LOCARLA

AI & Data in UK Social Housing

A DATA-DRIVEN PERSPECTIVE USING PROPERTY, EPC AND
HOUSING ORGANISATION DATASETS.

An independent analysis based on millions of
Housing Association & Local Authority homes
across England & Wales.

Why AI discussions in housing often miss the real issue

AI in Social Housing: The Data Question

Over the past two years, artificial intelligence has become a major topic across the UK housing sector.

Conferences, technology vendors and consultants increasingly focus on the potential of AI tools to support asset management, procurement, and operational decision-making.

Unlike many sectors, housing data is fragmented across multiple systems and organisations. Property records, energy performance data, procurement activity and organisational information are typically stored separately, making it difficult to analyse individual organisations, and the sector as a whole.

> The effectiveness of AI in housing does not primarily depend on the model being used.
> ### The limiting factor is data structure.

Housing Organisations

Property Ownership
(HM Land Registry)

EPC Certificates
(EPC Register)

Procurement Data
(Tenders / contracts)

Geographic Data
(Postcode & UPRN)

When these datasets are connected and governed consistently, AI becomes significantly more useful - not as a conversational tool, but as an intelligence layer capable of answering complex operational questions.

This briefing provides a short demonstration of what becomes visible when housing data is analysed in this way.

The Housing Data Landscape

Information about social housing in England and Wales exists across multiple government registers, industry datasets and organisational reporting systems.

These sources contain valuable information about housing stock, energy performance, ownership, investment and geographic distribution.

However, they are typically maintained independently and analysed separately.

As a result, understanding the structure and performance of housing portfolios often requires combining information from several different sources.

Property Ownership

HM Land Registry

Energy Performance

43 Woodfield Avenue
LONDON
SW16 1LE

Energy rating

D

Valid until
8 September 2033

Certificate number
0380-2969-8280-
2877-7915

Housing Organisations

Regulator of Social Housing

Tenders & Awards

GOV.UK
Find a Tender

Geographic Data

Ordnance Survey

Housing data exists across multiple government and industry systems, but these datasets are rarely connected or analysed together.

When these datasets are analysed in isolation, it becomes difficult to understand housing portfolios, energy performance patterns or investment activity across the sector.

The Locarla Housing Intelligence Platform

Locarla has assembled multiple housing sector datasets into a single structured intelligence platform. By matching property records, EPC certificates, organisational data and procurement activity, the platform provides a unified view of social housing stock across England and Wales.

At the centre of the platform is a property-level dataset built using **Unique Property Reference Numbers (UPRNs)**, allowing previously separate sources of information to be connected and analysed together.

The Locarla platform currently includes:

Housing Organisations	Property Records (UPRN)	EPC Certificates	Procurement Data
Over 3,000 housing organisations profiled	**4.8 million social housing properties** across England and Wales **UPRN-matched property records** linked to ownership and location	**EPC certificates connected to individual homes**	**Public procurement notices and contract awards** relating to housing maintenance, retrofit and investment

Locarla connects property, energy, organisational and procurement datasets using UPRNs and organisation matching to create a unified housing intelligence platform.

How the Data is Connected

Each dataset is linked using a combination of UPRN matching, organisation mapping and geographic referencing.
This enables information that traditionally sits in separate government and industry systems to be analysed within a single platform.

The result is a housing intelligence layer that supports analysis of:

◆ **housing portfolios**

◆ **energy performance**

◆ **investment and procurement activity**

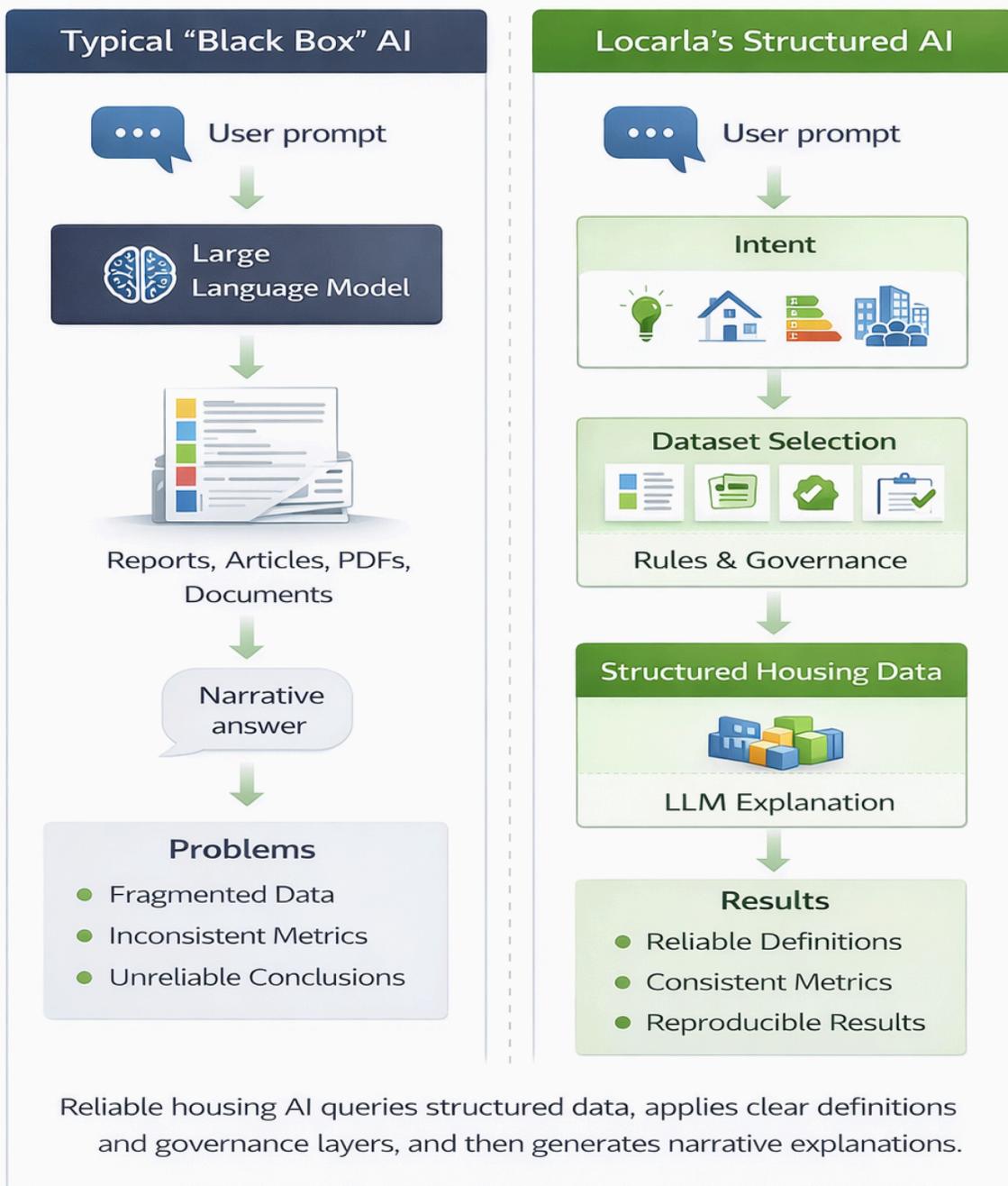◆ **geographic distribution of housing stock**

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How AI Becomes Reliable in Housing

Artificial intelligence can provide powerful insights when applied to housing data. However, reliable and meaningful analysis requires more than simply having access to large language models.

In sectors such as housing, where information is fragmented and definitions vary between organisations, AI systems must operate against structured datasets and clearly defined rules.

This is where data architecture and governance become critical.

How AI Becomes Reliable in Housing

Typical "Black Box" AI

User prompt

↓

Large Language Model

↓

Reports, Articles, PDFs, Documents

↓

Narrative answer

↓

Problems
- Fragmented Data
- Inconsistent Metrics
- Unreliable Conclusions

Locarla's Structured AI

User prompt

↓

Intent

↓

Dataset Selection

Rules & Governance

↓

Structured Housing Data

LLM Explanation

↓

Results
- Reliable Definitions
- Consistent Metrics
- Reproducible Results

Reliable housing AI queries structured data, applies clear definitions and governance layers, and then generates narrative explanations.

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The Locarla Social Housing
Rulebook

To enable reliable analysis, Locarla has developed a structured Social Housing Rulebook that governs how housing data is interpreted.

The rulebook defines how key concepts should be understood and calculated within the sector, including:

✦ **property and building definitions**

✦ **energy performance metrics**

✦ **organisational ownership and stock attribution**

✦ **procurement and contract interpretation**

✦ **derived metrics and portfolio calculations**

This framework ensures that questions about housing data are interpreted consistently before any analysis is performed.

Why this matters

When AI systems operate directly on structured housing datasets governed by clear rules, the results become significantly more reliable.

Instead of interpreting documents or reports, the system can query the underlying data and apply consistent definitions across organisations and portfolios.

The language model then performs the final step: explaining the results in natural language.

Reliable use of AI in housing depends on *structured datasets, clear definitions and consistent governance* before language models generate explanations.

What Housing Intelligence Can Answer

✦ **Where are EPC D/E homes most concentrated?**

✦ **Which landlords face the largest retrofit exposure?**

✦ **Which local authorities contain the oldest social housing stock?**

✦ **Which portfolios contain the most high-rise buildings?**

✦ **Which contracts dominate responsive repairs?**

✦ **Which regions show the highest retrofit demand?**

✦ **Which landlords have the most EPC certificates expiring soon?**

These questions can be answered in seconds when housing datasets, including property, EPC, organisational and procurement data are analysed within a single structured platform.

Prompt :

Which local authorities have the most EPC D and E social homes?

Output :

Table of local authorities ranked by number of D/E homes with percentages of total stock.

What Housing Intelligence Can Answer

👤 Give me an overview of L&Q's stock and EPC profile

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L&Q Group - EPC and Property Analysis

Organisation Profile
- **Organisation** : L&Q Group
- **Registered Address** : 29-35 West Ham Lane, Stratford, Greater London, E15 4PH
- **Website** : https://www.lqgroup.org.uk/
- **Contact Email** : contact@lqgroup.org.uk

Subsidiaries
- **L&Q Living** : No Stock

Stock Position
- **Total Properties (Land Registry)** : 85,949
- **Group Properties (Land Registry)** : 85,949

EPC and Property Analysis – England and Wales

EPC Coverage
- **Active EPCs** : 30,841
- **Expired EPCs** : 38,504
- **Without EPCs** : 16,604
- **Active EPC Coverage** : 35.9%

EPC Performance
- **EPC A-C Homes (Higher Performing)** : 46,373 (66.9%)
- **EPC D-G Homes (Lower Performing)** : 22,972 (33.1%)
- **Average Energy Efficiency** : 71.9 (EPC C)
- **Average CO2 Emissions** : 2.3 tonnes per year

EPC Breakdown
- **A** : 78 (0.1%)
- **B** : 14,291 (20.6%)
- **C** : 32,004 (46.2%)
- **D** : 20,451 (29.5%)
- **E** : 2,223 (3.2%)
- **F** : 236 (0.3%)
- **G** : 62 (0.1%)

Assessment Methodology
- **SAP** : 9,654 (13.9%)
- **RdSAP** : 59,691 (86.1%)

Property Mix
- **Houses** : 24,315 (35.1%)
- **Flats** : 40,038 (57.7%)
- **Bungalows** : 1,583 (2.3%)
- **Maisonettes** : 3,409 (4.9%)

Building Height / Floors
- **Under 5 Floors** : 67,299
- **5-7 Floors** : 1,218
- **Over 7 Floors** : 6,002

Construction Age Profile
- **Before 1900** : 3,525

LOCARLA Property Insight

What Housing Intelligence Can Answer

Which local authorities have the most EPC D and E social homes?

Leeds and Birmingham have the highest volumes of EPC D and E social homes in the results shown, followed by Manchester, County Durham and Liverpool.

Local Authority	Total Properties	EPC D	EPC E
Leeds	19,568	16,182	3,386
Birmingham	18,643	15,557	3,086
Manchester	18,406	15,907	2,499
County Durham	17,161	16,292	869
Liverpool	17,120	15,080	2,040
Southwark	16,431	13,771	2,660
Lambeth	16,386	14,013	2,373
Wakefield	15,575	15,011	564
Sheffield	14,419	13,312	1,107

LOCARLA Property Insight

What Housing Intelligence Can Answer

👤 Clarion properties in buildings over 6 floors on mains gas with D-G EPC in London

👤 Clarion properties in buildings over 6 floors on mains gas with D-G EPC in London

Clarion Housing Association has 22 properties in London within buildings exceeding 6 storeys that use mains gas and hold an EPC rating of D to G. The majority of these properties are rated D, with a single property currently at energy rating E. These are primarily located within the SW19 and E3 postcode areas, with a smaller volume situated in SE12.

Address	UPRN	Flat Storey Count	Mains Gas Flag	
Flat 49, Leybridge Court, Eltham Road, London, SE12 8TJ	100023232394	11	Y	
Flat 3, Hudson Court, Pincott Road, London, SW19 2LF	48056775	12	Y	
Flat 60, Hudson Court, Pincott Road, London, SW19 2LF	48056832	12	Y	
Flat 65, Hudson Court, Pincott Road, London, SW19 2LF	48056837	12	Y	
Flat 66, Hudson Court, Pincott Road, London, SW19 2LF	48056838	12	Y	

LOCARLA Property Insight

👤 Identify Riverside properties in Manchester that are most suitable for retrofit, using the most recent valid EPC record per property.

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Filters:
  - Organisation name: Riverside
  - Town: Manchester
Return a table including:
  - UPRN
  - Address
  - Property type
  - Current EPC rating
  - Potential EPC rating
  - EPC assessment date

From a total of 2,349 properties, showing 50 properties here. These Riverside properties in Manchester are primarily rated E to F, with significant potential for improvement to ratings B or C. The stock includes a mix of bungalows, houses, and flats, with the most recent assessments dating from 2013 to 2025.

UPRN	Address	Property Type	Current Energy
77036930	33, Chelsea Road, Manchester, M40 2TR	Bungalow	F
77035282	12, Orford Road, Manchester, M40 1JY	Bungalow	F
77035288	32, Orford Road, Manchester, M40 1JY	Flat	F
77035290	36, Orford Road, Manchester, M40 1JY	Bungalow	F
10014178860	Apartment 10, 4, Union Street, Manchester, M4 1PT	Flat	F

LOCARLA Property Insight

What Connected Housing Data Reveals

When housing data is connected at property level, the sector moves from fragmented information to portfolio intelligence.

By linking property records, EPC certificates, organisational ownership and procurement activity, housing portfolios can be analysed in ways that support both strategic planning and operational decision-making.

Concentrations of low-performing homes

Connecting EPC data to property ownership allows clusters of poor energy performance homes to be identified across portfolios and geographic areas.

This helps highlight where retrofit activity may be most urgently required.

Geographic retrofit pressure

When energy performance data is analysed alongside location and stock age, it becomes possible to identify areas where retrofit demand is likely to concentrate.

This provides an early view of future investment pressures.

Differences between housing portfolios

Linking EPC performance, property types and construction age reveals significant variation between landlord portfolios, even within the same region.

Understanding these differences can support benchmarking and long-term asset planning.

Procurement exposure

By combining housing stock data with procurement and contract awards, it becomes possible to see where investment activity is already concentrated and where future procurement demand may emerge.

This creates a clearer view of the housing investment landscape.

When housing data is connected at property level, the sector moves from fragmented information to portfolio-level intelligence.

The Real AI Challenge
for Housing

Debate around artificial intelligence in housing often focuses on model performance, whether large language models (LLMs), smaller models (SLMs) or other architectures are most suitable.

However, in practice the primary challenge facing the sector is not model selection. It is the availability of structured, reliable housing data that AI systems can analyse consistently.

Without this foundation, even the most advanced models struggle to produce reliable insights.

Three Foundations for Housing AI

Data Integration

Housing information is distributed across multiple systems including property registers, energy performance data, organisational reporting and procurement records.
Bringing these datasets together at property level is the first requirement for meaningful analysis.
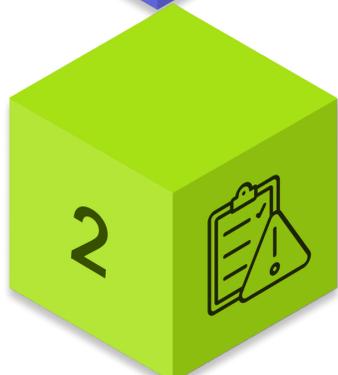
Governance and Definitions

Housing data contains many concepts that require consistent interpretation, including building definitions, stock attribution, energy metrics and investment categories.
Clear governance rules ensure that analysis is based on consistent definitions rather than subjective interpretation.
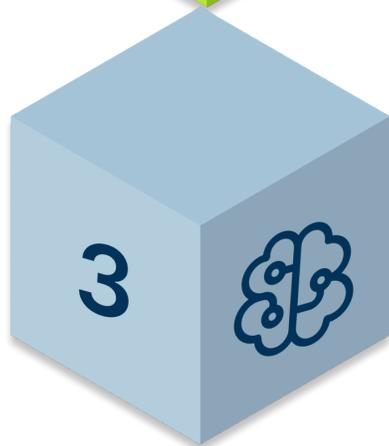
Analytical Capability

Once data is connected and governed by clear rules, analytical ools, including AI, can identify patterns across portfolios, regions and investment programmes.
This allows the sector to move beyond fragmented reporting towards evidence-based housing intelligence.

The debate between LLMs and SLMs is secondary.

Without structured housing datasets and clear governance frameworks, AI systems cannot produce reliable insights.

When these foundations exist, AI becomes a powerful tool for interpreting and communicating housing intelligence.

Reliable housing AI depends first on **structured data** and **sector governance - language models are the final step, not the first.**

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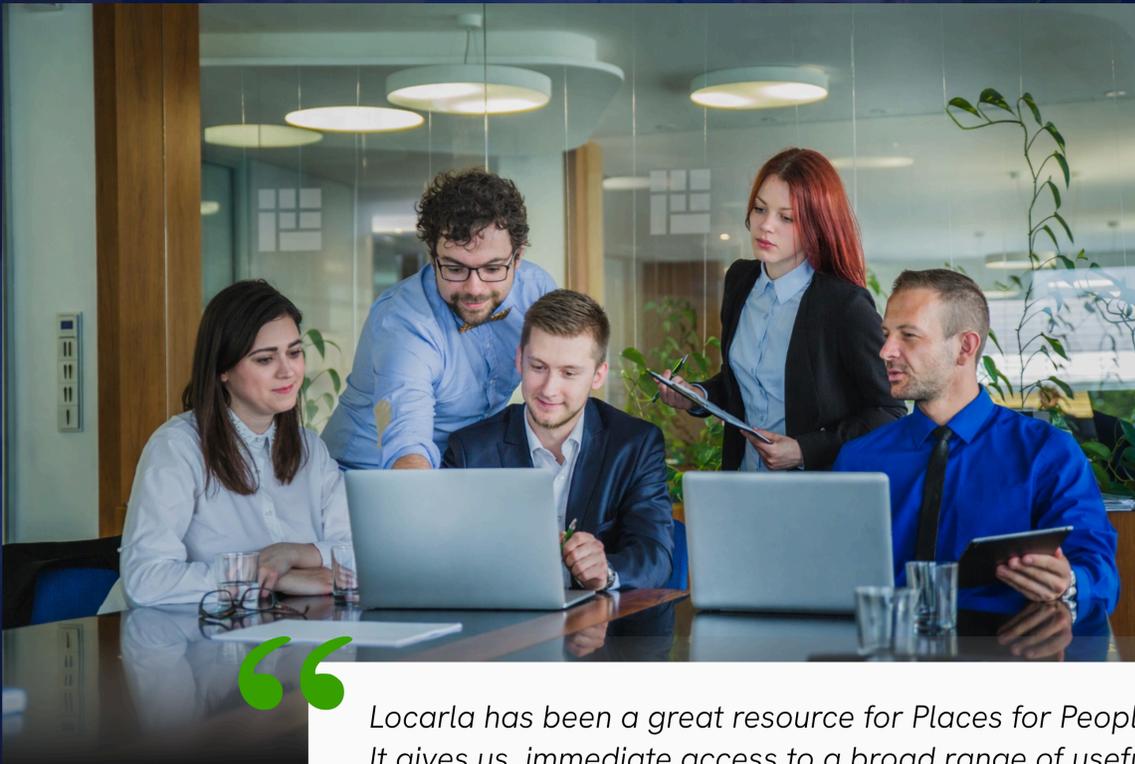
> "Locarla has been a great resource for Places for People because:
> It gives us immediate access to a broad range of useful housing
> information in one easy to use, intuitive platform. It allows us to
> identify, harness and nurture strategic relationships in the sector
> which can underpin our development and regeneration program.
>
> Alan Heron - Places for People

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