Ordnance Survey

An OS data guide

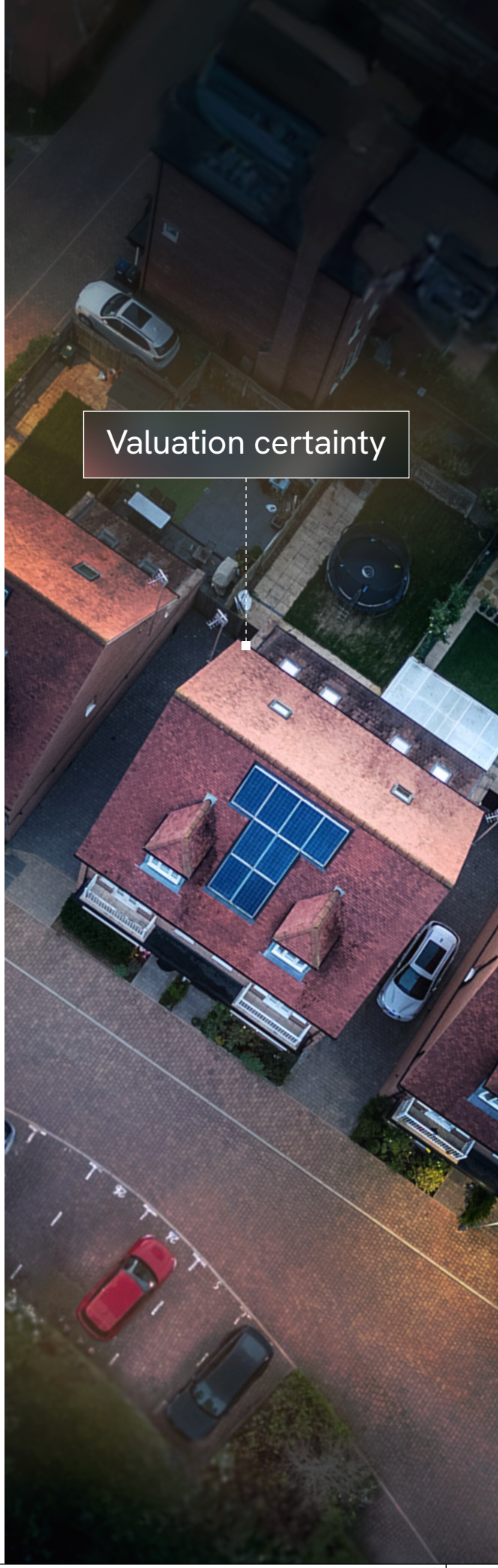
Make confident decisions in retail banking with precise location data by Ordnance Survey

os.uk/financialservices

Contents

This guide explores how the banking sector is using location data to overcome growing uncertainty and build a stronger competitive edge for the digital future. Get use cases and real customer stories on how to put location data to work to reduce risk, meet environmental targets, boost customer experience, and more. Enabling you to bring more confidence into decisions.

Let's get into it.



Retail banking is at an *intersection.*

Ahead are opportunities of deeper customer insight and the ability to boost productivity and deliver more personalised services through AI-driven processes. First, however, banks must navigate growing challenges, including increased scrutiny around sustainability, cyber security and fraud.

Agile new entrants, from mobile payment platforms and buy-now-pay-later providers to digital-first banking apps, are raising the bar. Built on modern, data-rich platforms, they can surface contextual, tailored offers before a transaction even reaches a traditional bank. By contrast, many established institutions remain constrained by legacy systems and data silos, limiting insight into customer behaviour, financial health and emerging trends. Open banking adds further pressure, enabling competitors to access portfolio and spending data with customer consent.

The role of location

Location data is a powerful, and often overlooked, tool for retail banking. Delivered through API-driven data layers or data downloads to suit your existing infrastructure, it allows banks to modernise services without wholesale transformation. This guide explores at what's possible with Ordnance Survey (OS) and how its unrivalled location data is already helping banks mitigate risk, build loyalty and accelerate approvals.

First, find out what makes OS the national mapping agency for Great Britain and a leading geospatial data tech company.

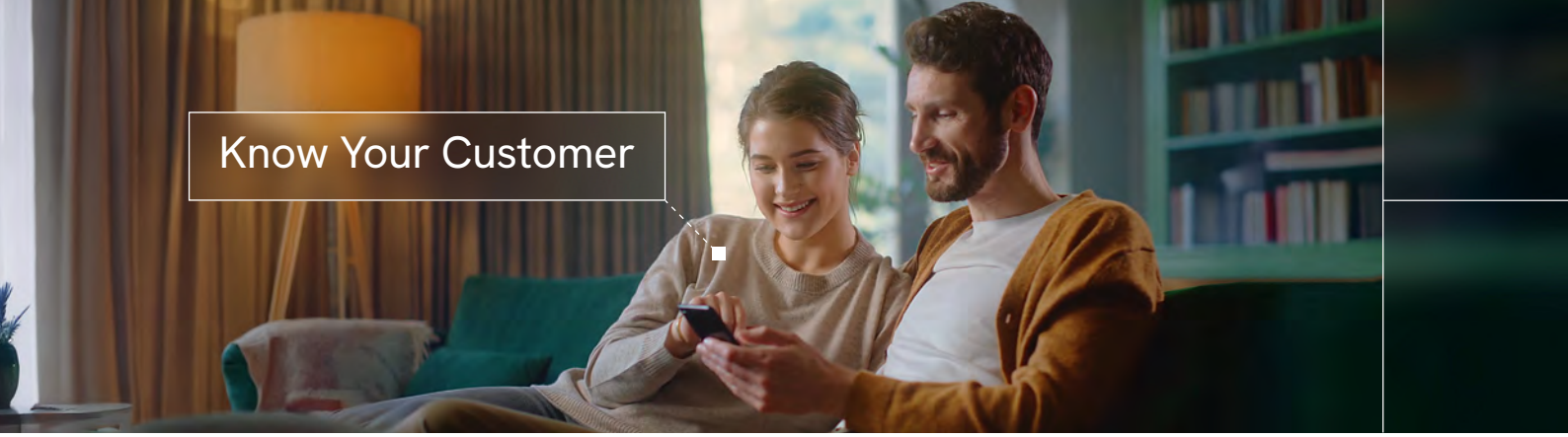
OS data: unrivalled detail and accuracy

Location data is a truly strategic asset for retail banks, providing the insights to tailor the customer experience, verify identity for large digital transactions, reduce risk, and more. Providing the physical perspective in a digital world, it helps prevent sophisticated fraud and enables faster lending approvals, more accurate portfolio steering, more tailored products, and the ability to meet sustainability targets faster.

With location data from OS, you get the accumulated benefit of over 200 years in collecting and providing national map data, making us Britain's leading provider of map data, trusted by governments and businesses worldwide.

We collect the data – boundary, address, building, water networks, roads, and more – at the source. This data is refined and quality checked before it's distributed through a network of partners who create additional solutions and bespoke services in response to your needs.

Through this approach, our customers get an all-important single, always up to date, centralised source of truth for location insights. So, you can fill in the blanks and bring confidence to every decision.



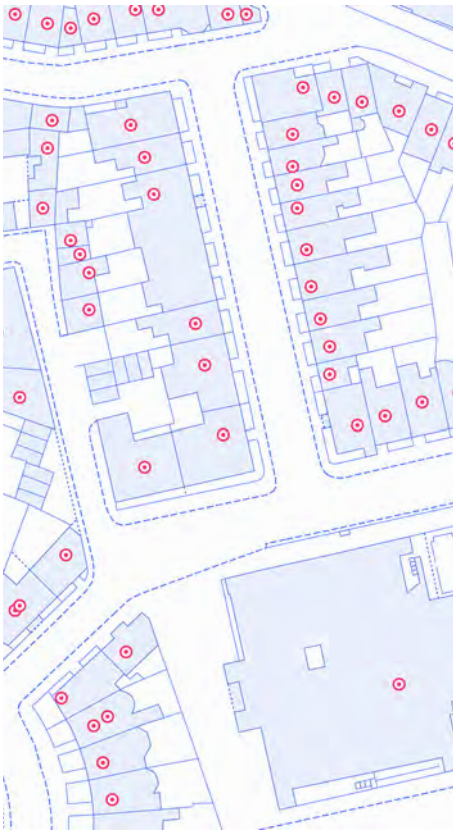
USE CASE

Location data for onboarding and customer experience

Location data is a powerful enabler of smoother, smarter customer experiences in retail banking, strengthening both onboarding and Know Your Customer (KYC) processes. By blending internal data with trusted external sources, banks can enrich onboarding journeys, whether it's to open a current account, verify a business, or apply for a mortgage. High quality geospatial data removes the reliance on customer-entered information or slow, inconsistent property surveys.

Tools like the Unique Property Reference Number (UPRN) and OS's National Geographic Database (NGD) mean applications can be prepopulated with verified details on address history, building characteristics and land use – cutting formfilling, improving accuracy and supporting more robust KYC and lending decisions.

UPRN	100120021866
Full address	19 Oakham Drive, Orton Courteville, Peterborough, PE3 5GG
Construction material	Brick or Block or Stone
Roof material	Tile or Stone or Slate
Roof aspect	South
Roof shape	Pitched
Solar panel presence	No
Building age	1870-1918
Building description	Semi-detached
Basement	Basement present



Enhance fraud detection and deliver greater personalisation

Ground truth spatial attributes improve the quality of AI models used for identity checks, fraud detection and risk decisions, while providing clear, explainable context that meets regulatory expectations. As AI powered financial assistants evolve, understanding the geography of customer behaviour, such as the locations of regular transactions, also creates opportunities for hyperlocal personalisation, like targeted offers or partnerships with nearby businesses.

Together, these capabilities help banks make decisions with confidence, and meet rising expectations for speed, simplicity and tailored service.

nationwide

CASE STUDY

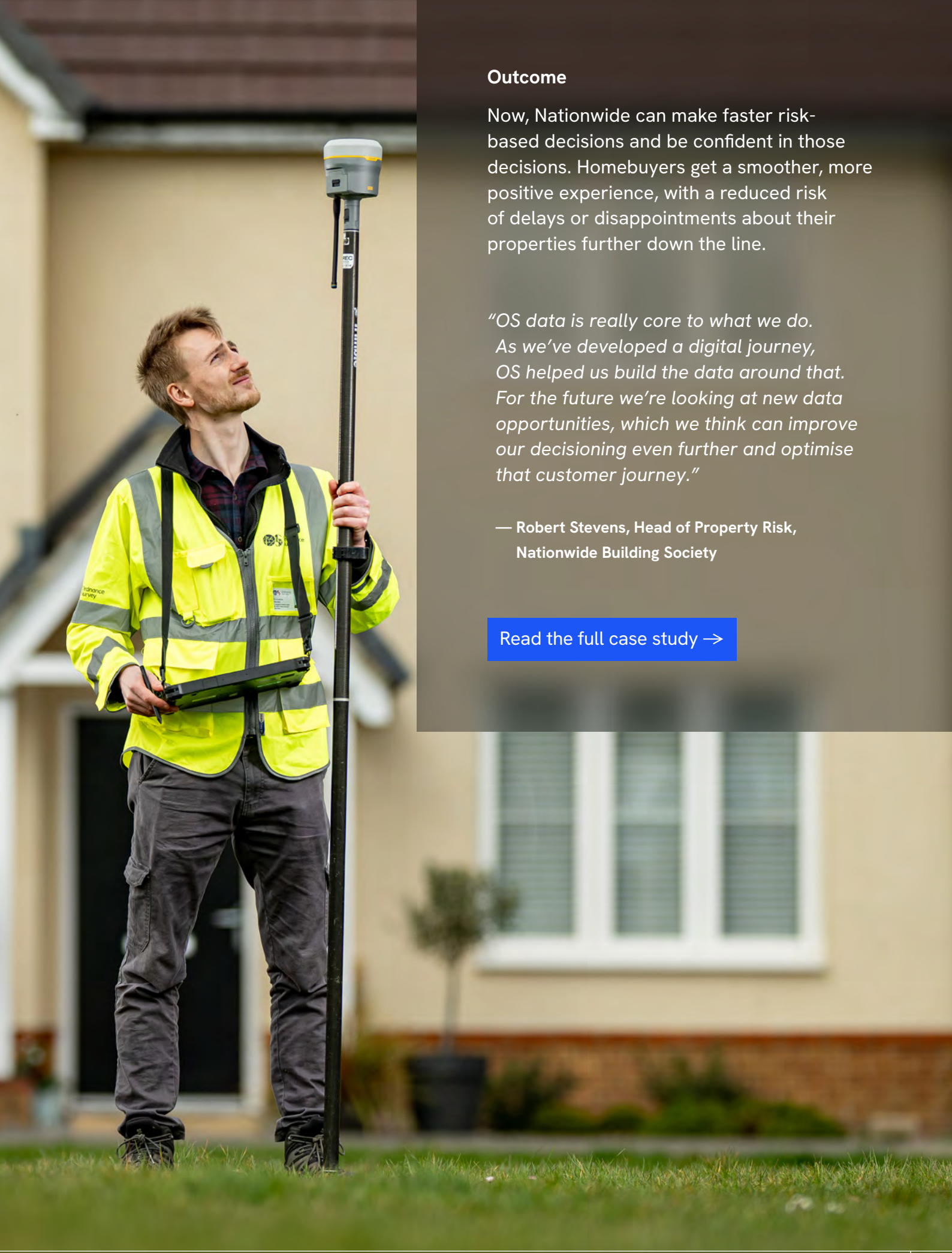
How Nationwide improved the house-buying process with location data

Challenge

Nationwide, the world's largest building society and a prominent mortgage lender, needed to find a way to more accurately assess the properties it was being asked to lend against. It needed to be sure that properties were sustainable and insurable from the get-go, so customers would get faster answers, less disappointment down the line, and a faster overall house-buying process.

Solution

By integrating OS data into their digital process and utilising the Unique Property Reference Number (UPRN), Nationwide got a unique identifier for each property, giving them a granular view of perils, from flood risk to subsidence.



Outcome

Now, Nationwide can make faster risk-based decisions and be confident in those decisions. Homebuyers get a smoother, more positive experience, with a reduced risk of delays or disappointments about their properties further down the line.

"OS data is really core to what we do. As we've developed a digital journey, OS helped us build the data around that. For the future we're looking at new data opportunities, which we think can improve our decisioning even further and optimise that customer journey."

— Robert Stevens, Head of Property Risk, Nationwide Building Society

Read the full case study →

USE CASE

Build future-ready portfolios with location-based climate insights

Location data is now central to property valuation and climate-risk modelling. By mapping properties and portfolios against climate hazards, transition risk and contextual factors, retail banks gain a clear view of vulnerability today and in the future. This enables more accurate risk assessment, stronger modelling, and better-informed sustainability strategies.

Regulatory expectations such as SS5/25 make this data-driven approach essential. Spatially assessing physical and transition risks strengthens compliance and helps institutions futureproof portfolios.

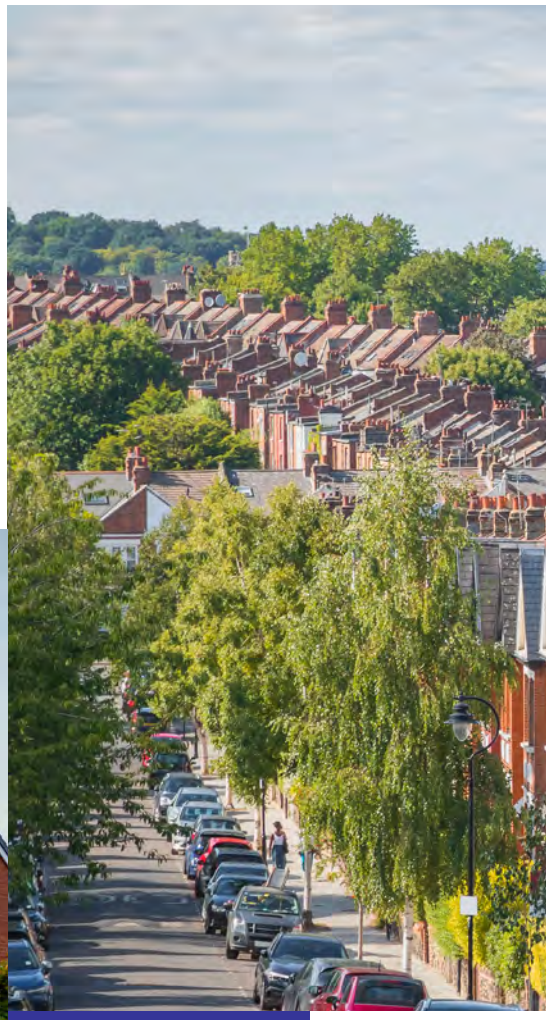
As climate and ESG considerations grow, location data also enables initiatives such as carbon linked pricing and integrated lending for upgrades (e.g., solar panels, EV chargers, heat pumps), aligning financial incentives with sustainability objectives.

Location intelligence supports scenario analysis by identifying how flood events, extreme heat or restricted access could disrupt operations, supply chains or workforce mobility – now and in future climate pathways.

In the mortgage market, location data supports ongoing portfolio reviews as property values and climate exposures change; while mortgage balances decline, environmental or market pressures may cause property values to decline faster, increasing negative equity and default risk.

Granular spatial insights, such as a property's resilience to climate risks, its existing green features, or its retrofit potential based on roof shape, material and orientation, help identify opportunities for green finance and targeted sustainability upgrades.

While broader location-driven context, including walkable access to services, school catchments, crime rates, heat stress mapping, parking availability and local development trends, provide deeper insights into overall property desirability and long-term value.



Cambridge & Counties Bank

CASE STUDY

How OS data helped CCB to optimise climate risk assessments & ESG compliance

Challenge

Cambridge & Counties Bank (CCB), a challenger bank with strong ESG commitments, needed a clearer view of the properties it finances to meet rising regulatory expectations and support long-term lending decisions. Limited and inconsistent climate risk data combined with complex commercial addresses and manual processes made accurate risk assessment and scenario modelling difficult. With only partial coverage from existing datasets and growing pressure to understand both physical and transition risks, CCB lacked the reliable location data required to improve portfolio insight, ensure responsible lending, and plan confidently for a lower carbon future.

Solution

CCB partnered with digital expert Twinn (part of Haskoning). Twinn's Climate Risk Score product gave CCB detailed assessments across up to 19 physical hazards, including regularly refreshed flood data, giving CCB the depth needed for long-term scenario modelling. To make the data usable, CCB matched Twinn's climate risk outputs to its own portfolio using Ordnance Survey addressing data and Unique Property Reference Number (UPRN) features, improving accuracy, consistency and overall reliability.

Outcome

Using location data, CCB can better understand and manage climate related risk across its portfolio. By combining detailed hazard insight from Twinn with accurate address matching through OS data and the UPRN, CCB can link key datasets, such as flood risk, EPC ratings and CO_2 emissions, to each individual property. Supporting better sustainability decisions and helping to meet growing regulatory expectations around financed emissions and ongoing data improvement.

""As a responsible financial services institution, we are committed to playing a significant role in the drive towards greater sustainability in the UK banking sector. In line with this commitment, we are continuously refining our climate risk data to enhance our knowledge and understanding of our customers' property portfolios. Ordnance Survey plays a pivotal role in supporting this process."

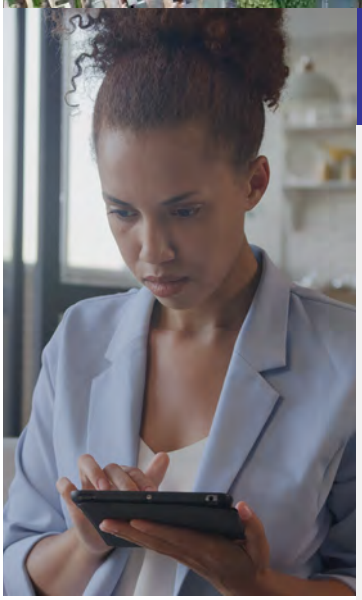
— Mike Hudson, Chief Risk Officer, Cambridge & Counties Bank

USE CASE

Reduce fraud in retail banking with location data

Location data provides a powerful tool for helping banks spot and stop fraud before it causes harm. Fraudsters often use tactics like registering accounts to “ghost addresses”, empty plots, or commercial buildings that don’t match the type of business they claim to be. By using accurate address data, backed by tools like UPRNs and trusted geographic datasets, banks can quickly check whether a location is real, occupied and suitable for the activity being claimed. This makes it easier to flag suspicious behaviour early on, such as a supposed high revenue business operating from a shed or a non-existent office.

As financial products become embedded in other services, like car purchases or smart devices, the ability to validate location in real time will be even more important.



Strengthen your ability to detect unusual patterns across customer activity

By comparing the location of transactions, the location of a customer's mobile device and known behavioural patterns, banks can more confidently verify or block payments that don't make sense, such as two transactions happening in places far apart within minutes. Over time, this helps shift fraud detection from reactive to predictive, spotting anomalies before losses occur.

As the banking relationship moves closer to retailers, online services and embedded finance providers, fraud monitoring becomes more complex, but location intelligence provides the ground truth needed to bring confidence to decisions and keep customers safe across every channel.

Address verification in large transactions

The move to ISO 20022 for CHAPS payments has exposed weaknesses in the address data held by retail banks that were effectively 'hidden' in legacy formats. Many legacy systems allow free text and varied formats, but unstandardised, manually entered address data is error-prone and difficult to validate and match across systems. ISO 20022 strongly encourages structured address components and clear and standardised formatting. While hybrid address formats provide short-term compliance, with accurate location data, it's easier to migrate to a structured address format and comply with the changes for processing payments. This way, the UPRN can easily be matched with addresses across internal and third-party systems. Strengthening verification, reducing false positives, speeding up fraud and sanction checks, and enabling smoother straight-through processing.

The outlook for retail banking and the growing role of location data

Spatial data, enhanced by AI and automation, is enabling more personalised products and smarter decision making. While lending will continue to reflect individual and property risk, it can extend to include more dynamic factors such as climate exposure, property characteristics and behavioural risk signals. By embedding UPRNs from OS into core systems, retail banks can connect disparate datasets at property level, enabling greater personalisation, reduced risk, and stronger sustainability outcomes.

A growing need for fraud detection

Customer expectations have shifted, with most expecting fully digital interactions – from in-app mortgage applications to embedded finance and account aggregation. As digital touchpoints expand, fraud tactics evolve. Trusted, authoritative data is critical to verify identity, validate addresses and flag inconsistencies in real time. With OS data integrated into KYC and onboarding processes, retail banks can strengthen fraud controls while maintaining a smooth customer experience.

Manage increased regulatory scrutiny

This growing use of technology and spatial data will increase scrutiny around privacy, transparency and bias. Regulators will be looking for clear data lineage and responsible AI use, avoiding opaque 'black box' decisioning. OS provides authoritative, standardised location data that is centralised, traceable and explainable at the source – giving customers the ability to support compliance while enabling innovation.

Discover what's possible with OS data

As the world becomes more digital, AI takes hold, and customer expectations and regulatory scrutiny continue to grow, the granularity and control you get with OS data is critical.

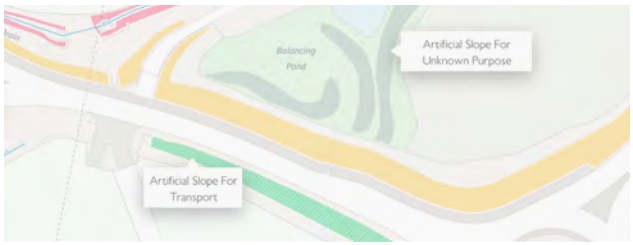
Learn what's possible →

OS data product glossary

OS data collections for retail banking

Our data collections contain analytical geographical data, grouped by themes, for integration into existing solutions. In some cases, a basemap will be needed for spatial context or visualisation.

OS GB Address **and** OS Islands Address | containing 41 million full addresses across the UK, combining both UPRN and Royal Mail Postcode Address File (PAF) – giving you both datasets for just one licence fee instead of two. Augment address holdings with pre-build and historic addresses and improve your understanding of the address with four levels of classification.



OS Land Features | depicting land cover information, from the presence of tennis courts to residential gardens and construction sites. It also details natural land, i.e. heath, marshland, mixed trees.

OS Building Features | Over 30 data points for millions of buildings across Great Britain. Providing information on the building itself, with building attribution data including data on the roof (roof shape, green roof or solar panel presence etc), building height, number of floors, connectivity to other buildings, access points, and basement presence.

OS Land Use Features | detailing how the land is used, its purpose, and access points for public buildings. This includes everything from schools and universities to caravan parks.

OS Structure Features | providing detail on structures that are manmade but not buildings, including bridges and clock towers, with information on the height and boundary (including natural boundaries) of such structures.

OS Water Features **and** OS Water Network | detailing rivers, canals, streams and more, both natural and manmade, including data on tidal zones, flow direction, drains and more.

OS Transport Features, OS Transport Network **and** OS Routing and Management Information | a definitive collection of data on Great Britain's roads, railways, tracks and paths.

Next steps

Unlock the benefits of OS data and lead the digital future with confidence

Improve risk analyses, deliver a greater customer experience, enhance compliance, bring confidence to decisions in sustainability, and so much more. It's all possible with precise location insights from Britain's most advanced mapping data provider, and powerful, connected insights that'll underpin your most critical decisions.

Get to work with OS data in three simple steps:

Step 1 | Book an initial consultation to discuss your unique challenges and goals, and to qualify the data products you need.

Step 2 | Dive deeper with one of our experts to explore the art of the possible to make sure you get the very best from your data.

Step 3 | From our network of partners, we'll help you find the right one to deliver on your requirements and work with you through integration and beyond.

Click here to start your enquiry →

Try our products and get a taste of what's possible with our free sample data. →

Find out more at os.uk/financialservices →