OS National Geographic Database & Product Roadmap

Cadcorp Emergency Services Conference

Richard Barker

Geospatial Consultant

Oct 25

Ordnance Survey

Agenda

- Public Sector Geospatial Agreement (PSGA)
- The OS NGD and Example Use Cases
- Working with Address, Buildings & Sites
- Roadmap & New Developments

Public Sector Geospatial Agreement

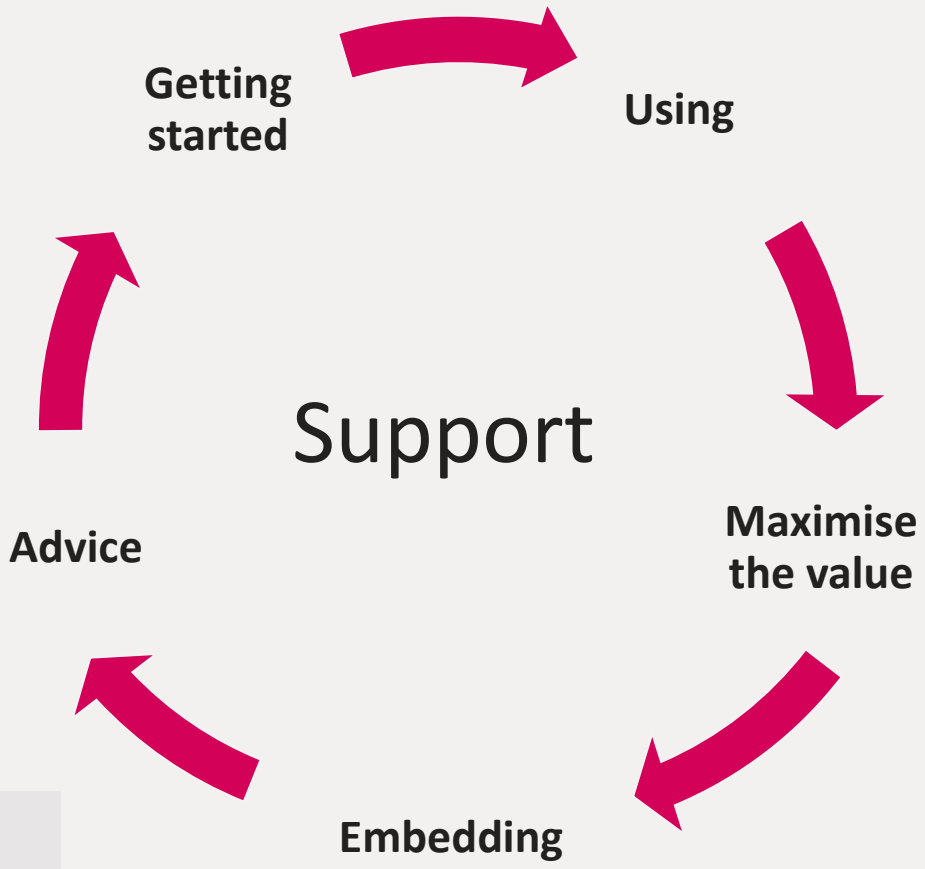
Public Sector Geospatial Agreement (PSGA)

Contract between Ordnance Survey and the Government Digital Service (GDS) on behalf of the public sector in England, Wales, Scotland.

Allows Public Sector members to access, use and share our data and expertise.

A 10 year agreement. Commenced on 1 April 2020

replaced the Public Sector Mapping Agreement (PSMA) and the One Scotland Mapping Agreement (OSMA) (on 19th May 2020)



Other, Non-OS Large Public Sector Contract: Aerial Photography Great Britain (APGB)

The OS NGD and Example Use Cases

The OS National Geographic Database (OS NGD)

9 Themes

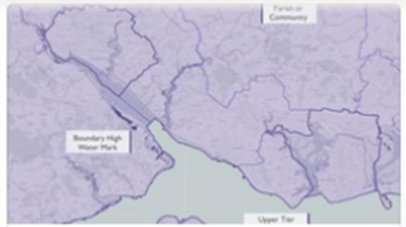
Structured Database designed for analysis

Current, comprehensive and richly attributed data describing Great Britain

Available to OS Partners and to PSGA members

https://docs.os.uk/osngd

OS NGD Address



OS NGD Administrative and Statistical Units

OS NGD Buildings

OS NGD Geographical Names

OS NGD Land

OS NGD Land Use

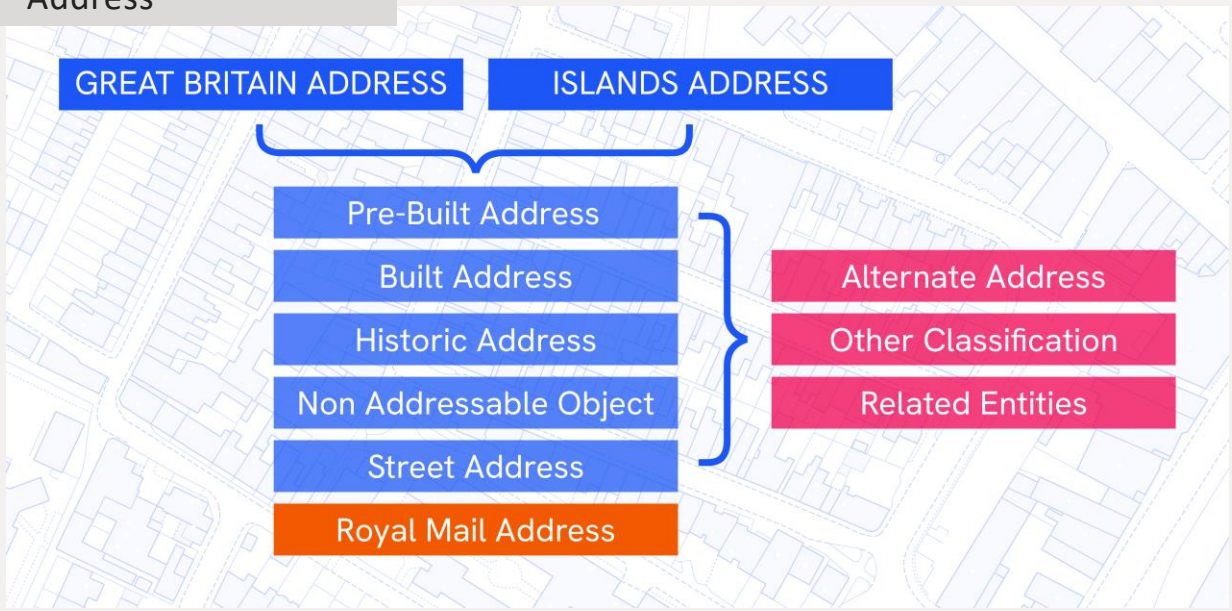
OS NGD Structures

OS NGD Transport

OS NGD Water

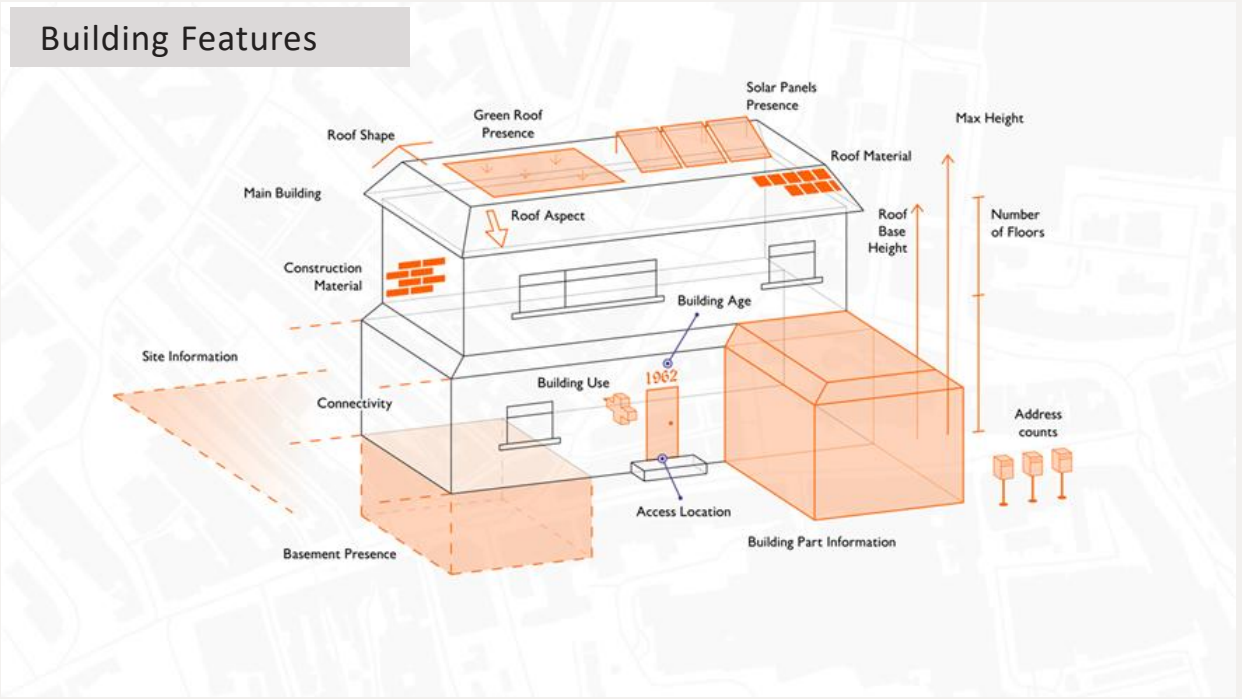
OS NGD Themes for Emergency Services

Address



- Incident Location
- Risk & Analysis using the UPRN
- Initiatives alongside NHS, Public Health & Local Authorities

Building Features

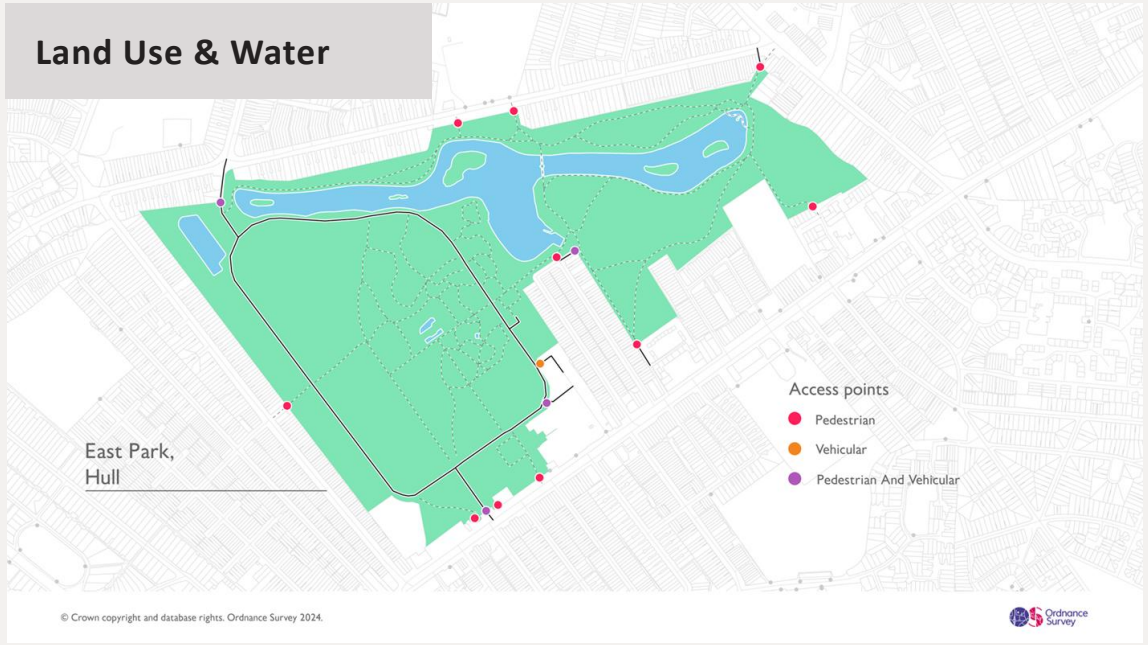


- Incident Planning & Situational awareness
- Policy Enforcement & Regulation
- Asset Management
- 3D Models & BIM

https://docs.os.uk/osngd/data-structure/address/gb-address/built-address#hierarchylevel

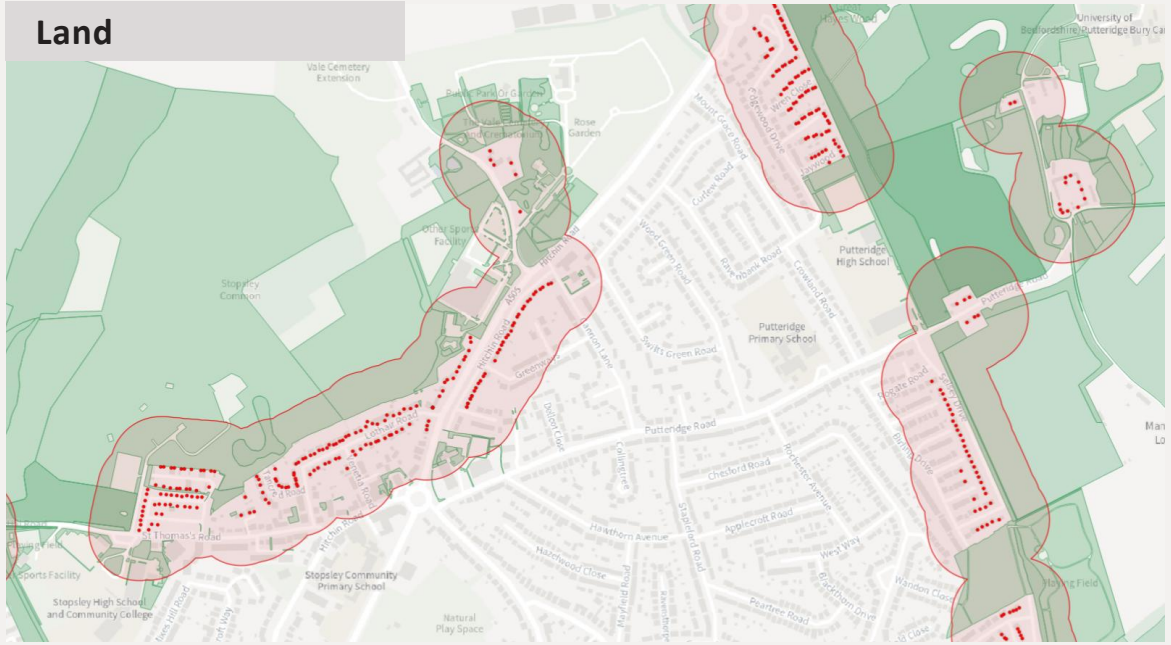
OS NGD Themes for Emergency Services

Land Use & Water



- Community Safety
- Non-Addressable Incident trends

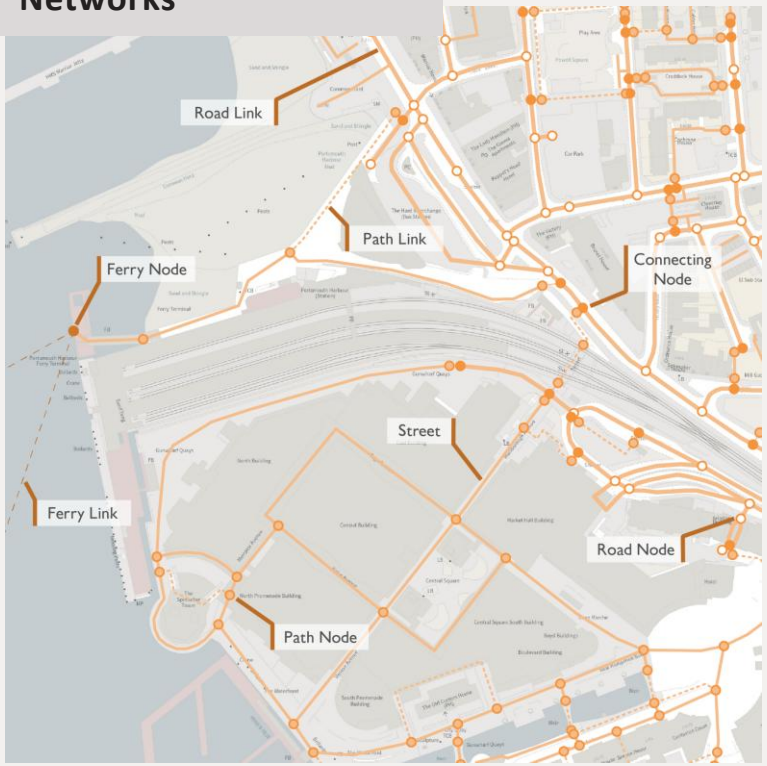
Land



- Wildfire origin landcover classification
- Predictive Wildfire Modelling
- Risk by FRS and Nationally

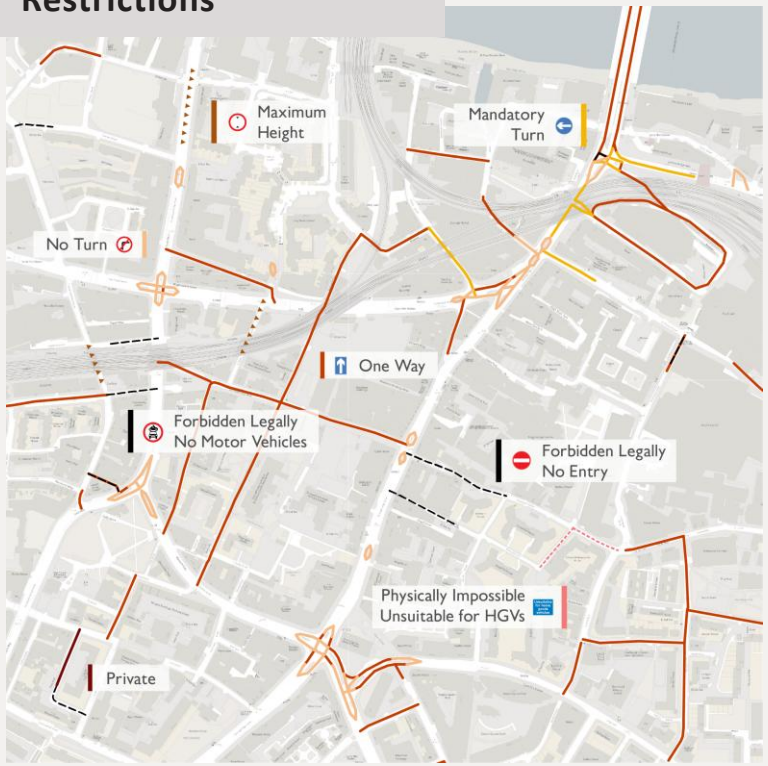
OS NGD Transport for Emergency Services

Networks



Speed Data

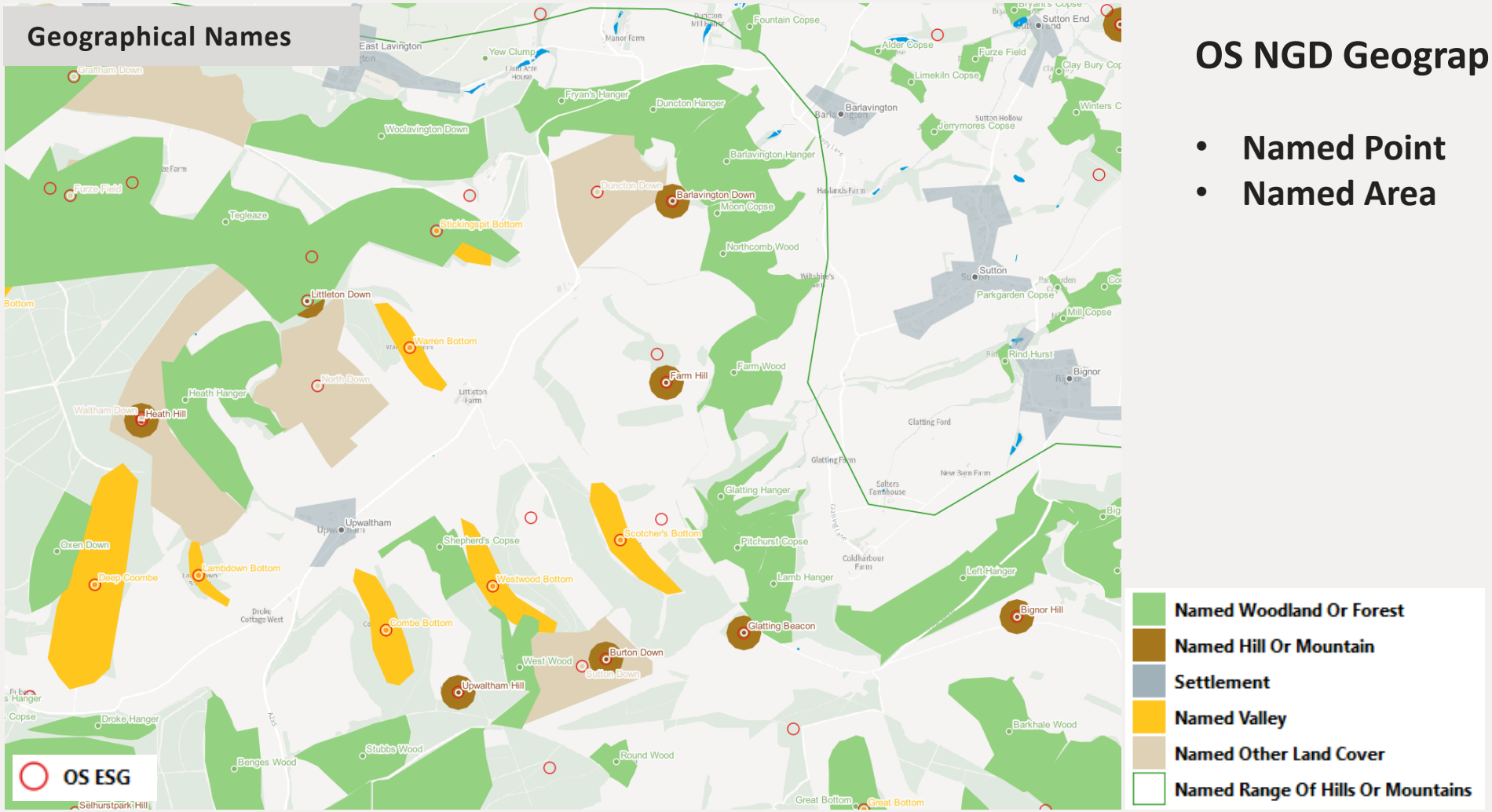
Restrictions



Control*, Travel Time Analysis, Dynamic Resource Cover, Service Area Creation, Journey Auditing & Recruitment Modelling. *Crucial to align GIS modelling with Control as best possible

Migration from OS Mastermap Highways

Non Addressable Locations



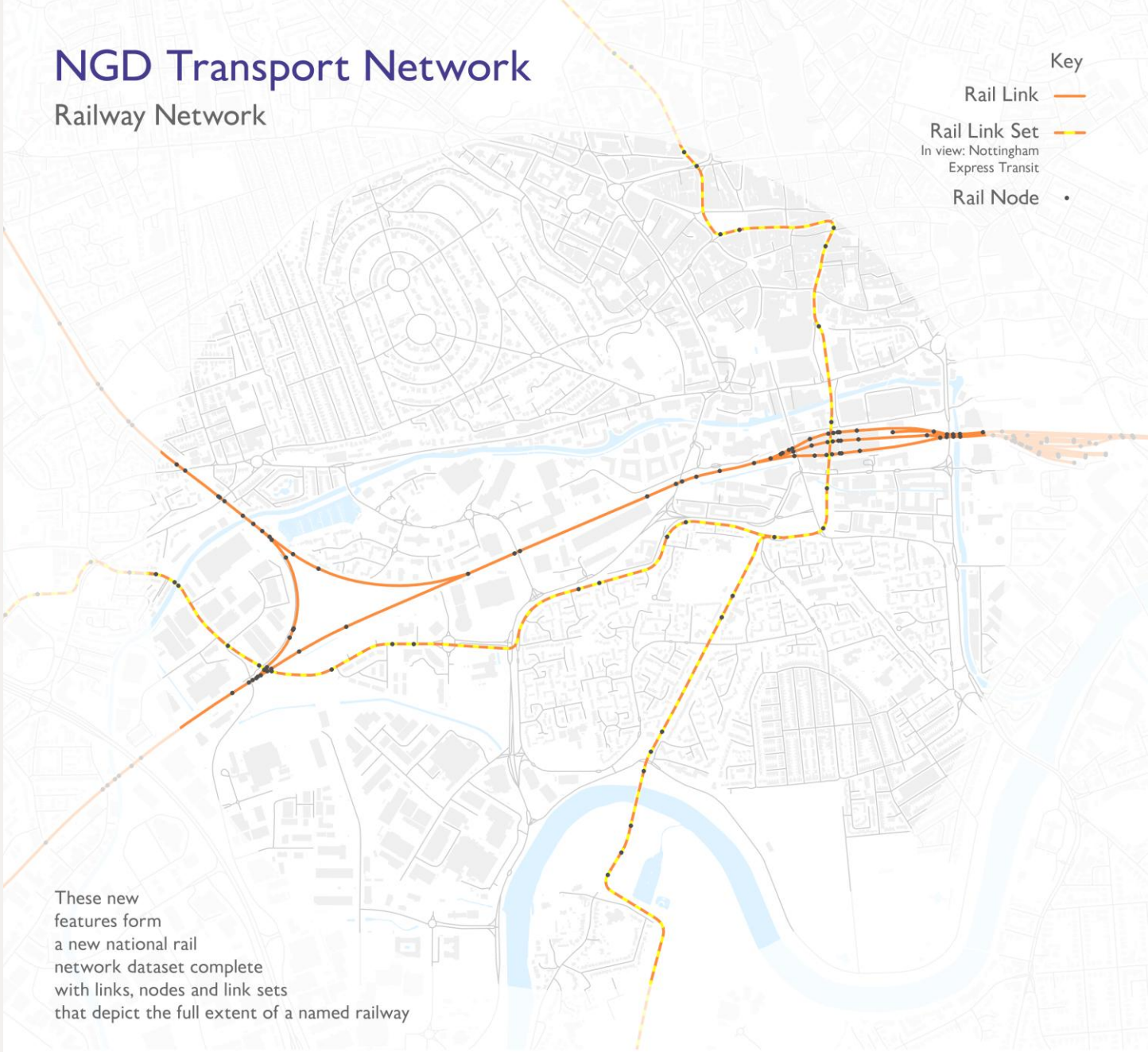
OS NGD Geographical Names

- Named Point
- Named Area

Railway Data

Railway Links have been created from a 1:10,000 scale cartographic rail dataset and are a topologically structured link dataset.

- Description – Main Line, Funicular, Mineral, Preserved, Tram, etc.
- Gauge – Standard, Narrow, Broad, Monorail
- Structure – In Cutting, On Bridge, In Tunnel, On Embankment, etc.,
- Use – Freight, Passenger, Mineral, etc.
- How many tracks – Single, Multiple, Siding
- Status – Active, Inactive

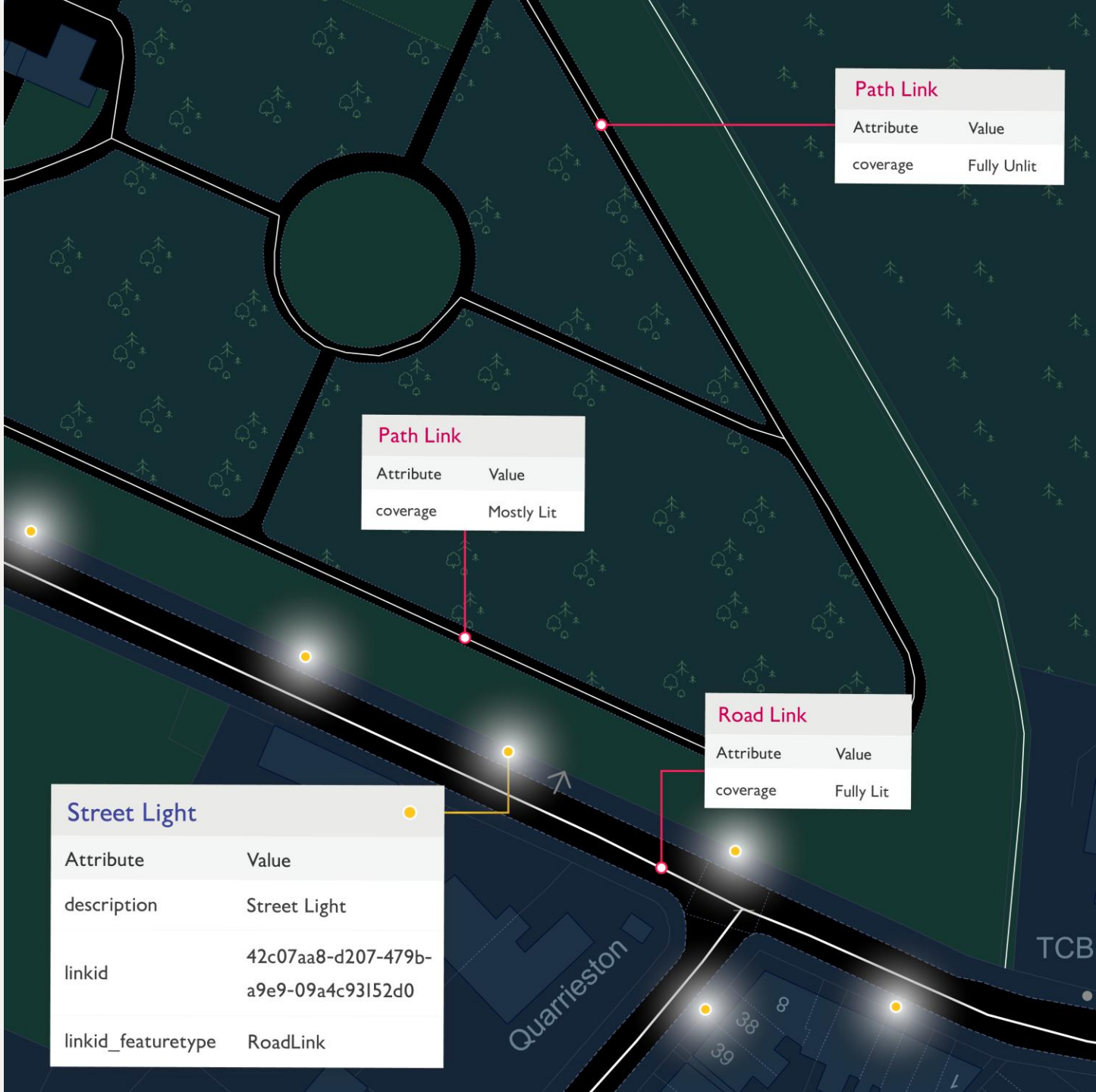


Street Lighting

A point representation of a pole mounted light which is positioned to artificially illuminate sections of a road or path.

Street light locations have been captured and extracted from aerial imagery.

Street light coverage attribute on Road Link & Path Link



Working with Address, Buildings & Sites

Commercial Data

Site Summary

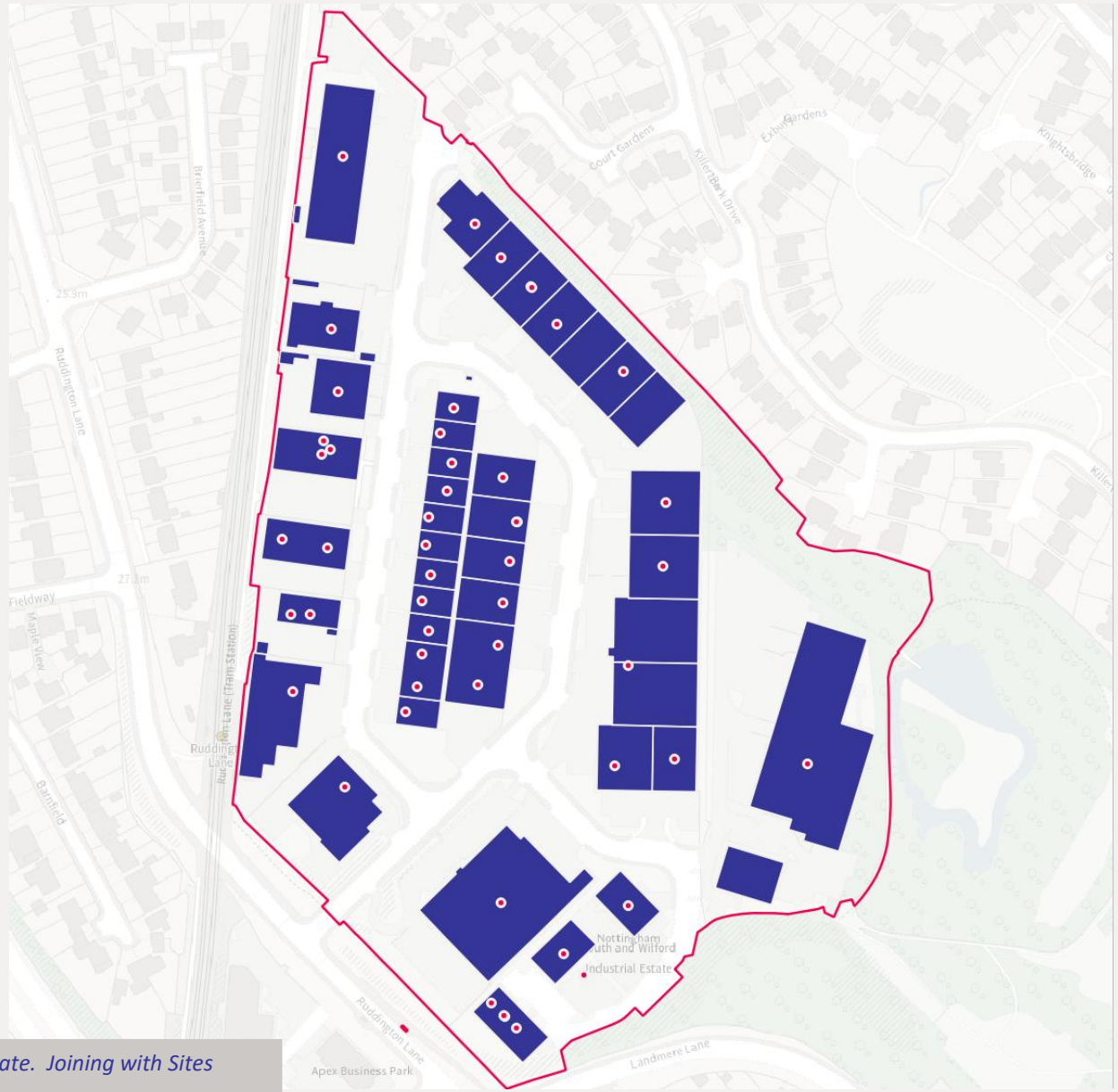
osid	4ef136b0-115f-4e35-8116-a0b0a1e8f4f9
name1_text	Nottingham South and Wilford Industrial Estate
geometry_area_m2	80,238.51
description	Business Or Industrial Park
addresscount_total	59
nlud_orderdescription	INDUSTRY AND BUSINESS

Building Summary

description	total_area	address_uprn	building_count
Commercial Building	26,371.15	41	45
Mixed Use Building	1,690.41	9	3
Electricity Sub Station	21.172	0	2
Ancillary Building	2.991	0	1

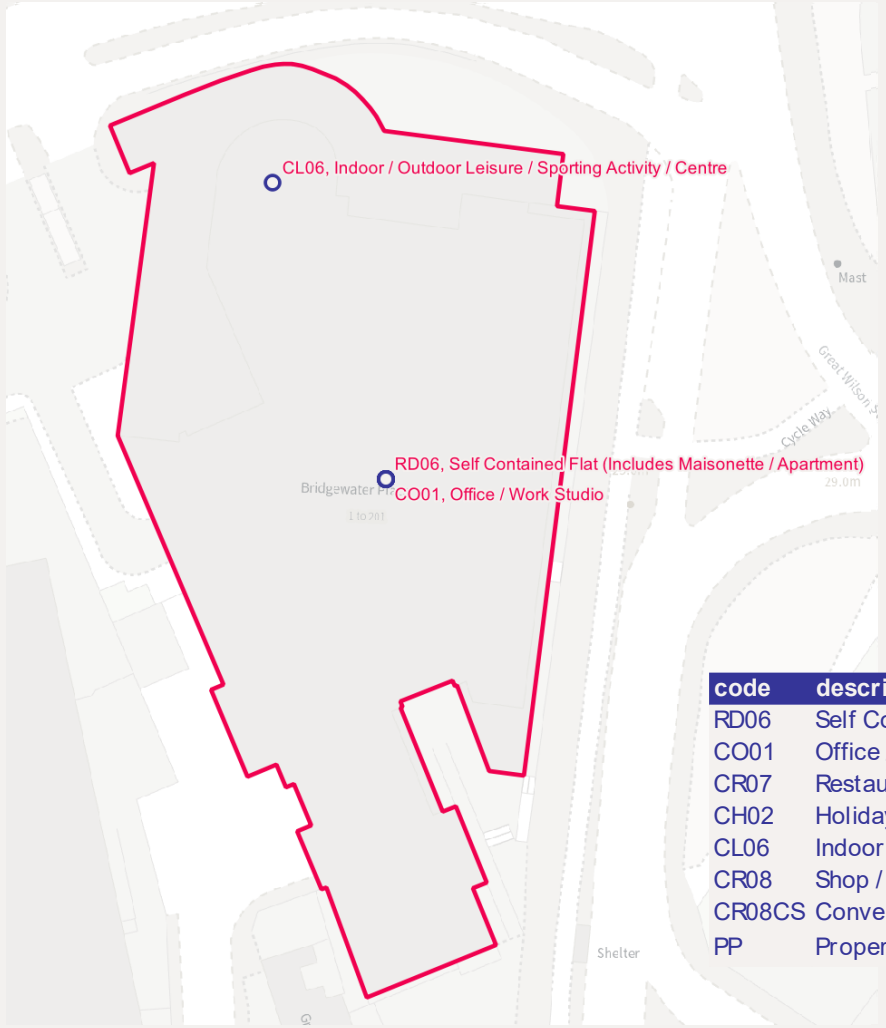
Address Summary

address_name	count
NOTTINGHAM SOUTH AND WILFORD INDUSTRIAL ESTATE	47
17-19 NOTTINGHAM SOUTH AND WILFORD INDUSTRIAL ESTATE	1
BEISSBARTH UK LIMITED	1
UNIT 14 NOTTINGHAM SOUTH AND WILFORD INDUSTRIAL ESTATE	1
UNIT 3 3 NOTTINGHAM SOUTH AND WILFORD INDUSTRIAL ESTATE	1
UNITS 3 2 AND 3 4 NOTTINGHAM SOUTH AND WILFORD INDUSTRIAL ESTATE	1



The address record isn't consistent for the industrial estate. Joining with Sites offers a consistent id and Name for data within

Building Occupancy



- **Parent UPRN – no classification and can be positioned outside the building footprint**
- **Address data is historically the only resource for managing risk data**
- **The Building OSID can be used as a container for quantifying overall Building Risk**

osid	3b257a57-8a7c-4285-83df-90a707bd99ac
description	Mixed Use Building
buildinguse_addresscount_total	211
buildinguse_addresscount_residential	193
buildinguse_addresscount_commercial	17
buildinguse_addresscount_other	1
connectivity	Standalone
constructionmaterial	Other Non-Standard Or System Build
buildingage_period	2000-2009
buildingage_year	2006
numberoffloors	32
height_absolutemin_m	27.8
height_absoluteroofbase_m	66.1
height_absolutemax_m	73.2
height_relativeroofbase_m	38.3
height_relativemax_m	45.4

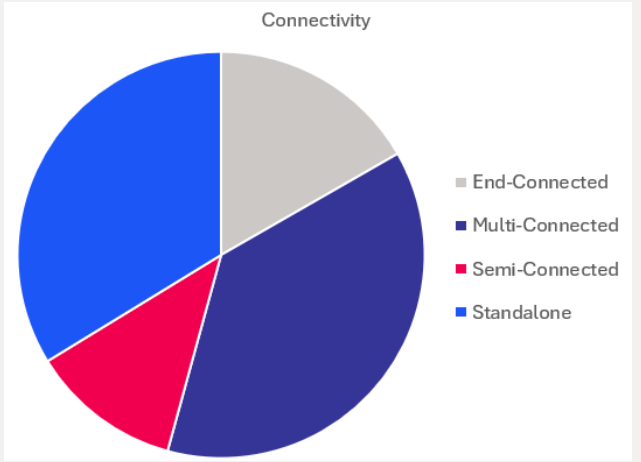
code	description	uprn_count	RBIP group	Combined Risk Score	Combined Risk Category
RD06	Self Contained Flat (Includes Maisonette / Apartment)	193	B1	187	M
CO01	Office / Work Studio	9	F8	74	VL
CR07	Restaurant / Cafeteria	4	D3	111	VL
CH02	Holiday Let/Accomodation/Short-Term Let Other Than CH01	1	C1	138	L
CL06	Indoor / Outdoor Leisure / Sporting Activity / Centre	1	D2	195	M
CR08	Shop / Showroom	1	F5	87	L
CR08CS	Convenience Store	1	F5	87	L
PP	Property Shell	1			

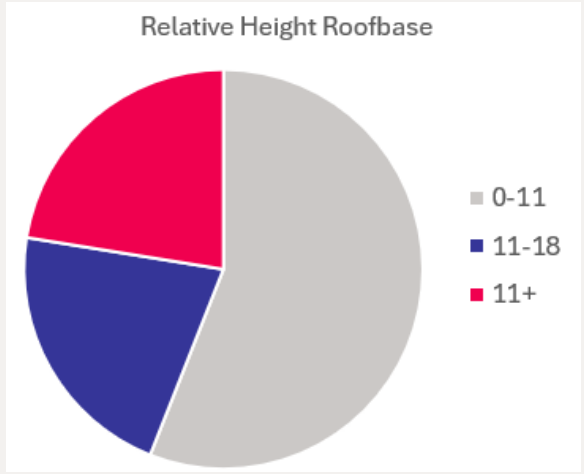
Does a combination of classification codes codes within the building affect the relative risk?

Nottingham RD06 by Building

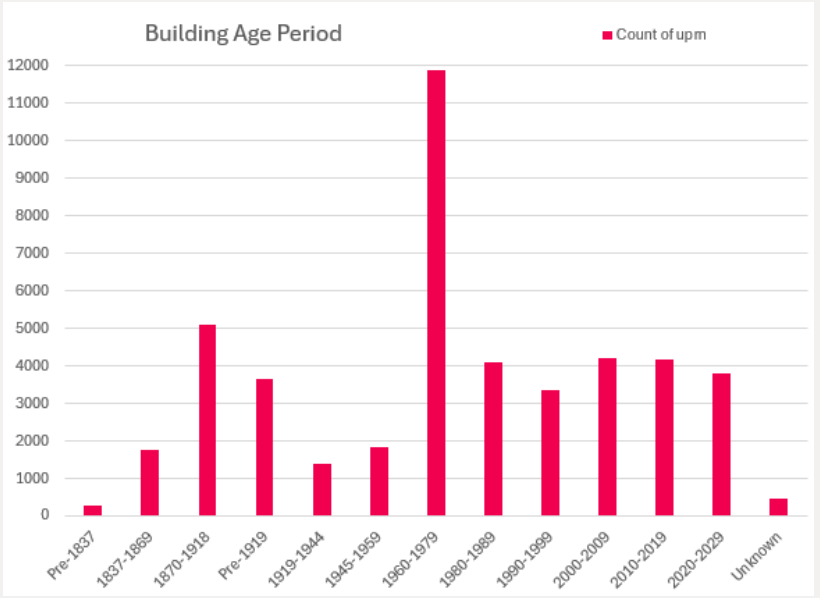
Not all RD06 are equal!?

building description	Count of uprn	%total
Multiple Residential Accommodation	32745	71.2%
Mixed Use Building	12671	27.6%
Residential Building	291	0.6%
Mid-Terrace House	130	0.3%
End-Of-Terrace House	65	0.1%
Detached House	21	0.0%
Semi-Detached House	21	0.0%
Church	12	0.0%
Community Meeting Place	9	0.0%
Medical Care Facility	8	0.0%
Health Centre	5	0.0%
Religious Meeting Place	2	0.0%
Golf Clubhouse	2	0.0%
Children's Nursery	1	0.0%
Commercial Building	1	0.0%
School	1	0.0%
Education Building	1	0.0%
Museum	1	0.0%
Bowls Clubhouse	1	0.0%
Gurdwara	1	0.0%
Grand Total	45989	100.0%





numberoffloors	Count of uprn
1	126
2	10826
3	11653
4	7043
5	3427
6	2498
7	2315
8	2043
9	699
10	211
11	522
13	1034
14	323
15	180
16	453
17	104
18	104
20	128
21	258
(blank)	2042
Grand Total	45989



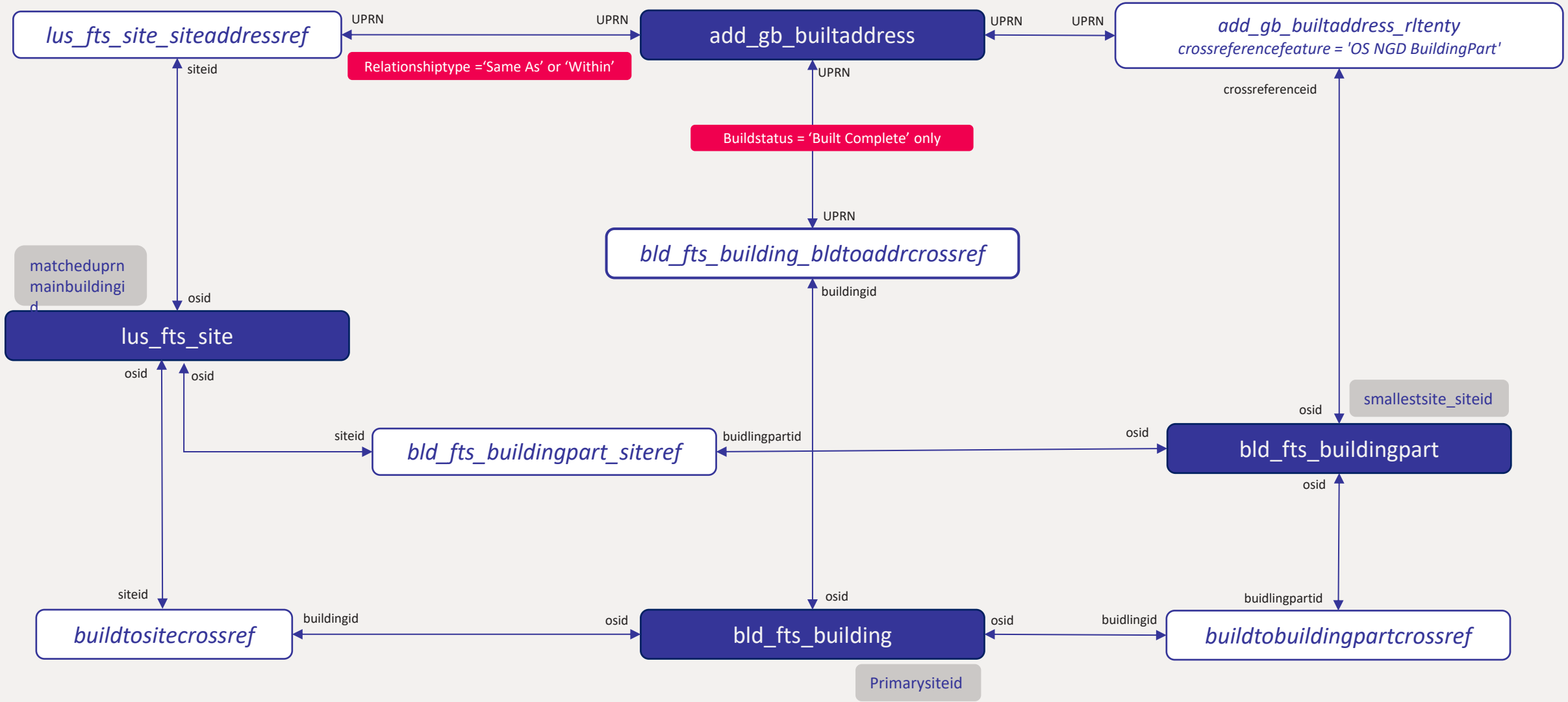
Assign the Incident record the building attribution prior to risk modelling to create a more targeted risk profile for RD06!?

Care home comparisons

uprn	10023987433	100031563934
fulladdress	ALBANY HOUSE DAY SERVICES, ORBY CLOSE, NOTTINGHAM, NG3 2FP	15, LANGTRY GROVE, NOTTINGHAM, NG7 7AX
classificationcode	RI01	RI01
classificationdescription	Care / Nursing Home	Care / Nursing Home
osid	2d9fcae1-9b8c-4d05-976d-abda3a0c0423	053fa94f-5a30-4824-9d75-ae6ae159b13a
geometry_area_m2	2076.774	70.092
description	Mixed Use Building	Detached House
buildinguse	Commercial Activity: Other|Residential Accommodation	Residential Accommodation
buildinguse_addresscount_total	73	1
buildinguse_addresscount_residential	72	1
buildinguse_addresscount_commercial	1	0
buildinguse_addresscount_other	0	0
buildingage_period	2010-2019	1960-1979
buildingage_year	2011	[NULL]
numberoffloors	4	1
height_relativeroofbase_m	12.2	3.5
height_relativemax_m	16.3	5.3

Not only are the two UPRNS associated with very different building risk. The building attribution may allow the responder to make decisions in an emergency e.g. moving occupants upstairs instead of evacuating in a flood incident.

Address, Building & Site Joins

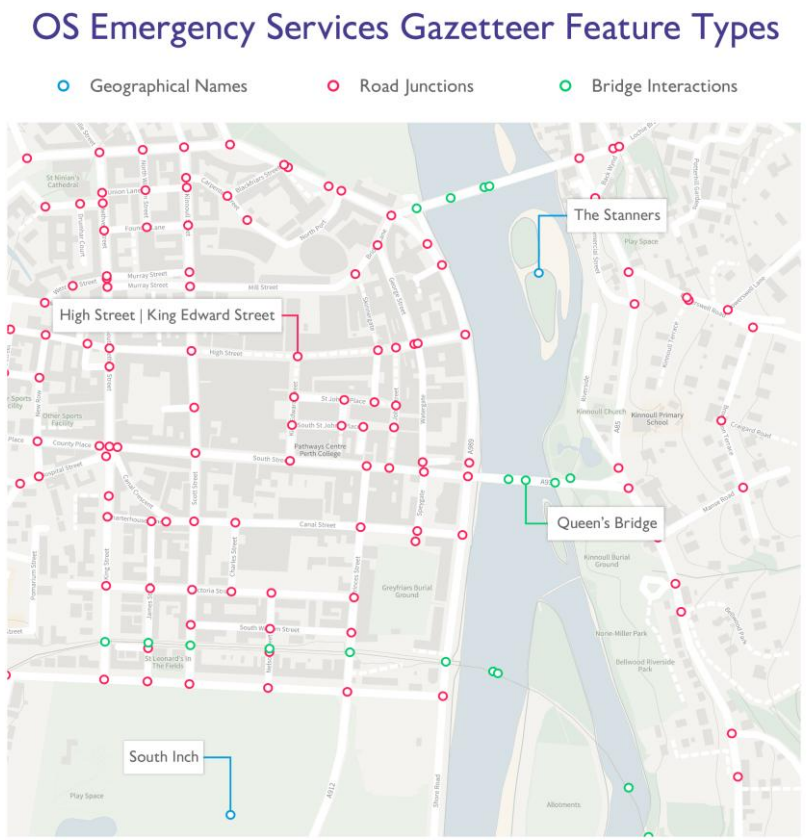


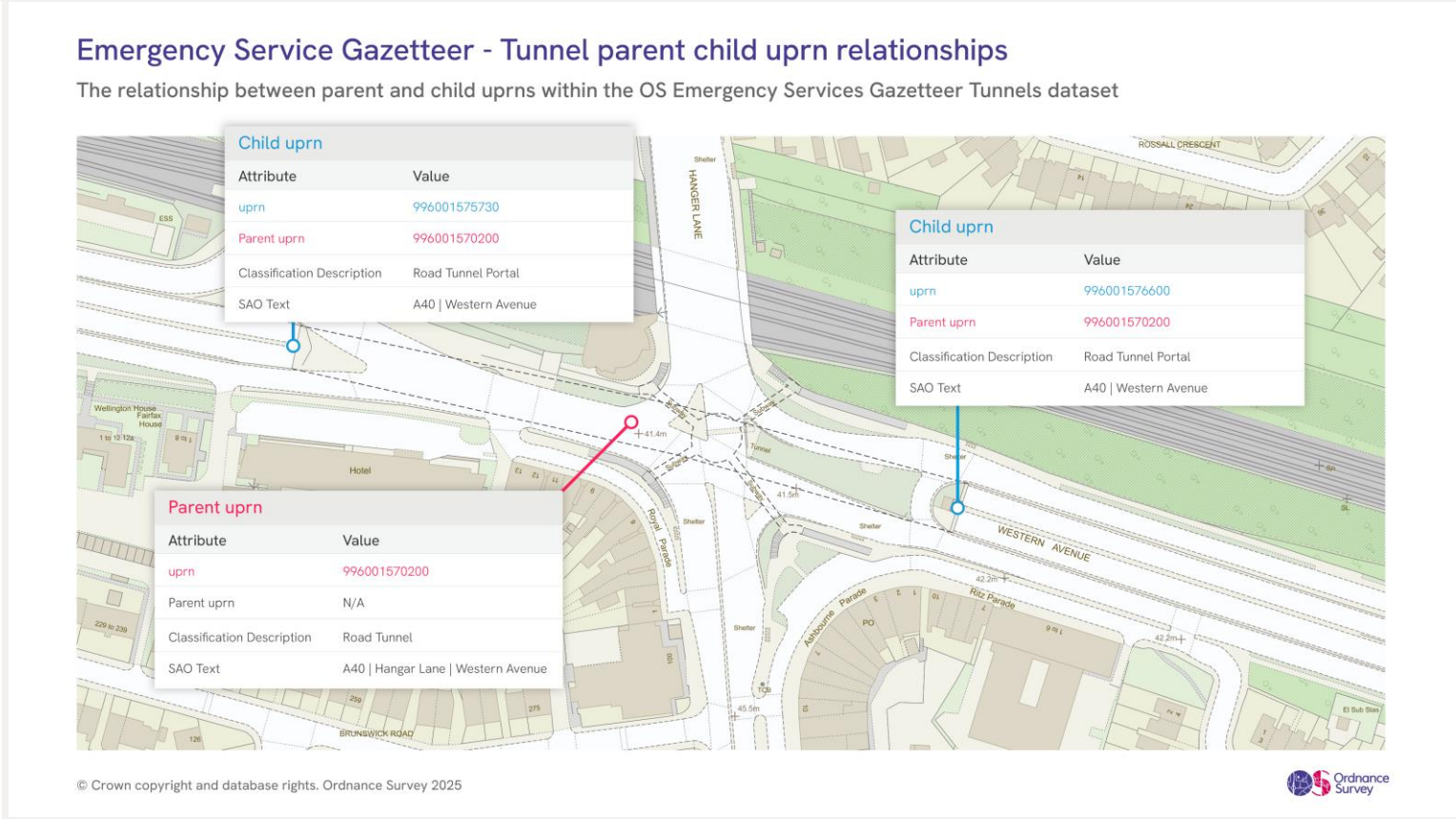
OS NGD Feature Type | Cross Reference Table | Direct Join

Ordnance Survey

The OS ESG

OS Emergency Services Gazetteer (OS ESG)





[More than Maps | ESG]

Roadmap

End of Life

OS NGD is the foundation of our next generation data

Enhancing technology to be more efficient and create better data

Improve the customer experience, and support and evolve ‘fit for future products’, sustainably

https://www.ordnancesurvey.co.uk/products/roadmap

End of Life for a product means that OS stops publishing updates and removes access to the product from the OS Data Hub and our APIs. We will issue customer notices at least 12 months prior to the End of Life date.

PSGA PRODUCT SUMMARY

A quick view of all the data available to PSGA members via download and APIs.

Ordnance Survey
SEE > BETTER PLACE

OS National Geographic Database
The authoritative location data for GB from one single source.
OS NGD

OS NGD API – Features
Access the data you need from the OS National Geographic Database.
API

OS NGD API – Tiles
Use customisable styling to create versatile and interactive maps.
API

Boundary-Line
Every administrative boundary for England, Scotland and Wales.
OPENDATA DOWNLOAD

AddressBase
Over 29 million addresses. Residential or commercial classifications
PREMIUM DATA DOWNLOAD

AddressBase Core
Over 33 million addresses, updated weekly.
PREMIUM DATA DOWNLOAD

AddressBase Plus
Over 37 million addresses, including multi-occupancy addresses.
PREMIUM DATA DOWNLOAD

AddressBase Premium
Over 40 million addresses. Property lifecycle information.
PREMIUM DATA DOWNLOAD

Code-Point
17 million postcode units in Great Britain and Northern Ireland.
PREMIUM DATA DOWNLOAD

Code-Point with Polygons
Over 16 million postcodes. Notional shape of every postcode unit in GB.
PREMIUM DATA DOWNLOAD

Code-Point Open
Coverage of the 17 million postcodes in Great Britain.
OPENDATA DOWNLOAD

OS Open Names
Place names, roads numbers and postcodes for Great Britain.
OPENDATA DOWNLOAD

OS Emergency Services Gazetteer
The locations and names of places and objects of GB.
PREMIUM DATA DOWNLOAD

GB Overview Maps
Maps of the British Isles.
OPENDATA DOWNLOAD

MiniScale
Simple overview map of Great Britain.
OPENDATA DOWNLOAD

1:250 000 Scale Colour Raster
Regional map view of towns and villages, roads and places of interest.
OPENDATA DOWNLOAD

1:50 000 Scale Colour Raster
Digital alternative to OS Landranger paper map series.
PREMIUM DATA DOWNLOAD

1:25 000 Scale Colour Raster
Digital alternative to OS Explorer paper map series.
PREMIUM DATA DOWNLOAD

OS VectorMap District
Customisable district level mapping of Great Britain.
OPENDATA DOWNLOAD

OS VectorMap Local
Customisable street level mapping of Great Britain.
PREMIUM DATA DOWNLOAD

OS OpenMap – Local
Street-level mapping.
OPENDATA DOWNLOAD

OS Open Zoomstack
Customisable map of Great Britain to be used at national and local levels.
OPENDATA DOWNLOAD

OS MasterMap Highways Network – Roads
A routable road network dataset.
PREMIUM DATA DOWNLOAD

OS MasterMap Highways Network – Routing and Asset Management
Routable road network and routing restriction information.
PREMIUM DATA DOWNLOAD

OS MasterMap Highways Network – Paths
Path network dataset for Great Britain.
PREMIUM DATA DOWNLOAD

OS Open Rivers
Water bodies and watercourses in Great Britain.
OPENDATA DOWNLOAD

OS Open Roads
High-level view of the road network.
OPENDATA DOWNLOAD

OS MasterMap Networks – Water Layer
Detailed watercourse dataset.
PREMIUM DATA DOWNLOAD

OS Detailed Path Network
Path and track routing dataset.
PREMIUM DATA DOWNLOAD

OS Multi-modal Routing Network
A fully connected network for the multi-modal routing of people and goods.
PREMIUM DATA DOWNLOAD

OS MasterMap Topography Layer
Detailed view of Great Britain's landscape.
PREMIUM DATA DOWNLOAD

OS MasterMap Building Height Attribute
Building height properties.
PREMIUM DATA DOWNLOAD

OS MasterMap Sites Layer
Detailed extents of important locations.
PREMIUM DATA DOWNLOAD

OS MasterMap Greenspace – Layer
Greenspaces in urban areas.
PREMIUM DATA DOWNLOAD

OS Open Greenspace
Greenspace sites and their access points.
OPENDATA DOWNLOAD

OS Open Linked Identifiers
Authoritative relationship between UPRNs, USRNs, TOIDs.
OPENDATA DOWNLOAD

OS Open TOID
Uniquely identify landscape and built environment features.
OPENDATA DOWNLOAD

OS Open USRN
Uniquely identify streets.
OPENDATA DOWNLOAD

OS Open UPRN
Uniquely identify addressable locations.
OPENDATA DOWNLOAD

OS Terrain 50
Visualise simple landscapes in 3D.
OPENDATA DOWNLOAD

OS Maps API
Serving pre-rendered raster tiles.
API

OS Features API
Filter OS data and receive exactly what you need.
API

OS Vector Tile API
Serving data as a customisable basemap.
API

OS Linked Identifiers API
Access relationships between primary identifiers.
API

OS Places API
Find UK addresses instantly online.
API

OS Names API
Geographic directory about identifiable places.
API

OS Downloads API
Automate your downloads of OS data.
API

DATA CATEGORIES

- A Addressing and location
- C Contextual and derived
- N Networks
- T Topography
- ID Identifiers
- H Height

Access all OS data available under the PSGA in the OS Data Hub.

osdatahub.os.uk

- Access the OS National Geographic Database
- Download OS Premium and OpenData
- Use APIs for direct access to our data
- Easily report errors and omissions using the Error Reporting Tool

End Of Life Notice
2026 – 2029

All Subject to suitable alternatives being available via new data releases and enhancements

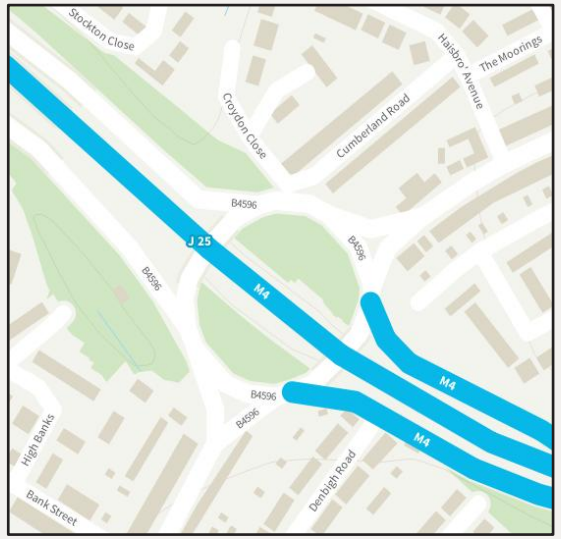
Ordnance Survey
SEE > BETTER PLACE

Large Scale Topographic Map

- End of Life is TBC for OS MasterMap Topography Layer
- Development under way for an OS NGD based replacement. Alpha will be available as soon as possible
- Detailed basemap of Great Britain's landscape, including features representing manmade and natural environment. Designed for use alongside OS NGD themes or as a standalone product.
- Improved usability and customer experience – better data model, consistent with NGD, plain English
- Use – Backdrop, Vector work and simple analysis with easy integration with NGD to enable enhanced analysis
- 1,1250 scale
- GPKG and CSV format

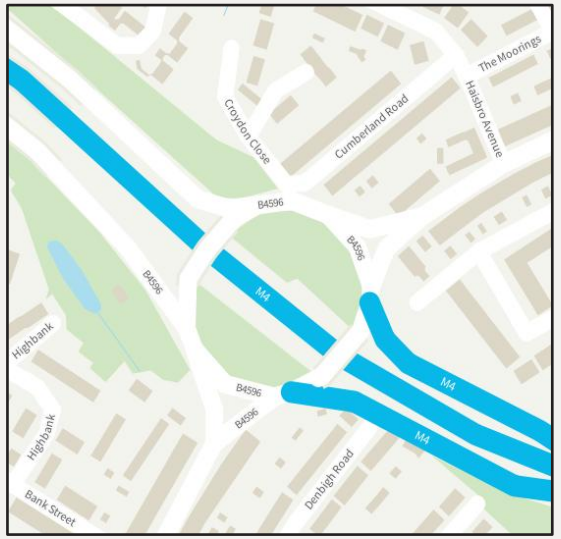
Open Zoomstack

- End of Life for OS open Zoomstack is Spring 2027
- Development under way for an OS NGD based replacement. Alpha expected during 2025. Product launch targeted Spring 2027
- National to local level basemap in an all-in-one zoomable product. Replacement for current OS Open Zoomstack product, designed for use alongside OS NGD themes or as a standalone product.
- Improvements in the latest sample data now available:
  - Road levels
  - Collapsed Roundabouts
  - Building generalization – Terraces
  - Airport Runways
- Use – Backdrop and Vector work
- GPKG format



Current Zoomstack

Motorway incorrectly shown above the roundabout



Zoomstack v2

Motorway correctly shown below the roundabout

Thankyou!

richard.barker@os.uk

Ordnance Survey