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Addressing the UK

Local Government Association

improvement service

Ordnance Survey

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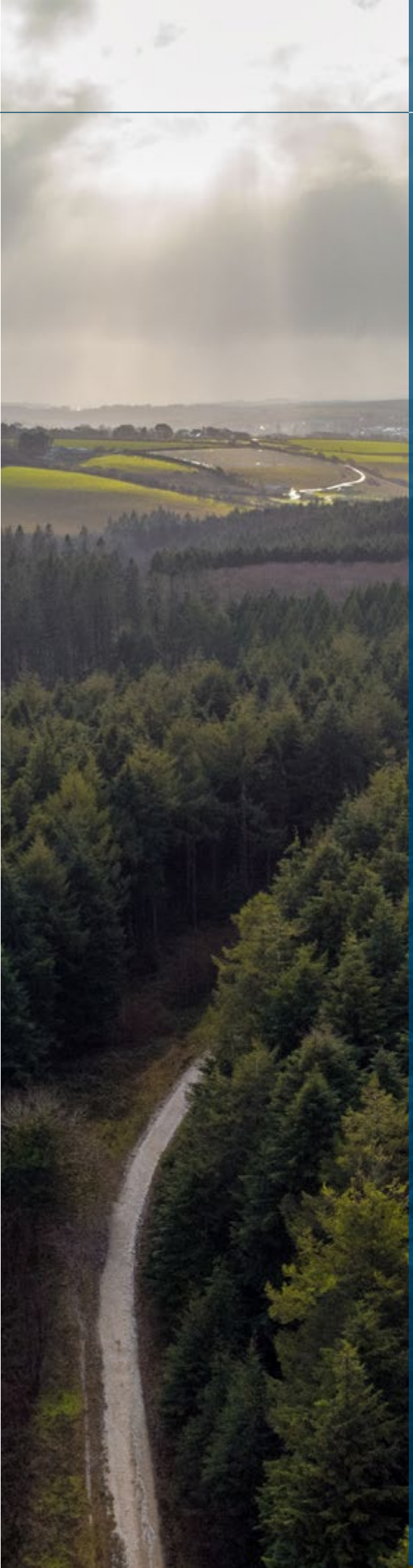
Addressing the UK

→ National efficiency is essential if we are to grow the UK economy. Rapid, transformational responses are crucial if we want that economy to flourish on the international stage. To secure these outcomes, we must understand what needs to change, when, how, and where.

To achieve that level of insight, so that confident decisions might be made, we need more people and businesses to work efficiently, and to share information effectively. In short, we need wider adoption of the UK Geospatial Strategy– a shared resource that's based on the principle of 'capture authoritative data once, use it many times'.

The value of this data infrastructure is immense, and geospatial data is its core component. When we can understand where people are, what they need and where and why, we can then shape the policies that serve them best.

Addressing is key. We can address the future together, with a joined-up approach that harnesses the power of geospatial data to deliver maximum efficiency and effectiveness for all.



The Importance of Data

Accurate and timely data and information is a cornerstone of economic progress. The UK government has already highlighted the importance of data generally in achieving health, economic, social and environmental outcomes with the publication of a National Data Strategy. Additionally, the Geospatial Commission's UK Geospatial Strategy aims to unlock the significant economic, social and environmental opportunities offered by location data and boost the UK's global geospatial expertise.

Linkable data is the 'golden thread' that connects both the public and private sector to effective, efficient, people-centric services. Fraud detection and prevention; emergency response provision; our continued COVID response – all of these services depend on having access to and the ability to manage complex data at scale.

Commerce also depends on huge quantities of data to facilitate banking, lending, insurance and logistics and property transactions. In short, access to an authoritative public sector data framework can provide the private sector with a foundation that can surface a myriad of benefits and multiple opportunities to innovate, and deliver immense rewards.

The Essence of Location

Geospatial data – the information that defines where something is located – is a core component of the strategy that underpins our powerful, national data infrastructure:

- Insights that connect people to places, where services are needed, and how policy should be shaped to best service those needs
- Accurate and up to date geospatial data including authoritative geospatial addressing drives efficiency and service transformation, nationwide
- Geospatial address data can link disparate datasets authoritatively, enabling analysis and creating new opportunities for innovation.

In short, economic prosperity and thriving communities are significantly enhanced by place-based solutions and policy-making – and to understand those locations, we need a way to identify them.

Consistently. Accurately. With enduring confidence.

Unique location identifiers – UPRNs and USRNs

By using unique location identifiers, we can more easily identify where and how best to improve services and outcomes for people and businesses. Better still, authoritative address and street data with unique location identifiers provide a framework for linking all kinds of information efficiently – data that needs to be cleansed of personal details, perhaps, or datasets with few fields in common. The potential for efficiencies across government are significant. It is almost impossible to name a type of data or a pool of information that doesn't have an element location within it.

To embed this value at the heart of society, the Government through its Open Standards Board has mandated the use of the Unique Property Reference Numbers (UPRNs) and Unique Street Reference Numbers (USRNs) - as the common identifiers for government systems, services and applications that store or publish data sets containing property and street information. A recognition of their value as 'a golden thread' in linking and connecting processes and systems across government. Look no further than the increasingly effective exchange of data between health services and government bodies based on the UPRN in the face of the COVID pandemic.

Effectively, the government mandate confirms that best practice involves using these identifiers all of the time, at every opportunity. The identifiers themselves are the definitive set of references for every addressable location in the UK, and they're also available to the private sector through an Open Government Licence and the AddressBase® range of products from Ordnance Survey. The aspiration is that this level of accessibility will encourage wider adoption.

Realising the Value of Addressing

Local authorities have been creating, maintaining and integrating standardised address data into their systems and processes for some 20 years – details of property and street names and numbers, and features about every addressable location in the country. This has already improved the way information is managed, enabling better policy-making and more efficient services across the public sector with net benefits of up to £202 million from better use of the address and street data that councils create and maintain. Based on the current rates of adoption, this represents a return on investment for local authorities, after discounting of 4:1.

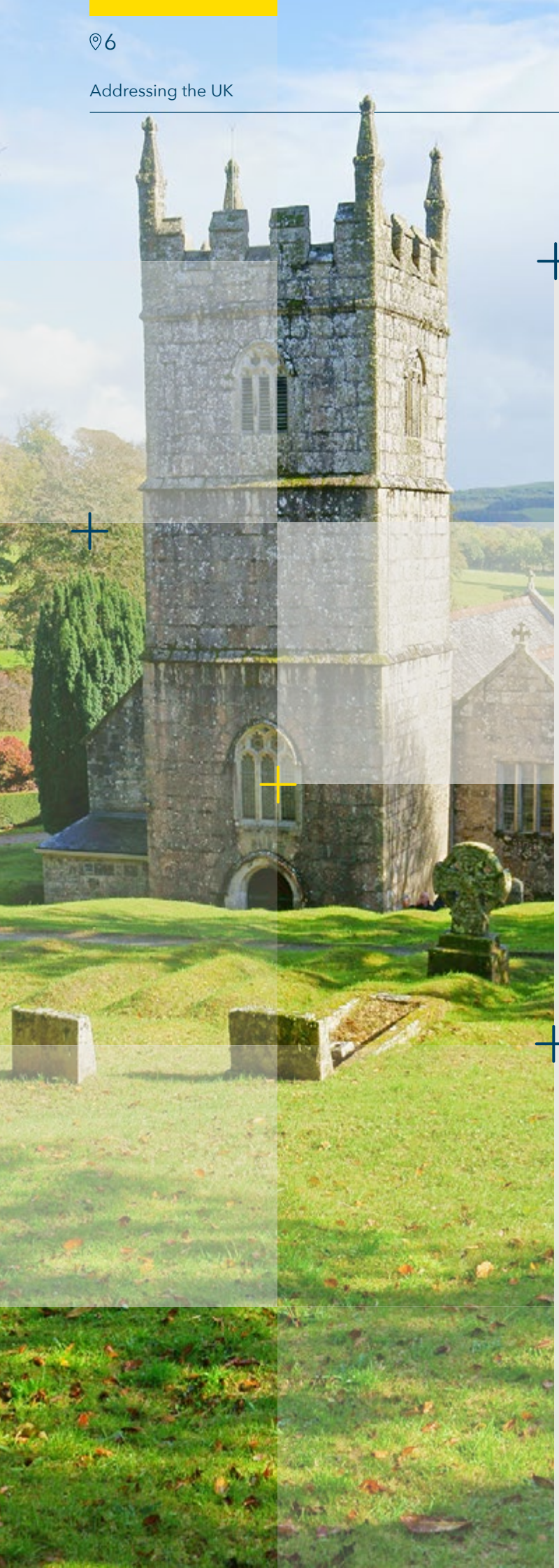
That data, which is collated by GeoPlace, is then made available to the wider public sector, the private sector, education and voluntary sectors by Ordnance Survey through a portfolio of data products known as AddressBase, and a suite of digital services.

Take-up of AddressBase has been widespread. Anyone using one or more of the AddressBase products has access to UPRNs, (and their 'sister' reference, Unique Street Reference Numbers or USRNs) – and can tap into the immense value of standardised, uniquely identified, geo-referenced address data. What's more, sophisticated use cases in almost every UK market sector is helping to drive the development of the AddressBase products themselves and the underlying processes that maintain the data within them.

Usually, we think of 'an address' as being the description of where to find a property or a dwelling. That may be where we live, a friend's house, a business or an organisation that we want to contact – to buy something, or to organise a delivery. But an address can also be a description of features in the landscape or objects of interest. Parks, for example, or churches, electricity substations – even bus shelters have an official address.

Addresses are inherently focused on location, both in the terms they use and the way they are constructed. The term 'geospatial address' indicates that an explicit piece of geographic information has been added to the element, usually in the form of coordinates, which will enable the address to be located on a map.

We can exchange that information and use it confidently and consistently, as long as it has been formalised, made precise, and uniquely identified with a reference number: the UPRN.



How we use Geospatial Data

When we combine geospatial addresses with other information, we can visualise all kinds of insights on a map. We can add layer upon layer of data to see how places are associated with or affected by other resources, events, risks or behaviours.

For example: to assess the risks that might be connected with a home, insurers can analyse datasets that hold details about the risk of flooding, crime, or other perils to that single property – not a postcode, but an individual building.

Joined-up geospatial addresses provide the means for companies to improve the quality of their service, and to enrich their customer databases. Geospatial addresses from AddressBase enable retail and logistics companies to calculate confidence limits around their delivery time predictions. Working with UPRNs at the heart of their internal systems, these firms can then reduce costs and increase the number of successful deliveries each day – offering more precise, more reliable delivery slots. Planners can ensure that the right charging infrastructure is in place for electric vehicles – making sure that easily-accessible chargers are in the right place for as many people as possible.

In an increasingly digital world, geospatial addresses are becoming far more important to us as consumers, too. This data helps us to access online services whenever we want to, giving us choice and flexibility. In response, to ensure our safety and protect themselves from fraud, service providers employ Know Your Customer (KYC) checks: these use location insights to detect fraud, check for compliance and assess risks.

Geospatial data is also fundamental to consumer data enrichment. It provides the means to understand customer interests, values, behaviours, and habits. But we are also using addresses now to prove who we are, as much as what we do or where we do it. In short, it's becoming more and more important for us to be using complete, officially recognised and authoritative address data.

Authoritative UK Geospatial Addresses

→ GeoPlace, the limited liability partnership owned equally by Local Government Association (LGA) and OS is responsible for collating, managing and maintaining the primary UK authoritative geospatial address data and this is made widely available to customers as the AddressBase products and specialist addressing services by Ordnance Survey and their partners.

GeoPlace aggregates all Local Land and Property Gazetteers (LLPGs) created by local authorities adding addresses from Improvement Service in Scotland, Land and Property Services in Northern Ireland and the Isle of Man and Channel Islands and integrating datasets from the Valuation Office Agency (VOA), Royal Mail and Ordnance Survey amongst others.

Local authorities hold the responsibility as the legal source of addresses in the UK and this means this aggregated data is officially recognised and authoritative.

Each local authority is responsible for creating and maintaining a complete and granular set of all addressable locations in their area. That responsibility to name and number properties and streets is defined in legislation. Street names and property addresses are created as new properties or changes to the built environment take place as part of their planning and development processes.

With over 45 million addresses covering over 40 million buildings and related structures on almost 1.5 million streets, the data held by GeoPlace and available as AddressBase is the most complete and granular view of geospatial addresses available for the UK today.

As part of the legislative process, local authorities consult and share that information with interested parties as appropriate. This includes Royal Mail who then confirm or allocate a postcode and post town. That insight is available from the Royal Mail Postcode Address File (PAF). The PAF contains all postal addresses (but no further geospatial data beyond the postcode)

for the UK and this enables Royal Mail to deliver mail and fulfil its obligation to provide a universal postal service. The PAF contains over 30 million business and residential addresses, and these are incorporated by GeoPlace and local authorities and included in AddressBase.

Updates to the PAF are sourced from local authorities – information is added from their street naming and numbering process – or through Royal Mail operations, either through feedback from delivery staff or PAF users. As local authorities have statutory responsibilities for planning and street naming and numbering, information about a property and its address is generally recorded by the local authority first, before becoming available via the Royal Mail.

These addresses are not just for the building itself. They include the granular, specific detail that identifies the location of flats, offices and other recognised subdivisions within each building. GeoPlace holds 2.5 billion data fields for address and street records, including over 80 million links to other datasets and a history of the changes that have occurred on each record. Through a validation and assurance process GeoPlace runs 364 address data checks, 550 street data checks and 1,480 assurance checks on each record before being accepted into the database. This includes checks to ensure UPRNs and USRNs are assigned appropriately and without duplication. Data is enriched and transformed by adding the best attributes from source datasets to enhance overall quality of the product. It's updated daily by local authorities, GeoPlace receives over 2 million changes per month.

Using the UPRN in the Property Lifecycle

Local authorities are continuously engaged with the land and property lifecycle. Their day-to-day activities include assessing planning applications, street naming and numbering, building and environmental control, licensing, electoral registration, and assessment of council tax and non-domestic rateable value.

To provide a consistent and standard approach, local authorities assign a UPRN to each new address record at the moment it is created. At the same time, that UPRN's location is recorded using National Grid coordinates.

The UPRN is definitive. In the same way that every citizen has a National Insurance number, every vehicle a number plate, and every book features an ISBN, every addressable location in Great Britain has one UPRN. Each one is unique. With this consistent identifier in place, there is an unbreakable link in any chain of businesses that's exchanging details about land and property, from planning permission through to demolition and beyond. This commonality delivers efficiency gains in operational processes, and it acts as the persistent and unique identifier that's needed to cross-reference disparate information.

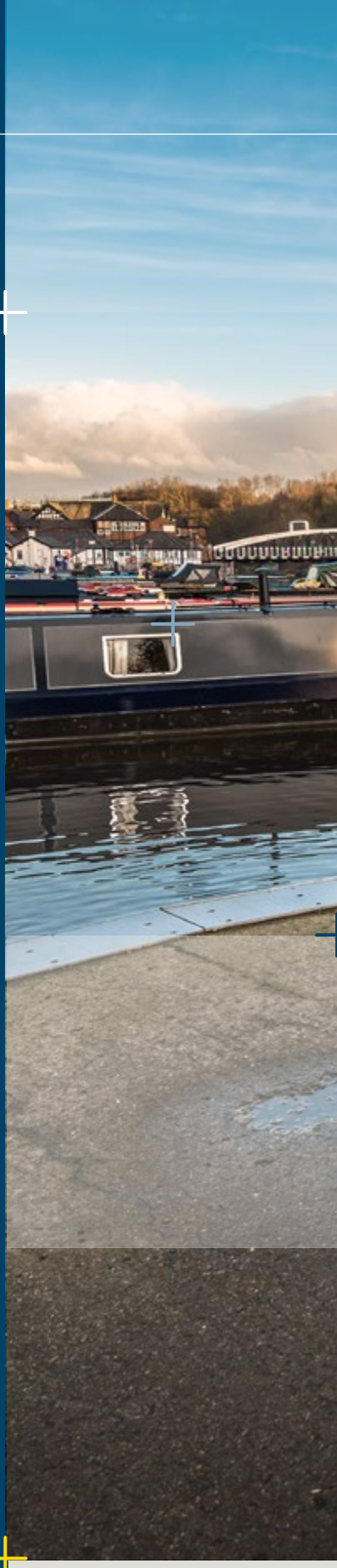
During its lifecycle, information about the address of a property may change. This might come about due to a change of name, perhaps; due to a sub-division or aggregation of an address within a building; or due to a change of use, such as from single occupancy to multiple occupancy.

The advantage of an authoritative, single point of reference – the UPRN – is that all historic, alias, and provisional forms of address can be recorded against the same identifier.

Within blocks of flats or offices, UPRNs are structured into a corresponding hierarchy of identifiers that describe each block and its component parts. So, the block will be allocated a parent UPRN, and each flat or office located within the block will have its own unique child UPRN, linked to the overarching parent UPRN.

If a property is demolished, then the UPRN becomes historic. Information about the property is retained. The UPRN is never removed or reused. If other buildings are built to take the original property's place, new UPRNs are given to each new property on the site.

At each stage in the property life cycle, the status of the property is recorded in a series of logical codes. For example, before street naming and numbering has been completed, a property in the early stages of development should be 'Provisional', its state may be recorded as 'Under Construction'. Later, when the property exists and street naming and numbering is complete, the same building will have its status changed to 'Approved' and its state may be recorded as 'In Use'.



Standards and Governance

GeoPlace is the centre of excellence for addressing and streets in the UK. It is the guardian and champion of exemplar addressing information on a national scale.

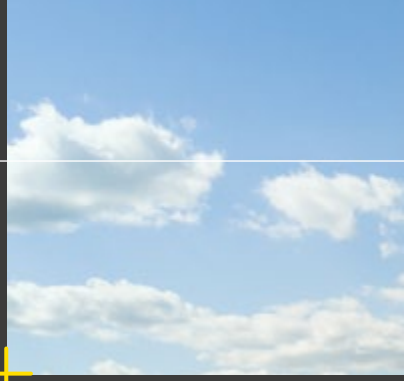
The Limited Liability Partnership was created in 2011. GeoPlace works with all 336 councils responsible for planning and the 174 local highways authorities in England and Wales under a Data Cooperation Agreement (DCA), together with the Improvement Service in Scotland as the coordinating body for Scottish local authorities, the Land and Property Services in Northern Ireland, and with the Isle of Man Government and the Channel Islands via Digimap.

A nationally consistent and standard approach to the maintenance of the authoritative geospatial address data is only possible due to the data governance framework that is operated and managed by the GeoPlace team – providing the basis for local authority data to be managed as a strategic national asset.

At the local authority level, those Local Land and Property Gazetteers (and in Scotland, the Corporate Address Gazetteers (CAGs)) are managed and maintained by an appointed address data Custodian. The Custodian is the key point of contact for all addressing matters within and external to the authority; they work alongside Street Naming and Numbering Officers on a daily basis, and they collaborate with planning, development control, highways and billing teams.

GeoPlace provides advice, support, training and data matching tools to help local Custodians create and use their gazetteers in a way that conforms to national standards. This ensures the data they're curating can be compiled seamlessly into a single national dataset following rigorous quality checks. A regional and national structure ensures that councils promote effective and best working practices and are properly represented. This structure also supports the promotion of guidance and tools for standardisation, such as data formats and data entry conventions.

All LLPGs maintained by local authorities throughout England and Wales and the equivalent CAGs maintained by local authorities in Scotland, are managed in accordance with the British Standard (BS7666) for geographical referencing and addressing of land and property. Further consistency is introduced by the nationally agreed Data Entry Conventions (DEC), which provide definitions and guidance for consistent maintenance of the LLPGs and CAGs.



Getting Access to UPRNs

UPRNs are available to the market as part of OS AddressBase®, a portfolio of data products that's been jointly created by GeoPlace and Ordnance Survey (OS).

As the national mapping service, OS is responsible for providing, promoting, marketing and licensing AddressBase®. The AddressBase® portfolio comprises a family of related but distinct products.

AddressBase® Premium is the flagship addressing product. It provides:

- a UPRN for every addressable location
- every authoritative local authority geospatial address
- Royal Mail postcodes and post town names (where matched to a UPRN)
- addresses with sub-divisions or multiple occupants
- objects without postal addresses such as bus shelters or named ponds
- cross-references to VOA data and OS MasterMap® Topography and Highways Network
- street identifiers (Unique Street Reference Numbers (USRNs)
- coordinates
- classification for each address.

A new AddressBase® product, AddressBase® Core, was added to OS's addressing portfolio in July 2020. It is simplified, easy to use data product providing all 'live' addresses with a weekly update frequency. It offers a single line address and simplified attribute structure, with cross-references to PAF and OS MasterMap®. Classification of addresses is provided at both a primary and secondary level.

Identifying Property and Street Information

The AddressBase® products are free at the point of use for the public sector via the Public Sector Geospatial Agreement (PSGA). At the same time, the Government Digital Service (GDS) Open Standards Board has mandated the use of the UPRN as an open identifier for government systems, services and applications that store or publish data sets containing property and street information.

In July 2021, the Central Digital & Data Office (part of the Cabinet Office) issued new guidance to comply with the UPRN standard. It states that, if you work in the public sector and you need to use address data, such as property and street information, then you should follow this guidance. Under the PSGA, the UPRN was made open. This included the launch of a new OS Open URPN data product. This was complimented by the launch of OS Open USRN, OS Open TOID and OS Open Linked Identifiers.

Additionally, on 11th March 2021, the Government Digital Service provided best practice guidance for creating a strategy to manage and support reference data for publishing. The guidance is aimed at government employees who need to publish reference data so others can use it across government. The guidance specifically highlights the use of UPRNs.

AddressBase® products are also available to business customers and education institutions. OS has network of more than 1,600 Licensed Partners in a wide range of markets. They license the AddressBase® products to provide their customers with products and services.

A Vision for Addressing the Future – Together

Our vision is to move beyond the current practice of different organisations building separate datasets and batch-matching them to bring them together – by working with other bodies to connect businesses processes and link data through the property lifecycle.

For example, at the point at which a council tax valuation or property sale is made by the national agency responsible for valuation or land registration in that location, that information could be assigned its UPRN.

At the moment, data about individual properties is collected and held in different formats by many different organisations involved in some aspect of their formal administration. By better connecting those processes through wider and earlier adoption of the UPRN and embedding that link, the potential exists to realise to ensure certainty, avoid duplication, and release huge value.

The Royal Institution of Chartered Surveyors (RICS), the Institute of Residential Property Management (IRPM) and The Lettings Industry Council have outlined the value of this proposition for the land and property in particular. In May 2021, the Housing Minister stated that UPRNs should be 'baked in' to streamline house buying and selling.

UPRNs can link the information in records that have been created by land registration; local land charges; energy performance certificates (EPCs); confirmation of compliance with building regulations; planning permissions; council tax assessments; gas and electricity safety certificates, and innumerable documents provided by vendors. They can provide the 'golden thread' to bring these datasets together.

Imagine how the property sector would change if all of this information was connected authoritatively. Using the UPRN to link these data sources or any other relevant information is a key factor in building a trusted digital data set. It speeds up the process, it reduces the number of failed transactions, and it helps to prevent fraudulent activity.

What's Next?

→ Ultimately – through data improvements, product enhancements, and the complete integration of addresses, streets, buildings, mapping and cadastre – this data will become the backbone for an integrated set of land and property registers. This will provide a platform for innovation in the market, and will underpin and stimulate the economic growth that the Geospatial Commission are driving.

Moving forwards, GeoPlace supports the concept of single canonical datasets as outlined by the Lord Maude Review published in July 2021. A wide range of activities that underpin the growth fundamental to property and housing markets will be supported by integrating the official land and property registers via UPRNs.

These include:

- managing tax revenue streams
- combatting fraud
- identifying citizens to be evacuated during disaster management
- guiding the planning system in delivering sustainable development
- ensuring evidence-based decision making at scale
- safeguarding environmentally sensitive ecosystems
- underpinning 'track and trace' solutions during pandemics
- strengthening the resilience of our buildings and cities
- mitigating the impact of climate change.

GeoPlace® is a public sector limited liability partnership between the Local Government Association and Ordnance Survey

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