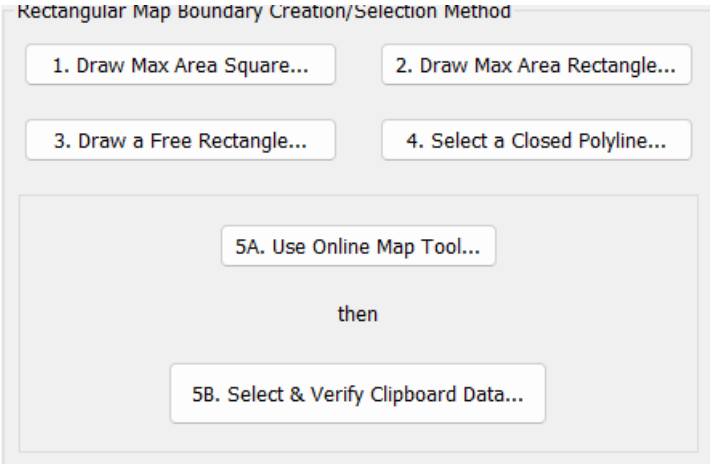
Clip Images?

If this option is CHECKED then any part of the image(s) that externally overlap the boundary will be clipped back to the boundary

Hide Image Frame?

If this option is checked the frame around every image in the drawing will be turned OFF

Note: The CAD command IMAGEFRAME will also perform the same task



Rectangular Map Boundary Creation/Selection Method

1. Draw Max Area Square

Use this method to create a square that equals the maximum area allowed. The dialog will temporarily be hidden, and you will be prompted to:

A Pick a Square Corner Point on your drawing, the outline of the square will be displayed.

B. Move your mouse so that the Square Corner Point becomes the Bottom Left, Bottom Right, Top Right or Top Left corner of the square

C. Pick a second point to confirm the position and return to the dialog

2. Draw a Max Area Rectangle

Use this method to create a rectangle that equals the maximum area allowed

The dialog will temporarily be hidden, and you will be prompted to:
A. Pick a Rectangle Corner Point on your drawing, the outline of the rectangle will be displayed.

B. Move your mouse so that the Rectangle Corner Point becomes the Bottom Left, Bottom Right, Top Right or Top Left corner of the rectangle and adjust the rectangular shape at the same time

C. Pick a second point to confirm the position and return to the dialog.

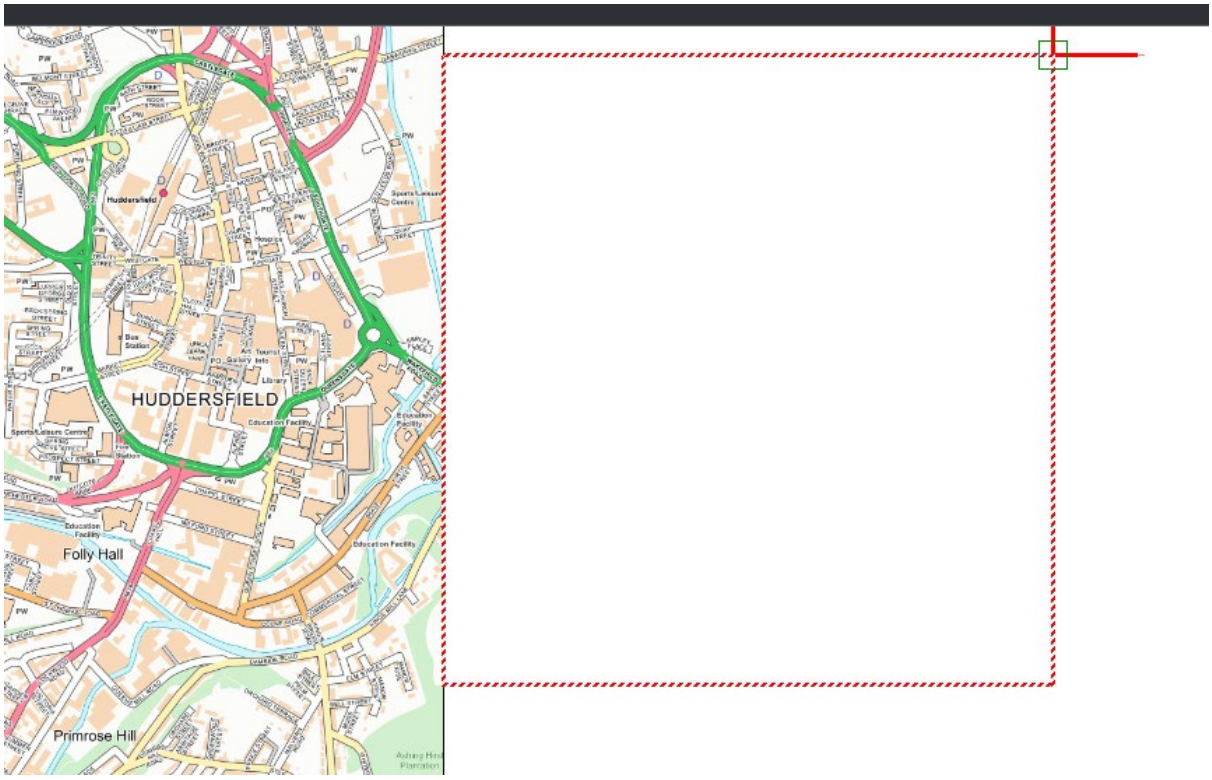
3. Draw a Free Rectangle
Use this method to pick 2 points that define two diagonal corners of a rectangle

4. Select a Closed Polyline
You can use this method if you have already created a CLOSED POLYLINE and overlaid it on top of your map. The polyline can be any shape but a rectangular shape is recommended because the extreme rectangular extents of the shape are used
When you pick either Select a Closed Polyline or Draw a Rectangle the dialog will temporarily be hidden, follow the prompts to either draw a rectangle of select a closed polyline

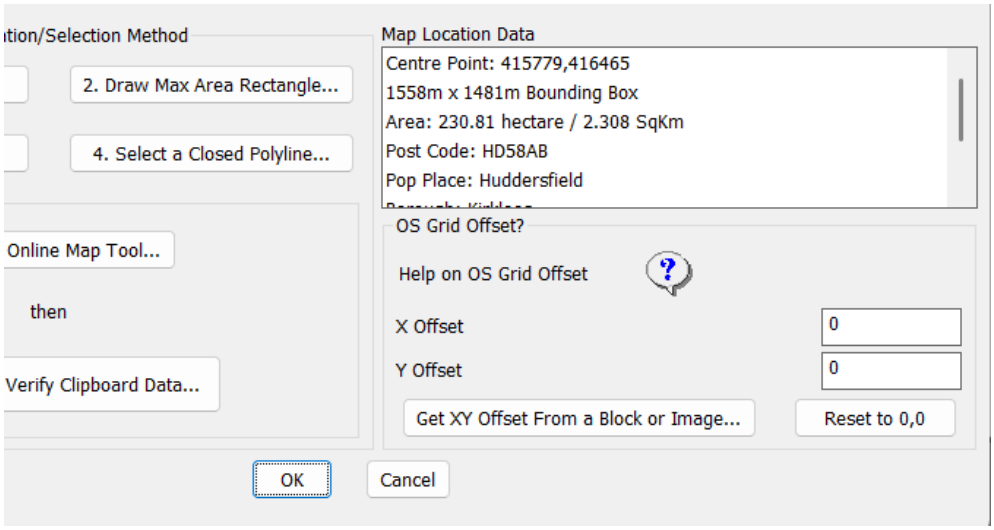
5A Use Online Map Tool
Use this option to display an Online Map of Great Britain
Zoom IN/OUT to your desired location and pick the Top Left Rectangle Icon
Click on two points on the map to define a rectangle, information will be copied to the clipboard. Next return to your CAD system and pick the:

5B Select & Verify Clipboard Data button
Either of the above methods if successfully will display information about the map boundary in the Map Location Data window

Example : Using the Draw a Free Rectangle method to add additional images.



The dialog is re-loaded, and the Map Location Data is populated with information and the OK button is enabled. Pick the OK button to proceed.

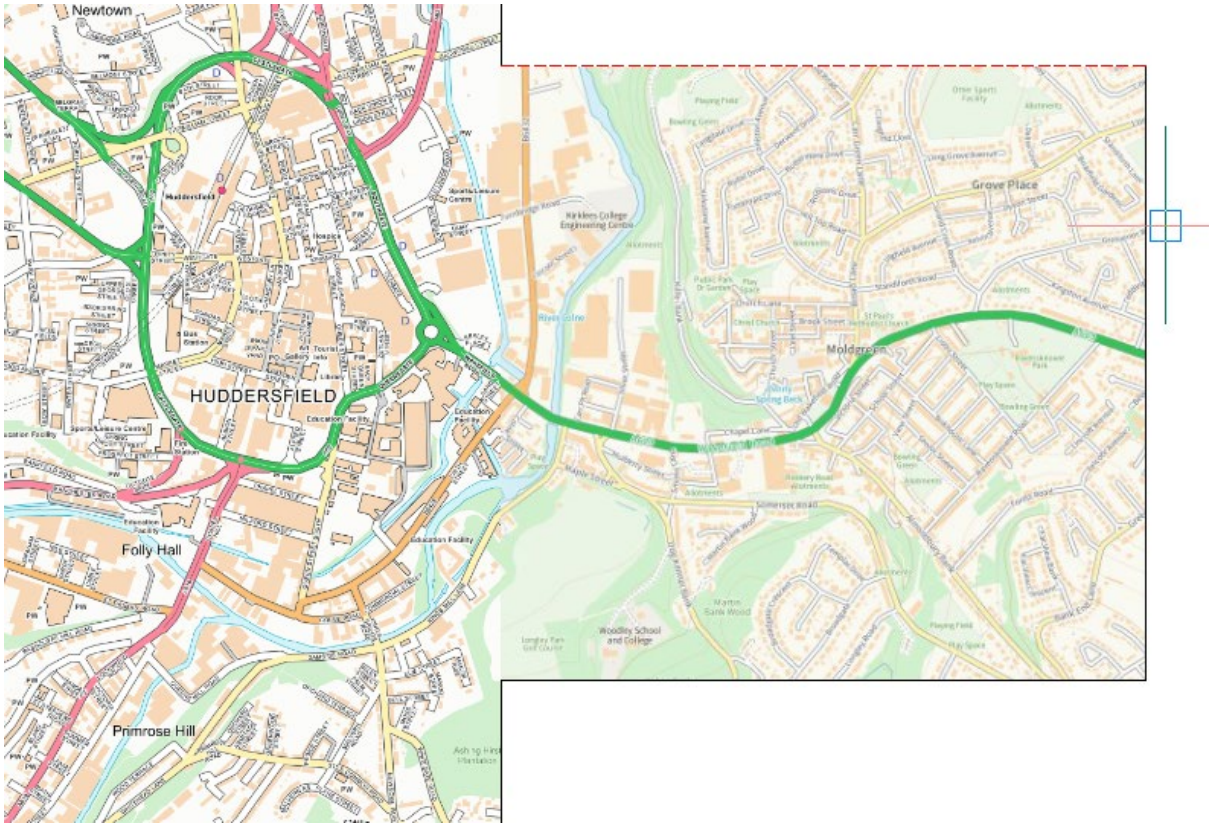


Tiles will be downloaded and attached, progress will show at the command line

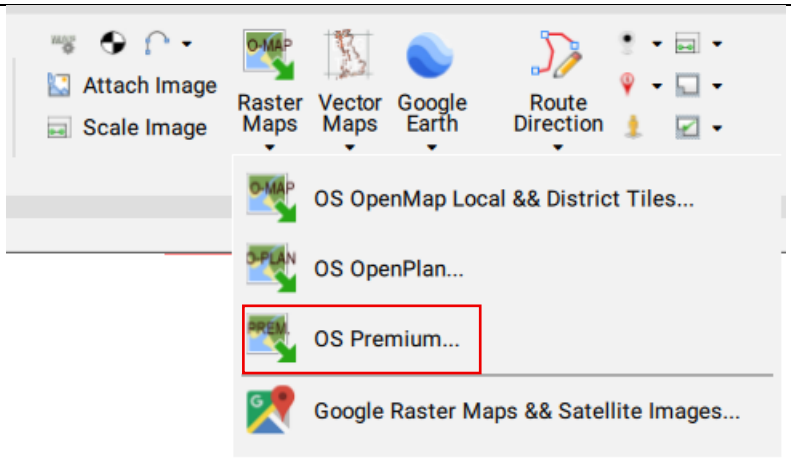
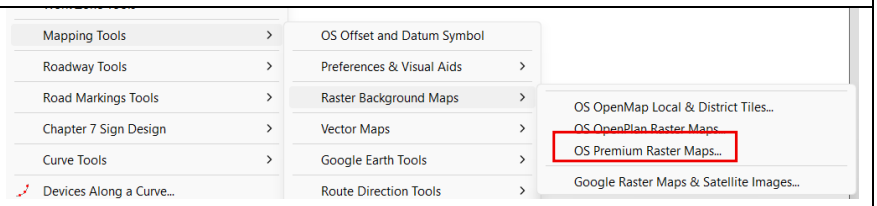
Example: Attaching 1 of 30 tiles, Please Wait

The time taken to download and attach tile will vary depending on the server status and Internet speed.

Typical Result

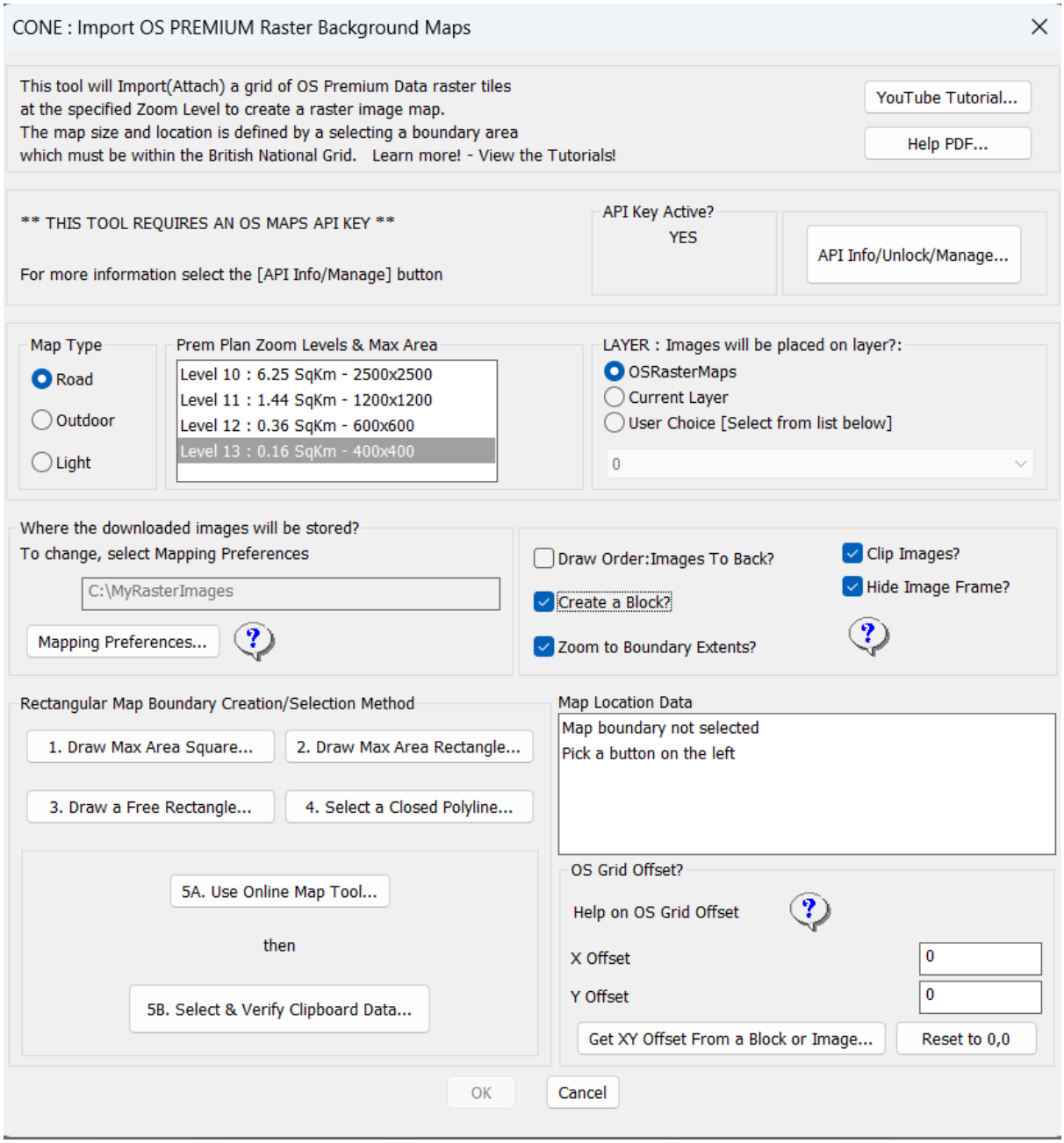


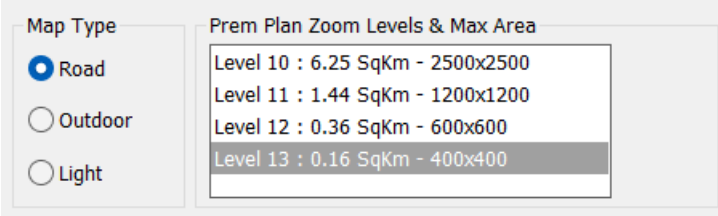
Mapping Tools – OS Premium Plan Raster Maps

Command CUKOSPREMMAPS RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPING1	

This tool will Import(Attach) a grid of OS Premium API Plan raster image tiles directly from the OS Data Hub at a specified zoom level to create a raster image map. The map size and location is defined by selecting a boundary area which must be within the British National Grid.

Note: CADaptor Solutions Ltd is not entitled to and does not purport to allow the End User use of the OS Premium API Data. Where the End User wishes to use OS Premium API Data, the End User must first obtain an OS Premium API Key licence to use the OS Premium API Data from Ordnance Survey. Guidance on how to do so can be found at here by selecting the Api/Unlock/Info button In the main dialog



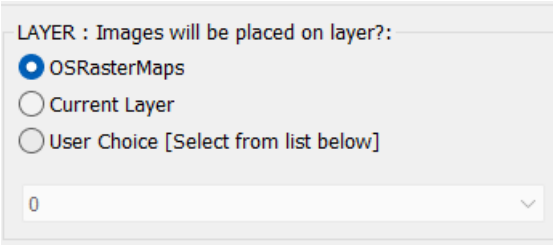


Map Type

Choose between Road, Outdoor or Light

Zoom Levels and Max Area: Level 13 is the highest zoom level

A maximum area of 0.16 Sq Km can be selected at Zoom Level 13 and will require around 256 small tiles to be downloaded



Choose the layer for the attached images,

Images can be place on the OSRasterMaps layer, the current layer or select from a list of the current layers in your drawing.

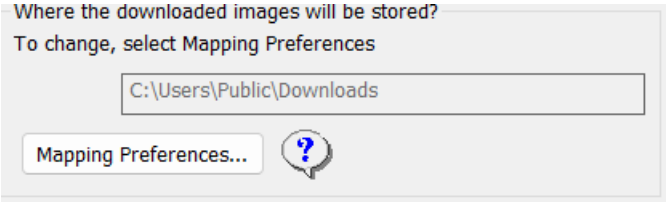
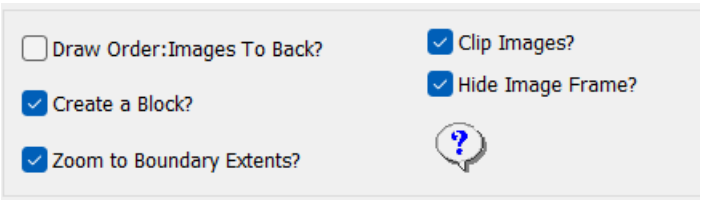


Image files will be downloaded and placed in unique folders one level down from the top level location specified. By default, this is your Users\Public\Downloads folder.

Note: You can change this setting via the [Mapping Preferences] button.



Set The Draw Order of Attached Tiles:

Either above or below any existing objects in your drawing.

Draw Order: Images to Back?

If this option is UNCHECKED and the images overlap existing entities, then they will display and print ABOVE the existing entities.

If this option is CHECKED then the images will be sent to the BACK and the existing entities will be visible.

Create a Block?

If this option is CHECKED then a uniquely named BLOCK will be created from the attached images. The BLOCK will be GEO-REFERENCED enabling it to return its XY Offset if the block is moved to a different XY location

Zoom to Boundary Extents?

If this option is CHECKED the drawing view will be zoomed to the extents of the images after attachment in the drawing

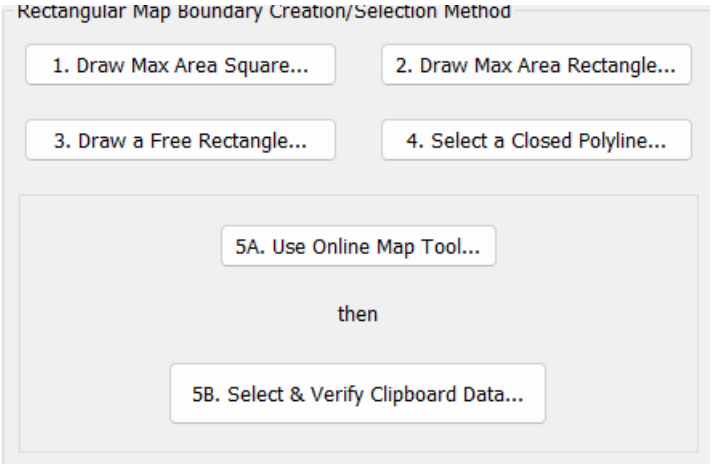
Clip Images?

If this option is CHECKED then any part of the image(s) that externally overlap the boundary will be clipped back to the boundary

Hide Image Frame?

If this option is checked the frame around every image in the drawing will be turned OFF

Note: The CAD command IMAGEFRAME will also perform the same task



Rectangular Map Boundary Creation/Selection Method

1. Draw Max Area Square

Use this method to create a square that equals the maximum area allowed. The dialog will temporarily be hidden, and you will be prompted to:

A Pick a Square Corner Point on your drawing, the outline of the square will be displayed.

B. Move your mouse so that the Square Corner Point becomes the Bottom Left, Bottom Right, Top Right or Top Left corner of the square

C. Pick a second point to confirm the position and return to the dialog

2. Draw a Max Area Rectangle

Use this method to create a rectangle that equals the maximum area allowed

The dialog will temporarily be hidden, and you will be prompted to:
A. Pick a Rectangle Corner Point on your drawing, the outline of the rectangle will be displayed.

B. Move your mouse so that the Rectangle Corner Point becomes the Bottom Left, Bottom Right, Top Right or Top Left corner of the rectangle and adjust the rectangular shape at the same time

C. Pick a second point to confirm the position and return to the dialog.

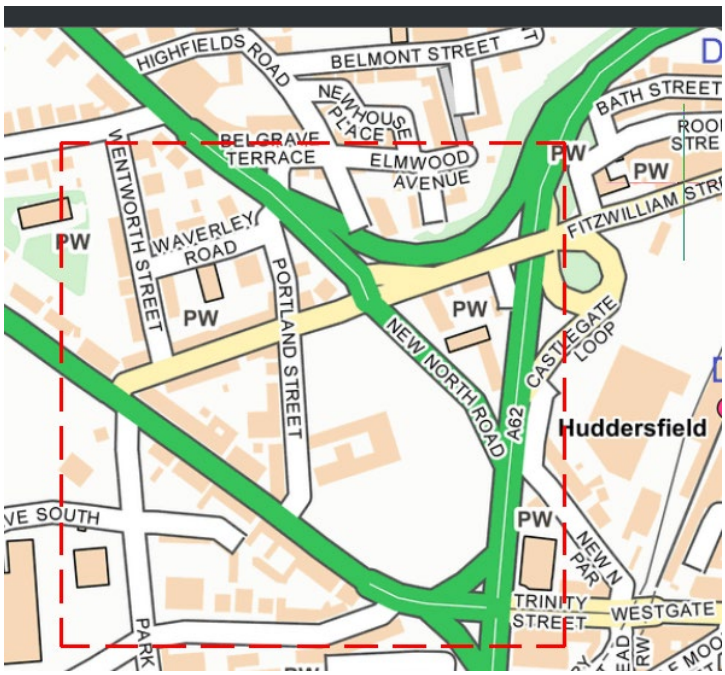
3. Draw a Free Rectangle
Use this method to pick 2 points that define two diagonal corners of a rectangle

4. Select a Closed Polyline
You can use this method if you have already created a CLOSED POLYLINE and overlaid it on top of your map. The polyline can be any shape but a rectangular shape is recommended because the extreme rectangular extents of the shape are used
When you pick either Select a Closed Polyline or Draw a Rectangle the dialog will temporarily be hidden, follow the prompts to either draw a rectangle of select a closed polyline

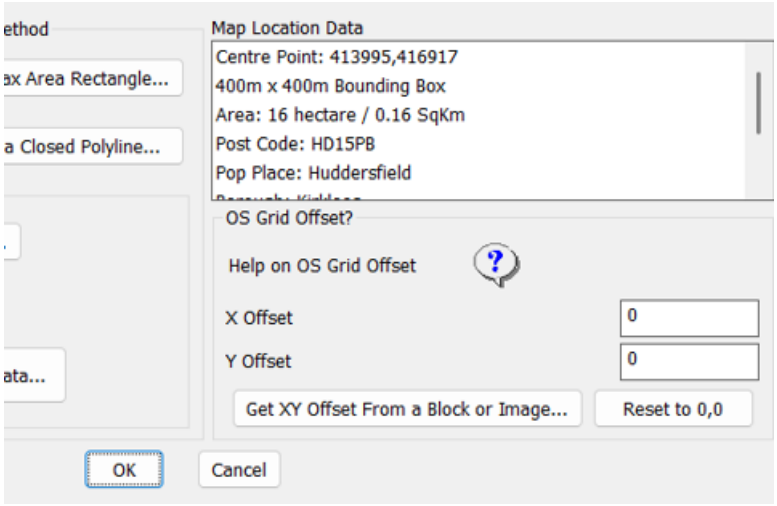
5A Use Online Map Tool
Use this option to display an Online Map of Great Britain
Zoom IN/OUT to your desired location and pick the Top Left Rectangle Icon
Click on two points on the map to define a rectangle, information will be copied to the clipboard. Next return to your CAD system and pick the:

5B Select & Verify Clipboard Data button
Either of the above methods if successfully will display information about the map boundary in the Map Location Data window

Example : Using the Draw a Free Rectangle method to add Premium images



The dialog is re-loaded, and the Map Location Data is populated with information and the OK button is enabled. Pick the OK button to proceed.



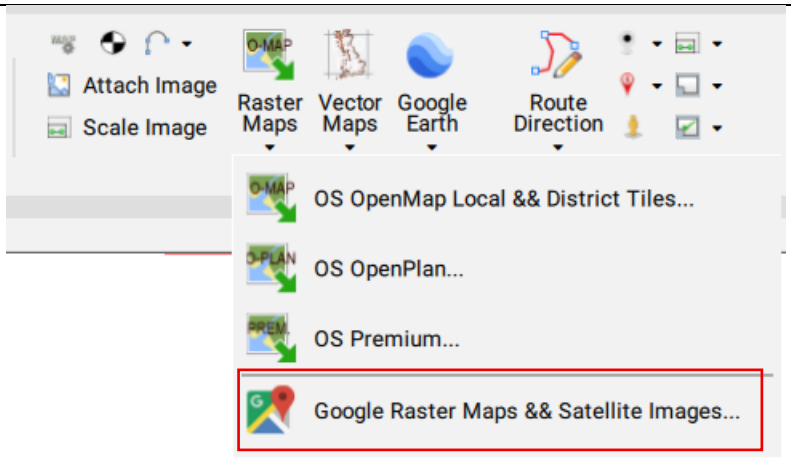
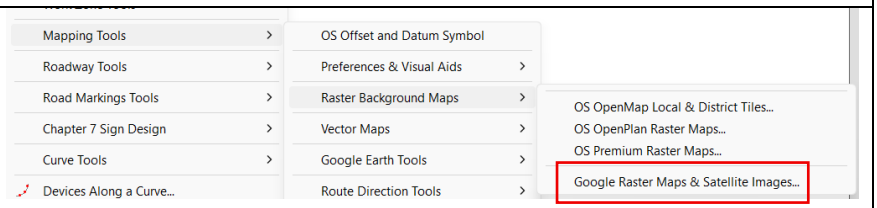
Tiles will be downloaded and attached, progress will show at the command line

Example: Attaching 1 of 250 tiles, Please Wait

The time taken to download and attach tile will vary depending on the server status and Internet speed.

Typical Result

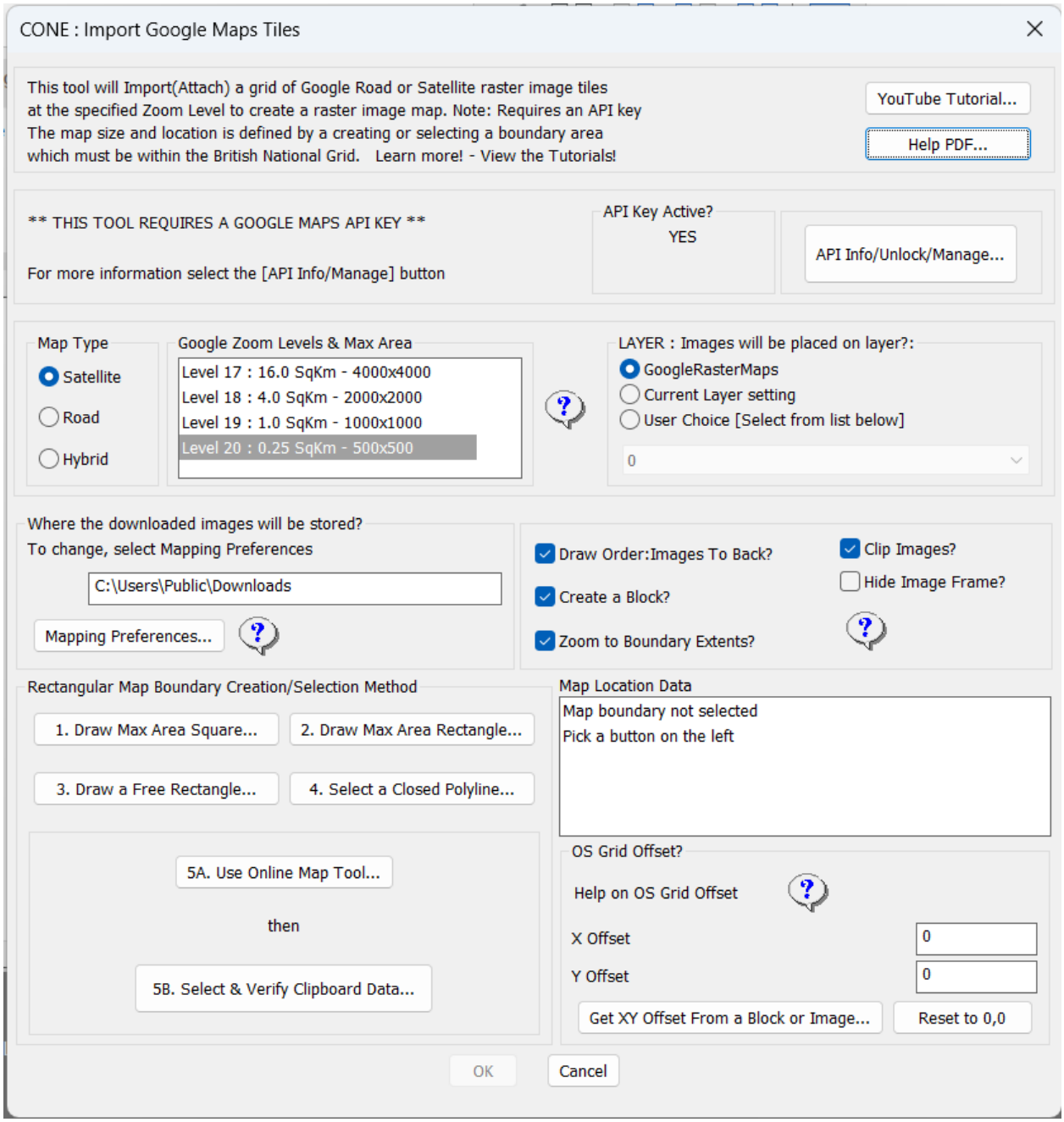
Mapping Tools –Google Raster Maps & Satellite Images

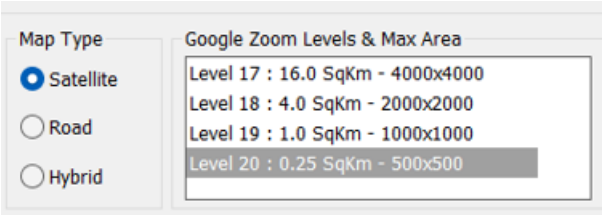
Command CUKGOOGLEMAPS RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPING1	

This tool will Import(Attach) a grid of OS Google Satellite or Road Map raster image tiles at a specified zoom level to create a raster image map. The map size and location is defined by selecting a boundary area which must be within the British National Grid."

Note: CADaptor Solutions Ltd is not entitled to and does not purport to allow the End User use of the Google mapping service. Where the End User wishes to use Google mapping service , the End User must first accept the relevant licence and obtain an API Key from GOOGLE.
Guidance on how to do so can be found at here by selecting the Api/Unlock/Info button In the main dialog

GO HERE
https://developers.google.com/maps/documentation/maps-static/get-api-key



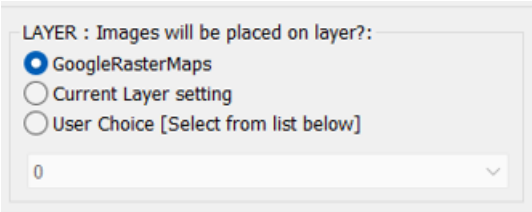


Map Type

Choose between Satellite, Road, or Hybrid

Zoom Levels and Max Area: Level 20 is the highest zoom level

A maximum area of 0.16 Sq Km can be selected at Zoom Level 13 and will require around 256 small tiles to be downloaded



Choose the layer for the attached images,

Images can be place on the GoogleRasterMaps layer, the current layer or select from a list of the current layers in your drawing.

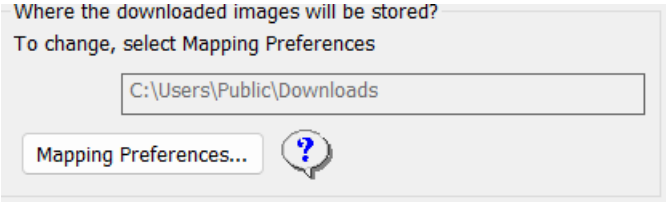
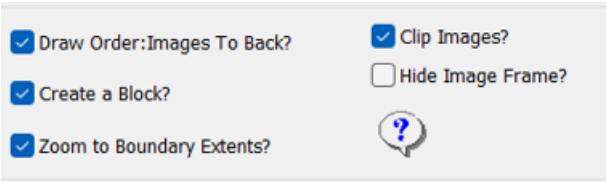


Image files will be downloaded and placed in unique folders one level down from the top level location specified. By default, this is your Users\Public\Downloads folder.

Note: You can change this setting via the [Mapping Preferences] button.



Set The Draw Order of Attached Tiles:

Either above or below any existing objects in your drawing.

Draw Order: Images to Back?

If this option is UNCHECKED and the images overlap existing entities, then they will display and print ABOVE the existing entities.

If this option is CHECKED then the images will be sent to the BACK and the existing entities will be visible.

Create a Block?

If this option is CHECKED then a uniquely named BLOCK will be created from the attached images. The BLOCK will be GEO-REFERENCED enabling it to return its XY Offset if the block is moved to a different XY location

Zoom to Boundary Extents?

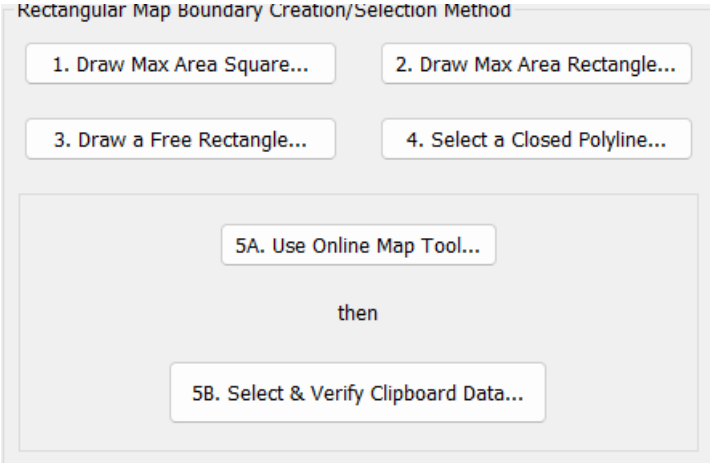
If this option is CHECKED the drawing view will be zoomed to the extents of the images after attachment in the drawing

Clip Images?

If this option is CHECKED then any part of the image(s) that externally overlap the boundary will be clipped back to the boundary

Hide Image Frame?

If this option is checked the frame around every image in the drawing will be turned OFF
Note: The CAD command IMAGEFRAME will also perform the same task



Rectangular Map Boundary Creation/Selection Method

1. Draw Max Area Square

Use this method to create a square that equals the maximum area allowed. The dialog will temporarily be hidden, and you will be prompted to:
A Pick a Square Corner Point on your drawing, the outline of the square will be displayed.
B. Move your mouse so that the Square Corner Point becomes the Bottom Left, Bottom Right, Top Right or Top Left corner of the square

C. Pick a second point to confirm the position and return to the dialog

2. Draw a Max Area Rectangle

Use this method to create a rectangle that equals the maximum area allowed
The dialog will temporarily be hidden, and you will be prompted to:
A. Pick a Rectangle Corner Point on your drawing, the outline of the rectangle will be displayed.

B. Move your mouse so that the Rectangle Corner Point becomes the Bottom Left, Bottom Right, Top Right or Top Left corner of the rectangle and adjust the rectangular shape at the same time

C. Pick a second point to confirm the position and return to the dialog.

3. Draw a Free Rectangle

Use this method to pick 2 points that define two diagonal corners of a rectangle

4. Select a Closed Polyline

You can use this method if you have already created a CLOSED POLYLINE
and overlaid it on top of your map. The polyline can be any shape but
a rectangular shape is recommended because the extreme rectangular extents
of the shape are used
When you pick either Select a Closed Polyline or Draw a Rectangle the
dialog will temporarily be hidden, follow the prompts to either draw
a rectangle of select a closed polyline

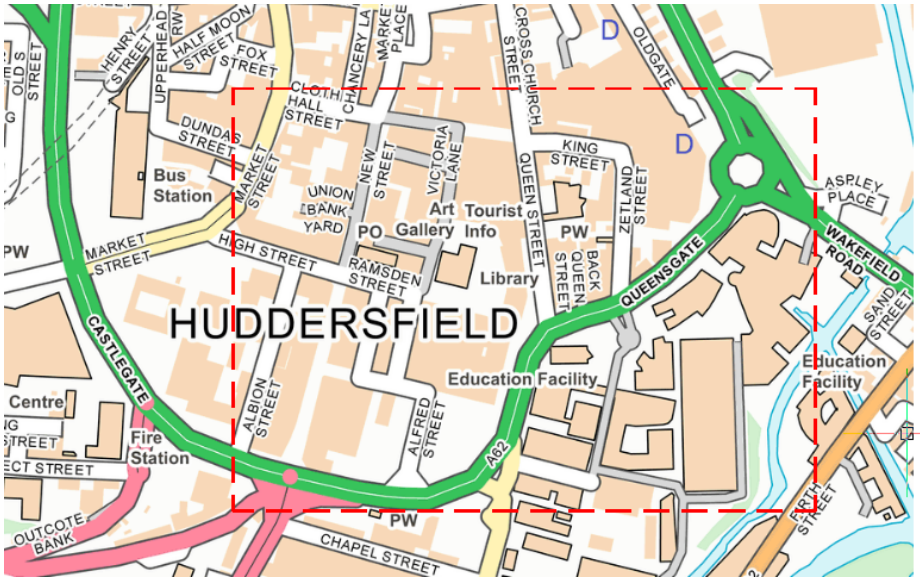
5A Use Online Map Tool

Use this option to display an Online Map of Great Britain
Zoom IN/OUT to your desired location and pick the Top Left Rectangle Icon
Click on two points on the map to define a rectangle, information will be copied to the clipboard. Next return to your CAD system and pick the:

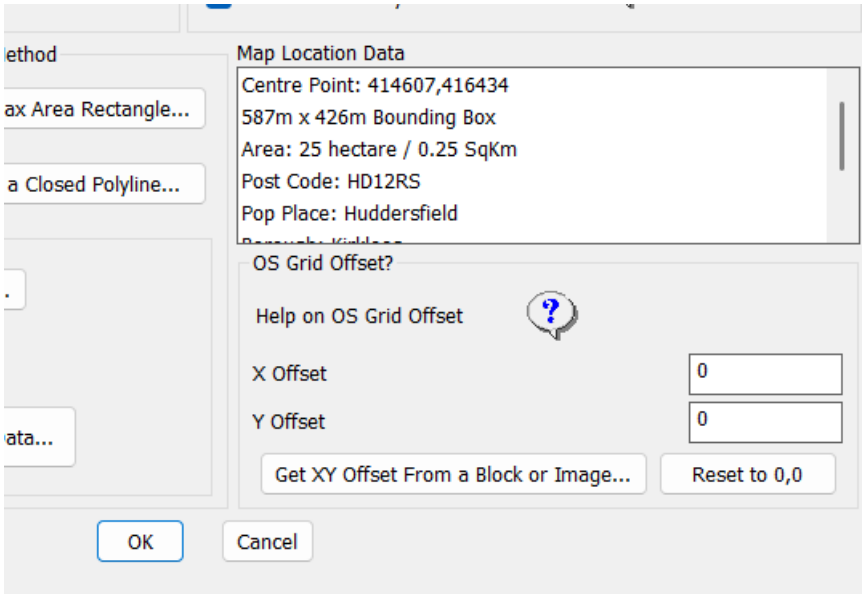
5B Select & Verify Clipboard Data button

Either of the above methods if successfully will display information about the map boundary in the Map Location Data window

Example : Using the Draw a Free Rectangle method to add Premium images



The dialog is re-loaded, and the Map Location Data is populated with information and the OK button is enabled. Pick the OK button to proceed.

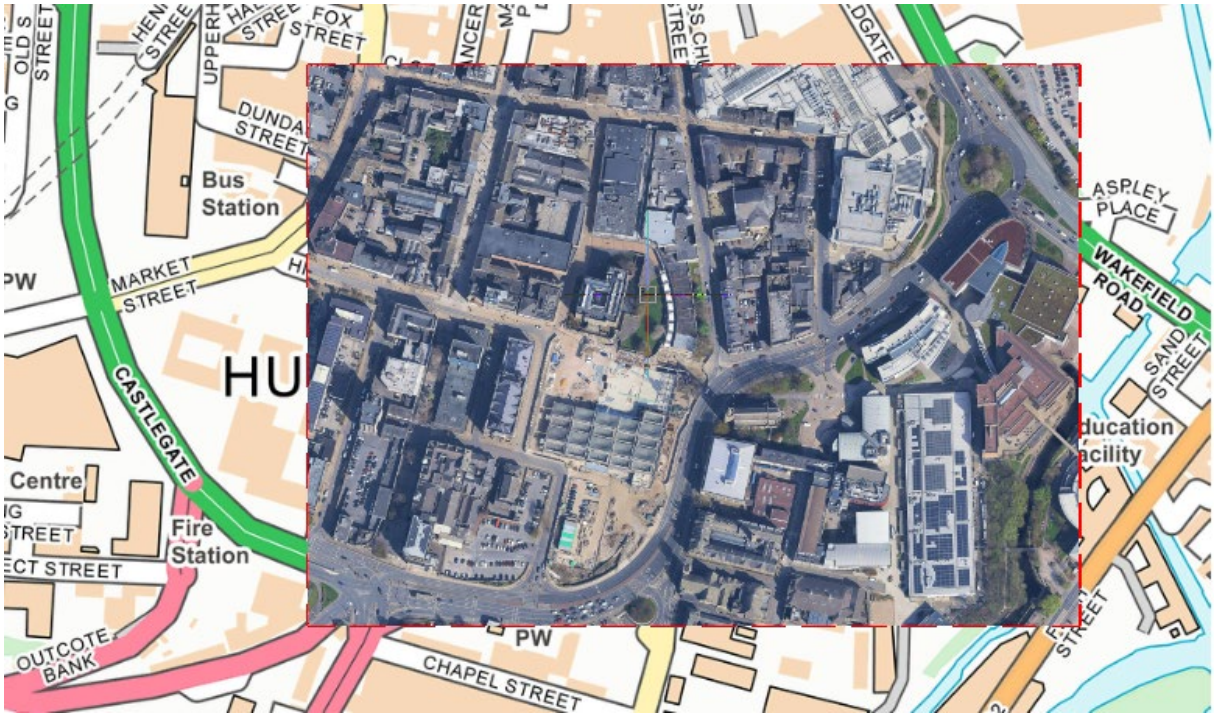


Tiles will be downloaded and attached, progress will show at the command line

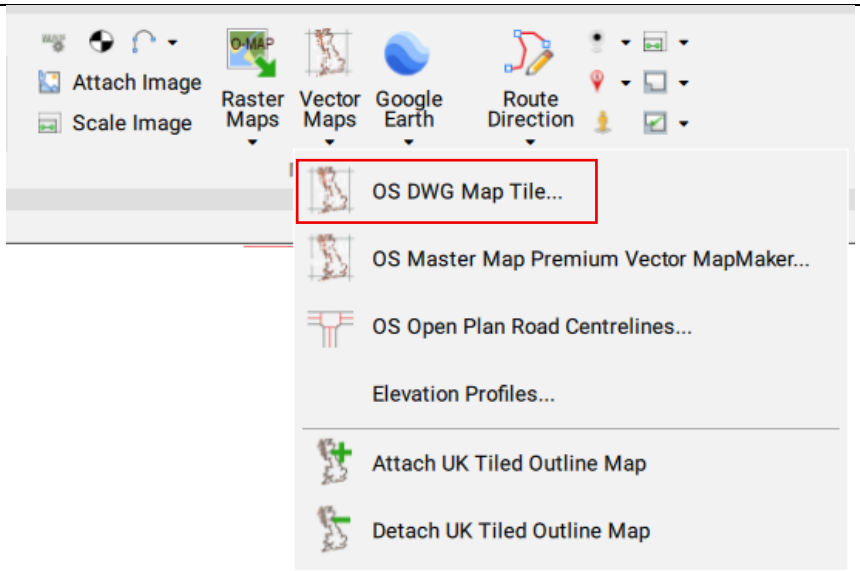
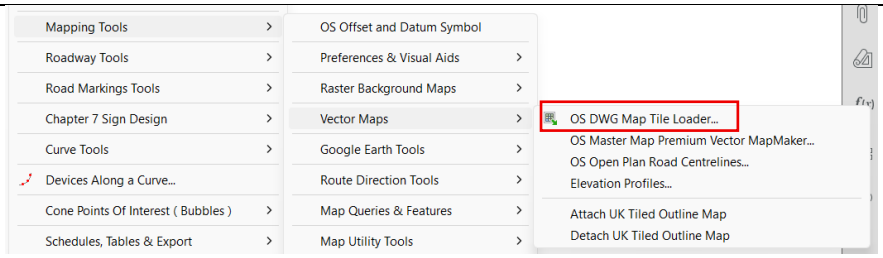
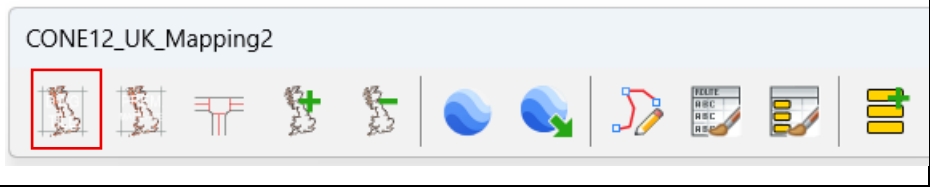
Example: Attaching 1 of 100 tiles, Please Wait

The time taken to download and attach tile will vary depending on the server status and Internet speed.

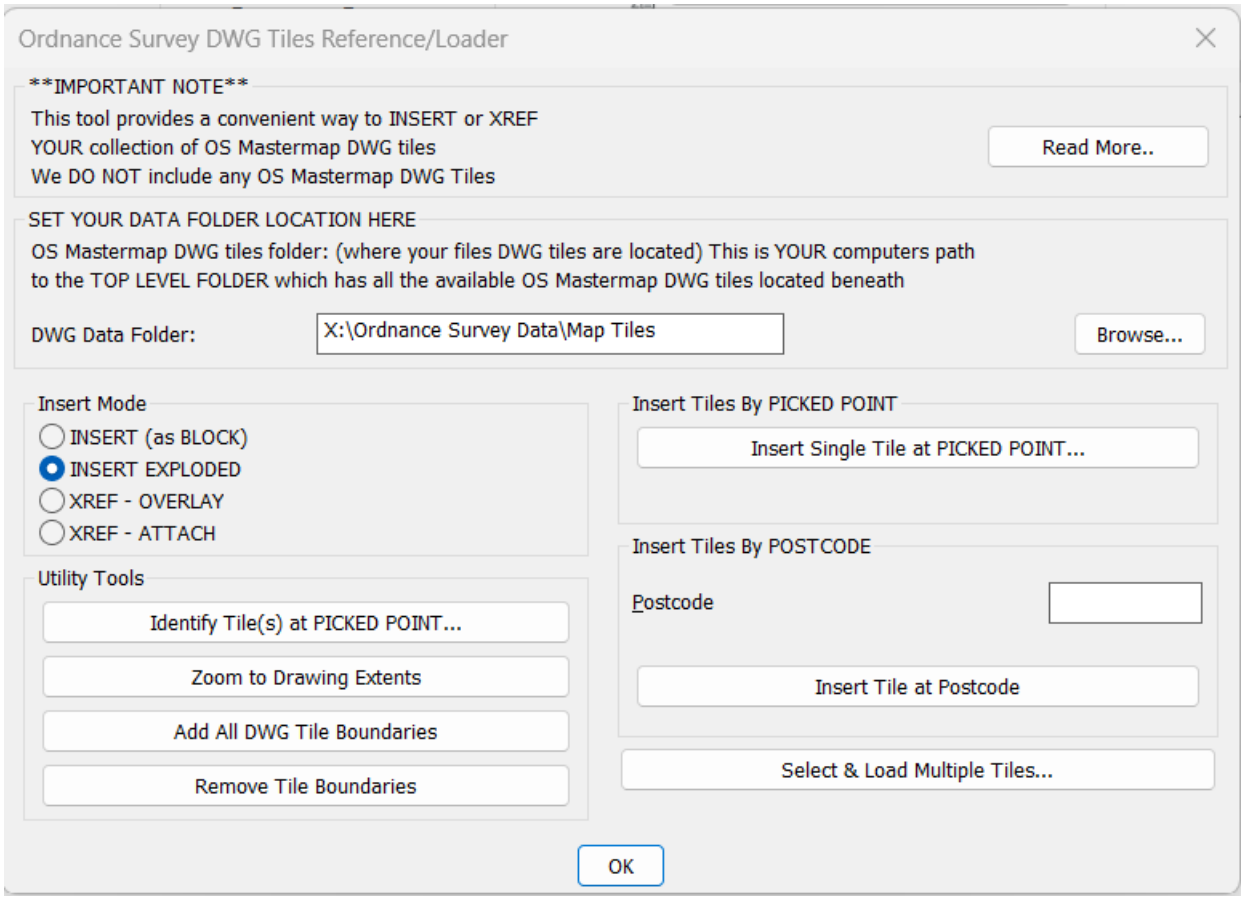
Typical Result



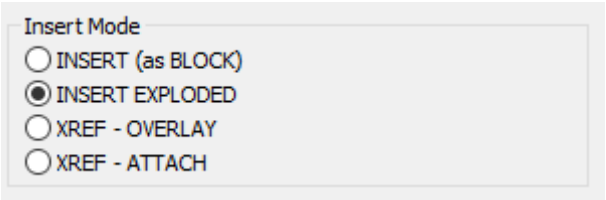
Mapping Tools –OS Drawing Tiles Reference/Loader

Command CUKOSDWG RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPING2	

This tool provides a convenient way to INSERT or XREF YOUR collection of OS MasterMap DWG Tiles



You will first need to specify a folder that contains you CAD map tiles, this master folder can be further sub divided into folders named SA, SB, SC, SD, SE etc to make managing the individual drawings for the Ordnance Survey Tiles a little easier.
Click the button labelled Browse and select the top level folder, all drawings can be in this folder or sub divided into further folders labelled SD, SE, SF, SH, SJ, SK etc



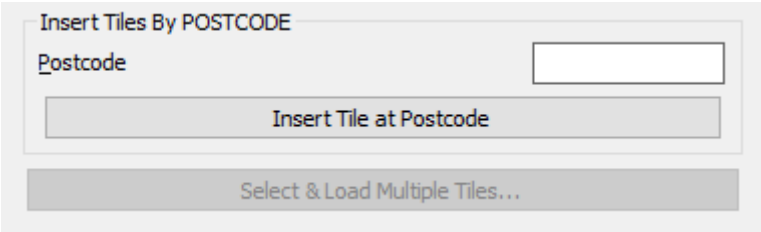
INSERT (as BLOCK): The drawing tile will be inserted as a complete block, this single block can be moved or deleted and layers turned on or off, but individual map elements are not easily edited.

INSERT EXPLODED: The drawing tile will be exploded into its individual elements hence making editing or moving road names or other text labels easier, this is the recommended mode

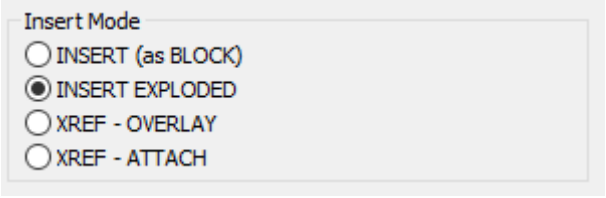
XREF – OVERLAY: Using the XREF options link the drawing file to this drawing, so whilst you can see the elements on this drawing, you cannot modify them as when they are inserted & exploded with the option above, though this option dies keep the drawing file size smaller when using multiple tiles.

XREF – ATTACH: Using the XREF options link the drawing file to this drawing, so whilst you can see the elements on this drawing, you cannot modify them as when they are inserted & exploded with the option above, though this option dies keep the drawing file size smaller when using multiple tiles

Inserting Ordnance Survey Drawing Map Tiles



Enter the postcode of the location required, then click the button labelled **Insert Tile at Postcode**, the program will calculate the map tile required, and search your specified drawing folder for the tile.
Once found it will be inserted into the current drawing using the options selected in the **Insert Mode** section at the left of the screen:



INSERT (as BLOCK): The drawing tile will be inserted as a complete block, this single block can be moved or deleted and layers turned on or off, but individual map elements are not easily edited.

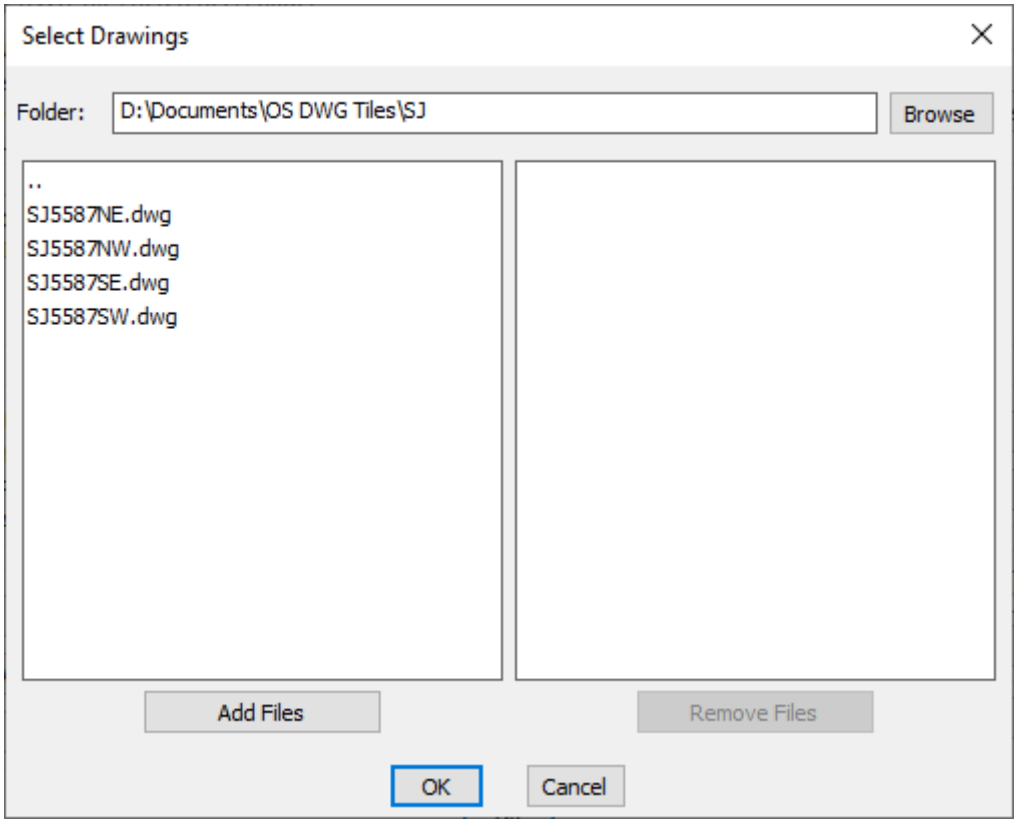
INSERT EXPLODED: The drawing tile will be exploded into its individual elements hence making editing or moving road names or other text labels easier, this is the recommended mode

XREF – OVERLAY: Using the XREF options link the drawing file to this drawing, so whilst you can see the elements on this drawing, you cannot modify them as when they are inserted & exploded with the option above, though this option dies keep the drawing file size smaller when using multiple tiles.

XREF – ATTACH: Using the XREF options link the drawing file to this drawing, so whilst you can see the elements on this drawing, you cannot modify them as when they are inserted & exploded with the option above, though this option dies keep the drawing file size smaller when using multiple tiles

The drawing will be zoomed so the selected postcode location is the centre of the screen.

Inserting multiple Tiles



If you have a set of files you want to load together, use **Select & Load Multiple Tiles** the dialog will allow you to select a folder, then highlight one or more files from that

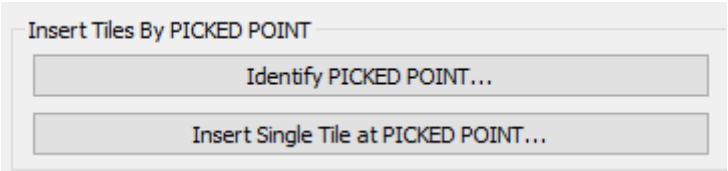
folder. Click the Add Files button to move the files to the list of selected drawing tiles on the right .

After selecting all files you require, click the OK button, each file will be inserted into the drawing in turn at it's position on the Ordnance Survey coordinate system, hence adjacent map tile will align correctly.

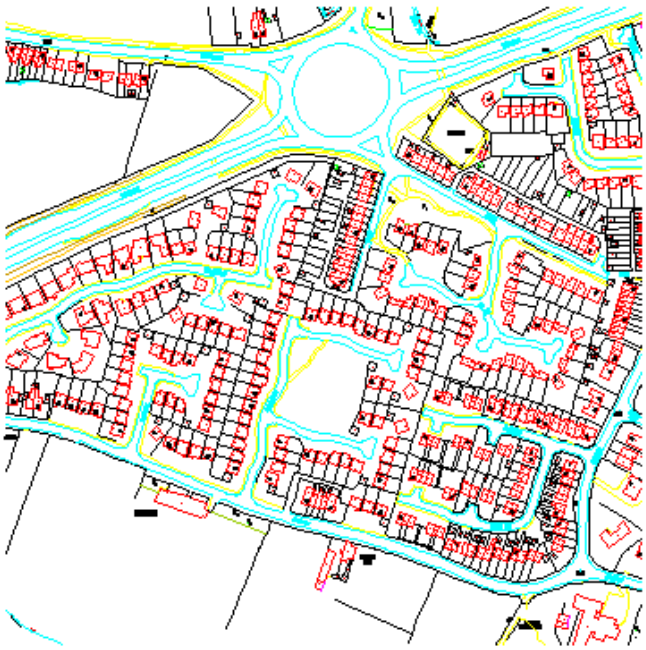
NOTE: map tiles can contain large amounts of drawing elements, beware when adding many tiles to a single drawing that it may become unresponsive if it contains too many elements.

Inserting Individual Tiles by Location

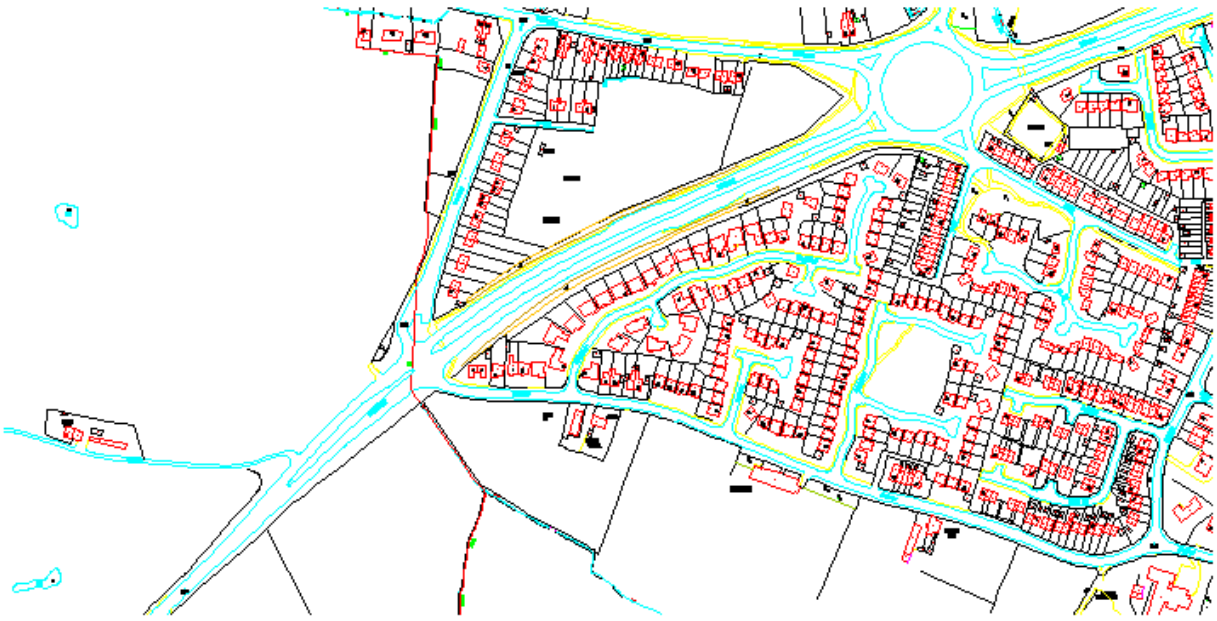
Once you have inserted one map tile, by either postcode location or by selecting the tile name as above, you can add adjacent tile from your library of available drawing by clicking the location on the drawing.



Insert Single Tile at PICKED POINT… the program will ask for a location, use the mouse to indicate the next drawing to load as in this screengrab

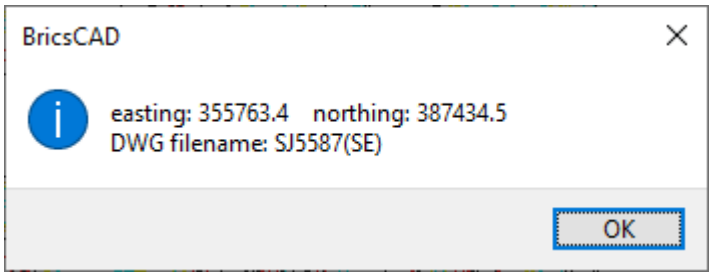


The program will calculate the Ordnance Survey coordinates of the point and load (if available) the relevant section of map tile

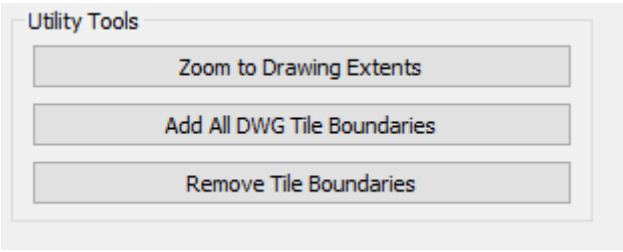


As each map is loaded to the correct OS grid coordinates, there is no need to align these yourself.

Identify PICKED POINT This button will prompt for a location on the drawing, and then display the easting & northing coordinates, as well as the name of the map tile required for that location.

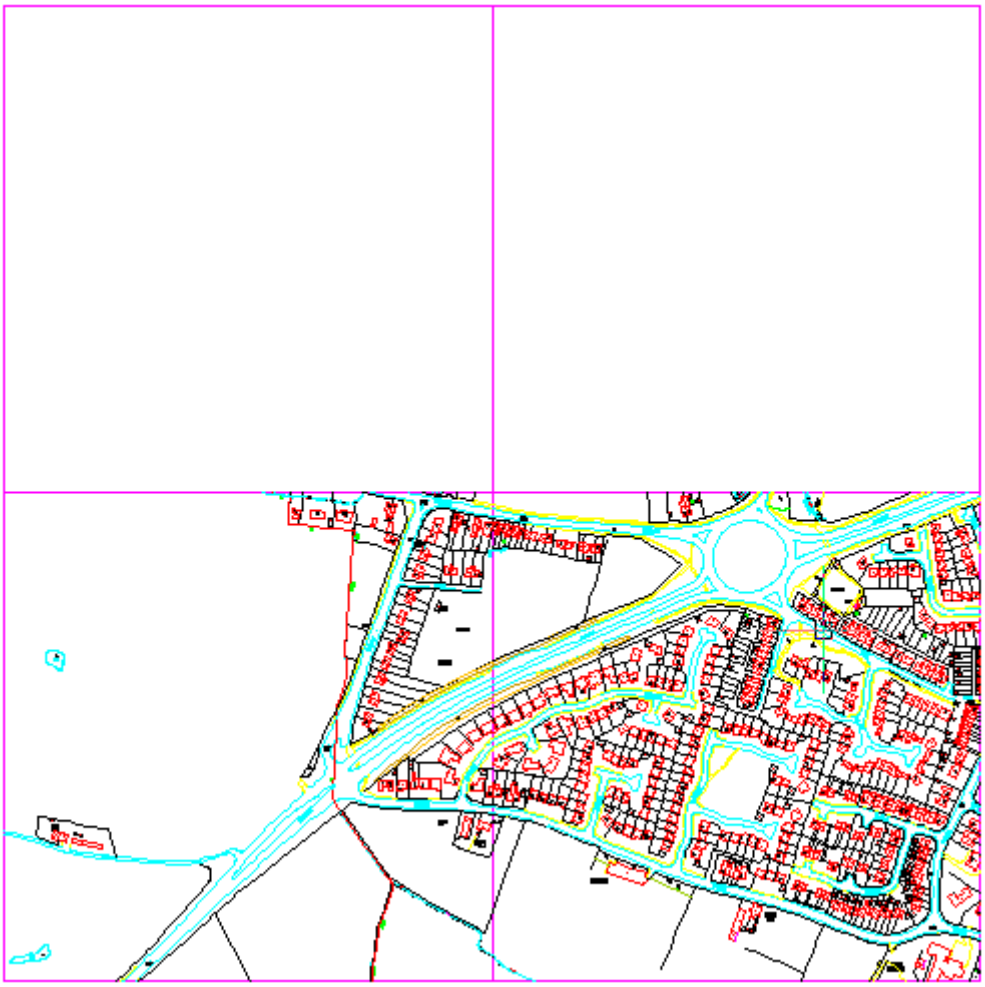


Utility Tools



Zoom to Drawing Extents After inserting a drawing tile by postcode, the program will zoom to the postcode location, clicking this button will show all the entities on the current drawing without having to close the map loader dialog.

Add All DWG Tile Boundaries If you have a large library of drawing tiles, this option will drawn magenta rectangles to show the location of each drawing tile on a layer named **_CS_osgrid** e.g.

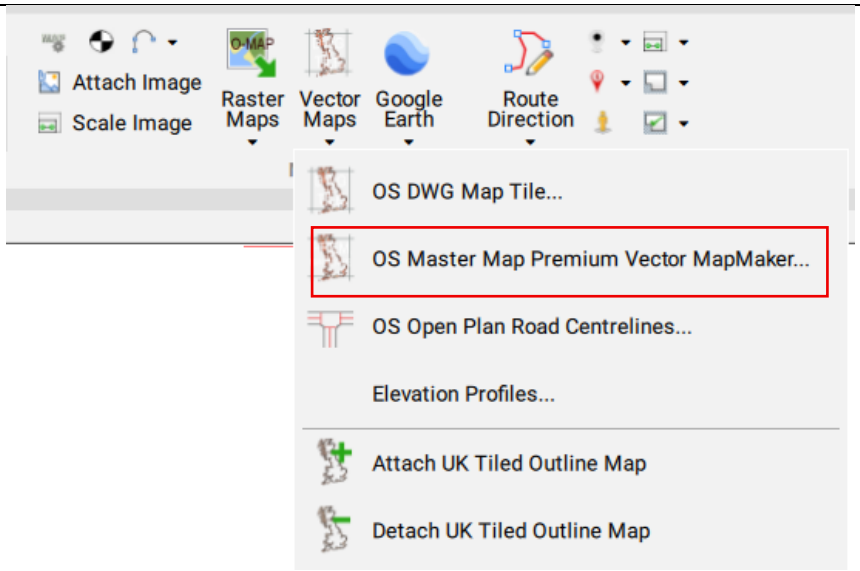
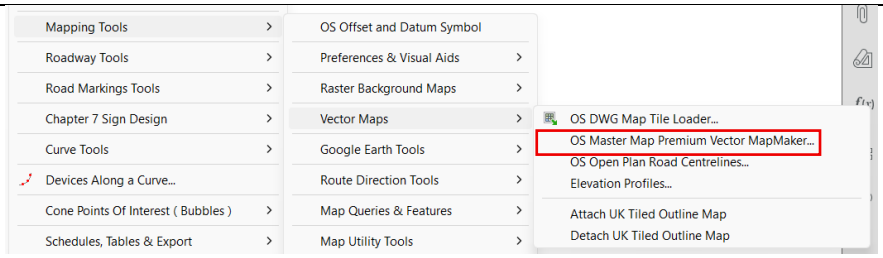
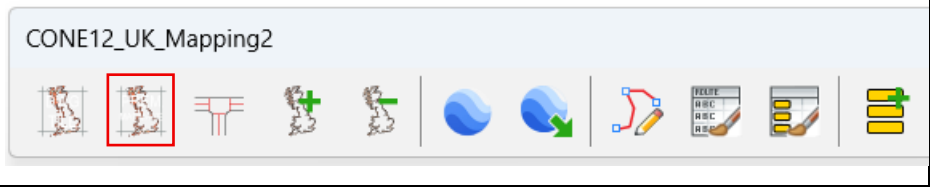


This can be used to give you an idea of where you can click to load individual drawing tiles.

Remove Tile Boundaries The Magenta boxes can be removed by turning the layer OFF or using this function to delete them from the drawing.

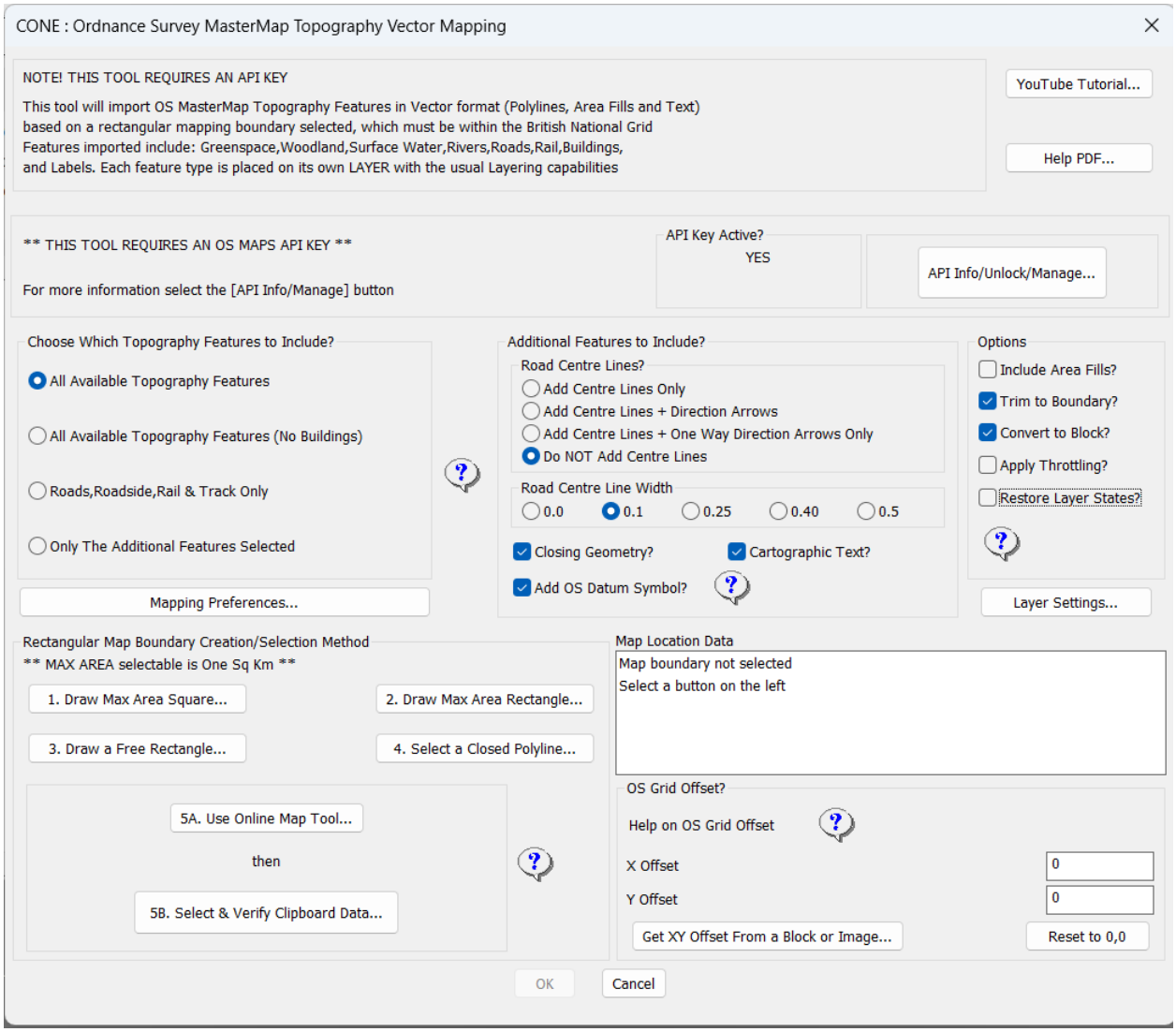
NOTE: for all the O.S. map loading tools to work, it requires the position of the maps to be at their correct O.S coordinates, if you COPY or MOVE sections of maps on your drawing, the above tools may not work correctly

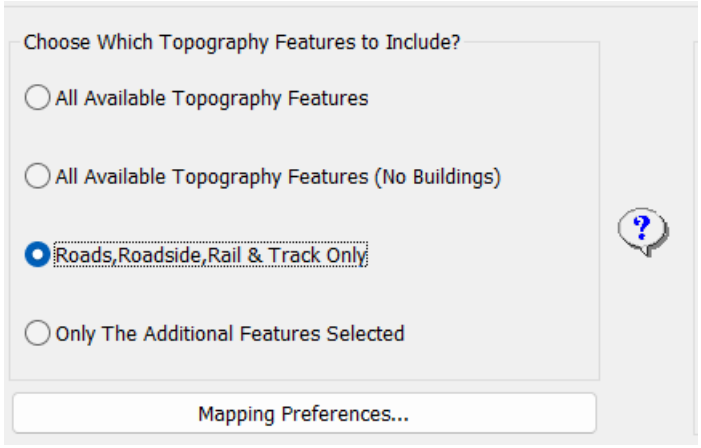
Mapping Tools –OS MasterMap Premium Vector MapMaker

Command CUKOSPREMVECTORMAPS RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPING2	

This tool will import OS Premium API MasterMap Topography Features in Vector format (Polylines, Area Fills and Text) directly from the OS Data Hub The map size and location is defined by selecting a boundary area which must be within the British National Grid.

Note: CADaptor Solutions Ltd is not entitled to and does not purport to allow the End User use of the OS Premium API Data. Where the End User wishes to use OS Premium API Data, the End User must first obtain an OS Premium API Key licence to use the OS Premium API Data from Ordnance Survey. Guidance on how to do so can be found by selecting the Api/Unlock/Info button In this tools main dialog





Choose which Topography features to include in your map

Including more features equals more requests to the API server and therefore a higher costs

All Available Topography Features

Imports all the available OS Topography features found in the selected area

All Available Topography Features (No Buildings)

This option can reduce the number of requests in built-up areas by up to 50%, but warning the query required runs very slowly.

Roads, Roadside, Rail & Track Only

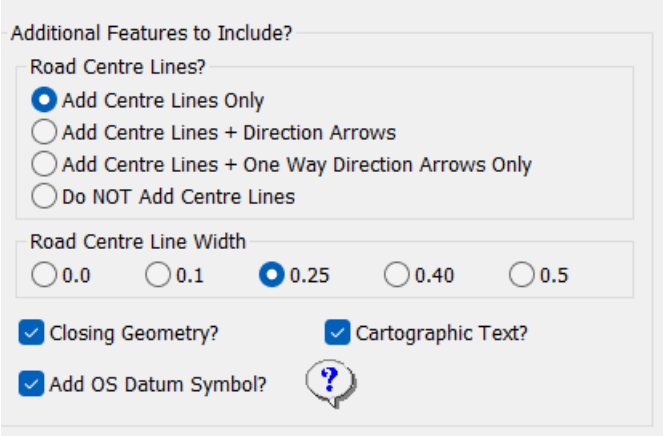
Only imports the above features, the number of requests is significantly reduced

Additional Features to include

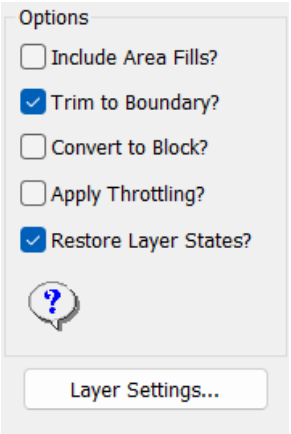
Any of the Additional Features selected will be included when you choose one of the four options above, if you do not want any additional features then uncheck the options below

Only The Additional Features Selected

Useful for adding features Road Centre Lines, Text, Closing Geometry or a OS Datum Symbol to an existing map area at a later time



Other Options



Include Area Fills

Creates solid hatch fills on your map, each hatch is placed on its parent layer (Eg OSBuilding_AreaFill)

The colours of the layers can be inspected and changed by selecting the [Layer Settings] button

Trim to Boundary

Trims objects that extend outside the rectangular area selected back to the boundary

Convert to Block

Useful if you intend to MOVE a map that you have created to another location on your drawing because the Block created will contain the correct OS X,Y coordinate of the bottom left corner of the block.

If you subsequently move your map to some other location on your drawing and wish to later reference its correct spatial position (Example: Using Streetview or Map Queries) then the block can be selected with the [Get XY Offset from a Block or Image] button and its OS: X and Y Offset will be returned

Less useful for TTM purposes as you won't be able to select the objects inside the block in which case you would need to EXPLODE the block and the OS X,Y coordinate will be lost

If you do not select this option then it is recommended to add a **OS Datum Symbol** reference to your map output

Apply Throttling

If Apply Throttling is turned ON then requests made to the OS Data Hub are restricted by the program to approx. 30 requests per minute. This usually ensures that the whole map is created without interruption but slowly.

Note: You only need to apply throttling if your OS Data Premium API Project key is in DEVELOPMENT MODE.

In DEVELOPMENT MODE the OS Data Hub restricts the number of requests to 50 per minute, but in reality it is fewer, and if you go over the limit an error message will occur and you will need to wait between 8 and 10 minutes before trying again

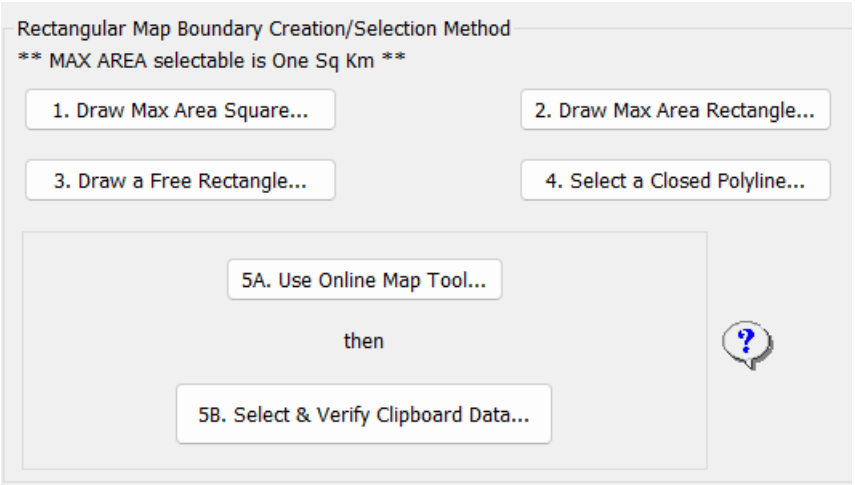
Best practice is to set your OS Data Premium API Project key (in the OS DATA HUB) to LIVE MODE

Restore Layer States

During the creation of a map any OS* layers used that are LOCKED,FROZEN or OFF are UNLOCKED,THAWED and turned ON. If the Restore Layer States checkbox is enabled (On) the layers are returned to their original setting before the map was created.

Layer Settings

Selecting the [Layer Settings] button will launch a sub-dialog window giving access to the Vector Mapping layer colours



Rectangular Map Boundary Creation/Selection Method

There are five methods of selecting the Map boundary you wish to fill with vector topography

1. Draw Max Area Square

Use this method to create a square that equals the maximum area allowed. The dialog will temporarily be hidden, and you will be prompted to:

1A. Pick a Square Corner Point on your drawing, the outline of the square will be displayed

1B. Move your mouse so that the Square Corner Point becomes the Bottom Left, Bottom Right, Top Right or Top Left corner of the square

1C. Pick a second point to confirm the position and return to the dialog

2. Draw a Max Area Rectangle

Use this method to create a rectangle that equals the maximum area allowed. The dialog will temporarily be hidden, and you will be prompted to:

2A. Pick a Rectangle Corner Point on your drawing, the outline of the rectangle will be displayed.

2B. Move your mouse so that the Rectangle Corner Point becomes the Bottom Left, Bottom Right, Top Right or Top Left corner of the rectangle and adjust the rectangular shape at the same time

2C. Pick a second point to confirm the position and return to the dialog.

3. Draw a Free Rectangle

The dialog will temporarily be hidden, and you will be prompted to pick 2 points that define two diagonal corners of a rectangle

4. Select a Closed Polyline

You can use this method if you have already created a CLOSED POLYLINE and overlaid it on top of your map. The polyline can be any shape but a rectangular shape is recommended because the extreme rectangular extents (bottom left and top right corner) of the closed polyline are used

The dialog will temporarily be hidden, follow the prompts to select a closed polyline

5A Use Online Map Tool

Use this option to display an Online Map of Great Britain

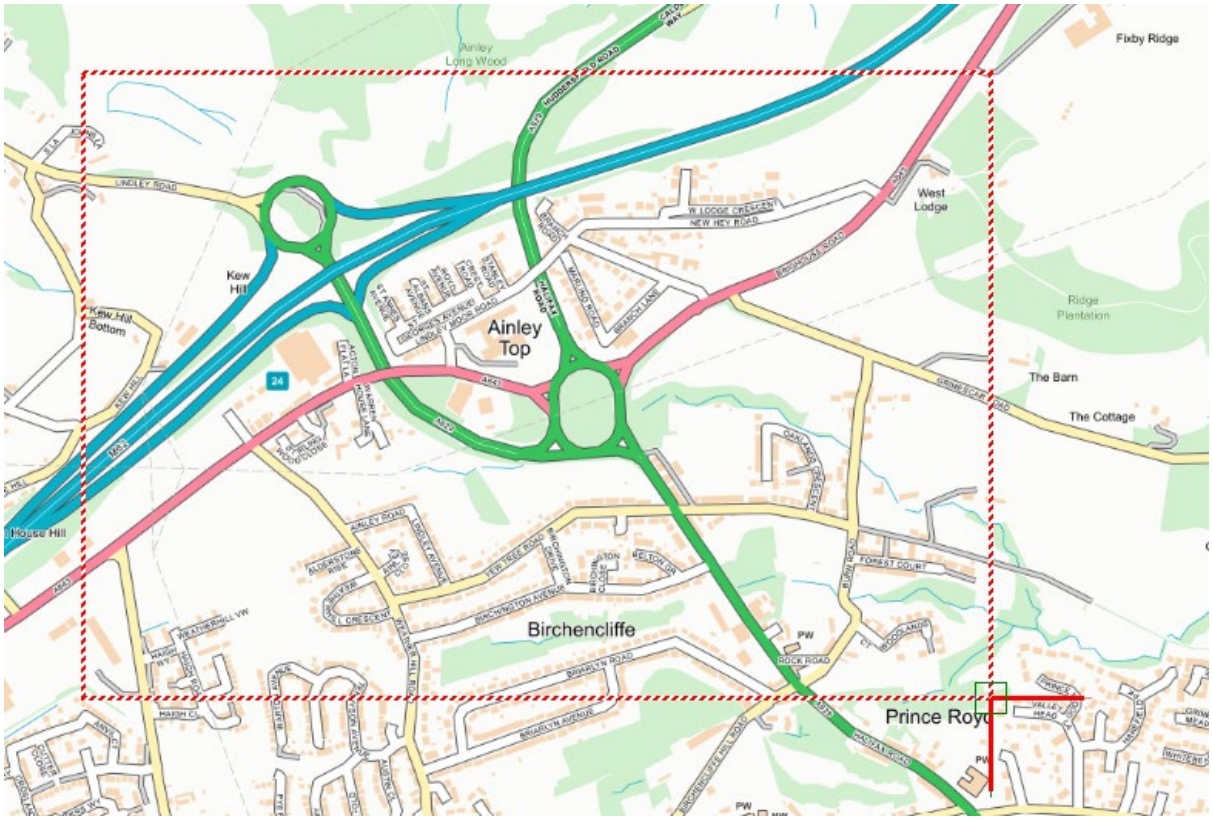
Zoom IN/OUT to your desired location and pick the Top Left Rectangle Icon

Click on two points on the map to define a rectangle, information will be copied to the clipboard. Next return to your CAD system and pick the:

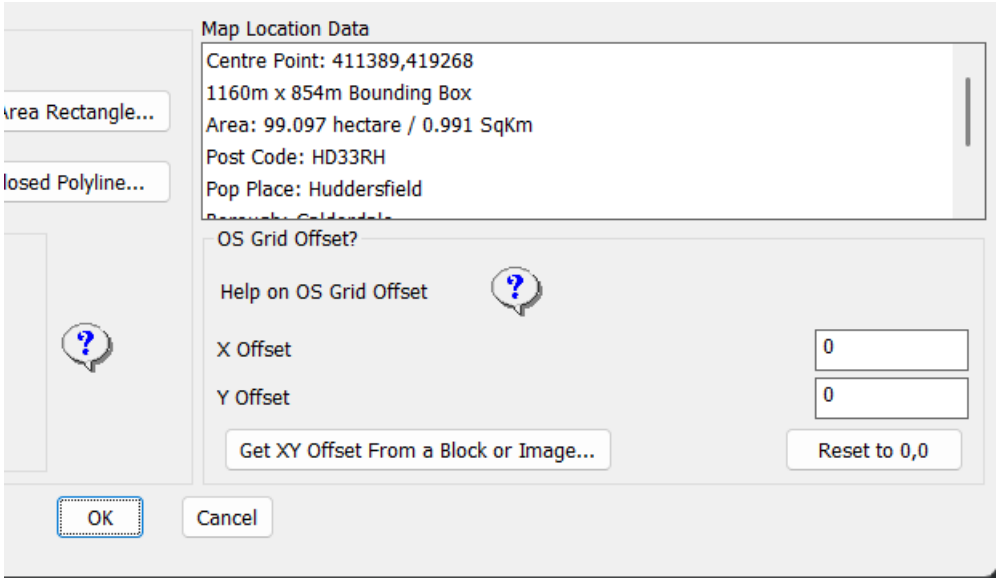
5B Select & Verify Clipboard Data button

Each of the methods described if successfully implemented will display information about the map boundary in the **Map Location Data** window and the **OK** button will be enabled ready to proceed.

Example : Using the Draw a Free Rectangle method to add a boundary to a background map

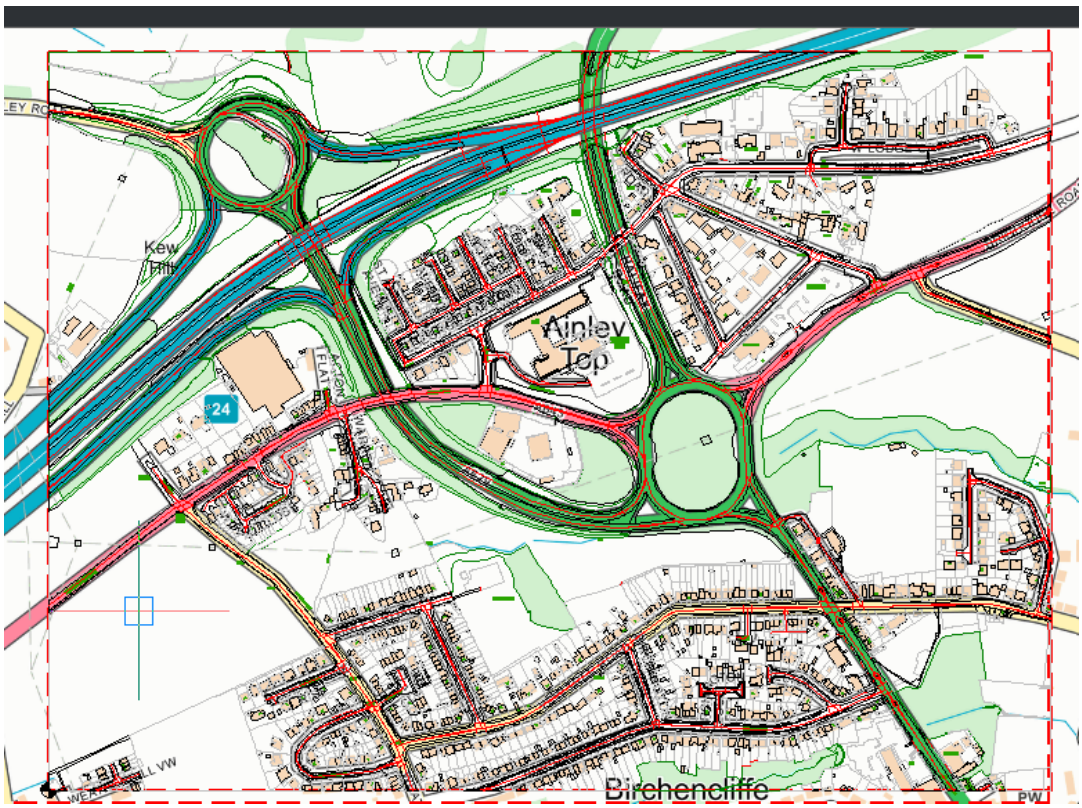


After specifying a boundary area the dialog is re-loaded, and the Map Location Data is populated with information and if the boundary area is within the max area allowed the OK button is enabled.

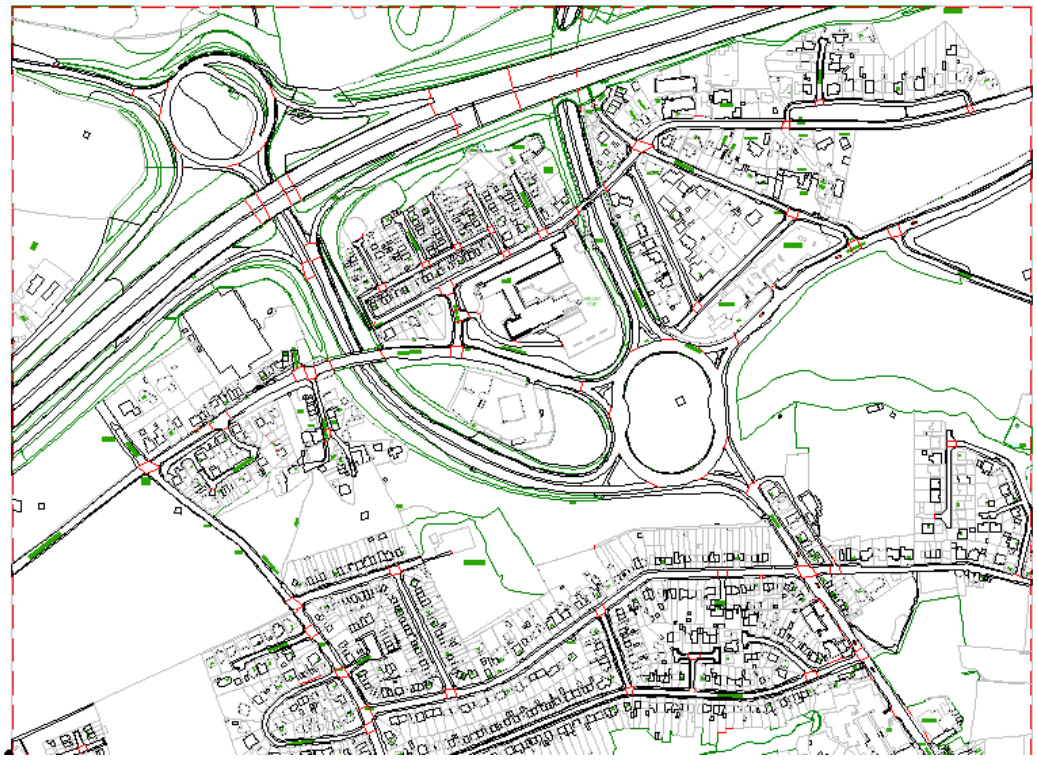


Select the OK button to start the vector map making process

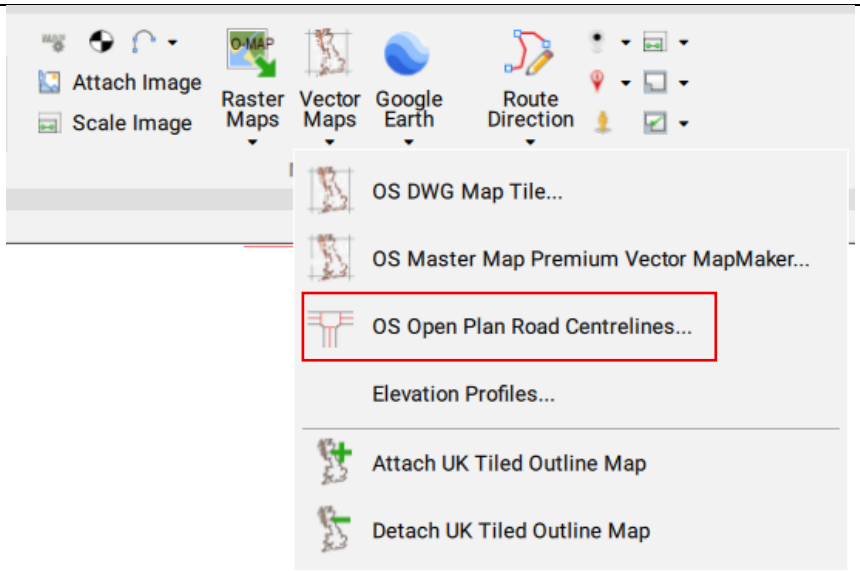
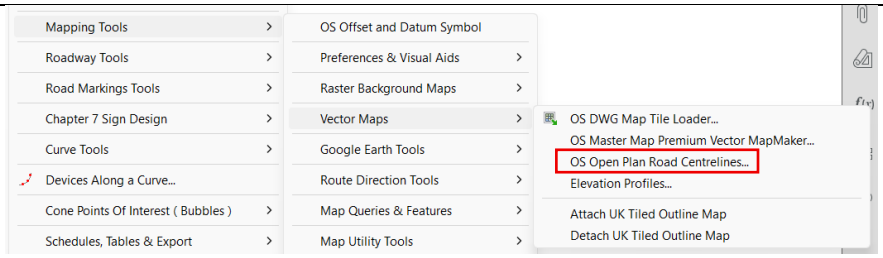
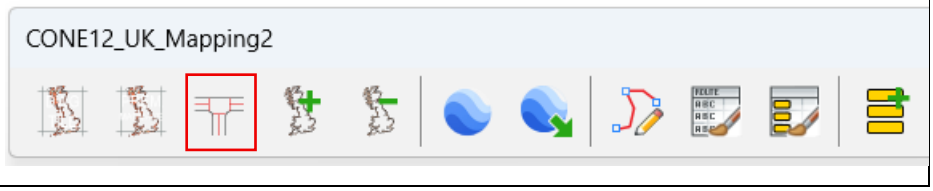
In this example the vector map is overlaid on top of the raster map



Typical result after the raster background layer is switched OFF



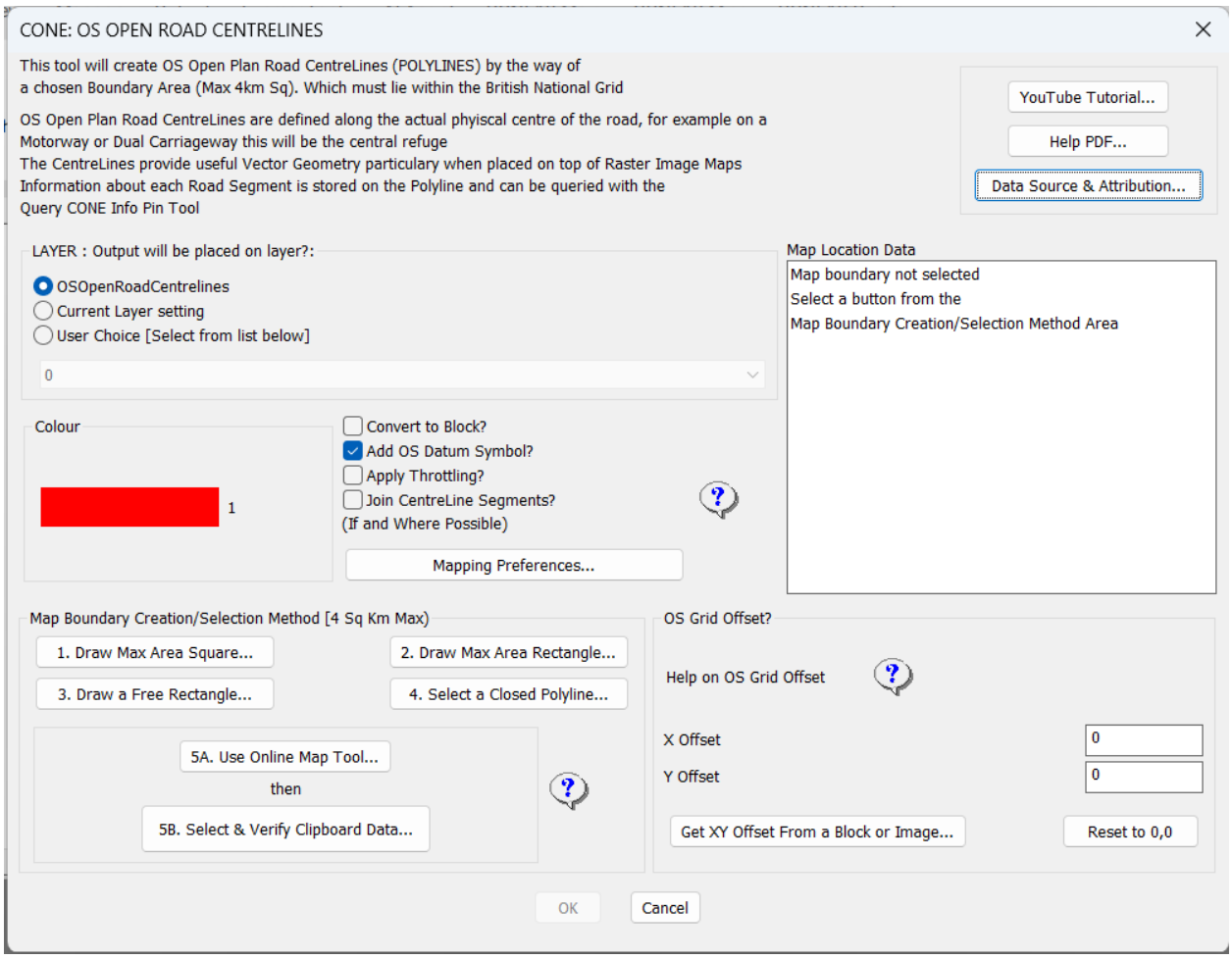
Mapping Tools –OS Open Plan Road Centrelines

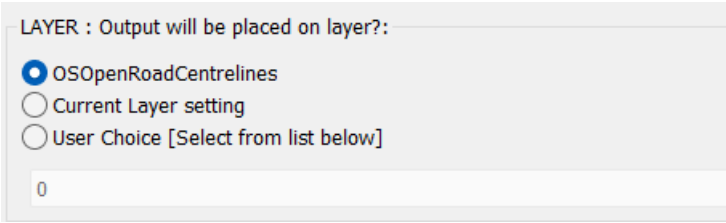
Command CUKOPENPLANCENTRELINES RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPI NG2	

his tool will create OS Open Plan Road Centre Lines (POLYLINES) by the way of"
a chosen Boundary Area (Max 4km Sq). Which must lie within the British National Grid"
OS Open Plan Road Centre Lines are defined along the actual physical centre of the road, for example on a Motorway or Dual Carriageway this will be the central refuge

The Centre Lines provide useful Vector Geometry particularly when placed on top of Raster Image Maps
Information about each Road Segment is stored on the Polyline and can be queried with the Query CONE Info Pin Tool

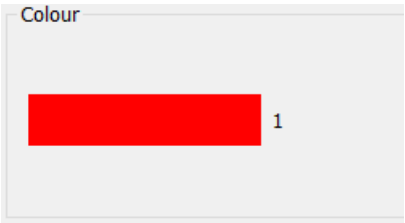
OS OpenData is free to use under the Open Government Licence(OGL)
http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/





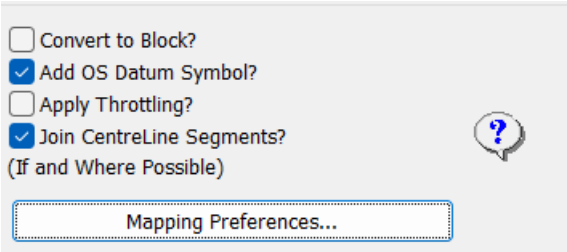
Choose the layer for Road Centre Lines

The OSOpenRoadCentreLines layer, the current layer or select from a list of the current layers in your drawing.



Choose a colour for the Road Centre Lines

Select the swatch.to choose a Colour or BYLAYER which means inherit the chosen layers colour



Convert to Block

Useful if you intend to MOVE the centre lines to another location on your drawing because the Block created will contain the correct OS X,Y coordinate of the bottom left corner of the block.

If you subsequently move your centre lines to some other location on your drawing and wish to later reference its correct spatial position (Example: Using Streetview or Map Queries) then the block can be selected with the [Get XY Offset from a Block or Image] button and its OS: X and Y Offset will be returned

Less useful for TTM purposes as you won't be able to select the objects inside the block in which case you would need to EXPLODE the block and the OS X,Y coordinate will be lost

If you do not select this option then it is recommended to add a **OS Datum Symbol** reference to your map output

Apply Throttling

If Apply Throttling is turned ON then requests made to the OS Data Hub are restricted by the program to approx. 30 requests per minute. This usually ensures that the whole map is created without interruption but slowly.

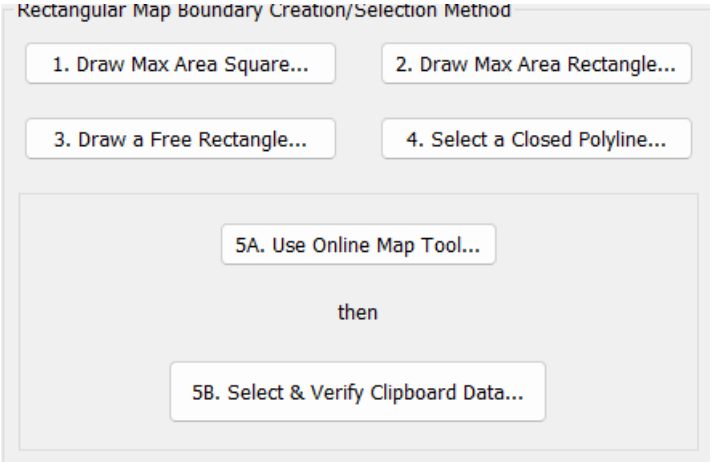
Note: You only need to apply throttling if your have a OS Data Premium API Project key and it is in DEVELOPMENT MODE.

In DEVELOPMENT MODE the OS Data Hub restricts the number of requests to 50 per minute, but in reality it is fewer, and if you go over the limit an error message will occur and you will need to wait between 8 and 10 minutes before trying again

Best practice is to set your OS Data Premium API Project key (in the OS DATA HUB) to LIVE MODE

Join Centre Line Segments (where possible)

Each road centre line is created as a polyline segment from Junction to Junction including side road junctions. If would like to attempt to JOIN contiguous segments where they share common end points then select this option



Rectangular Map Boundary Creation/Selection Method

1. Draw Max Area Square

Use this method to create a square that equals the maximum area allowed. The dialog will temporarily be hidden, and you will be prompted to:

A Pick a Square Corner Point on your drawing, the outline of the square will be displayed.

B. Move your mouse so that the Square Corner Point becomes the Bottom Left, Bottom Right, Top Right or Top Left corner of the square

C. Pick a second point to confirm the position and return to the dialog

2. Draw a Max Area Rectangle

Use this method to create a rectangle that equals the maximum area allowed

The dialog will temporarily be hidden, and you will be prompted to:

A. Pick a Rectangle Corner Point on your drawing, the outline of the rectangle will be displayed.

B. Move your mouse so that the Rectangle Corner Point becomes the Bottom Left, Bottom Right, Top Right or Top Left corner of the rectangle and adjust the rectangular shape at the same time

C. Pick a second point to confirm the position and return to the dialog.

3. Draw a Free Rectangle

Use this method to pick 2 points that define two diagonal corners of a rectangle

4. Select a Closed Polyline

You can use this method if you have already created a CLOSED POLYLINE
and overlaid it on top of your map. The polyline can be any shape but
a rectangular shape is recommended because the extreme rectangular extents
of the shape are used
When you pick either Select a Closed Polyline or Draw a Rectangle the
dialog will temporarily be hidden, follow the prompts to either draw
a rectangle of select a closed polyline

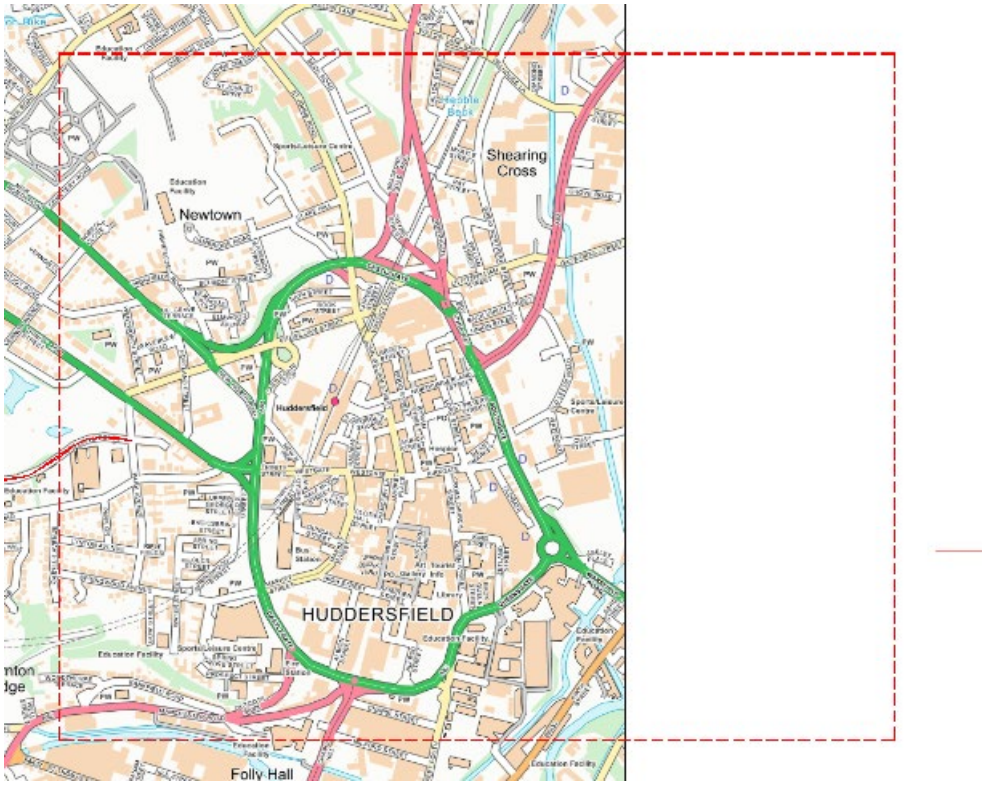
5A Use Online Map Tool

Use this option to display an Online Map of Great Britain
Zoom IN/OUT to your desired location and pick the Top Left Rectangle Icon
Click on two points on the map to define a rectangle, information will be copied to the clipboard. Next return to your CAD system and pick the:

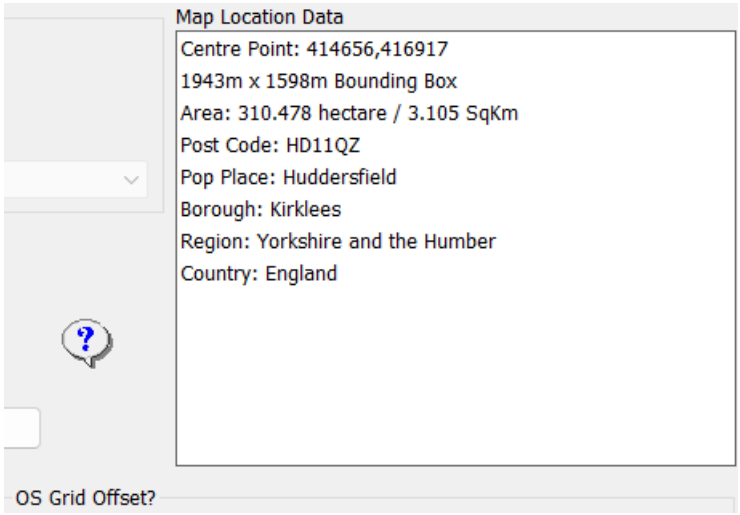
5B Select & Verify Clipboard Data button

Either of the above methods if successfully will display information about the map boundary in the Map Location Data window

Example : Using the Draw a Free Rectangle method to add road centre lines on top of a OS 5K map tile

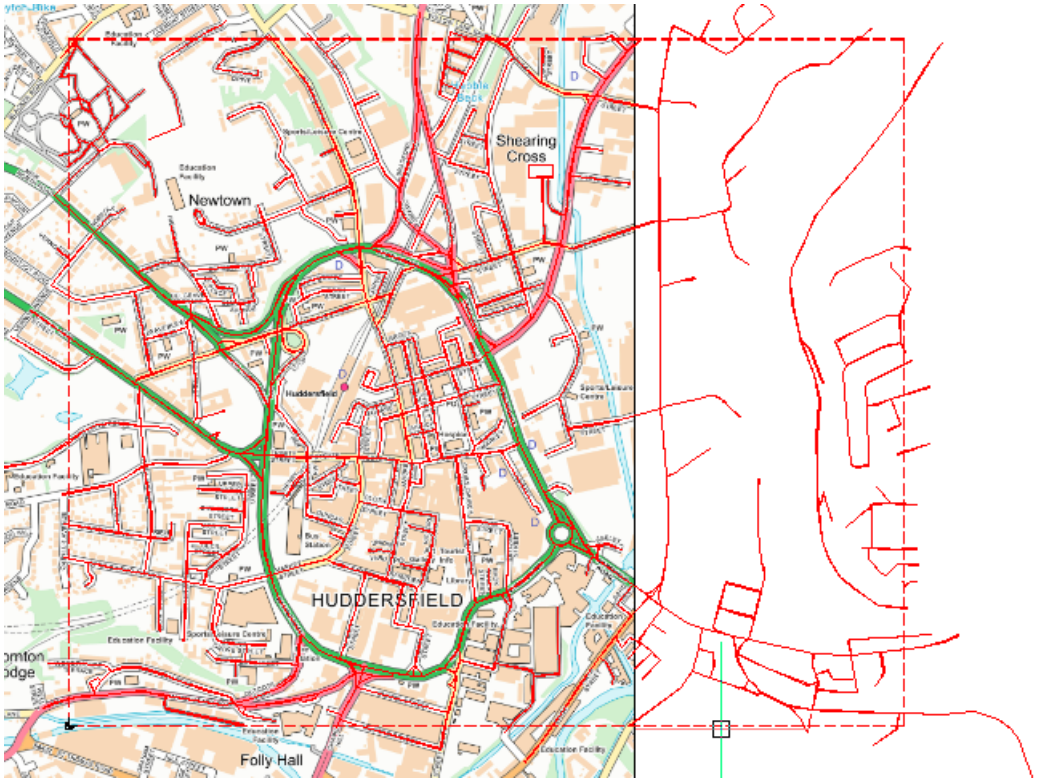


The dialog is re-loaded, and the Map Location Data is populated with information and the OK button is enabled. Pick the OK button to proceed.

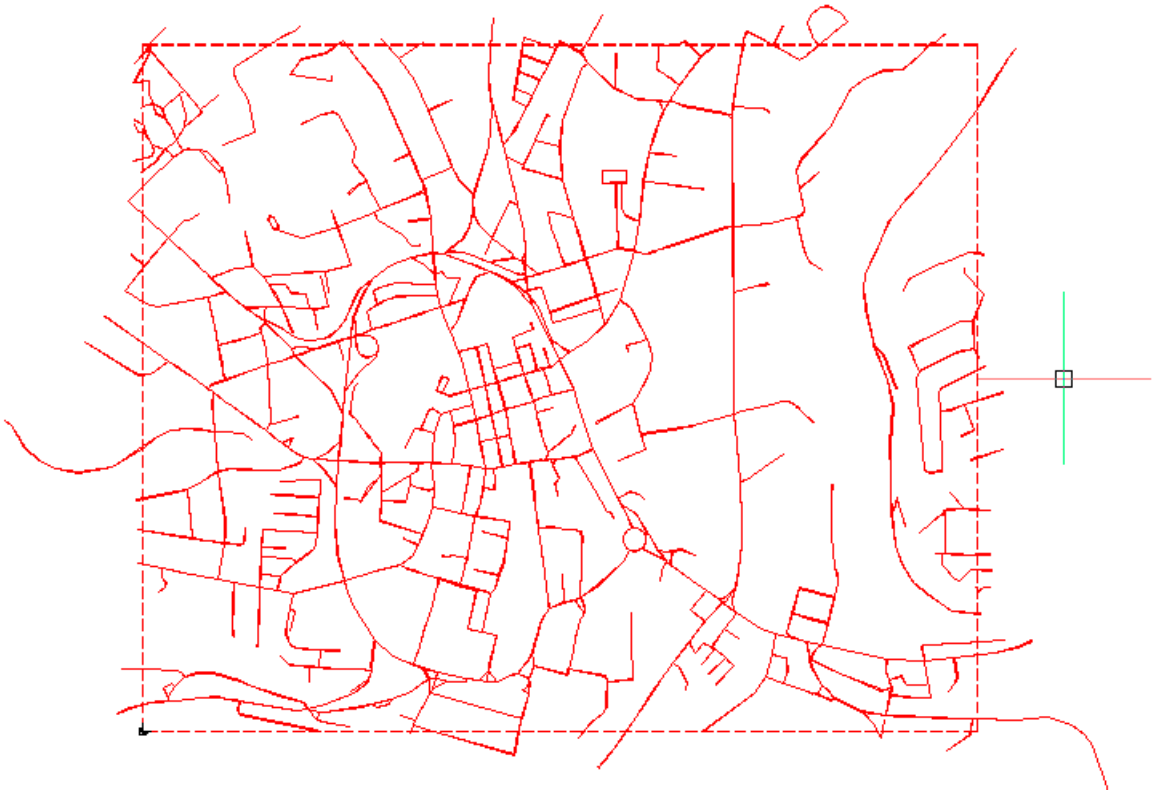


Tiles will be downloaded and attached, progress will show at the command line
The time taken to create the centre lines will vary depending on the server status and Internet speed.

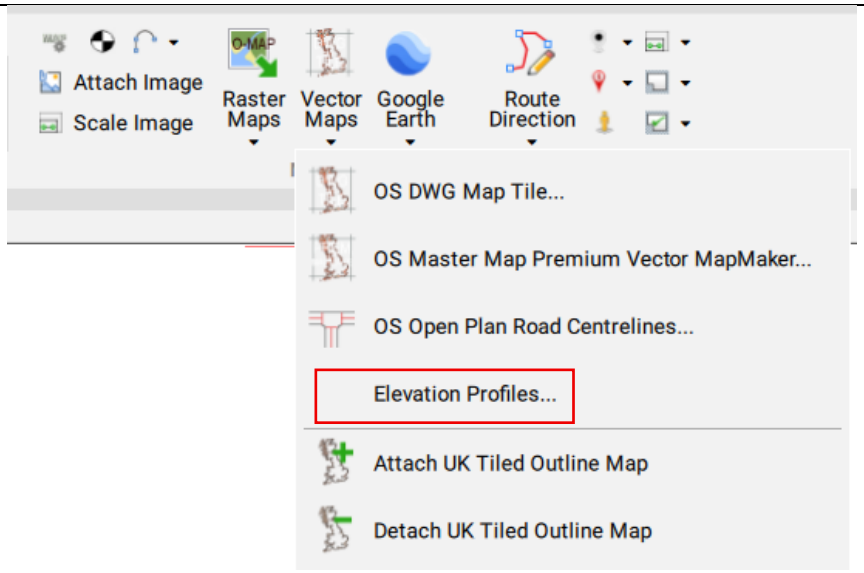
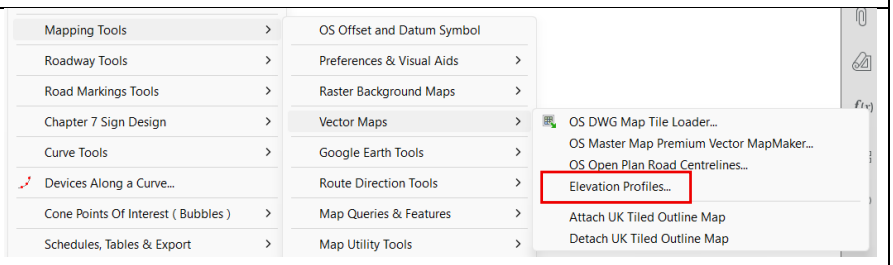
Typical Result



And after the background map layer is turned off



Mapping Tools –Elevation Profiles

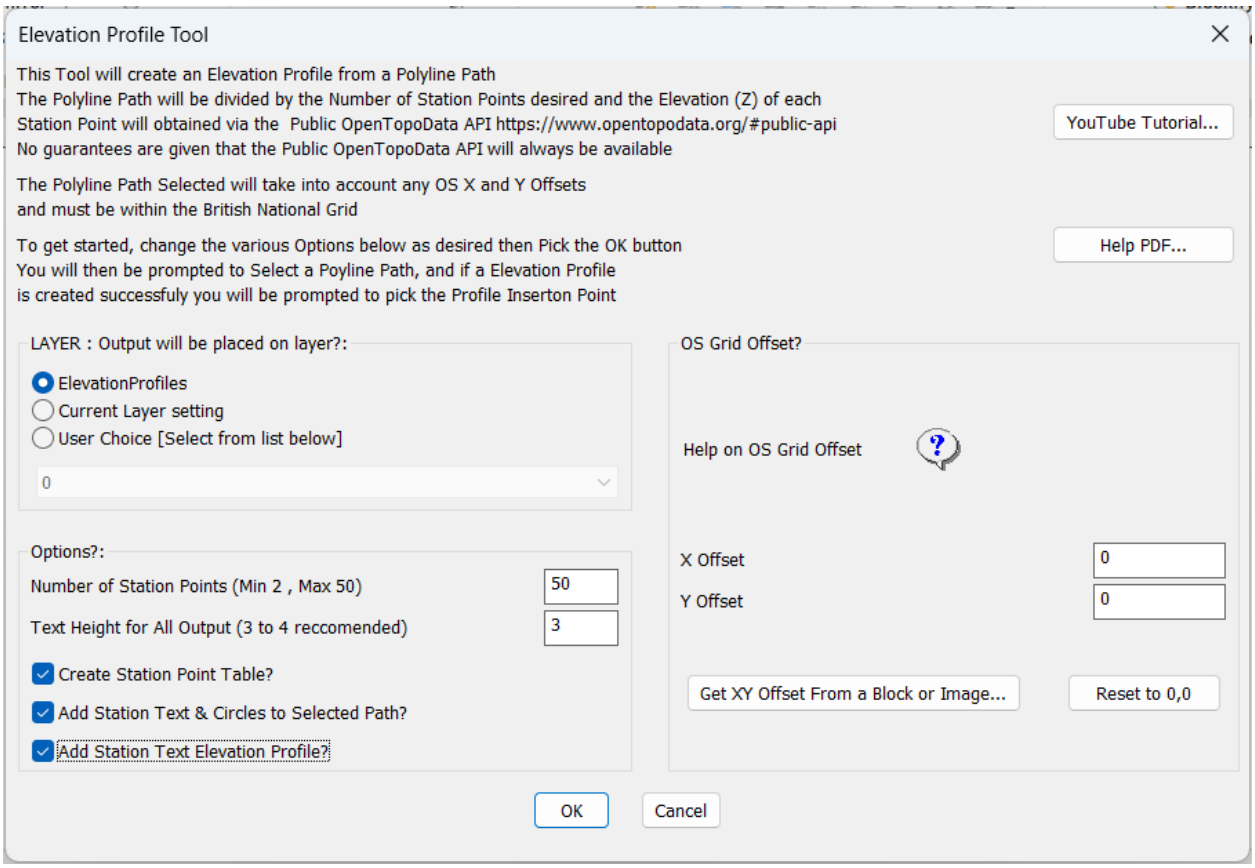
Command CUKELEVPROFILE RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPING 2	

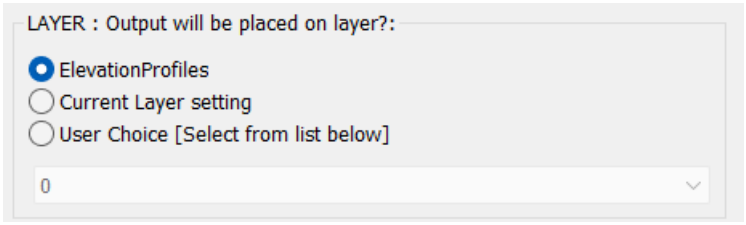
This Tool will create an Elevation Profile from a Polyline Path

The Polyline Path will be divided by the Number of Station Points desired (Max 50) and the Elevation (Z) of each Station Point will obtained via the Public OpenTopoData API https://www.opentopodata.org/#public-api

No guarantees are given that the Public OpenTopoData API will always be available

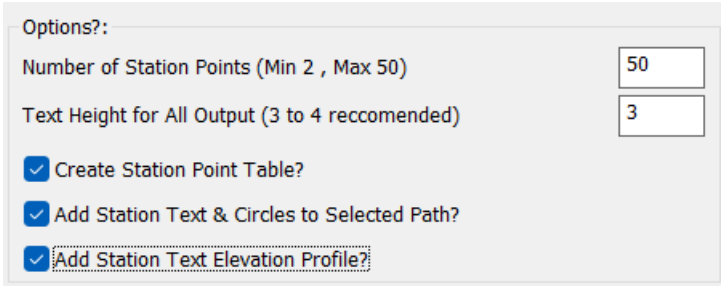
The Polyline Path Selected will take into account any OS X and Y Offsets and must be within the British National Grid





Choose the layer for the output

The ElevationProfiles layer, the current layer or select from a list of the current layers in your drawing.



Number of Station Points :

Minimum of 2 and a Maximum of 50

Text height for All Output

A text height of 3 is recommended

Create Station Point Table

Select this option to create a point table similar to below that includes information for each station point:

X = the distance from the start point along the profile

Z ELEV : The elevation at the point

GAIN : The elevation gain from point to point (could be minus)

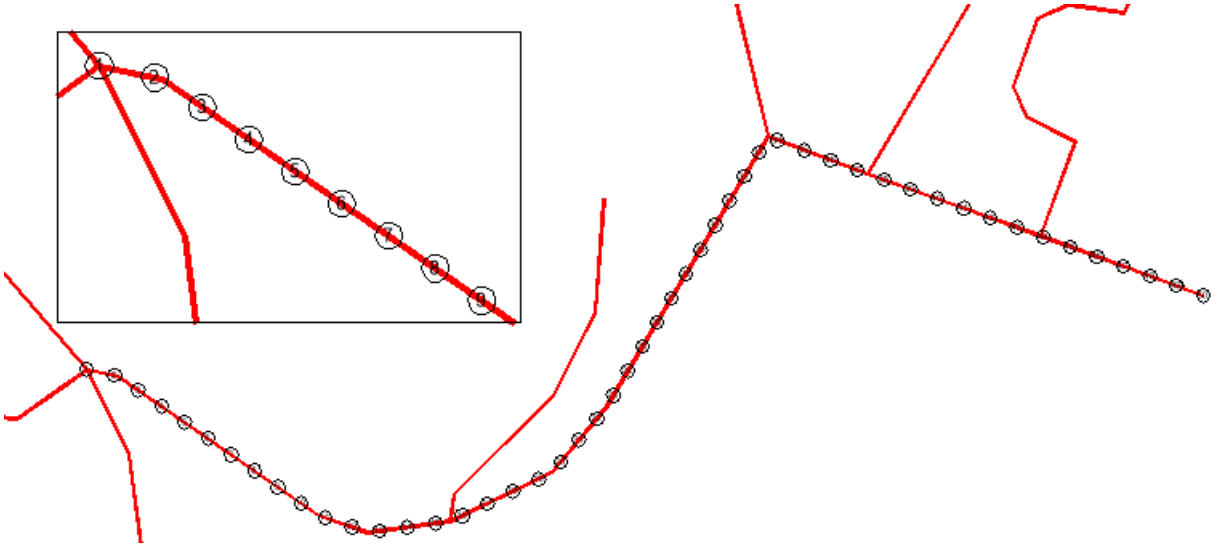
%SLOPE The slope of the GAIN in % terms

TOT GAIN: The accumulative gain from the start point (could be minus)

Point	X	Z ELEV	GAIN	% SLOPE	TOT GAIN
1	0	240.47	0	0	0
2	12.01	241.17	0.69	5.76	0.69
3	24.01	242.29	1.12	9.33	1.81
4	36.02	243.44	1.16	9.62	2.97
5	48.02	243.9	0.45	3.79	3.42
6	60.03	244.26	0.37	3.08	3.79
7	72.03	244.43	0.17	1.38	3.96

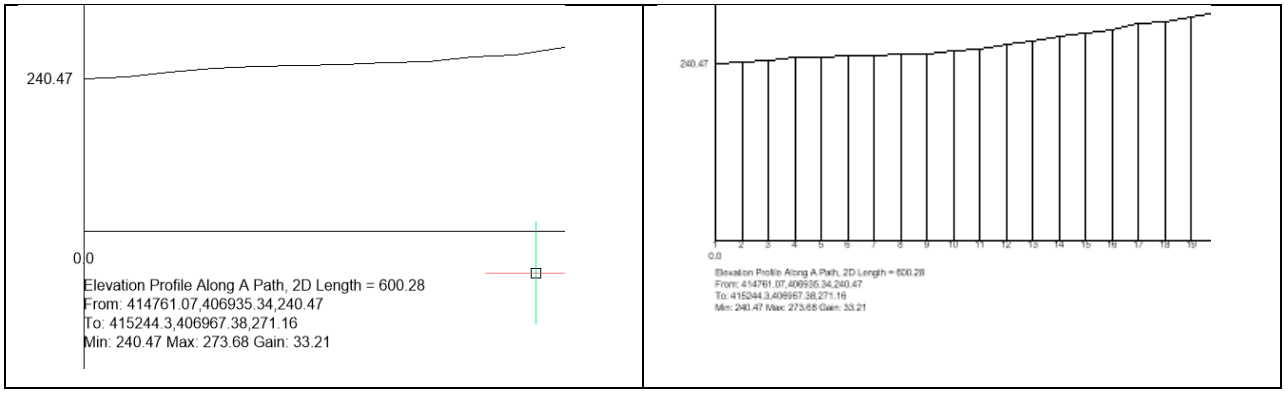
Add Station Text and Circles to Selected Path

Select this option to have the station point number created within a circle and added along the selected path



Add Station Text to Elevation Profile

The diagram below shows the elevation profile WITHOUT station text alongside a elevation profile WITH station text

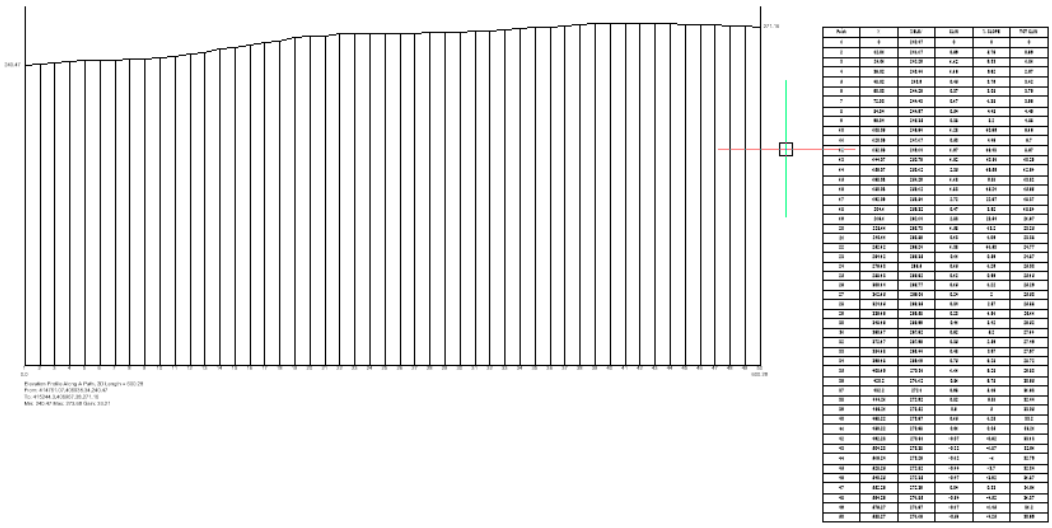


To proceed click the OK button and you will be prompted to:
Select a Polyline Profile Path: (select your path)

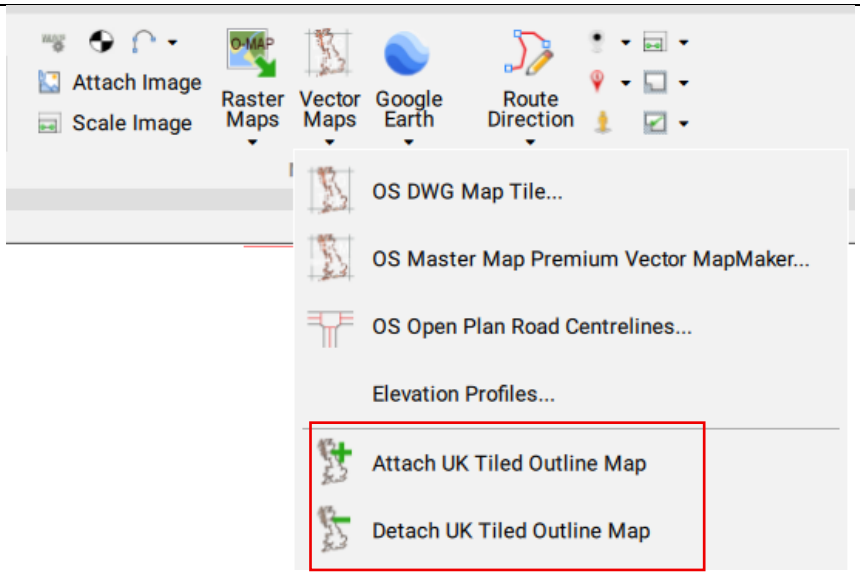
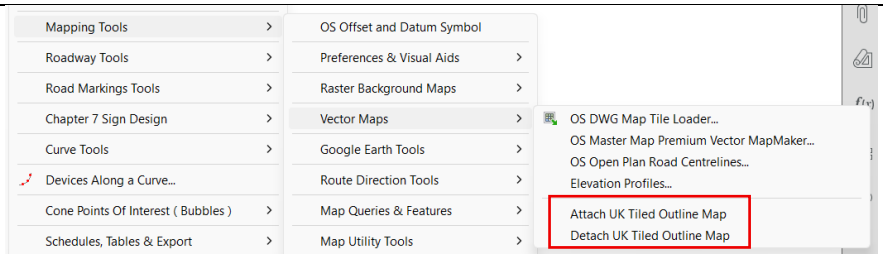
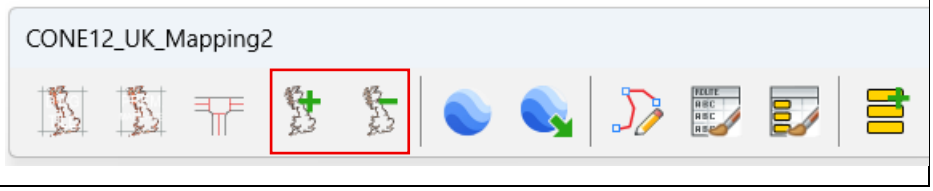
After selection the profile path and table (if chosen) will be generated and you will be prompted pick a point on your drawing where you would like to position the output

Pick Profile Insert Point:

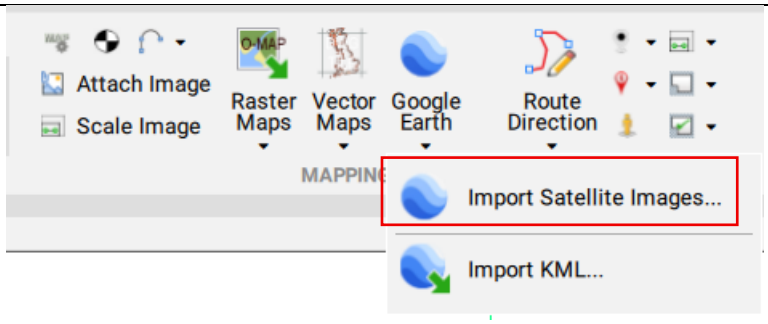
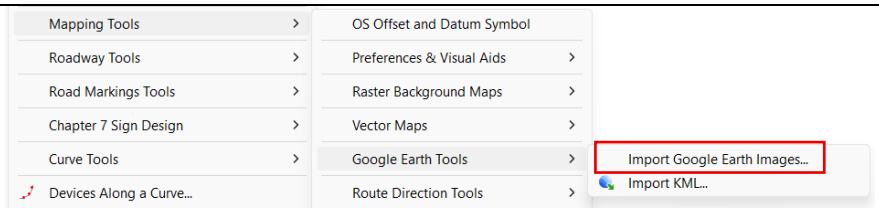
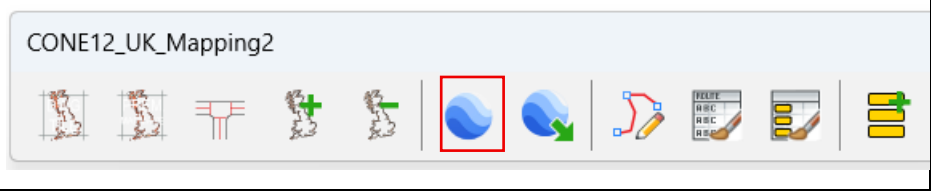
Typical Output

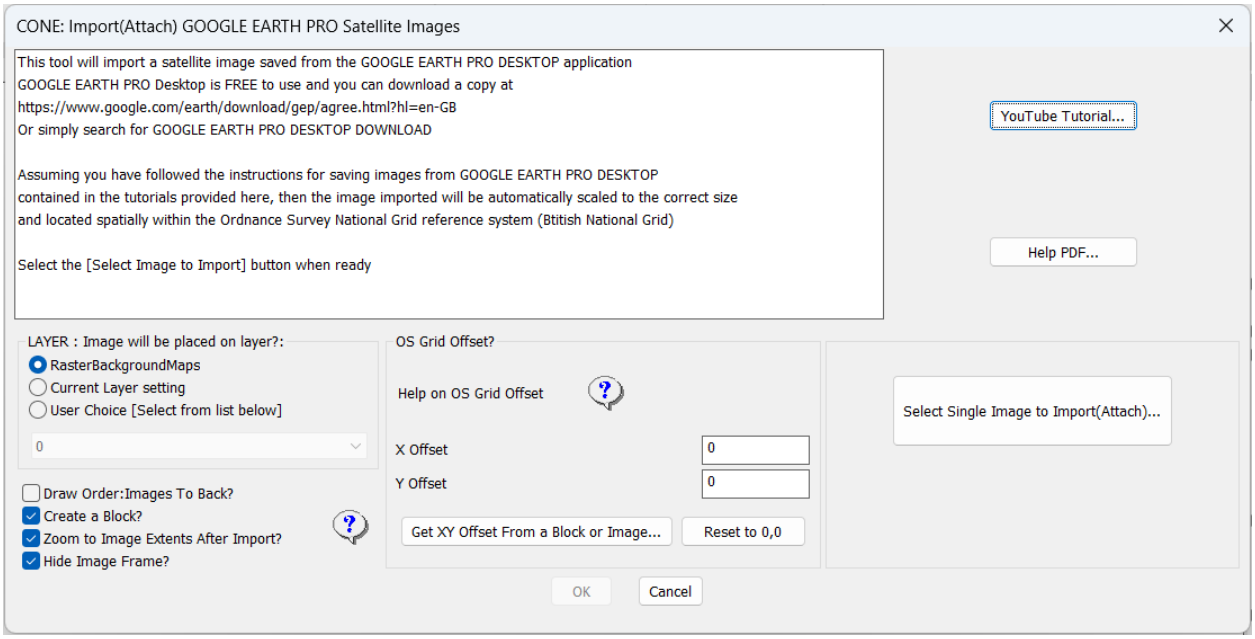


Mapping Tools –Attach or Detach UK Tiled Outline Map

Command ATTACHUKMAP And DETATCHUKMAP RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPI NG2	

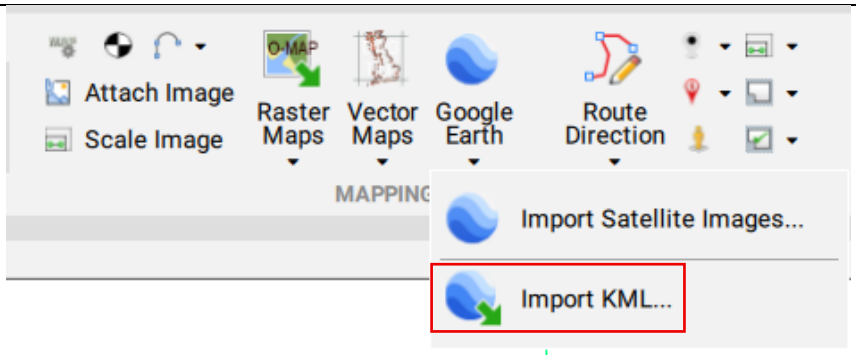
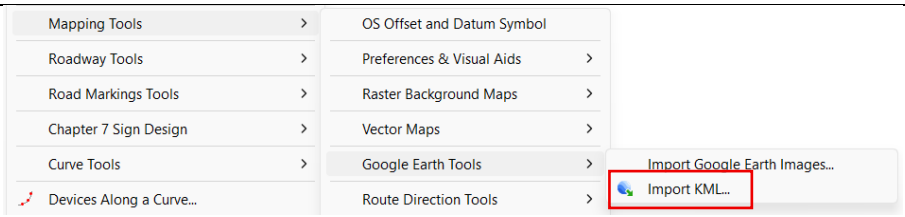
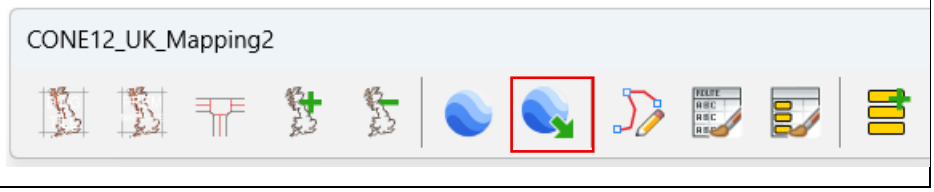
Mapping Tools –Google Earth Tools -Import Google Earth Images

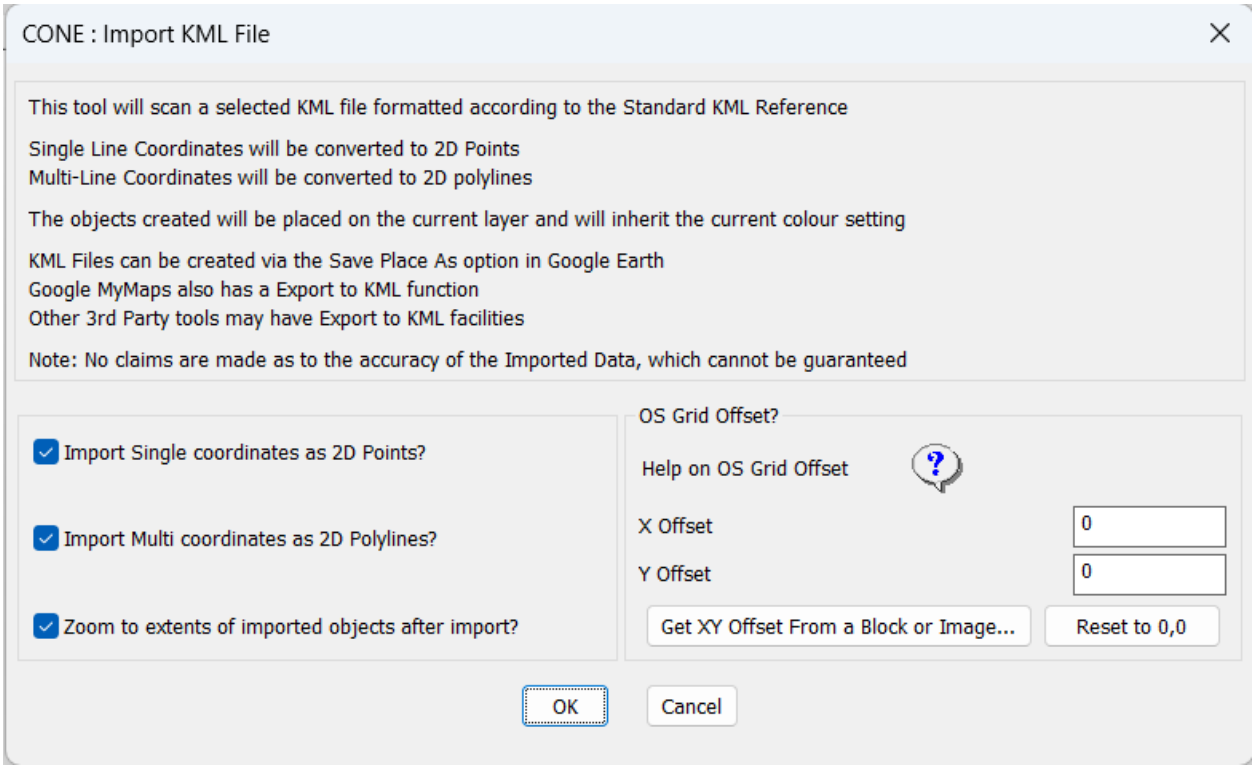
Command CUKIMPORTGOOGLEIMAGES RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPI NG2	



WAITING FOR CONTENTS

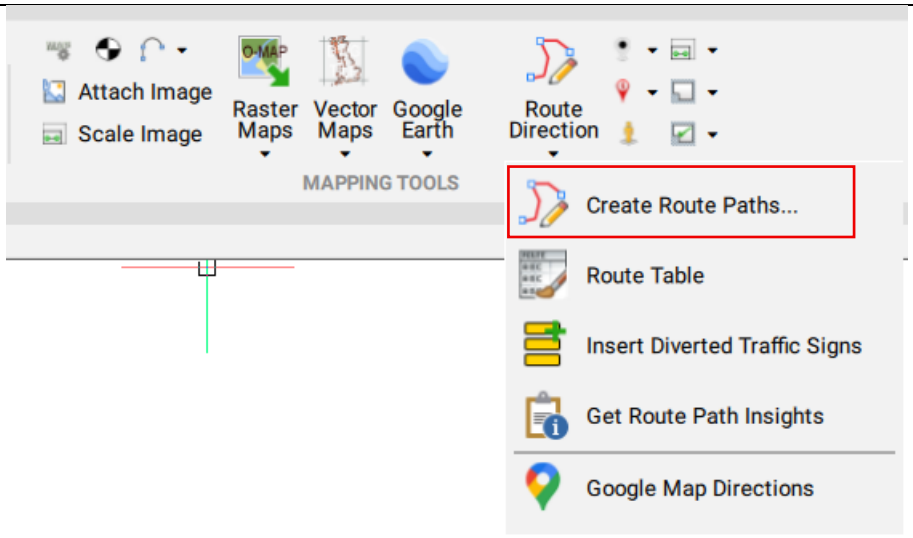
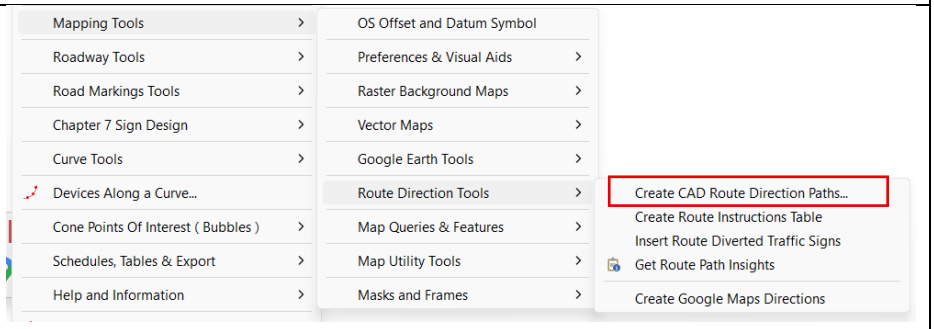
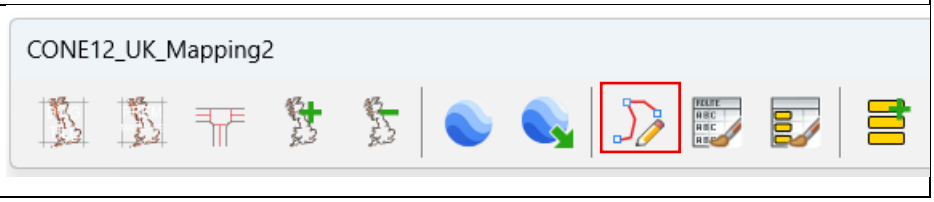
Mapping Tools –Google Earth Tools -Import KML Files

Command CUKIMPORTKML RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPING2	



WAITING FOR CONTENTS

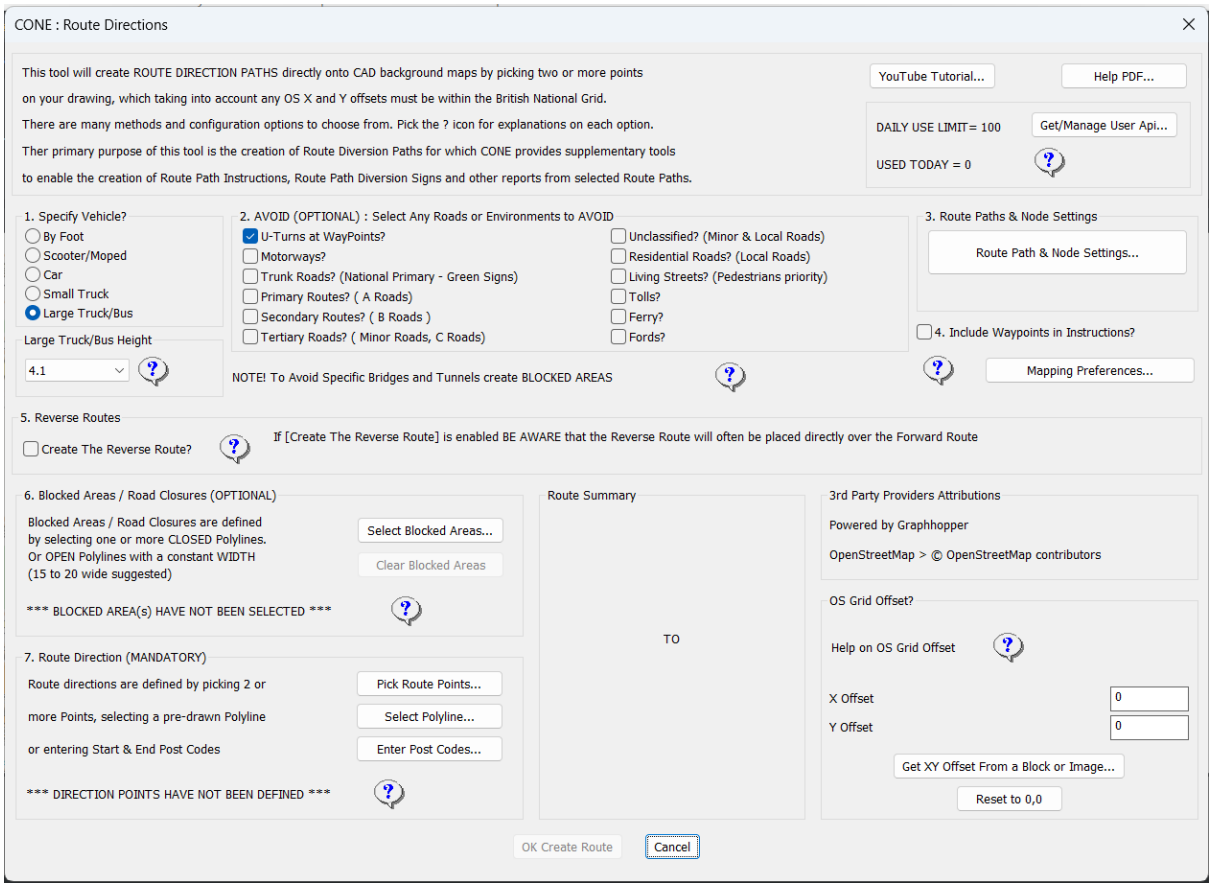
Mapping Tools –Create Route Direction Paths

Command CUKROUTEDIRECTIONS RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPI NG2	

This tool will create route direction paths directly onto CAD background maps by picking two or more points on your drawing, which taking into account any OS X and Y offsets must be within the British National Grid.

The primary purpose of this tool is the creation of Route Diversion Paths for which CONE provides supplementary tools to enable the creation of Route Path Instructions, Route Path Diversion Signs and other reports from selected Route Paths.

Key features of the Route Direction tool is the facility select large vehicles, to avoid particular road classifications and avoid whole areas.



DAILY USE LIMIT

The CONE Route Directions Tool is powered by Graphhopper for which CADaptor Solutions have purchased a commercial plan. We subject usage of the plan to daily limits which may vary from time to time. Every CONE user is subject to the same daily use limit.

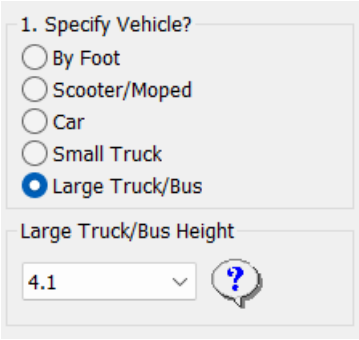
Each time a route is calculated (Forward or Reverse) the USED TODAY figure is incremented by ONE. The only exception is if the routing engine returns an error or is unavailable. Note: Creating a Forward and Reverse Route calculation at the same time counts as TWO uses.

A warning will appear when your daily use nears the daily limit.

If you require more than the daily use limit then you can obtain your own API key by visiting https://www.graphhopper.com/pricing/ Sign Up, Select a Plan etc.

The usage of your API key can be shared across your organisation.

For more info pick the [Manage User Api] button



1. Specify Vehicle

The routing engine support the following travel modes:

By Foot: Pedestrian Routes

Scooter/Moped: Fast inner city, often used for food delivery, is able to ignore certain bollards, maximum speed of roughly 50km/h. weight=300kg, width=1m, height=2m

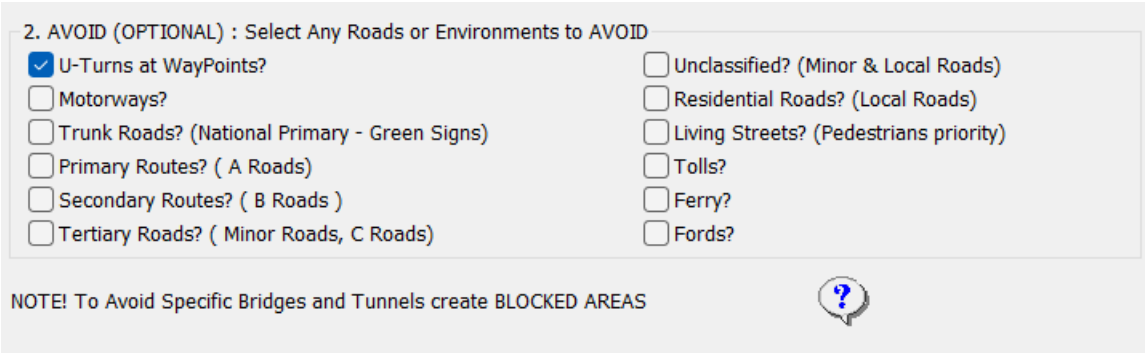
Car: Weight=2500kg, Width=2m, Height=2m

Small Truck: Small truck like a Mercedes Sprinter, Ford Transit or Iveco Daily height=2.7m, width=2+0.28m, length=5.5m, weight=2080+1400 kg

Large Truck or Bus: Truck like Mercedes-Benz Actros Height=3.7m, Width=2.6+0.34m, length=12m, Weight=13000+13000 kg, HGV=yes, 3 Axes

You can increase the height of the Large Truck or Bus up to a max height of 5m

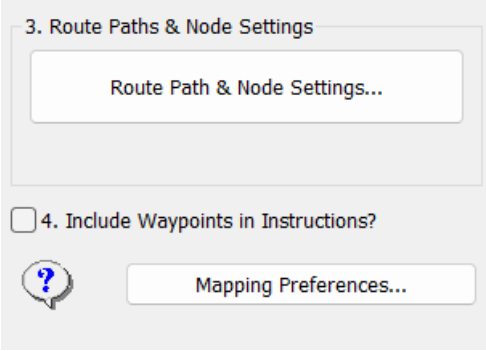
The routing engine will attempt to avoid routes with height, width and weight restrictions that are less than the vehicle specification. However some weight restrictions may also have exemptions that allow through traffic in certain conditions (Local Access and Diversion routes for example)



2. AVOID (OPTIONAL) Road Types and Environments to Avoid

AVOID U-Turns at Waypoints. If your route definition includes Waypoints i.e. 3 or more points and this option is NOT checked then the routing engine may make a U-Turn at a waypoint if the resulting route would be shorter.

The Graphhopper routing engine is powered by OpenStreetMap (OSM) data and the Road/Highway types used are as specified by OpenStreetMap.
OSM Road/Highway Classifications differ from UK Ordnance Survey Road Classifications. Both are shown below starting with the highest importance, the equivalent Ordnance Survey Road Classification are those shown in brackets.
You should use Blocked Areas to prevent access to specific Bridges and Tunnels
Note: It is entirely possible to Start and/or End your chosen route on a road type that you have also selected to AVOID. For example, you have selected route points that start on a Tertiary Road but have also checked AVOID Tertiary (Minor Roads, C Roads). In this case a warning will be presented and if you choose to ignore, the routing engine will attempt to find a route that leaves the Tertiary Road as quickly as possible and AVOID Tertiary roads for the reminder of the route. However, there is no guarantee that a satisfactory route will be returned and may be ignored particularly on higher classification roads.

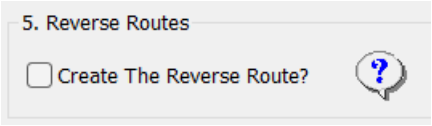


3. Route Path & Node Settings

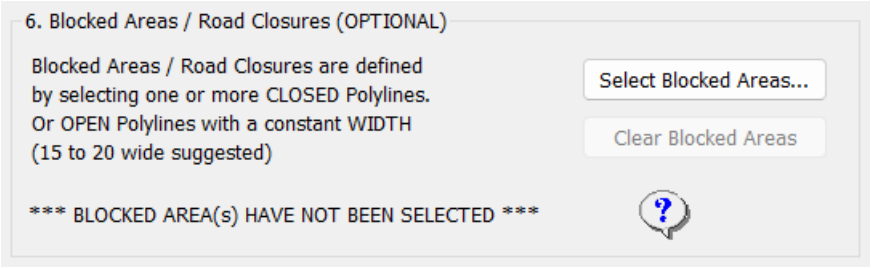
Selecting the [Route Path and Node Settings] button will load a sub dialog enabling you to configure the properties of Route Path and Nodes

4. Include Waypoints in Instructions

The routing engine returns Turn by Turn instructions for the whole route including any Waypoints. If your route definition includes Waypoints ie. 3 or more points, then you may prevent waypoints from being included in Route Instructions and Diverted Traffic Sign tables by UNCHECKING this option.



5. Reverse Routes Can be calculated at the same time as a Forward route in this case the USED TODAY figure is incremented by two. The Reverse route will in most cases be placed on top of the Forward route. Selecting the [Route Path and Node Settings] button will load a sub dialog enabling you to configure the colour and thickness of Forward and Reverse routes for better clarity.



6. Blocked Areas / Road Closures (OPTIONAL)

Blocked Areas are used to prevent the routing engine following a route along specific roads and areas. For route diversions the Blocked Areas are usually the road or roads that are closed to through traffic. There is no limit to the number of blocked areas you can select but a maximum of 10 is recommended.

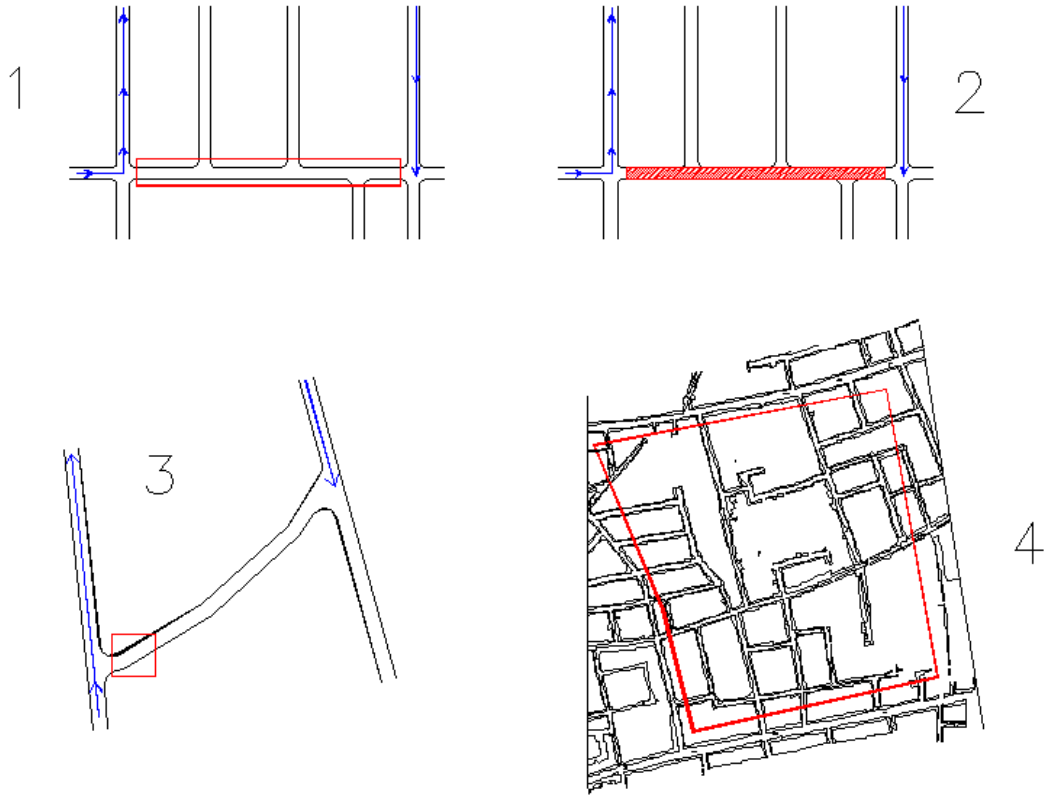


Figure 1. A simple closed polyline blocking the entire length of a road and the junctions in-between.

Figure 2. Using a wide polyline as an alternative to figure 1

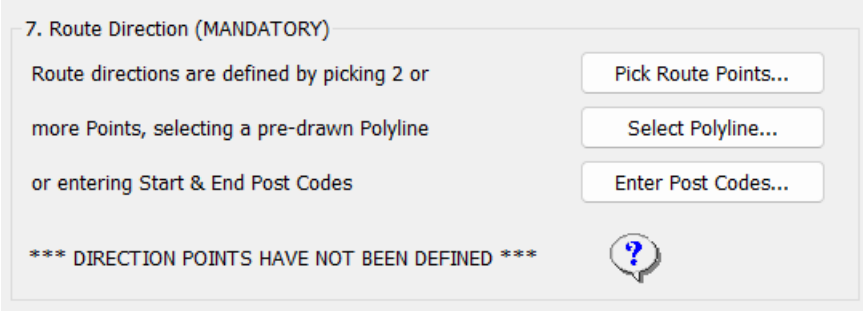
Figure 3. A simple rectangle can often be used to block entry and in this case could be placed at either end or even in the middle.

Figure 4. Entire areas can be blocked with a closed polyline.

You should use Blocked Areas to prevent access to specific Bridges and Tunnels

When selecting Blocked Areas you may select many areas as required at the same time

The [Clear Blocked Areas] button will erase any previously selected Blocked Areas from memory.



7. Route Direction (MANDATORY)

[Pick Route Points]

Routes are defined by picking at least two points on your drawing/map (Start Point and End Point). You may also include additional points (Way points) but you must pick all points in logical order.

Example: Start Point, Way Point 1, Way Point 2, Way Point 3 etc., then End Point.

When picking points a polyline will be drawn between the points, this is deliberately left on your drawing as a useful indicator and can be erased at any time.

[Select Polyline]

You can also select a pre-drawn polyline; The Start Point of the polyline is the start of your route. The End Point of the polyline is the end of your route, and any vertices in-between will become Way points.

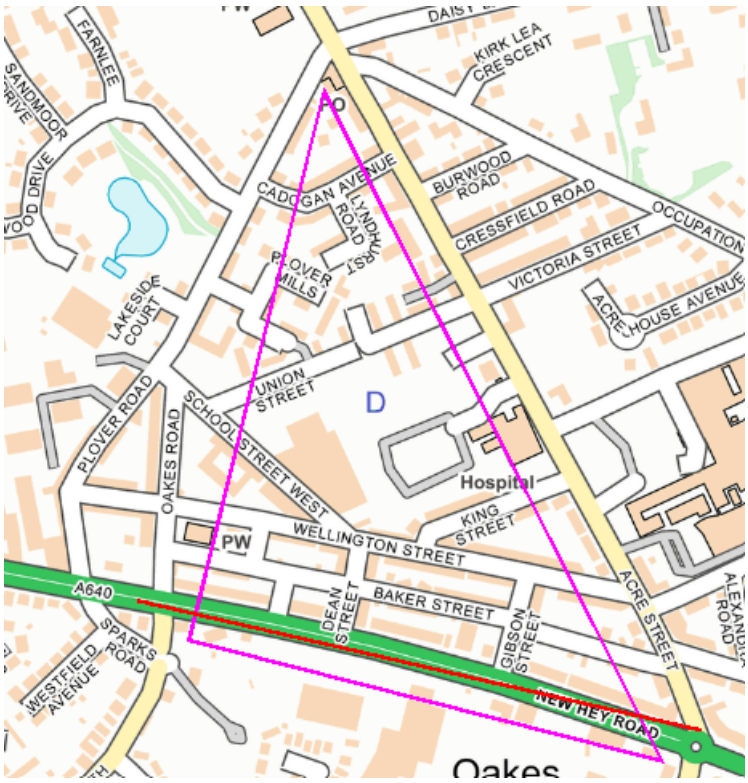
NOTE! You should aim to be reasonably accurate with your point picks, particularly on dual carriageways. Zoom in as you go and aim to bias your point picking on the **Left-Hand Side** of the travel direction.

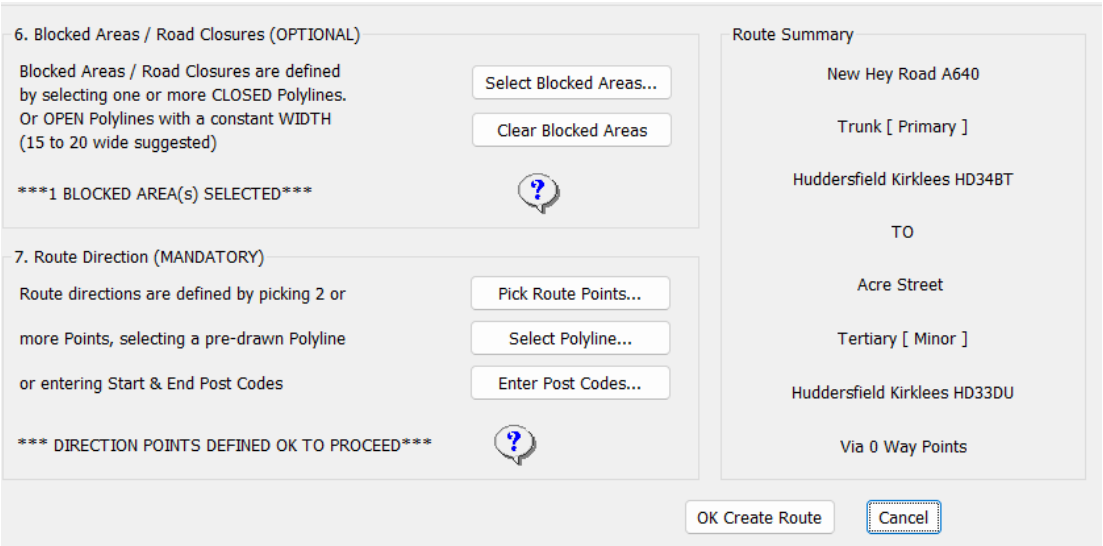
[Enter Post Codes]

Route start and end points can also be defined by simply entering the Start and End Post Codes. Way points are not possible with this option.

Selecting one of the route options again will automatically erase the previous route definition.

Example: Start Point + End Point + Blocked Area





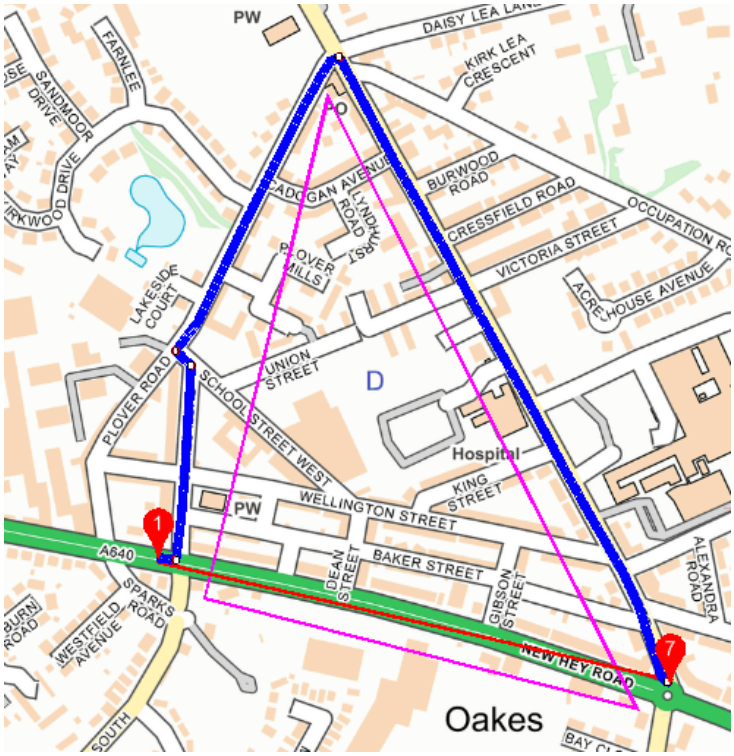
Route Summary

When you have defined your route, the Route Summary portion of the dialog will show information about your start and end points, you should check this to see if it matches your expectations.

Note: If the Route Summary is empty or very vague or quite simply not what you were expecting then it's likely that your drawing/map is not spatially located correctly.

The **[OK Create Route]** button will be enabled when the Route Start and End Points have been defined.

Route Path Created



CONE includes various additional tools that you can use to query a route path.

See:

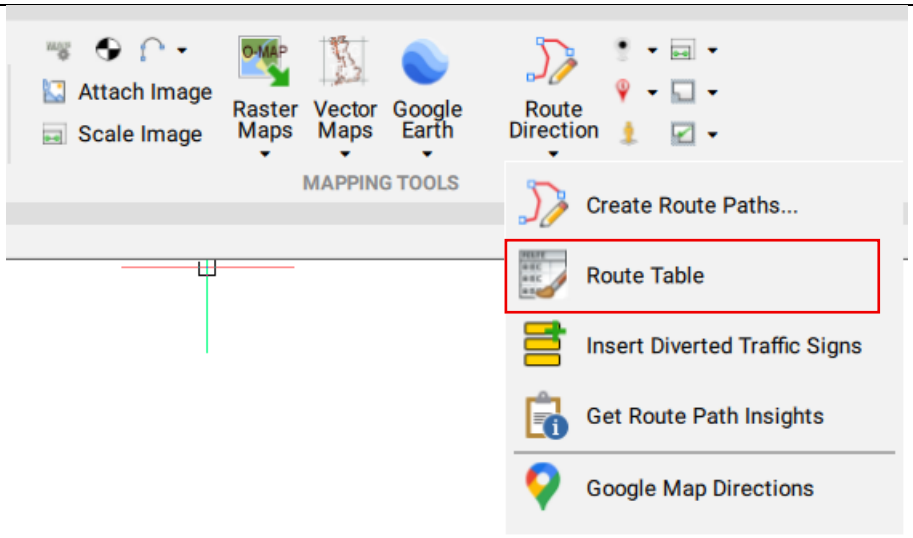
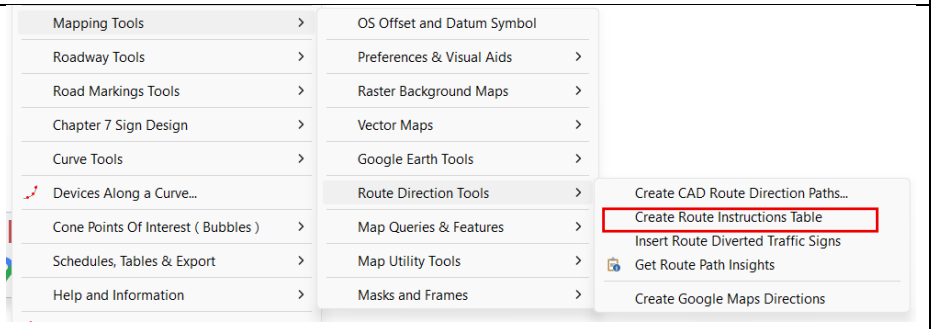
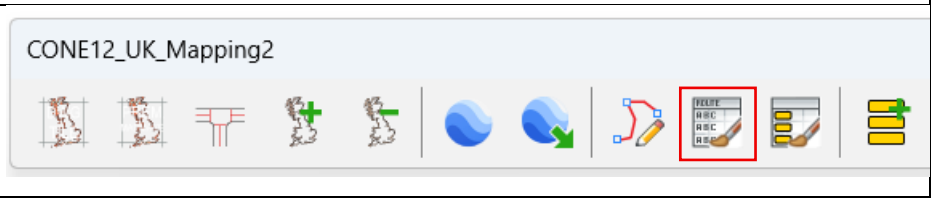
Mapping Tools – Create Route Instructions Table

Mapping Tools – Insert Route Diverted Traffic Signs

Mapping Tools – Get Route Path Insights

Mapping Tools – Create Google Maps Directions

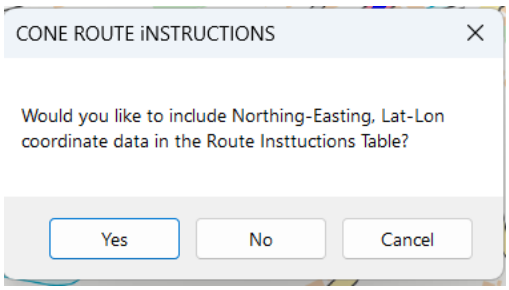
Mapping Tools –Create Route Instructions Table

Command CUKROUTEINSTRUCTIONS RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPI NG2	

You will be prompted to pick a route path from which a Route Instructions Table will be generated. The table size is determined by the current TEXTSIZE setting.

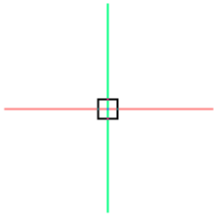
Select a CONE Route Path Polyline

You will be asked if you would like to include Northing and Easting coordinates



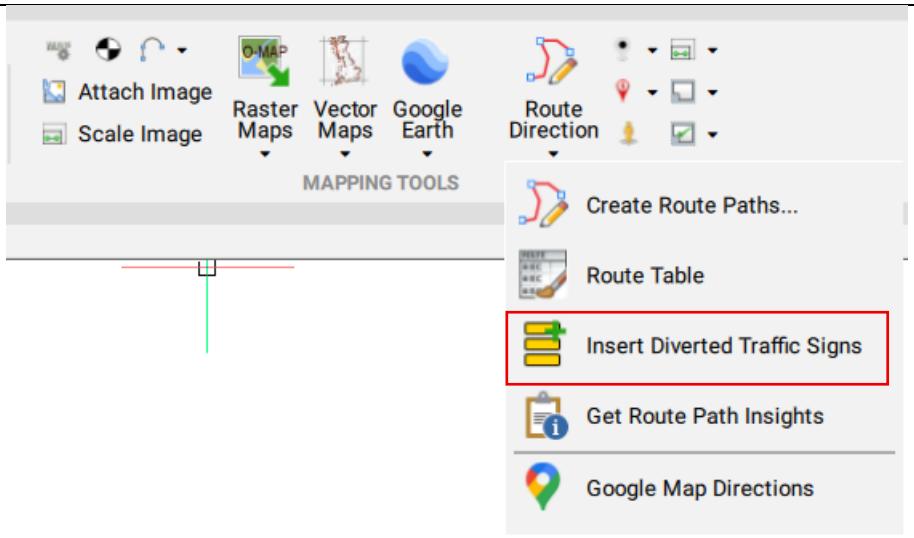
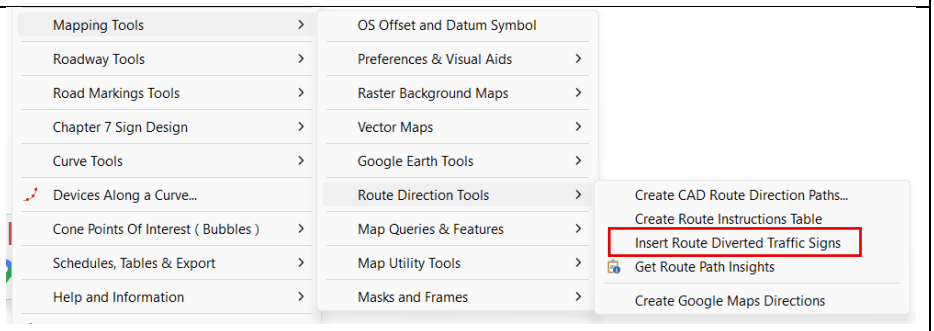
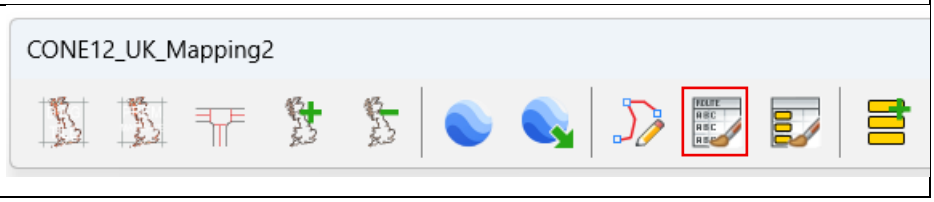
Typical Route Instructions Tables with and without coordinates

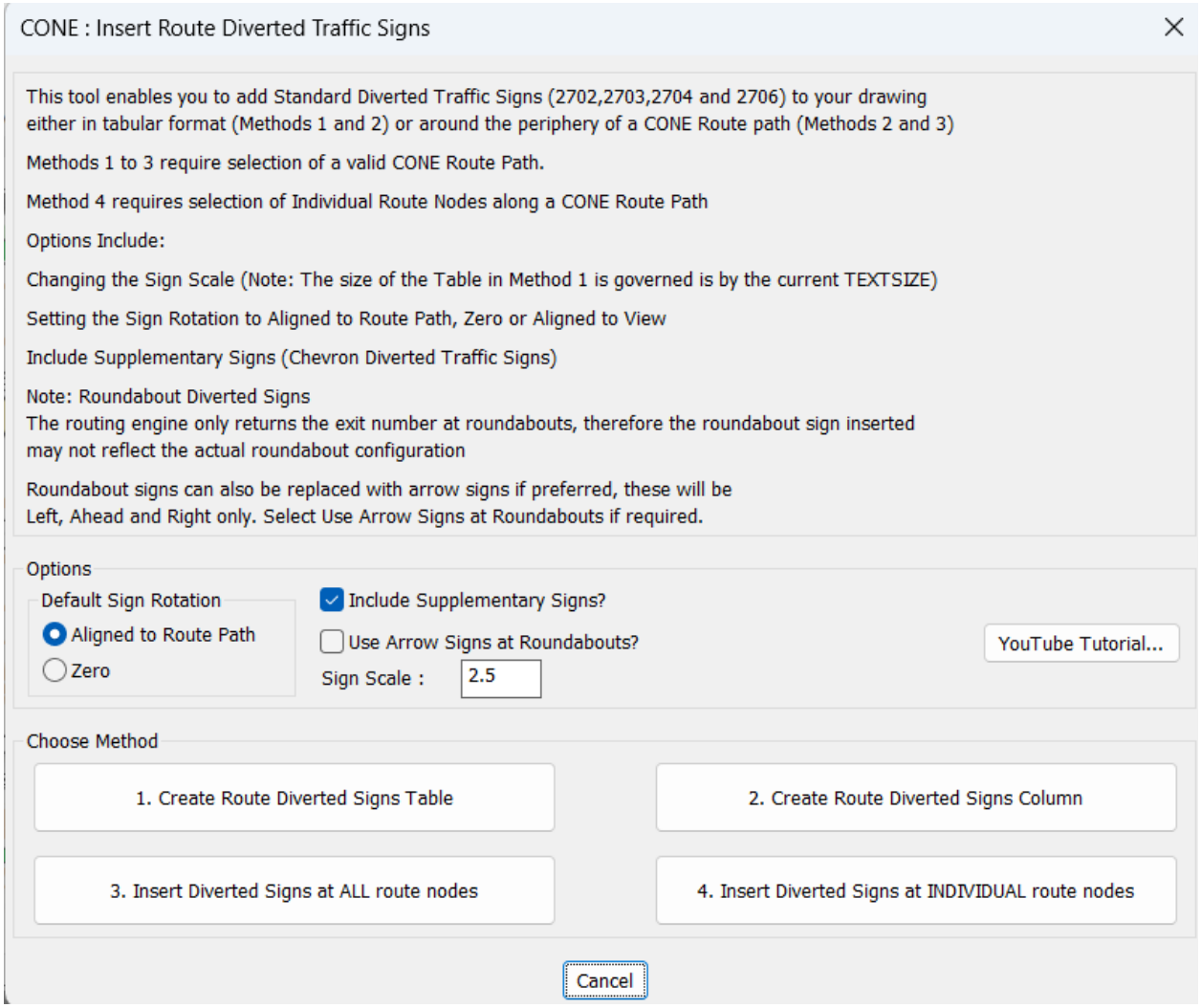
By: Large Truck or Bus, From: New Hey Road A640 HD34BT, To: HD33DU, 0.8 mi, 3.4 mins			
Node	Route	Distance	Road Class
1	Head East and Continue onto New Hey Road	33 yds	Trunk / Primary
2	Turn left onto Oakes Road	0.1 mi	Residential / Local Road
3	Turn left onto School Street West	24 yds	Residential / Local Road
4	Turn right onto Plover Road	0.2 mi	Residential / Local Road
5	Turn right onto Acre Street	0.5 mi	Tertiary / Minor Road
6	Enter roundabout	10 yds	Trunk / Primary
7	Arrive at destination	0	Trunk / Primary



By: Large Truck or Bus, From: New Hey Road A640 HD34BT, To: HD33DU, 0.8 mi, 3.4 mins							
Node	Route	Distance	Road Class	Northing	Easting	Latitude	Longitude
1	Head East and Continue onto New Hey Road	33 yds	Trunk / Primary	411684.2	417519.05	53.654055	-1.82469401
2	Turn left onto Oakes Road	0.1 mi	Residential / Local Road	411713.76	417514.8	53.654016	-1.824247
3	Turn left onto School Street West	24 yds	Residential / Local Road	411729.66	417714.99	53.655815	-1.823999
4	Turn right onto Plover Road	0.2 mi	Residential / Local Road	411713.62	417729.64	53.655947	-1.82424101
5	Turn right onto Acre Street	0.5 mi	Tertiary / Minor Road	411881.21	418031.79	53.658659	-1.821694
6	Enter roundabout	10 yds	Trunk / Primary	412218	417389.89	53.652882	-1.816623
7	Arrive at destination	0	Trunk / Primary	412225.08	417385.12	53.652839	-1.81651601

Mapping Tools –Insert Route Diverted Traffic Signs

Command CUKROUTESIGNS RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPI NG2	



This tool enables you to add Standard Diverted Traffic Signs (2702,2703,2704 and 2706) to your drawing either in tabular format (Methods 1 and 2) or around the periphery of a CONE Route path (Methods 2 and 3)

Methods 1 to 3 require selection of a valid CONE Route Path.

Method 4 requires selection of Individual Route Nodes along a CONE Route Path
Options Include:

Options

Sign Scale Enter the desired scale for the signs (Note: The size of the Table in Method 1 is governed is by the current TEXTSIZE)

Default Sign Rotation: Aligned to Route Path or Zero

Include Supplementary Signs (These will always be Chevron Diverted Traffic Signs)

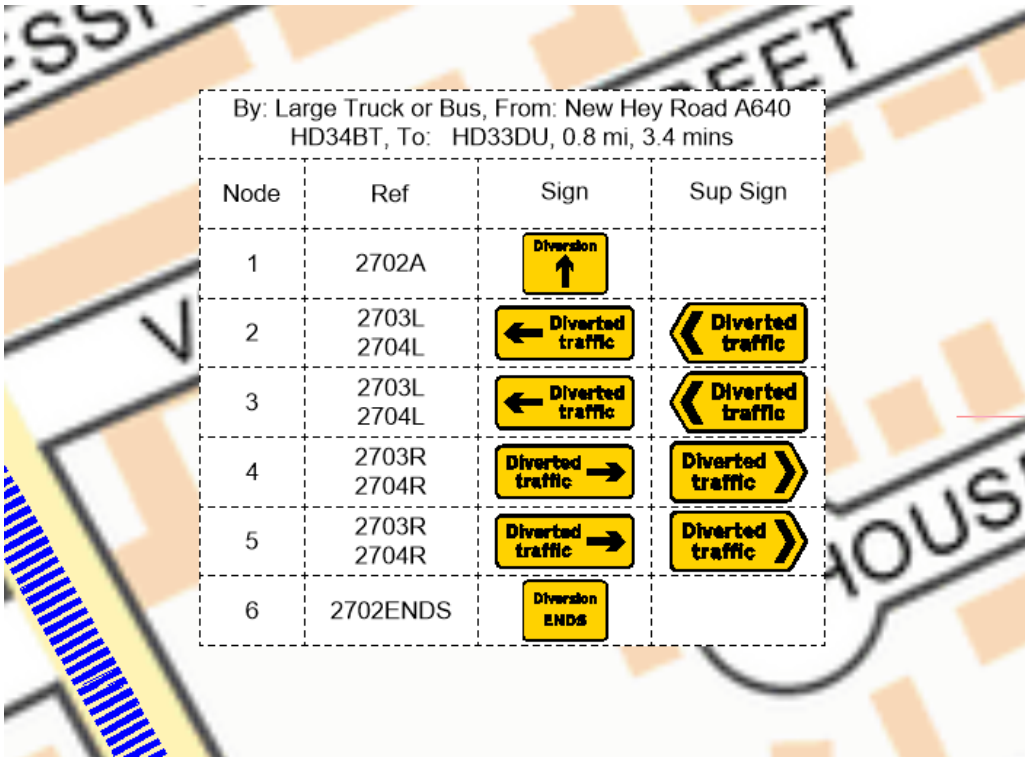
Use Arrow Signs at Roundabouts

The routing engine only returns the exit number at roundabouts, therefore the roundabout sign inserted may not reflect the actual roundabout configuration you may replace roundabout signs with arrow signs if preferred, these will be Left, Ahead and Right only.

Method 1 : Create Route Diverted Signs table.

Prompt: Select a CONE Route Path Polyline

Typical Route Diverted Signs table.



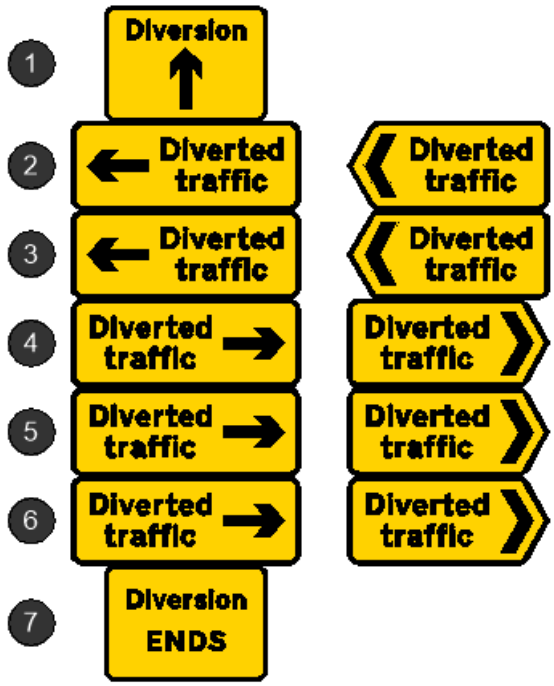
By: Large Truck or Bus, From: New Hey Road A640 HD34BT, To: HD33DU, 0.8 mi, 3.4 mins

Node	Ref	Sign	Sup Sign
1	2702A	Diversion	
2	2703L 2704L	Diverted traffic	Diverted traffic
3	2703L 2704L	Diverted traffic	Diverted traffic
4	2703R 2704R	Diverted traffic	Diverted traffic
5	2703R 2704R	Diverted traffic	Diverted traffic
6	2702ENDS	Diversion ENDS	

Method 2 : Create Route Diverted Signs Column.

Prompt: Select a CONE Route Path Polyline

A simple column of diverted traffic signs will be created, you could drag these signs into position around your route periphery.



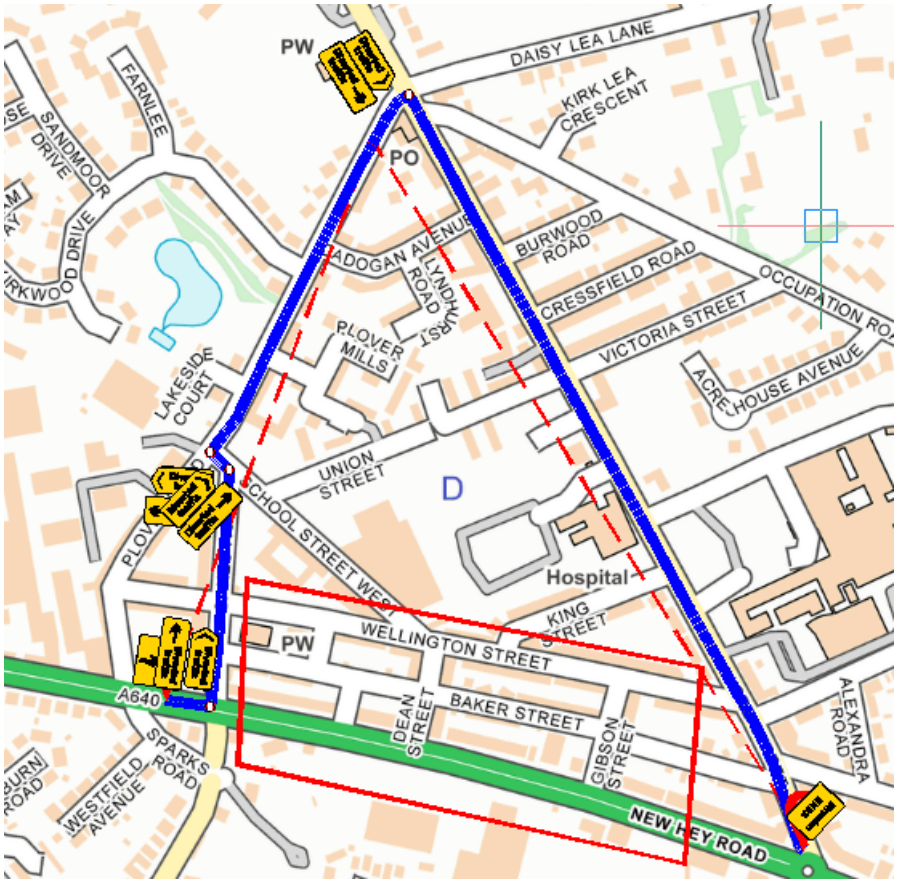
Method 3 : Insert Diverted Signs at all Route Nodes.

Prompt: Select a CONE Route Path Polyline

This tool inserts signs into aprox position and rotation along you route path

Some tidying up may be required

Typical Signs at all Route Nodes



Method 4 : Insert Diverted Signs at INDIVIDUAL Route Nodes.

This method enables you to select individual route nodes and position the sign

As you go with options to change the sign alignment or scale for each sign

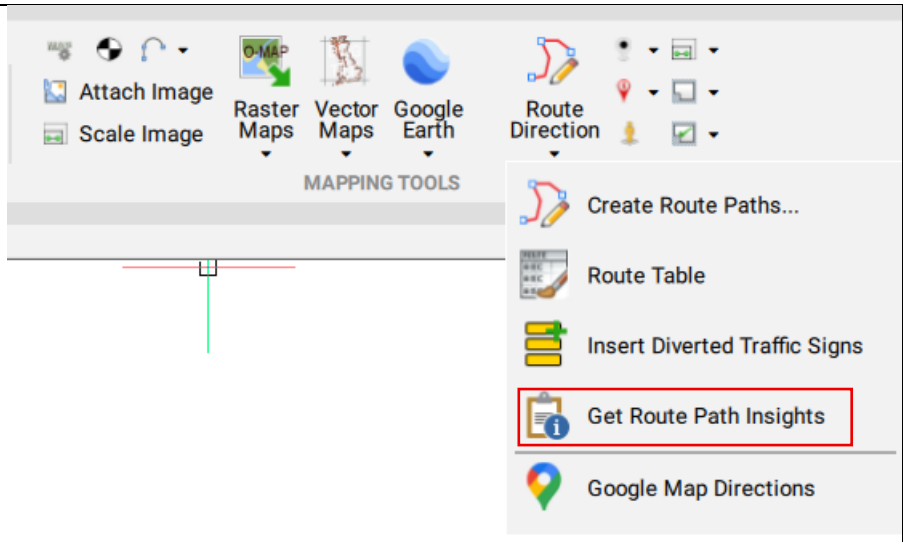
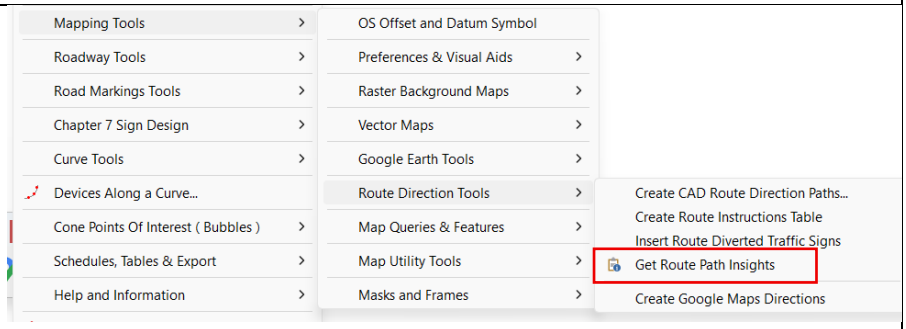
Prompt: Select a CONE Route Node, or press Enter to finish:

Select a route node

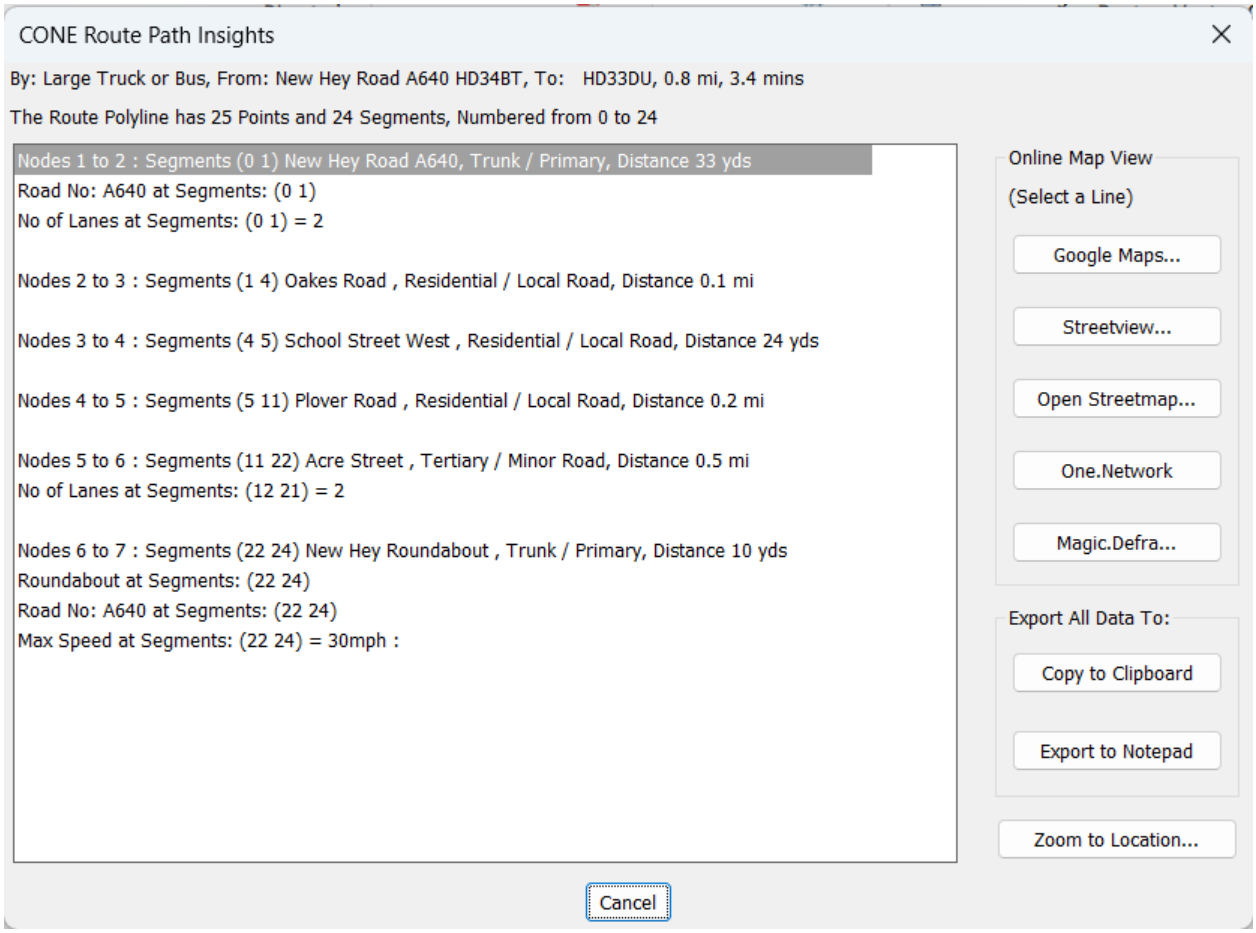
Prompt: Pick New Point or enter Keyword -

Align-to-path/Zero/View-aligned/Rotate/Scale:[A/Z/V/R/S] :

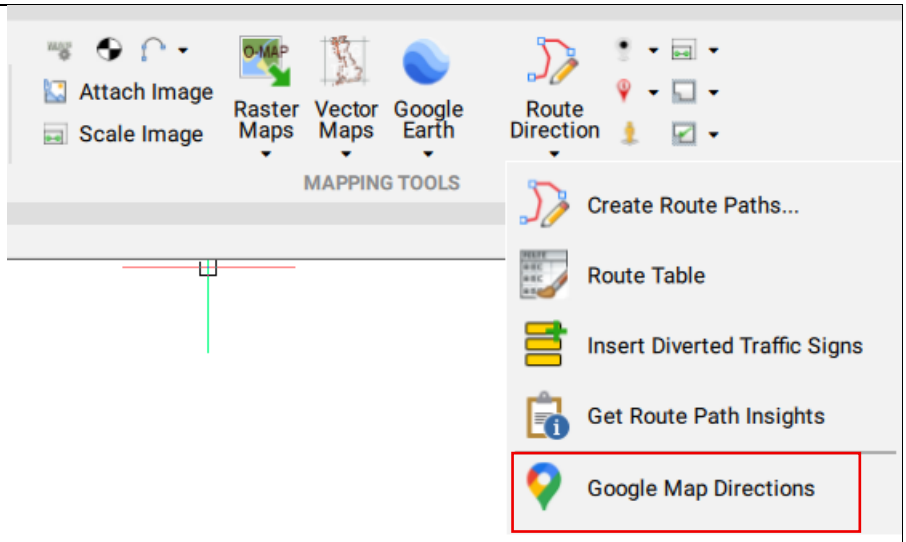
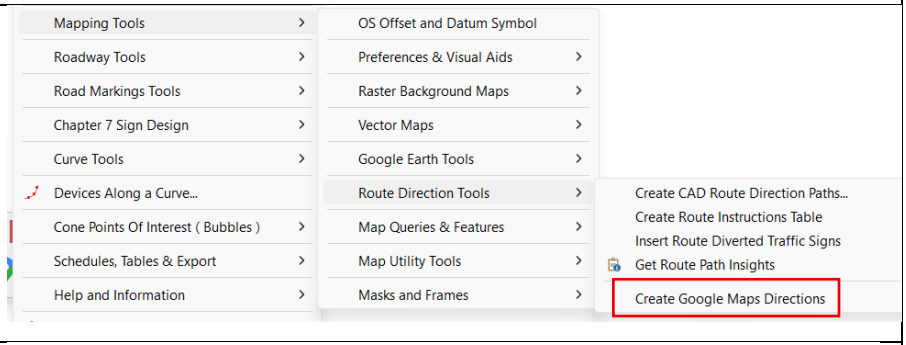
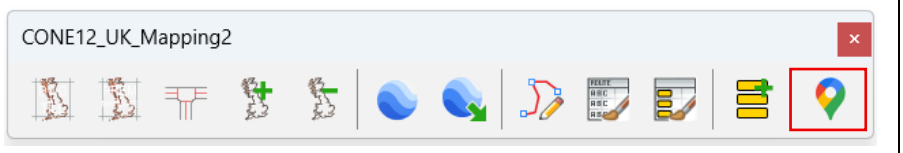
Mapping Tools –Get Route Path Insights

Command CUKROUTEINSIGHTS RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPING 2	

The Route Path Insights Tool examines your route path and returns useful information About the segments between the route node

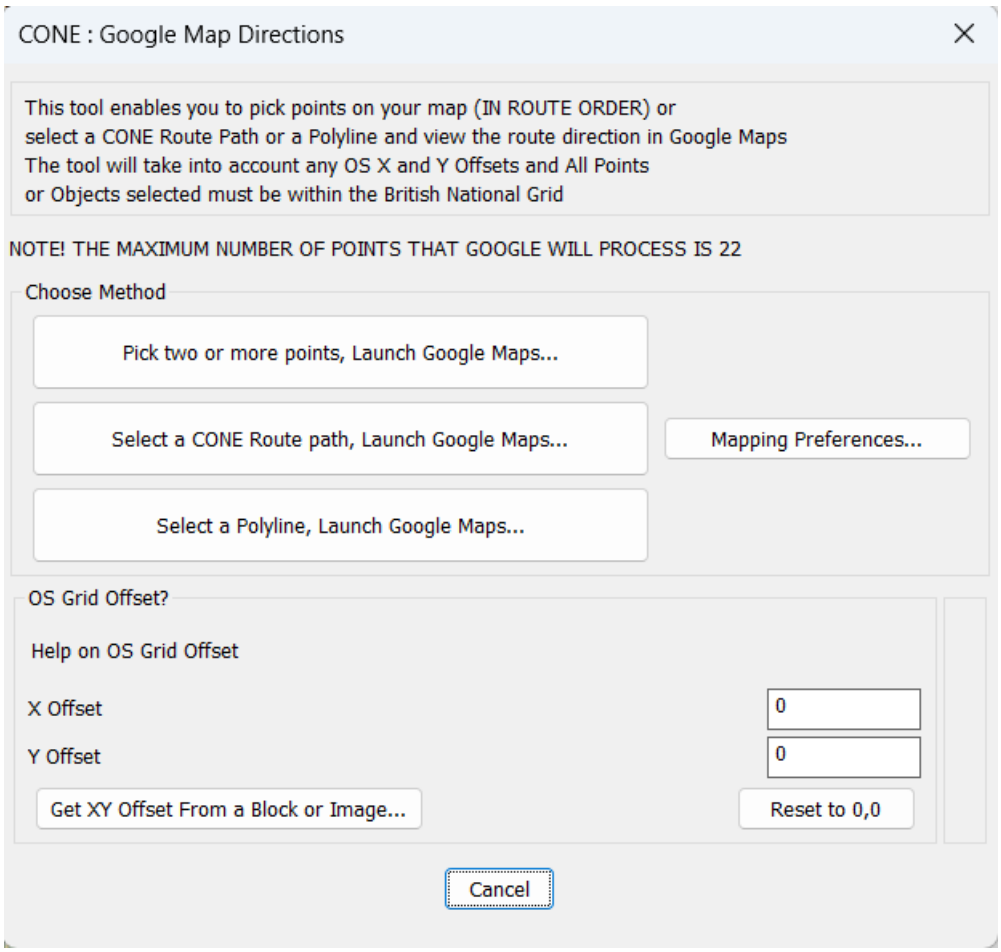

CONE Route Path Insights
By: Large Truck or Bus, From: New Hey Road A640 HD34BT, To: HD33DU, 0.8 mi, 3.4 mins
The Route Polyline has 25 Points and 24 Segments, Numbered from 0 to 24
Nodes 1 to 2 : Segments (0 1) New Hey Road A640, Trunk / Primary, Distance 33 yds
Road No: A640 at Segments: (0 1)
No of Lanes at Segments: (0 1) = 2
Nodes 2 to 3 : Segments (1 4) Oakes Road , Residential / Local Road, Distance 0.1 mi
Nodes 3 to 4 : Segments (4 5) School Street West , Residential / Local Road, Distance 24 yds
Nodes 4 to 5 : Segments (5 11) Plover Road , Residential / Local Road, Distance 0.2 mi
Nodes 5 to 6 : Segments (11 22) Acre Street , Tertiary / Minor Road, Distance 0.5 mi
No of Lanes at Segments: (12 21) = 2
Nodes 6 to 7 : Segments (22 24) New Hey Roundabout , Trunk / Primary, Distance 10 yds
Roundabout at Segments: (22 24)
Road No: A640 at Segments: (22 24)
Max Speed at Segments: (22 24) = 30mph :
Online Map View
(Select a Line)
Google Maps...
Streetview...
Open Streetmap...
One.Network
Magic.Defra...
Export All Data To:
Copy to Clipboard
Export to Notepad
Zoom to Location...
Cancel

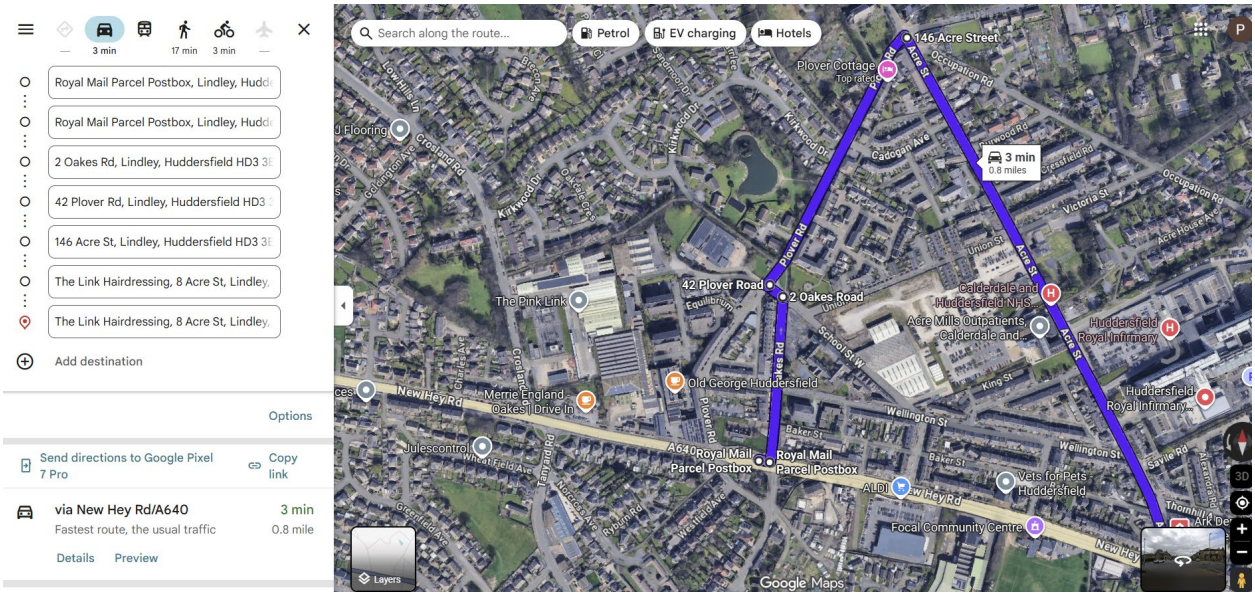
Mapping Tools –Create Google Maps Directions

Command CUKGOOGLEDIRECTIONS RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MAPPING 2	

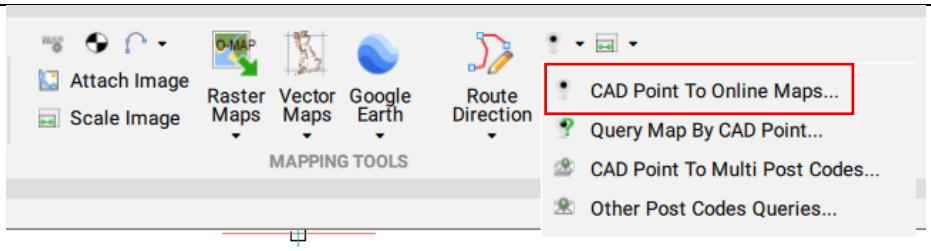
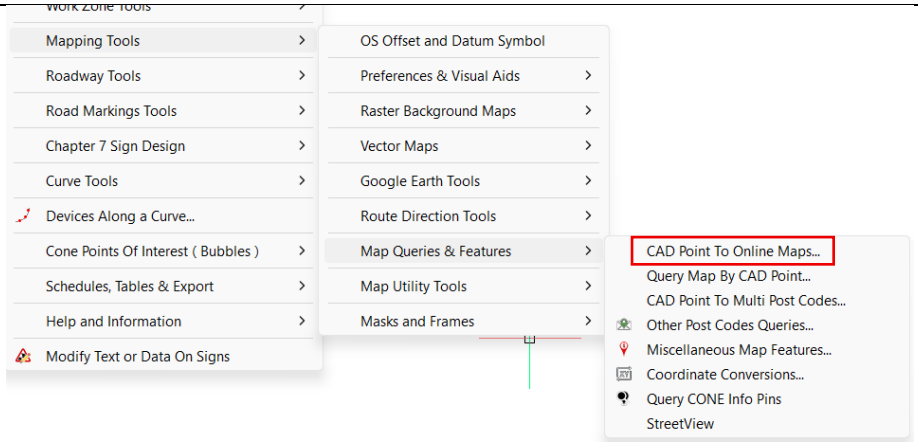
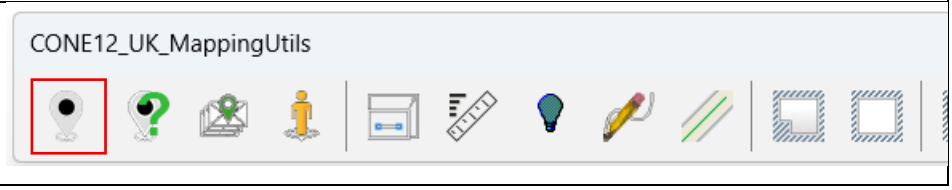
This tool provides 3 ways to create Google Map Directions from your drawing/map

Assuming your map is Spatially Correct


CONE : Google Map Directions
This tool enables you to pick points on your map (IN ROUTE ORDER) or
select a CONE Route Path or a Polyline and view the route direction in Google Maps
The tool will take into account any OS X and Y Offsets and All Points
or Objects selected must be within the British National Grid
NOTE! THE MAXIMUM NUMBER OF POINTS THAT GOOGLE WILL PROCESS IS 22
Choose Method
Pick two or more points, Launch Google Maps...
Select a CONE Route path, Launch Google Maps...
Mapping Preferences...
Select a Polyline, Launch Google Maps...
OS Grid Offset?
Help on OS Grid Offset
X Offset
0
Y Offset
0
Get XY Offset From a Block or Image...
Reset to 0,0
Cancel

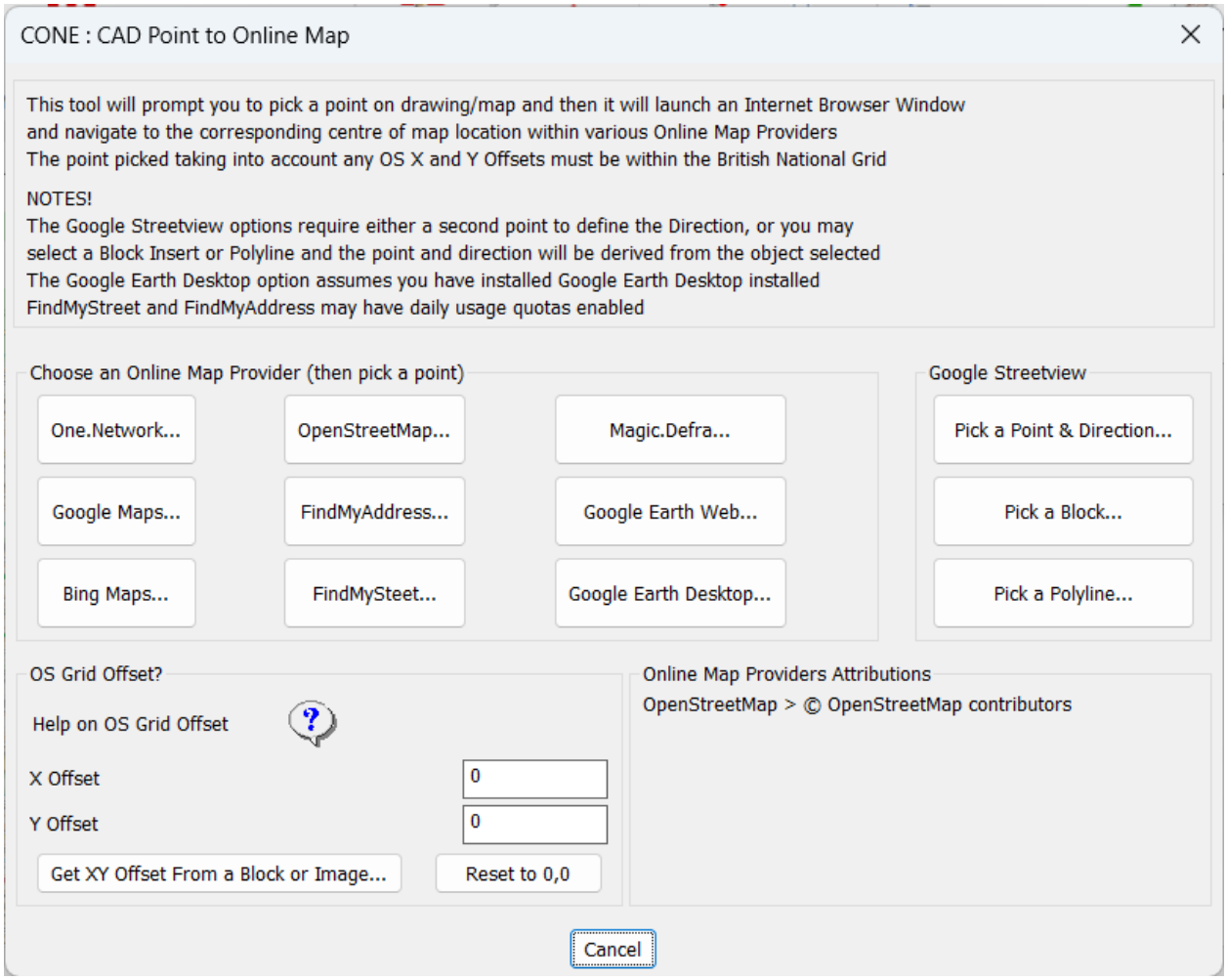

Royal Mail Parcel Postbox, Lindley, Hudd
Royal Mail Parcel Postbox, Lindley, Hudd
2 Oakes Rd, Lindley, Huddersfield HD3
42 Plover Rd, Lindley, Huddersfield HD3
146 Acre St, Lindley, Huddersfield HD3
The Link Hairdressing, 8 Acre St, Lindley
The Link Hairdressing, 8 Acre St, Lindley
Add destination
Options
Send directions to Google Pixel 7 Pro
Copy link
via New Hey Rd/A640
Fastest route, the usual traffic
3 min
0.8 mile
Details
Preview
Search along the route...
Petrol
EV charging
Hotels
146 Acre Street
Plover Cottage
3 min
0.8 miles
42 Plover Road
2 Oakes Road
The Pink Link
Old George Huddersfield
Merrie England Oakes | Drive In
Royal Mail Parcel Postbox
Royal Mail Parcel Postbox
ALDI
Vets for Pets Huddersfield
Focal Community Centre
Huddersfield Royal Infirmary
Calderdale and Huddersfield NHS
Acre Mills Outpatients Calderdale and
Julescontrol
A640
Layers
Google Maps

Mapping Tools –Query – CAD point To Online Maps

Command CUKCAD2ONLINEMAPS RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MappingUtils	

"This tool will prompt you to pick a point on drawing/map and assuming your map is spatially correct then it will launch an Internet Browser window and navigate to the corresponding centre of map location within various Online Map Providers
The point picked taking into account any OS X and Y Offsets must be within the British National Grid

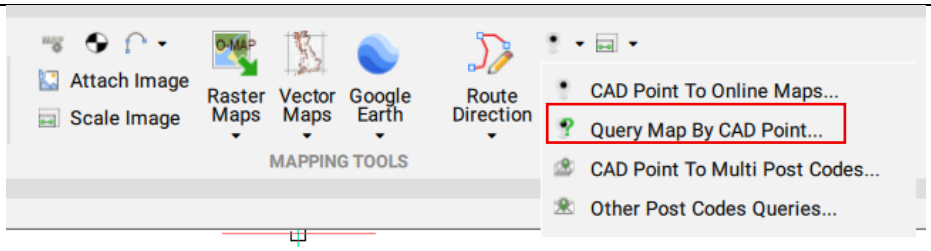
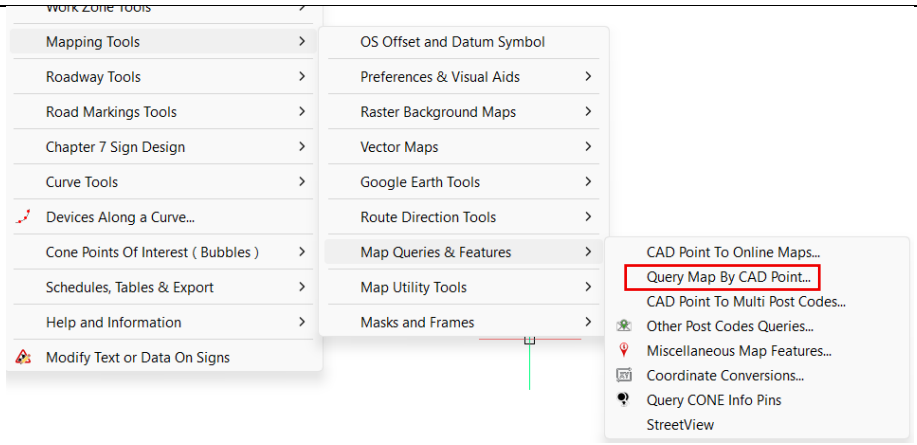
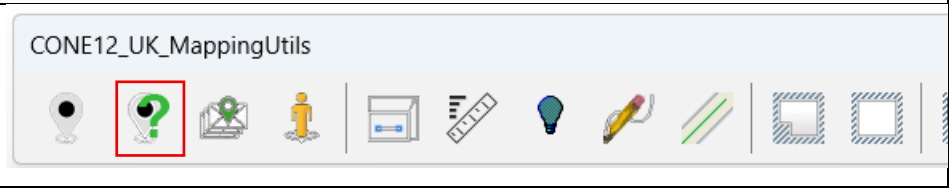
NOTES
The Google Streetview options require either a second point to define the Direction, or you may select a Block Insert or Polyline and the point and direction will be derived from the object selected
The Google Earth Desktop option assumes you have installed Google Earth Desktop installed
FindMyStreet and FindMyAddress may have daily usage quotas enabled"



Simply choose a online provider by pick one of the buttons

You will be prompted to pick a point on your Map drawing

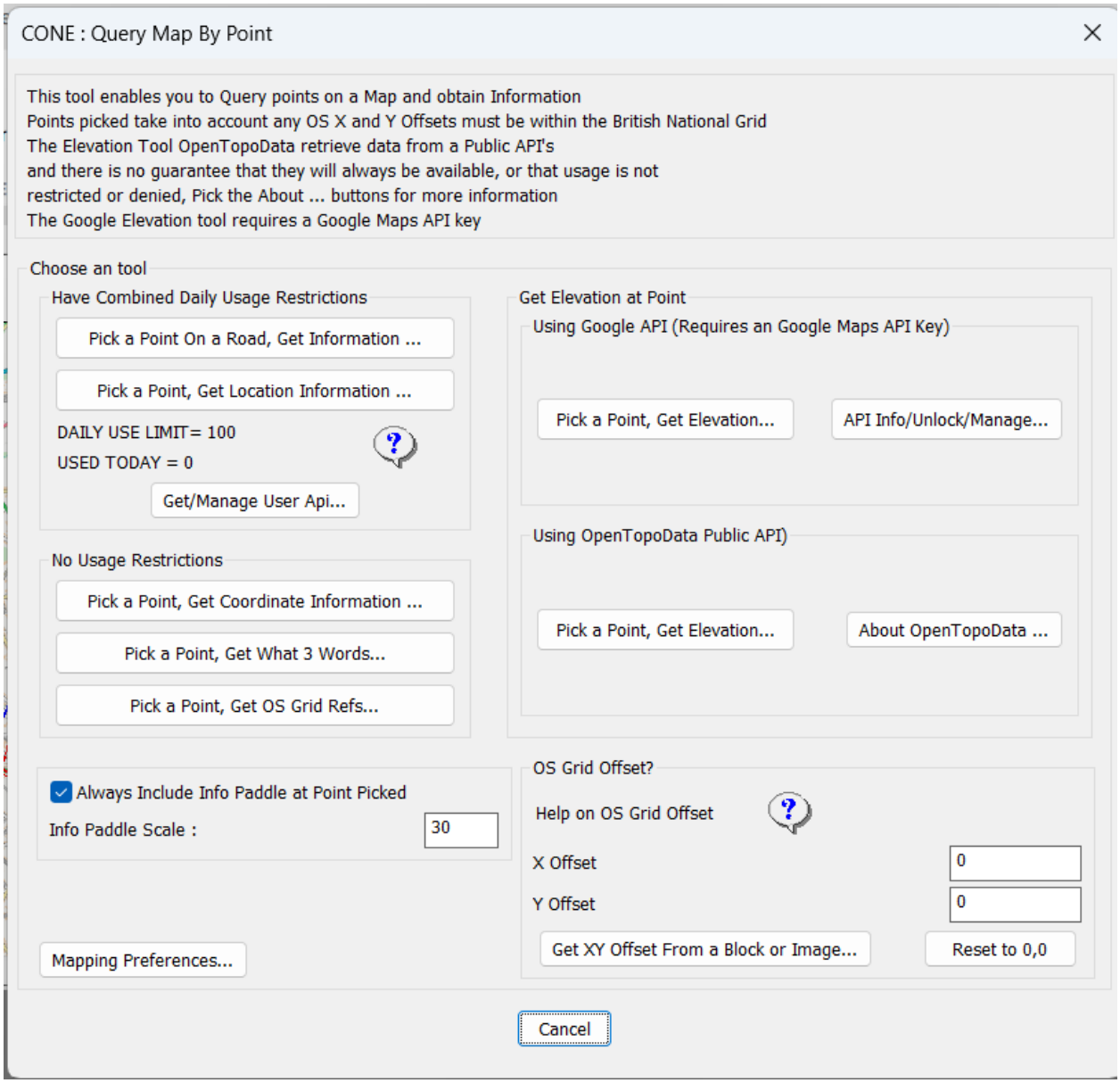
Mapping Tools –Query Map By CAD Point

Command CUKQUERYMAPBYPOINT RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MappingUtils	

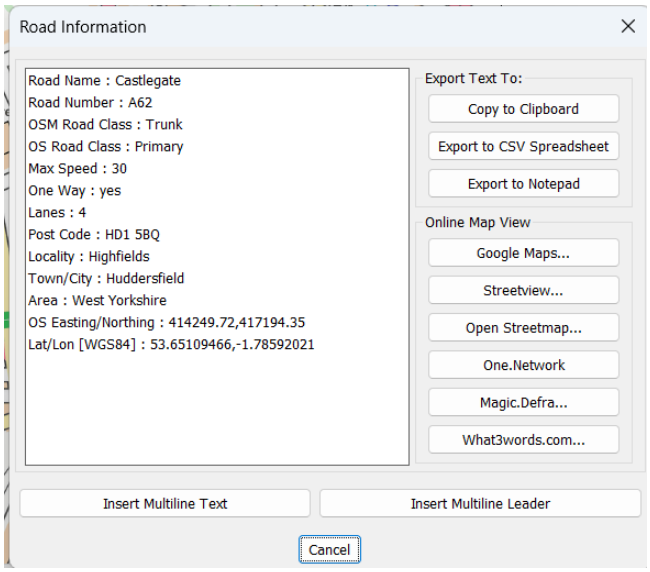
This tool enables you to Query points on a Map and obtain Information
Such as location, Information about a particular road, What 3 words, Coordinates , OS Grid Refs and Elevation.
Assuming your map is spatially correct the points picked take into account any OS X and Y Offsets must be within the British National Grid

NOTES:
The Elevation Tool OpenTopoData retrieves data from a Public API's and there is no guarantee that they will always be available, or that usage is not restricted or denied

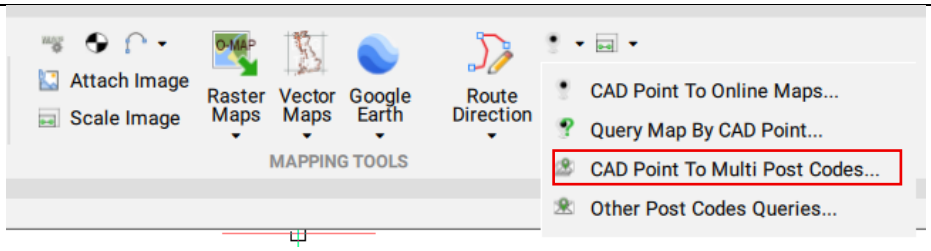
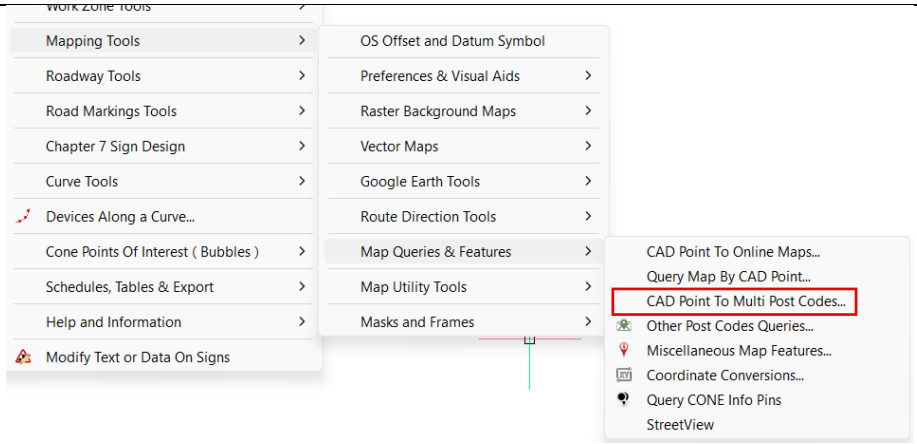
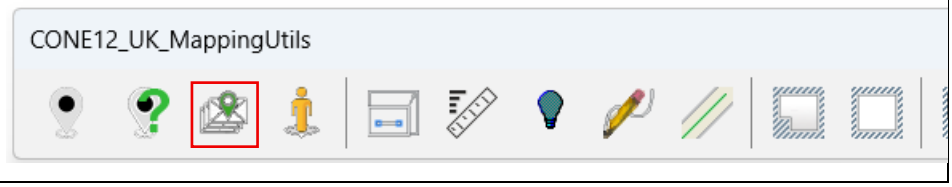
The Google Elevation tool requires a Google Maps API key



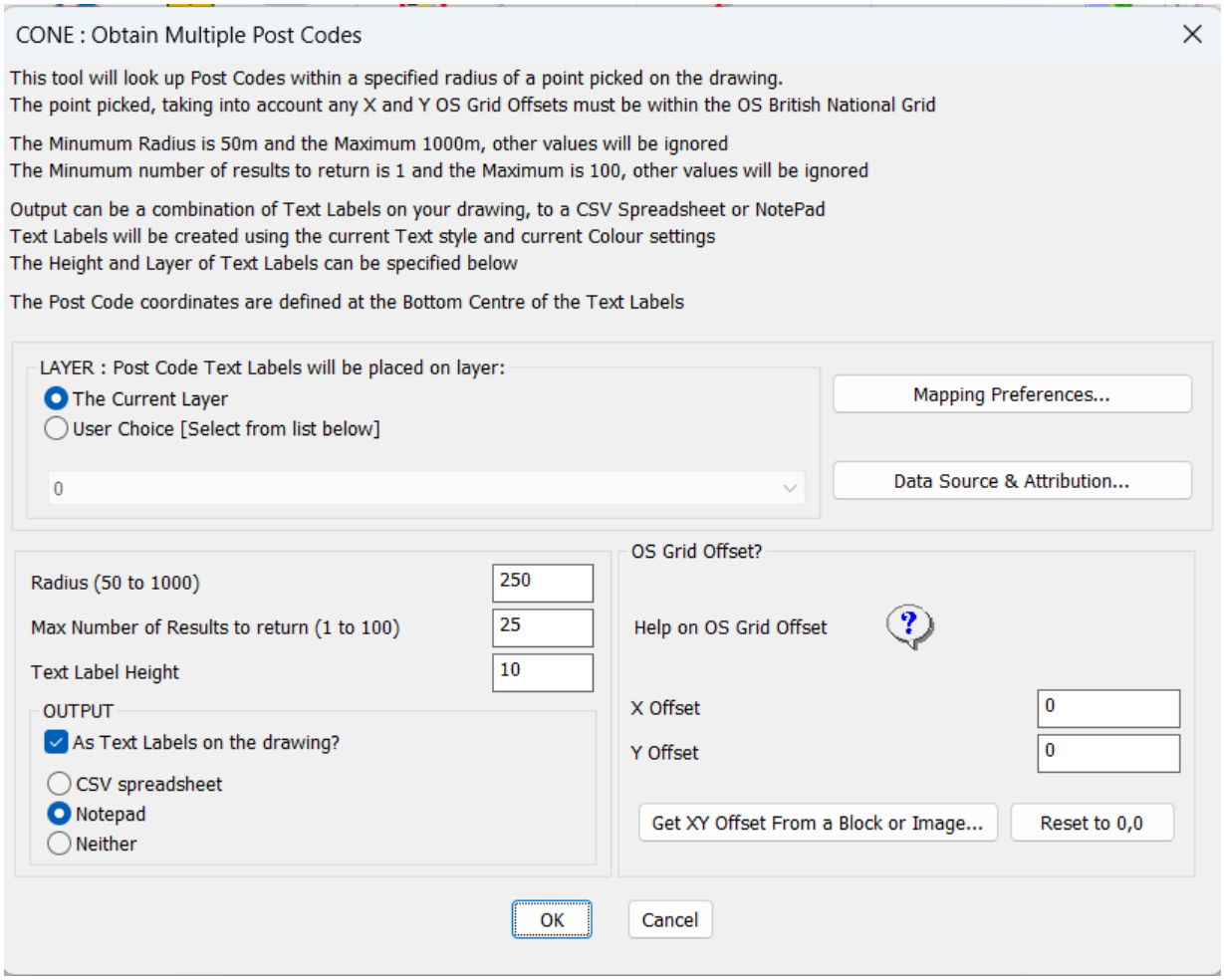
TYPICAL EXAMPLE After pick a point on a road on your map drawing



Mapping Tools –CAD Point To Multi Post Codes

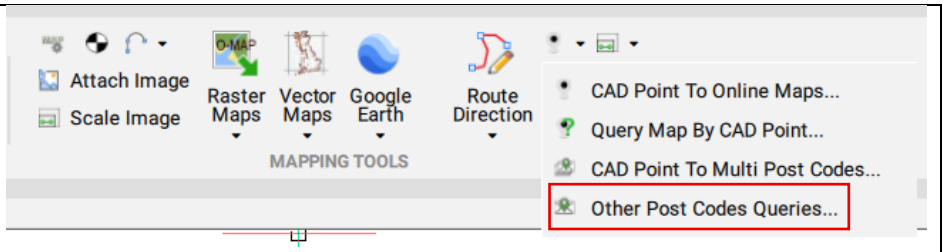
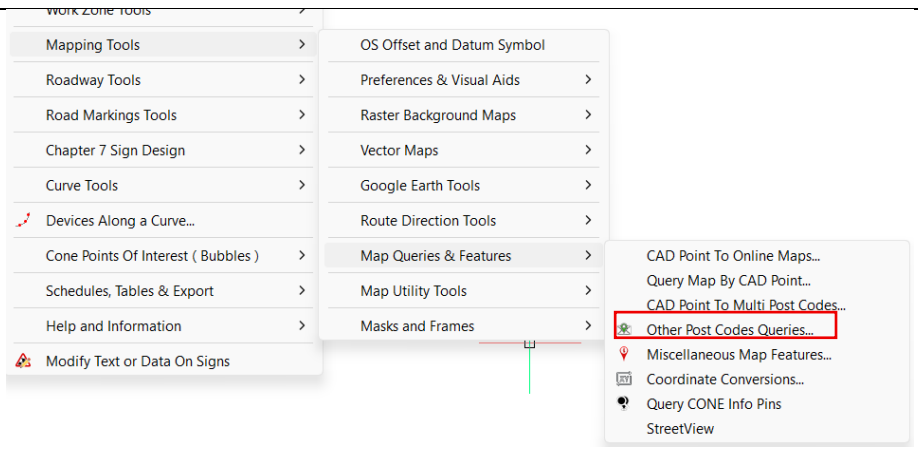
Command CUKMULTIPCODES RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MappingUtils	

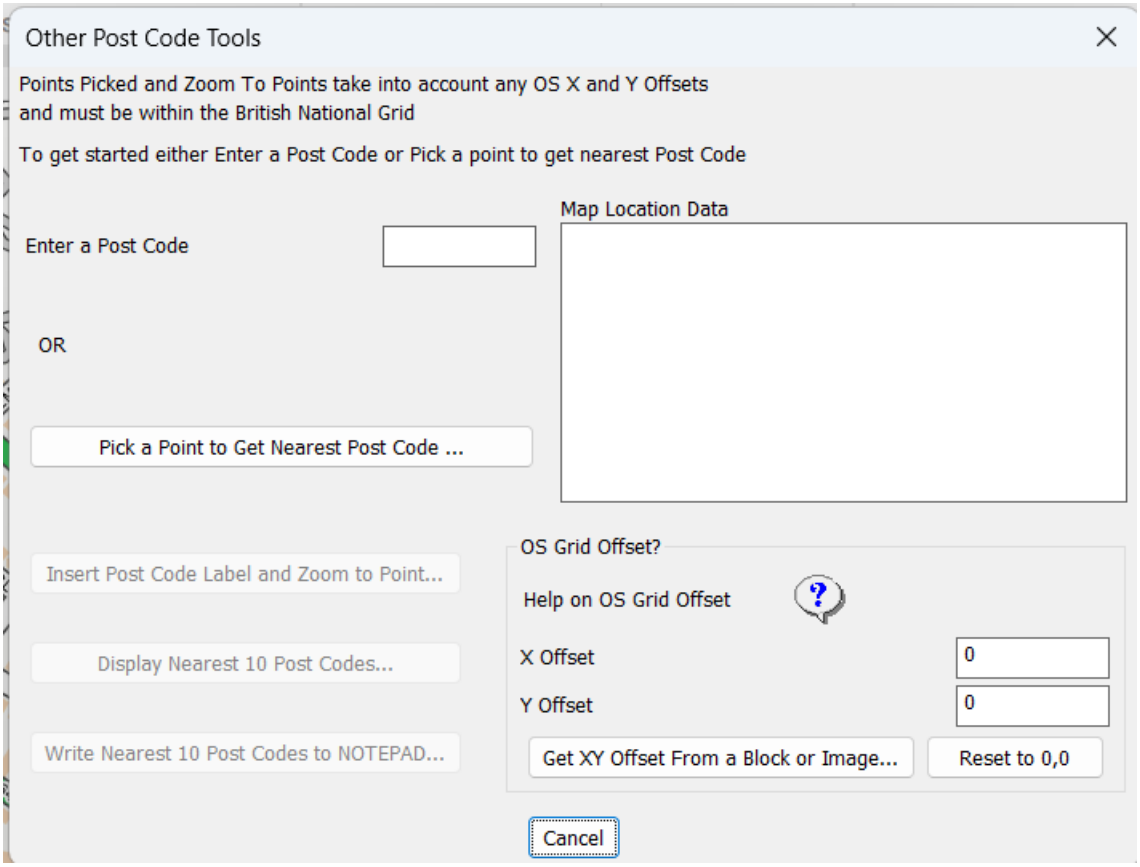
WAITING FOR CONTENTS



INSTRUCTIONS TO BE ADDED HERE

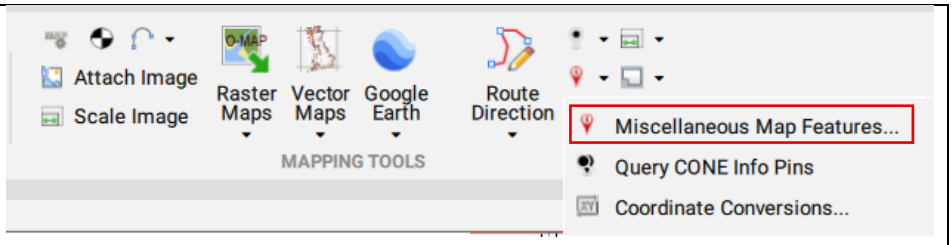
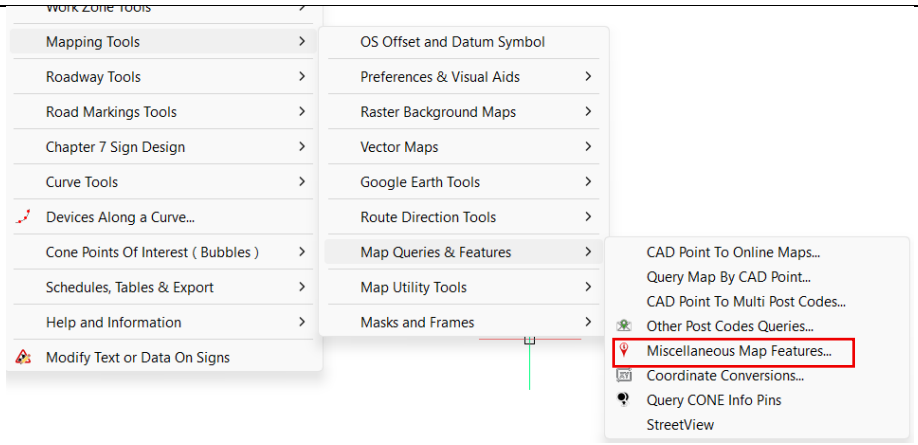
Mapping Tools –Other Post Code Queries

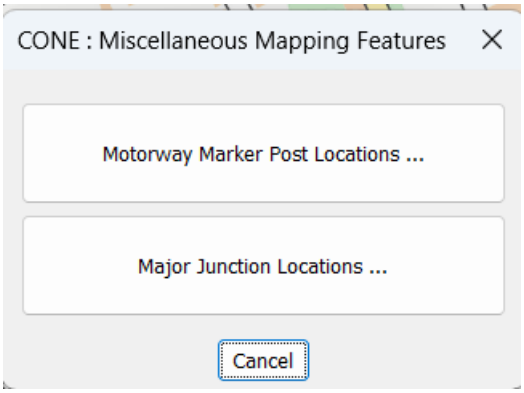
Command CUKPCODES RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	



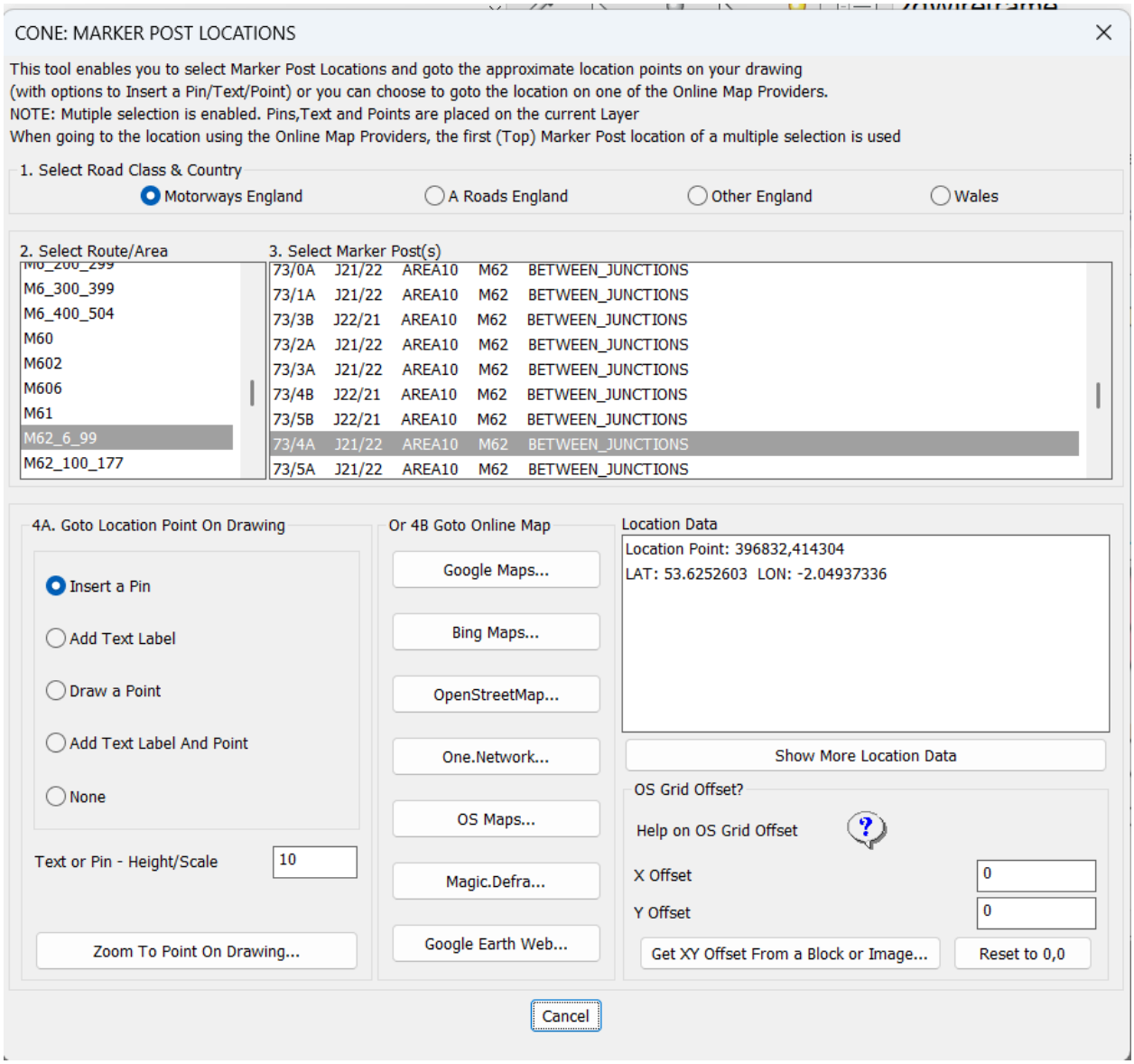
INSTRUCTIONS TO BE ADDED HERE

Mapping Tools –Miscellaneous Map Features

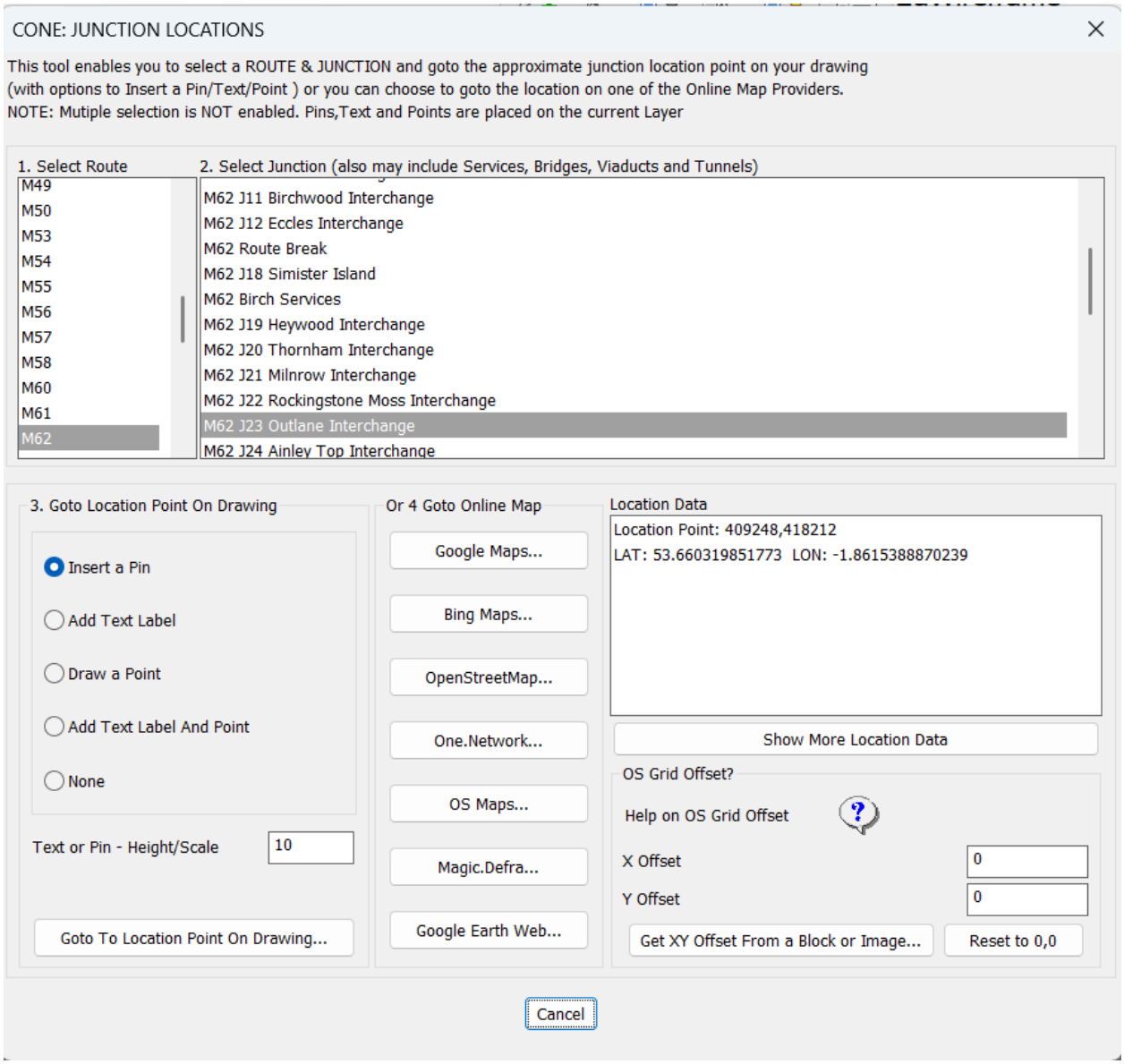
Command CUKMISCMAPFEATURES RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	



INSTRUCTIONS TO BE ADDED HERE

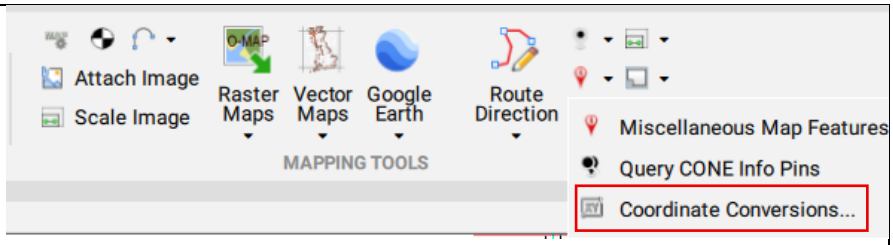
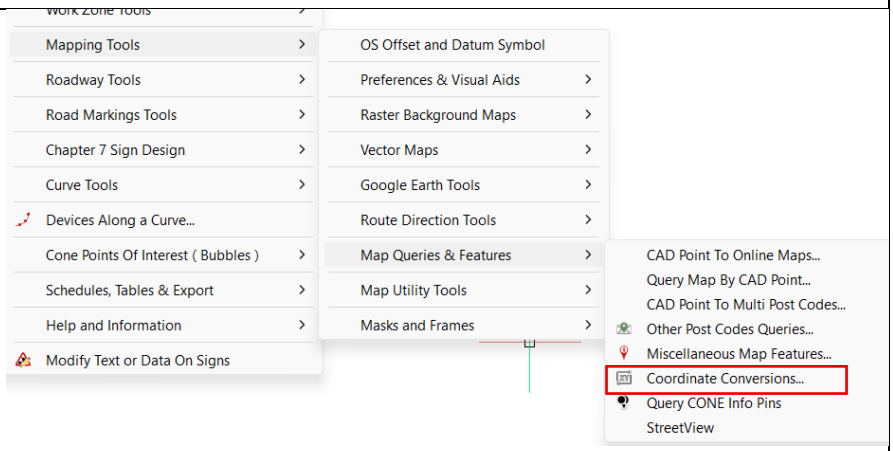


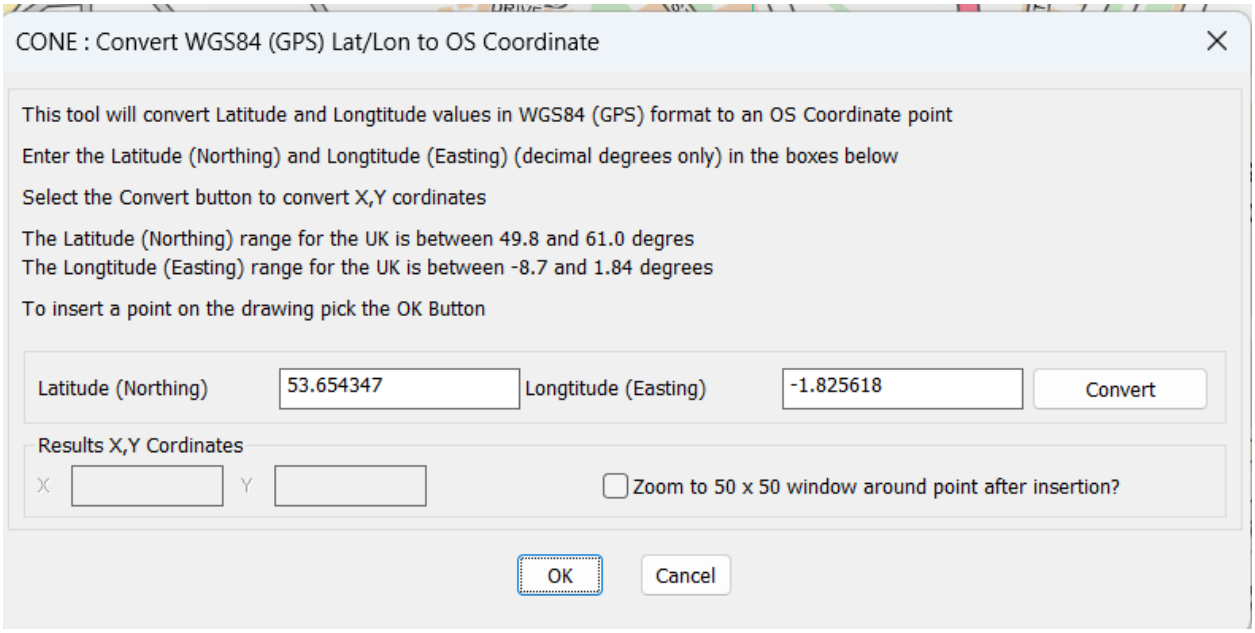
INSTRUCTIONS TO BE ADDED HERE



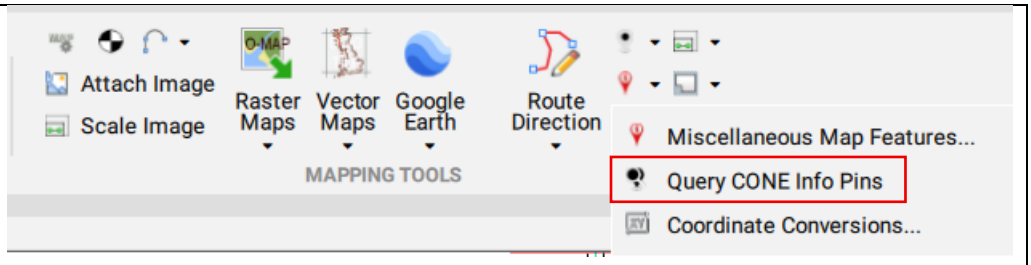
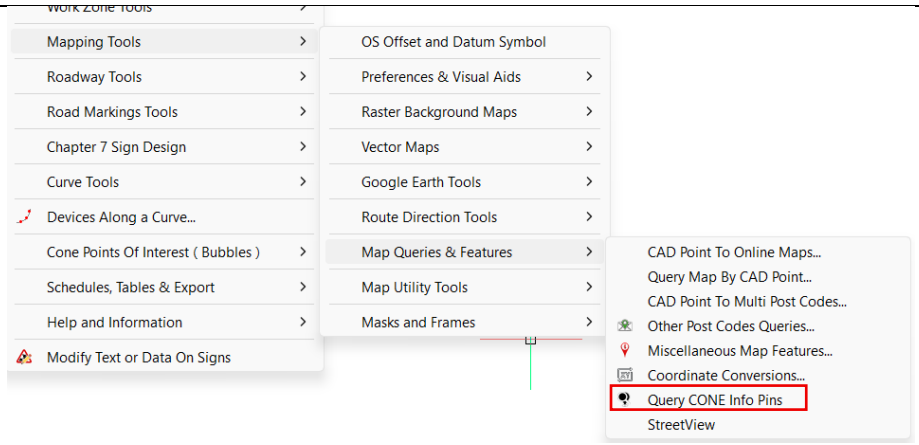
INSTRUCTIONS TO BE ADDED HERE

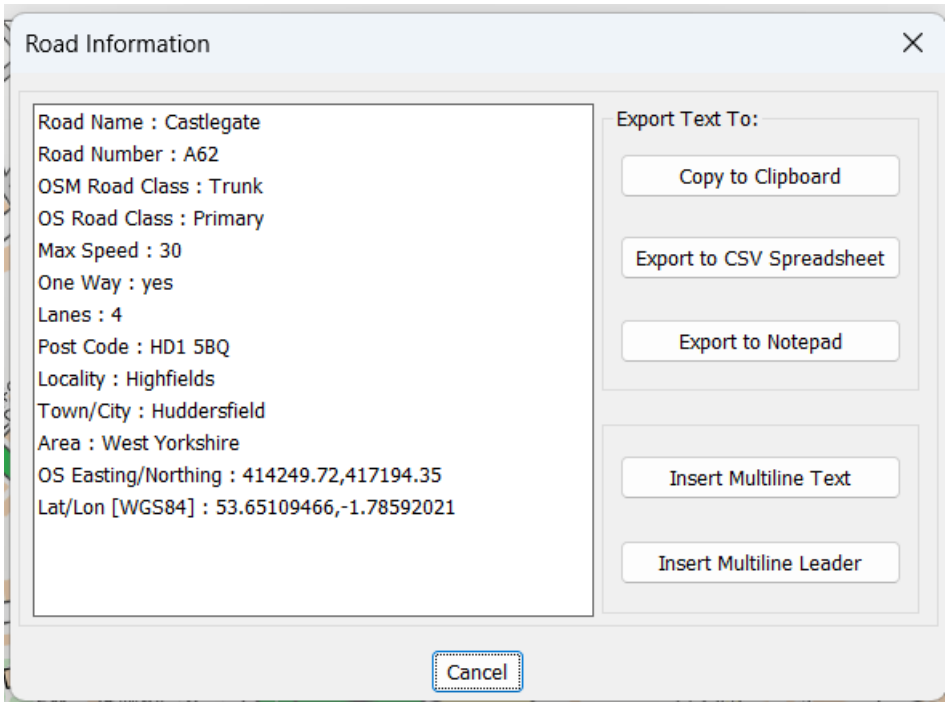
Mapping Tools –Coordinate Conversions

Command CUKCOORDCONVERT RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MappingUtils	

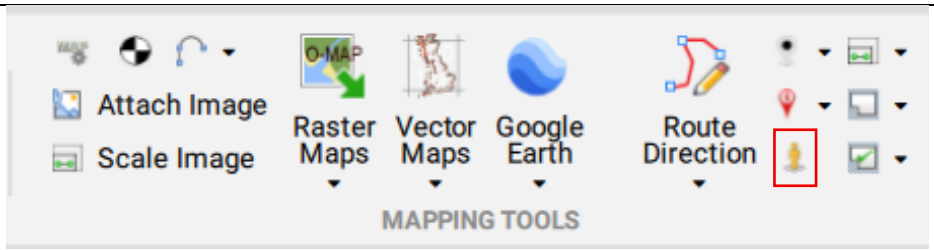
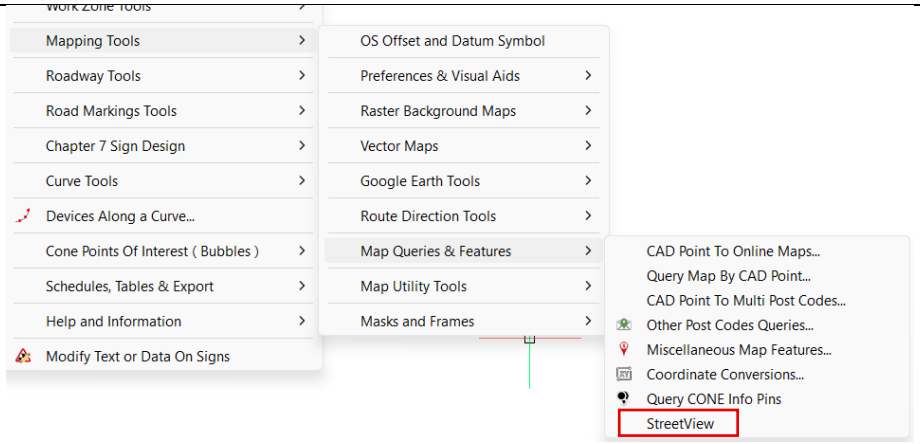
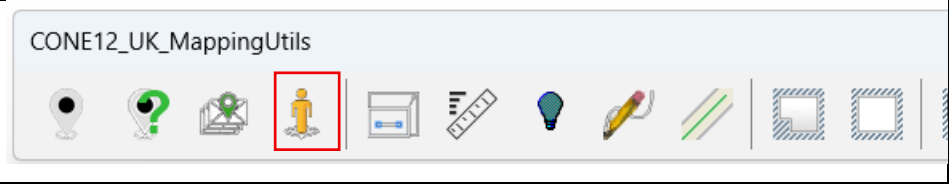


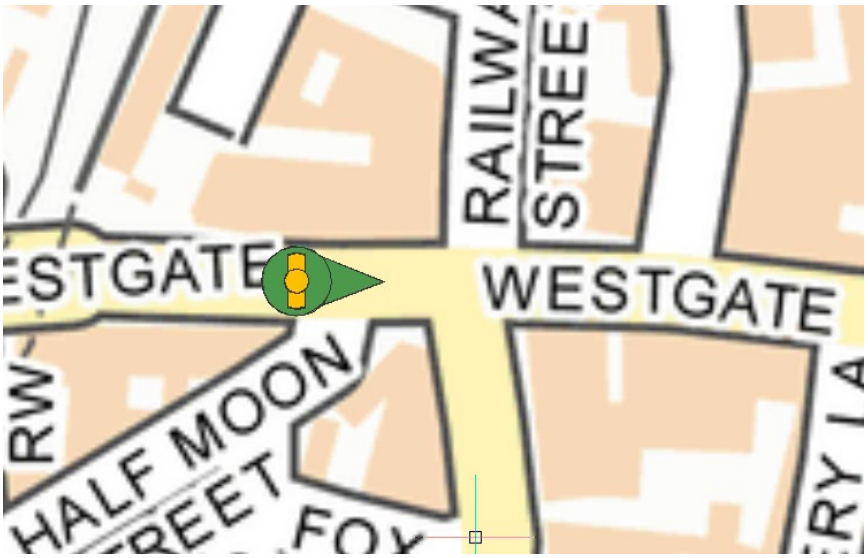
Mapping Tools –Query Info Pins

Command CUKQUERYPIN RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	

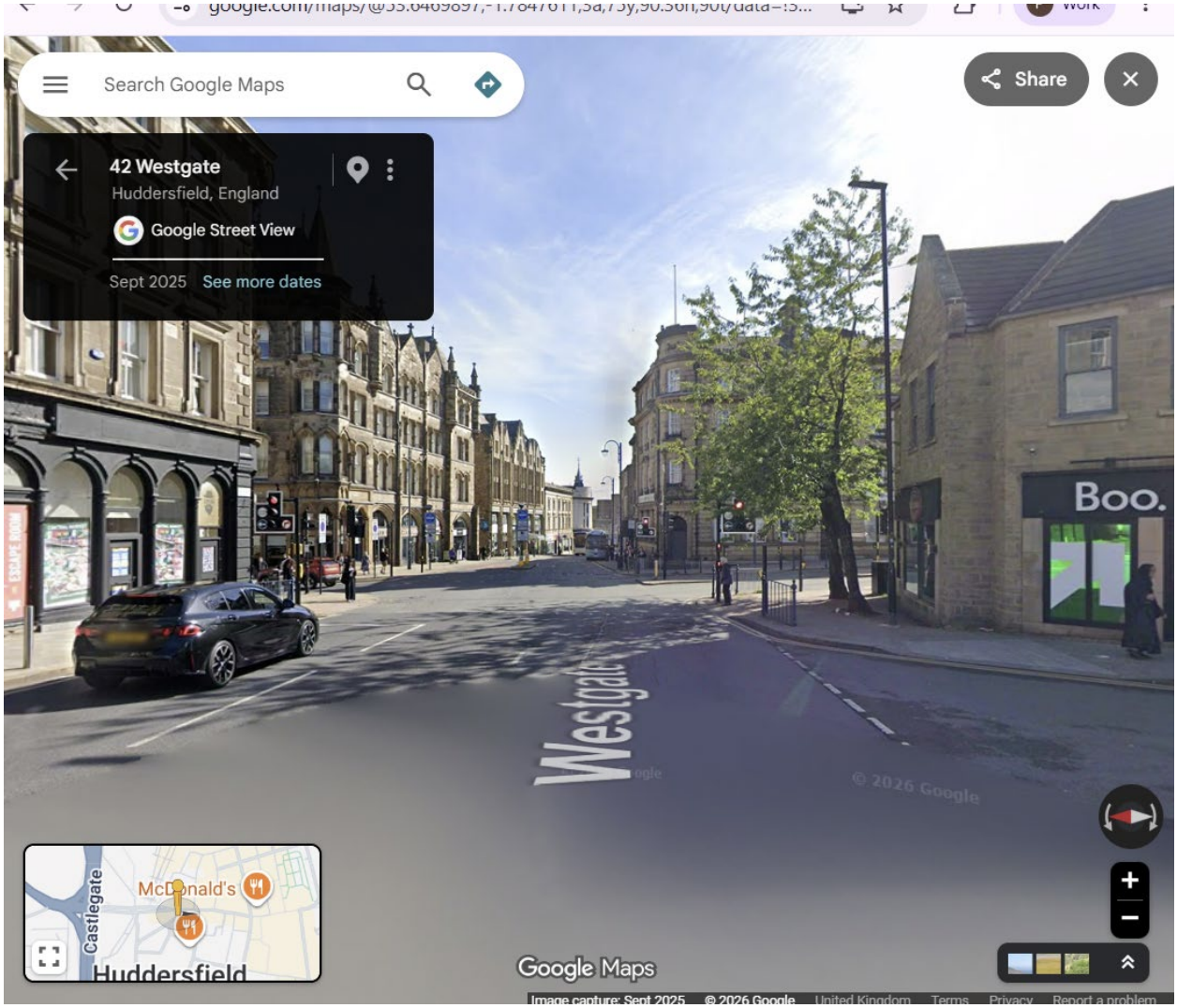


Mapping Tools –Streetview

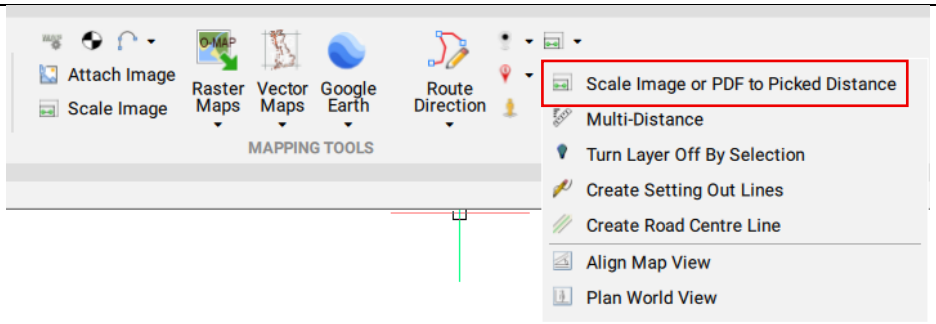
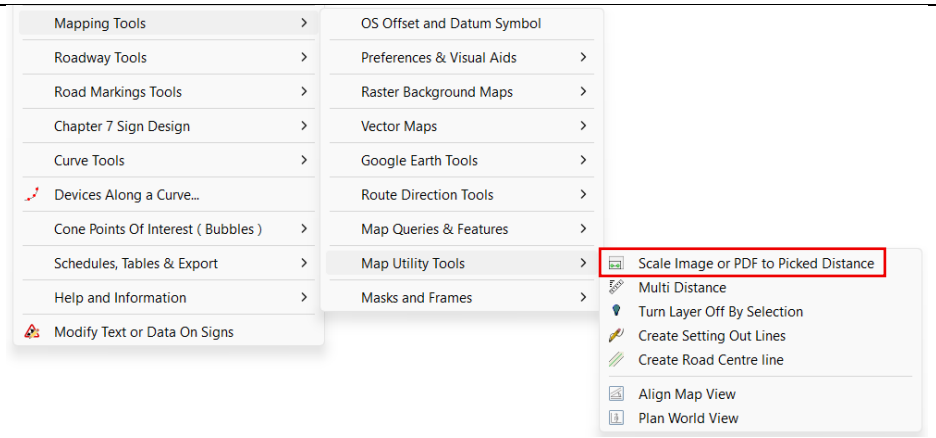
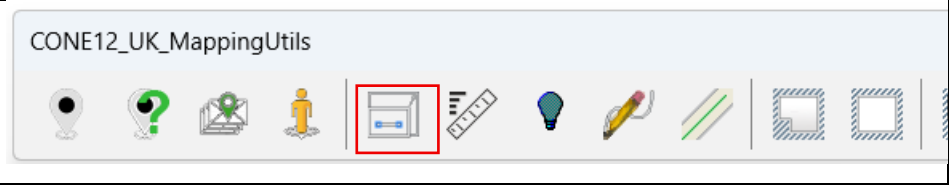
Command CUKPT2STREETVIEW RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MappingUtils	



Pick a point and then a second point to show the direction, the tool the launches a Google Maps STREETVIEW Browser window


Search Google Maps
Share
42 Westgate
Huddersfield, England
Google Street View
Sept 2025
See more dates
Boo.
Westgate
© 2026 Google
McDonald's
Castlegate
Huddersfield
Google Maps
Image capture: Sept 2025 © 2026 Google United Kingdom Terms Privacy Report a problem

Mapping Utilities – Scale Image or PDF to Picked Distance

Command CUKSCALE2PICKED_DIST RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MappingUtils	

After inserting an image such as a Google Earth or Google Maps raster image onto the drawing – use the parent CAD function such as:

Insert | Attach Raster Image

OR a PDF plan of an area using the CAD function:

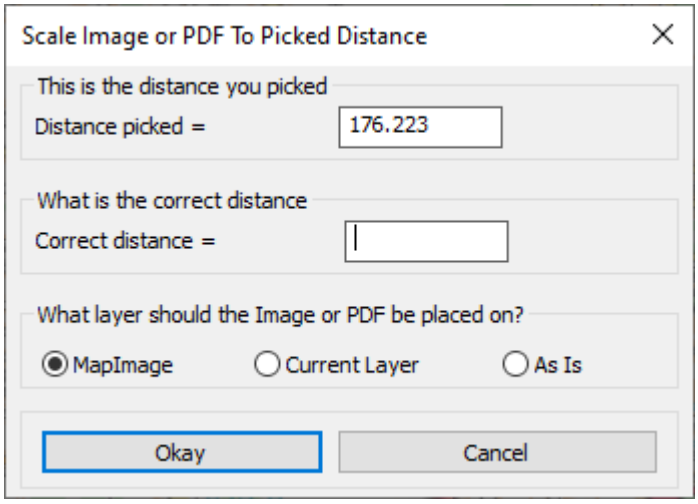
Insert | Attach PDF

It is important to scale the image to “real world” size so any distances measured are correct, and any road signs inserted appear at the size expected, especially if you are using the sign arrays or workspace tools.

In the screen grab below, we can see the scale bar from an example of a Google Earth satellite photograph.

Select image to scale: pick the EDGE of the raster image
Pick 2 points at each end of known distance on the image: *select each end of scale bar in turn*

The following dialog will appear showing the current measured distance between indicated points



Enter the correct distance into the middle edit box – In our example it would be 45 (the length of the scale bar)

There are three additional options for manipulating the layer the image is drawn on:

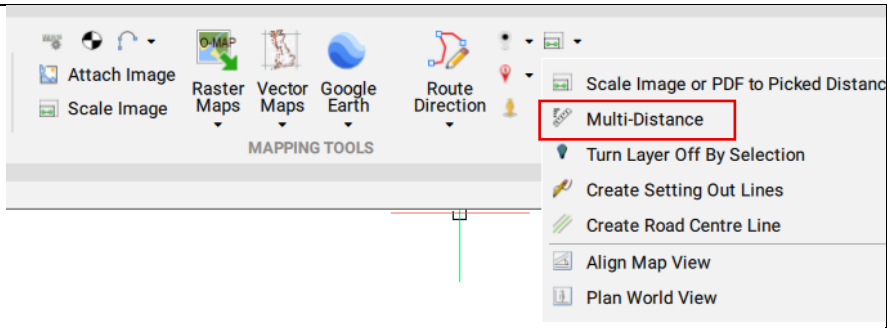
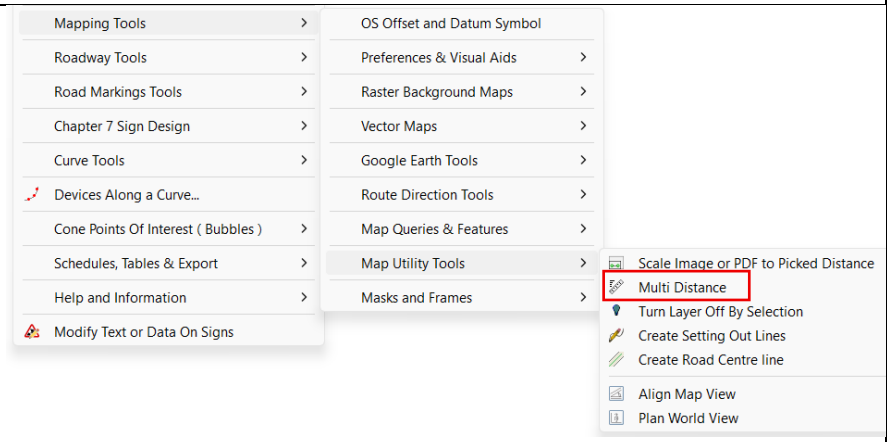
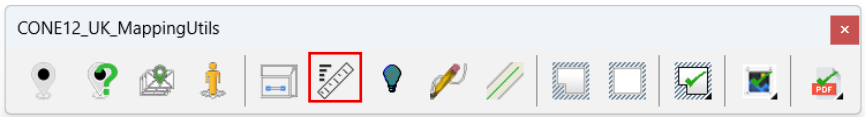
Mapimage: the tool will create a layer named MAPIMAGE and move the raster image to this layer
Current Layer: the tool will move the map to the currently active layer

As Is: No layer change is made, the raster image remains on the layer it was originally inserted onto.

Finally, the image is rescaled and the tool confirms the scaling factor and if relevant, the layer to which the image has been moved.

The bottom left position of the image remains fixed, so you may have ZOOM EXTENTS to see the whole map at its new size.
NOTE: If you are loading multiple raster images you will have to reposition/realign them AFTER scaling

Mapping Utilities – Multi Distance

Command CUKMDI RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MappingUtils	

Measuring lengths on the map is easy for straight lines, however, to follow curves of roads, this tool allows you to pick a series of points, then receive information on distance between the last two points, as well as a running total length.

CONE Multi-Distance

Pick start point > Indicate point on drawing to start

Pick next point <hit Enter to Exit> Indicate next point along measured path

Last Distance = 28.2833 Accumulative Distance = 28.2833

Pick next point <hit Enter to Exit> Indicate next point along measured path

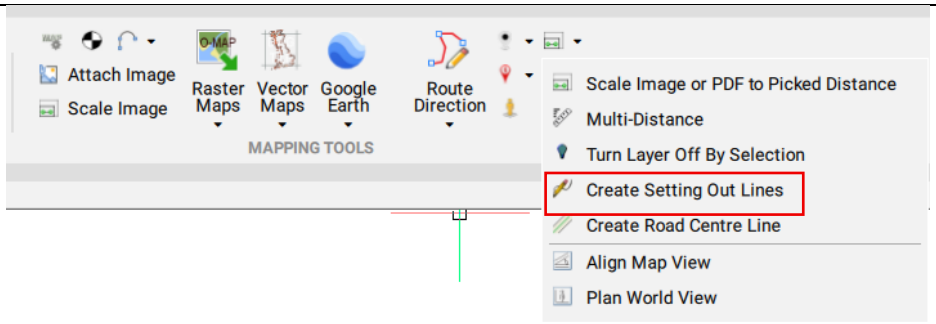
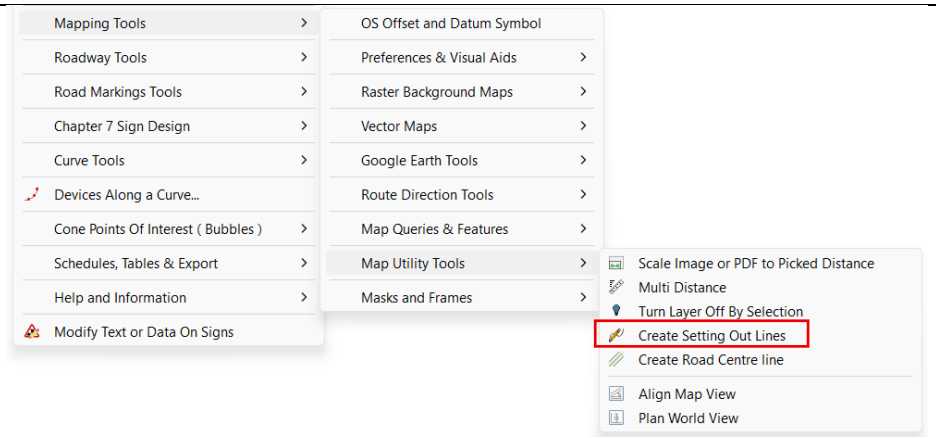
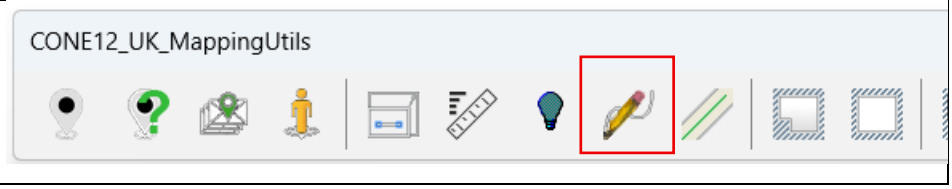
Last Distance = 22.16 Accumulative Distance = 50.4433

Pick next point <hit Enter to Exit> Indicate next point along measured path

Last Distance = 46.6121 Accumulative Distance = 97.0554

Pick next point <hit Enter to Exit> *Press [ENTER] key when finished*

Mapping Utilities – Create Setting Out Lines

Command CUKCSOL RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MappingUtils	

When working with either CAD or raster maps, you may need to draw setting out lines to place a line of cones or other device along.

Using the Create Setting Out Lines tool makes this easy.

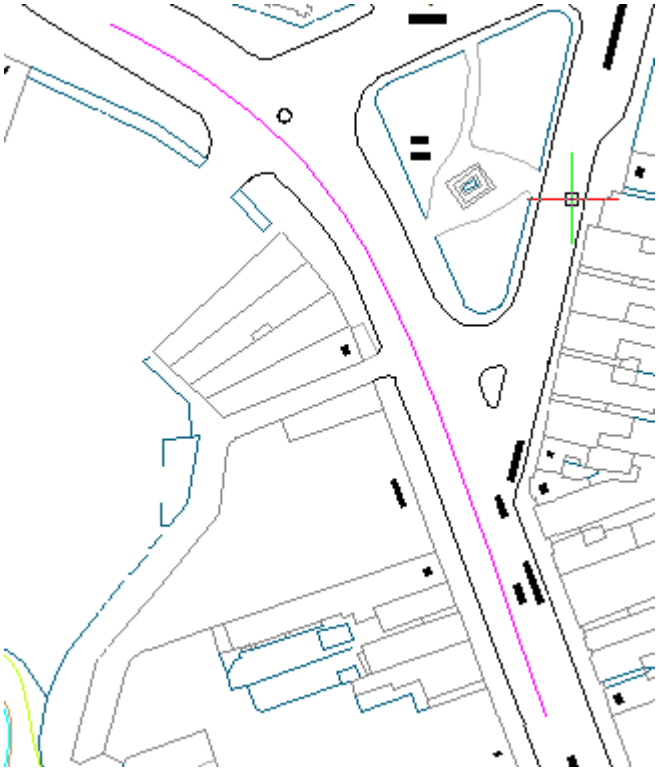
Select the tool, and you will be prompted for a series of points exactly as when drawing a standard CAD polyline.

The tool creates a layer named: **CONE_SETTING_OUT_LINES** and draws with a colour of Magenta.

After indicating the last point, press ENTER and an additional prompt appears:

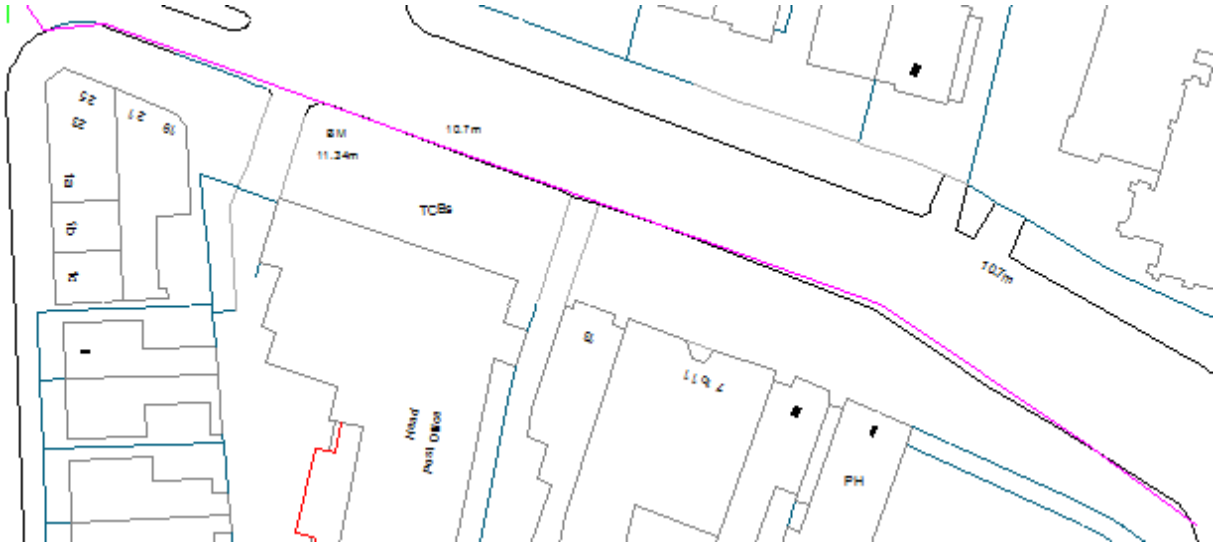
Polyline Fit Options: Smooth / Drape / None: <None>:

Smooth: convert the straight line segments into a smooth splined curve .
Drape: attempt to match the polyline to any adjacent CAD lines whilst splitting it into 2m segments
None: leave the setting out line as straight segments



Example of Smooth setting out line

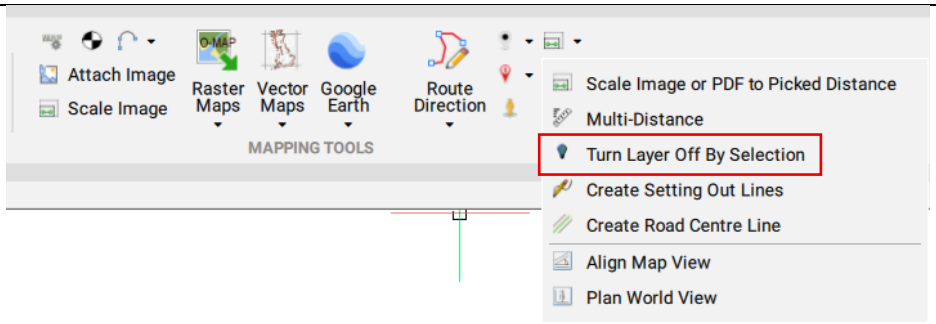
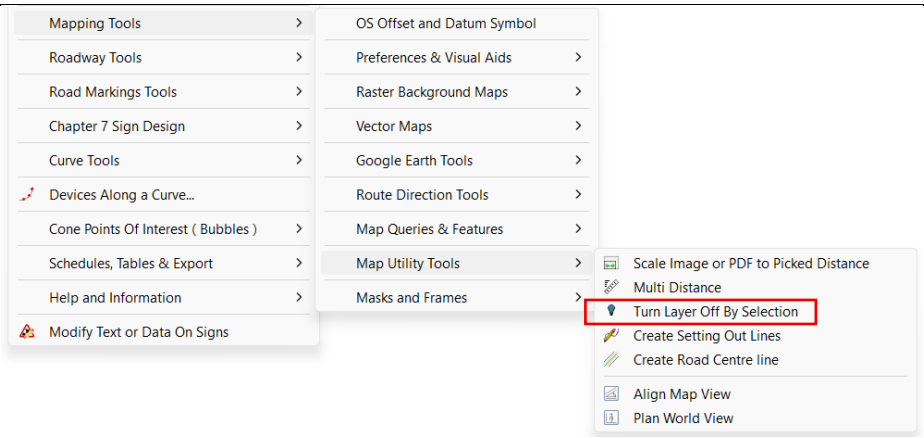
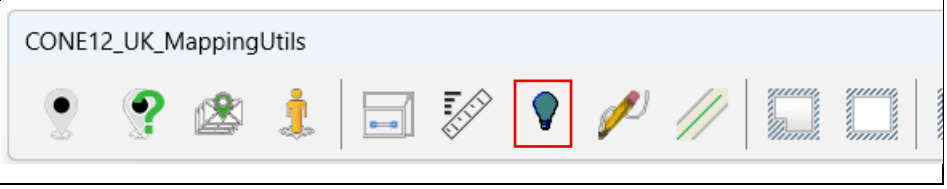
Example of straight line segments of setting out line adjacent to kerb across a junction



Example of segments CLOSE to kerbline – touching different kerbs at start and finish

Same setting out line as above, after using DRAPE option to match adjacent kerbline. NOTE selected polyline shows how it is subdivided into 2m segments but has not matched completely if the polyline is too far from the kerb.

Mapping Utilities – Turn Layer OFF By Selection

Command CUKCLO RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MappingUtils	

Usually, the different types of information are on separate layers, and by freezing a layer you can hide that set of visual information. This tool allows you to simply select a single entity and have all information on it's layer turned off or hidden – NOTE, it is not deleted, and can be made visible at any later time using the parent CAD "layer" command.

Entities on layers turned OFF affect the zoom extents function, so double clicking the mouse wheel will still show an area where these hidden elements were.

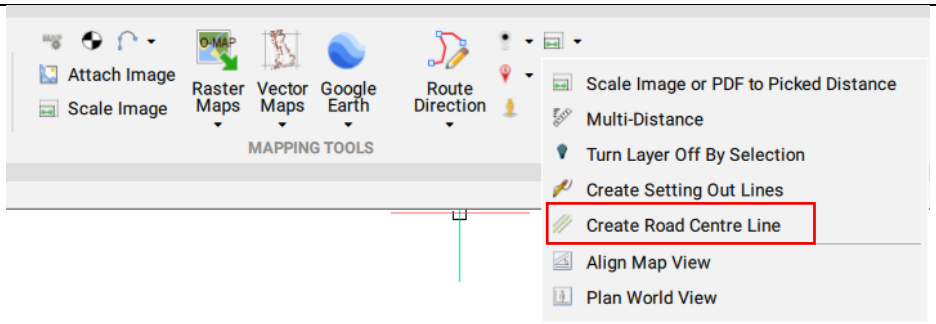
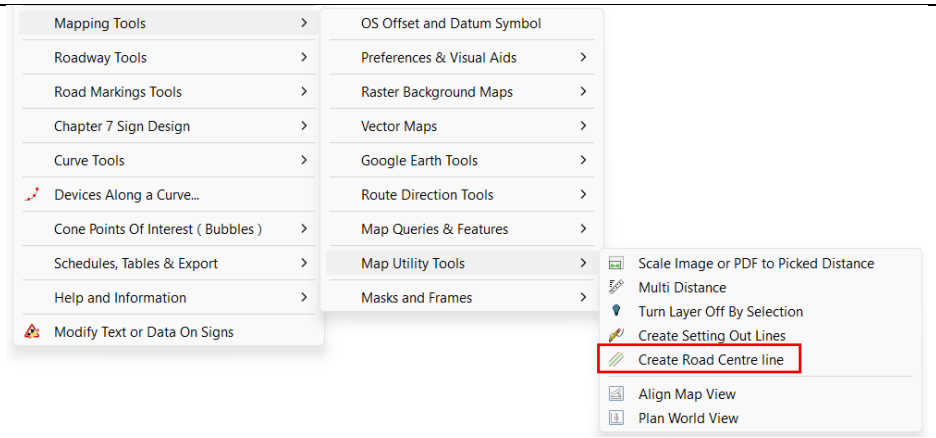
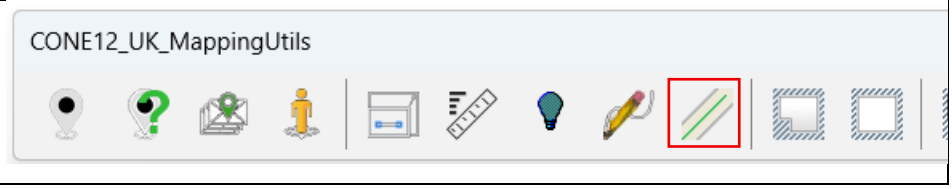
The tool prompts:

Select entities who's layer is to be turned OFF, press ENTER when done *select a single entity*

Select entities who's layer is to be turned OFF, press ENTER when done *press [ENTER]*

NOTE: if the maps has been inserted as a block, it may ALL disappear, in this case UNDO the last command, then EXPLODE the single background map into its individual entities.

Mapping Utilities – Create Road Centre Lines

Command CUKCREATECENTRELINE RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR: CONE12_UK_MappingUtils	

In the example screen grab above, the tool has drawn the centreline (in magenta) between the two selected kerb lines (first shown in red, second in blue)

The colours are used to make this explanation clearer, the tool will use the current selected pen colour to draw the centreline.

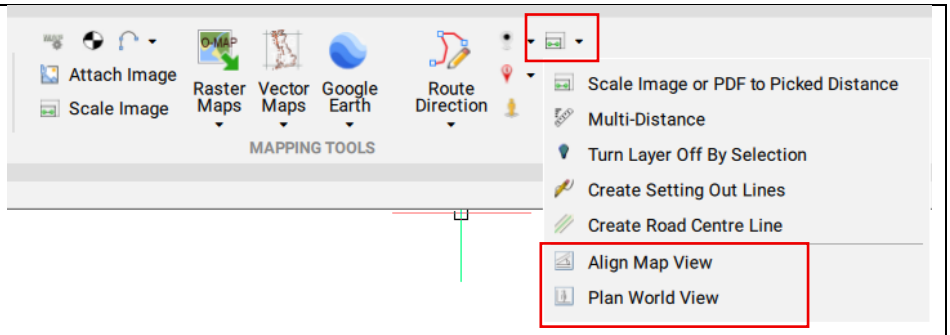
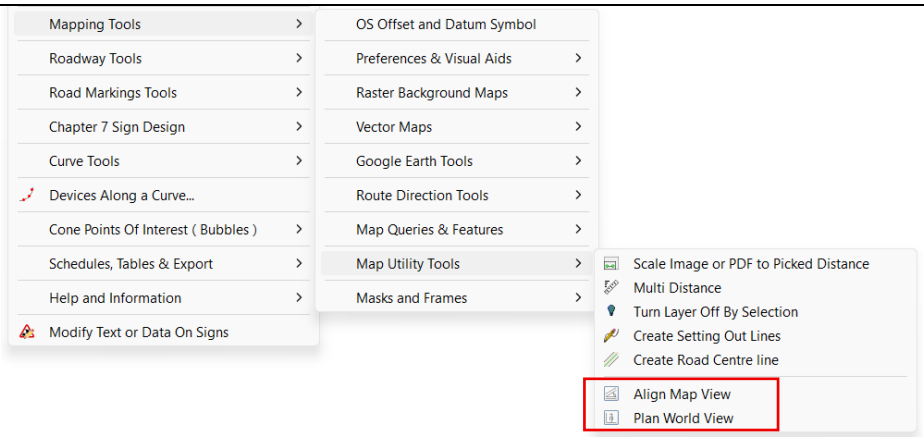
After selecting the tool you are prompted:

Command: CREATECENTRELINE
Select First Polyline: pick the first kerb (i.e. red one in this example)
Select Second Polyline: pick the second kerb (i.e. blue one in this example)

The centre line is drawn as long as possible by interpolating between the two polyline kerbs

NOTE: if your kerbs are drawn using LINE segments rather than polylines, the function will automatically cease.

Mapping Utilities – Align Map View and Plan World View

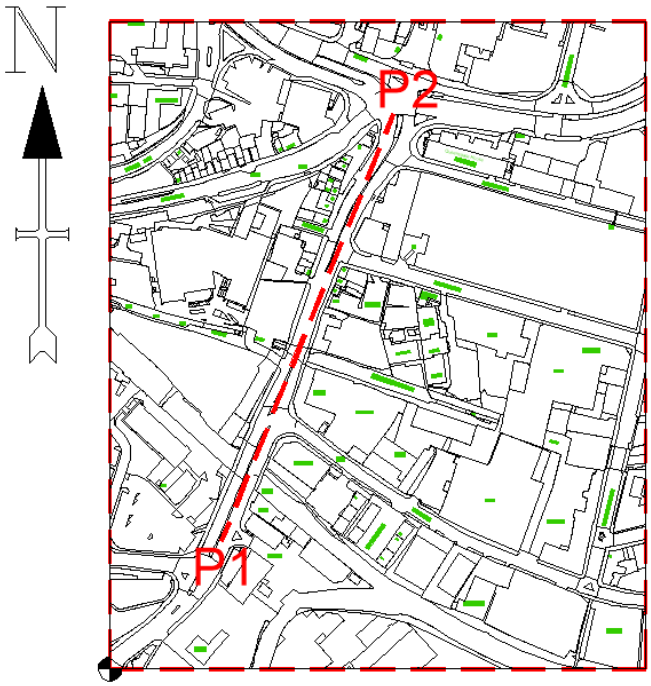
Command CUKALIGNVIEW and CUKPLANWORLD RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	

The Align Map View tool rotates the current view to match two points that are picked on the drawing

In this following example the view is rotated so that the red dashed line is horizontal by picking two points P1 and P2

Command: CUKALIGNVIEW
First alignment point: P1
Second alignment point: P2

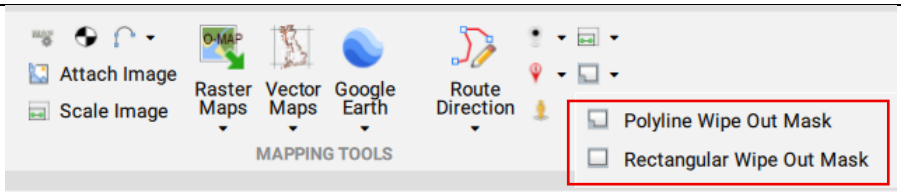
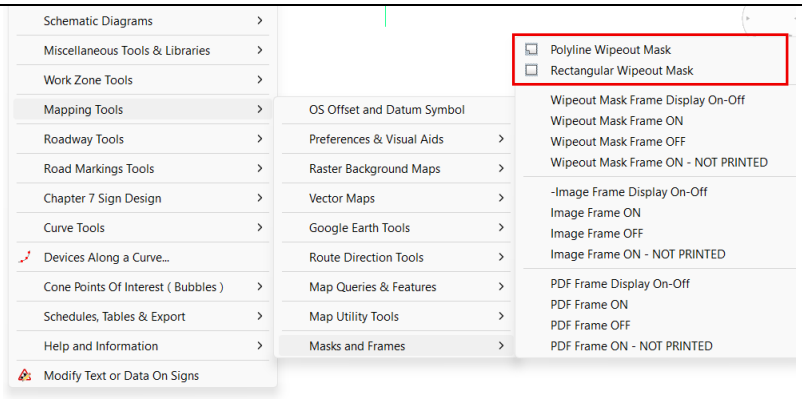
Before Align View



View after Align View

To return to the original view use the Plan World View tool

Mapping Utilities - Polyline and Rectangular Wipeout Masks

Command CUKPOLYMASK and CUKRECTMASK RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR CONE12_UK_MappingUtils	

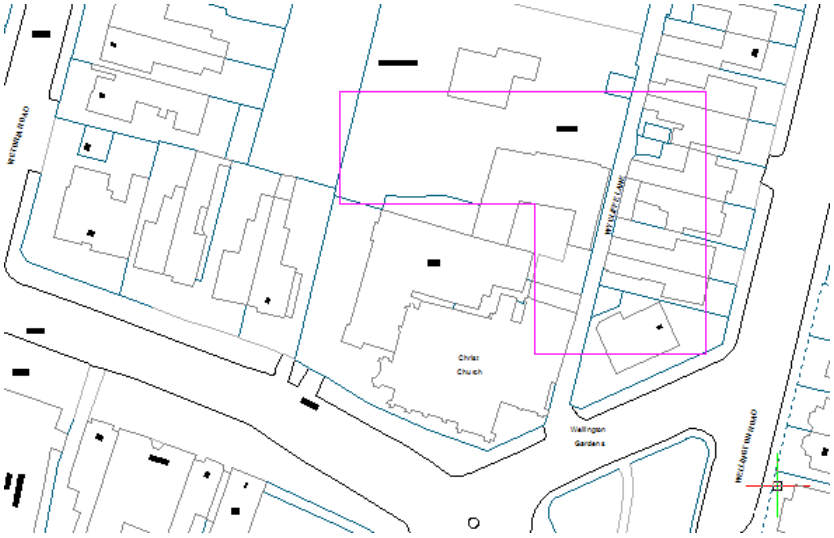
Wipeout masks are useful when hiding extra detail on maps and as a plain base area to add your text without having to delete and trim lots lines from the drawing, they can also be moved at a later time to reveal the entities beneath.

Using the Polyline Wipeout Mask tool, requires you to draw a CLOSED polyline to show the boundary to mask. If you use the polyline tool, after indicating all the points, press the “C” option key to ensure the shape is closed.

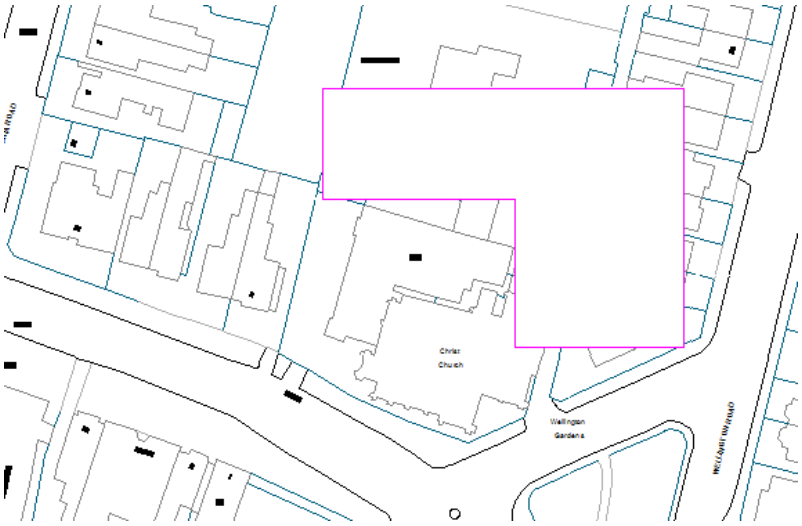
Use the ORTHO drawing aid to make easier and more accurate horizontal and vertical elements.

The polyline Wipeout Mask tool, prompts you to indicate the polyline, then applies the mask to that shape, see the example screen grabs below

NOTE: The Wipeout mask is drawn on the same layer as the original polyline



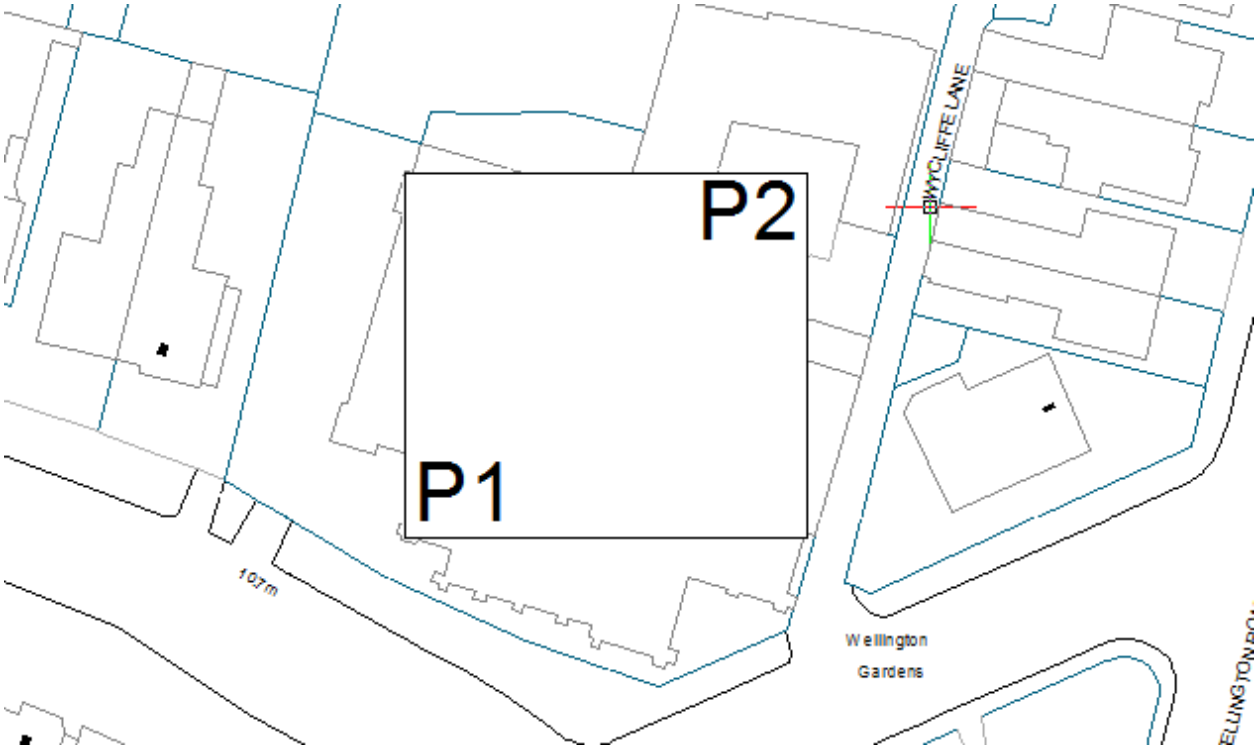
Map showing closed polyline drawn around area to be masked



Same map as above, with area converted to a WIPEOUT to mask map detail

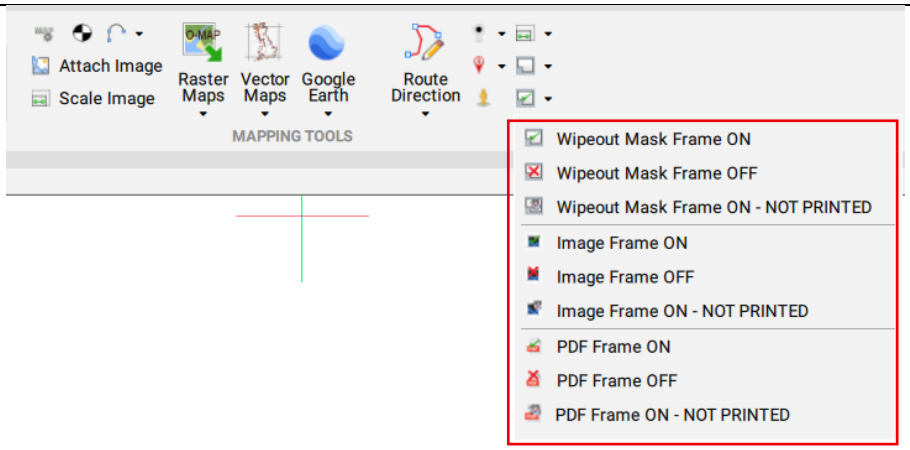
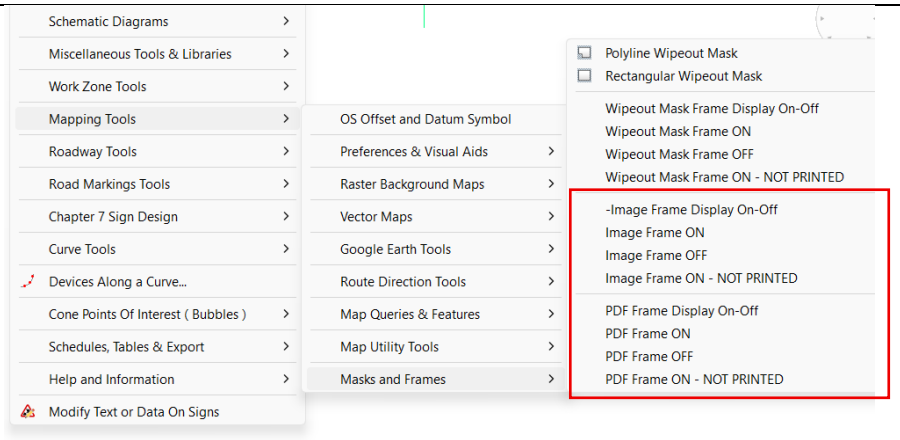
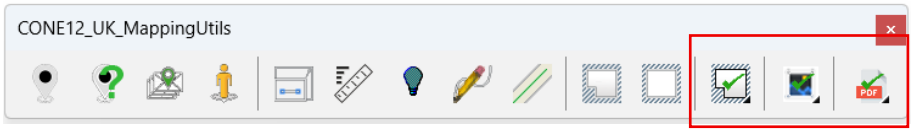
The Rectangular Wipeout Mask tool simply prompts for two points to draw a rectangle mask

NOTE: the rectangular wipeout mask will be drawn on the layer “CONE_WIPEOUT_MASKS”



In the example above, the first point indicated at P1, then second point at P2.
NOTE how the text is clearer to read against the plain white wipeout background.

Mapping Utilities – Wipeout Mask Frame Display ON/OFF/PRINT

Commands various RIBBON: CONE12 Main: MAPPING TOOLS	
CONE12UKBC Pull Down Menu	
TOOLBAR CONE12_UK_MappingUtil s	

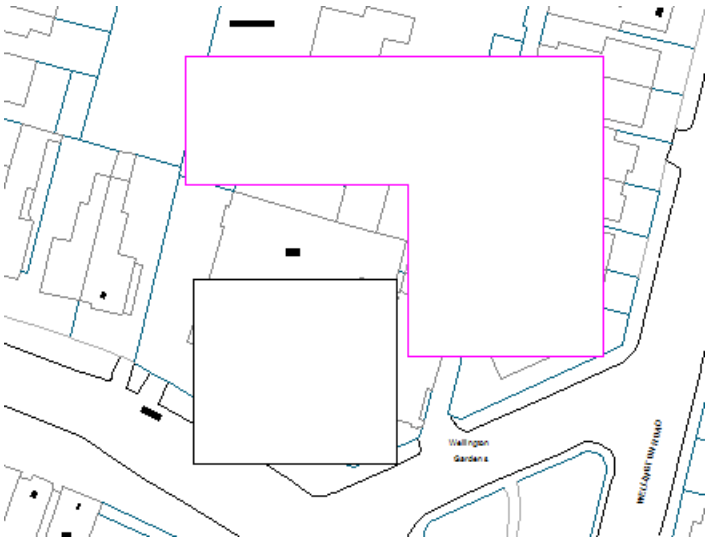
After inserting wipeout masks onto your drawing,
it is possible to hide the solid boundary to make them a little more discrete.

Selecting one of the three Mask Frame display tools:

ON
OFF
ON – NOT PRINTED

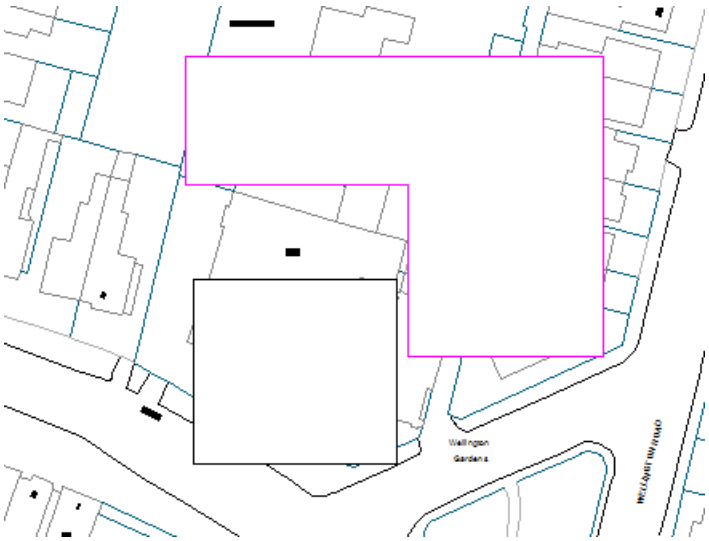
will change all the wipeout masks on the drawing

See the example below to see difference between the modes.



Map showing wipeouts WITH borders – DISPLAY MODE: Frame ON

Map showing wipeouts WITHOUT borders – DISPLAY MODE: Frame OFF



Map showing wipeout frames whilst in BricsCAD WITH borders – DISPLAY MODE: Frame ON – NOT PRINTED

When the drawing is printed to paper or exported to a PDF file the outlines will not appear in the final output.