

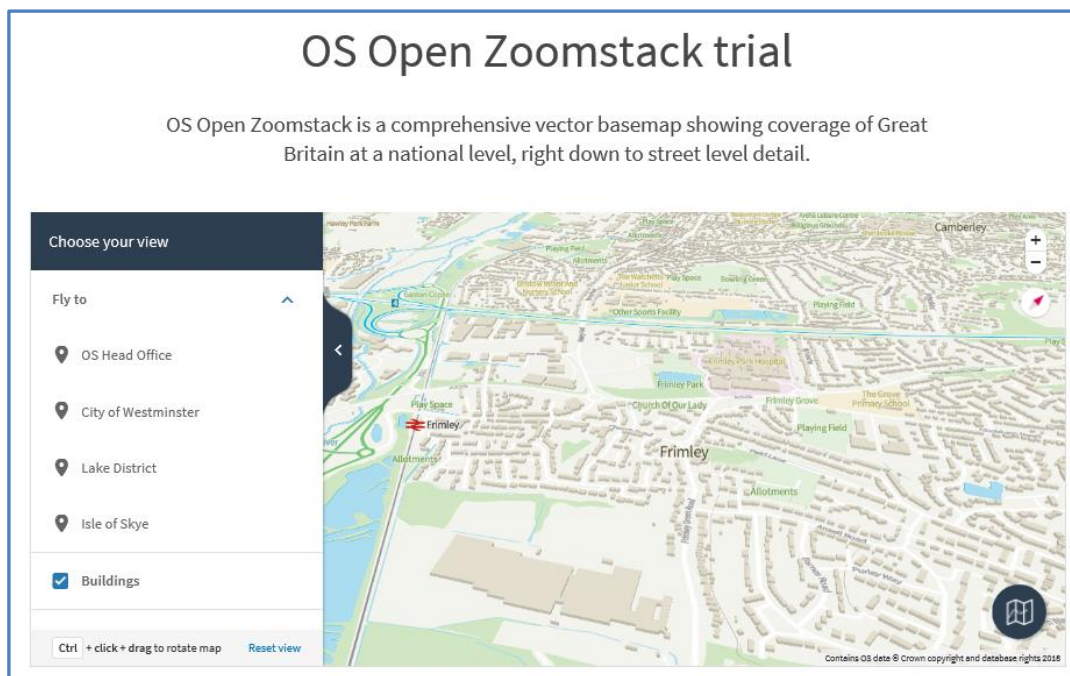
In this White Paper we will explore how to download, access and then style the new **OS Zoomstack** from the Ordnance Survey. This paper explores how to access OS Zoomstack as vector geometry using a GeoPackage data source.

Objectives

- Download OS Zoomstack data – GeoPackage File
- Connect QGIS to the OS Zoomstack data – Using GeoPackage Connection
- Apply OS Styling using QML Files

1 - Download OS Zoomstack data:

At the time of writing this paper (Jan 2019) the OS Zoomstack data was available as a trial download from - [OS Open Zoomstack trial](#)



Before getting started these help and **support guides** published by the Ordnance Survey are very useful:

- OS Zoomstack Vector Tiles - <https://www.ordnancesurvey.co.uk/docs/user-guides/os-open-zoomstack-vector-tiles.pdf>
- OS Zoomstack PostGIS Vector File - <https://www.ordnancesurvey.co.uk/docs/user-guides/os-open-zoomstack-post-gis-export-file.pdf>
- OS Zoomstack GeoPackage - <https://www.ordnancesurvey.co.uk/docs/user-guides/os-open-zoomstack-geopackage.pdf>




This White Paper will utilise the OS Zoomstack GeoPackage download.

Note – much of this paper has been sourced from the advice available in the first OS guide above – **“A guide to getting started with the OS Open Zoomstack GeoPackage”**



What are the benefits? the Ordnance Survey list these as:

- Ease of use – Easy to integrate Ordnance Survey mapping into your application
- Zero data management – We manage all the data, you just use it
- Automatic updates – Data will be refreshed seamlessly (unlikely to happen during the trial period)
- Web and mobile ready – Pixel perfect maps on any device
- Seamless user experience – Vector Tiles pan, zoom, tilt and pitch beautifully
- 4 beautiful cartographic styles – Choose the map which best fits your requirements

 <h3>A single data file</h3> <p>There's no need to crunch 1000's of data files yourself – we've done it for you. The data is available in just one single data file and via an API. It's provided in easy-to-use formats to help you get started quickly.</p>	 <h3>Flexible</h3> <p>The data is compatible with Geographic Information Systems (GIS), web, mobile and offline systems. It's highly customisable, giving you the flexibility you need.</p>	 <h3>Advanced</h3> <p>Vector Tiles contain actual data (not just images) which can be interrogated and analysed. The high-definition mapping also renders quickly, giving a seamless experience.</p>
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This means that the OS Zoomstack can be accessed in both a desktop and webGIS without the need to process and manage 1000's of data files!

To download the latest OS Zoomstack Vector Tiles simply **sign up to the trial** using the online form:

Try OS Open Zoomstack


Complete the form below to sign up to the 3-month trial and become part of our Early Adopter Programme. We'll send you the links to the Zoomstack data and make sure you receive supporting emails to help you through the trial period.
*Denotes a required field.

First name *

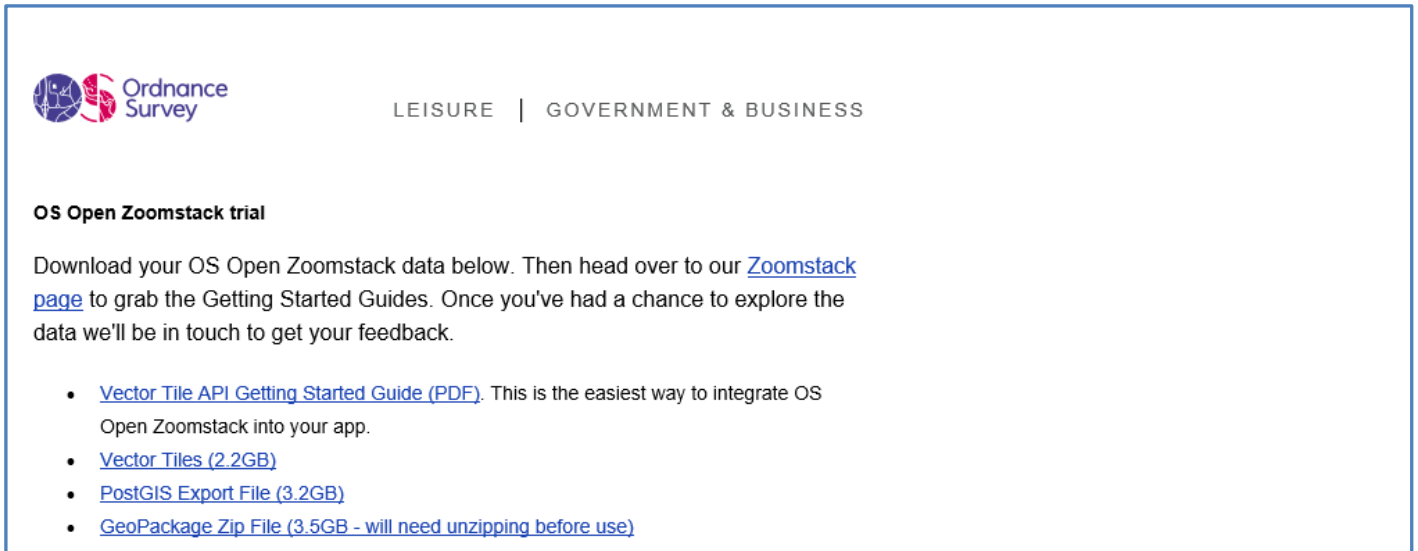
Last name *

Email *

Please tick here if you are happy for Ordnance Survey Limited and its group of companies to email you supporting emails about our Zoomstack data and to request feedback through the trial period.

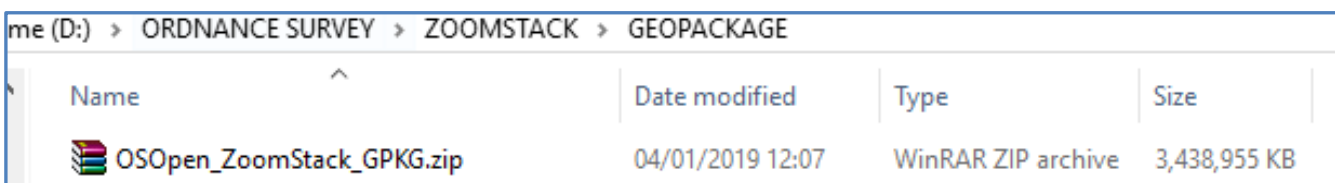
I'm not a robot 

Once signed up you will receive an **email** with links to the datasets:




The screenshot shows an email from Ordnance Survey. The header includes the Ordnance Survey logo and the text "LEISURE | GOVERNMENT & BUSINESS". The main content is titled "OS Open Zoomstack trial" and contains the following text: "Download your OS Open Zoomstack data below. Then head over to our [Zoomstack page](#) to grab the Getting Started Guides. Once you've had a chance to explore the data we'll be in touch to get your feedback." Below this is a bulleted list of links: "Vector Tile API Getting Started Guide (PDF)", "Vector Tiles (2.2GB)", "PostGIS Export File (3.2GB)", and "GeoPackage Zip File (3.5GB - will need unzipping before use)".

Using the **links provided** you can then download the source files. In this paper we will download and utilise the **GeoPackage export**. Once downloaded, copy the files to a shared folder location where your QGIS instance can access them.



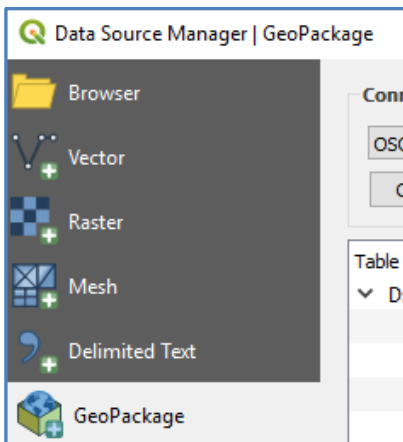
The screenshot shows a Windows File Explorer window with the path "me (D:) > ORDNANCE SURVEY > ZOOMSTACK > GEOPACKAGE". The table below represents the contents of the folder:

Name	Date modified	Type	Size
 OSOpen_ZoomStack_GPKG.zip	04/01/2019 12:07	WinRAR ZIP archive	3,438,955 KB

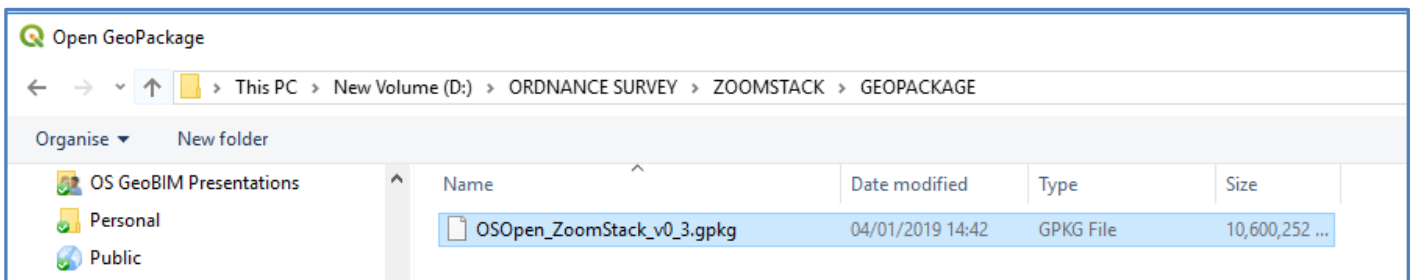
3 – Connect QGIS to the OS Zoomstack data – Using GeoPackage Connection

To view the OS Zoomstack data within QGIS you will need to create a **New Connection** to the GeoPackage data file.

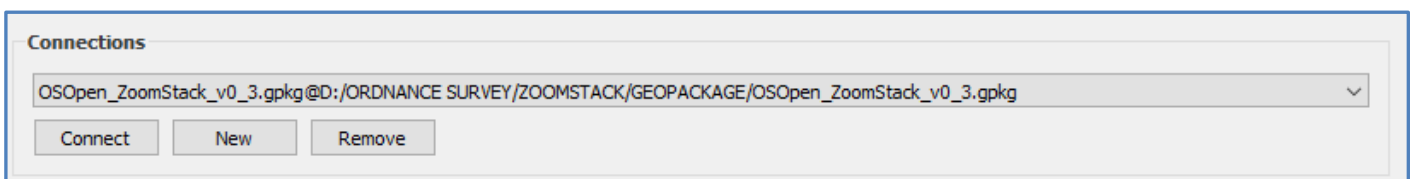
In QGIS, open the **Data Source Manager** and choose **GeoPackage**:



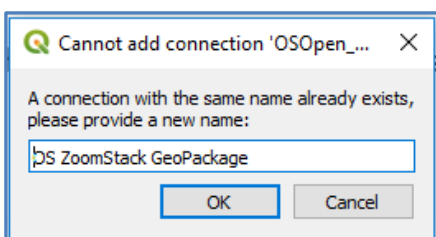
Firstly, choose the **location** of the downloaded **GeoPackage** file:



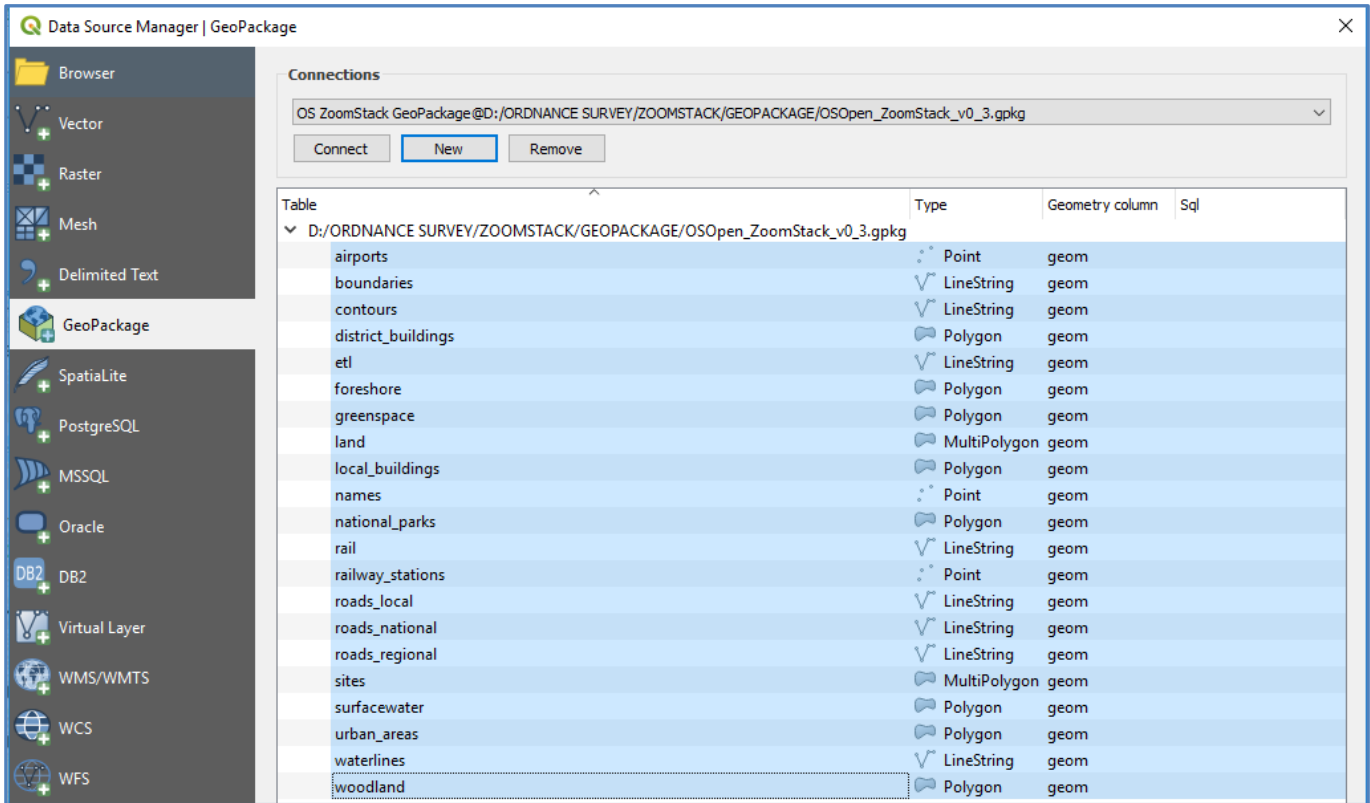
The **Name** for the Connection will be taken from the name/location of the GeoPackage file chosen.



If the same Connection already exists, then you can specify a **new Name**.



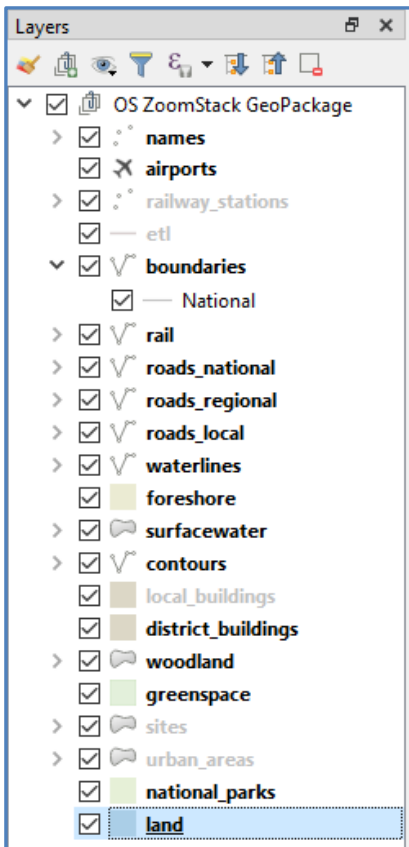
Once you have chosen to Connect, the list of layers available within OS Zoomstack is shown. **Select** all the layers and choose **Add** to open the layers into QGIS.



The OS Zoomstack layers are then added to your map window – *unstyled*.



Re-Order the layers, with the OS suggesting the optimum order being:







4 - Apply OS Styling using QML Files:

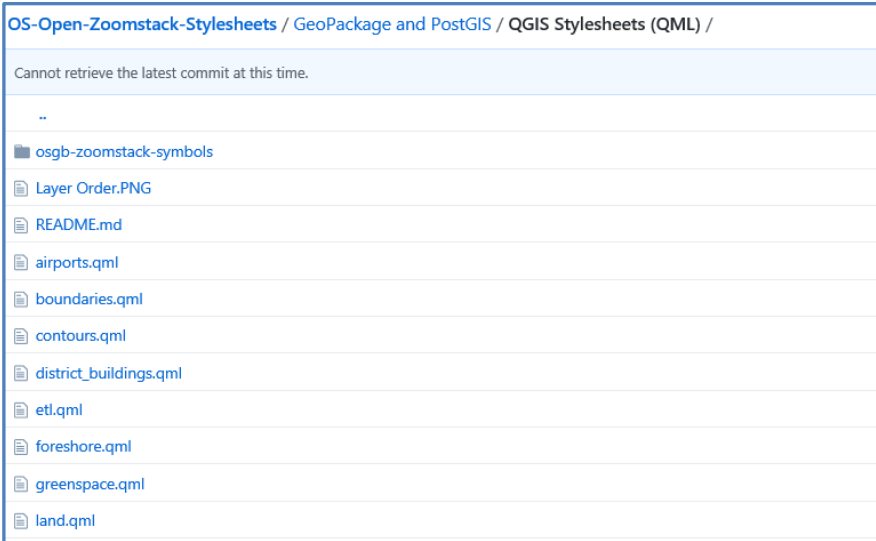
The following web page provides a download link to access the **OS Zoomstack Style Files** for QGIS:

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

The links will provide access to download the style files in several formats, including SLD (GeoServer), MapBox GL Styles, and QML for QGIS:

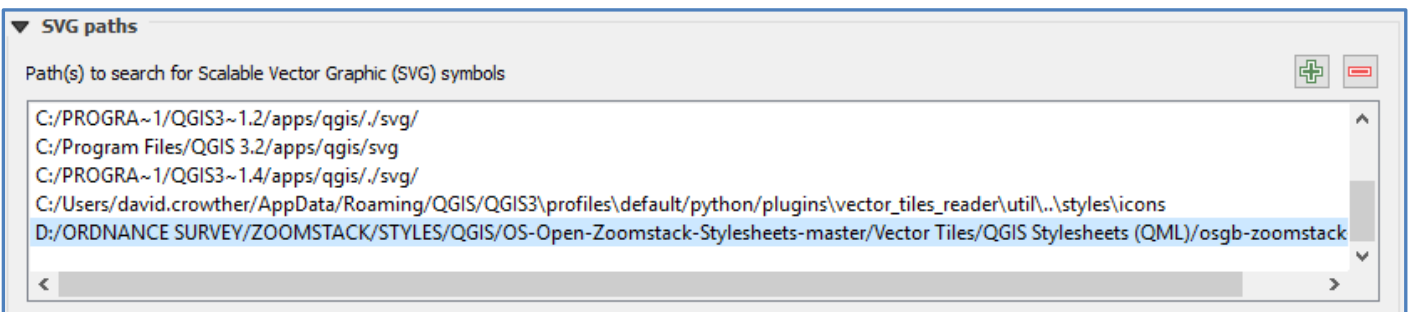
 Colour Values	Update README.md	Jul 17, 2018
 GeoPackage and PostGIS	update names.qml	Aug 29, 2018
 Vector Tiles	Update README.md	Aug 16, 2018
 README.md	Update README.md	Jul 8, 2018

Downloading the **GeoPackage and PostGIS > QGIS Stylesheets** will provide all the required QML style files:



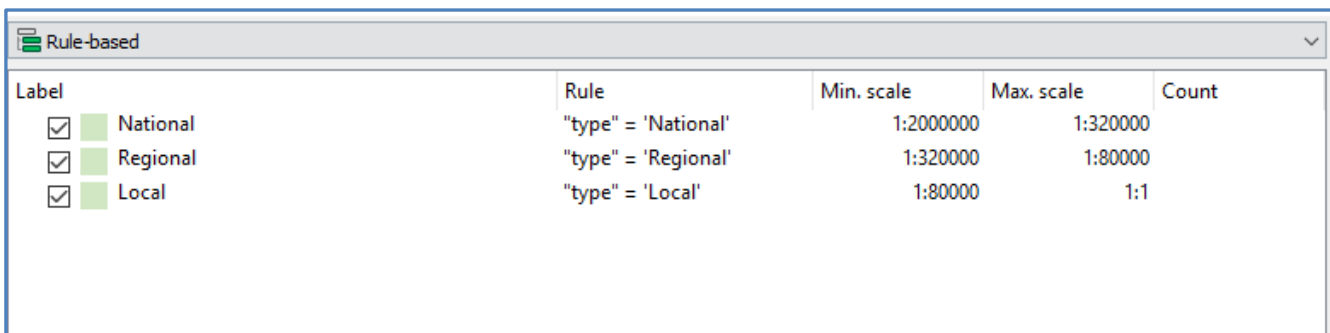
Name	Date modified	Type	Size
osgb-zoomstack-symbols	29/08/2018 05:27	File folder	
airports.qml	29/08/2018 05:27	QML File	15 KB
boundaries.qml	29/08/2018 05:27	QML File	16 KB
contours.qml	29/08/2018 05:27	QML File	16 KB
district_buildings.qml	29/08/2018 05:27	QML File	14 KB
etl.qml	29/08/2018 05:27	QML File	14 KB
foreshore.qml	29/08/2018 05:27	QML File	14 KB
greenspace.qml	29/08/2018 05:27	QML File	14 KB
land.qml	29/08/2018 05:27	QML File	14 KB
Layer Order.PNG	29/08/2018 05:27	PNG File	14 KB

For more complicated styling QGIS uses **SVG files** to render textures within polygon features (e.g. woodland features in OSMM) and to show images for points of interest (e.g. rail stations). To utilise these SVG files ensure that you copy the folder of SVGs called 'osgb-zoomstack-symbols' into your **QGIS SVG paths**:



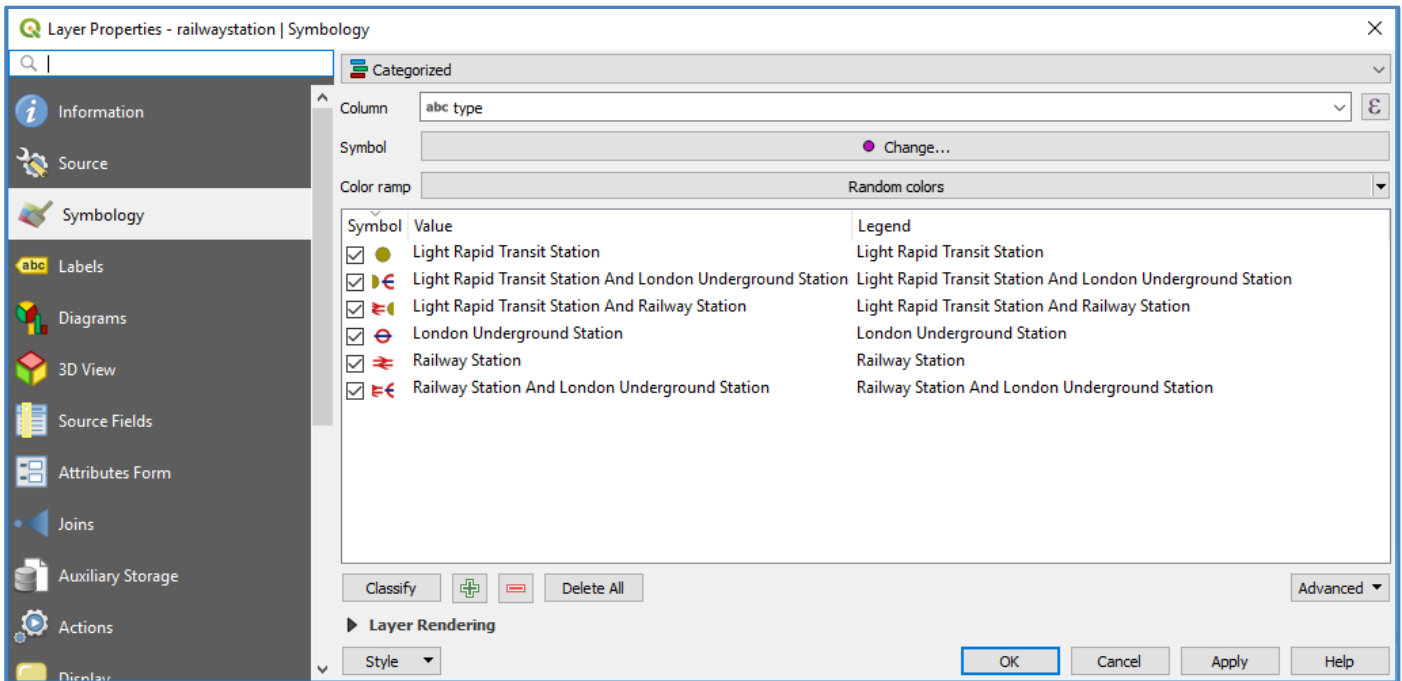
Now in QGIS, choose each of the OS Zoomstack layers from the layers panel in turn and select the **Properties** Tab. In the **STYLE** tab choose Style > **Load Style** > **Load from File** > selecting each of the QML files that relate to that layer.

The QML style file may simply render one type of fill colour, or in some cases apply **Rule Based** styling so that the features change as the user zooms in and out of the map.



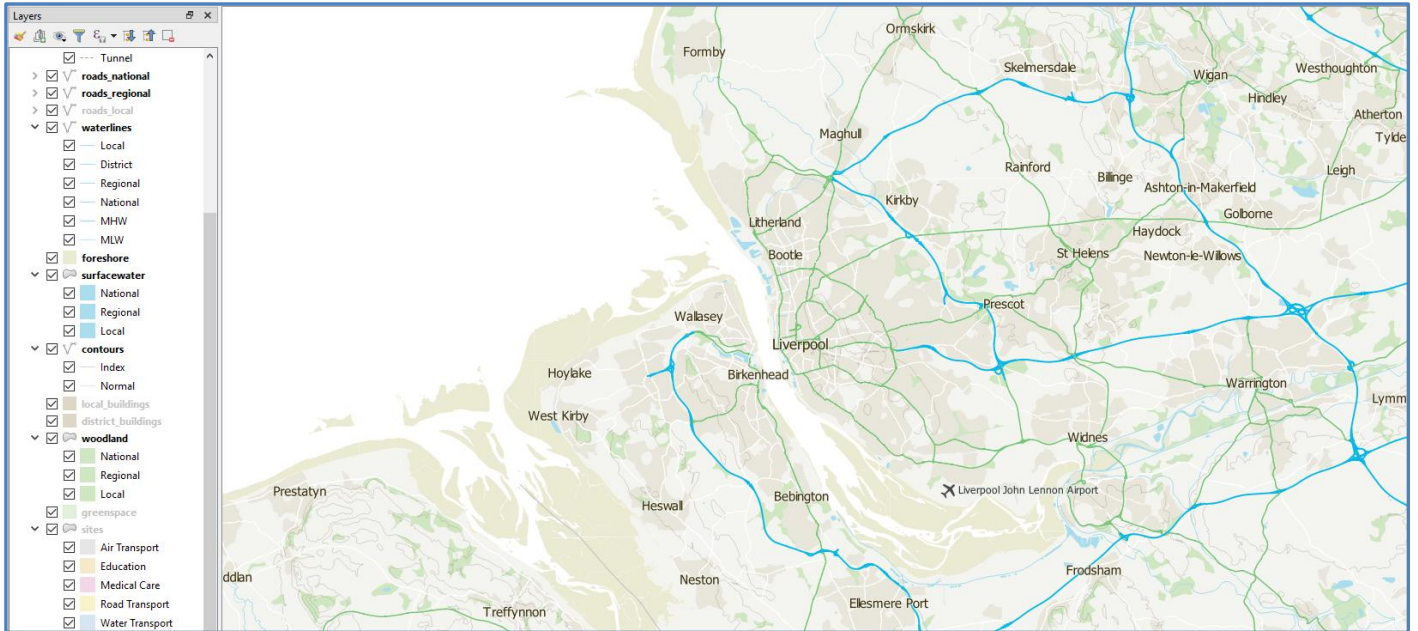
Label	Rule	Min. scale	Max. scale	Count
<input checked="" type="checkbox"/> National	"type" = 'National'	1:2000000	1:320000	
<input checked="" type="checkbox"/> Regional	"type" = 'Regional'	1:320000	1:80000	
<input checked="" type="checkbox"/> Local	"type" = 'Local'	1:80000		1:1

In the case of the Railways Stations the **SVG images** are used to define railway stations, tube stations etc...

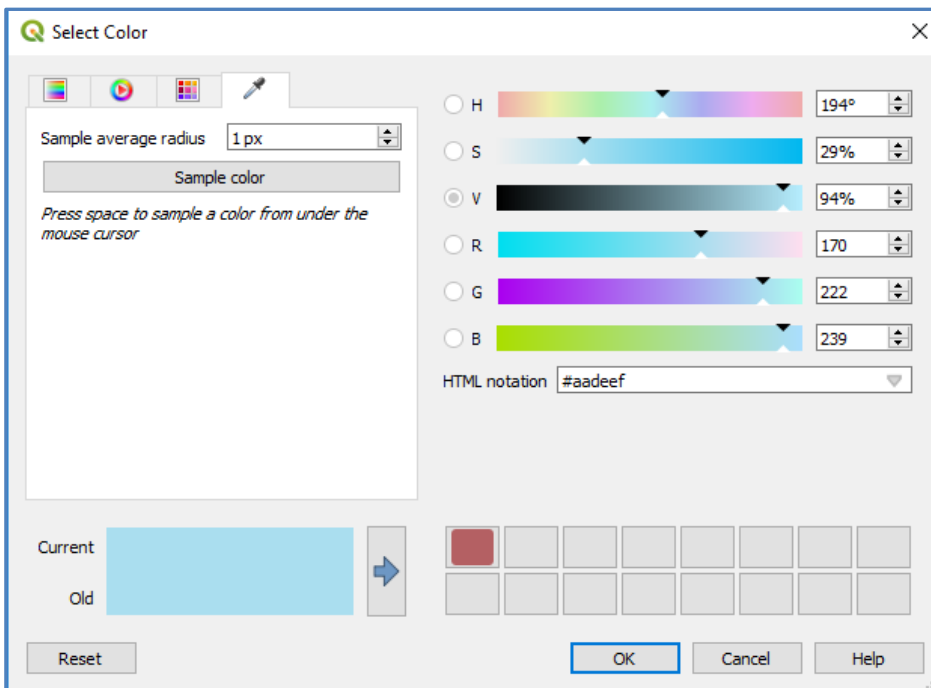


Symbol	Value	Legend
<input checked="" type="checkbox"/>	Light Rapid Transit Station	Light Rapid Transit Station
<input checked="" type="checkbox"/>	Light Rapid Transit Station And London Underground Station	Light Rapid Transit Station And London Underground Station
<input checked="" type="checkbox"/>	Light Rapid Transit Station And Railway Station	Light Rapid Transit Station And Railway Station
<input checked="" type="checkbox"/>	London Underground Station	London Underground Station
<input checked="" type="checkbox"/>	Railway Station	Railway Station
<input checked="" type="checkbox"/>	Railway Station And London Underground Station	Railway Station And London Underground Station

Once you have loaded the QML notice how QGIS auto styles the OS Zoomstack data into each **Feature Type**.



To add a tint to your map, from the top menu select **Project > Project Properties** and change the background colour to **R170 G222 B239**.



The Map now has a tint where the sea is coloured blue.

