

Loading Zoomstack with CVD styles in QGIS – tutorial

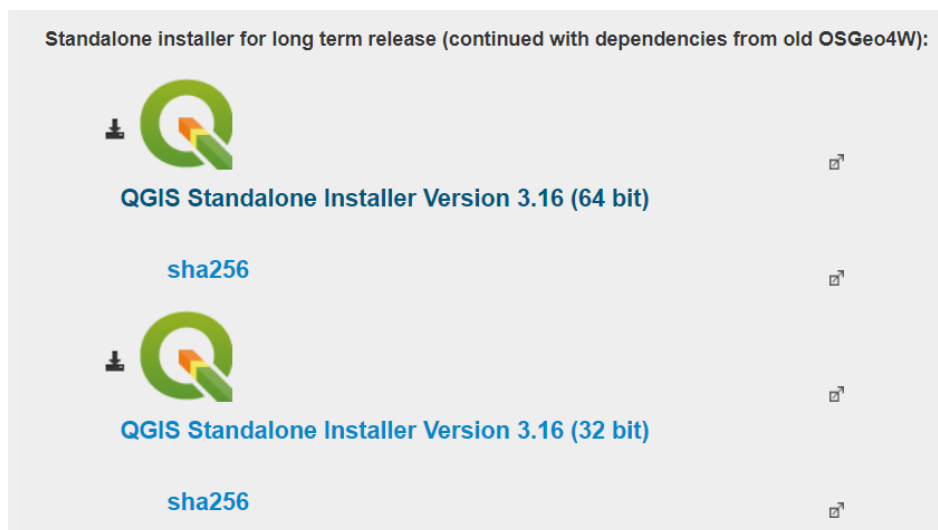
- [How to install QGIS – Page 2](#)
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Step 1 – Installing QGIS

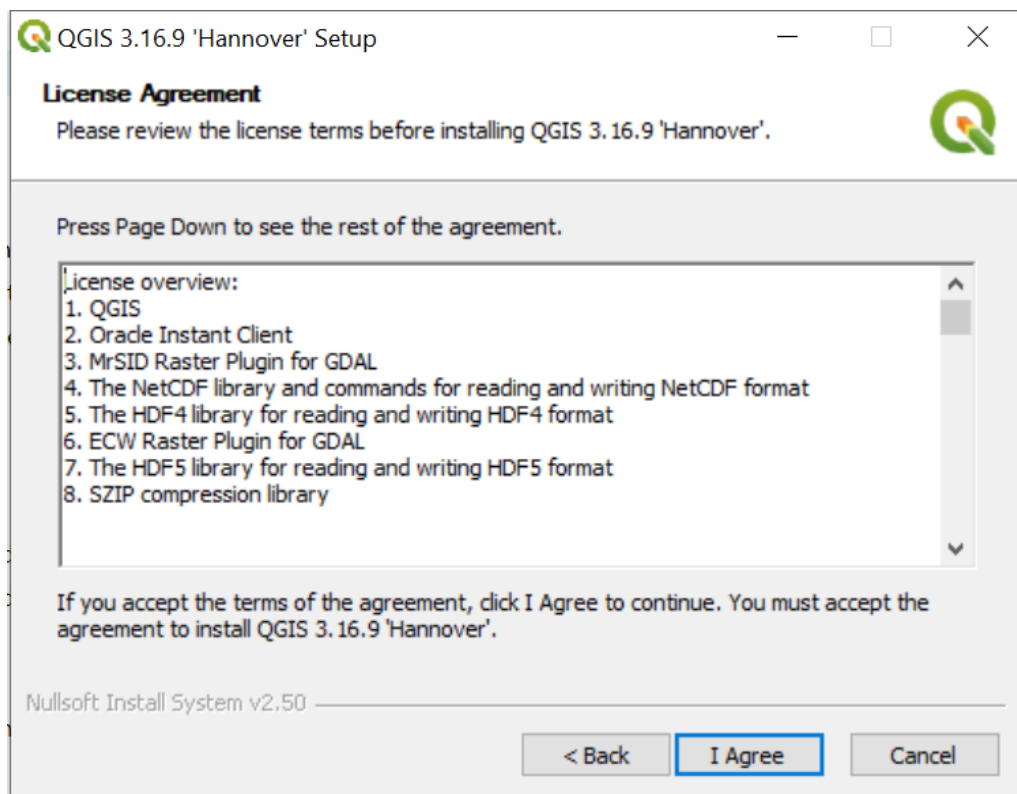
1. Navigate to <https://qgis.org/en/site/forusers/download.html>

QGIS (Quantum Geographic Information System) is a professional GIS that is free to download.

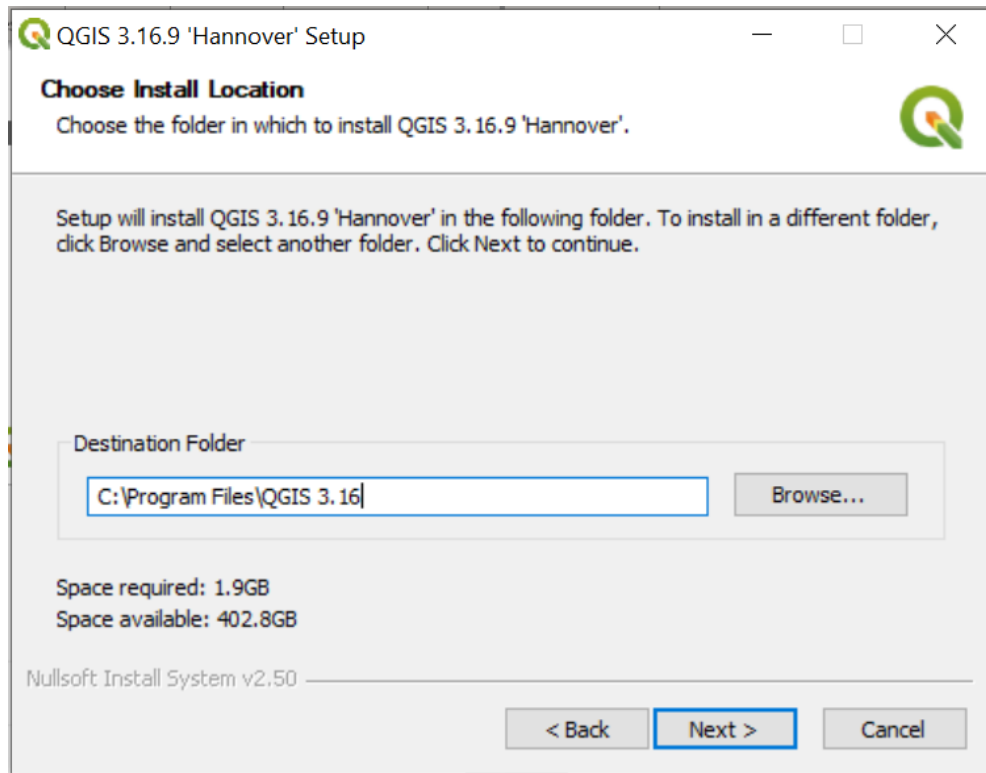
2. Download the latest stable release of QGIS (currently 3.16 'Hannover') and choose the 32 or 64 bit version depending on the type of processor your PC has.
 - a. To find out this information about your PC on a Windows operating system, select the Start button, then select Settings > System > About. Open About settings. At the right, under Device specifications, see System type.



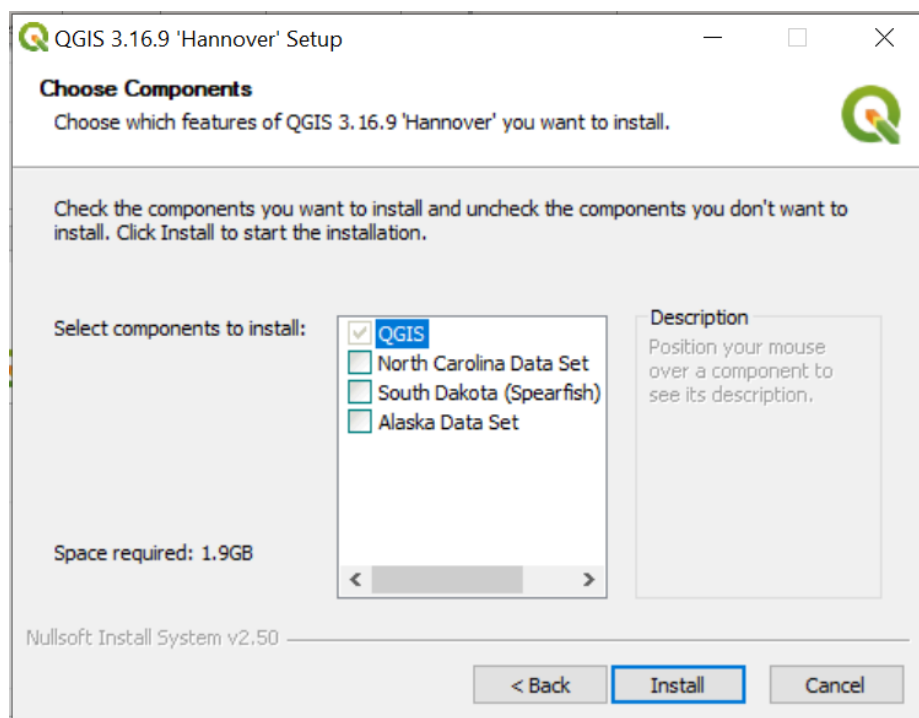
3. After QGIS has downloaded, **double** click on the QGIS application.
4. Review the license agreement and click **I Agree**.



5. Accept the default install location or choose a new one and click Next. A typical Windows path would be C:\Program Files\QGIS 3.16

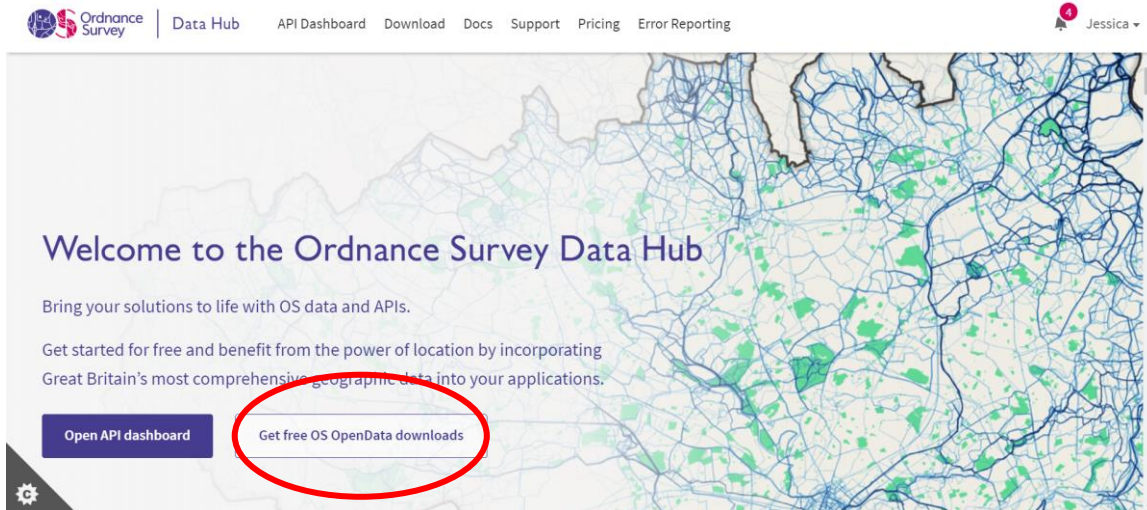


6. Leave the Choose Components window as it is and click Install.



Step 2 – Download Ordnance Survey Open Zoomstack data

1. Navigate to <https://osdatahub.os.uk/>
2. Click on Get free OS OpenData downloads



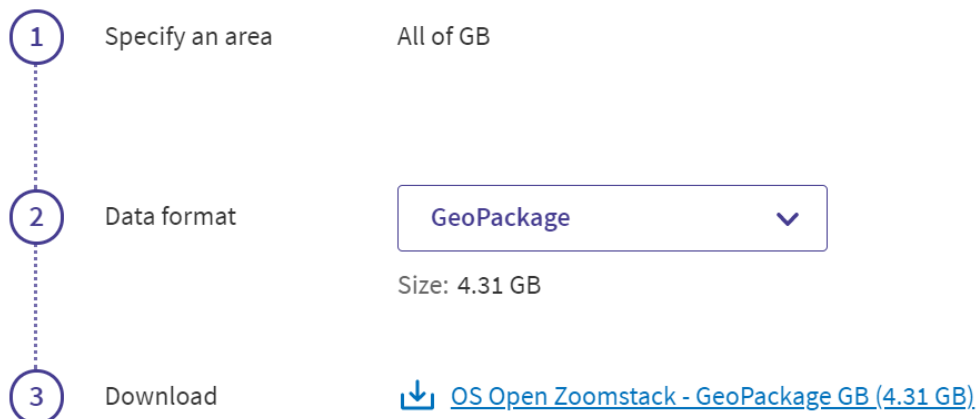
3. Scroll down to select OS Open Zoomstack.

Zoomstack is a vector dataset which shows many different features that make up a map of Great Britain which has more/less detail depending on how zoomed in you are.

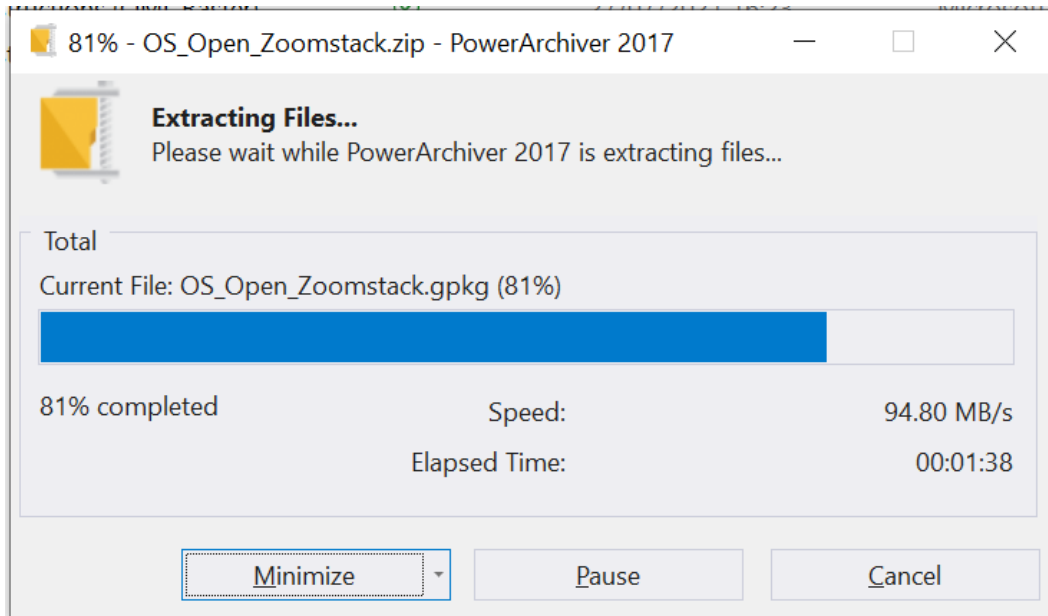
4. Change the Data Format to **GeoPackage** and click on the Download link.

Download OS Open Zoomstack

All OS OpenData can be freely downloaded under the [Open Government Licence](#).



5. The data for Zoomstack will be in your downloads folder, as a ZIP file. Move it across to a folder in your local drive.
6. Once moved, right click on the ZIP file and click **Extract Here**. It should take a minute or so.

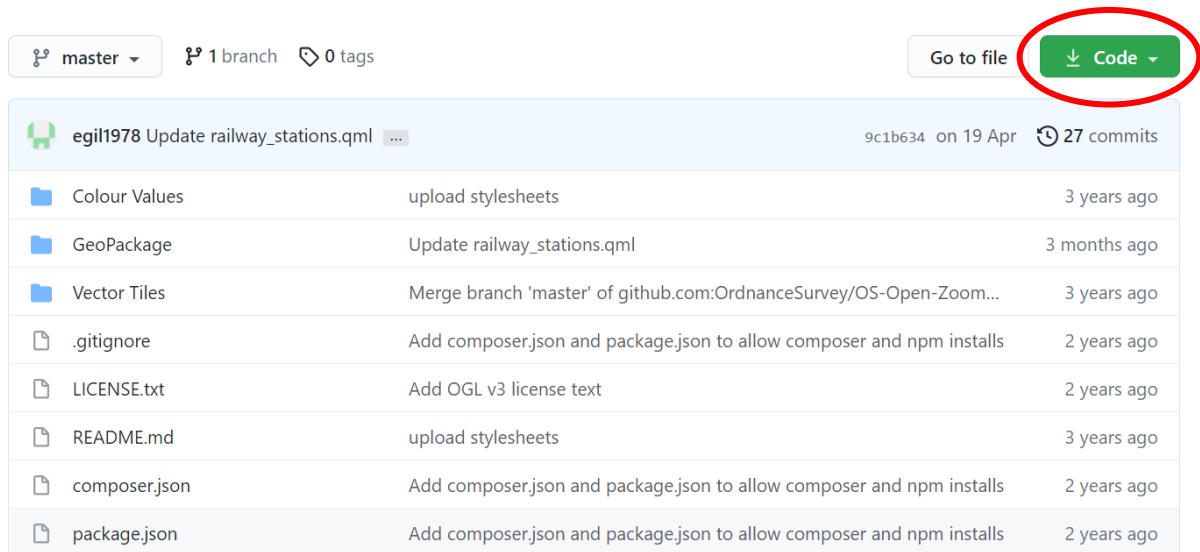


Step 3 – Download the OS CVD stylesheets

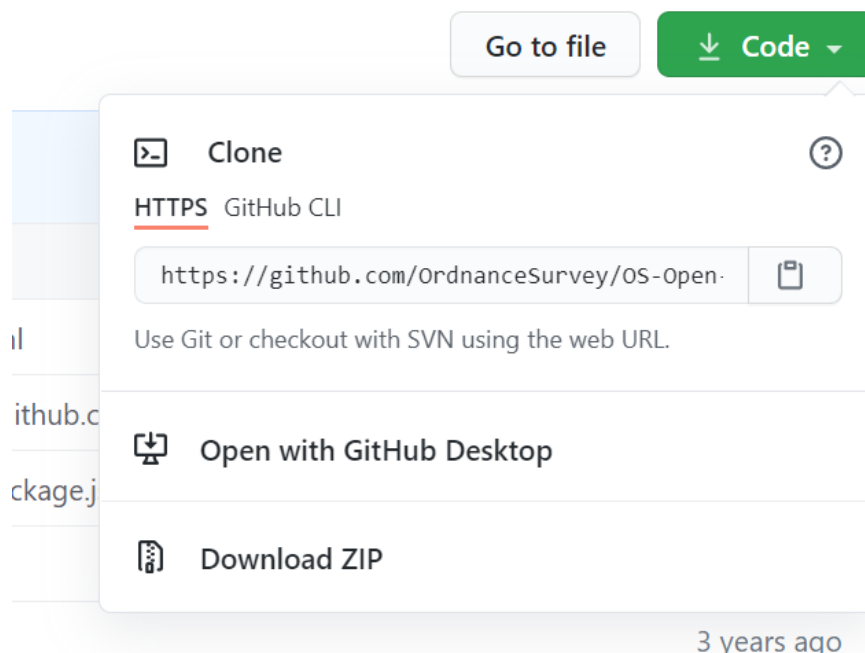
1. Navigate to <https://github.com/OrdnanceSurvey/OS-Open-Zoomstack-Stylesheets>

This is a GitHub repository that contains various stylesheets for Zoomstack, including the CVD styles we will apply in this tutorial.

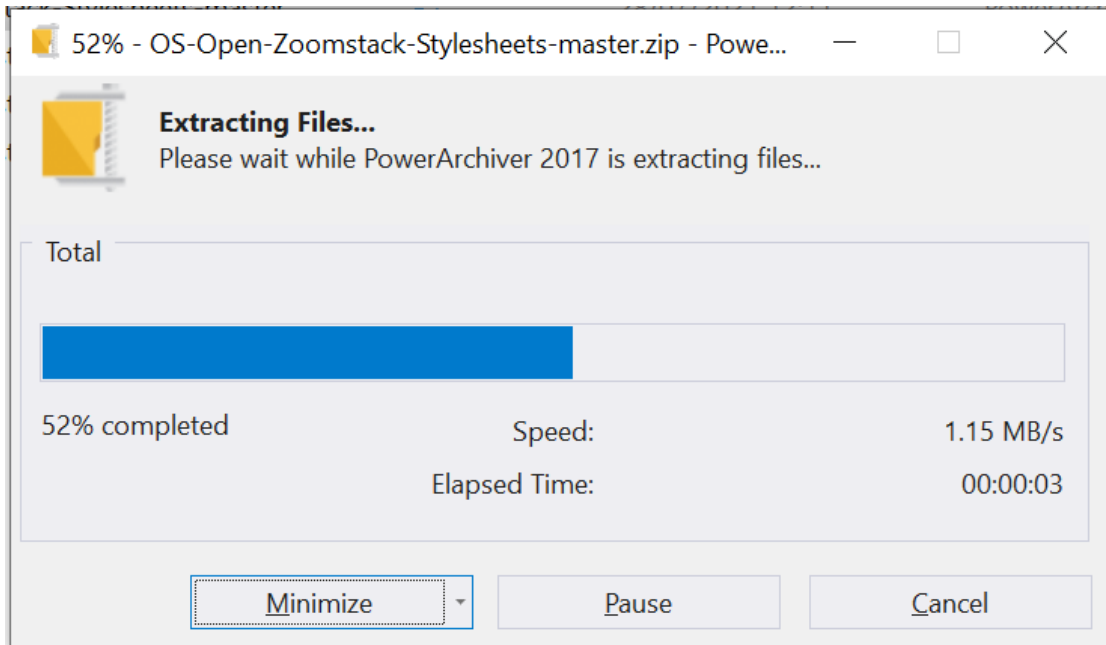
2. Click on the Code dropdown



3. From the dropdown click on **Download ZIP**.

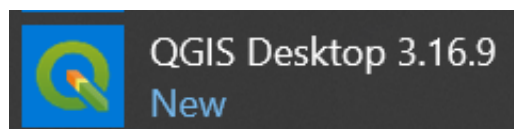


4. The file you have just downloaded will be in your downloads folder, as a ZIP file. Move it across to a folder in your local drive.
5. Navigate to the location and folder of the stylesheets. Right click on the ZIP file and click Extract Here.

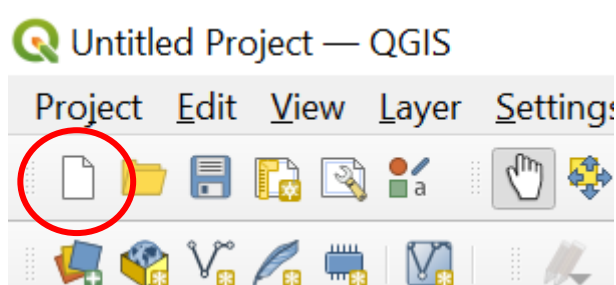


Step 4 – Load data into QGIS

1. Open QGIS desktop

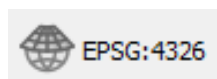


2. Click on the New Project icon which can be found in the top left ribbon of your QGIS project

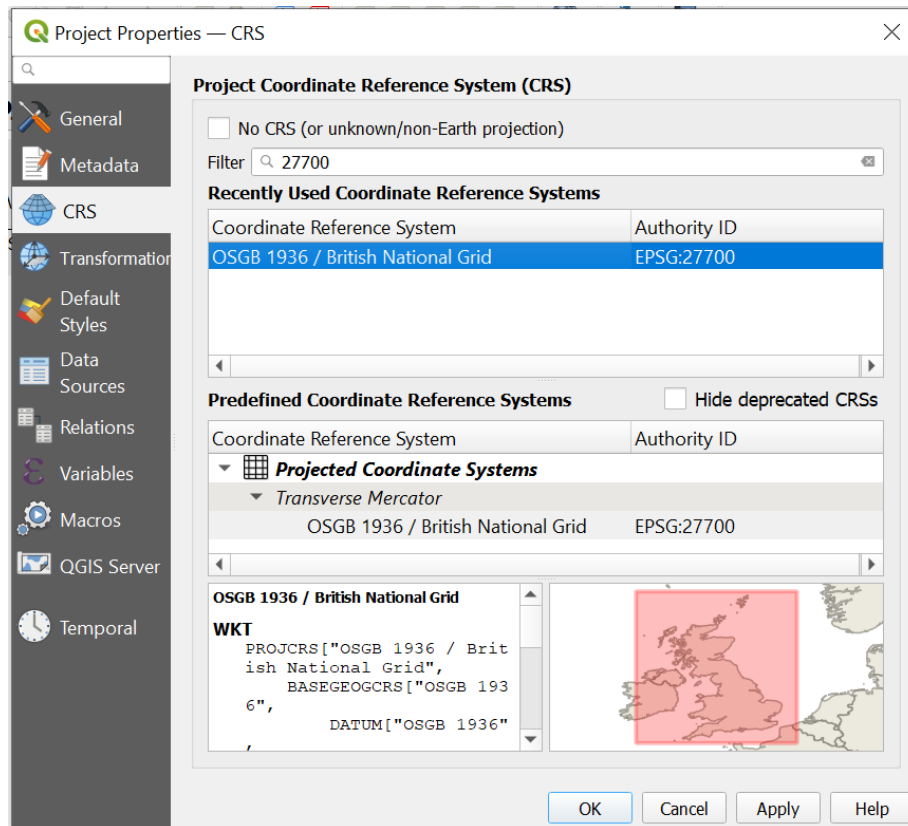


3. Check that the coordinate reference system of your project is set to British National Grid. British National Grid (also known as BNG) is a coordinate system created by Ordnance Survey for displaying all of our data.

In the bottom right of your QGIS project is a button that highlights the current coordinate system of your project.

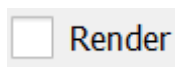


4. Click on this and in the window that appears, type **27700** into the filter box. Highlight OSGB 1936 / British National Grid



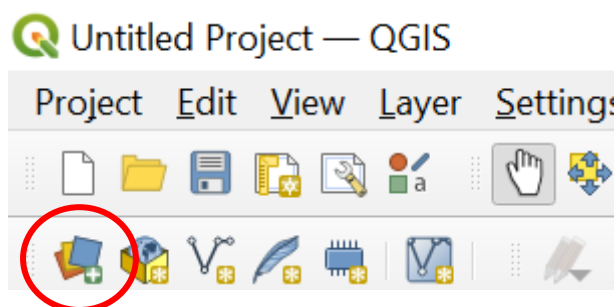
- Click **OK**.
- Before we add our Zoomstack data into the QGIS project, it is good practice to turn the data render off. This stops the data rendering each time we do something, which can cause your machine to run slowly.

To turn it off, untick the **Render** box in the bottom right of your project.

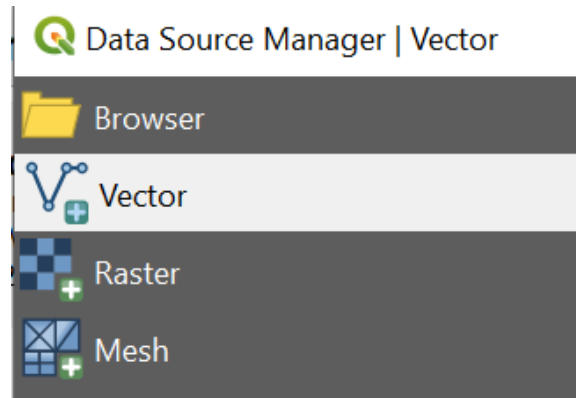


We can now add the data to our project.

- Click on the **Open Data Source Manager** icon.



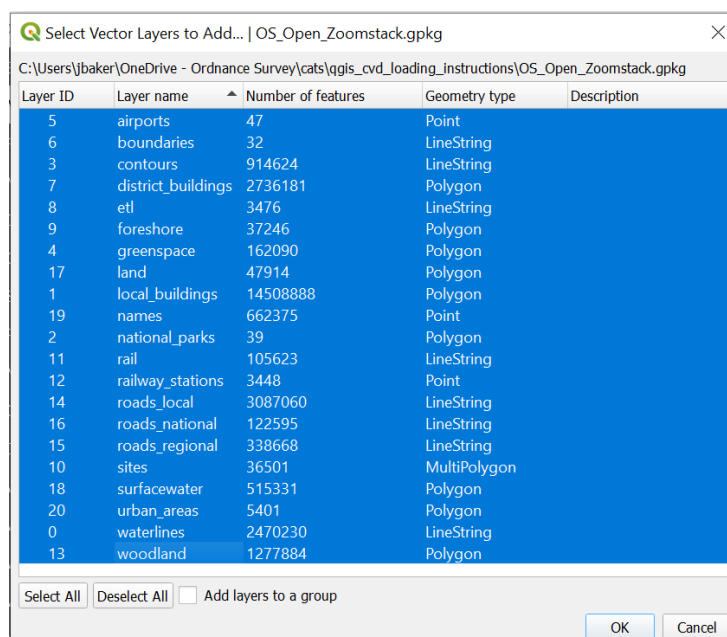
- In the window that appears, make sure that Vector is selected from the pane on the left-hand side.



- Click on the 3 dots to the right of the Source bar.

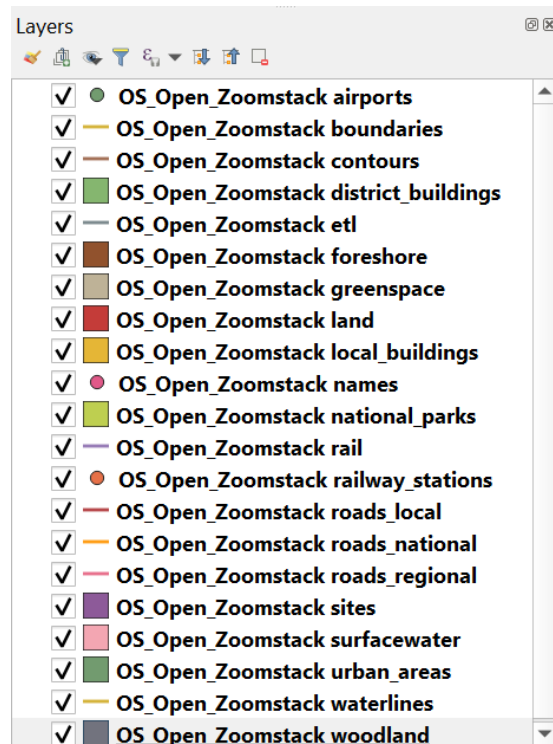


- Navigate to the location of your Zoomstack data and highlight the file **OS_Open_Zoomstack.gpkg** by clicking on it. Click **Open**.
- This will take you back to the Data Source Manager. The Source box will now contain the location of your data. Click **Add**.
- In the Select Vector Layers to Add window, click **Select All** to highlight all the layers which make up Zoomstack. When you are done click **OK**.



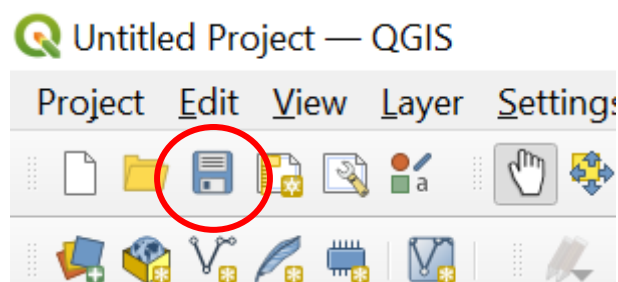
- Click Close on the Data Source Manager window.

Your Zoomstack data layers should now have appeared in the **Layers** window of your project. QGIS assigns random colours to each layer when it loads them into your project, so don't worry if yours don't match the below.



The data will not be visible as we have turned the map **Render** off.

- It is good practice to save your work as you progress through this tutorial. To save your QGIS project, click on the Save icon on the top ribbon

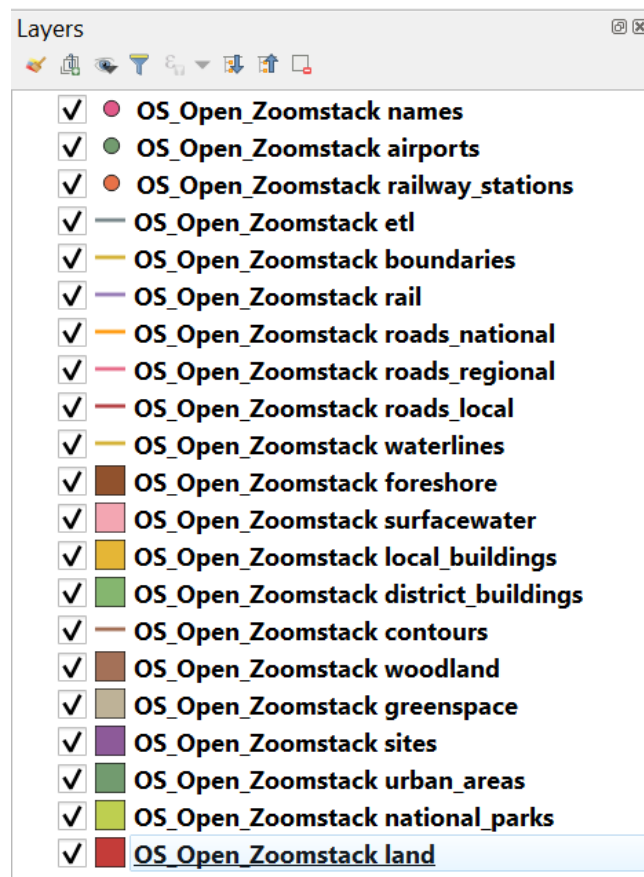


As this is the first time you have saved your project you will need to navigate to a save location on your PC. Call it something like 'CVD_zoomstack'.

Step 5 – Style the data

Before we style our Zoomstack data, we need to make sure the data is ordered correctly in the Layers panel, so that the features appear in the correct order and we can see everything which is meant to be included in the map.

1. To change the layer order in Layers panel, single click on one of the layers, and drag it to the desired position between the other layers. We want our layers to appear in the following order:



2. Next, we need to add a file containing some of the symbols for things like airports and train stations, into our QGIS programme folder. To do this, first navigate to the 'OS-Open-Zoomstack-Stylesheets-master' folder you downloaded from GitHub earlier.

Within this folder, go to GeoPackage > QGIS Stylesheets (QML). Right click on the `os-open-zoomstack-symbols` folder and select Copy.

Name	Status	Date modified	Type	Size
Deuteranopia style	✓	28/07/2021 12:12	File folder	
Light style	✓	28/07/2021 12:12	File folder	
Night style	✓	28/07/2021 12:12	File folder	
os-open-zoomstack-symbols	✓			
Outdoor style	✓			
Road style	✓			
Tritanopia style	✓			
Layer Order	✓			25 KB
README.md	✓			3 KB

Open

Open in new window

Pin to Quick access

Share

View online

Always keep on this device

Free up space

Scan with Apex One

Give access to >

Restore previous versions

Include in library >

Pin to Start

Send to >

Cut

Copy

Paste

- Next, navigate to your QGIS Software within your Program files. This is likely to be in a similar location to this: **C:\Program Files\QGIS 3.16**

Once in your QGIS Program folder, navigate to apps > qgis-ltr > svg. Once you are in this folder, paste your copied **os-open-zoomstack-symbols** folder.

Name	Date modified	Type	Size
accommodation	27/07/2021 17:01	File folder	
amenity	27/07/2021 17:01	File folder	
arrows	27/07/2021 17:01	File folder	
backgrounds	27/07/2021 17:01	File folder	
components	27/07/2021 17:01	File folder	
crosses	27/07/2021 17:01	File folder	
emergency	27/07/2021 17:01	File folder	
entertainment	27/07/2021 17:01	File folder	
food	27/07/2021 17:01	File folder	
gpsicons	27/07/2021 17:01	File folder	
health	27/07/2021 17:01	File folder	
landmark	27/07/2021 17:01	File folder	
money	27/07/2021 17:01	File folder	
os-open-zoomstack-symbols	28/07/2021 15:21	File folder	
religion	27/07/2021 17:01	File folder	
services	27/07/2021 17:01	File folder	
shopping	27/07/2021 17:01	File folder	
sport	27/07/2021 17:01	File folder	
symbol	27/07/2021 17:01	File folder	
tourist	27/07/2021 17:01	File folder	
transport	27/07/2021 17:01	File folder	
wind_roses	27/07/2021 17:01	File folder	

We are now ready to style the data layers.

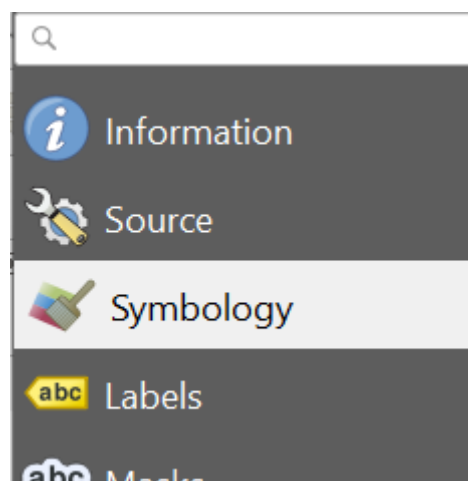
At this point, you can choose which type of CVD style you want to apply to the data. There are two styles created by Ordnance Survey – Deuteranopia, and Tritanopia.

The Deuteranopia style was created for those who suffer from red-green colour blindness (also known as colour vision deficiency, or CVD).

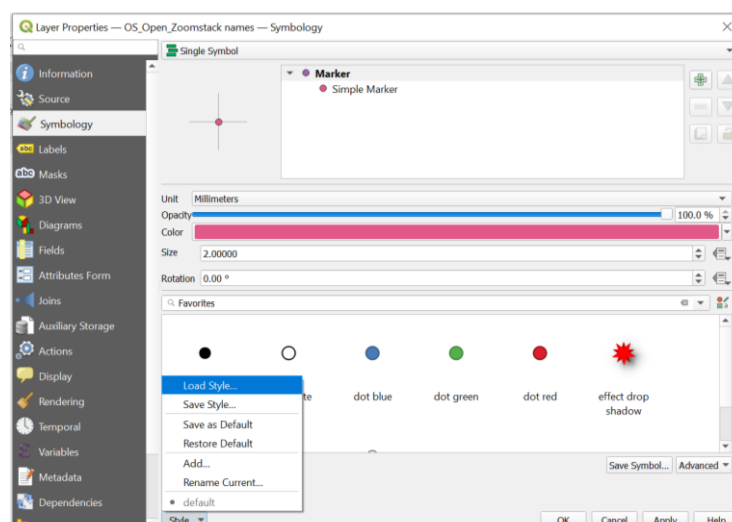
The Tritanopia style was created for those who suffer from blue-yellow colour blindness. This style is also designed for people who have Protanopia.

For the remainder of this tutorial, we will use the Deuteranopia style but feel free to repeat the process with the Tritanopia style at a later date.

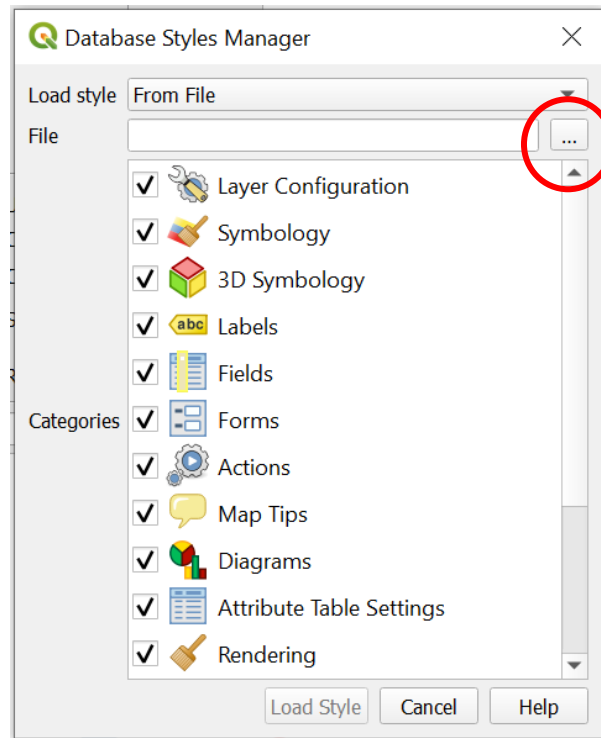
4. Double click on the OS_Open_Zoomstack_names layer, which should be at the top of your Layers pane. This will bring up the Properties pop-out, which is where we will apply the style.
5. Click on the Symbology tab from the ribbon on the left-hand side



6. Next, click on the Style dropdown which can be found at the bottom left of the Layer Properties window, and click **Load Style...**



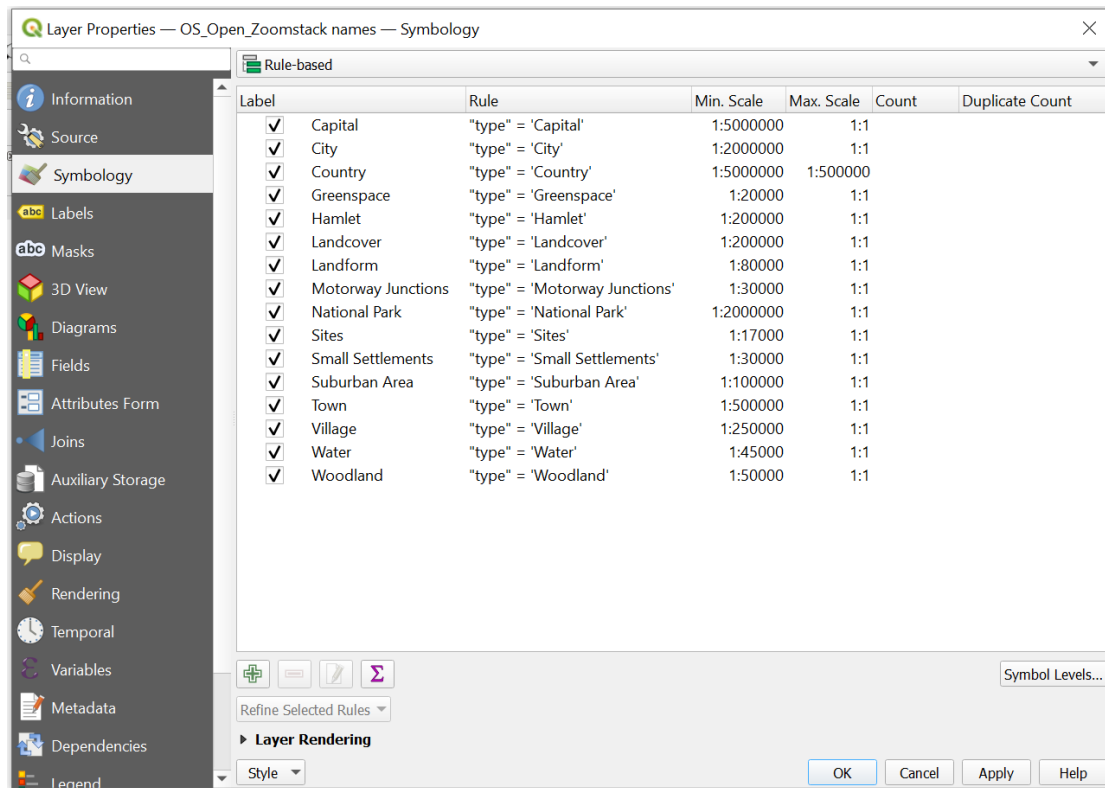
- This will bring up the Database Styles Manager pop-out. Click on the 3 dots next to the File bar.



- Navigate to the location you saved the **OS-Open-Zoomstack-Stylesheets-master** folder. We will be using the Deuteranopia style, and the location of these within the above folder is:

GeoPackage > QGIS Stylesheets (QML) > Deuteranopia style

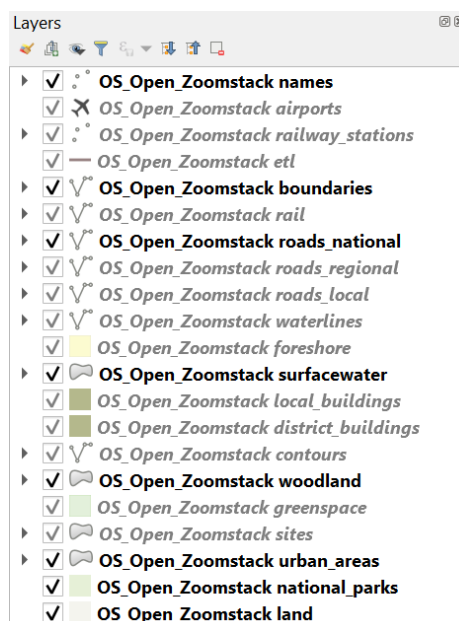
- Because we are currently styling the names layer, select the file called **names – Deuteranopia**. Click **Open**.
- The file location we are loading will now appear in the File bar of the Database Styles Manager pop-up. Click **Load Style**.
- This will take you back to your Layer Properties window, which should look like the below:



12. Click **OK**.

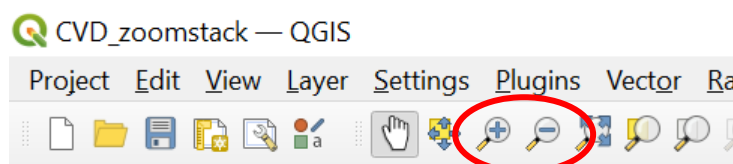
13. Repeat steps 4 – 12 for every layer in your Layers pane, selecting the relevant style from your **Deuteranopia style** folder for each layer. Make sure to keep regularly saving your QGIS project!

14. Once you have styled all of the layers, your Layers pane will look something like this:

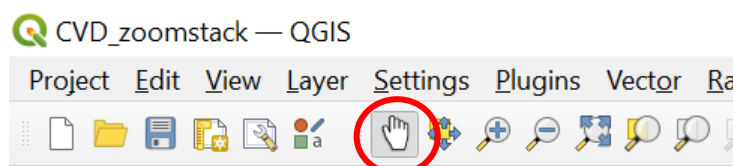


- Next, tick the Render box in the bottom-right corner of our QGIS window, and allow your map to draw. This may take a few seconds to fully load.

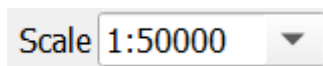
You can zoom in and out of your map using your scroll wheel on the mouse, or with the plus and minus magnifying glass icons on the top pane.



To pan around your map, select the hand icon and drag around the main map window.

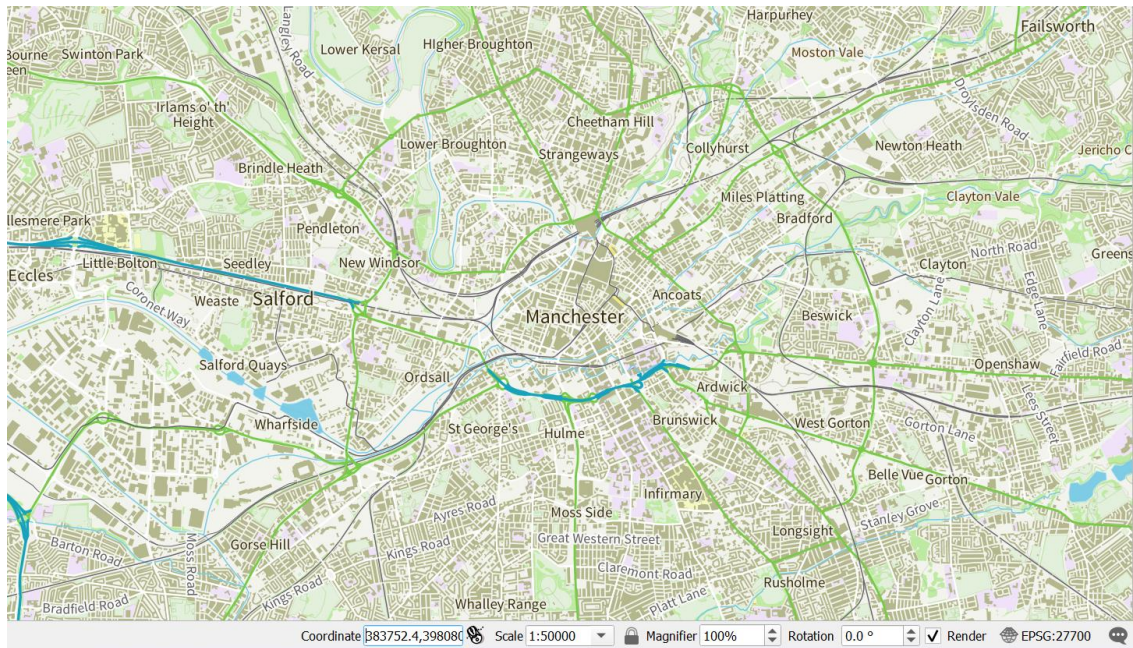


- We are going to create a map of Manchester, so we want to pan towards the city, and zoom in to an appropriate level.
- To zoom to a specific scale, we can type a value into the **Scale** box which is at the bottom of the window. Change the scale of your map to 1:50 000 by placing your cursor in the Scale box and type it in manually.



- To centre the map on Manchester, place your cursor in the **Coordinates** box (next to Scale), and cut and paste **383752.4,398080.5**. This will centre the map window on the Manchester area we are interested in.
- Press **Return** on your keyboard.

Your map window should now look similar to this:

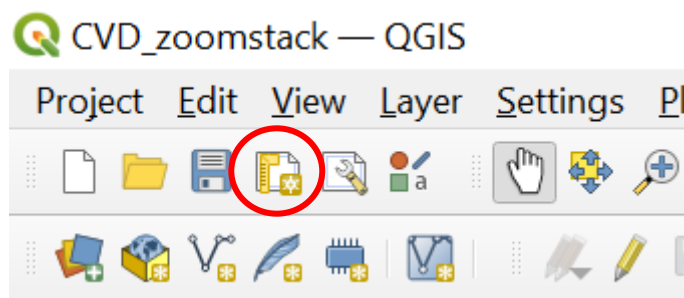


20. Save your QGIS project.

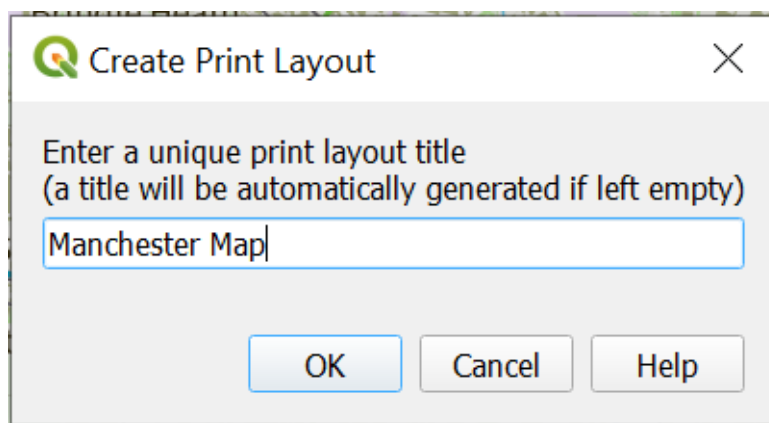
Step 6 – Prepare your map for digital export or printing

We now need to set up our map, ready to be exported in our desired format. QGIS does this using the Print Layout function.

1. Click on the **New Print Layout** icon on the top ribbon of your QGIS project.



2. In the Create Print Layout box that appears, give your print layout a title. Call it something like Manchester Map. You can leave this blank if you want, but naming a print layout means it is easier to find if you're creating more than one layout in your QGIS project.



3. Press OK.

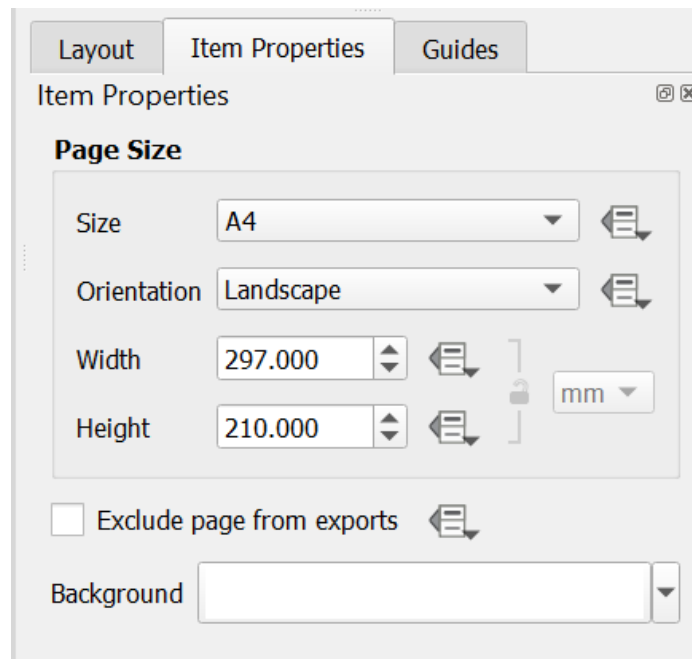
A new window should appear with a blank page. This is your Print Layout window.

The first thing we need to do is set the size we would like our map to export.

4. Right click on the blank page and select **Page Properties...**

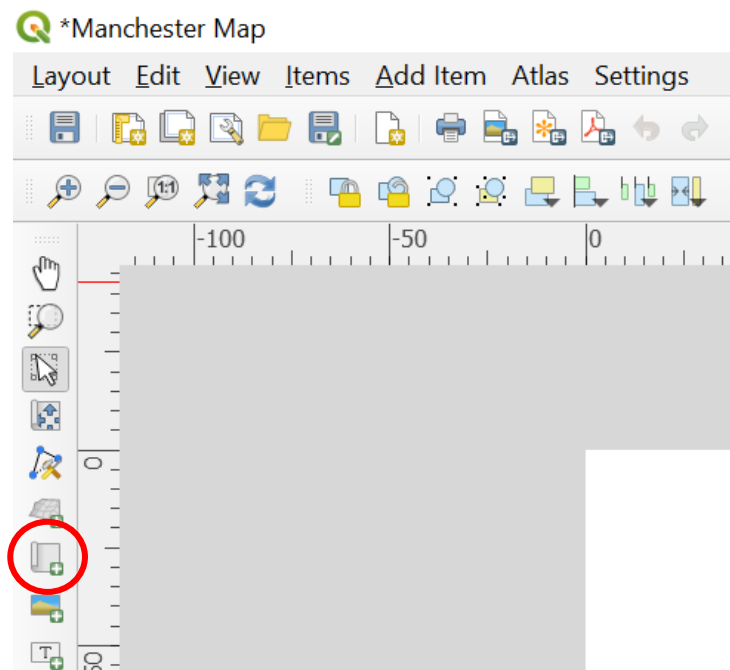
This opens the Item Properties tab on the right hand side.

5. Change the **Size** to A4 and the **Orientation** to Landscape.



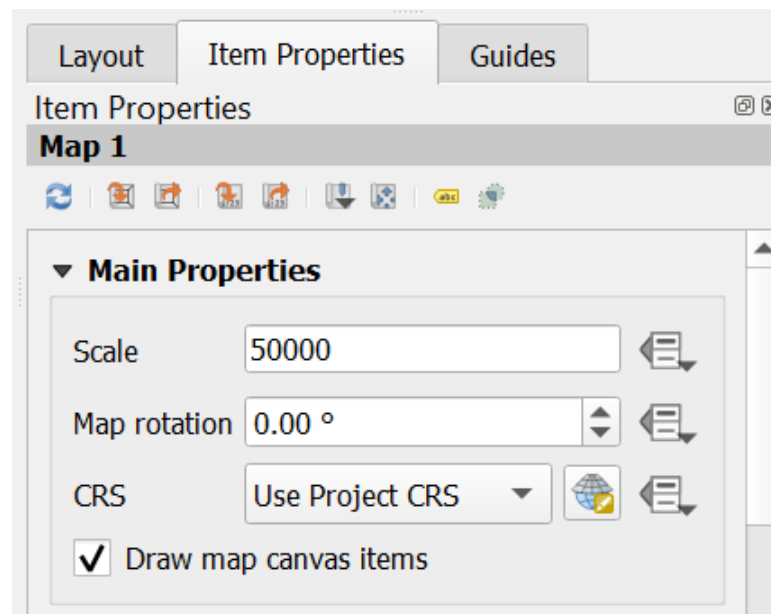
Now we need to add our map.

6. Click on the **Add Map** icon found on the ribbon on the left-hand side of your Print Layout.

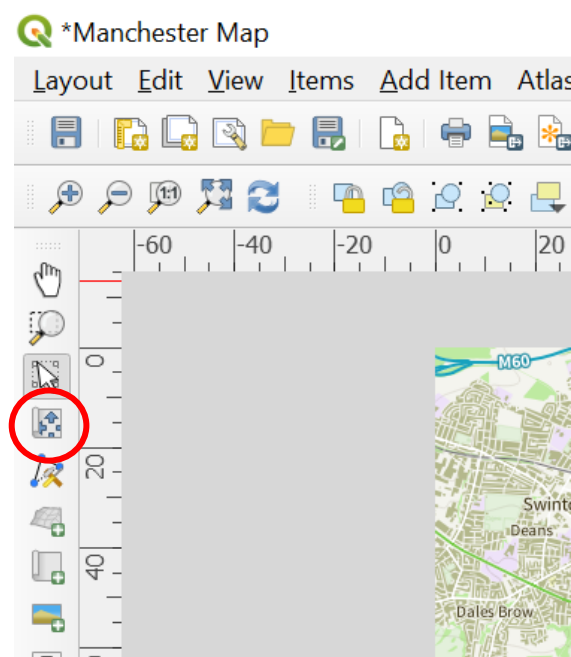


7. Place your cursor at the top left hand corner of your A4 page (0,0). It should snap to the corner.

8. Left click and hold and drag a rectangle across your page and down to the bottom right hand corner. Again, it should snap to the corner. Release your mouse button and your map should now appear.
9. If your map isn't at the right scale, you can zoom in or out by changing the scale within the Main Properties box on the right-hand side. To zoom in you need to lower the scale number, and to zoom out you need to increase it.



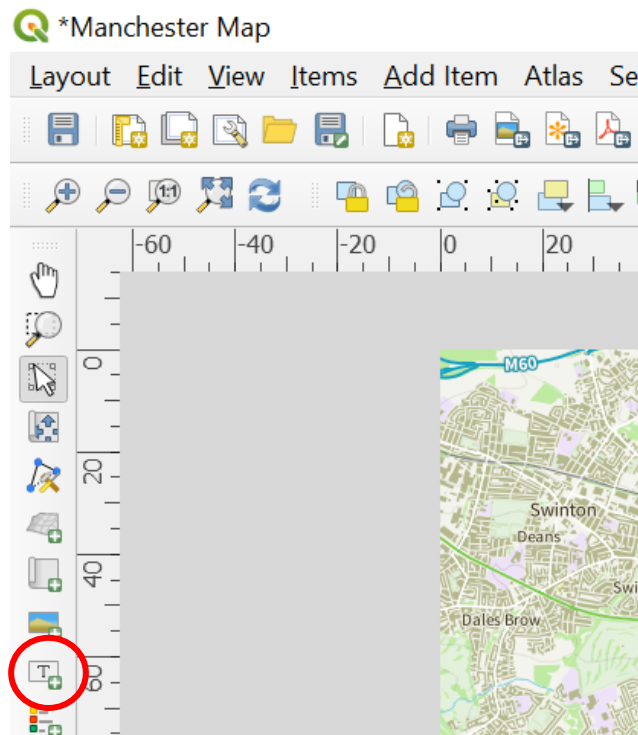
10. If you need to move your map extent slightly (so it's more central for example), then you need to use the **Move Item Content** icon which can be found on the ribbon on the left-hand side of your Print Layout window.



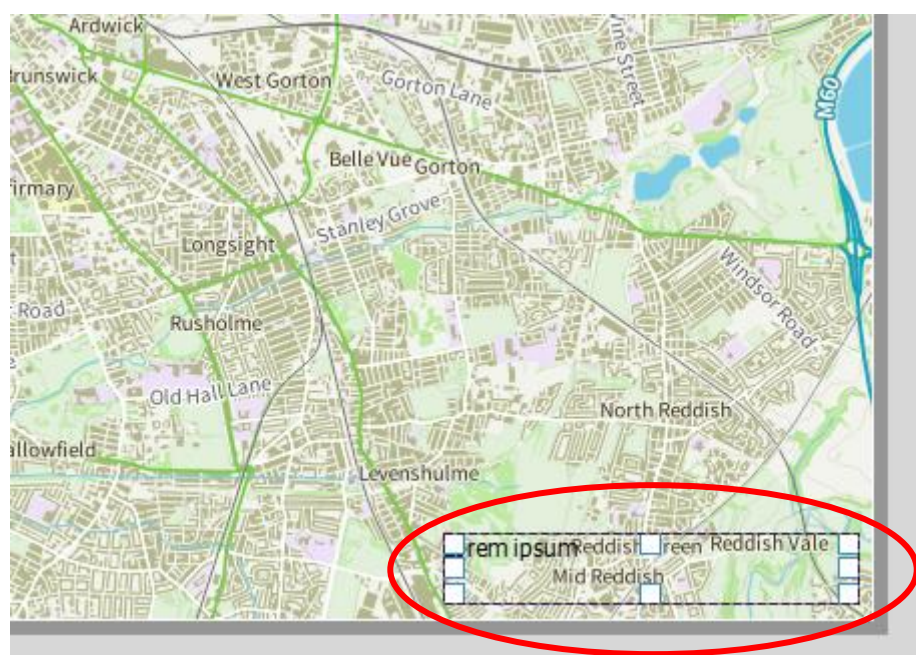
11. Click on the icon and then left-click and hold to drag your map to it's correct position.

The last thing we need to do before printing is add an OS Copyright notice.

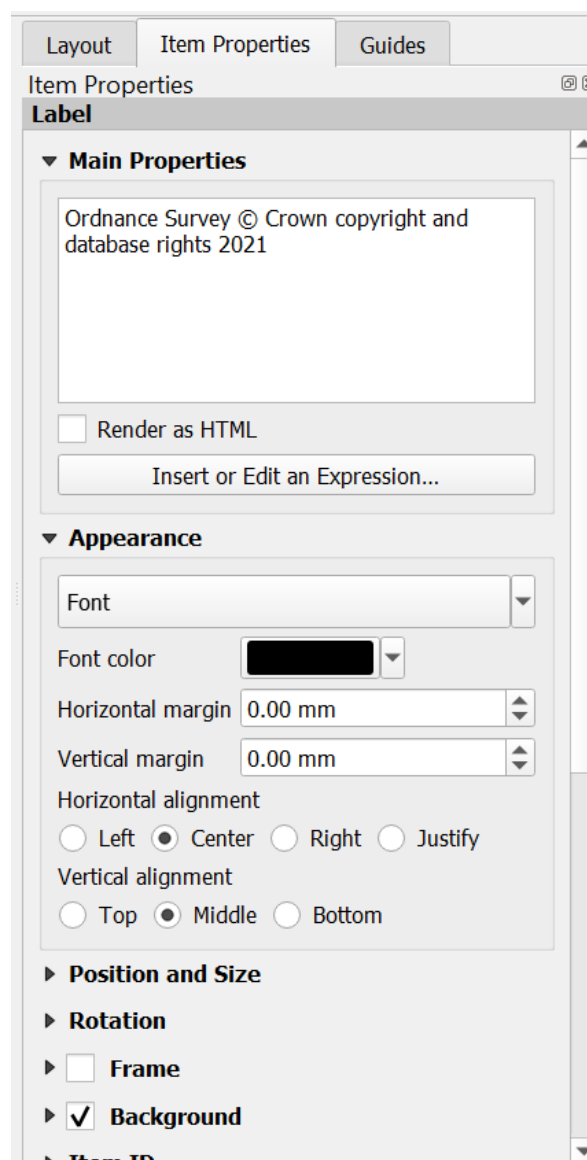
12. Click on the **Add Label** icon on the left-hand side.



13. Draw a rectangle in the bottom right-hand side of your map by left clicking and holding.

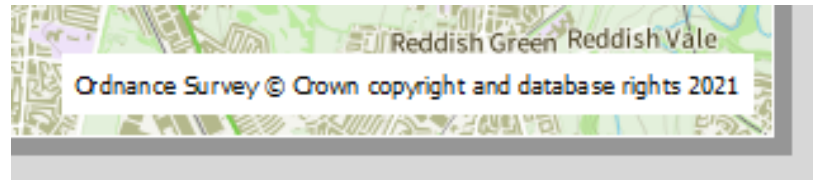


14. In the **Label** box under **Item Properties** change the latin text to 'Ordnance Survey © Crown copyright and database rights 2021' by copy and pasting.
15. Under **Appearance** click on the **Font** dropdown and change the text size to **8.0**.
16. Keep the font colour as black but change the **Horizontal alignment** to **Center** and **Vertical Alignment** to **Middle**.
17. Make sure the **Background** box is ticked and the colour is set to white. You can set this using the **Colour** dropdown.

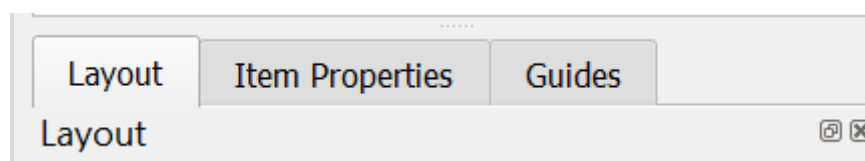


18. Next, increase or decrease your text box size by left clicking and holding to drag the box dimensions up, down, left, or right. You can move the box by left clicking and holding in the middle of the box and then drag it to its new location.

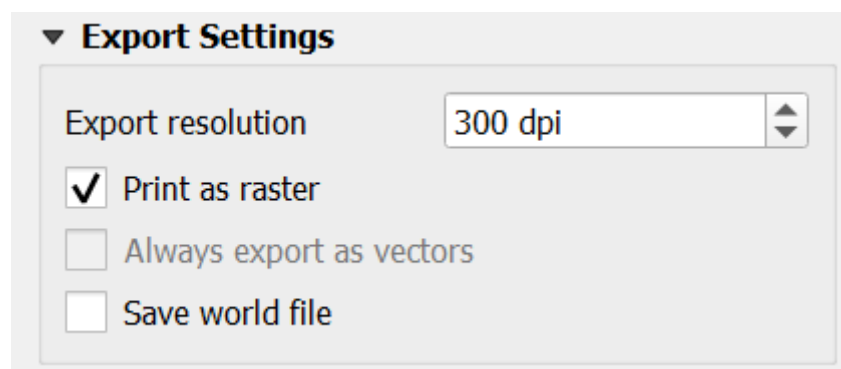
The text should all be on one line and look like this:



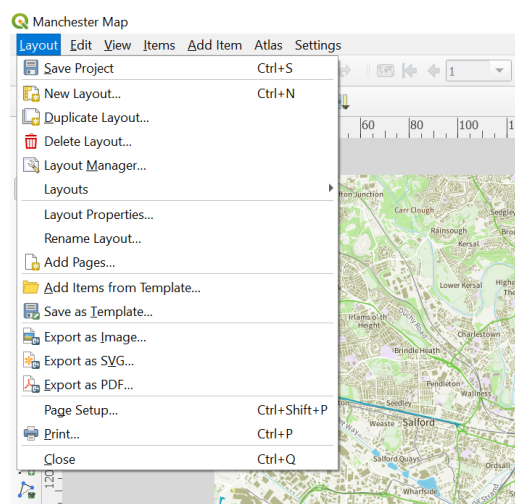
- Next, click on the Layout tab which can be found on the right hand side of your Print Layout window.



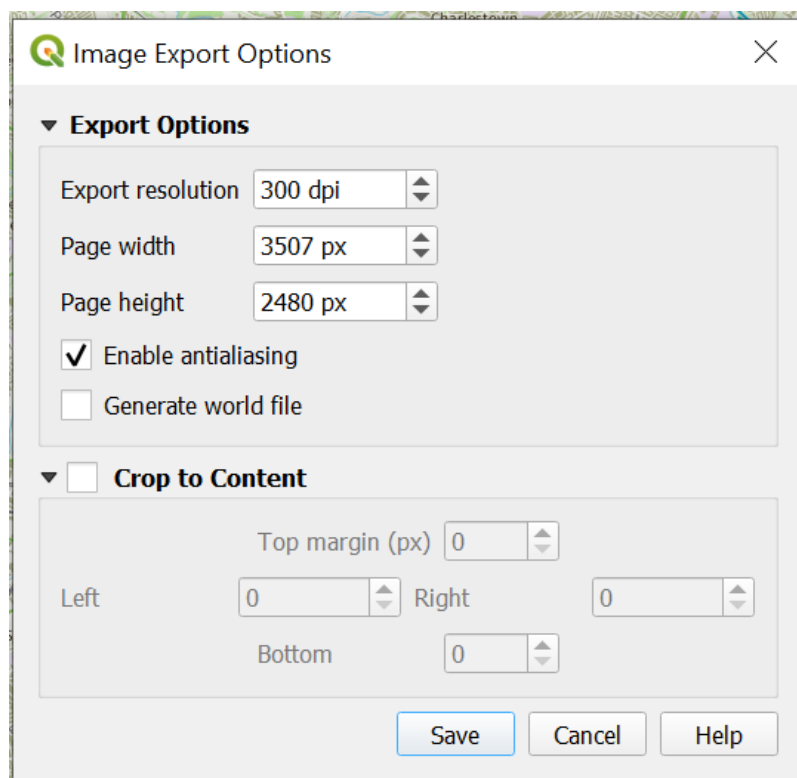
- Under Export Settings change the Export Resolution to 300 dpi and make sure the Print as raster box is checked.



- Next click on Layout from the top left-hand side of your Print Layout window
You will see that there is the option to Export as Image, SVG, or PDF.



22. Choose your preferred export format, and save the document. When the **Image Export Options** pop up appears, double check that your Export resolution is 300 dpi, and click **Save**.



You will now be able to view your image/PDF/SVG from the File Explorer on your PC.

Your map is now ready for printing 😊