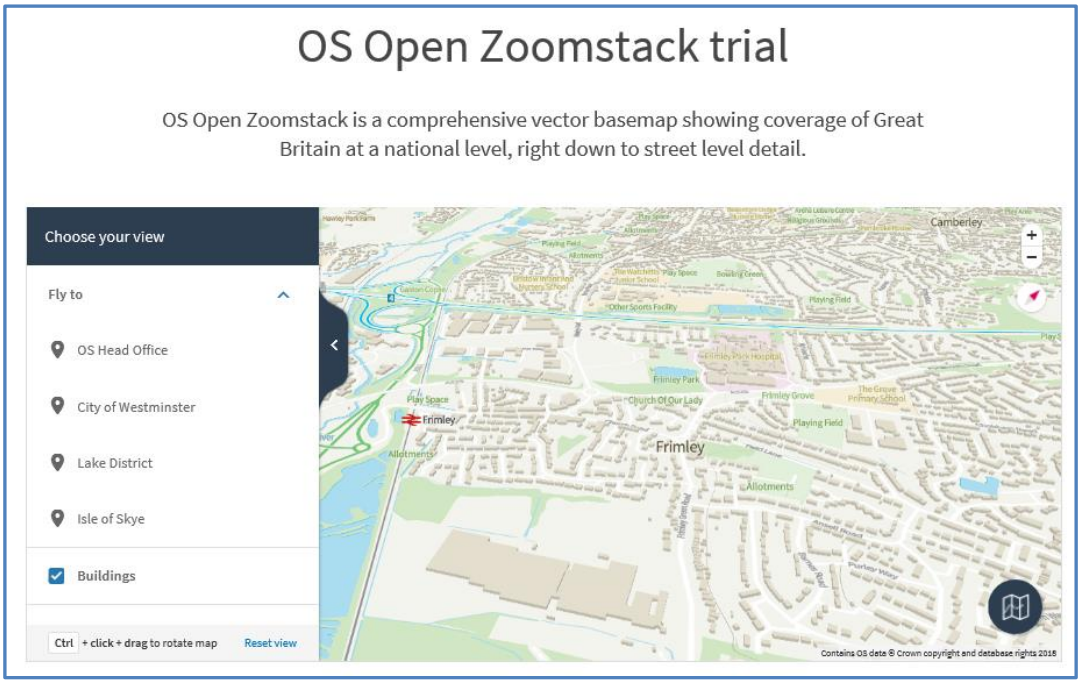
In this White Paper we will explore how to download, access and then style the new **OS Zoomstack** from the Ordnance Survey. This paper explores how to access OS Zoomstack as vector geometry using a GeoPackage data source.

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:

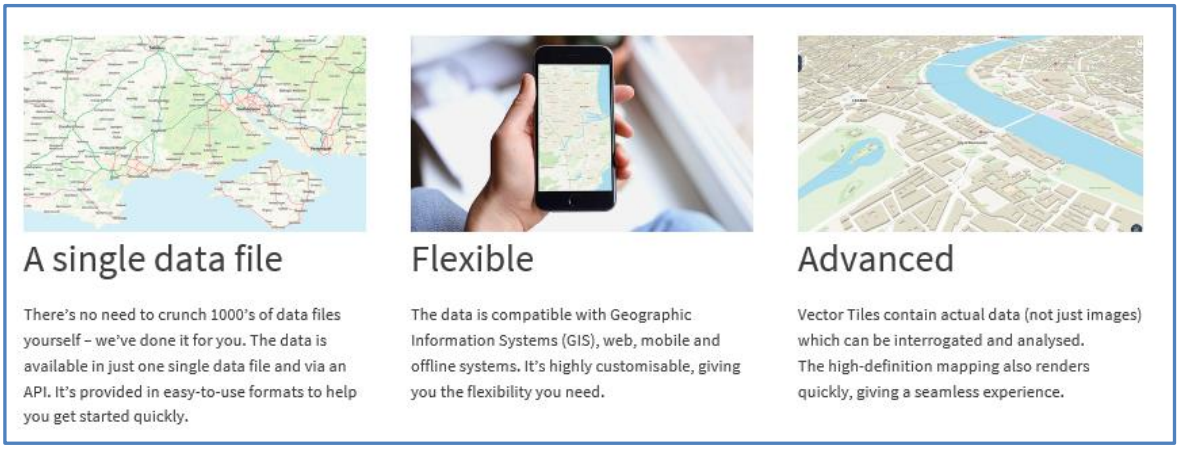
- OS Zoomstack Vector Tiles - https://www.ordnancesurvey.co.uk/docs/user-guides/os-open-zoomstack-vector-tiles.pdf
- OS Zoomstack PostGIS Vector File - https://www.ordnancesurvey.co.uk/docs/user-guides/os-open-zoomstack-post-gis-export-file.pdf
- OS Zoomstack GeoPackage - https://www.ordnancesurvey.co.uk/docs/user-guides/os-open-zoomstack-geopackage.pdf

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"

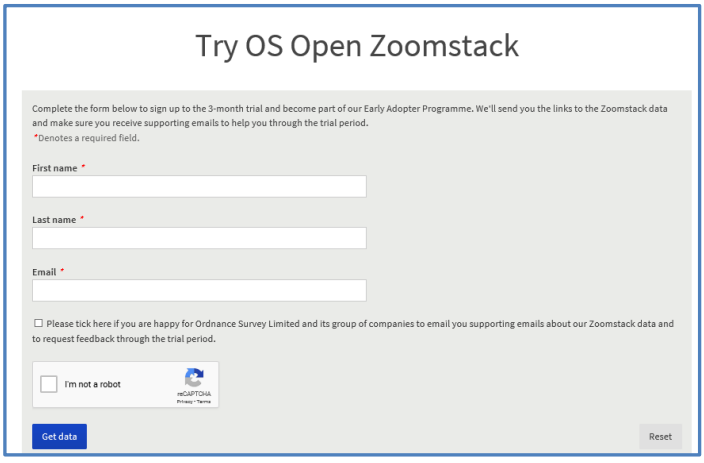
What are the benefits? ….. the Ordnance Survey list these as:

- 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

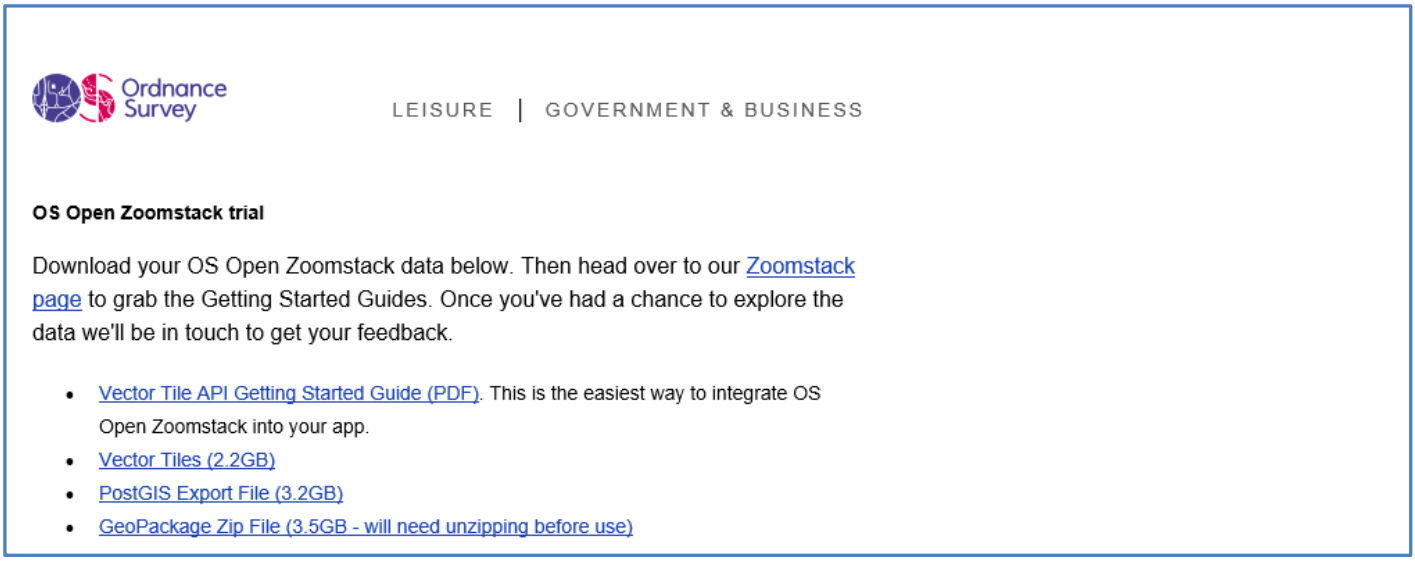


This means that the OS Zoomstack can be accessed in both a desktop and webGIS without the need to process and manage 1000's of data files!

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



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



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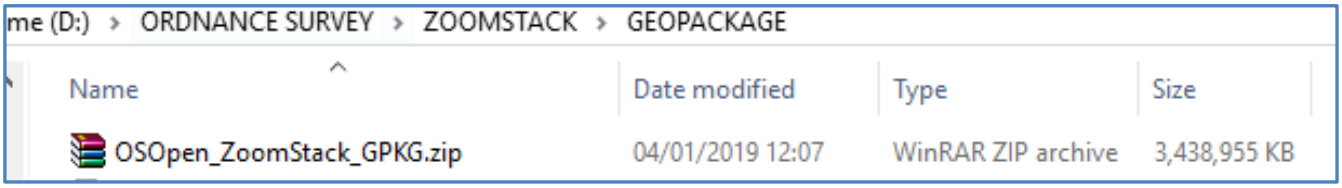
OS Open Zoomstack trial

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.

- Vector Tile API Getting Started Guide (PDF). This is the easiest way to integrate OS Open Zoomstack into your app.
- Vector Tiles (2.2GB)
- PostGIS Export File (3.2GB)
- 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.



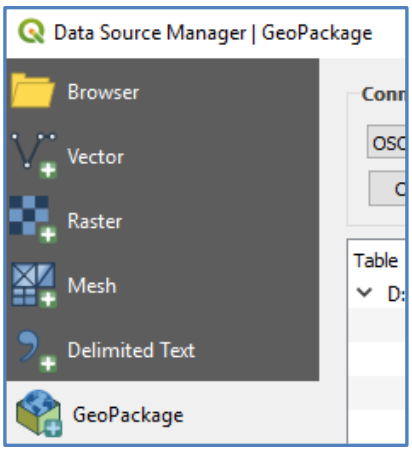
me (D:) › ORDNANCE SURVEY › ZOOMSTACK › GEOPACKAGE

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

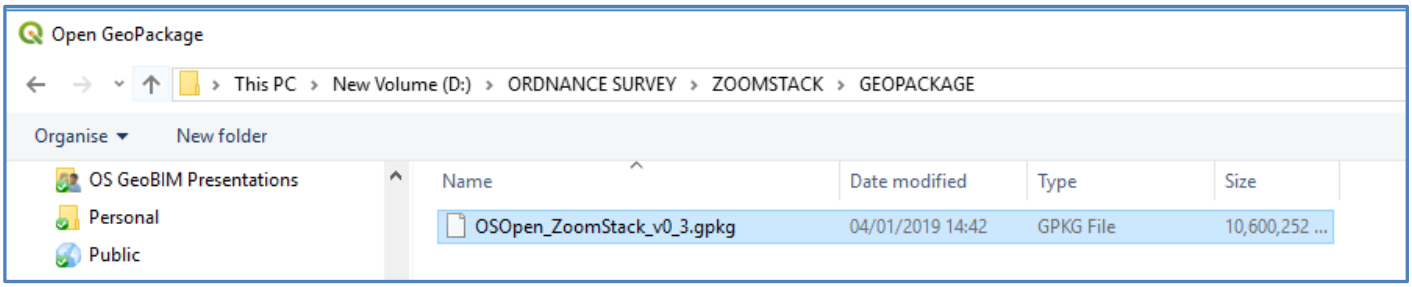
3 – Connect QGIS to the OS Zoomstack data – Using GeoPackage Connection

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

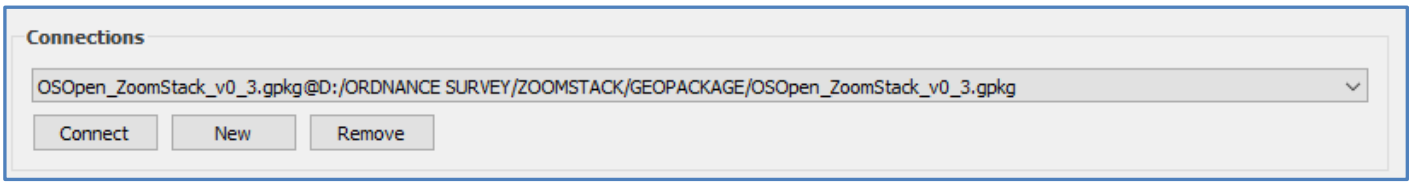
In QGIS, open the **Data Source Manager** and choose **GeoPackage:**



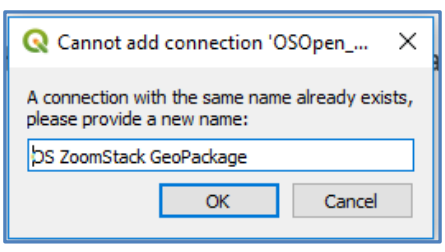
Firstly, choose the **location** of the downloaded **GeoPackage file**:



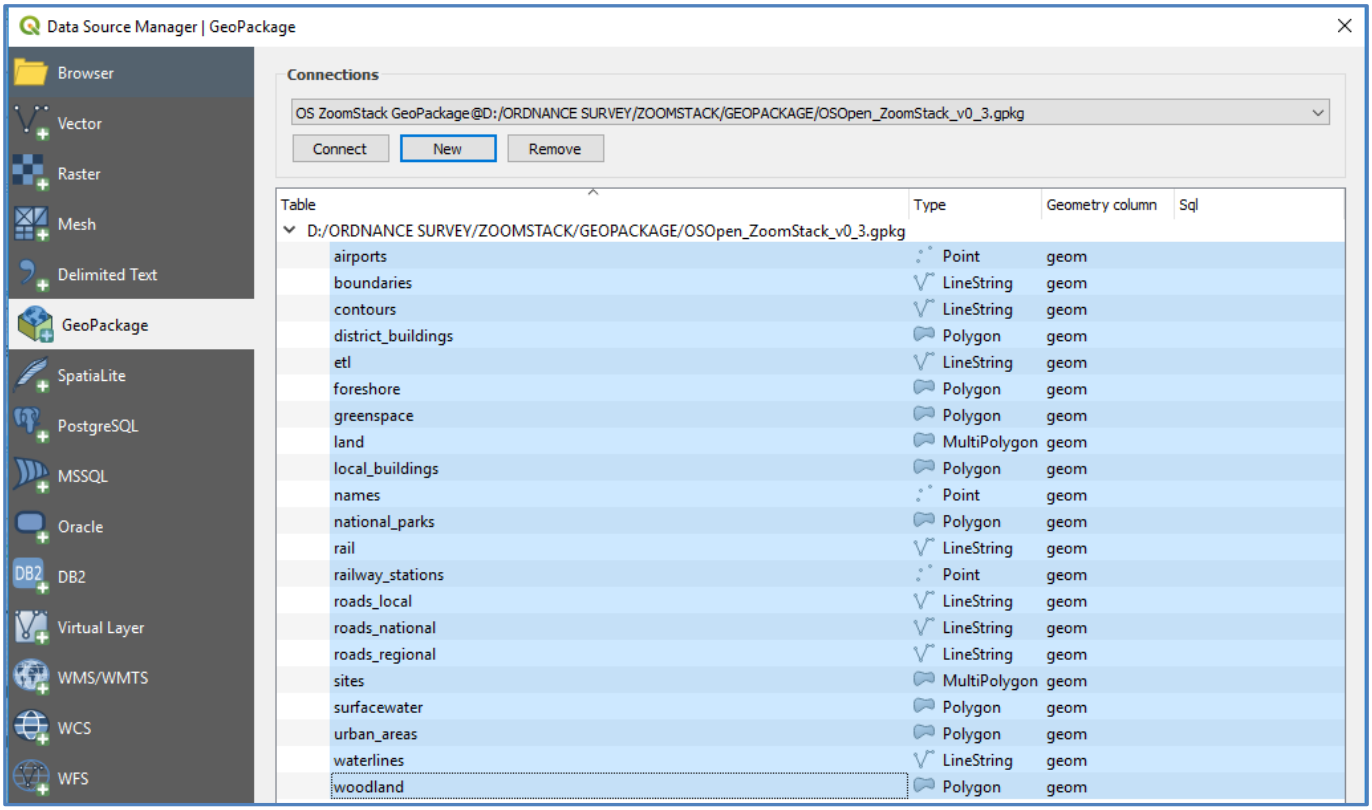
The **Name** for the Connection will be taken from the name/location of the GeoPackage file chosen.



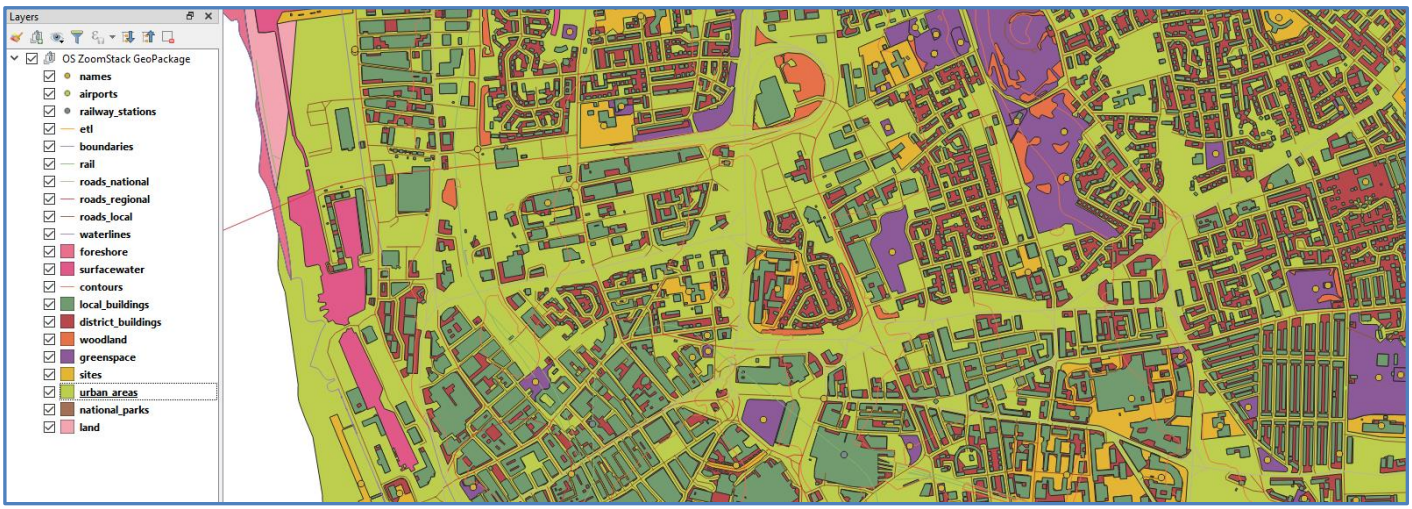
If the same Connection already exists, then you can specify a **new Name.**



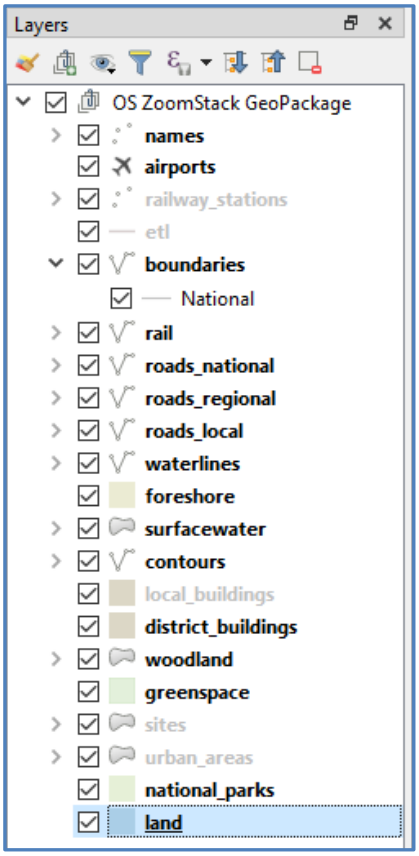
Once you have chosen to Connect, the list of layers available within OS Zoomstack is shown. **Select** all the layers and choose **Add** to open the layers into QGIS.



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



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

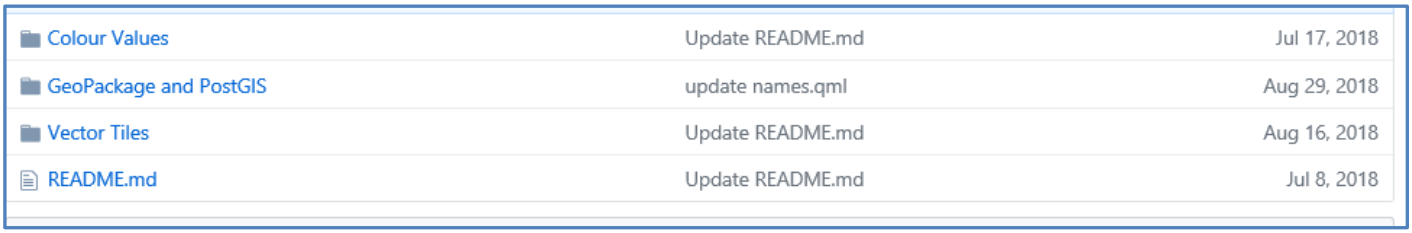


4 - Apply OS Styling using QML Files:

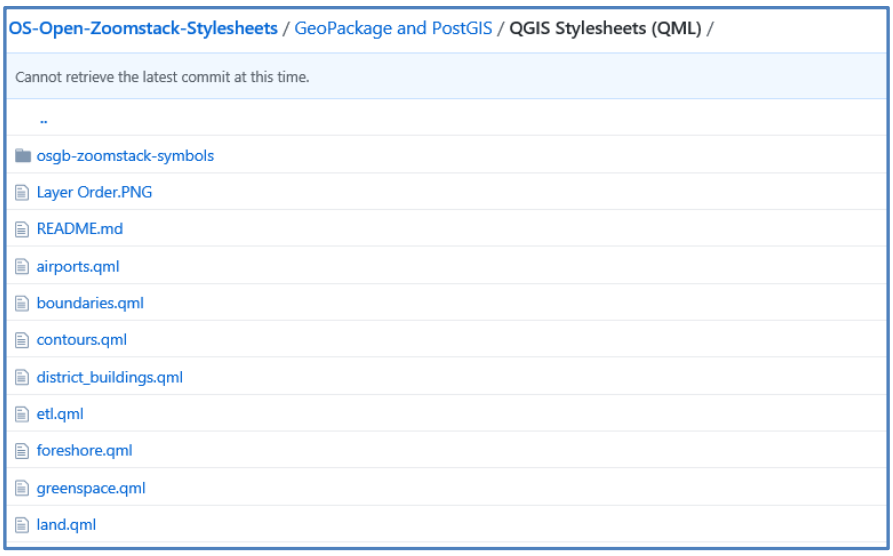
The following web page provides a download link to access the **OS Zoomstack Style Files** for QGIS:

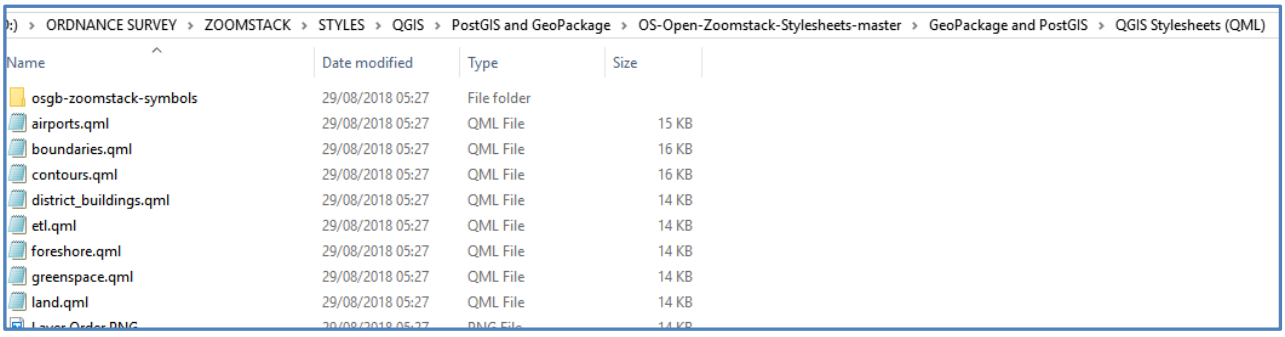
https://github.com/OrdnanceSurvey/OS-Open-Zoomstack-Stylesheets

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

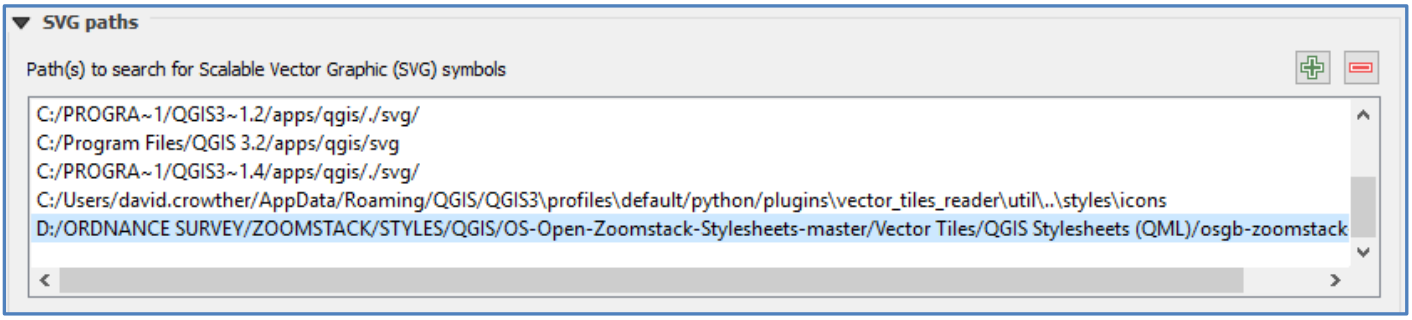


Downloading the **GeoPackage and PostGIS** > **QGIS Stylesheets** will provide all the required QML style files:



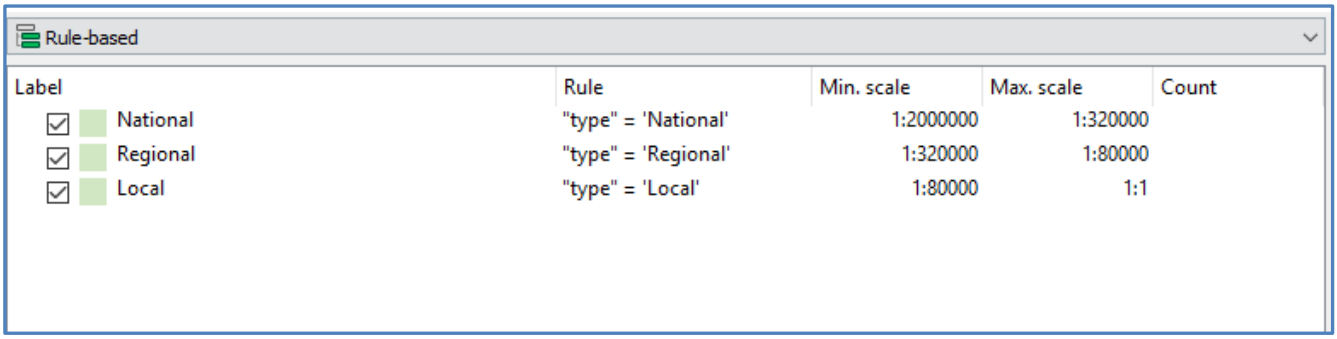


For more complicated styling QGIS uses **SVG files** to render textures within polygon features (e.g. woodland features in OSMM) and to show images for points of interest (e.g. rail stations). To utilise these SVG files ensure that you copy the folder of SVGs called 'osgb-zoomstack-symbols' into your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

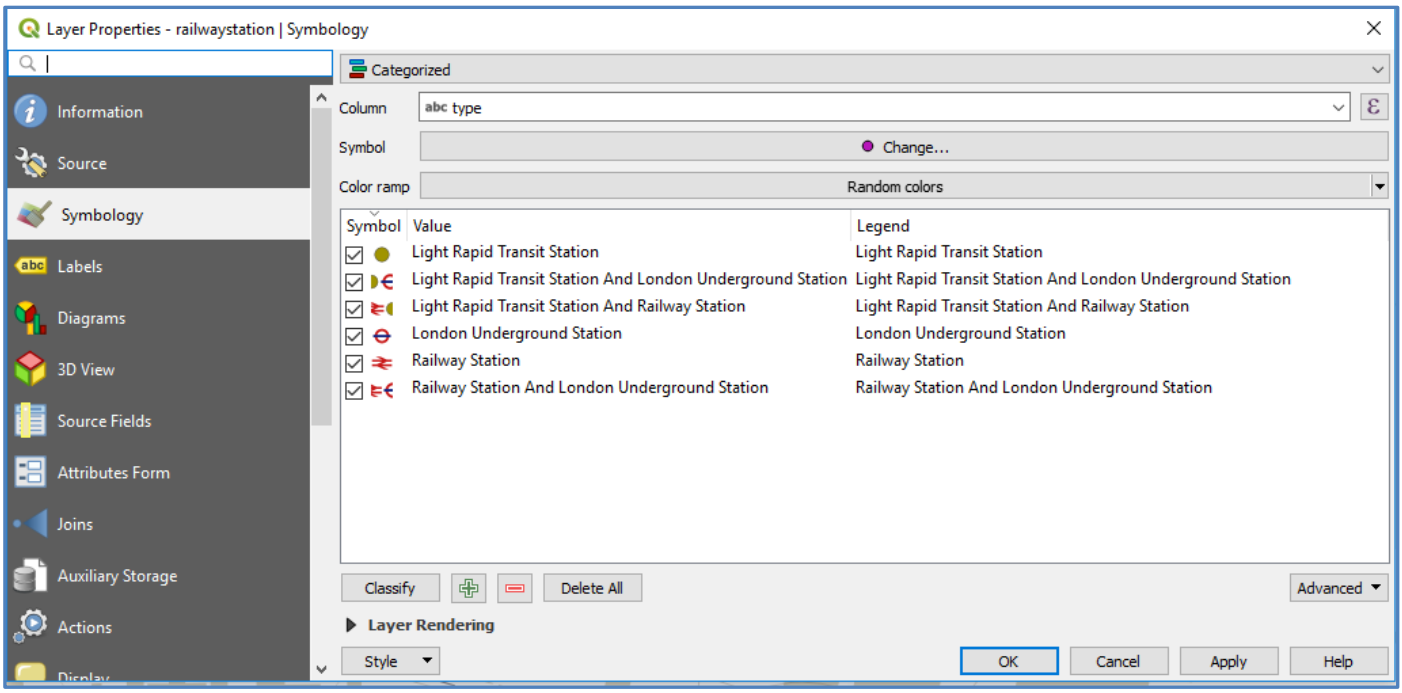


Now in QGIS, choose each of the OS Zoomstack layers from the layers panel in turn and select the **Properties** Tab**.** In the **STYLE** tab choose Style > **Load Style** > **Load from File** > selecting each of the QML files that relate to that layer.

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.

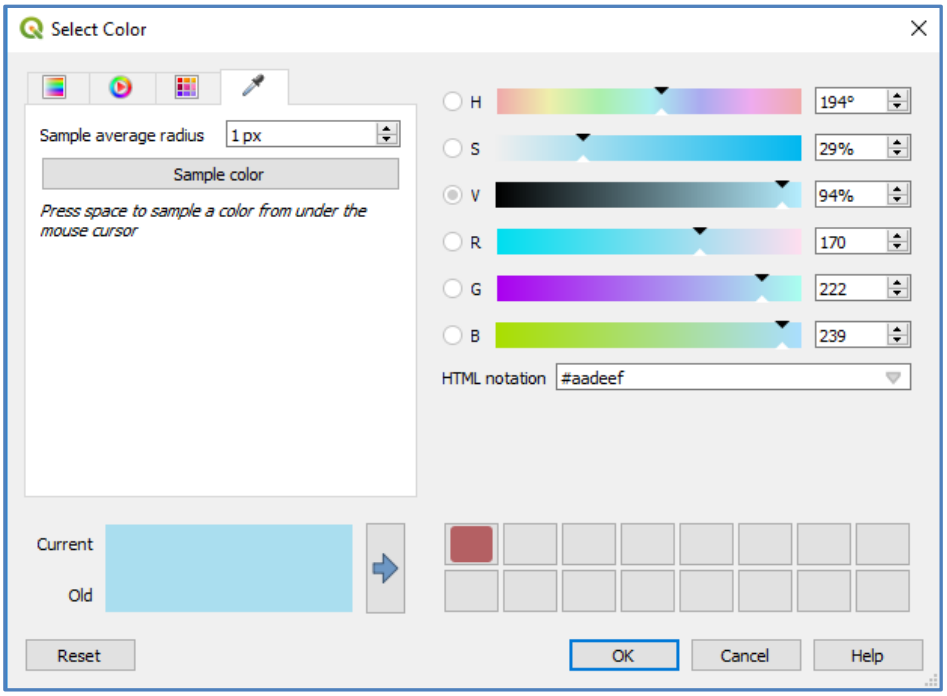


In the case of the Railways Stations the **SVG images** are used to define railway stations, tube stations etc…



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.**