# Leaflet

<https://leafletjs.com/examples/quick-start/>

Reference: <https://leafletjs.com/reference.html>

Examples: https://github.com/tomickigrzegorz/leaflet-examples

OS premium topo leaflet: <https://labs.os.uk/public/os-data-hub-examples/os-maps-api/zxy-27700-basic-map#leaflet>

## Gotchas

If you add a marker which is not within the map bounds, the map will not display.

## Adding Overlays

<https://github.com/OrdnanceSurvey/os-data-hub-tutorials/blob/main/quick-start/examples/leaflet-adding-overlays.md>

<https://labs.os.uk/public/os-data-hub-tutorials/code-playground/#quick-start-adding-overlays-leaflet>

### Adding a Walk track to a map

See <https://labs.os.uk/public/os-data-hub-tutorials/code-playground/#quick-start-adding-overlays-leaflet>

<https://leafletjs.com/reference.html#polyline>

Using LIVE <http://localhost:4845/Walks/Details/13568>

See Walk details

1. Load any track into viewdata (in controller)
2. Create javascript array containing track points
3. Use L.polyline

# Coordinate conversion

Helper functions: <https://github.com/OrdnanceSurvey/os-transform>

Three different co-ordinate reprentations are in play:

## WGS84 (EPSG:4326)

is latitude and longtitude, centred on 0,0 (off the west cost of central africa)

In degrees.

E.g. ambleside is -2.967934, 54.424802  
  
Longitude: -2.967934, 54.424802  
Lng DecMinSec: -2° 58' 4.56"  
Latitude: 54.424802  
Lat DecMinSec: 54° 25' 29.29"

<https://epsg.io/4326>

## British National Grid (a.k.a. ESPG:27700)

Easting and Northing, measured in metres

From centre near the scottish border 305371.94 610575.38

## OS Grid Reference

This is what is used on paper maps, and what is stored as waypoint info.

E.g. NY 21541 07216

## Using os-transform.js

<https://github.com/OrdnanceSurvey/os-transform#usage>

To transform from OS Grid Ref to ESPG:27000

os.Transform.fromGridRef("NY 37297 03695");  
// Returns { ea: 337297, no: 503695 }

# OS Maps APIs

|  |  |
| --- | --- |
| Page | URL |
| Start page | <https://www.ordnancesurvey.co.uk/business-government/products/maps-api> |
| API Doco home page | https://osdatahub.os.uk/ |
| API usage dashboard | https://osdatahub.os.uk/dashboard |
| OS Maps Walking Project | https://osdatahub.os.uk/projects/BriansWalkingSite |
| Code Samples | <https://labs.os.uk/public/os-data-hub-examples/os-maps-api/zxy-27700-basic-map#leaflet> |
| Code samples - github | https://github.com/OrdnanceSurvey/os-data-hub-tutorials |
| Code playground | <https://labs.os.uk/public/os-data-hub-tutorials/code-playground/#quick-start-adding-overlays-leaflet> |
| Coordinate transformation helper functions | <https://github.com/OrdnanceSurvey/os-transform> |

## Brian’s Walking Site

https://osdatahub.os.uk/projects/BriansWalkingSite

Project API key: 468YAE3SzsjV8Uu8XPPDQpVVh2mA67vC

Project API secret: QGsiFKvxyoXrzV4B

## ZXY raster API

**Endpoint address:**

[https://api.os.uk/maps/raster/v1/zxy/Leisure\_27700/{z}/{x}/{y}.png?key=468YAE3SzsjV8Uu8XPPDQpVVh2mA67vC](https://api.os.uk/maps/raster/v1/zxy/Leisure_27700/%7bz%7d/%7bx%7d/%7by%7d.png?key=468YAE3SzsjV8Uu8XPPDQpVVh2mA67vC)

**Overview:**

OS Maps API is available as **EPSG:27700** (British National Grid which is applicable just for GB) and EPSG:3857 (Web Mercator which is a global coordinate system). All four of our styles are available; Road, Outdoor, Light in both 27700 and 3857, **plus Leisure in 27700**. The API is available using the Open Geospatial Consortium Web Map Tile Service (OGC WMTS) standard and **Restful ZXY**.

Graphical user interface

Description automatically generated with medium confidence

# Building HillDetailsMap

Example:

<http://localhost:4845/Walks/HillDetailsMap/3826>

Using CSS based on <https://joshuafrazier.info/leaflet-basics/>

**Stopped using normal site layout with the following lines:**

@{

Layout = null; // get rid of the \_SiteLayout.cshtml structure

}

Created new site layout CSS to get the view looking okay.

# Debugging Javascript in Chrom DevTools

Go to the Sources tab, select the file – this will show any syntax errors at runtime.

# Re-skinning the site

## Top/Bottom nav

Navbar with image

<https://www.w3schools.com/howto/howto_css_navbar_image.asp>

# Adding Track overlay to walk details

<https://leafletjs.com/reference.html#polyline>

<https://stackoverflow.com/questions/37909071/populate-datatable-in-c-sharp-from-gpx-file>

1. **Read GPX file into XmlDocument DONE**
2. **Populate array from ViewData[“TrackPoints”];**
3. **Feed array into polyline function**