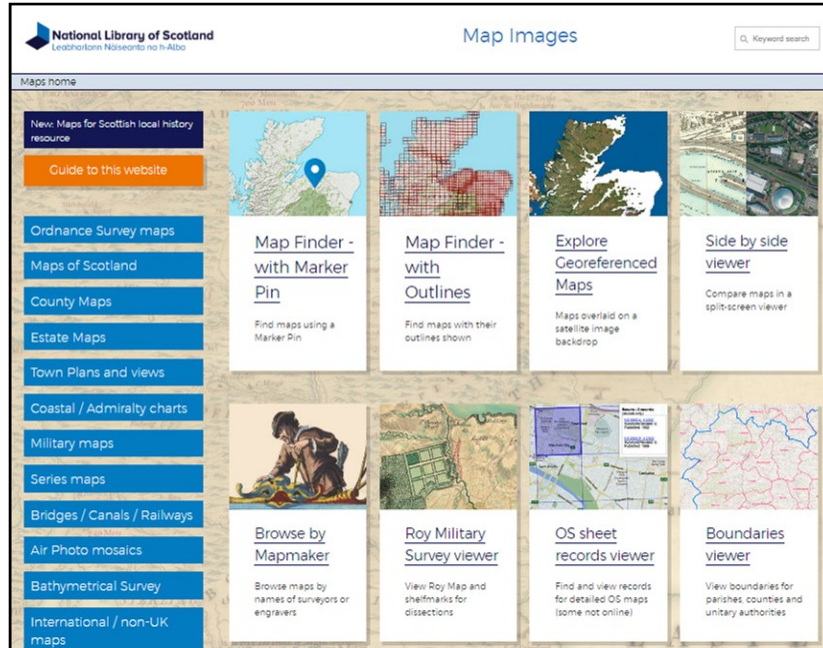


Chris Fleet

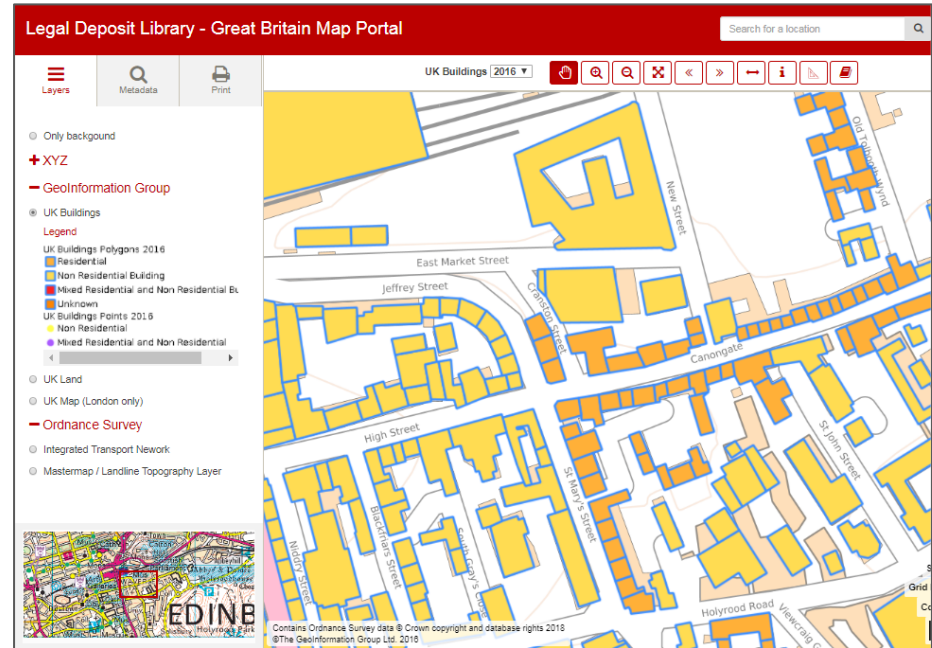
Geospatial data preservation activities at the National Library of Scotland



1. NLS Digital Mapping



2. Non-print legal deposit



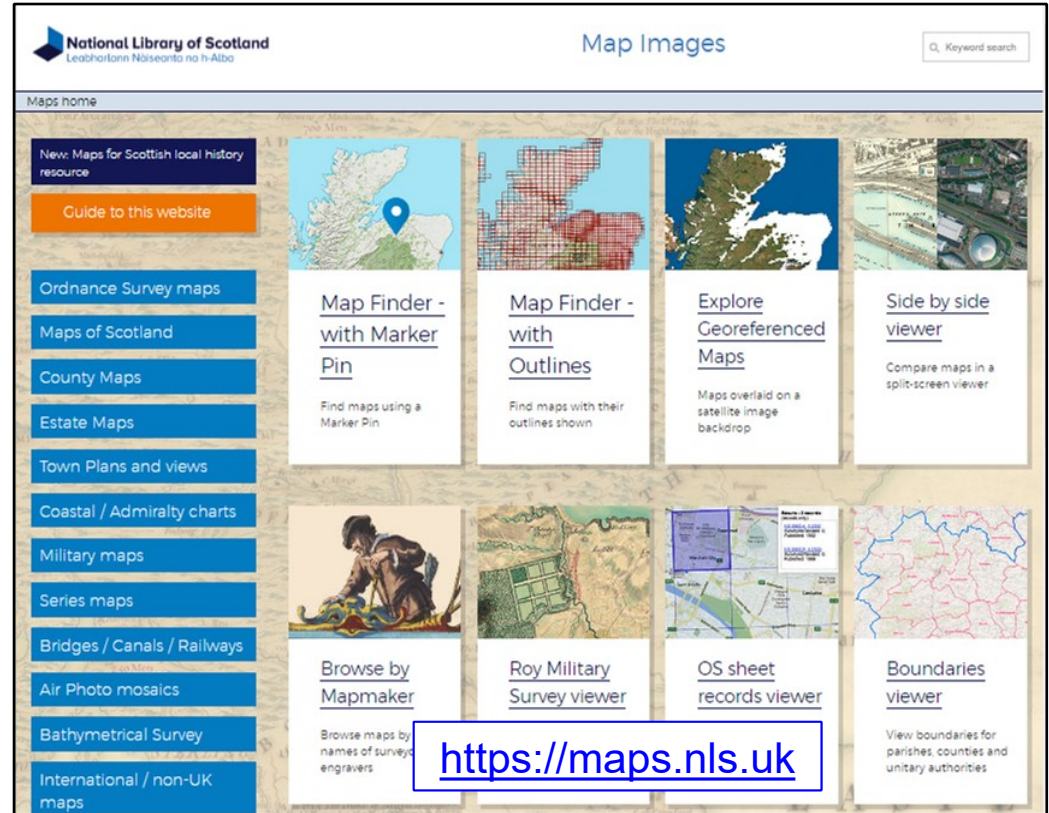
NLS Maps website

Content


- 260,000 online maps
- 130 map categories
- 600 georeferenced layers

Annual usage - 2021

- 1.7 million users
- 3.8 million user sessions
- 15.6 million pageviews



Spatial polygons for all maps

 **National Library of Scotland**
Leabharlann Nàiseanta na h-Alba

Map images

Map Finder | [Explore georeferenced maps](#) | [Side by Side](#)

[with Marker Pin](#) [with Outlines](#)

[Maps home](#) > [Ordnance Survey](#) > Six-inch [Scotland, 1843-1882](#) , [1892-1960](#) ; [England and Wales, 1842-1952](#)

[View basket](#)

Search Places ☒ UK ☐ World

Type a modern placename... or

Search by National Grid Ref:

Type Grid Ref...

Search County:

Show my location? ☐

Choose maps: (select from both lists)

Great Britain, Ordnance Survey

OS Six-Inch, 1840s-1960s

[Zoom to this map / map series](#)

36 map series cover this area

Filter by date:

1840-1960

2 km

Change transparency of boxes:

☐ Zoom to selected map extents?

Results - 5 maps: (1888 - 1952)

[Cambridgeshire XL SW](#)

Series: Ordnance Survey. Six-inch to the mile

Surveyed: 1886

Published: 1888

[Cambridgeshire XL SW](#)

TL 44099 60496
544099, 260496
52.22383, 0.10820
52° 13' 28" N 0° 06' 30" E

Tiles © [ArcGIS](#)

[Help](#) [Use of cookies](#) [Site map](#) [Contact](#) [About](#)

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Map images

[Map Finder](#) | Explore georeferenced maps | [Side by Side](#)

as Overlays Full Screen/Draw 3D Spy

Re-use: CC-BY-NC-SA

Maps home > Ordnance Survey > 25 inch Scotland, 1892-1949 England and Wales, 1841-1952 View basket

The screenshot displays the National Library of Scotland's Map Finder web application. The main area shows a historical map of Glasgow, Scotland, with various landmarks labeled such as 'University Library', 'Church of St Mary the Great (Vic.)', 'KING'S COLLEGE (Founded 1441)', and 'First Court'. The map is overlaid with a grid system. On the left side, there are search filters and controls:

- Search Places:** Includes radio buttons for 'UK' (selected) and 'World', a text input field for 'Type a modern placename...', and a checkbox for 'Show my location?'.
- Search by National Grid Reference:** Includes a text input field for 'Type Grid Ref...' and a dropdown menu for 'Search OS six-inch 1888-1913 names:'.
- Search County:** A dropdown menu labeled 'Choose...'.
- Choose an historic map overlay:** A section with two steps:
 - Select a category: 'Great Britain' (dropdown).
 - Select a map / map series: 'OS 25 inch, 1892-1914' (dropdown).
 Below these are links for 'Zoom to this map / map series:', a checkbox for 'Only show maps with more detail than the current zoom level - (18)', and a note '49 map layers cover this area'.
- Change transparency of overlay:** A horizontal slider bar.

At the bottom, there is a navigation bar with links: Help, Enquiries & Copies, Map Key, Show Coordinates, Add Marker, Links, Use of cookies, Site map, Contact, and About.

National Library of Scotland
Leabharlann Nàiseanta na h-Alba

Map images

[Map Finder](#) | [Explore georeferenced maps](#) | [Side by Side](#)

[as Overlays](#) [Full Screen/Draw](#) [3D](#) [Spy](#)

Re-use: [CC-BY-NC-SA](#)

[Maps home](#) > [Ordnance Survey](#) > [25 inch Scotland, 1892-1949](#) [England and Wales, 1841-1952](#)

[View basket](#)

[Measurement tools](#)

Search Places ☒ UK ☐ World

Type a modern placename... or

Search by National Grid Reference:

Type Grid Ref.

Search OS six-inch 1888-1913 names:

Type an 1888-1913 name...

Search County:

Show my location? ☐

Change background map - ESRI World Image

Choose an historic map overlay:

1. Select a category:
Great Britain

2. Select a map / map series:
OS 25 inch, 1892-1914

[Zoom to this map / map series.](#)

☐ Only show maps with more detail than the current zoom level - (18)

49 map layers cover this area

Change transparency of overlay:

50 m

[Help](#) [Enquiries & Copies](#) [Map Key](#) [Show Coordinates](#) [Add Marker](#) [Links](#)

[Use of cookies](#) [Site map](#) [Contact](#) [About](#)

Tiles © [ArcGIS](#)

Georeferenced viewers



National Library of Scotland **Map images** [Map Finder](#) | Explore georeferenced maps | [Side by Side](#)

[as Overlays](#) [Full Screen/Draw](#) [3D](#) [Spy](#)

[Maps home](#) > [Ordnance Survey](#) > [25 inch Scotland, 1892-1949](#) [England and Wales, 1841-1952](#) [View basket](#)

Search Places ☒ UK ☐ World or
Search by National Grid Reference:
Search OS six-inch 1888-1913 names:
Search County:
Show my location? ☐

Choose an historic map overlay:

1. Select a category:
2. Select a map / map series:

[Zoom to this map / map series:](#)
☐ Only show maps with more detail than the current zoom level - (18)
49 map layers cover this area
opacity: 6% transparency of overlay:

Map navigation:


Map navigation:

Map content: **COLLEGE** **Founded 1841** **Measurement tools** **Tiles © ArcGIS**

Tiles © ArcGIS



Spy viewer

 **National Library of Scotland**
Leabharlann Nàiseanta na h-Alba

Map images

Map Finder | Explore georeferenced maps | [Side by Side](#)

[as Overlays](#) [Full Screen/Draw](#) [3D](#) **Spy**

Keyword search

Maps home > Ordnance Survey > Town Plans of England and Wales, 1840s-1890s [View basket](#)

Search places: ☒ UK ☐ World ✕
Type a modern placename... or
County:
Show my location? ☐


Background map - Bing Satellite

Choose a layer inside the spyglass:
1. Select a category:


2. Select a map / map series:

[Zoom to this map / map series:](#)
48 map layers cover this area
Change size of spyglass:

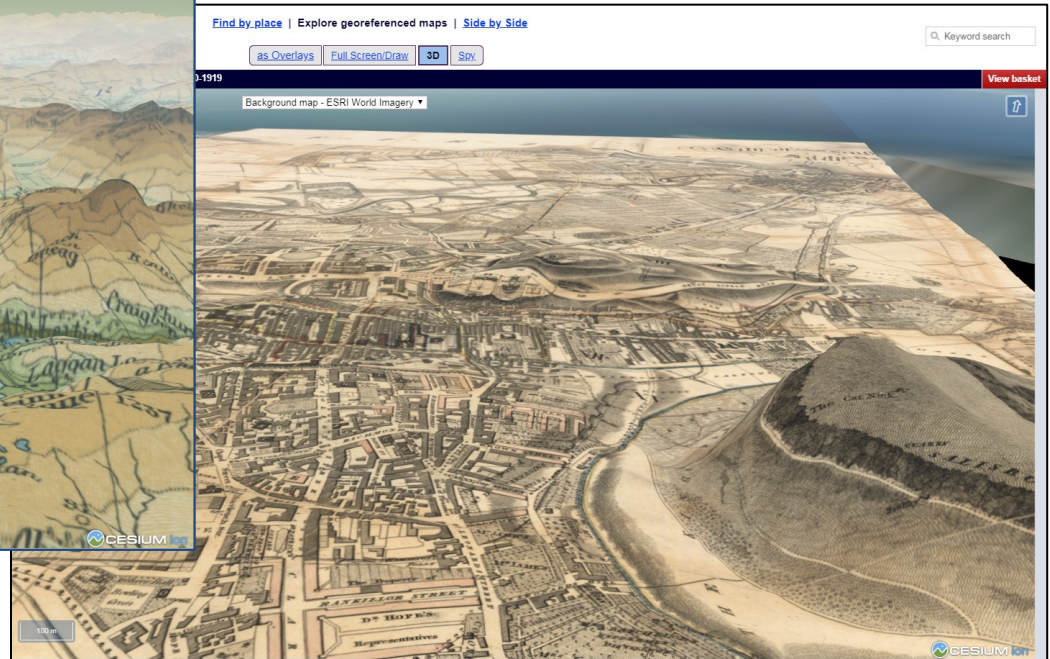
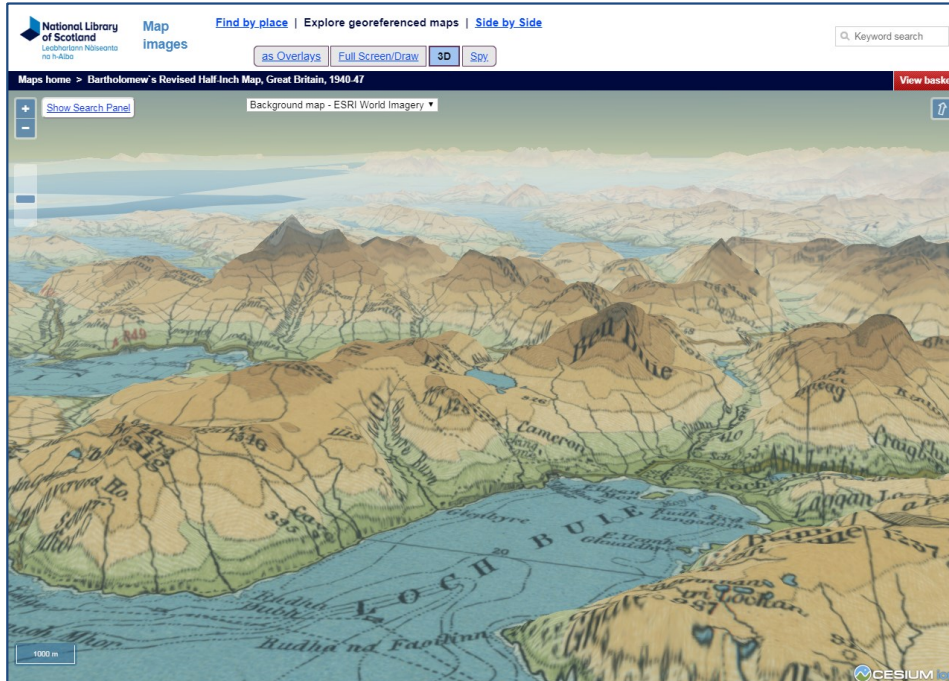
[Help](#)



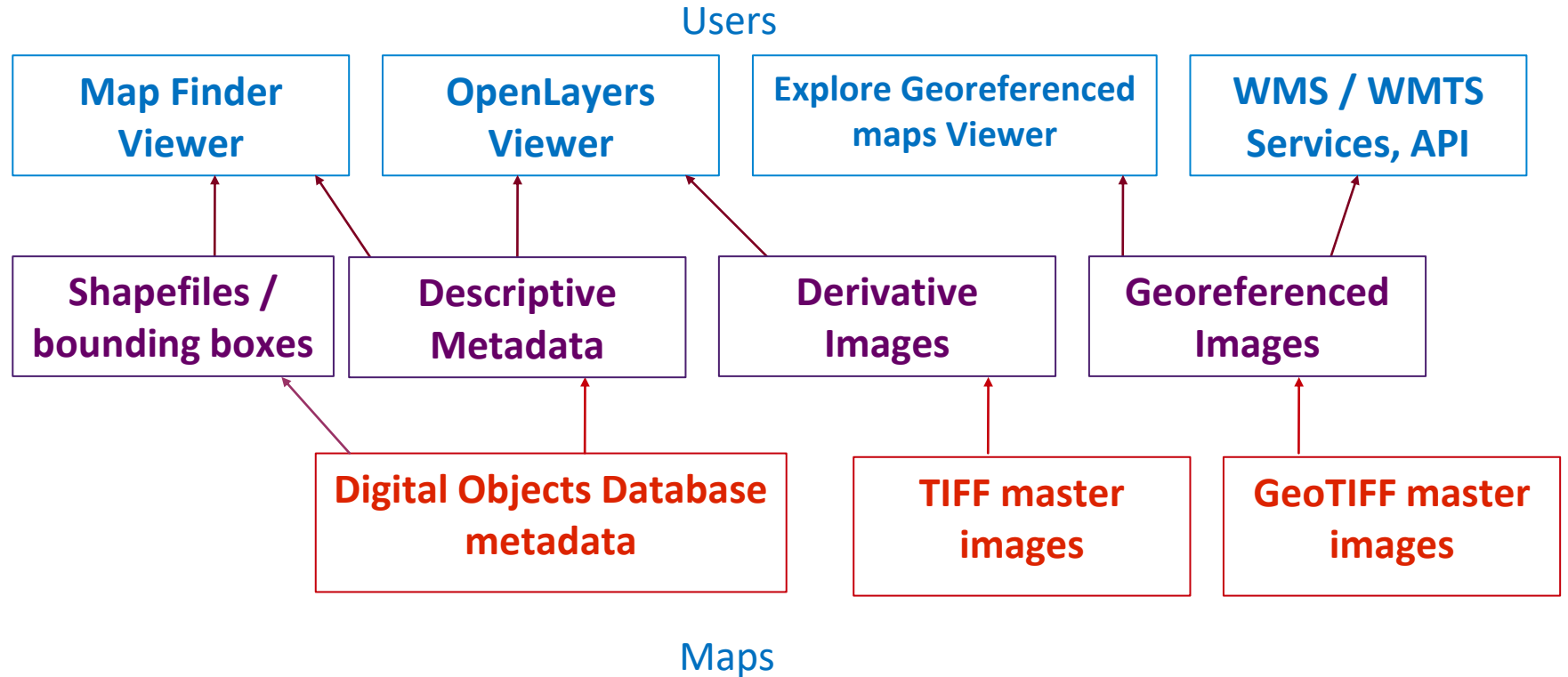
TL 44772 58298
544772, 258298
52.20390, 0.11710
52° 12' 15" N 0° 07' 02" E

 © 2021 Microsoft Corporation © 2021 Maxar © CNES (2021) Distribution Airbus DS [Terms of Use](#)

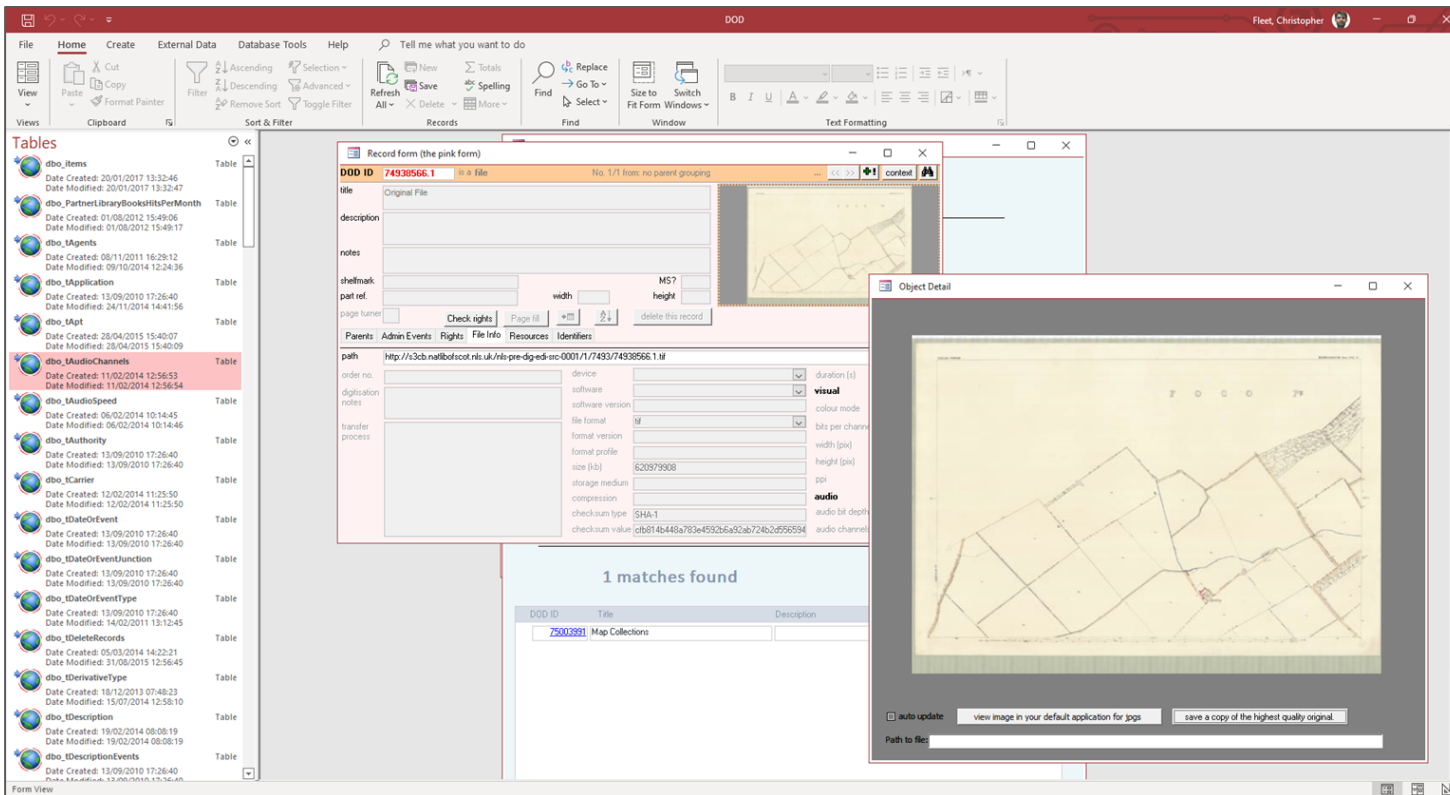
3D viewer



NLS maps website structure



NLS Digital Objects Database



The screenshot displays the NLS Digital Objects Database application interface. The main window is titled "Record form (the pink form)" and shows a record for a map collection. The record is identified by the DDD ID "74930566.1" and is titled "Map Collections". The record is associated with the table "dbo_MapCollections".

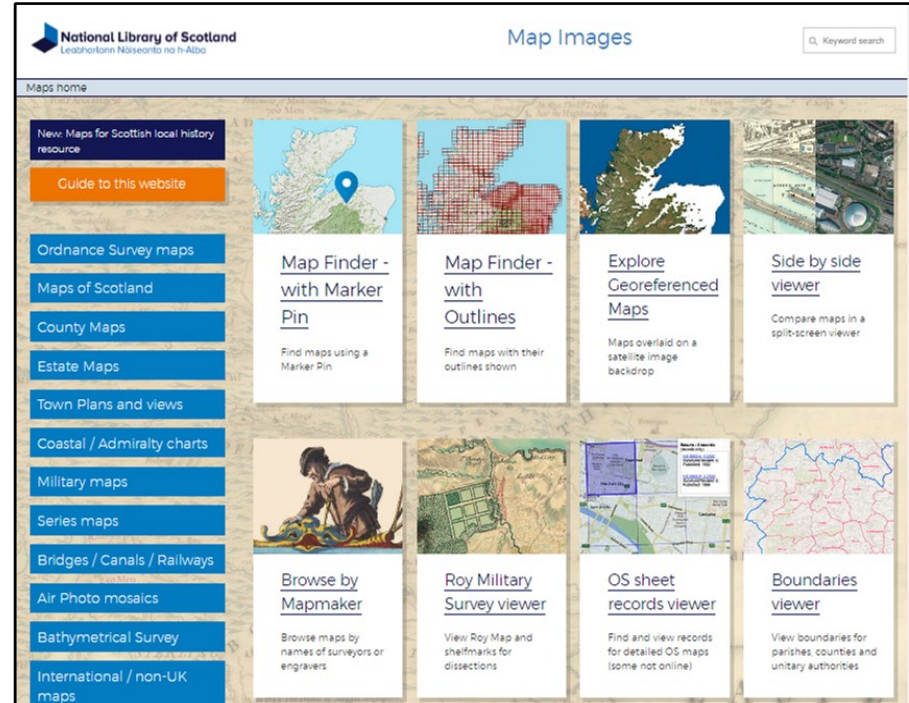
The interface includes a sidebar with a list of tables, a top menu bar with options like File, Home, Create, External Data, Database Tools, and Help, and a toolbar with various actions like New, Save, Refresh, and Delete. The main area displays the record form with fields for title, description, notes, shelfmark, part ref, and page turner. The record is associated with the table "dbo_MapCollections".

An "Object Detail" window is open, showing a thumbnail of a map collection. The detail window includes a "Visual" section with fields for colour mode, bits per channel, width (px), height (px), and ppi. It also includes an "Audio" section with fields for audio bit depth and audio channel. The "Path to file" field is visible at the bottom of the detail window.

A search results window titled "1 matches found" is also visible, showing a table with columns "DDD ID", "Title", and "Description". The table contains one entry: "75003931 Map Collections".

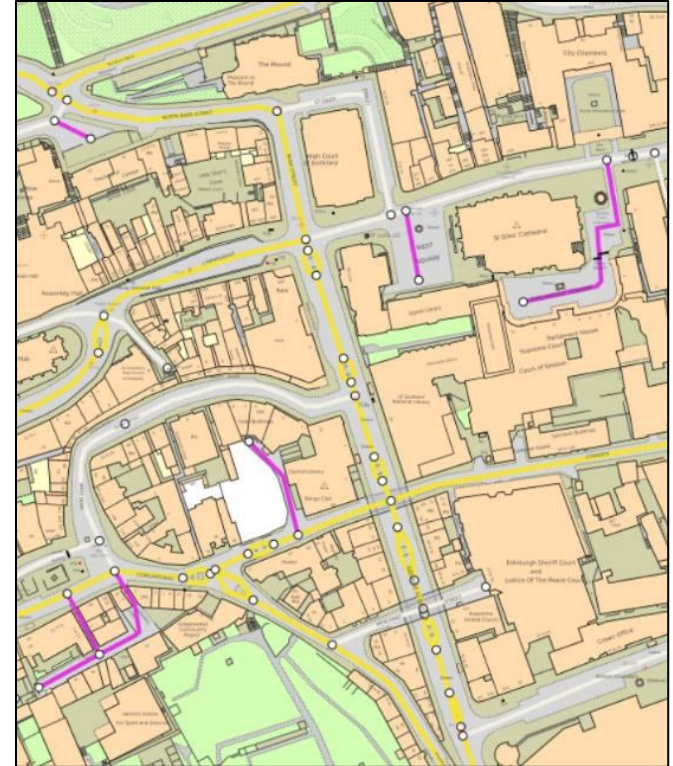
NLS digital mapping preservation principles

- master images stored as TIFF and GeoTIFF in replicated, archival storage
- item level technical, legal and administrative metadata for all content
- open-source components using “open” formats and standards - GeoJSON, shapefiles, WFS, WMTS, etc.
- separation of data from systems



2. Non-print legal deposit of UK digital mapping

- Annual voluntary deposits of Ordnance Survey's most detailed mapping from 1998 to the present
- Annual voluntary deposits of Ordnance Survey Northern Ireland's most detailed mapping from 2004 to the present
- Shared system across the Legal Deposit Libraries for managing and storing the mapping
- Bespoke viewer for accessing digital mapping in Legal Deposit Library Reading Rooms
- Active ingest of other publisher content from 2016



LDL Map Portal - zooming in...

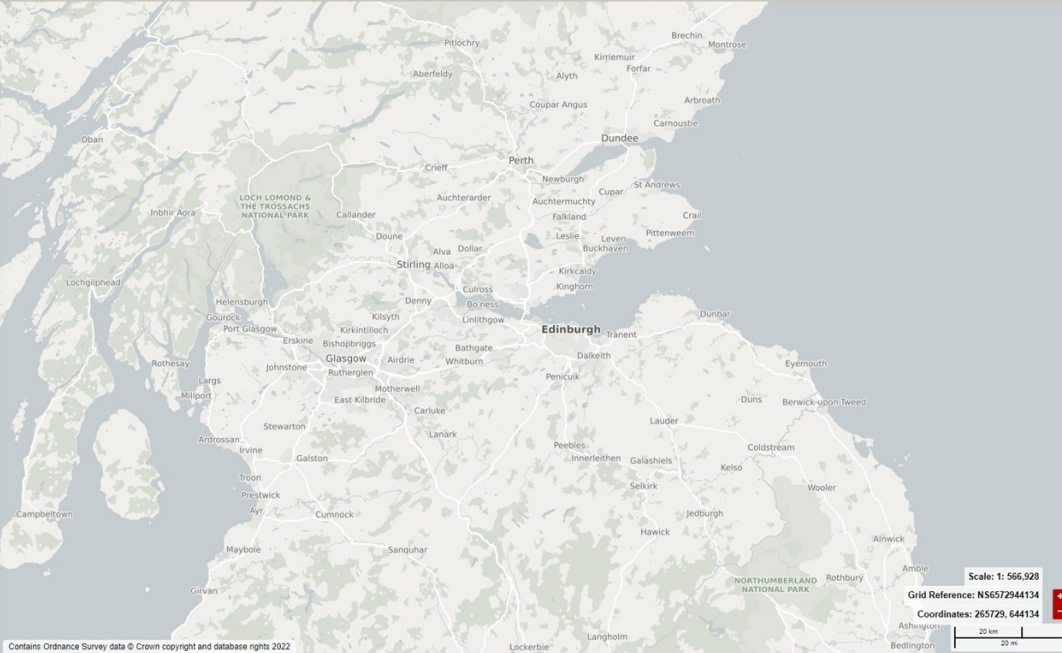
Legal Deposit Library - Great Britain Map Portal

Search for a location

Layers Metadata Print

Background ☒ No selection

- + Antares
- + British Geological Survey
- + CADW
- + Clever Little Maps Company
- + Geoinformation Group
- + Historic England
- + Historic Environment Scotland
- + Ordnance Survey
- + RCAHMM
- + XYZ



Edinburgh

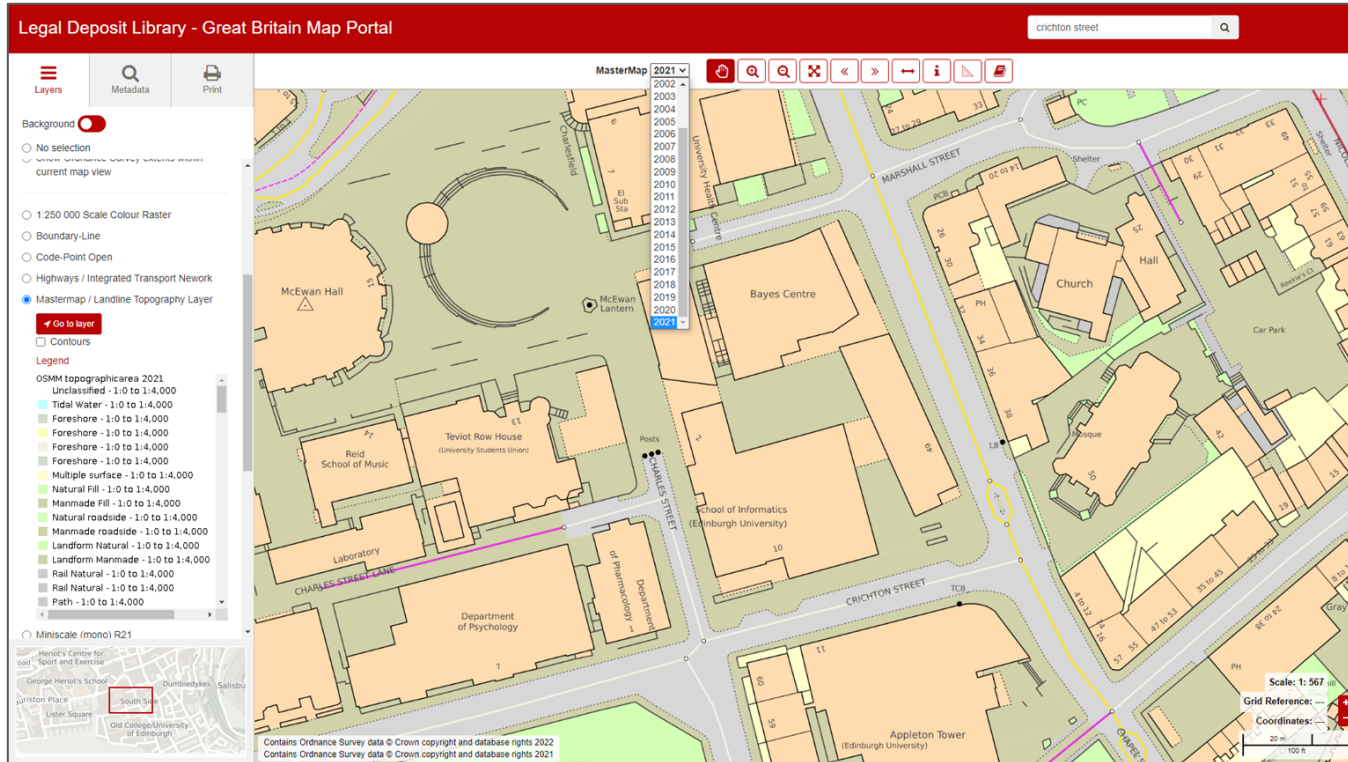
Scale: 1: 566,928

Grid Reference: NS6572944134

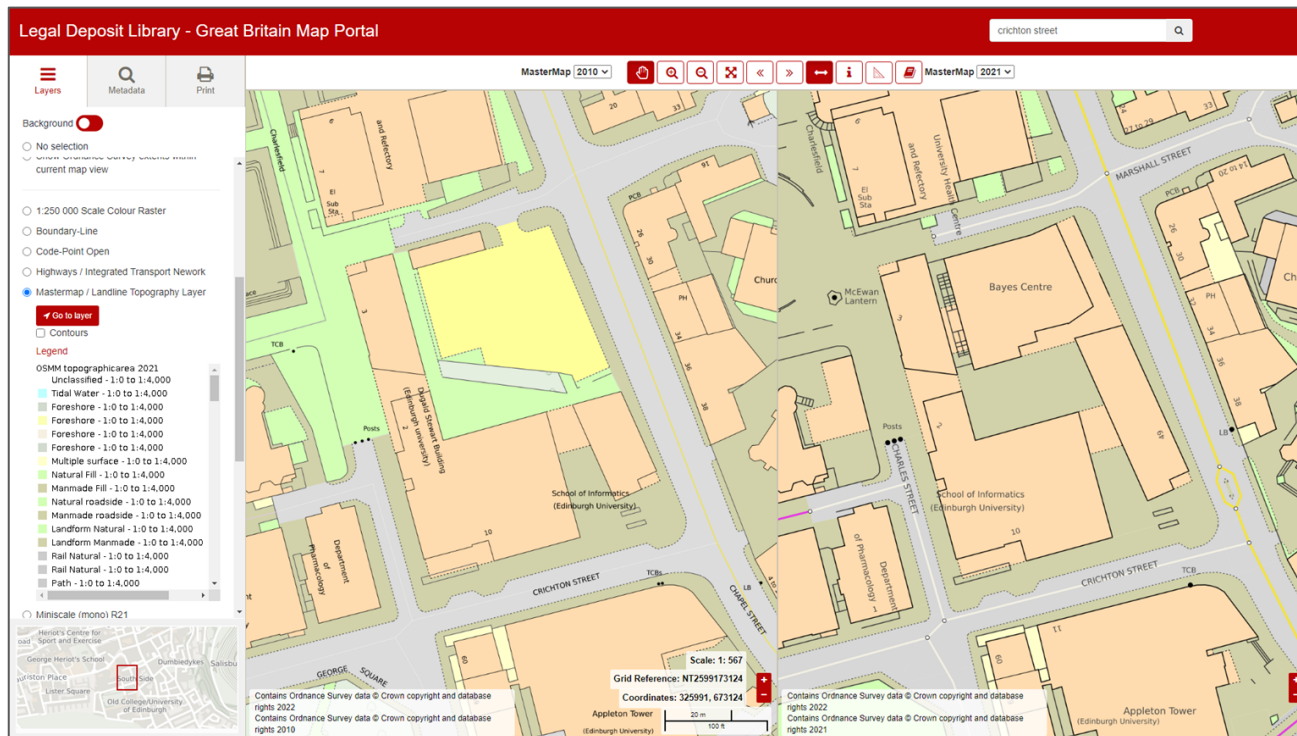
Coordinates: 265729, 644134

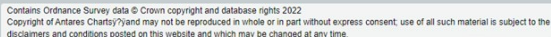
Contains Ordnance Survey data © Crown copyright and database rights 2022

LDL Map Portal - annual snapshots of OS MasterMap

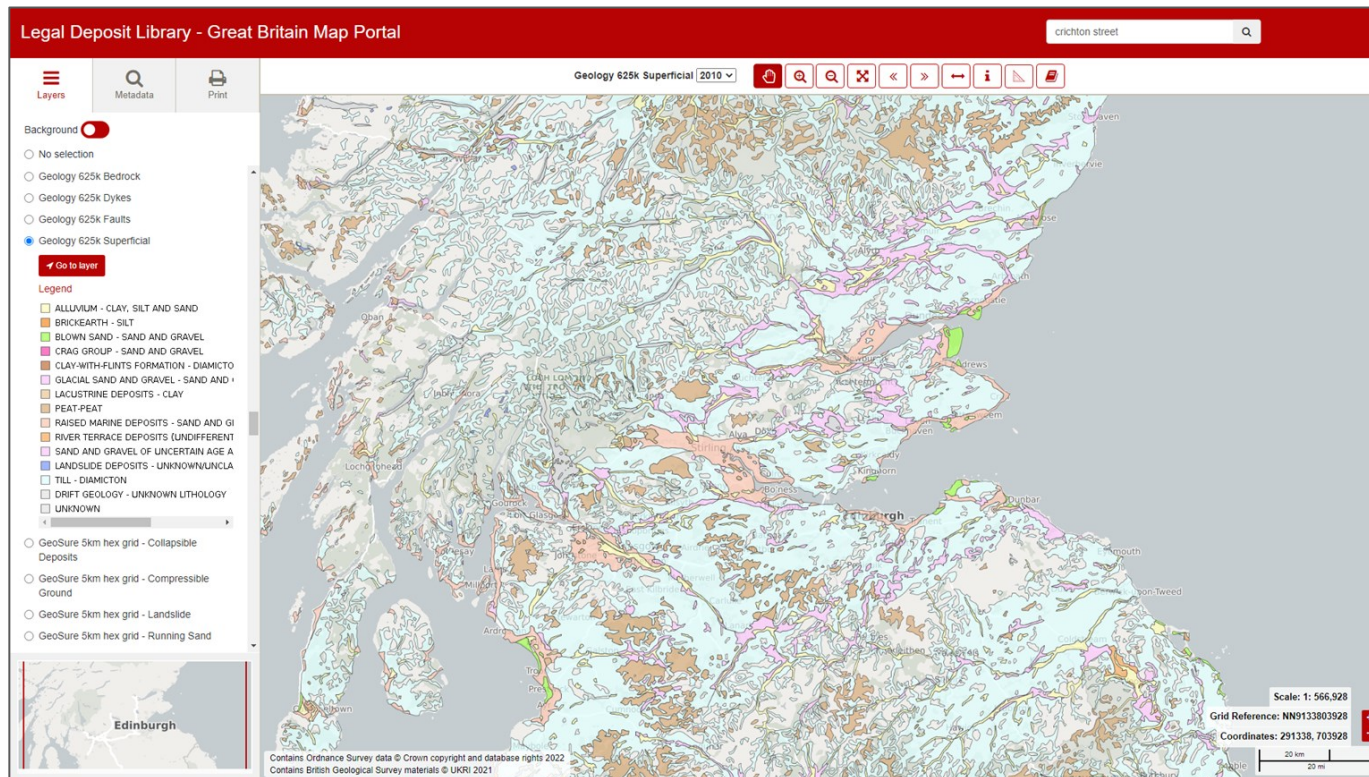


LDL Map Portal - comparing change over time

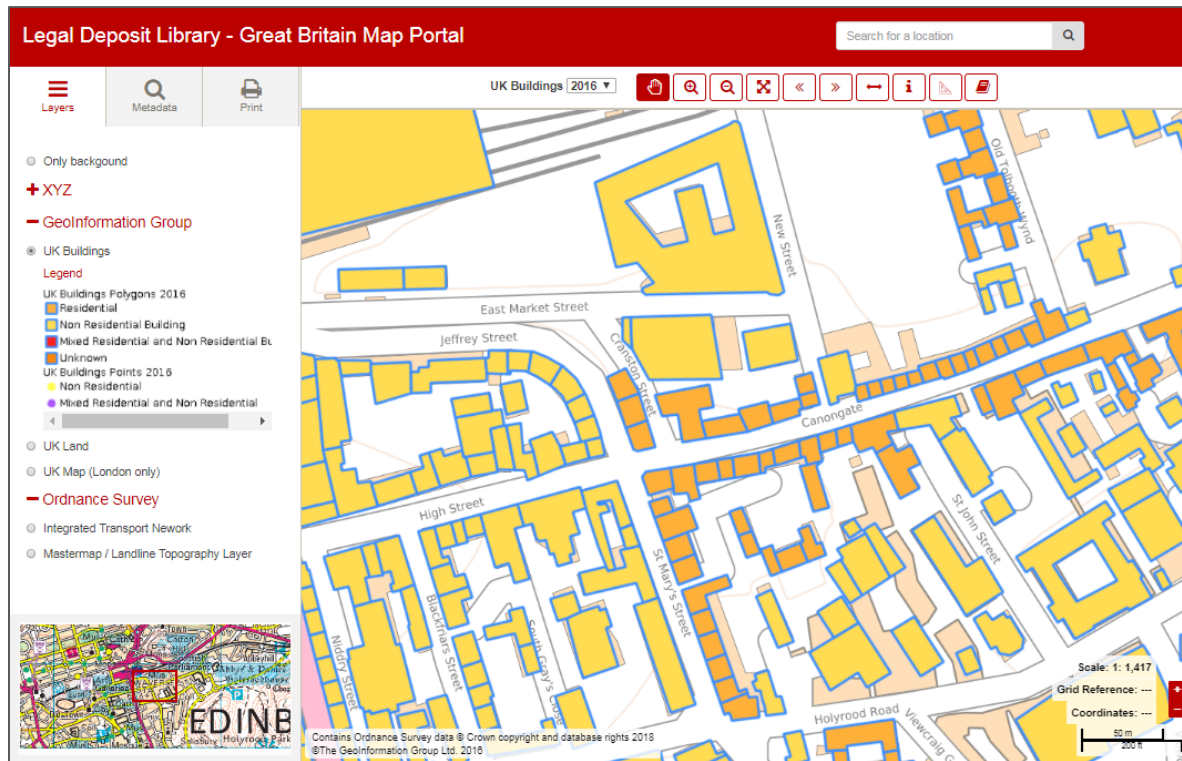




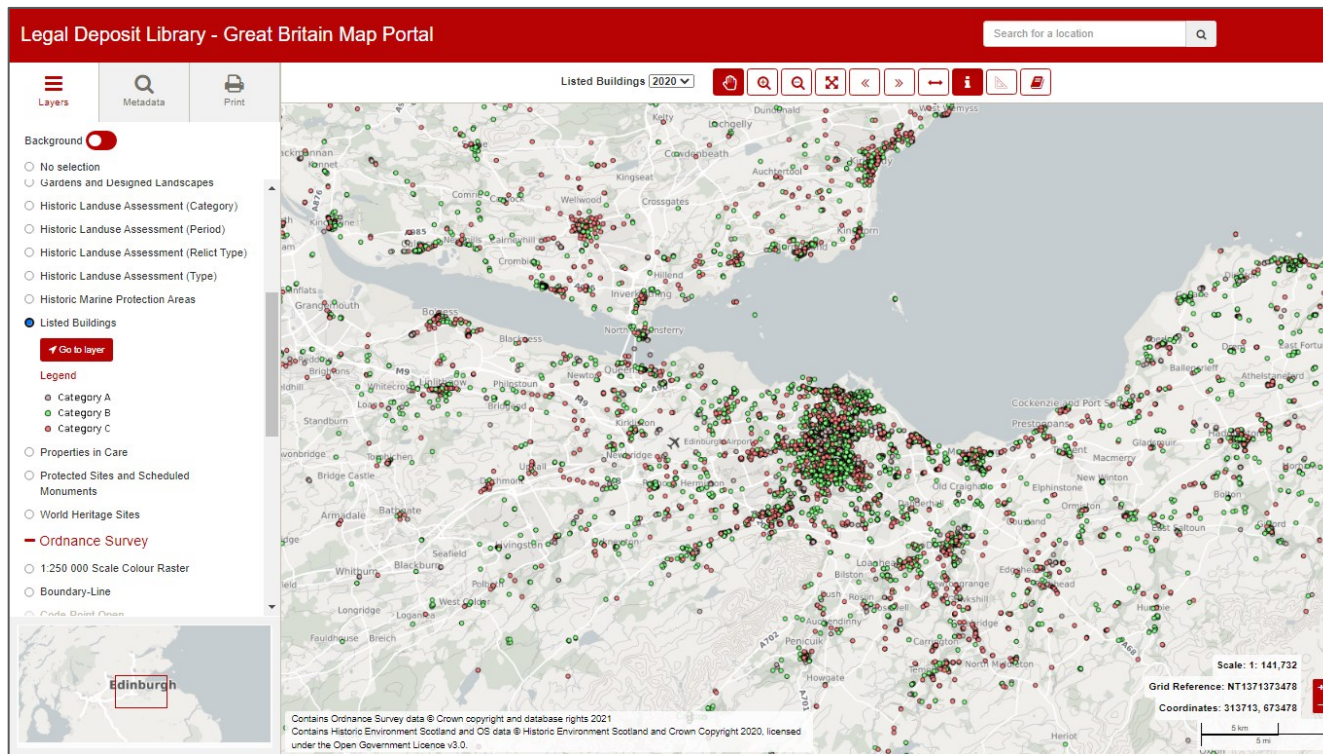
LDL Map Portal - British Geological Survey open data



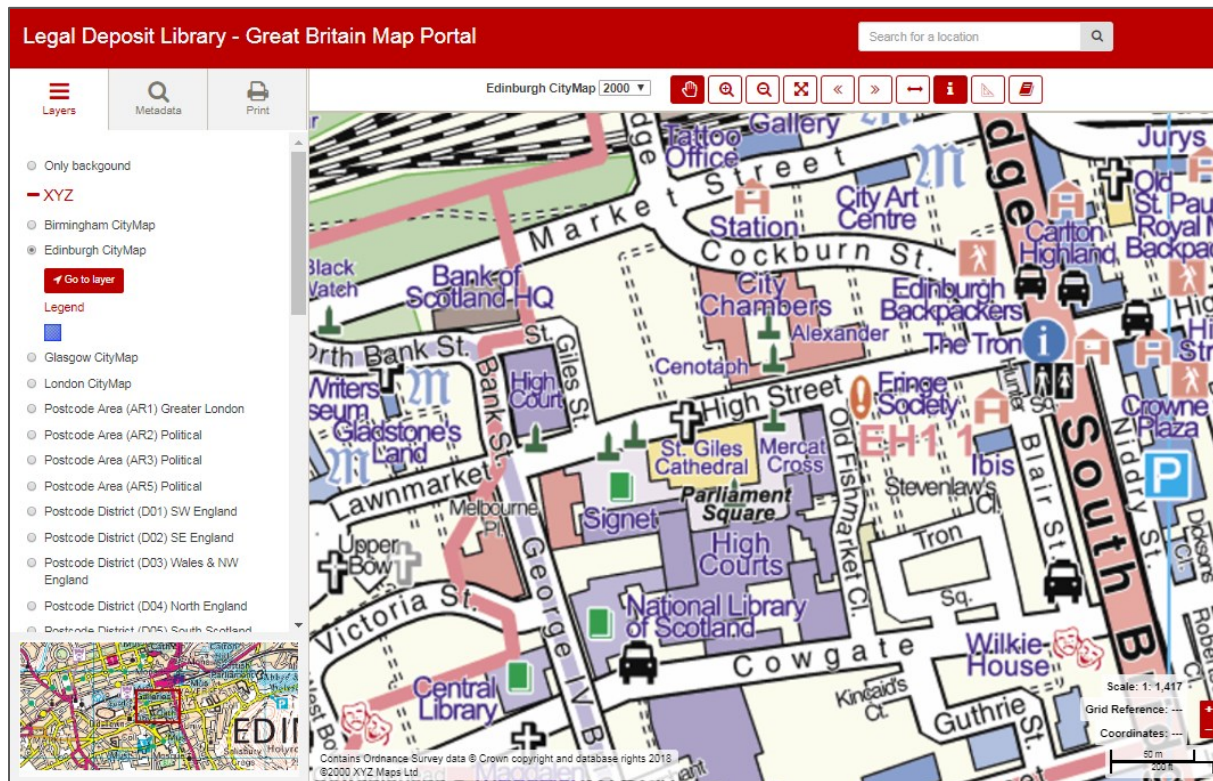
LDL Map Portal - GeoInformation Group buildings



LDL Map Portal - historic environment datasets

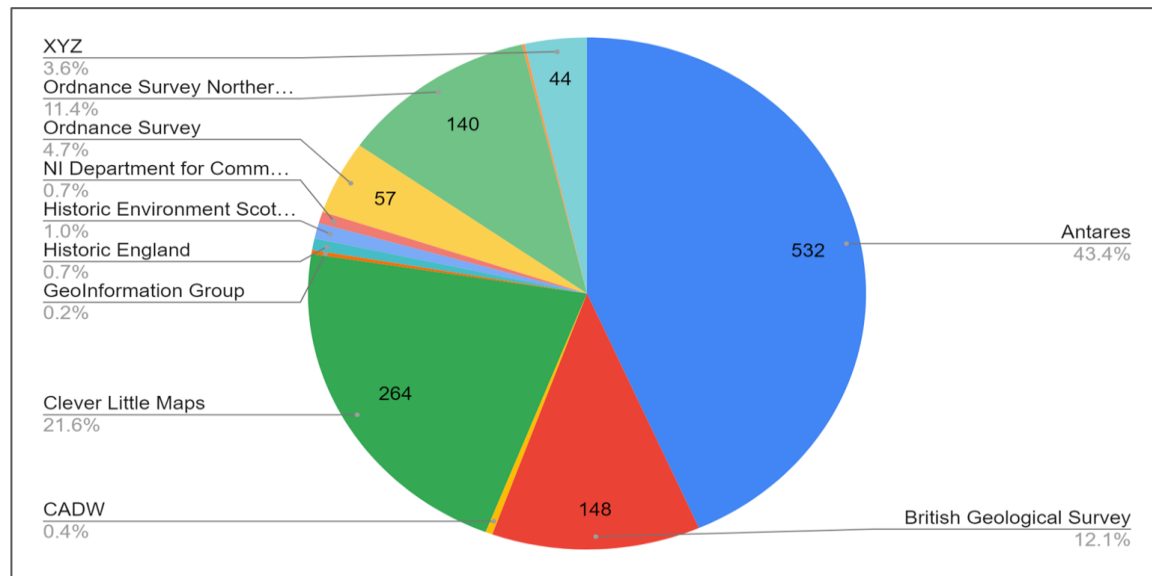


LDL Map Portal - XYZ Street Mapping



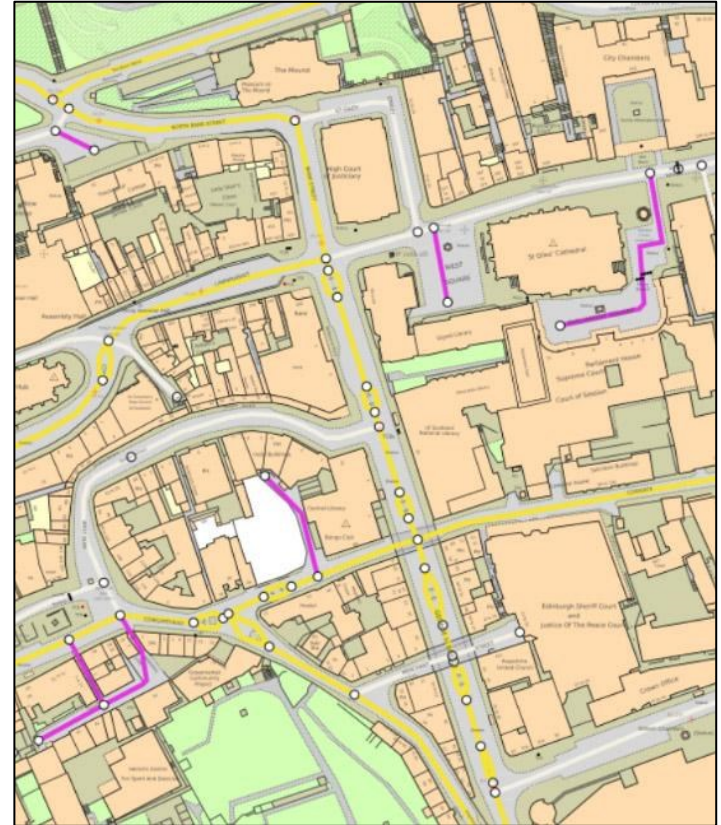
Non-Print Legal Deposit Datasets

- 1223 datasets
- 5Tb - total volume
- 5.7 million files



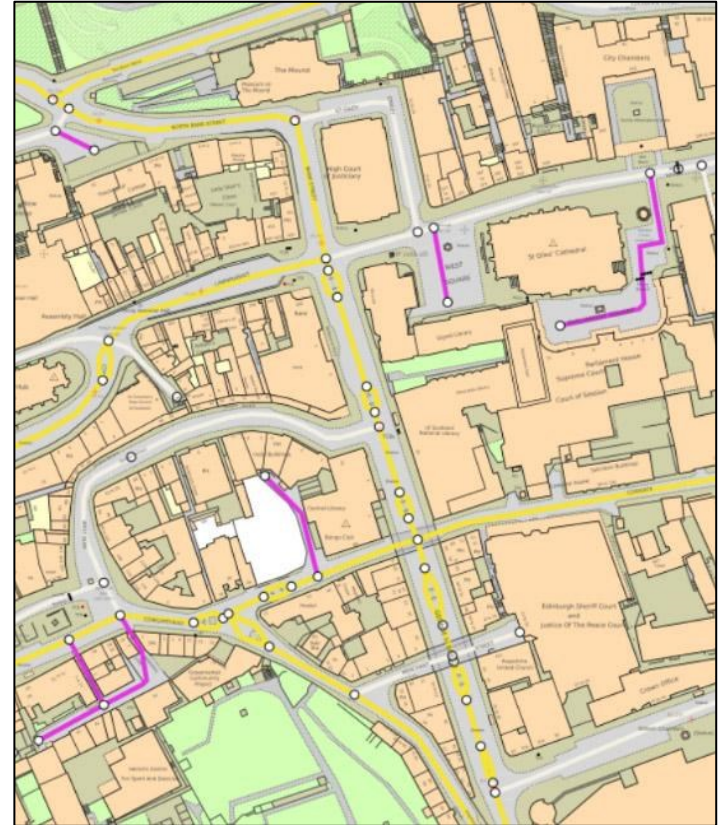
Digital Preservation challenges 1

- Large backlog of digital map publications the Libraries have not received
- Encouraging publishers to deposit without additional licensing agreements
- Cost and complexity of ingesting map datasets
- Implementing robust metadata creation workflow
- Ingesting map datasets into the British Library DAMPS/UDRP digital archive



Digital Preservation challenges 2

- Maintaining readability of OS National Transfer Format data (OS Landline - 1998-2005)
- Creating appropriate metadata - often this does not exist
- Avoiding proprietary datasets and formats
- Separating datasets that are merged / packaged together in their presentation
- Large size of raster datasets (eg. LiDAR) are greater than current LDL capacities



Thank you

Chris Fleet

c.fleet@nls.uk



/NationalLibraryofScotland



@natlibscotmaps



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