LOCATING PEOPLE AND PLACES WHEN TIME MATTERS

JOHN KIMMANCE EXPLORES HOW ORDNANCE SURVEY IS UPPING ITS GAME BY HARNESSING THE POWER OF UNIQUE PROPERTY REFERENCE NUMBERS TO SUPPORT EMERGENCY AND HEALTHCARE SERVICES

Accurate location is a vital tool in responding to emergency incidents, with the blue light services employing a range of geospatial data (roads, addresses, waterways, and terrain) to keep communities safe.

Whether it's supporting 999 control room responses, or providing dedicated mapping for emergencies, major incidents or national events, Ordnance Survey (OS) has been there and got the T-shirt.

But now, thanks to Unique Property Reference Numbers (UPRN), address data can support these applications more accurately than ever before.

What is a UPRN?

A UPRN can be used like a National Insurance number, or car registration plate. A UPRN can be up to 12 digits in length and serves as a unique identifier for an addressable location, such as a building, a house, an individual flat in a block and other types of addressable locations that might not have a 'normal' address like a bus stop, a post box or an electricity substation.

The UPRN identifier applies a 'common standard' for addressable buildings and objects, which then makes it possible to collate, share, and connect data from various sources. The unique identifier helps reduce ambiguity in a location being considered and ensures everyone refers to the correct location. This enables a greater accuracy of detail between separate organisations, and so, the unification of data.

Individual datasets may fail to recognise an address, especially if organisations perform data entry by different methods; or a query may relate an object that has no literal address.

Essentially the UPRN offers a more discrete level of geography. Postcodes are widely relied on; the familiar six or seven-digit alphanumeric code has been in place for over 60 years, and though proven effective, it still is not the most distinct level of geography.

There are 124 postcode areas and roughly 1.7 million postcodes in the United Kingdom. The average size of a postcode area is 776 square miles, and the average population is 533,000, while each individual postcode covers an average of about 15 properties. Some postcodes can hold up to 100.

Representation of UPRNs for residential (above Left) and commercial (above right) properties
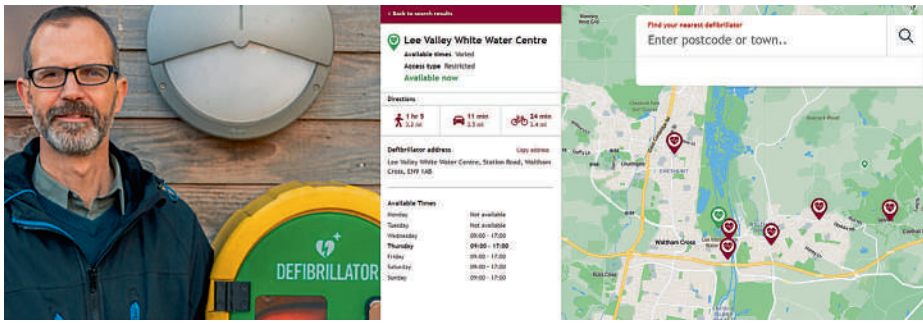
Example of public-facing defibrillator mapping created by the British Heart Foundation

So there is certainly room for an even more granular level of geography.

Enter the UPRN, which has 38,474,050 live records at the time of writing.

Not only do UPRNs serve as a unique identifier for a single addressable location, but they can be used as a consistent, unique reference point. Organisations can link records, exchange them, and keep their data consistent within their internal tools and processes.

The UPRN and healthcare

UPRNs have been utilised extensively in various markets from local authorities to prop-tech start-ups and the National Landlord Register in the property sector. But outside of the property sector, the most significant impact UPRNs have made is arguably in healthcare, where reduced ambiguity can be the difference between life and death.

Recently OS and GeoPlace supported the British Heart Foundation (BHF) in ensuring that the national database of defibrillators used by the UK's ambulance services has access to complete and accurate address data including UPRNs.

Known as The Circuit, the national defibrillators network maps and geo references defibrillators across the UK. The Circuit is designed to synchronise every 60 seconds with the live dispatch system of the ambulance services and provide them with the location of the nearest defibrillator in an emergency.

In some cases the use of a defibrillator before an ambulance arrives can be the difference between life and death. Sadly, this happens in too few cases and many opportunities to help save a life are missed. This is in part because the ambulance services do not know the location of the nearest defibrillator which is why having accurate data on the Circuit is so vital.

To help people register defibrillators as quickly as possible, UPRNs are used. Sometimes there can be one defibrillator in an entire block of flats or there could be one on the outside of a large building, so traditional addressing methods were not conducive to finding them in emergency situations.

Using the UPRN ensures everyone refers to the correct location, even for an object that has no literal address. It also allows users to link other important information and records, such as maintenance information and date of usage.

Healthcare planning in London

During 2021, a year which certainly put extreme pressure on the healthcare sector, the NHS London Healthy Urban Development Unit (HUDU) wanted to match existing addresses to the UPRN, using addressing data. The records they had been using, such as locations of health infrastructure, GPs and hospitals were not adequate for accurately assessing their assets and model accessibility.

They needed a more granular level of geography. Through doing so, they could continue aligning housing development planning and health programmes in London to narrow health inequalities, and make sure everyone has access to the healthcare they need.

NHS London HUDU is also using OS Maps API to help produce detailed static mapping evidence, to support health location planning, in conjunction with UPRN matching.

Covid-19 tracing

Using the UPRN as an address-based identifier made it a valuable asset in tracking, and then managing, the outbreak and spread of Covid-19 during the pandemic.

A recent study, published in *Emerging Infectious Diseases*, focused on increases in Covid-19 cases and
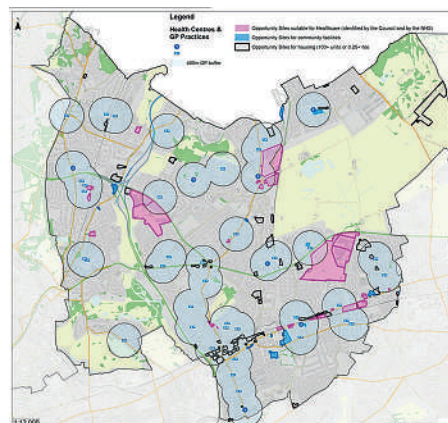
Example of HUDU healthcare planning, here in the London Borough of Redbridge

outbreaks among students returning to their universities in September 2020.

Students residing in student accommodations could be identified by matching their residential addresses with national property databases. Then, the types of accommodation (such as student accommodation) could be identified, by matching the case patient address with its appropriate UPRN. This data mapping enabled precise locating of any case patients to a particular area of residence, and data could then be compared.

Having this information in place helped gain significant insight, such as the average age of case patients, whether more males or females were afflicted, and the locations of the highest outbreaks. With these findings in mind, implementing appropriate Covid-19 restrictions meant that students could reduce risk of infection, and focus on their studies and university experience.

What's next?

There are further examples of the UPRN's involvement in healthcare, from helping the Government understand the inequalities associated with Covid-19 (where we saw greater proportions of confirmed cases for residents living in social housing) to helping the UK Health Security Agency determine where to deliver Covid-19 test kits and plot locations for potential test sites.

But the UPRN is proving to be a valuable asset for locating places and people, while remaining a safe identifier that anchors data together. From land registry, gas certificates, broadband coverage, defibrillator networks, Covid tracing and NHS records – everything that could be related to one property is unified.

Over the last few years it has been fantastic to see the potential of the UPRN being realised. Thanks to more organisations across the public and private sectors adopting the UPRN it has become more effective the more it has been used. Organisations who adopt and use it gain a method of cleansing data and more reliably connecting datasets, which in turn helps to improve communication between separate organisations.

I think this metaphor sums-up the UPRN perfectly; all the different data, records, services and organisations are the keys and the UPRN is the keychain linking them all together.

UPRNs are now openly available via the PSGA and the OS Data Hub.

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