



Improving Customer Outcomes (a lifetime of lessons) in 12 Digits

Rob Lee

13/2/25

OFFICIAL

Introduction

Rob worked in Financial Services most of their working life and spent many many many hours trying to help customers, using the data the organisation holds.

They are the Chief Data Architect at HMRC focussing on how to arrange HMRCs data flows for agility, cost and a better customer experience.

Here we distil a lifetime of working on one problem... to the solution.

Co-developed with Debbie Wilson Head of Data at Ordnance Survey.





Customer Outcomes

Who is the customer?

Who is interacting with the process?

How do we know?

How to process customer data



1

Collect data about a customer, use it to identity them

2

Turn it into another identifier, so we have consistency

3

Design processes based on the new identifier (mostly)

National Insurance Number

Email Address

Mobile Number

Company Number

Bank Account and Sort Code (IBAN)

Charity Number

NHS Number

UTR

Customer Number

Name, Address, Date of Birth	Company Name
John Doe, 123 Main St, 1990-01-01	ABC Corp
Jane Smith, 456 Elm St, 1985-03-15	XYZ Inc
Bob Johnson, 789 Oak St, 1992-07-22	DEF LLC
Alice Brown, 101 Pine St, 1988-11-05	GHI Corp
Charlie Davis, 202 Cedar St, 1995-04-18	JKL Inc
Eve Wilson, 303 Birch St, 1991-09-30	MNO LLC
Frank Miller, 404 Spruce St, 1987-12-10	PQR Corp
Grace Lee, 505 Willow St, 1993-06-25	STU Inc
Henry Kim, 606 Ash St, 1989-02-08	VWX LLC
Ivy Chen, 707 Hickory St, 1994-08-12	YZA Corp
Jack White, 808 Sycamore St, 1990-10-03	BCD Inc
Karen Black, 909 Magnolia St, 1986-05-20	EFG LLC
Leo Green, 1010 Dogwood St, 1992-11-14	HIJ Corp
Mia Hall, 1111 Redwood St, 1988-03-27	KLM Inc
Noah Young, 1212 Cypress St, 1996-01-09	NOP LLC
Olivia King, 1313 Juniper St, 1991-07-16	QRS Corp
Peter Scott, 1414 Fir St, 1987-04-01	TUV Inc
Quinn Adams, 1515 Palm St, 1993-12-24	WXY LLC
Rachel Baker, 1616 Cedar St, 1989-09-07	ZAB Corp
Samuel Garcia, 1717 Birch St, 1995-02-19	CCD Inc
Tina Martinez, 1818 Spruce St, 1990-06-04	EEE LLC
Victor Lopez, 1919 Willow St, 1986-10-17	FFF Corp
Wendy Hill, 2020 Ash St, 1992-03-29	GGG Inc
Xavier Scott, 2121 Hickory St, 1988-08-11	HHH LLC
Yara King, 2222 Sycamore St, 1994-01-23	III Corp
Zoe Green, 2323 Dogwood St, 1990-05-06	JJJ Inc
Adam White, 2424 Redwood St, 1987-11-18	KKK LLC
Bella Black, 2525 Magnolia St, 1993-04-02	LLL Corp
Caleb Hall, 2626 Cypress St, 1989-09-15	MMM Inc
Diana Young, 2727 Juniper St, 1995-12-28	NNN LLC
Ethan King, 2828 Fir St, 1991-07-10	OOO Corp
Fiona Scott, 2929 Spruce St, 1987-02-22	PPP Inc
Gavin Adams, 3030 Willow St, 1993-08-05	QQQ LLC
Hannah Baker, 3131 Ash St, 1989-03-18	RRR Corp
Ian Garcia, 3232 Cedar St, 1995-10-31	SSS Inc
Jessica Martinez, 3333 Birch St, 1990-05-14	TTT LLC
Kyle Lopez, 3434 Spruce St, 1986-11-27	UUU Corp
Laura Hill, 3535 Willow St, 1992-06-09	VVV Inc
Max King, 3636 Ash St, 1988-01-21	WWW LLC
Nicole Green, 3737 Hickory St, 1994-07-04	XXX Corp
Oliver White, 3838 Sycamore St, 1990-12-17	YYY Inc
Pamela Black, 3939 Dogwood St, 1987-08-30	ZZZ LLC
Robert Hall, 4040 Redwood St, 1993-02-12	AAA Corp
Sarah Young, 4141 Juniper St, 1989-07-25	BBB Inc
Steven King, 4242 Fir St, 1995-03-08	CCC LLC
Tiffany Scott, 4343 Spruce St, 1991-09-21	DDD Corp
Umar Adams, 4444 Willow St, 1987-04-04	EEE Inc
Vanessa Baker, 4545 Ash St, 1993-10-17	FFF LLC
Walter Garcia, 4646 Cedar St, 1989-05-30	GGG Corp
Xavier Martinez, 4747 Birch St, 1995-11-12	HHH Inc
Yara Lopez, 4848 Spruce St, 1990-06-25	III LLC
Zoe Hill, 4949 Willow St, 1986-01-08	JJJ Corp
Adam King, 5050 Ash St, 1992-07-21	KKK Inc
Bella Scott, 5151 Hickory St, 1988-02-03	LLL LLC
Caleb Adams, 5252 Sycamore St, 1994-08-16	MMM Corp
Diana Baker, 5353 Dogwood St, 1990-03-29	NNN Inc
Ethan Garcia, 5454 Redwood St, 1987-09-11	OOO LLC
Fiona White, 5555 Magnolia St, 1993-04-24	PPP Corp
Gavin Black, 5656 Cypress St, 1989-10-07	QQQ Inc
Hannah Hall, 5757 Juniper St, 1995-05-20	RRR LLC
Ian Young, 5858 Fir St, 1991-11-03	SSS Corp
Jessica King, 5959 Spruce St, 1987-06-16	TTT Inc
Kyle Scott, 6060 Willow St, 1993-01-29	UUU LLC
Laura Adams, 6161 Ash St, 1989-07-12	VVV Corp
Max Baker, 6262 Cedar St, 1995-02-25	WWW Inc
Nicole Garcia, 6363 Birch St, 1990-08-08	XXX LLC
Oliver Martinez, 6464 Spruce St, 1986-03-21	YYY Corp
Pamela Lopez, 6565 Willow St, 1992-09-04	ZZZ Inc
Robert Hill, 6666 Ash St, 1988-04-17	AAA LLC
Sarah King, 6767 Hickory St, 1994-10-30	BBB Corp
Steven Scott, 6868 Sycamore St, 1990-05-13	CCC Inc
Tiffany Adams, 6969 Dogwood St, 1987-11-26	DDD LLC
Umar Baker, 7070 Redwood St, 1993-07-09	EEE Corp
Vanessa Garcia, 7171 Magnolia St, 1989-02-22	FFF Inc
Walter Hall, 7272 Cypress St, 1995-08-05	GGG LLC
Xavier Young, 7373 Juniper St, 1991-03-18	HHH Corp
Yara King, 7474 Fir St, 1987-09-01	III Inc
Zoe Scott, 7575 Spruce St, 1993-04-14	JJJ LLC
Adam Adams, 7676 Willow St, 1989-10-27	KKK Corp
Bella Baker, 7777 Ash St, 1995-06-10	LLL Inc
Caleb Garcia, 7878 Cedar St, 1990-01-23	MMM LLC
Diana Martinez, 7979 Birch St, 1986-07-06	NNN Corp
Ethan Lopez, 8080 Spruce St, 1992-02-19	OOO Inc
Fiona Hill, 8181 Willow St, 1988-08-02	PPP LLC
Gavin King, 8282 Ash St, 1994-03-15	QQQ Corp
Hannah Scott, 8383 Hickory St, 1990-09-28	RRR Inc
Ian Adams, 8484 Sycamore St, 1987-05-11	SSS LLC
Jessica Baker, 8585 Dogwood St, 1993-11-24	TTT Corp
Kyle Garcia, 8686 Redwood St, 1989-07-07	UUU Inc
Laura Hall, 8787 Magnolia St, 1995-02-20	VVV LLC
Max Young, 8888 Cypress St, 1990-08-03	WWW Corp
Nicole King, 8989 Juniper St, 1986-03-16	XXX Inc





The Address



Addressee's name
House number and street name
Locality name (if needed)
TOWN (print in capitals)
FULL POSTCODE (print in capitals)



Mx Rob Lee
32 Culley Way
MAIDENHEAD
SL6 3PX

- ✓ Addressees' Name
- ✓ House Number and street name
- ✓ TOWN
- ✓ FULL POSTCODE

Mr Robert Lee
Two Chimneys
High Street
Urchfont
DEVIZES
SN10 4QH

- ✓ Addressees' Name
- ✗ House Number and street name
- ✓ Locality name
- ✓ TOWN
- ✓ FULL POSTCODE

The Address



Addressees' name
House number and street name
Locality name (if needed)
TOWN (print in capitals)
FULL POSTCODE (print in capitals)

Ms Rob Lee
Ground Floor Flat, 43a Catharine Street
FROME
BA11 1DB

Is Ground Floor Flat the NAME, like Two Chimneys

Or a synonym for 43a Catharine Street

Is there a First Floor Flat

Is it 43b

Is 43 the building with flats: Ground Floor and First Floor

Can I get broadband installed?



[43b Catherine Street, Frome, BA11 1DB](#)

[Land At The Back Of, 43 Catherine Street, Frome, BA11 1DB](#)

[43 Catherine Street, Frome, BA11 1DB](#)

[43a Catherine Street, Frome, BA11 1DB](#)

[Ground Floor Flat, 43a Catherine Street, Frome, BA11 1DB](#)

[The Garden Apartment, 43 Catherine Street, Frome, BA11 1DB](#)

[First Floor Flat, 43a Catherine Street, Frome, BA11 1DB](#)

An aerial photograph of a city street scene. In the top left, a semi-transparent white box contains the text 'UPRN'. The background shows a mix of urban architecture, including residential houses, commercial buildings, and parking lots. A river or canal is visible in the upper left corner. The overall scene is a dense urban environment.

UPRN

Unique Property Reference Number

A unique numeric identifier for every addressable location in Great Britain.



32 Culley Way
MAIDENHEAD
SL6 3PX

100080354541

Two Chimneys
High Street
Urchfont
DEVIZES
SN10 4QH

100120990799

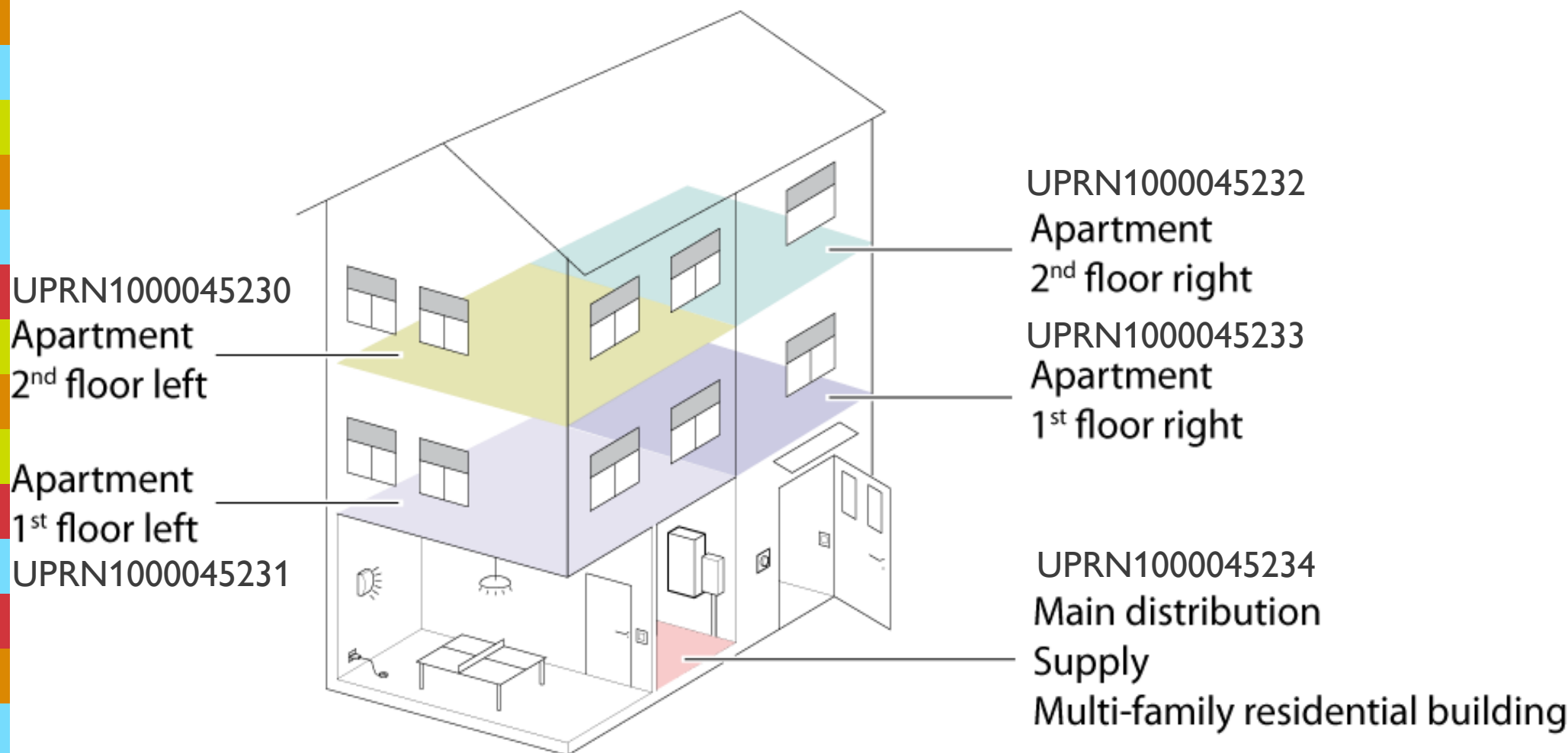
Ground Floor Flat, 43a Catharine Street
FROME
BA11 1DB

250070260

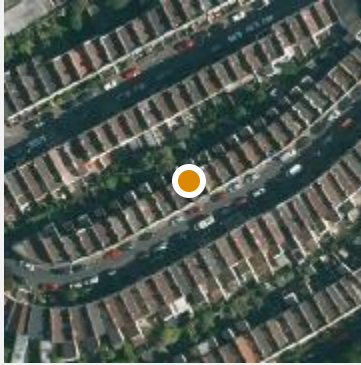


Unique identifiers for every location/apartment

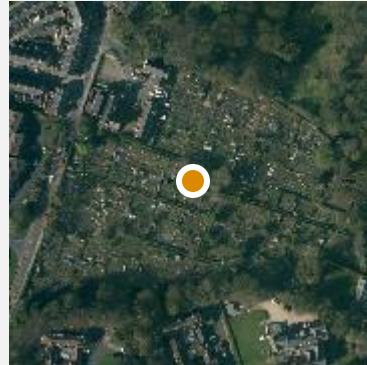
250070259 does not equal 250070260



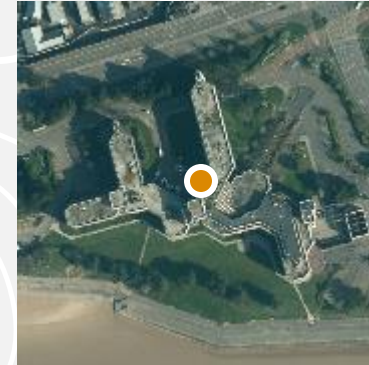
An UPRN is attached to any kind of building, residential or commercial, as well as many objects that might not have a 'normal' address



53 Stevens Crescent, Bristol
UPRN: 120621



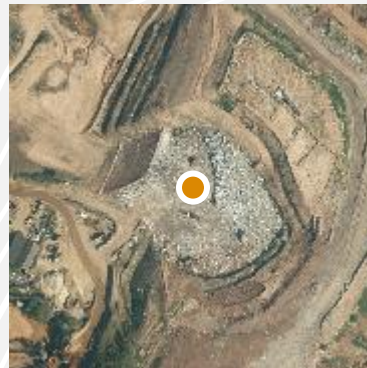
St Margarets Allotments, Durham
UPRN: 10093041935



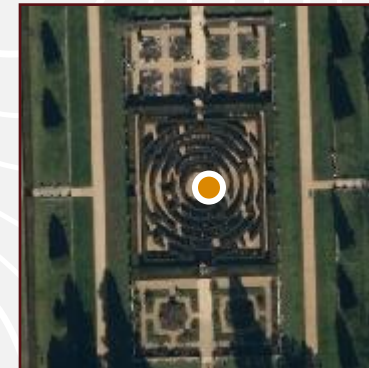
Swansea Council Offices
UPRN: 100100986761



Parkstone Bay Marina, Poole
UPRN: 100041056934



Composting Site
UPRN: 10023410127



Chatsworth House Maze
UPRN: 10015324484

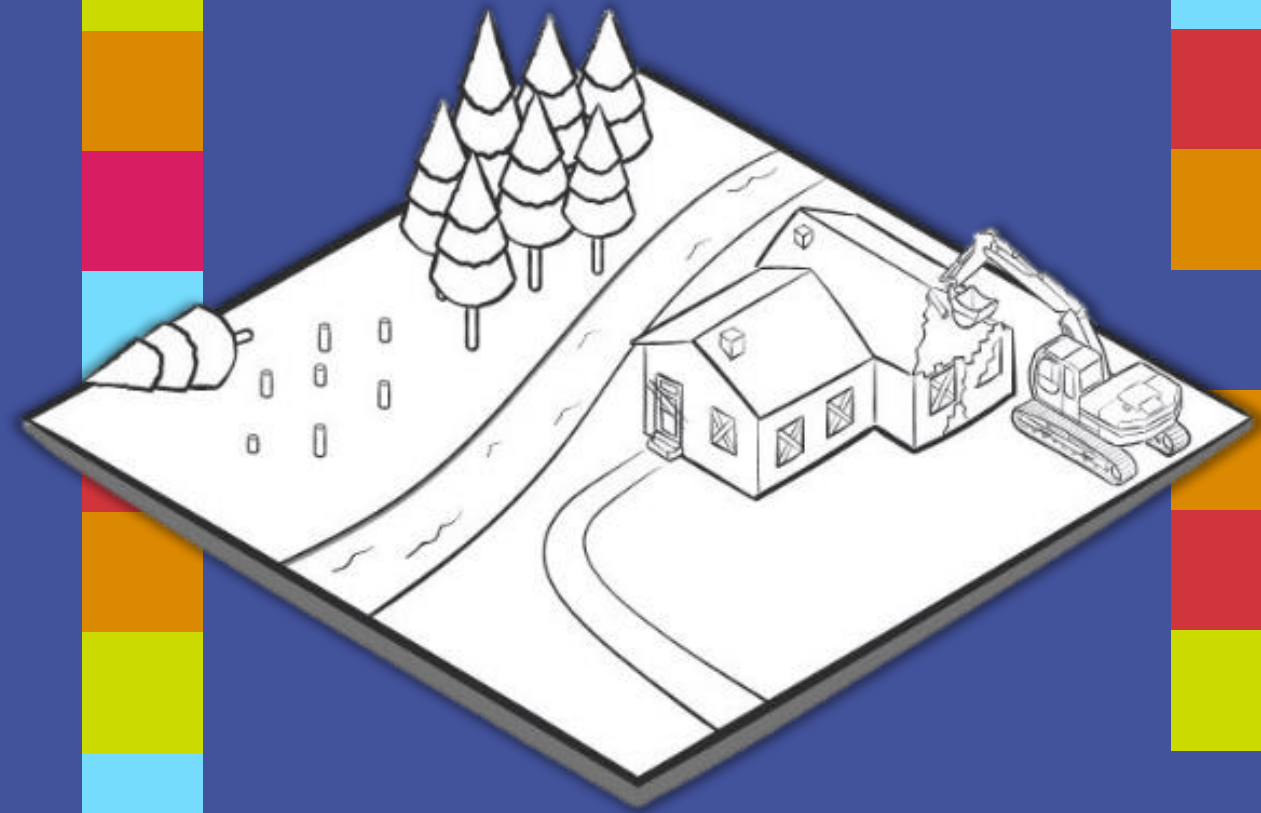
An allocated UPRN will remain a constant for an addressable location, never changed or reused, and will follow the lifecycle of that location, up to and including its demolition.

Even if a property is changed or removed, its original UPRN is kept as 'historic' information and remains available.

USRN

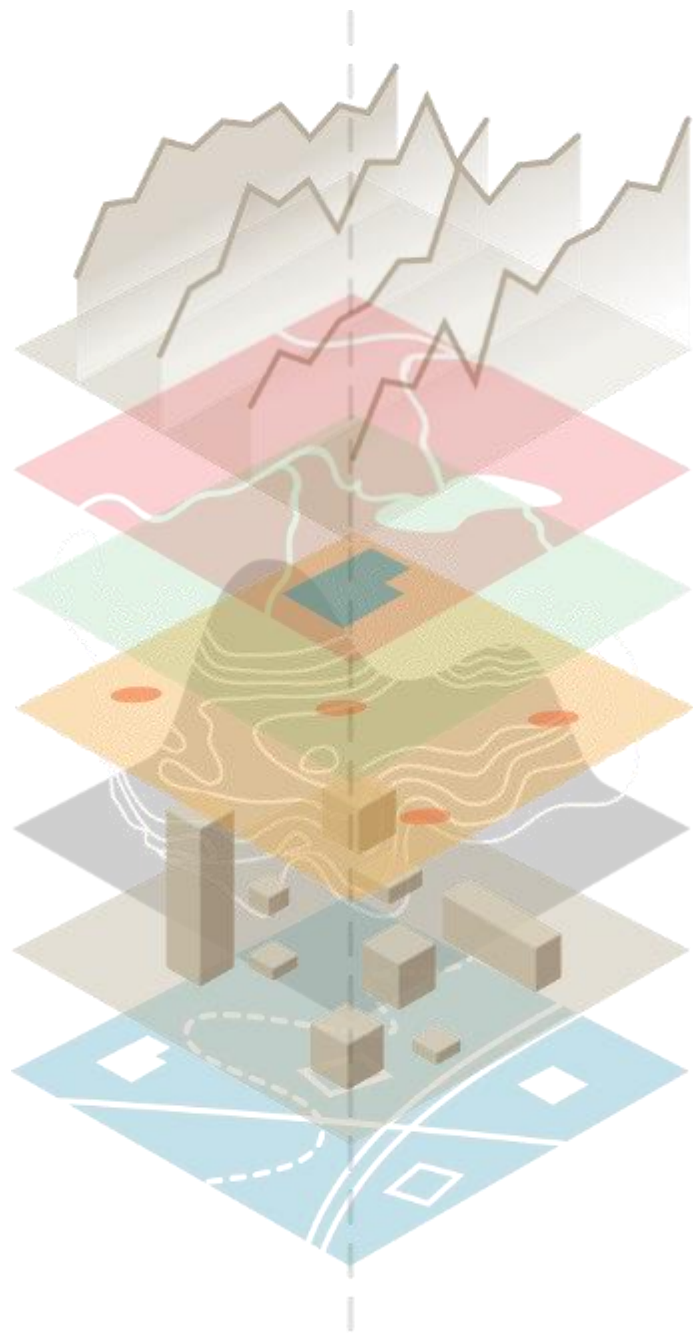
Unique Street Reference Number

The same as a UPRN but for an entire street.



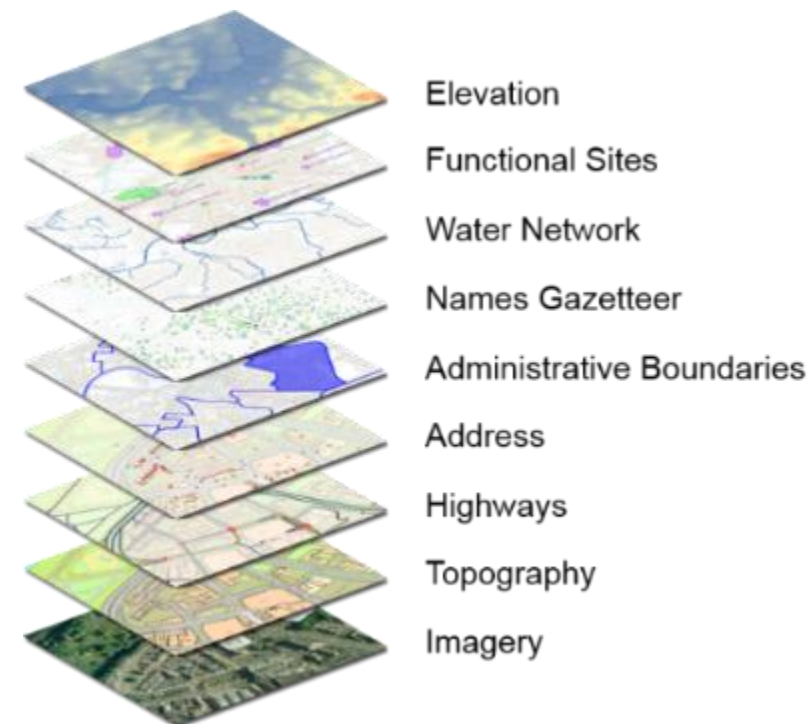
The lifecycle of a UPRN





Unique Standardised Consistent Reference enables linking of government and commercial information

- Health records
- Flood plane
- Land ownership
- Utility supply/smart meters
- Topography
- Height of building? Floor levels?
- Crime, education, vulnerable persons



Does it apply to my industry?



Land and
Property



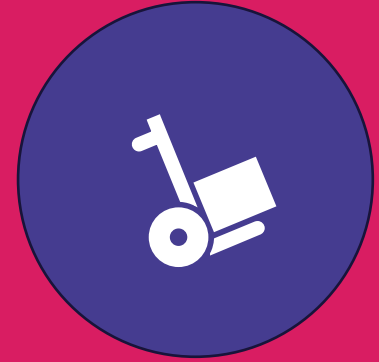
Utilities



Financial
Services



Emergency
Response



Transport
and
Logistics

At the point of entry select, not type and use the UPRN



GOV.UK

Search for land and property information

Beta

This is a new service – [give your feedback](#) to help us to improve it (link opens in new tab).

English | [Cymraeg](#)

[My documents](#)

[Sign in](#)

Search results

[43b Catherine Street, Frome, BA11 1DB](#)

[Land At The Back Of, 43 Catherine Street, Frome, BA11 1DB](#)

[43 Catherine Street, Frome, BA11 1DB](#)

[43a Catherine Street, Frome, BA11 1DB](#)

[Ground Floor Flat, 43a Catherine Street, Frome, BA11 1DB](#)

[The Garden Apartment, 43 Catherine Street, Frome, BA11 1DB](#)




[First Floor Flat, 43a Catherine Street, Frome, BA11 1DB](#)

Local and National Government has had a standard since July 2020

As Government seeks to deliver more and more shared services expect the use of UPRN to rise.

It will be added to APIs and Data Requests.

Home > [Government](#) > [Government efficiency, transparency and accountability](#) > [Open standards for government](#)

 [Cabinet Office](#)  [Government Digital Service](#)  [Central Digital & Data Office](#)


Guidance

Identifying property and street information

Updated 9 August 2022

Contents

- [1. Summary of the standards' use for government](#)
- [2. How these standards meet user needs](#)
- [3. How to use these standards](#)

 [Print this page](#)

Use the [Unique Property Reference Number \(UPRN\)](#) and the [Unique Street Reference Number \(USRN\)](#) standards to identify geographic locations.

1. Summary of the standards' use for government

These standards contain unique numerical identifiers:

- UPRNs are the unique identifiers for every addressable location in Great Britain
- USRNs are the unique identifiers for every street in Great Britain

The UPRN and USRN identifiers, along with their associated grid references, are available as open data under [Open Government License](#) (OGL) from the [Ordnance Survey Data Hub](#). Further information, such as address or building classifications are available from Ordnance Survey products under the [Public Sector Geospatial Agreement](#).

Systems, services and applications that store or publish data sets containing property and street information must use the UPRN and USRN identifiers.

The government chooses standards using the [open standards approval process](#) and the

Nottingham City Council – Licensing Applications

UPRN allows various datasets such as records of property sales and data required to check licence applications and undertake enforcement checks to be tied together, improving work efficiency.

Privately rented accommodation has to be licensed – failure to license a property results in a fine and potential loss of the property.

In a year, the efficiency gain equated to **savings of around £125,000.**



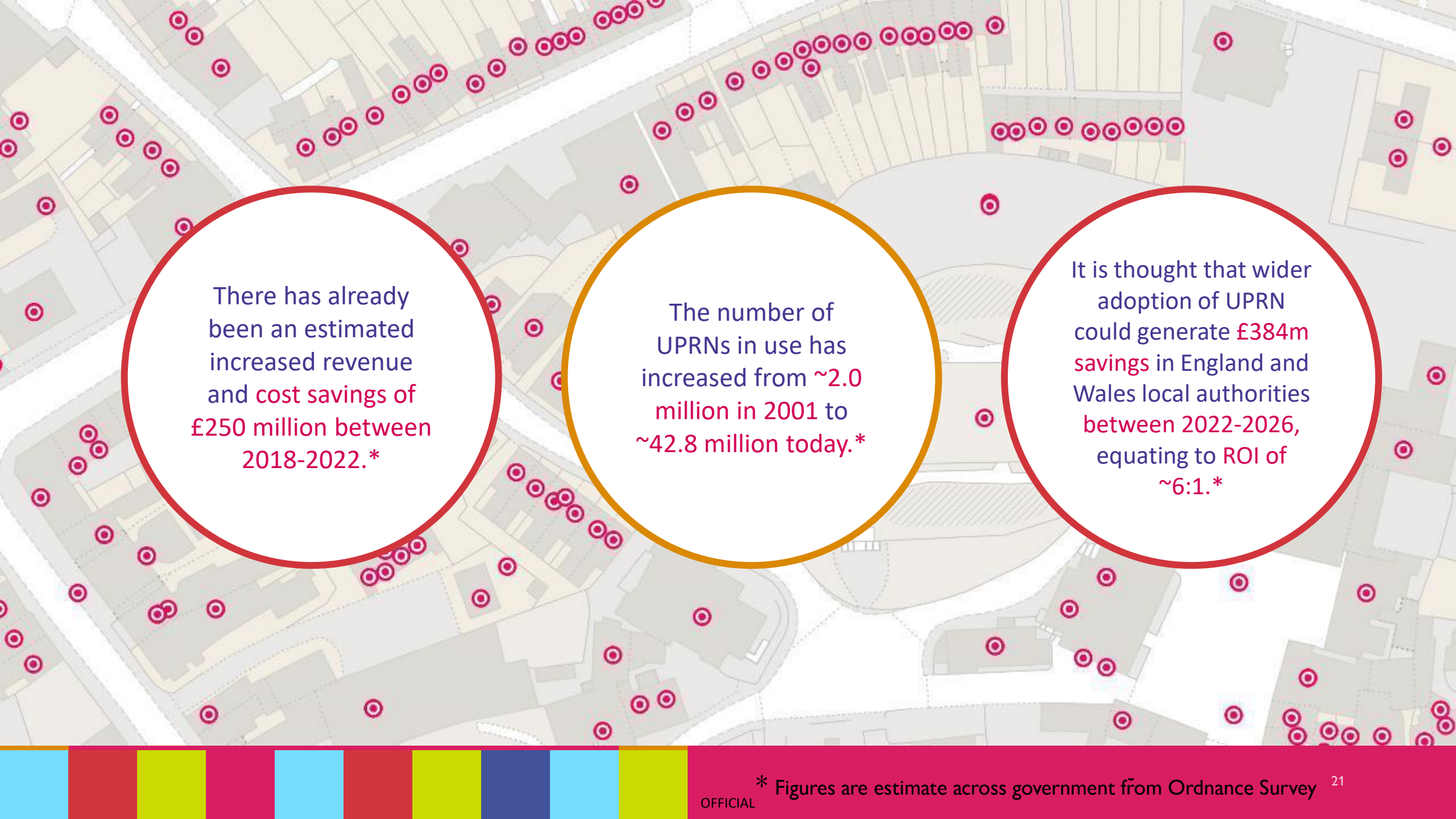
London Borough of Hackney – Improving Housing Conditions

UPRNs allowed multiple datasets to be easily joined to aid in creating a Vulnerability Index, meaning that households most at risk of mould could be identified.

This could also be extended to prioritise residents at greatest risk if amenities like lifts break, or prioritise certain households for tenancy and household checks.

By helping to aid a more proactive approach in managing housing conditions, meaning that issues are dealt with sooner.





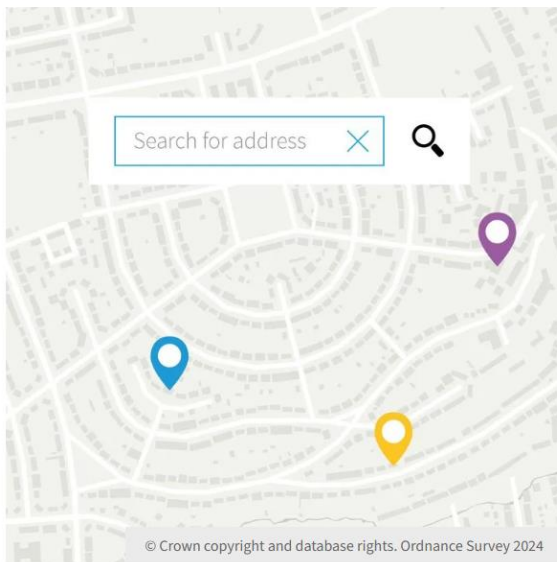
There has already been an estimated increased revenue and cost savings of £250 million between 2018-2022.*

The number of UPRNs in use has increased from ~2.0 million in 2001 to ~42.8 million today.*

It is thought that wider adoption of UPRN could generate £384m savings in England and Wales local authorities between 2022-2026, equating to ROI of ~6:1.*

Where do I get them?

OS Places API



OS Places API

With OS Places API you have direct access to rich address data for geocoding, postcode searching, form-filling and much more. Find UK addresses instantly online and be confident you're getting the most up-to-date information.

[Addressing and location](#) [API](#) [Public Sector Plan](#) [Premium Plan](#)

This product is updated daily

[Get this Product](#)

[View Technical Information](#)

[OS Places API](#) | [Data Products](#) | [OS](#)

[Product overview](#)

[Technical information](#)

[Get this product](#)

AddressBase Premium

AddressBase Premium has over 40 million addresses and 100 million cross references as well as providing all the information relating to an address from creation to retirement.

[Addressing and location](#) [Download](#) [Public Sector Plan](#) [Premium Plan](#)

This product is updated every six weeks

[Get this Product](#)

[View Technical Information](#)

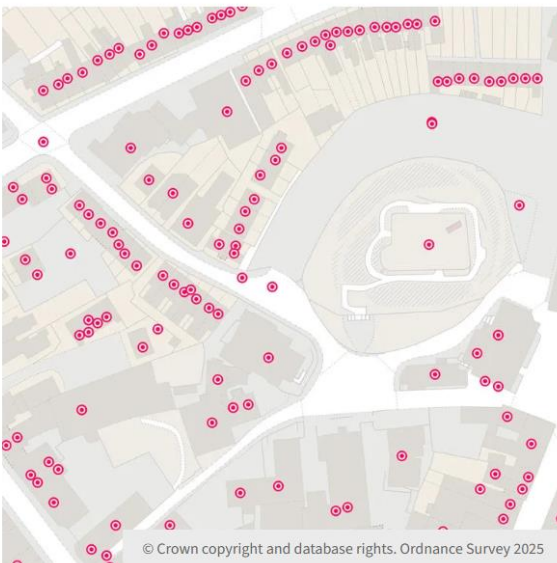
[AddressBase Premium](#) | [Data Products](#) | [OS](#)

[Product overview](#)

[Technical information](#)

[Get this product](#)

AddressBase Premium



What AddressBase Premium provides you with

Addresses throughout the property lifecycle

The AddressBase Premium dataset contains Local Authority, Ordnance Survey and Royal Mail addresses, each uniquely referenced by the UPRN.

Shape your operations

With UPRNs being assigned as soon as planning permission is granted, with AddressBase Premium you'll have all the information you need to shape the way you plan, operate and communicate with your audience.

Spot data patterns

Property level coordinates within AddressBase Premium allow you to conduct analysis at the level of individual addresses and spot patterns hidden in your own data.

Enable efficient processes

Each address is referenced by the Unique Property Reference Number (UPRN), a persistent identifier for each address allowing you to manage addresses and making your processes more efficient.

EVERY PROPERTY IN GREAT BRITAIN

FindMyAddress

Use FindMyAddress to search for the [official address](#), [UPRN](#) and location of every property in England, Scotland and Wales.

The data is created and maintained by local authorities, collected and managed centrally by GeoPlace and published by Ordnance Survey as [AddressBase®](#).

FindMyAddress is for personal, non-commercial use only. You can perform up to 10 searches every day, free of charge. [Need more searches?](#)

[FindMyAddress](#)



- 1) Learn about Unique Property Reference Number & Unique Street Reference Number
- 2) Change existing platforms and applications to add a UPRN field wherever a UK address is used
- 3) Work out UPRNs at the point Addresses enter your organisation
- 4) Update your existing address data to add UPRNs
- 5) Use UPRNs instead of the address whenever doing a comparison of addresses
- 6) Use USRNs when dealing with street-based analysis or work
- 7) Share UPRNs with partner organisations through APIs, Feeds and Data Set publications
- 8) Expect UPRNs from partner organisations
- 9) Lower your risk appetite for false matches based on addresses matching
- 10) Raise your expectations for serving your customers
- 11) Relax
- 12) Tell others about how UPRNs changed your life

Thank you

Rob Lee

07977 608422

rob.lee@hmrc.gov.uk



Debbie Wilson

Debbie.Wilson@os.uk

