



A Community Climate Investment Plan *for Knowle West*

March 2026

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Putting local people at the heart of the transition to a low-carbon, climate resilient neighbourhood.



Acknowledgements

The development of this Community Climate Investment Plan for Knowle West has been a shared endeavour, shaped by the knowledge, commitment and leadership of a range of local partners and communities.

The plan was produced by CSE in partnership with Knowle West Media Centre, WeCanMake, the Knowle West Alliance and Bristol City Council, whose combined expertise in community development, local government and energy systems has been central to shaping both its ambition and its practical grounding. In particular, the leadership of the community partners in Knowle West has ensured that the priorities, concerns, and lived experiences of local residents sit at the heart of this plan and that it builds on previous work in the neighbourhood.

We thank the many residents, community organisations, and local stakeholders who contributed time, insight and experience. Their contributions have helped ensure this plan reflects the realities of life in Knowle West and the opportunities for community climate action.



Preface

This plan starts from a simple premise: that putting local people and places at the heart of climate investment is essential to delivering a faster, fairer and more effective transition. With a large, consistent housing typology, strong community infrastructure and proven local partnerships, Knowle West offers a testbed for neighbourhood-scale climate investment. Building on the neighbourhood's Community Climate Action Plan, this plan sets out how targeted finance and funding could deliver warmer homes, skilled local jobs and scalable retrofit models, and has been shaped through engagement carried out via Mission Net Zero and the Transforming Energy Together initiative.

Community Climate Action in Bristol

The **Community Climate Action Project** (CCA), led by Bristol Climate and Nature Partnership and funded by the National Lottery's Climate Action fund, saw the development of Climate Action Plans in neighbourhoods across Bristol.¹ These plans, the first of their kind in the country, captured the priorities and ambitions of communities, demonstrated the important role they can play in achieving the city's climate and nature ambitions and provided a social mandate for future action. Knowle West's plan, "Climate Conversations" captured a bold vision for the neighbourhood and forms a core foundation for this Community Climate Investment Plan.²

Mission Net Zero and the Net Zero Living Programme

Run by Innovate UK, the **Net Zero Living Programme** looked to build new partnerships between businesses and local authorities to deliver new solutions, improve local services and open markets for economic growth, by optimising opportunities, accelerating adoption and scaling what works. In Bristol, **Mission Net Zero** was an ambitious project funded through the programme to make Bristol a more sustainable and inclusive city in support of the **Bristol One City Climate Strategy**, which aims for Bristol to be a carbon neutral and climate resilient city.³ The project worked to speed up the West of England's transition to net zero by tackling barriers such as limited access to finance, slow take-up of domestic retrofit and a shortage of skilled workers.

Transforming Energy Together

Transforming Energy Together (TET) was a central part of the Mission Net Zero project, led by the **Centre for Sustainable Energy**, working with local organisations, and supported by Mission Net Zero partners.⁴

Through TET three local organisations - **Eastside Community Trust, Knowle West Media Centre and Southmead Development Trust** were selected to pilot a new, community-led approach to planning investment in energy projects.

Building on the Community Climate Action Plans for their areas, the local organisations worked with the project partners to explore how the needs, priorities and concerns articulated by local people through the CCA process could be

met by community-led and community-informed solutions in a way that offered value to investors and funders whilst building wider local interest in climate and energy action in the neighbourhood.

Alongside local engagement, the project also assessed how these projects might work in practice, considering both technical factors (such as the feasibility of renewable energy installations and energy efficiency measures) and the social context (including affordability, local demand, and community readiness).

Together, the insights gained helped develop this Community Climate Investment Plan and associated pipeline of investment opportunities (see Section 4, and Appendix B).

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A document that combines findings from the Community Climate Action Plans and early engagement undertaken through Transforming Energy Together for each of the three neighbourhoods.	
<i>B. A Charter for Community Investment:</i>	
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Knowle West’s Community Climate Action Plan.	

Executive Summary

A neighbourhood ready for climate investment

Knowle West is a distinctive Bristol neighbourhood with a strong history of community action, creative innovation and collective problem-solving, exemplified through initiatives such as the Knowle West Alliance and WeCanMake Homes Community Land Trust. Its largely interwar housing stock, established community infrastructure and active local partnerships create favourable conditions for neighbourhood-scale climate investment, and Knowle West presents a clear opportunity to improve everyday life while reducing carbon emissions. However, climate action cannot be abstract: it must prioritise warmer homes, lower costs, better health and everyday wellbeing alongside emissions reduction.

Transforming Energy Together: from community action to citywide opportunity

This Community Climate Investment Plan translates local priorities into a practical investment framework. Building on the neighbourhood's Community Climate Action Plan and extensive engagement through the Mission Net Zero and Transforming Energy Together programmes, it sets out a pipeline of investable opportunities designed to deliver immediate benefits such as warmer homes, lower costs and improved wellbeing, whilst supporting long-term decarbonisation and resilience.

In doing so, the plan links community-identified needs with emerging national priorities around home upgrades, decentralised clean energy systems and the growth of green jobs and skills. A clear, locally grounded framework helps ensure national ambition translates into practical neighbourhood delivery, while strengthening the city's ability to coordinate investment and attract funding aligned with local priorities.

Developed through Mission Net Zero, this plan sits alongside similar Community Climate Investment Plans for Easton and Lawrence Hill and for Southmead. While each plan can stand alone, together the three neighbourhoods form a strong and complementary portfolio for place-based climate investment across Bristol, creating opportunities to test approaches at scale, share learning and develop delivery models with wider regional and national relevance.

Key lessons for future delivery

Developing this Community Climate Investment Plan has involved sustained engagement with residents, local organisations, delivery partners and technical specialists. This process has provided valuable practical insight into what could enable neighbourhood climate investment to succeed - not just technically, but socially, economically and organisationally. These insights include:

- **Start with real lives, not just technical models.** Retrofit and energy projects are most effective when designed around how people actually live.
- **Work with trusted community partners as core partners.** Local organisations bring knowledge, relationships and practical capacity that build confidence, reduce delivery risk and increase participation.
- **Take joined-up, street-scale approaches in mixed-tenure areas.** Coordinated delivery across homeowners, landlords and housing providers improves fairness and neighbourhood outcomes.
- **Invest early in people, skills and project development.** Locally rooted training and hands-on learning demonstrate how engagement and skills development underpin scalable delivery.
- **Ensure benefits are retained locally.** Climate investment should strengthen local economic opportunity, supply chains and community wealth.

Where investment can make a difference

Reflecting these lessons, the investment opportunities identified in this plan are organised around three interconnected themes designed not only to reduce emissions, but to strengthen the local economy and deliver lasting benefit for residents:

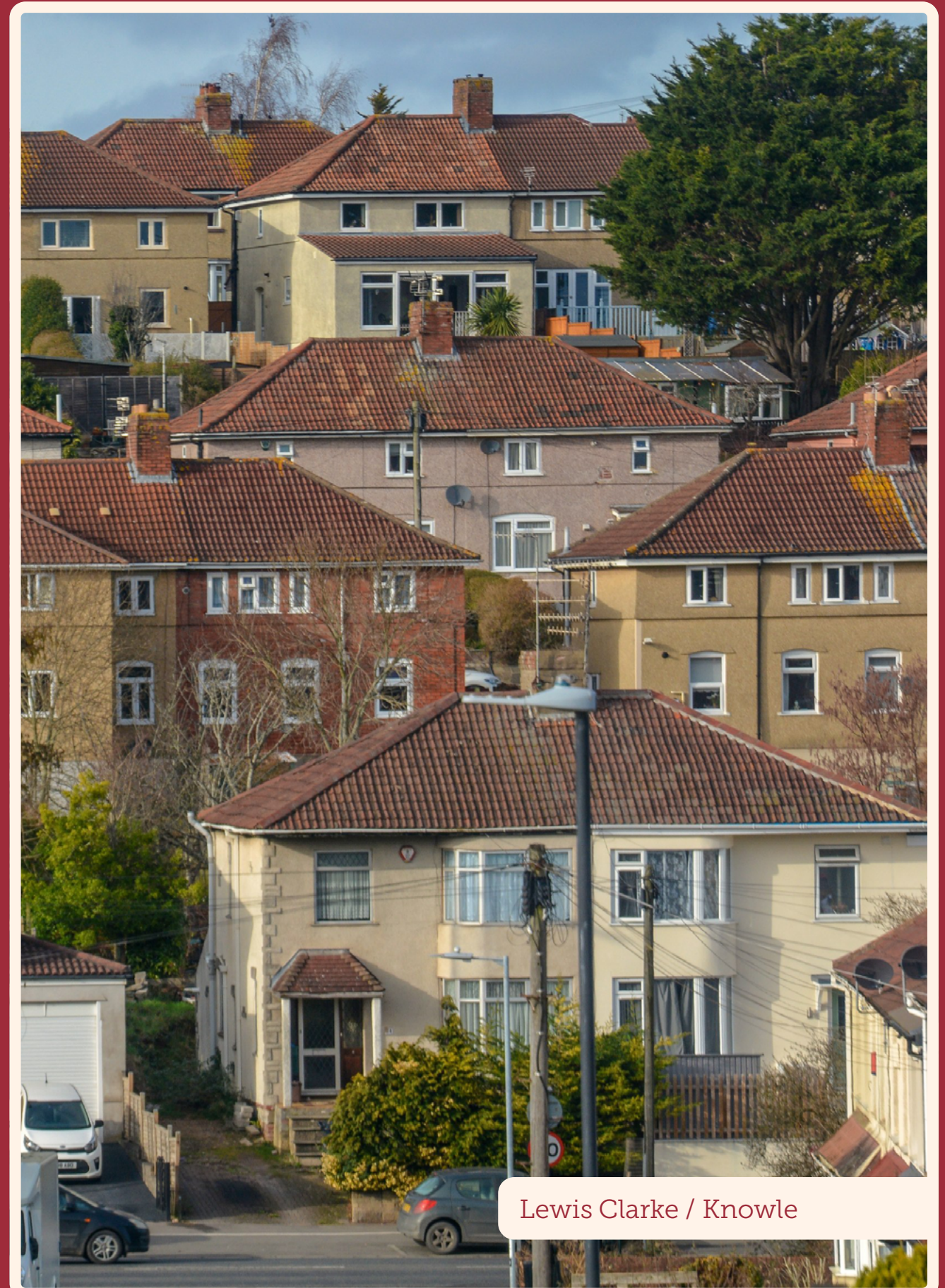
- **Homes** - Coordinated retrofit, low-carbon heating, solar deployment and early interventions to improve comfort, reduce bills and cut emissions, while creating demand for skilled local labour and trusted delivery partnerships.
- **Neighbourhood** - Shared infrastructure, local energy systems, green spaces and stewardship models that enhance resilience, environmental quality and community wellbeing, while building collective capacity and long-term local value.
- **Skills** - Local training programmes, delivery teams and employment pathways that strengthen supply chains, open up access to green jobs and help ensure that investment supports opportunity within the neighbourhood.

Together, these themes provide a practical pathway from community priorities to investable projects and scalable delivery. By aligning carbon reduction with health improvement, economic opportunity and community wellbeing, this approach shows how neighbourhood-scale climate investment can support inclusive growth, healthier communities and long-term resilience. Building on the partnerships, innovation and momentum established through this work, Knowle West is well placed to help shape a coordinated, place-based model for climate investment across Bristol, demonstrating how community-led action can translate into practical, lasting change.

1. A vision for the future

Knowle West is a distinctive neighbourhood in south Bristol, home to almost 23,000 people.⁵ One hundred years ago, when its homes were first built, it was seen by many as the future of how we could live better together. The council-built houses formed part of the 1.2 million “Homes Fit for Heroes” delivered in response to the social challenges that followed the First World War.⁶

A century later, Knowle West can again be an exemplar, this time demonstrating how a creative, community-led, asset-based approach can reimagine, repair and remake homes and streets so they are warmer, more affordable, greener and healthier as we respond to the changing needs of people and planet.



Lewis Clarke / Knowle

1.1

Where it began:
A Climate Action Plan for Knowle West

Knowle West’s Community Climate Action Plan, “Climate Conversations” underpins this Community Climate Investment Plan and reflects the community’s ambition to shape climate action locally, respond to health and economic challenges, and build confidence by valuing existing knowledge, assets and initiatives in the neighbourhood.

The Community Climate Action Plan was co-produced in 2024 by Bristol Climate and Nature Partnership (BCNP), Knowle West Media Centre (KWMC) and local residents through workshops, creative activity and community-led engagement.⁷ Alongside identifying priorities for action, it set out a locally defined vision of success: warm, dry and affordable homes; inclusive participation; collective action; and improved everyday wellbeing.



A fairer, greener and healthier future:
key local priorities⁸



Transport

- Improve access to affordable, reliable and accessible public transport
- Make walking, cycling and wheeling safer and more attractive
- Support active travel as part of everyday life



Energy

- Improve access to clear, trusted energy information and advice
- Support residents to reduce bills and build energy confidence
- Develop shared and local energy solutions where appropriate



Waste and Resources

- Reduce waste and tackle fly-tipping
- Support sharing, reuse and local repair
- Reduce food waste, increase composting and cut plastic packaging



Nature

- Make green spaces more accessible, safer and better connected
- Protect and enhance existing green spaces
- Create opportunities for learning, recreation and connection with nature



Business and Education

- Remove systemic barriers that prevent people from taking climate action
- Embed learning, training and apprenticeship opportunities for young people and adults
- Grow local skills and delivery capacity to support a just transition and increase community wealth



Homes and Buildings

- Support residents to improve energy literacy and access grants and support
- Work with landlords to improve energy efficiency in rented homes
- Develop neighborhood-scale approaches to retrofit and shared infrastructure

1.2

Going deeper: Transforming Energy Together

As part of the Transforming Energy Together (TET) project, KWMC and WeCanMake re-engaged residents across the neighbourhood to explore these priorities in more depth, identifying barriers to local action and the support needed to progress them into projects. This work was delivered through a range of inclusive engagement activities, with barriers such as language, accessibility needs and a lack of time pro-actively addressed. These activities included:⁹

The Neighbourhood Trade School Model

A 12-week pilot programme of 24 sessions combining creative engagement with practical learning around homes, DIY skills, materials and energy. The pilot engaged 47 participants who might otherwise be left out of climate conversations, delivering over 616 hours of hands-on learning and skills development to a diverse cohort, with the following demographics:

- 66% women
- 11% non-binary
- 22% men
- 20% from a global majority background
- 60% disabled
- 33% neurodivergent
- 50% LGBTQIA+

4 workshops where locals learnt about energy and gathered their ideas for shared renewable systems.

Creative workshops with the local construction college and training for local construction workers about retrofit, natural materials and the Andover Road project (see page 23)

Recruitment, training and support for a Neighbourhood Retrofit Trade Crew made up of local residents and those underrepresented in construction.

Co-design of a Neighbourhood Retrofit Recipe with a demonstration street.



1.3

Life in Knowle West:

Lived experience, evidence and implications for climate action

To bring together insights from the Community Climate Action Plan¹⁰ and the Transforming Energy Together programme, an Initial Community Needs Assessment was developed for Knowle West¹¹ (see Appendix A). This draws on the engagement activities outlined in Section 1.2, local partner input and a range of supporting data to capture common lived experiences in the neighbourhood.



Key theme 1:

Affordability, housing quality and health

What residents experience

High energy bills relative to income, difficult trade-offs between essentials, and long-standing problems with cold, damp and mouldy homes. These conditions are linked to stress, anxiety and wider physical and mental health impacts, and frustration with short-term fixes that do not address root causes.

Key evidence and data

- Around 30% of households include someone with a long-term health condition or disability, increasing sensitivity to cold, damp, mouldy homes or overheating due to housing design, poor ventilation or lack of shading.
- Fuel poverty rates are among the highest in the city, with some areas of the neighbourhood seeing rates as high as one in five homes (see Map A).
- Net household income after housing costs is among the lowest in Bristol, with up to 60% of the neighbourhood falling within the lowest income category, limiting the levels of capital available to improve their home.
- 78% of residents cite air quality as a local concern.¹³

Delivering the vision: implications for climate action and investment

- Improving housing comfort, affordability and health outcomes should remain central to climate action and investment locally.
- Well-designed, high quality retrofit approaches, delivered through trusted local partnerships and designed to reduce bills alongside emissions, can strengthen uptake, improve health outcomes and increase confidence in climate programmes.

Key theme 2:
Low trust and limited control shape how people engage

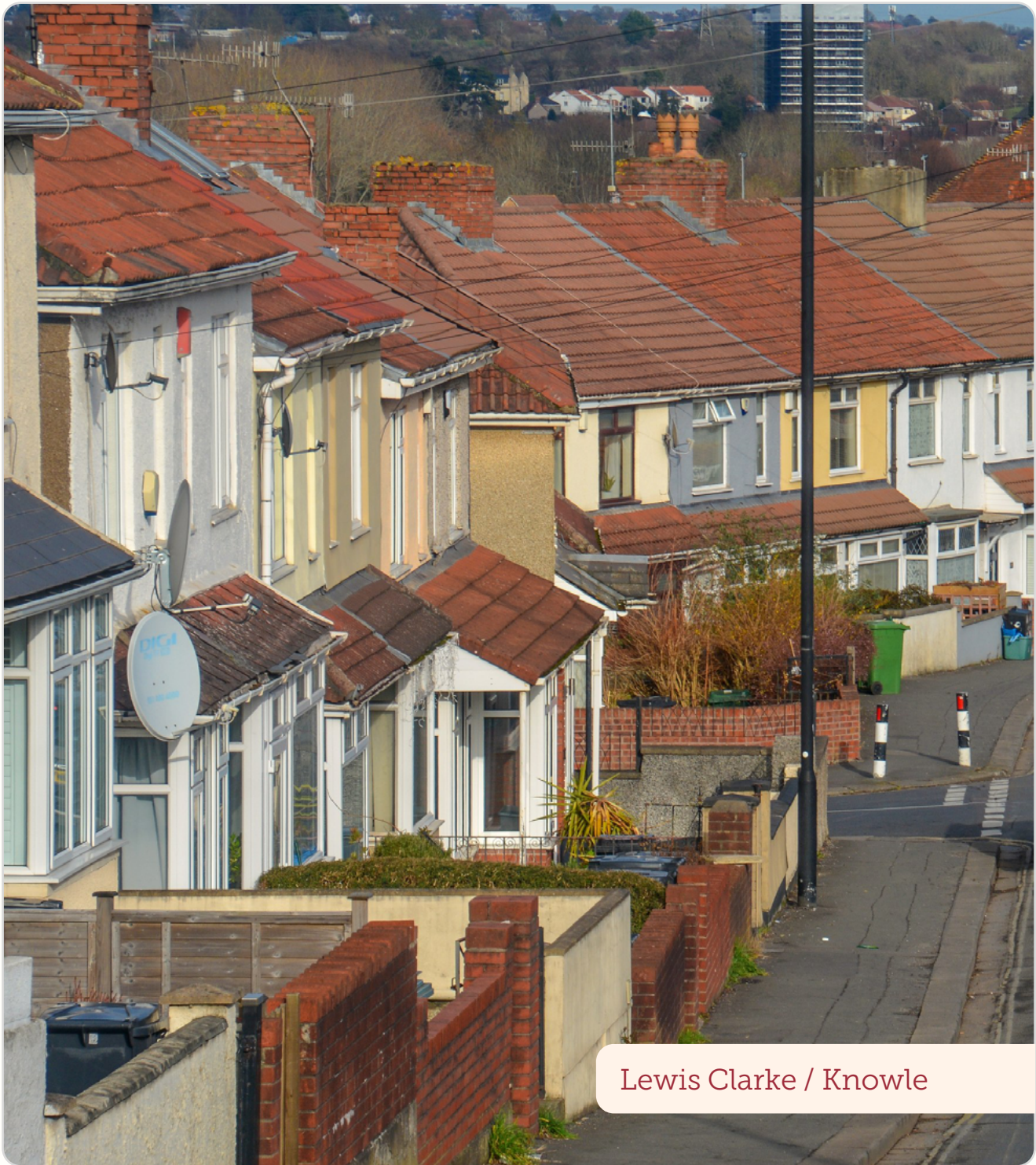
What residents experience	Low trust in systems and institutions, shaped by poorly explained works, repairs that failed to solve problems, and a lack of accountability. Mixed tenure limits people’s ability to act, even where there is motivation to do so.
Key evidence and data	• Almost half of the homes in Knowle West are rented (around 38% social housing and 8% private rented), limiting household control over improvements. • Rising house prices since 2011 have increased insecurity amongst renters and reduced tolerance for financial risk. • Nearly half of residents (47.5%) are already taking action to reduce home energy use due to climate concerns, indicating willingness to make changes where barriers can be reduced.¹⁴
Delivering the vision: implications for climate action and investment	Trusted, locally rooted delivery models will be essential to building confidence and enabling participation, particularly in mixed-tenure neighbourhoods. Investment that supports community leadership, clear accountability and shared ownership of infrastructure and solutions can reduce delivery risk, improve uptake and help ensure long-term benefits are retained locally.

Key theme 3:
Skills, learning and participation

What residents experience	Strong appetite to learn new skills and take part in climate action, particularly where opportunities are practical, hands-on and clearly linked to improving homes and everyday life.
Key evidence and data	• Levels of formal qualification are lower than the Bristol average, yet engagement delivered through Transforming Energy Together has demonstrated clear local interest in practical, accessible routes into skills, training and employment linked to housing and energy. • 52% of residents reported participation in learning-based activities in 2024, with 74% reporting confidence in online learning, highlighting an interest in upskilling and opportunities for accessible, blended approaches to learning. • A large young population provides workforce potential, with 27% of residents under the age of 20 and 49% under the age of 35.¹⁵
Delivering the vision: implications for climate action and investment	Supporting community-led skills development, training and participation can strengthen delivery capacity while creating local economic opportunity. Investment that builds accessible pathways into green skills, employment and leadership can enhance programme effectiveness, retain economic benefits locally and support a just transition.

Key theme 4:
Pressure on time and capacity

What residents experience	Many households do not have the energy and motivation to engage and sustain participation where decision-making power and resources feel distant and not in their control; participation is not properly resourced; and the value of community input is not valued.
Key evidence and data	• Around 10% of residents in the neighbourhood provide unpaid care, above the Bristol average, limiting mental load and ability to engage in additional activity. • Food insecurity indicates household strain, particularly in Filwood where 8% of households used a food bank in 2024, with moderate–severe food insecurity affecting 13% of residents.¹⁶
Delivering the vision: implications for climate action and investment	Climate action and investment must recognise, value, and work with the significant knowhow and creative resources that communities and individual households hold; and the risks and rewards of taking action should be equitably shared.

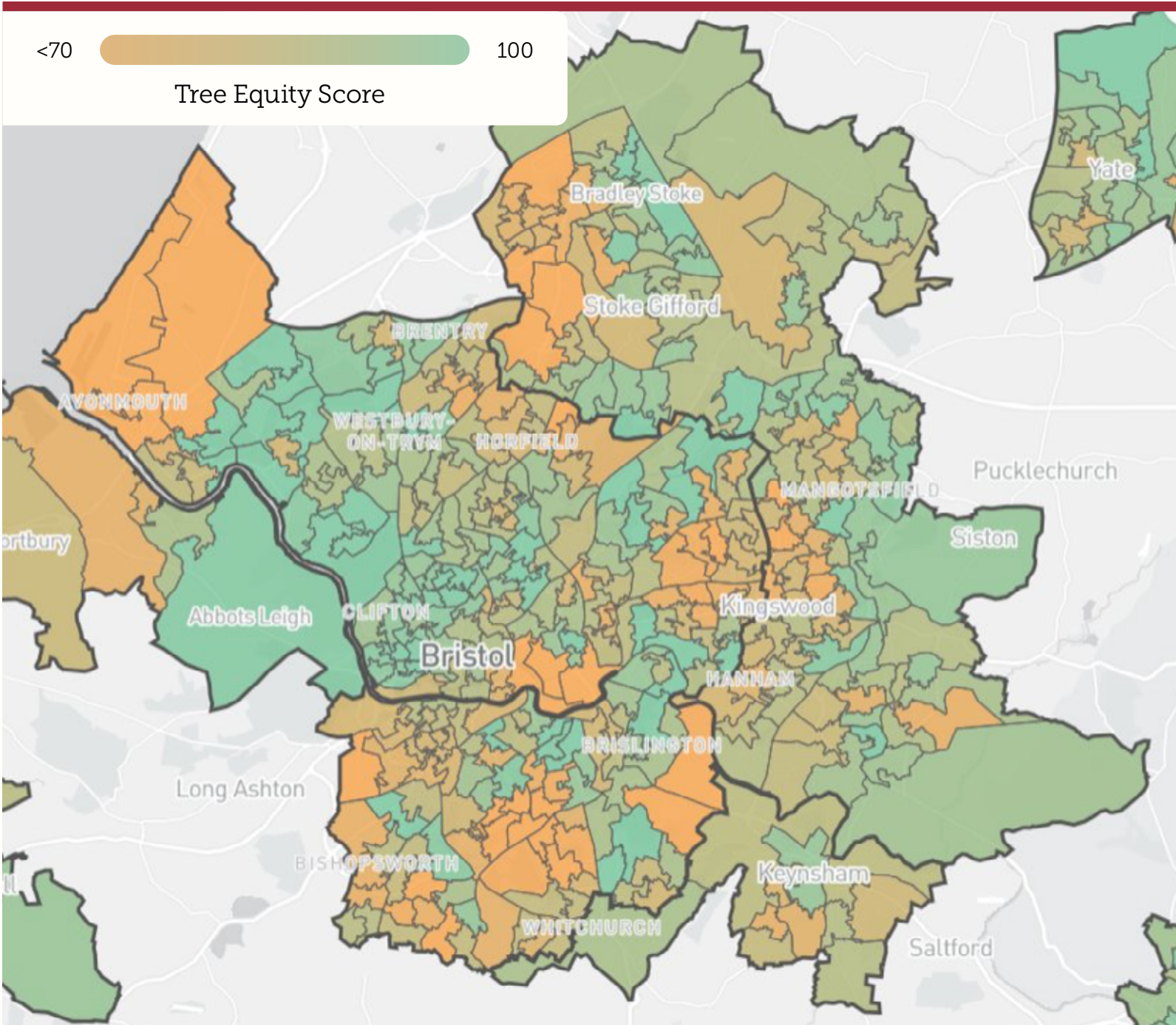


Key theme 5:
Homes under climate stress

Taken together, these themes indicate that low uptake of low-carbon measures in the neighbourhood likely reflects constraint rather than lack of interest. Reducing pressure on households, building trust through locally rooted delivery and prioritising improvements that deliver immediate benefits will be key, with coordinated neighbourhood-scale approaches likely to deliver the greatest impact.

Map B
Tree Equity Score UK mapping dataset¹⁸

What residents experience	While cold and damp remain major concerns, residents increasingly report overheating in summer, sleep disruption and discomfort during heatwaves.
Key evidence and data	• Around 16% of householders report that their home overheats in hot weather. Climate projections show increasing frequency of heat extremes and when deprivation is taken into account heat vulnerability in Filwood ward is considered ‘very high’, indicating the challenges faced by local people unable to adapt their homes to rising temperatures. • Some parts of the neighbourhood have as little as 5% tree canopy cover and rank some of the worst in the city for tree equity and heat disparity (see Map B). • 19% of residents in the neighbourhood report that their roads flood in heavy rain and long-term surface water flood risk is highest in the area around Filwood Park and Inn’s Court, with the risk of flooding increasing by up to 15% by 2060. • A significant proportion of residents (49%) express concern about climate change.¹⁷
Delivering the vision: implications for climate action and investment	Integrating climate adaptation alongside decarbonisation is increasingly important, particularly in homes vulnerable to overheating and damp and in higher risk parts of the neighbourhood. Investment in building performance, ventilation, shading and green infrastructure can improve comfort, resilience and health while supporting long-term climate goals.



2. Knowle West: the neighbourhood

Bounded by the Northern Slopes to the north, Hartcliffe Way and Hengrove Way to the east and south, and Filwood Green Business Park to the south-west, the neighbourhood spans three wards and includes around 54% of the homes in Knowle ward, all homes in Filwood, and a smaller proportion (around 7%) of the homes in Windmill Hill.¹⁹

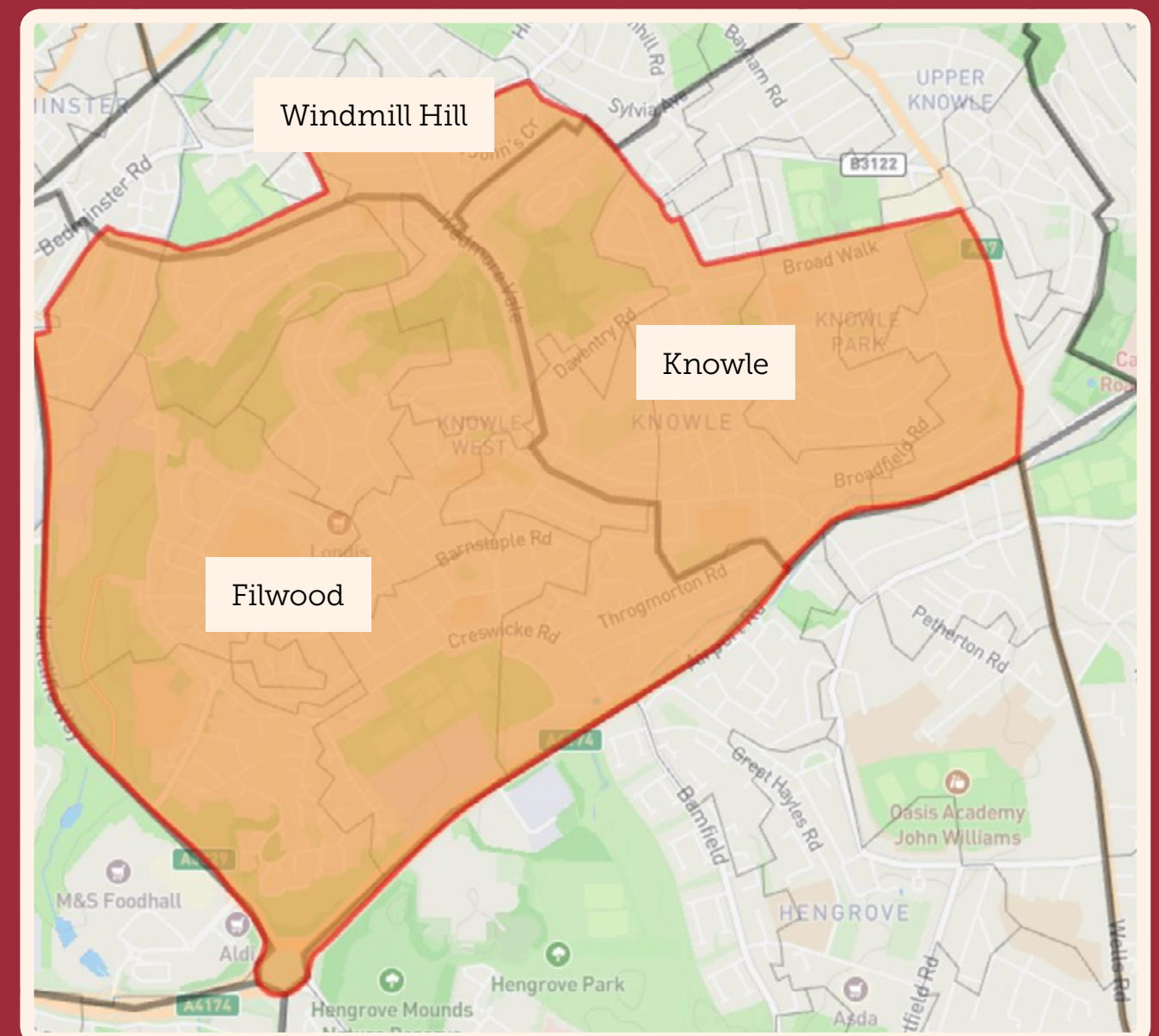
Areas of Knowle West sit within the 10% most deprived neighbourhoods in England.²⁰ Long-standing inequalities across health, education and employment shape everyday life for local people, influencing housing quality, energy affordability and resilience to climate change.

However, these headline indicators do not tell the whole story and Knowle West is also a creative and resourceful neighbourhood, home to makers, growers, inventors, sewers, bakers, coders, builders, musicians, carers, menders and storytellers. There is a strong tradition of making, fixing and sharing skills, with people finding ways to create value and support one another using the resources available to them.

Despite persistent challenges, residents and community organisations continue to work together to shape change, providing a solid foundation for place-based climate action rooted in lived experience, shared assets and long-term stewardship.

Map C

Knowle West neighbourhood boundary



2.1

The carbon emissions baseline

The estimated average annual consumption-based carbon footprint for a household in Knowle West is 11.4 tCO₂e, slightly lower than the Bristol average of 12.7 tCO₂e.²¹

This includes emissions linked to housing energy, transport, food, goods and services, reflecting the wider impacts of everyday consumption rather than direct household emissions alone. A breakdown by sector is shown in Chart A.

The total annual emissions associated with all activity across the neighbourhood, Knowle Wests ‘territorial emissions’, are approximately 56,000 tCO₂e.

Climate justice

Consumption-based emissions in Knowle West are lower than the Bristol average, likely reflecting lower incomes and constrained household choices (see Section 1.3). This suggests emissions often stem from structural inequality such as under-heating, limited ability to improve homes and restricted capacity to invest, rather than higher comfort or consumption.

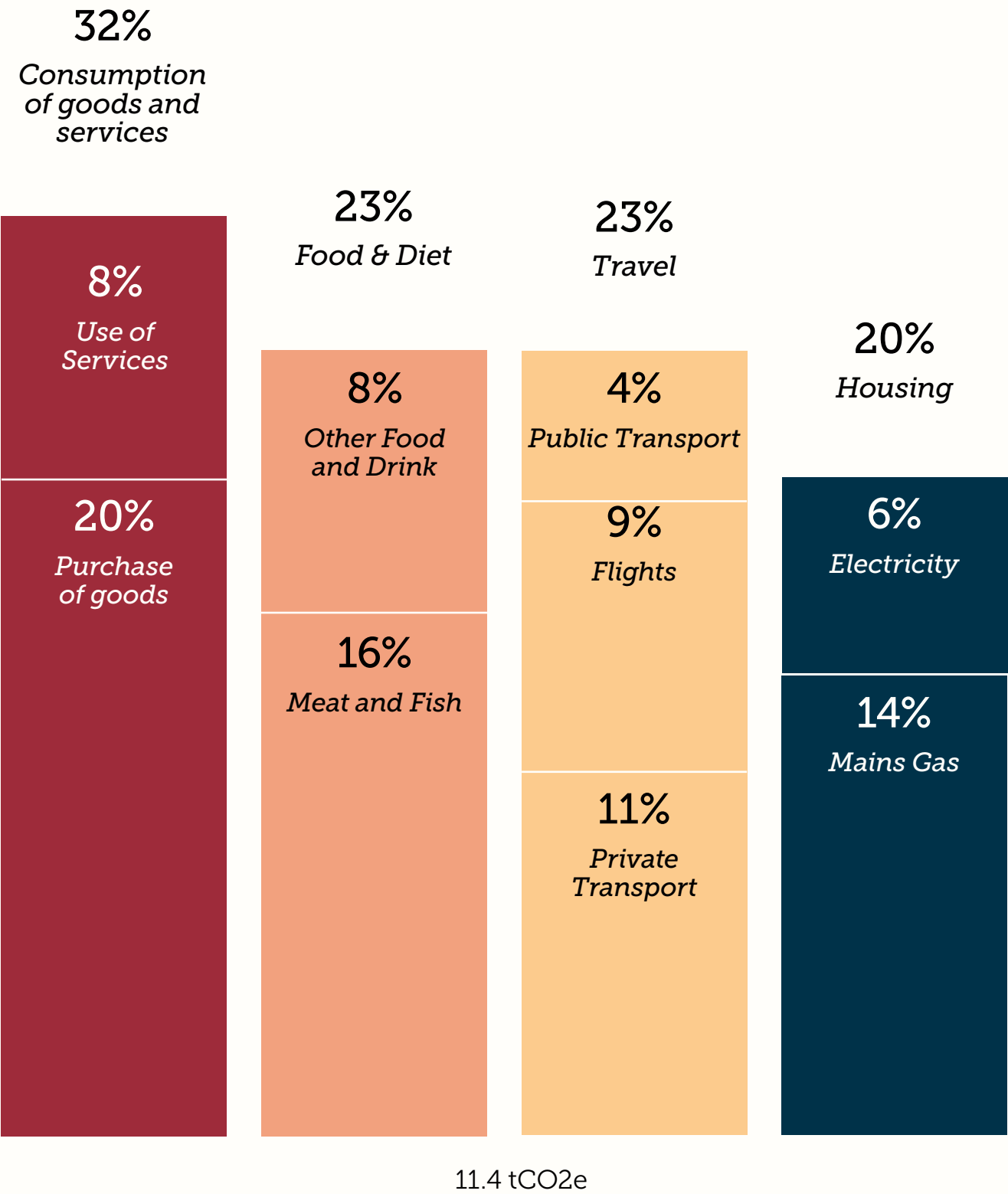
Lived-experience findings show climate action locally must prioritise comfort, affordability, health and trust alongside carbon reduction. Tenure patterns, time pressures and financial constraints shape how people can engage, reinforcing the need for tenure-blind, trusted delivery models that reduce participation barriers and avoid reliance on individual household action alone.

This context highlights the importance of combining emissions reduction with adaptation, community capacity-building and skills development, supporting warmer homes, greener neighbourhood infrastructure and stronger local delivery capability.

For investors, this creates opportunities to back projects that respond directly to community needs while delivering carbon reduction, stronger partnerships and resilient housing outcomes aligned with a fair and just transition.

Chart A

Annual household consumption footprint by sector for Knowle West (CSE, 2025)²²



2.2

Housing stock and tenure

There are approximately 10,000 homes in Knowle West²³ and 39% of the neighbourhood’s territorial carbon emissions come from the buildings that people live in,²⁴ making housing a critical focus for climate action in the neighbourhood.

As the largest interwar housing estate in Bristol,²⁵ Knowle West’s housing stock is representative of common housing typologies found across the city and the UK. Around 70% of homes were built in the interwar period²⁴ and this repetition of house types offers a powerful opportunity for retrofit solutions that can be designed, tested and refined locally, then scaled across the neighbourhood and beyond, supporting delivery at local, regional and national levels.

Alongside this primary housing typology, pockets of post-war and later housing types are distributed across the neighbourhood. A typology-led approach to retrofit that recognises this diversity can deliver significant value for householders, communities, the local authority and investors by enabling clearer pathways for intervention, more reliable performance outcomes, and replicable solutions that reduce technical and delivery risk.

This approach is already being put into practice locally through place-based retrofit demonstrators and community-led housing initiatives such as the Transforming Homes project on Andover Road and the WeCanMake model, which are testing typology-specific solutions while building local skills, trust and delivery capacity. Together, these projects help position Knowle West as a neighbourhood where scalable retrofit approaches can be developed in ways that deliver both climate and community value.

Typical of council-built housing estates of the period, Knowle West is dominated by low-rise terraced and semi-detached homes, with a much smaller proportion of flats and very few detached properties or bungalows (see Chart C).

Chart B

Age of property in Knowle West²⁶

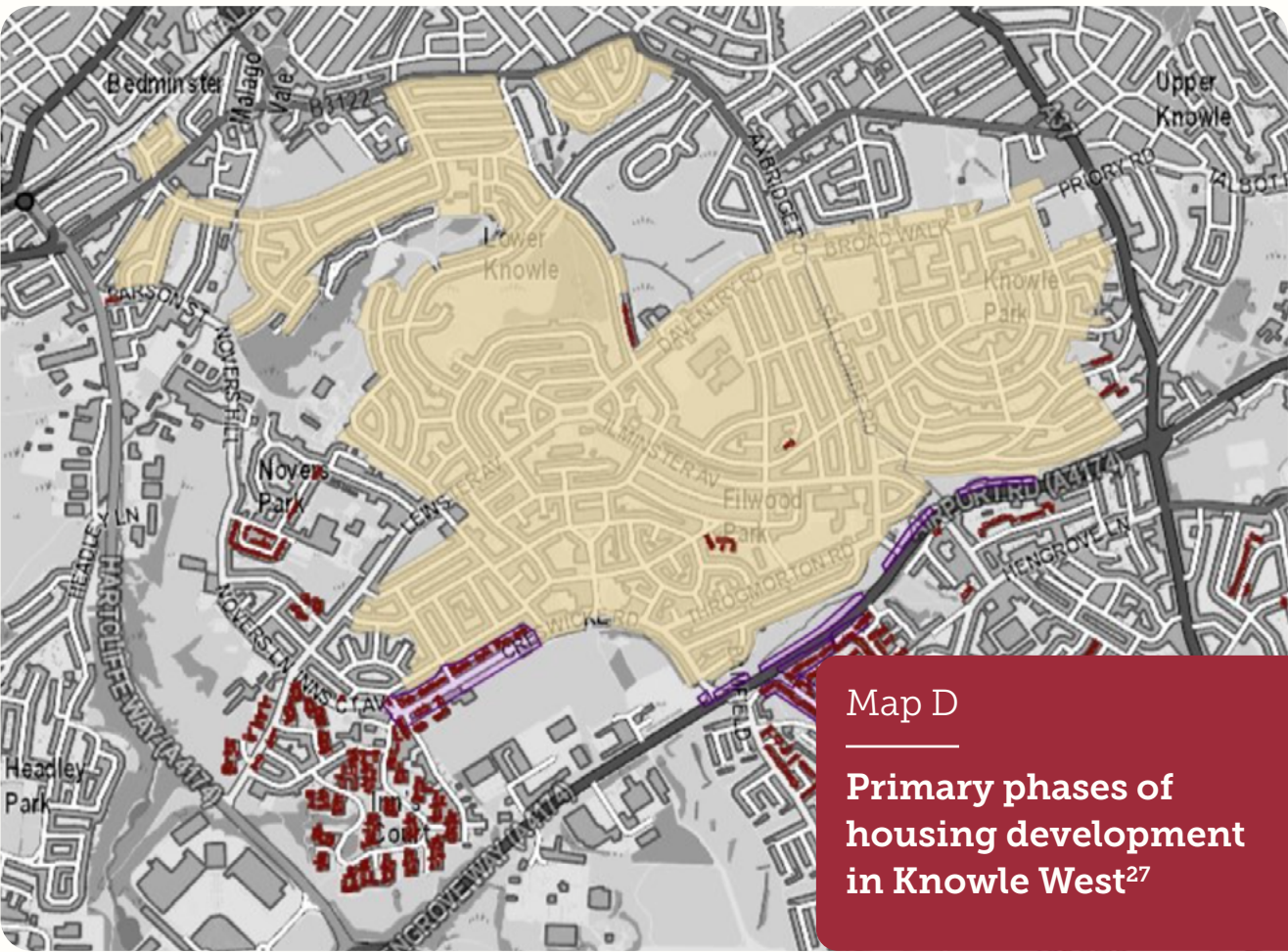
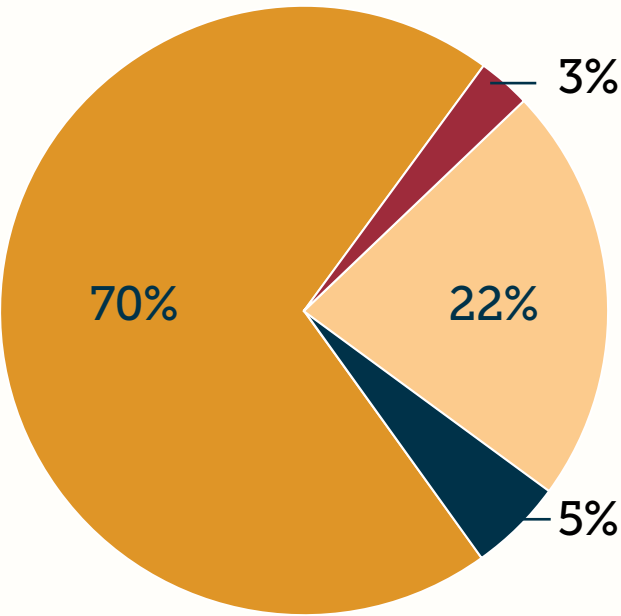
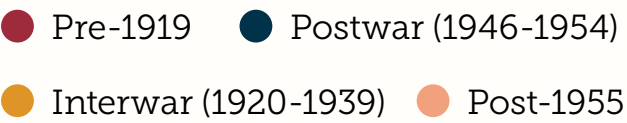
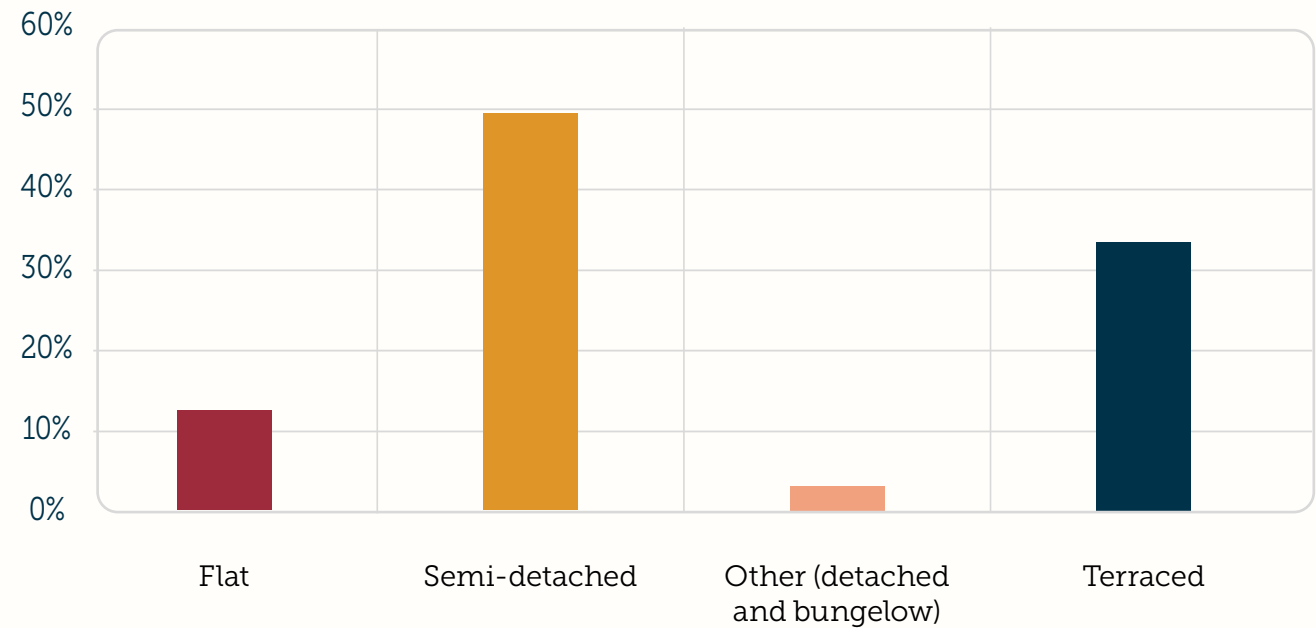


Chart C

Property type distribution in Knowle West²⁷



When considering options for decarbonisation, it is important to recognise the form and layout of the terraced and semi-detached housing prevalent in Knowle West. Homes are generally arranged in short runs, often combined with semi-detached pairs, and typically benefit from greater outdoor space, including front and rear gardens and wider street layouts (see photo below.)

Taken together, terraced and semi-detached properties account for approximately 84% of homes in the neighbourhood, making them a clear focus for place-based decarbonisation strategies. Their shared form and layout support coordinated, street-scale retrofit delivery while still allowing flexibility for measures such as insulation, heat pumps, shared infrastructure and green space improvements.

Terraced housing typologies typically found in Knowle West



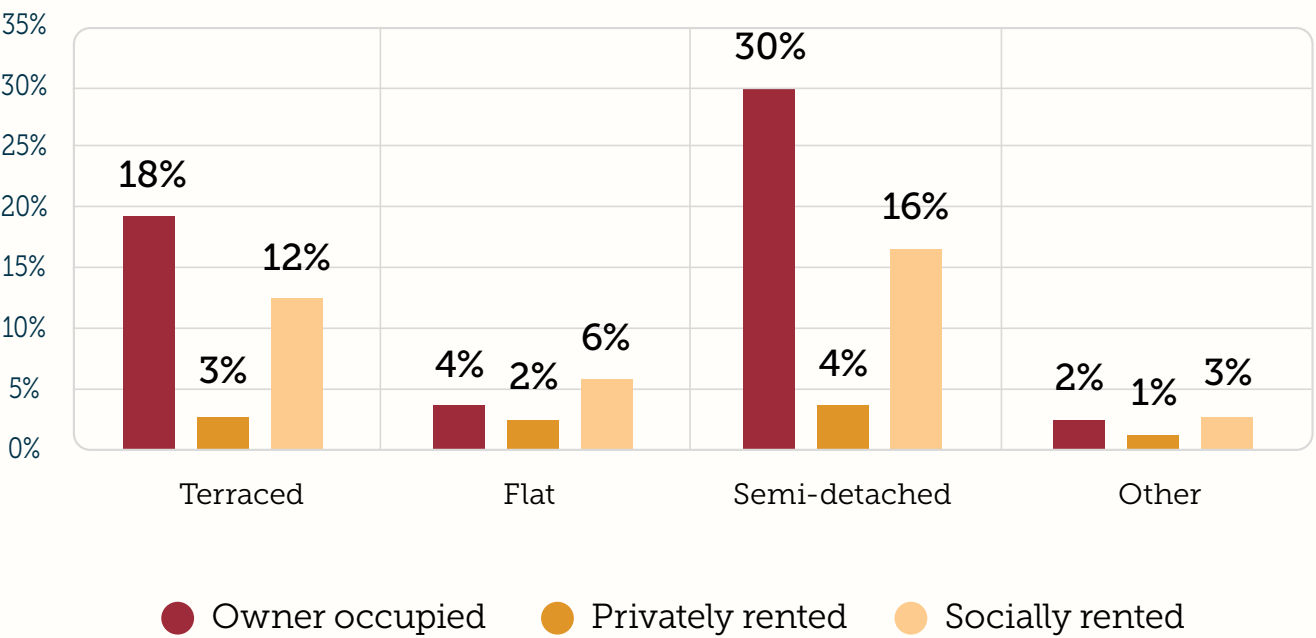
Tenure matters

Tenure is a key factor in how housing decarbonisation can be delivered, shaping who can make decisions, access finance and coordinate improvements at scale. Knowle West has a distinctive tenure mix, with a relatively high proportion of social housing (around 38%) alongside a larger proportion of owner-occupied homes (around 54%)²⁸ This creates both opportunities for coordinated retrofit through social landlords, and the need for approaches that work across tenures rather than relying solely on individual household action.

As shown in Chart D, tenure patterns vary by property type. Flats are predominantly socially rented, while many interwar terraced and semi-detached homes are owner-occupied or mixed tenure. This reinforces the importance of neighbourhood-scale, tenure-blind delivery models that can coordinate improvements across similar homes regardless of ownership.

Chart D

Tenure by core property type in Knowle West²⁷



Bristol City Council’s significant land and housing ownership further supports this potential, enabling coordinated programmes backed by funding, expertise and delivery capacity. The Council’s Housing Heat Decarbonisation Strategy also provides a strategic framework for upgrading its housing stock over time, helping align neighbourhood retrofit activity with wider city investment plans.²⁹ Combined with the presence of owner-occupied homes, this creates conditions for both equitable neighbourhood retrofit and the aggregation of homes into investable portfolios.

Map E

Bristol City Council land ownership in Knowle West and the surrounding area³⁰



Typologies in focus: Interwar housing

Of the 70% of interwar homes across the neighbourhood, most were built using early cavity brick construction with little original insulation, meaning many homes experience heat loss, damp or comfort challenges today.³¹ Because so many homes share similar construction, retrofit solutions can be designed once and delivered street by street; making homes warmer, lowering bills and reducing delivery costs at scale.

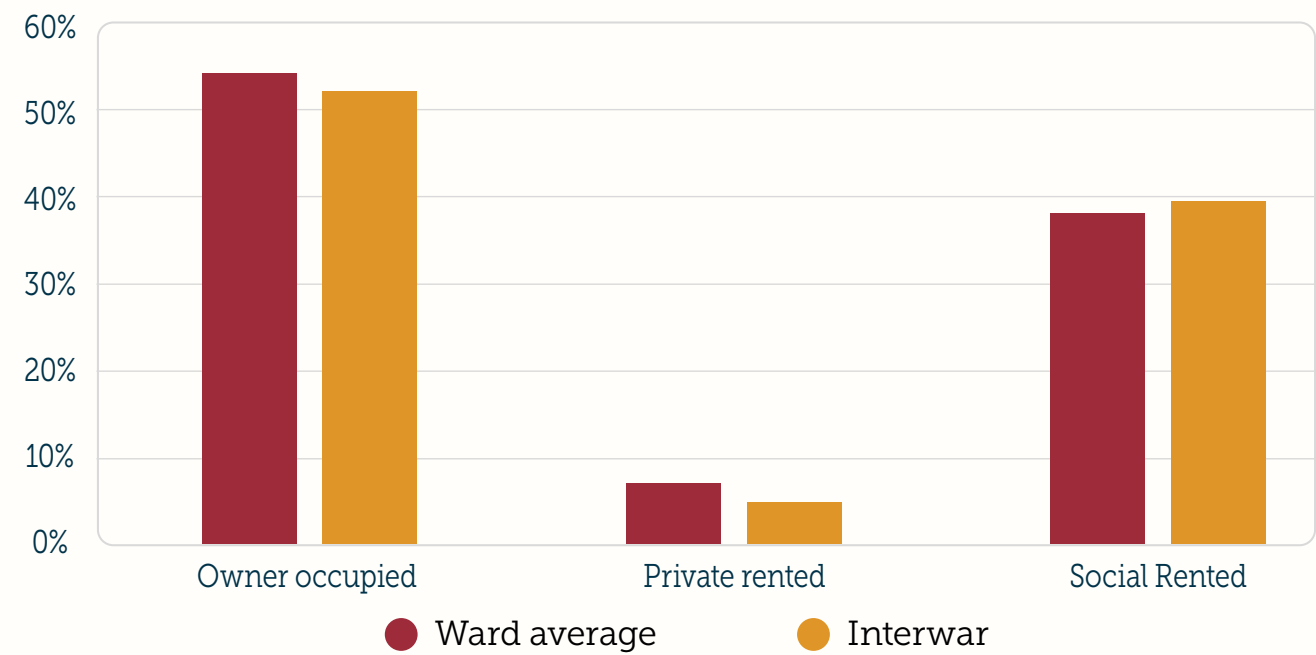
The mix of owner-occupied and socially rented homes across the neighbourhood creates opportunities for coordinated programmes that combine public and private investment, helping ensure improvements can be delivered equitably across the neighbourhood while achieving sufficient scale for cost-effective delivery.



Francis Moran, property on Andover road

Chart E

Comparison of tenure for interwar housing compared to the ward average in Knowle West²⁷



Findings from Transforming Homes: Andover Road

Focussing on this interwar housing typology, the Transforming Homes project on Andover Road³² was developed as a neighbourhood retrofit demonstrator to understand how housing condition, health, climate and community engagement intersect in a mixed-tenure area such as Knowle West.

Delivered over 18 months by WeCanMake, KWMC and the University of Bath, the project combined technical monitoring with sustained resident engagement including conversations, workshops and street-level activity, building a shared understanding of how homes actually perform.³³

Although many homes appear similar, the research identified a small number of recurring housing types with distinct layouts and construction details. Recognising these patterns allows retrofit solutions to be designed once and delivered repeatedly, supporting coordinated street-scale delivery rather than one-off projects.

This approach provides a practical foundation for scalable neighbourhood retrofit, improving comfort, reducing bills and lowering delivery risk while ensuring investment is grounded in local evidence.



In-depth monitoring through the Transforming Homes project has created a strong local evidence base on how interwar homes in Knowle West perform, highlighting important gaps between modelled performance and lived experience, reinforcing the need for retrofit approaches grounded in real homes rather than generic assumptions.³⁴

The research identified common issues affecting comfort and efficiency including heat loss, moisture challenges and indoor air quality concerns. These directly impact energy costs, health and everyday living conditions and addressing these together, rather than through piecemeal

measures, is critical to improving long-term performance and resident wellbeing.

For investors and delivery partners, grounding retrofit in measured local evidence reduces performance risk and supports more reliable outcomes. For residents, it means warmer, healthier homes that work better in practice, not just on paper.

Taken together, these findings support a typology-led, neighbourhood approach to retrofit, improving comfort and resilience while enabling scalable, cost-effective delivery.

Map F

Archetypes and their distribution found on Andover Road³⁴

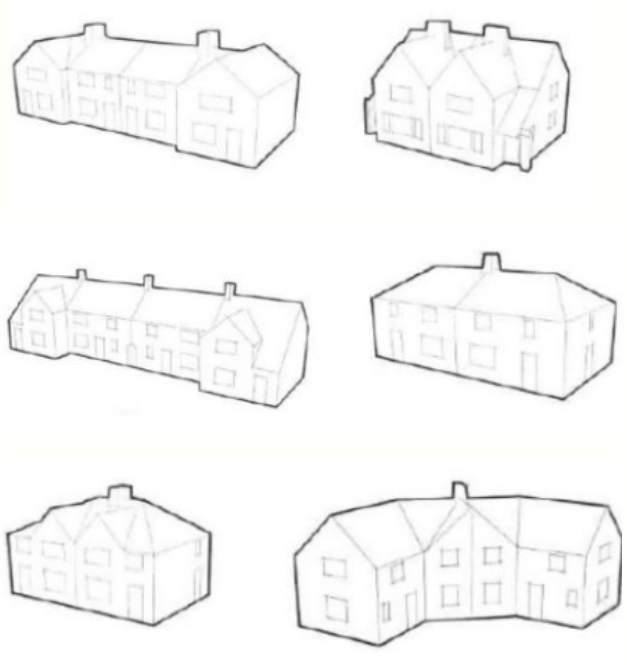
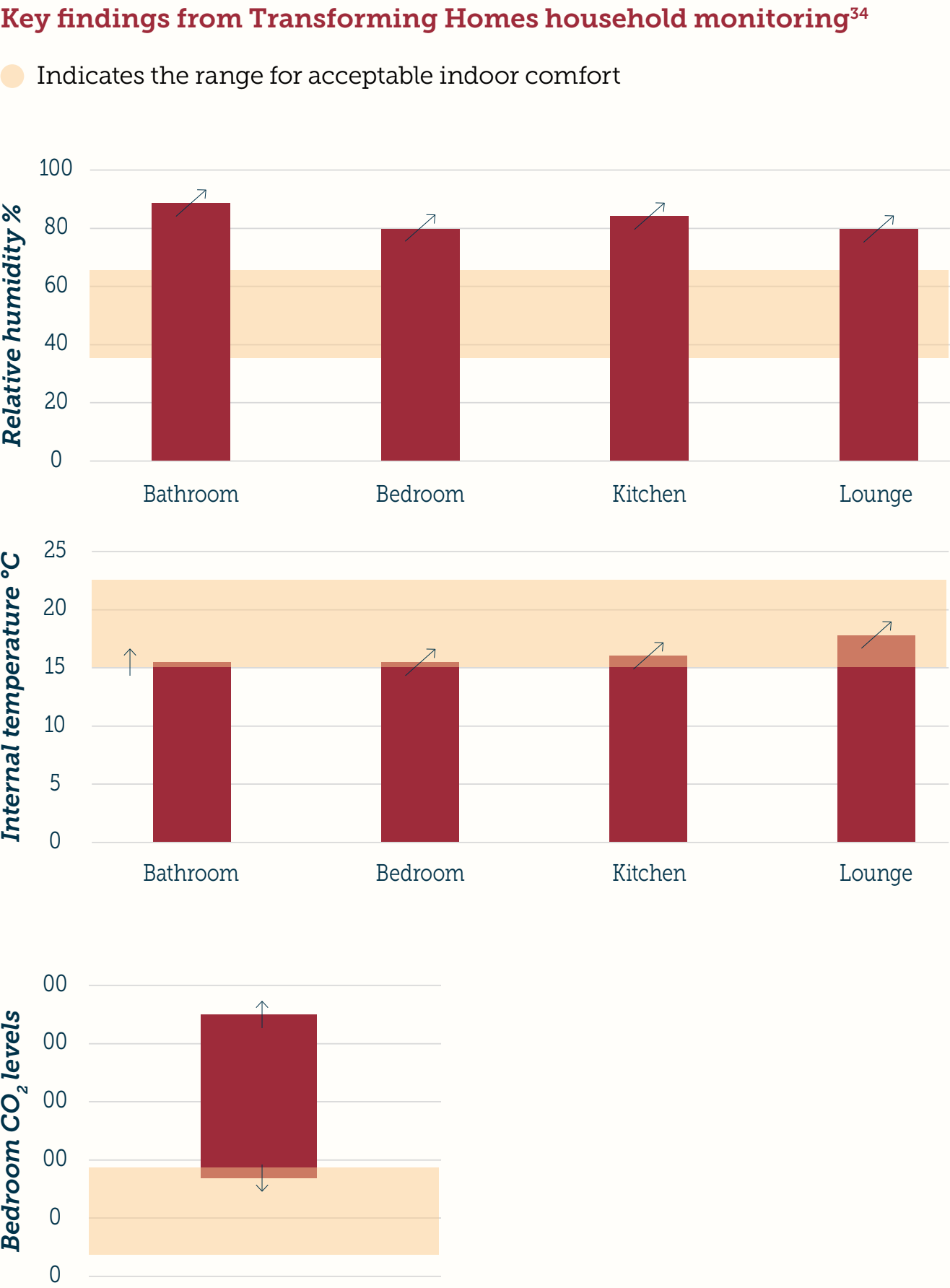


Chart F

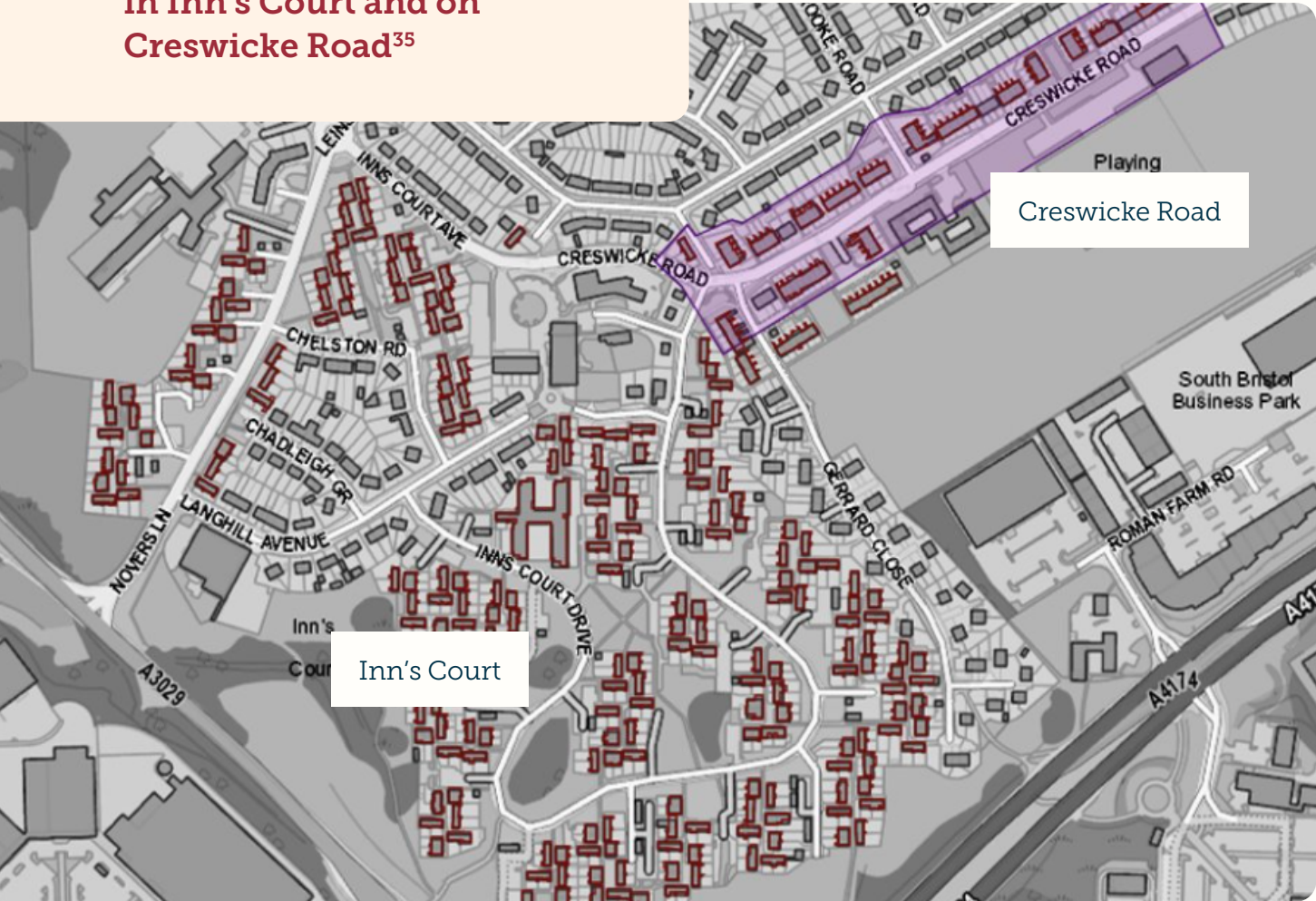


Post-1955 housing: traditional and non-traditional construction

Alongside the interwar housing stock seen across the neighbourhood, Knowle West also includes smaller pockets of other housing typologies with distinct construction types and performance characteristics. These homes present different retrofit challenges and are often more sensitive to diagnosis, sequencing and delivery quality, meaning standard approaches are not always effective.

Post-1955 housing is the second largest core typology in the neighbourhood, accounting for around 22% of homes. The following sections focus on two sub-typologies: brick-built post-war homes, typified by those seen in Inns Court, and non-traditional prefabricated homes found on Creswicke Road. Together they illustrate why tailored, typology-led approaches are an important part of the Knowle West retrofit pathway. While these homes require different solutions, their clustered layouts still allow improvements to be planned at street scale, helping investment go further and reducing disruption for residents.

Map G
Post-1955 housing typologies in Inn’s Court and on Creswicke Road³⁵



Brick housing: Inn’s Court

Homes at Inns Court were built in the 1960s as part of post-war social housing delivery. The homes are brick-built and typically arranged in short blocks or clusters. They are among the smallest homes in Knowle West, with an average internal floor area of around 68 m².³⁶ The compact form of these homes means building performance is highly sensitive to accurate diagnosis and sequencing. Low original insulation standards and limited internal space mean that changes to heating, insulation or ventilation need to be carefully designed together to avoid cold spots, condensation or overheating, and when measures are installed in isolation there is a higher risk of poor outcomes for comfort and health.

Homes are often accessed and serviced as part of small clusters, with external walls, paths and services shared between neighbouring properties. This makes coordinated, cluster-scale delivery more effective than property-by-property upgrades, and reinforces the need for clear design intent, shared standards and quality assurance.

Non-traditional pre-fabricated housing: Creswicke Road

Examples of this housing type are found in small pockets across Knowle West, with the largest concentration at the south-west end of Creswicke Road.³⁷ Built after the Second World War using non-traditional prefabricated construction (often concrete or steel frames with panelled walls) these homes behave differently from brick-built housing and require tailored approaches when planning retrofit. These are the largest homes in the neighbourhood with an average internal floor area of around 82m².³⁸

Many of these properties have limited original insulation and can be prone to heat loss, condensation and damp if improvements are not carefully designed. This means upgrades need thoughtful diagnosis and coordination to ensure they genuinely improve comfort, health and energy performance rather than creating new problems.

Because these homes are typically arranged in short terraces or clusters with shared construction features, improvements can be planned at street scale, consistent with the neighbourhood retrofit approach set out later in this plan. This can help reduce costs, improve consistency and minimise disruption for residents, while giving investors greater confidence in delivery.



Jonathan Billinger / Housing off Inns Court



Community-led housing development in Knowle West



Marshall walk development

Innovative construction approaches

Knowle West has established itself as a place where new approaches to housing and construction can be tested in response to both the climate emergency and wider social need. Recent low-carbon housing projects show how homes can be delivered on constrained sites, at neighbourhood scale and in ways that build local capacity.³⁹ Together, they provide practical evidence that innovative construction and delivery models can reduce risk, improve outcomes for residents and create credible pathways for future climate-focused housing investment.

WeCanMake, a community land trust incubated by KWMC, demonstrates how communities can move beyond consultation to co-lead housing delivery. Working with residents, local authorities and technical partners, it has pioneered community-led approaches to delivering genuinely affordable, low-carbon homes within existing neighbourhoods.

Early projects have delivered new homes on small underused sites using a model that combines gentle densification, community stewardship and

long-term affordability.⁴⁰ This approach ensures homes remain locally accountable while also supporting climate goals through low-carbon construction, high energy performance and reduced running costs.

Importantly, the work has built local confidence, skills and delivery partnerships alongside the homes themselves. This provides practical evidence that community-led development can reduce risk, strengthen social licence and create investable models that align climate action with long-term community benefit.

The project on Marshall Walk provides further evidence of scalable delivery. Delivered through a partnership between Bristol City Council and ZED Pods, the scheme shows how modern methods of construction can deliver low-carbon social housing on constrained urban sites.⁴¹ Offsite manufacturing enabled high quality control, faster delivery and reduced disruption, while high-performance building fabric and all-electric systems minimise energy demand and running costs for residents.

2.3

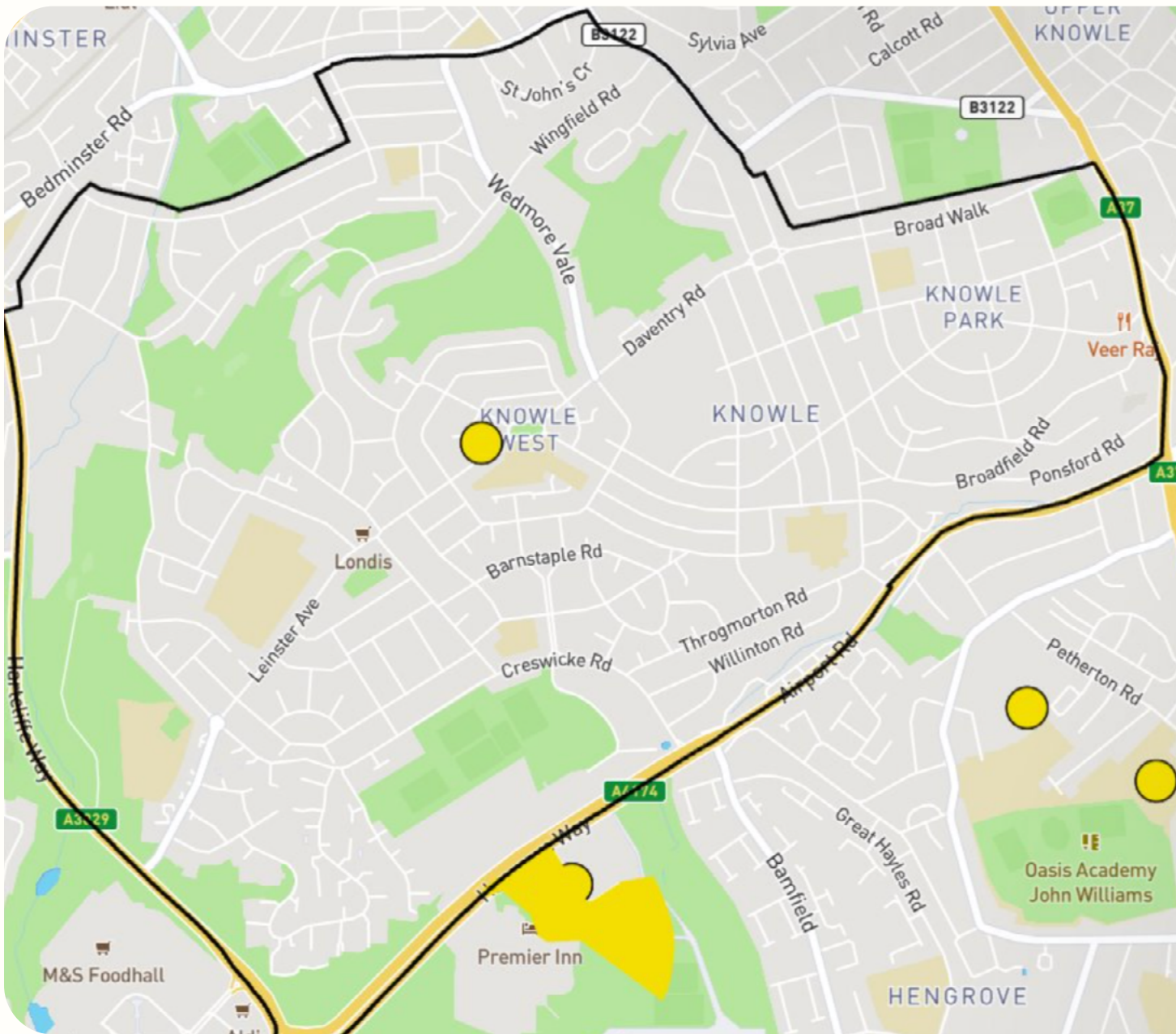
Local energy generation

As an urban neighbourhood, there is limited space available for purpose built, standalone energy sites in Knowle West. With a large number of homes and non-domestic properties in the area, the strongest investible opportunities for local energy generation come from using existing buildings and infrastructure. While local energy generation is still developing in Knowle West, there is significant potential to expand clean energy infrastructure over time and shape a long-term, neighbourhood-led delivery model. Existing infrastructure is highlighted in Table A.⁴²

Table A

Current scale of deployment of energy generation infrastructure across homes and non-domestic buildings in Knowle West⁴⁴

Category	Current deployment
Homes (domestic)	Local EPC data suggests 0.55% homes have solar panels. This is slightly lower than Bristol as a whole (0.67%), however both values are low, highlighting substantial scope to grow rooftop solar across the neighbourhood. ⁴³
Community, commercial and other buildings (non-domestic)	There is currently one 50 kW solar installation at Connaught Primary School and a 25 kW array on the Knowle West Media Centre building. A 240 kW site is awaiting construction just south of Airport Road.



Map H

Current large renewable installations in Knowle West⁴⁵

Solar power

Analysis using CSE’s Solar Wizard tool shows that a significant proportion of homes in Knowle West have strong potential for rooftop solar, with approximately 6,800 of the neighbourhood’s 10,000 homes assessed as suitable. Taken together, this represents an estimated 31 GWh of potential annual generation.⁴⁶

For individual households, a typical domestic solar installation is estimated to cost around £7,200, with a payback period of around

eight years, depending on usage and tariffs. Where installed alongside battery storage, solar PV can reduce energy bills, lower carbon emissions and provide greater protection from rising energy costs, particularly for lower-income households.

The solar opportunity in the neighbourhood also extends beyond homes, with around 900 of the 1,000 non-domestic buildings in Knowle West, including community hubs, schools and faith

buildings, offering good solar potential.⁴⁷ Installing solar on these buildings could significantly reduce running costs, freeing up resources for local services, while also creating opportunities to share or export surplus energy locally.

At this scale, solar power could form part of a local energy system. Coordinated delivery, linking solar with storage, smart controls and shared use, can increase the amount of

energy used locally and reduce pressure on the wider grid. Realising this potential depends on aggregation, coordination and access to finance, rather than relying on individual households or organisations to act alone.

The key systemic barriers to solar uptake in Knowle West, and the delivery approaches needed to address them, are summarised in Table B.



Table B

Systemic challenges preventing wider uptake of solar⁴⁸

Challenge	What this means locally	Potential solutions
Tenure and leases	Approximately 46% of homes in Knowle West are rented ⁴⁷ and many non-domestic buildings are leased rather than owner-occupied. This limits decision-making power and weakens incentives to invest, even where solar would reduce bills.	• Develop tenure-blind delivery models that work across owner-occupied, social and private rented homes. • Engage private landlords through aligned incentive models, for example by enabling landlords to retain export tariff income and increased property value, while ensuring tenants benefit from daytime bill savings through on-site use. • Support solar on social housing where bill savings can be passed directly to tenants. • Provide tailored guidance for community organisations and businesses operating from leased buildings.
Upfront cost	The upfront cost of solar remains a barrier for lower-income households, small organisations and community groups, even where long-term savings are clear.	• Reduce costs through aggregation and bulk procurement at neighbourhood scale. • Combine grants with patient, low-interest finance and cooperative or community ownership models. • Provide a simple, trusted entry point to funding and support, reducing complexity and perceived risk.
Grid	Increasing solar deployment places pressure on the local electricity network. Larger installations may face connection delays or export constraints without early coordination.	• Encourage early engagement with the Distribution Network Operator for larger or shared projects. • Prioritise on-site use, battery storage and local sharing to reduce reliance on export. • Communicate that smaller installations can often proceed without formal grid approval, reducing delay and uncertainty.
Fragmented delivery	Solar is often delivered on a building-by-building basis, limiting value, learning and local benefit.	• Use joined-up, neighbourhood-led delivery, linking homes and non-domestic buildings. • Support local energy hubs and shared systems over time. • Invest in coordination, governance and long-term stewardship, not just installation.

2.4
Heating

The heating fuel used by homes in the neighbourhood is predominantly mains gas, with 94% of homes powered by gas boilers. Electric heating is the second most common heating fuel, with 4% of homes heated by room and storage heaters. There are communal heating systems on Broadfield Road, Broadfield Walk and Hazel Road, accounting for just 1% of homes, with air source heat pumps (ASHPs) accounting for less than 1%, with 67 installed across the neighbourhood.⁴⁹

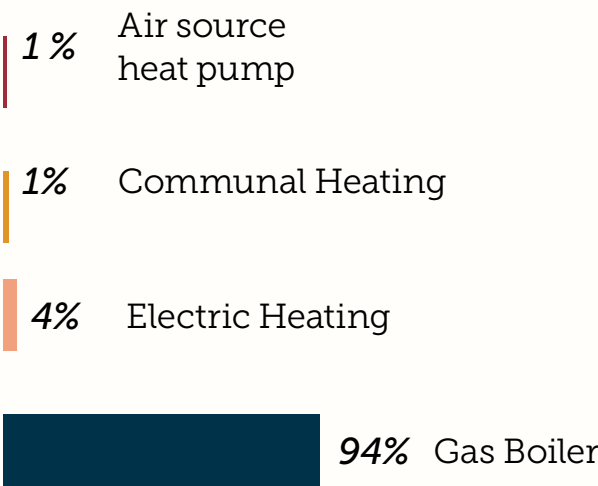
The total estimated annual heating spend in the neighbourhood is approximately £6.5 million, indicating that a 1% heating bill reduction across the neighbourhood could result in a combined £65,000 a year of savings.⁵⁰ Amongst the key housing typologies outlined in earlier sections of the plan, interwar homes have the highest estimated heating bills (see Chart G).

A shift away from gas towards electric heating options such as heat pumps or shared heat networks could deliver multiple local benefits, including lower carbon emissions, cleaner air, and reduced energy bills. With the cost of gas directly linked to global energy markets, widespread gas dependency also creates high vulnerability to fuel price shocks, as demonstrated during the 2021–2023 energy crisis, when households across the UK faced sudden, unaffordable price increases, disproportionately affecting the most vulnerable in society.⁵¹

While transitioning away from carbon-intensive gas heating is essential, households must not

Chart G

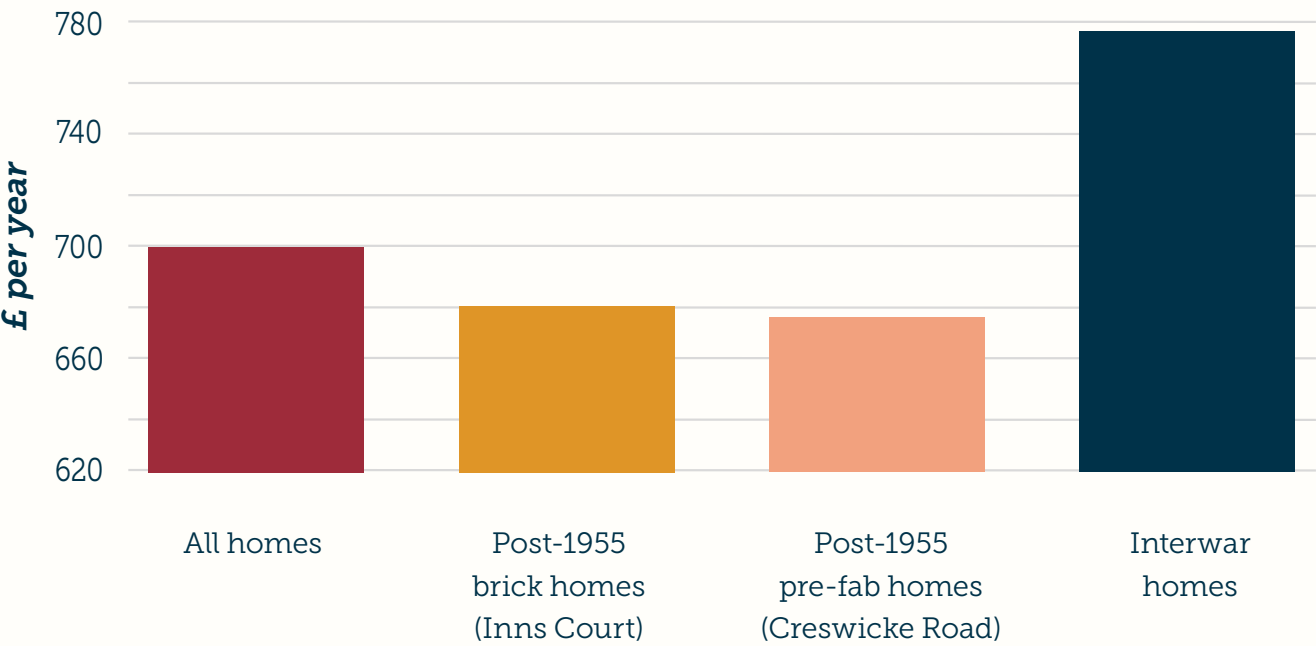
Primary heating systems in homes in Knowle West



be left worse off through higher bills or complex contracting arrangements. Because electricity currently costs more per unit than gas⁵², switching to technologies such as heat pumps without sufficient energy efficiency improvements, or the ability to disconnect from the gas network and avoid standing charges, could lead to higher overall costs. However, there are a number of options that can be explored, and a diverse mix of heat solutions tailored to housing type, household requirements and local opportunities will be required across the neighbourhood. Two key solutions to be explored are ASHPs and street-level shared heating systems.

Chart H

Average annual cost of space and hot water heating by typology in Knowle West



Air source heat pumps (ASHP)

Heat pumps are a core part of delivering warm, low-carbon homes. With coordinated retrofit, clear communication, trusted local advice and the right mix of finance they represent a major opportunity for Knowle West.

ASHPs are a well-established technology and work by converting heat in the outside air to provide low-carbon space heating and hot water for the home, typically through a radiator system and a hot water cylinder. Powered by electricity they are typically 3-4 times more efficient than gas boilers and can substantially reduce household carbon emissions and bills, particularly when homes are well insulated and systems are properly designed.⁵³ Integrating heat pumps with wider fabric-first retrofit can help ensure homes are “heat-pump ready”, improving comfort, performance and long-term value.

Installation costs are typically between £10,000 and £20,000, varying by property type and the

upgrades needed to make homes heat-pump ready.⁵⁴ In practice, these costs can be addressed through a mix of grants and low-interest finance (for example the government’s Boiler Upgrade Scheme gives any household £7,500 towards the cost of installation and the Warm Home Plan has announced a loan fund will soon be available), alongside neighbourhood-scale delivery, proactive supply chain engagement and trusted local advice that help reduce risk, improve quality and build confidence.

Uptake of ASHPs in Knowle West is increasing, with most installations currently in newer homes along Airport Road (Lyme Way, Seaton Crescent and Elder Avenue).⁵⁵ This reflects a wider national trend and highlights a significant opportunity to expand delivery through coordinated neighbourhood retrofit, clear communication, trusted advice, strong installer capacity and targeted investment.

Street-based shared heating systems

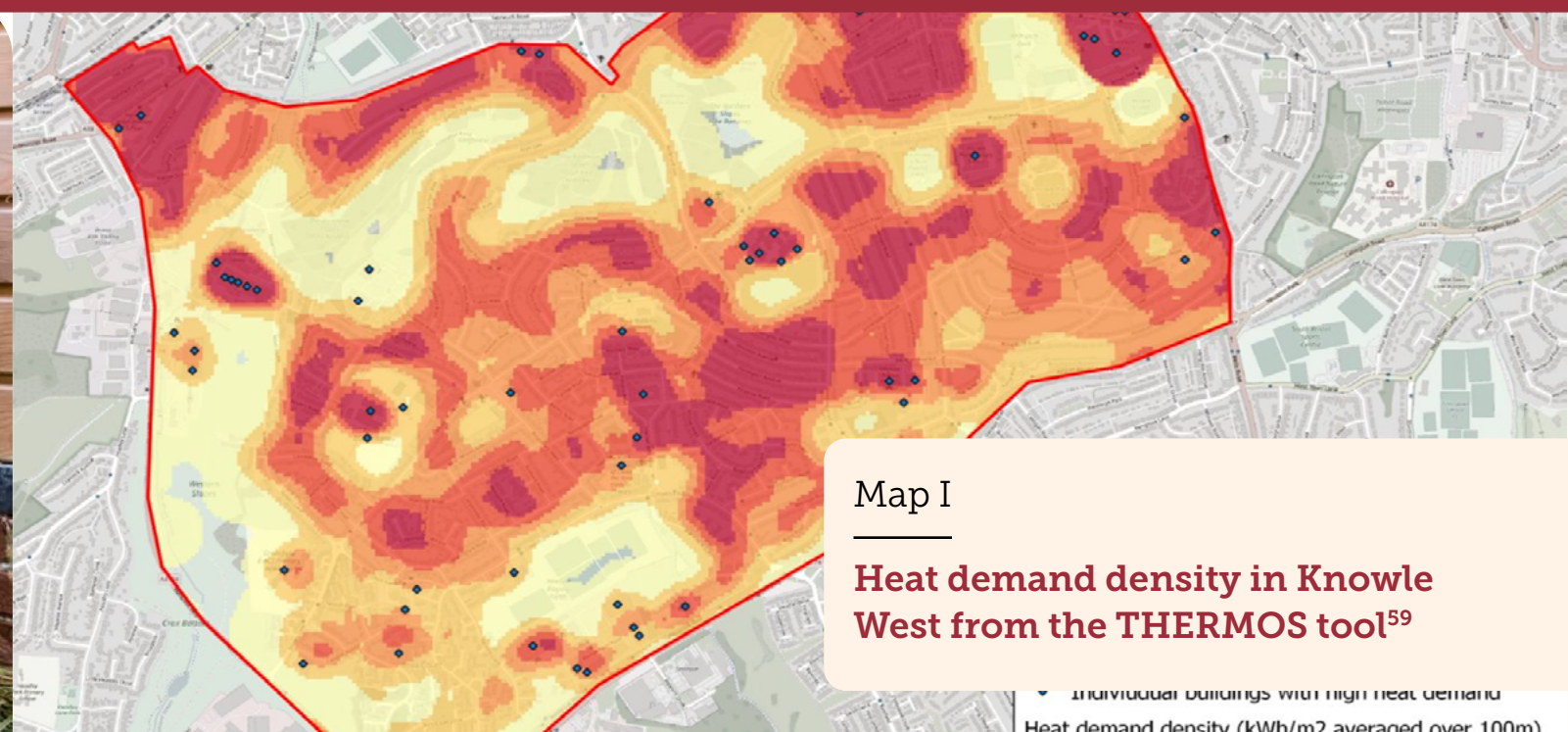
There are currently no plans for the Bristol Heat Network to extend into Knowle West, as overall heat demand density across the neighbourhood is relatively low⁵⁶ and Knowle West falls outside the areas designated for Bristol’s Heat Zone⁵⁷. This makes large centralised heat networks unlikely to be cost-effective in the near term. However, smaller pockets of homes with higher heat demand may still be suitable for shared heating solutions designed at street or neighbourhood scale, complementing individual heat pumps where shared infrastructure could improve efficiency, reduce costs or support future system flexibility.

An enabling study carried out through the Mission Net Zero project⁵⁸ explored this potential using Andover Road as a case study, reflecting the neighbourhood’s interwar housing types and mixed tenure conditions. The work indicated that shared heating is technically feasible but currently more expensive than individual ASHPs. As national investment in low-carbon heating

grows, there may be stronger opportunities for coordinated local systems where they can deliver resilience, efficiency and long-term value.

Wider analysis undertaken through Mission Net Zero also suggests other areas of Knowle West may warrant future exploration. Modelling by the CSE indicates comparatively higher heat demand around Ilminster Avenue and Torrington Avenue, with a number of potential anchor loads in this area,⁵⁷ which could support locally scaled shared heating approaches if conditions evolve.

Building on the real-world evidence and community engagement established through the Andover Road demonstrator, this supports a phased, place-specific approach to shared heating that reinforces Knowle West’s role as a test bed for neighbourhood-scale retrofit. It creates opportunities to pilot solutions locally, refine them using measured performance data and develop approaches that can scale more widely while delivering clear benefits for residents.



Moving forwards – heat

Heat electrification is achievable in Knowle West, but requires coordinated delivery, trusted support and investment models that work for residents. Key challenges and clear solutions are summarised in Table C.

Table C

Systemic challenges preventing uptake of low carbon heating opportunities in Knowle West⁶⁰

Heating option	Systemic challenges and what it means locally		Potential solutions
Air Source Heat Pumps (ASHPs)	Poor energy efficiency in local housing typologies reduces ASHP performance and cost-effectiveness without prior fabric improvements.		Deliver high-quality, well-designed, heat pump installations as part of retrofit, ensuring homes are heat-pump ready first. Provide trusted local advice, clear communication, and long-term quality assurance through accredited installers and neighbourhood delivery teams.
	High upfront costs, disruption during installation, and low confidence in the technology limit uptake, particularly for low-income and vulnerable households.		Combine funding sources such as the Boiler Upgrade Scheme and Warm Homes grants with low-interest loans, bulk procurement and community-scale delivery models, reducing upfront cost while avoiding financial risk being placed on residents.
Street-based shared heating systems	Low housing density, mixed tenure and older buildings increase infrastructure costs and create complexity around finance, regulation and delivery. Significant upfront capital investment is required for shared ground loops, energy centres and associated infrastructure.		Focus on small-scale, modular shared heat systems at street or cluster scale, aggregating demand where density allows, and combining public grant funding with patient or blended finance to address upfront capital requirements.
	Installation of underground infrastructure can cause disruption, requiring careful phasing, communication and sustained resident participation to maintain confidence and scheme viability.		Adopt phased, street-by-street delivery linked to wider retrofit works, with early and ongoing resident engagement, clear communication on disruption, and participatory decision-making processes that build buy-in across tenures.
	Governance, regulation and stewardship present significant challenges: shared systems require compliant legal structures (e.g. ESCos or SPVs), navigation of Ofgem requirements, and long-term operational responsibility.		Establish clear, community-anchored governance and delivery models (e.g. Heat-as-a-Service or Energy-as-a-Service), with early engagement between KWMC and Bristol City Council, supported by further feasibility work, investment-grade financial modelling and defined stewardship arrangements.

2.5

Community-led climate action in Knowle West

Knowle West has a long history of community action, with residents and local organisations working together over decades to improve social, environmental and economic outcomes in the neighbourhood. This has included grassroots organising, the creation and stewardship of community assets, and sustained efforts to address inequality, health and place-based challenges.⁶¹ This strong social fabric provides a foundation of trust, collaboration and local leadership that continues to shape how change happens in Knowle West.

Community-led climate action in the neighbourhood has been strongly supported by KWMC, a locally rooted arts and technology organisation that has worked in Knowle West for nearly 30 years.⁶² Through creative, co-produced projects, KWMC has helped develop new approaches to climate action that connect retrofit, energy, data and care with everyday lived experience. WeCanMake, a community land trust incubated by KWMC, builds on this foundation by rethinking how new homes and retrofit can be delivered in ways that create social infrastructure, community wealth and support a just transition.⁶³

Examples of existing and past climate action include:

- Retrofit Demonstrator Street, a place-led, tenure-blind whole-street retrofit project testing low-carbon materials and approaches.
- Twinergy, an EU-funded project exploring residents’ experiences of energy use and inclusion in future energy systems.
- Slow the Smoke, addressing air pollution and health impacts through citizen science and creative engagement around wood burning.⁶⁴

For future investment this track record demonstrates the proven capacity of the community to initiate, host and learn from complex projects, to engage residents meaningfully, and to steward long-term change.

“Community-led climate action is already happening in Knowle West. As a local network we believe in taking an “asset-based” approach, understanding where there is existing activity and energy, working with what is strong and supporting what is emerging in strengthening existing initiatives and projects.”

Knowle West Climate Action Plan⁶⁵

Governance, evidence and delivery: The Knowle West Alliance⁶⁶

The Knowle West Alliance (KWA) is a partnership of local residents and organisations working together to improve social, environmental and economic outcomes across the neighbourhood. Formed in 2019 by five founding community organisations (Filwood Community Centre, Knowle West Health Park, KWMC, The Park and Re:work), KWA provides a shared platform for locally led action.

KWA brings together resident knowledge, community leadership and organisational expertise through a resident-led Working Group, which meets regularly to coordinate activity, set priorities and co-design responses to issues including climate, housing, health and the local environment.

Taken together, the following strengths below position KWA as a credible platform for neighbourhood-scale climate investment, helping to reduce delivery risk while supporting long-term local outcomes.

1. Strong governance

KWA provides an organisational “home” for community climate action, with established governance and facilitation capacity. This enables funding to be received, managed and coordinated transparently, giving funders and statutory partners confidence that investment can be stewarded responsibly at neighbourhood scale.

A core part of this role is coordinating community planning and evidence. Since 2019, KWA has brought together local priorities, resident voice and partner expertise into coherent strategies

and supporting documents. This reduces fragmentation and ensures proposals are aligned with locally defined needs.

2. A local mandate and ability to evidence demand

KWA’s resident-led, co-produced approach provides a clear local mandate for climate action. The Alliance was a core partner in developing the Knowle West Community Climate Action Plan,⁶⁷ which evidences resident priorities, co-design and community leadership, a key consideration for funders assessing place-based initiatives.

KWA’s networked structure also enables fast, inclusive engagement across the neighbourhood. Through partner organisations’ services and touchpoints, KWA can reach residents across different tenures, age groups and needs. Its Small Grants programme supports early, visible activity that builds confidence, evidence and track record, strengthening the case for larger-scale investment.

3. Coordination and delivery capabilities

KWA coordinates a diverse network of local organisations, strengthening delivery capacity and reducing risk for investors. Members bring expertise across innovation, housing, energy, health, skills and employment, and many are custodians of major, visible community assets.

These include KWMC, Knowle West Healthy Living Centre, Filwood Community Centre, The Park and Re:work. Together, these assets provide stable bases for delivery and create opportunities for demonstrator projects that make climate action visible and tangible, helping to build confidence for wider domestic retrofit and neighbourhood-scale energy solutions.

Key Capabilities: The Factory

The Factory, co-run by KWMC and WeCanMake and based at Filwood Green Business Park, provides a practical, neighbourhood-based capability, unique in Bristol, that strengthens Knowle West's ability to deliver climate action on the ground.

It brings together space, equipment, technical expertise and community engagement to support local making, learning and low-carbon delivery, linking innovation directly to everyday homes and streets. This enables ideas to be tested, adapted and translated into solutions that work within the realities of the neighbourhood.

Through initiatives such as Transforming Homes⁶⁸ the Factory has played a key role in testing how low-carbon retrofit approaches can be designed, prototyped and delivered locally. This has included working with biomaterials, building components and retrofit details tailored to the interwar housing typologies found across Knowle West, and translating technical evidence into practical solutions that residents and local trades can understand and maintain.

The Factory also supports the development of local skills, confidence and delivery capacity aligned with neighbourhood need. It provides accessible routes for residents to engage with tools, materials and home improvement, and helps grow locally based teams capable of delivering high-quality work at street scale. In doing so, it directly addresses barriers identified in the Community Needs Assessment⁶⁹ (see Appendix A) including skills shortages, fragmented delivery models and the lack of trusted local capacity.

For future climate investment, the Factory offers a base for piloting and refining approaches before wider rollout, supports learning and quality assurance, and helps anchor investment in local capability rather than external supply chains alone. As a visible and trusted neighbourhood asset, it strengthens delivery confidence, supports inclusive participation, and provides a clear bridge between innovation, skills and scalable climate action.



3. From priorities to projects: The Community Climate Investment Plan

With £100 billion of planned investment in new energy sources over the next decade and the UK retrofit market estimated to reach £360 billion by 2050, place-based decarbonisation represents a major investment opportunity.⁷⁰ However, attracting investment and ensuring communities can access and benefit from it remains a challenge, requiring new approaches to unlock these opportunities.

Evidence from other sectors shows that aligning investment with local knowledge, needs, and priorities reduces delivery risk, builds trust, and delivers more inclusive, sustainable outcomes. Community Climate Investment Planning provides a solution: by working with communities as trusted partners, identifying opportunities, and clarifying the expectations of planners, investors, and policymakers, it translates local ambition into actionable, high-impact projects.

In practice, this approach helps make climate investment faster by building demand, better by capitalising on local knowledge to improve outcomes, and fairer by embedding a just transition from the outset.



Lewis Clarke / Knowle

3.1

Making climate action fairer by supporting a Just Transition

Delivering climate action at scale requires approaches that build trust, reflect local knowledge, and ensure communities can access and benefit from investment. Alongside making delivery faster and better, a core principle of Community Climate Investment Planning is making it fairer by supporting a just transition.

Climate impacts are felt most acutely by low-income and marginalised communities, yet these groups often have the least access to resources and decision-making power. Embedding community perspectives in climate investment helps ensure action addresses inequality and supports those most at risk. This is particularly relevant in Bristol, where in 2024 activists from disadvantaged communities across the city developed ten principles for a Just Transition, setting out how the shift to net zero must be fair and inclusive. This work has been championed through citywide collaboration, including the Bristol Climate and Nature Partnership, and has since been endorsed by organisations across the city, including Bristol City Council, committing to sustained engagement and capacity-building.⁷¹

This underscores the need for investment models that protect affordability, reduce inequality, and ensure the transition to net zero delivers shared and lasting benefits for residents. With around 40% of households in Knowle West having at least one person suffering from limiting, long-term health conditions, almost 10% of residents providing unpaid care and approximately 15% of residents born outside the UK, inclusive approaches are essential.⁷² Community organisations such as the membership of the Knowle West Alliance bring key expertise and insight into local barriers, helping tailor initiatives so all residents can take part.

Just Transition Declaration



What it means: investment in practice

Investors can support a just transition by investing in ways that keep benefits in the community, make it easier for people to take part, and avoid causing harm.

This means:

- Designing funding to protect affordability and prevent displacement, ensuring people can take part regardless of tenure, income, health or household circumstances.
- Developing investment models that prioritise long-term community ownership, stewardship and shared benefit, rather than one-way or extractive delivery where value flows out of the neighbourhood.
- Making sure funding covers the real, everyday costs of involving people such as translation, support from trusted local groups, accessible activities, and staying in touch over time - not just the physical work.
- Paying community members for their time, knowledge and lived experience, recognising this as essential to a fair transition and as an investment in community skills, confidence and long-term benefit, not just buildings or technology. Outcomes over time, treating learning, iteration, and adaptation as a strength that improves performance, uptake, and long-term value rather than as a sign of risk.

Further detail on how funding and investment can enable work towards a just transition can be found in Appendix B: A Charter for Community Investment.

3.2

Priorities to projects: building a local pipeline

This section sets out how local priorities in Knowle West have been shaped into a clear pipeline of investable opportunities, capable of attracting delivery partners, funding and long-term support.

To support this shift from priorities to projects, a small number of shared tools and frameworks, co-designed with Transforming Energy Together partners,⁷³ have been applied to bring greater clarity to potential opportunities, their readiness, and the support required to move them forward.

These tools help articulate projects in ways that are meaningful to local communities and transparent to funders, investors and delivery organisations. They include:

- **An Outcomes Matrix** to capture the wider social, economic and environmental value of community climate action (Page 51)
- **A Project Maturity Assessment Tool** to assess readiness for investment and identify any gaps that need to be addressed to enable delivery (Page 54)

The resulting pipeline in Section 4 spans a range of themes and stages of readiness, showing how projects can progress from early opportunity to delivery over time.

Articulating the wider benefits of climate action

Effectively communicating the wider benefits of climate action is key to building support amongst communities, energy planners, and investors. This support can help secure funding, establish partnerships, and engage local stakeholders, creating momentum for lasting change.⁷⁴

Eight key outcome areas relevant to a broad range of stakeholders have been identified to capture the full value of community-led climate action. An outcomes matrix was used to guide the selection of projects that both meet local-needs and provide clear pathways for delivery to planners and investors.

For each project in this plan, the outcomes it contributes to are highlighted, demonstrating the full value of the initiative - not just in terms of carbon reduction or financial return, but also in enabling community action, addressing local priorities, and delivering broader social, economic, and environmental benefits.

Chart I

Categorising outcomes of community climate investment

 Communities able to take action	Outcomes that give communities the tools they need to solve problems both now and, in the future, be that via new knowledge and relationships or access to information and data.
 Direct carbon reduction	Outcomes that reduce carbon emissions.
 Targeted action	Outcomes that improve the efficiency of projects, reduce risk and maximise success.
 A financial return	Outcomes that generate income for investors, residents or community organisations.
 Healthier communities	Outcomes that contribute to better health outcomes for communities by improving wellbeing and housing conditions.
 More money in pockets	Outcomes that result in householders and communities having more money than they did before by reducing bills or providing opportunities to generate income.
 Resilient places	Outcomes that support adaptation to a changing climate and protect local assets.
 Stronger supply chain	Outcomes that build local skills and support regional supply chain development.

Characterising investment readiness

Turning local climate ambitions into action requires projects that are clearly defined and able to meet the expectations of funders and investors.

A project is considered “ready for investment” when the right technical, financial, governance, and community foundations are in place to give funders and investors confidence to invest. These foundations reflect the core areas typically examined through investor due diligence, including delivery capability, governance and risk management, and evidence of demand.⁷⁵

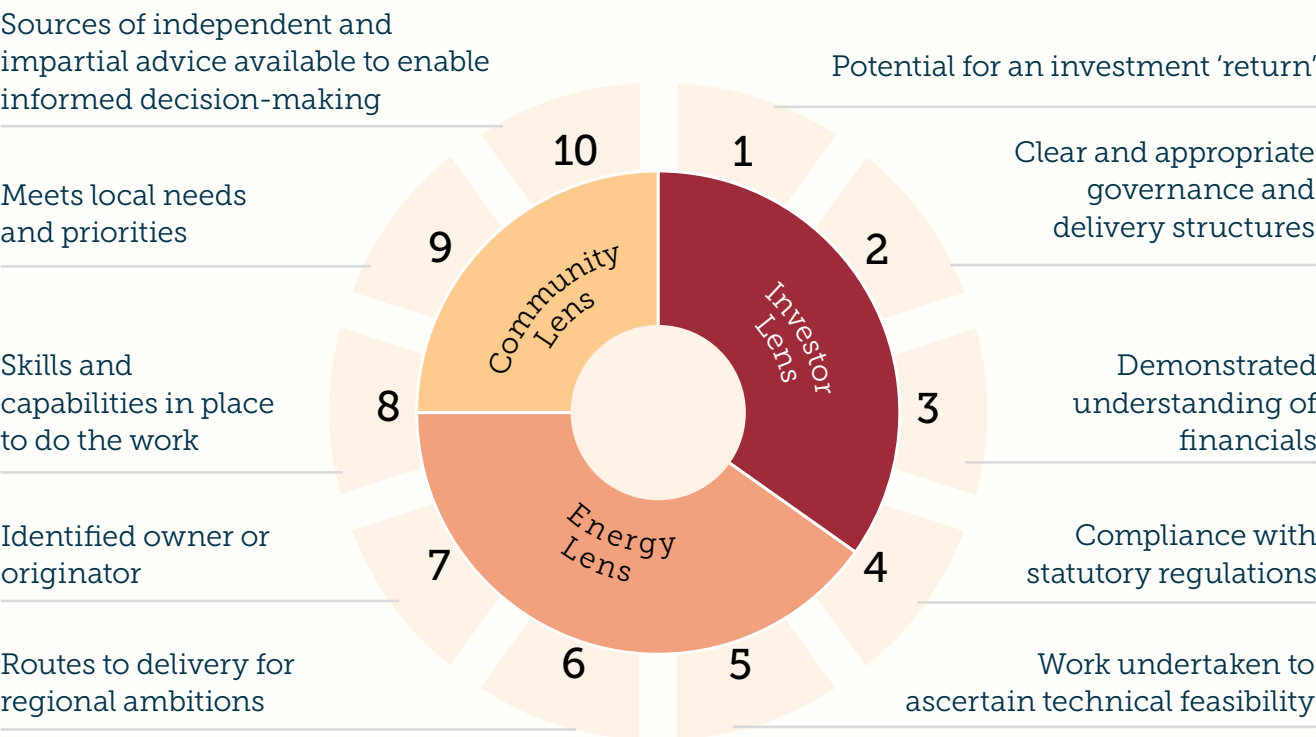
To support the identification and development of suitable projects in this plan, a purpose-built Project Maturity Assessment Tool was developed (see Chart J). This tool examines opportunities using ten criteria across three complementary lenses:

- **The Community Lens**, ensuring projects are rooted in local needs and supported by the people they aim to serve.
- **The Energy Planning Lens**, ensuring alignment with local and regional strategies and delivery pathways.
- **The Investor Lens**, highlighting the information and structures required to assess viability, risk, and potential return.

This holistic assessment helps bridge the gap between early ideas and delivery by identifying strengths, highlighting areas of weakness, and clarifying where and what further development is required.

Chart J

Project Maturity Assessment Tool⁷⁶



4. Opportunities for investment

This section outlines a set of potential clean energy investment opportunities shaped with community partners through the Transforming Energy Together programme.⁷⁷ Projects are grouped into three priority areas: Homes, Neighbourhood and Skills, reflecting where local organisations identified both urgent need and the greatest potential to contribute to delivery.

Together, these three areas provide a rounded approach to neighbourhood climate action: improving homes to reduce costs and emissions, investing in local infrastructure and community assets, and building the skills and capacity needed to sustain progress over time. Addressing all three in parallel helps ensure that climate investment delivers practical local benefits while supporting long-term, scalable change.

Rather than presenting a single blueprint, the opportunities highlighted here focus on achievable next steps that demonstrate what community-centred climate investment can look like in practice. They are intended to be delivered collaboratively with local organisations, either as individual projects or as part of a wider coordinated programme. They reflect priorities across all housing tenures including council homes, social housing and privately owned or rented properties, helping ensure investment is fair, visible and responsive to local needs while building confidence, capacity and early momentum.

By combining local insight with targeted investment, these projects establish a strong foundation for effective and sustainable climate action that can be scaled over time. As the owner and landlord of a significant proportion of local housing, Bristol City Council has a central role in enabling low-carbon retrofit at scale and will be an important delivery partner in this transition, guided by its published **Warm Homes Plan** and aligned with the ambitions of this Community Climate Investment Plan.



Ibolya Feher / Knowle West
Spring celebration

4.1
Homes

Homes are a central focus for climate action in the neighbourhood, both because domestic energy use is a major source of emissions⁷⁸ and because housing quality is closely linked to residents’ health, comfort and household costs.

Knowle West has a limited number of housing typologies but a complex mix of tenures, with a high proportion of social and private rented homes alongside owner-occupation. This makes household-led, piecemeal retrofit unlikely to deliver change at scale. Effective action therefore depends on co-ordinated, place-based delivery that works across tenures, reduces risk for residents and builds confidence through trusted local intermediaries.

The projects in this section build on local learning and evidence, including the Transforming Homes project and work led by KWMC and WeCanMake.⁷⁹

This has shown that successful retrofit in Knowle West depends not only on technical measures, but on correct sequencing, managing risks such

as moisture and ventilation, and supporting residents through change.

Rather than presenting a single solution, the projects are structured as a stepped, neighbourhood-led pathway. This includes establishing a shared Neighbourhood Retrofit Recipe, progressing delivery through demonstrator streets starting with Andover Road, prioritising early, equitable action to improve warmth and health, and enabling wider uptake through aggregation, bulk-buying and supported decision-making.

Together, these projects are designed to reduce delivery risk, build local capability and trust, and create a strong foundation for neighbourhood-scale retrofit and energy investment in Knowle West.

The Neighbourhood Retrofit Recipe

Knowle West’s approach to home retrofit is place-based and evidence-led, shaped by detailed learning from projects such as Transforming Homes and their work on Andover Road.⁸⁰ This work demonstrated that effective retrofit in Knowle West depends not only on technical measures, but on understanding how interwar homes actually perform, sequencing interventions correctly, and managing risks such as moisture, ventilation and overheating at neighbourhood scale.

What distinguishes the Knowle West approach is the use of a Neighbourhood Retrofit Recipe, a shared, locally developed framework that links diagnosis, design and delivery to the specific housing types, construction details and lived conditions found across the area. Rather than applying generic, measure-by-measure solutions, retrofit is treated as a holistic, long-term process focused on comfort, health and resilience as well as carbon reduction.

The approach is grounded in measured performance and practical learning, translating technical evidence into repeatable solutions that work in real homes. This helps reduce the performance gap between modelled and actual outcomes, avoids unintended consequences, and supports consistent quality across streets and tenures.

Crucially, the Retrofit Recipe connects learning to delivery, providing a shared reference point for residents, trades, designers and funders, enabling coordination at street scale and supporting incremental, phased investment rather than one-off interventions. By rooting retrofit in local housing realities and community capability, the approach reduces delivery risk and builds confidence for neighbourhood-scale action.

Together, this provides the foundation for the home-focused investment opportunities set out next, including projects that address fabric performance, shared energy systems and demonstrator streets.



Andover Road: from demonstrator to delivery

This project explores the next phase of the Andover Road whole-street retrofit, moving from detailed feasibility into delivery. As Knowle West’s first full-street retrofit demonstrator, Andover Road has provided valuable insight into how inter-war homes actually perform and what is required to retrofit them safely, effectively and at scale.⁸¹

To date, monitoring, surveys and resident engagement have involved around 20 households,

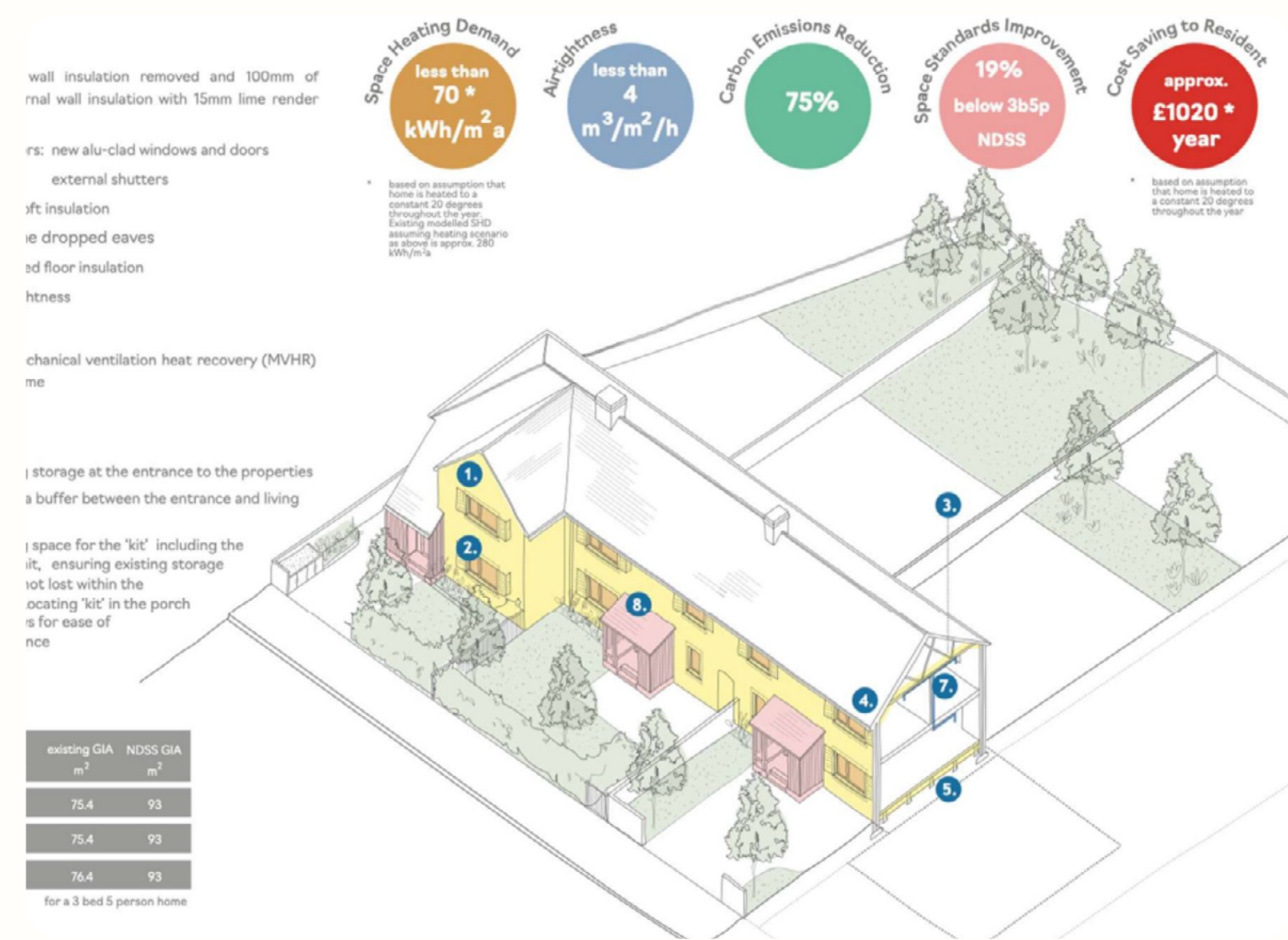
with six homes progressing through detailed design and feasibility. This work has identified key fabric, moisture and ventilation risks, highlighted the limits of measure-by-measure retrofit, and developed tested retrofit scenarios tailored to this housing type. The next phase aims to translate this learning into coordinated delivery while building on the trust and participation already established locally.

The delivery phase would implement these scenarios across the street, combining careful diagnosis, design and sequencing with coordinated neighbourhood-scale delivery. It also creates opportunities to align retrofit with shared energy solutions and other place-based infrastructure, strengthening the case for integrated investment rather than isolated measures.

For investors and delivery partners, Andover Road offers a lower-risk entry point into neighbourhood retrofit, grounded in real-world data, community engagement and tested delivery approaches. It provides a pathway from local demonstrator to city-scale rollout, generating the evidence, confidence and delivery models needed to scale retrofit across Knowle West’s interwar housing stock and beyond.

Chart K

A tested retrofit scenario for an Andover road archetype⁸⁴



Building a scalable retrofit pipeline for Knowle West

This project focuses on what comes next, applying learning from Andover Road to identify and prepare the next retrofit street in Knowle West. It recognises that scaling retrofit is not only about capital works, but about building the confidence, coordination and early-stage readiness needed to move from one demonstrator to a repeatable pipeline.

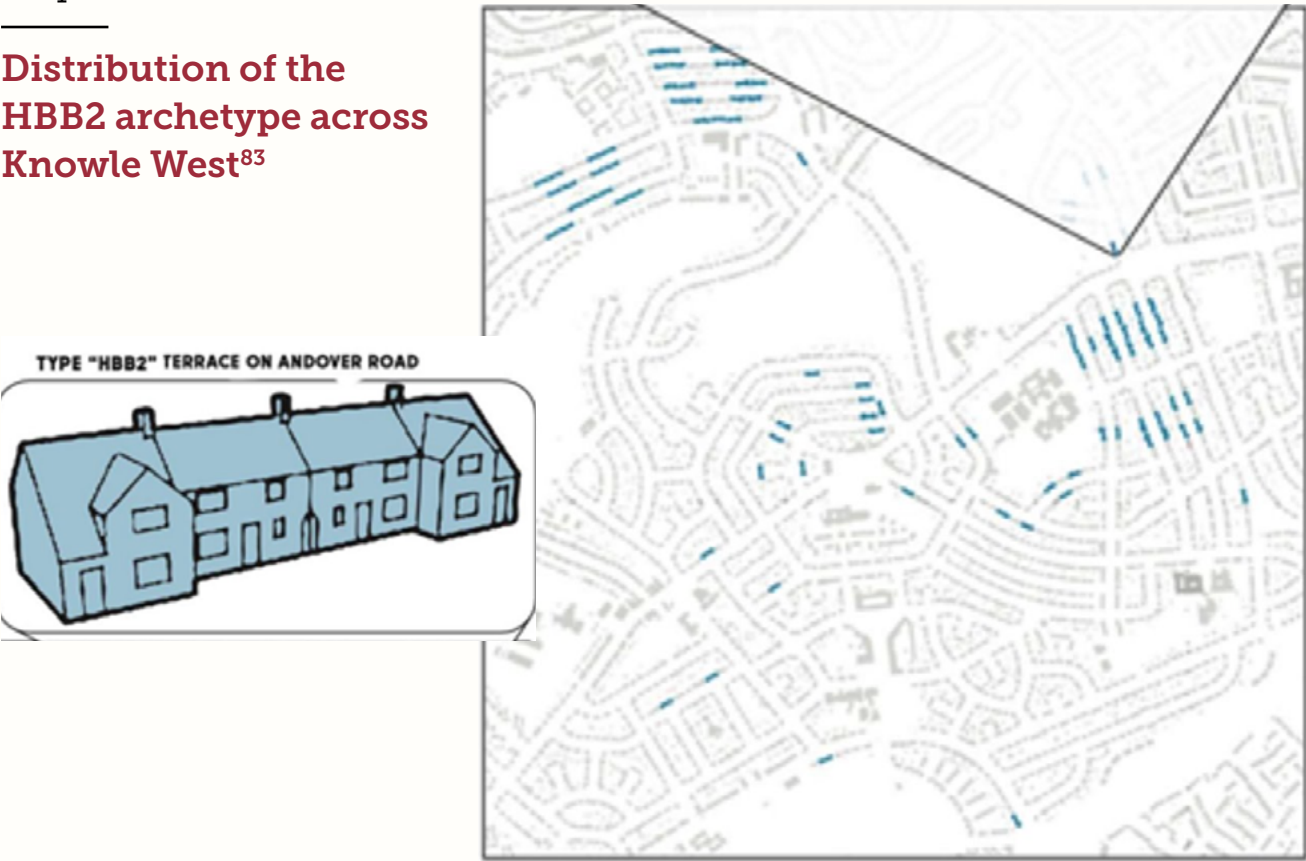
Using the Neighbourhood Retrofit Recipe and Details Library developed through Andover Road⁸², the project would support early monitoring, resident engagement and design work on a second street with similar housing types. This approach avoids starting from scratch, adapting proven solutions to local conditions while reducing technical and social risk.

Investment at this stage enables the often-overlooked activities that unlock scale: diagnosis, engagement, design refinement and delivery planning. By doing this before major capital investment, the project creates a clearer, faster route to delivery and builds momentum across the neighbourhood.

For the neighbourhood, this marks the transition from pilot to programme. For the city, it demonstrates how place-led, evidence-based retrofit can be scaled street by street, creating a model that can inform wider approaches to neighbourhood retrofit in Bristol's other interwar council estates (see Map J).

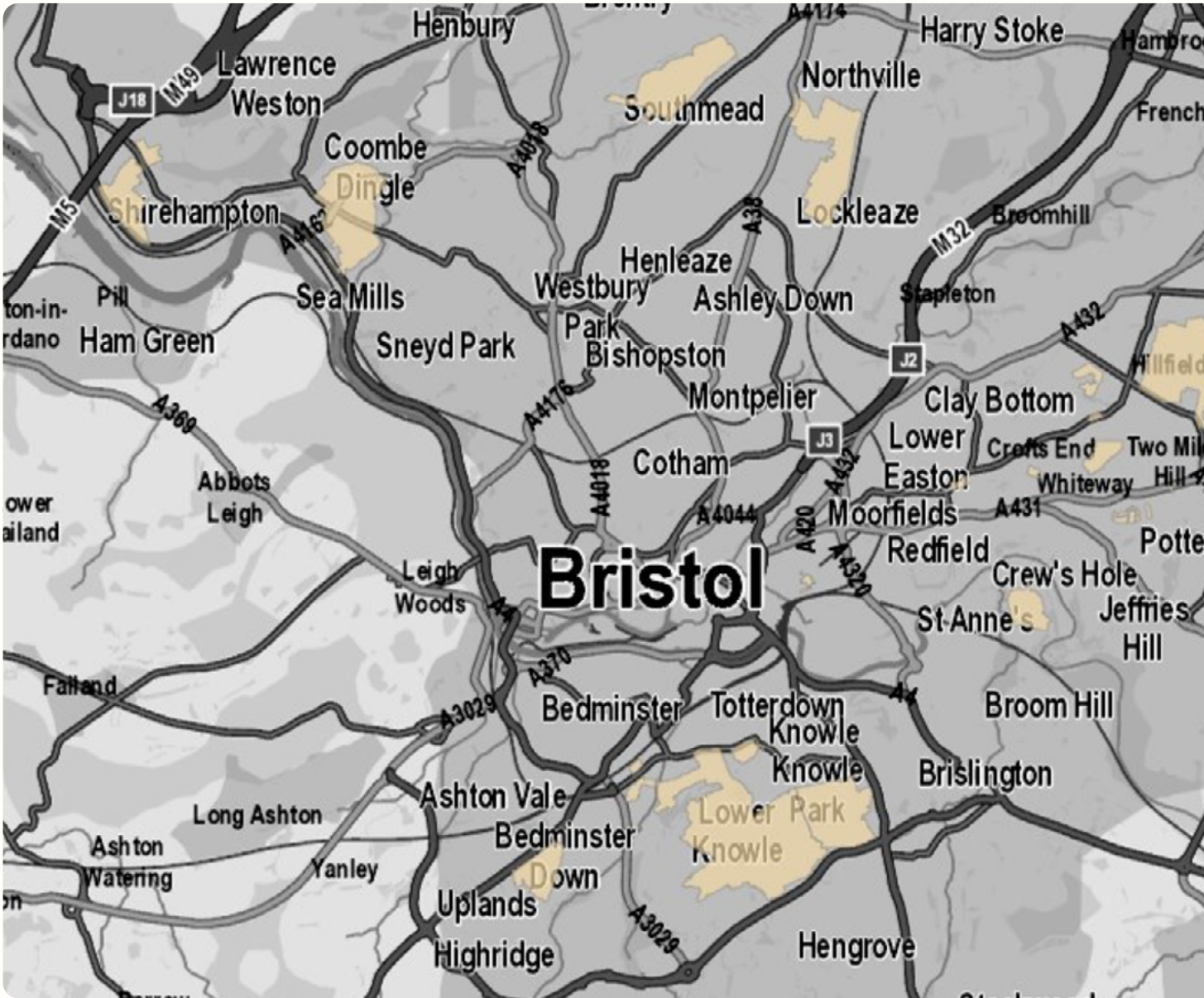
Map J

Distribution of the HBB2 archetype across Knowle West⁸³



Map K

Interwar council estates in Bristol⁸⁴



Building an equitable foundation

The projects in this section focus on simple, low-risk actions that help residents make their homes warmer, healthier and more comfortable, while building confidence to take part in more ambitious retrofit over time.

Designed as early, accessible stepping stones within Knowle West’s neighbourhood retrofit pipeline, they respond to immediate needs such as damp, mould, comfort and energy costs, while helping households understand what good retrofit looks like in practice.

These opportunities are intended to support all housing tenures, including the area’s significant social housing stock. Delivered alongside trusted local organisations, these opportunities can provide clear starting points for residents, landlords, local authorities and investors.

By building capability early, they help create the conditions for more comprehensive, street-scale retrofit that is inclusive, well understood and rooted in local experience.



Adapting to a changing climate

This project focuses on low-cost, practical adaptations that help homes cope with rising temperatures and more extreme weather.

A small neighbourhood pilot would support residents to install measures such as blinds and shutters, paired with hands-on support so households can choose options that fit their home and budget. Delivered through trusted local organisations, the project also builds awareness of climate risks while giving residents tangible experience of adaptation measures they can see and feel.

These visible, manageable actions help reduce overheating in summer, improve comfort year-round, and reduce heat loss through windows in winter by up to 33%,⁸⁵ while building confidence and ownership that supports progression into wider retrofit and resilience programmes.



Smart and fair local energy systems

This project supports households to better understand and manage their energy use through Smart Energy Action Plans, supported by smart technologies such as smart meters and real-time feedback. The focus is on helping residents make sense of their energy data and translate it into practical, everyday actions.

By building confidence and capability around how energy is used in the home, the project addresses common gaps in understanding that currently limit the benefits households receive from existing systems.

Evidence suggests that improved energy management through simple action planning can reduce household energy bills by around 4% in some cases.⁸⁷ Delivered at neighbourhood scale, Smart Energy Action Plans provide a fair and accessible starting point for households, building energy literacy and confidence while creating clearer pathways into shared energy, flexibility and wider retrofit.



Making Homes Warm and Healthy

This opportunity area focuses on practical actions that improve comfort and health in homes, especially where damp and mould are affecting everyday life. It combines two linked sub-projects:

- Damp and mould: supporting households and social housing providers to identify causes (including ventilation and moisture risk) and take practical steps to address them.
- Quick-win upgrades: installing LED lighting and loft insulation, with the potential for substantial household bill savings.⁸⁶

The focus is on visible, trusted support that helps residents understand what works, builds confidence, and creates a stronger starting point for deeper retrofit.

Unlocking householder finance

For households in Knowle West who are ready and able to take next steps, clear and practical routes are needed to turn growing interest into action. Even where confidence is increasing, uncertainty around cost, disruption and performance can still limit uptake.

The projects in this section are designed as next-step gateway interventions within the neighbourhood retrofit pipeline. By bringing households together at neighbourhood scale, they enable aggregation that reduces risk and cost, unlocks household investment, and creates clearer routes to coordinated action.

This approach makes it easier for households to invest, either as match funders alongside public or philanthropic support, or as primary funders where they are able, whilst giving local authorities and investors a simpler, scalable model to support. Sitting between early engagement and whole-street retrofit (such as Andover Road), these projects help turn individual action into neighbourhood momentum.



Smart Thermostats

This project supports households interested in improving heating control and reducing energy costs through smart thermostats. With relatively low upfront costs and straightforward installation, they offer an accessible next step for households already engaged in energy improvements. Evidence suggests smart thermostats can deliver bill savings of around 10–20% when accompanied with high-quality advice, often with relatively short payback periods.⁸⁸

A neighbourhood-scale bulk-buy and support programme would further reduce costs, improve uptake and help ensure devices are installed and used effectively. Delivered collectively, the project builds confidence and familiarity with smarter energy management while reducing risk for households and supporting more informed decision-making about future home improvements.



Stimulating Solar Uptake

This project supports households ready to invest in renewable energy by making solar PV simpler, cheaper and more accessible through neighbourhood-scale coordination.

By aggregating demand across streets and using bulk-buying and coordinated delivery models, the project reduces costs, simplifies decision-making and improves quality. This enables household investment to act either as match funding alongside public or philanthropic support, or as primary capital for those able to invest independently.

Collective purchasing models such as Solar Together have demonstrated the effectiveness of this approach, achieving bulk-buying discounts of up to 34%⁸⁹ With less than 1% of homes in Knowle West currently utilising their solar potential,⁹⁰ there is clear scope to unlock significant household-led investment through a locally trusted, coordinated model.



Next step insulation

This project supports households considering more substantial fabric improvements such as floor insulation, solid wall insulation, or external porches, which can feel high-risk without trusted advice, clear sequencing and reassurance. A neighbourhood-scale pilot delivering building assessments would help households identify next steps, understand options and make informed decisions.

In Knowle West, this builds on locally developed typology-led approaches and the Neighbourhood Trade Crew model,⁹¹ working to PAS 2035 standards across tenures. Early priorities could include biomaterial loft insulation, rectifying issues with defective cavity wall insulation and addressing a common eaves design fault that creates thermal bridging and increases mould risk - practical improvements grounded in how local homes actually perform.

Delivered collectively, this approach improves quality, reduces duplication and creates clearer pathways towards coordinated retrofit. Sitting between entry-level measures and whole-street retrofit, it acts as a bridge, enabling household investment while strengthening the foundations for a scalable neighbourhood retrofit pipeline.

4.2

Neighbourhood

A neighbourhood is where people live, meet, work and move through everyday life, making it a critical scale for building resilience to rising energy costs and a changing climate. Taking a proactive, neighbourhood-based approach helps strengthen local assets, relationships and capability, ensuring that investment delivers lasting value for the people who live there.

Streets and spaces between homes are shared assets, not just infrastructure. Improving them can support health, reduce climate risk and make neighbourhoods easier and more pleasant to move around. When approached in this way, neighbourhood action helps build community wealth by improving shared assets, retaining value locally and supporting long-term stewardship.

This section sets out a targeted set of clean energy opportunities in Knowle West, focused on improving assets of community value, exploring shared street-scale heat and power systems, and using nature as infrastructure to support adaptation in a changing climate.

Improving assets of community value

Large, publicly accessible community buildings play a vital role in neighbourhood life but are often difficult and costly to decarbonise. Many were built to older standards, have high and variable energy demand, and operate under tight financial constraints, meaning they are frequently overlooked in retrofit programmes.

In Knowle West, assets such as the Knowle West Media Centre building present both a challenge and an opportunity. While decarbonisation requires careful design and phased investment, these buildings also offer trusted, visible sites to demonstrate low-carbon solutions, test delivery models and build local capability.

An enabling study through the Mission Net Zero project assessed decarbonisation options for the Knowle West Media Centre building, identifying phased interventions that provide a practical starting point for reducing emissions and costs, while pointing toward a longer-term approach to community asset stewardship and climate action across the neighbourhood.⁹²



Heat, Energy and Retrofit Solutions for Knowle West Media Centre

This project explores the phased decarbonisation of the Knowle West Media Centre building, a large, mixed-use community building with high and variable energy demand, making it well suited to a staged retrofit approach.

Indicative measures include targeted fabric improvements, biomass replacement of gas heating with low-carbon heat (such as ASHPs), and on-site renewable generation. Early scenarios explored heat pump capacity in the range of c.150–250 kW and rooftop solar PV of around 100–200 kWp, subject to detailed design.⁹² A phased approach enables carbon and cost reductions while managing disruption to a busy, publicly used building. For investors, the project offers potential for stable, long-term returns through reduced energy costs or energy service arrangements, while anchoring investment in community infrastructure.



The Knowle West Media Centre building

Exploring opportunities for longterm stewardship

Knowle West has a strong network of community buildings and local assets that already support everyday life, health and social connection. A longer-term opportunity is to build on this by taking a more joined-up approach to caring for and investing in these spaces so they can continue serving the neighbourhood over time – supporting social wellbeing, climate action and local economic resilience in line with the neighbourhood’s commitment to community wealth building and the Roots of Resilience manifesto.⁹³

Securing buildings and spaces for long-term community use can reduce vulnerability to short leases, rising costs or future disposal while strengthening local climate action. Community-owned assets have potential to provide warm spaces for residents in winter and can also become hubs for retrofit activity, renewable energy, skills development and local coordina-

tion. Investing in places people already know and trust helps build continuity, reduce delivery risk and create lasting impact.

This stewardship approach also applies to community green spaces and biodiversity. Protecting common land through partnership, stewardship and potential community ownership can help secure these spaces as long-term neighbourhood assets rather than short-term projects. Treating green spaces as essential community infrastructure supports consistent maintenance, stronger community engagement and lasting local value. For investors and public partners, this creates a stable, place-based opportunity where environmental improvement, community wellbeing and long-term asset value are aligned (see Climate Action Prospectus for further detail).⁹⁴



Hastings Commons: A case study

Hastings Commons is a community-led regeneration programme using long-term community ownership to secure affordable homes, workspaces and shared facilities.⁹⁵ Through a Community Land Trust model, assets are held for community benefit, ensuring social, economic and environmental value stays local.

By combining public funding, grants and social investment with strong local governance, the programme demonstrates how treating buildings as long-term assets, rather than short-term projects can support resilience, affordability and confidence over time, offering a useful reference for Knowle West.

Map L

Community centres in Knowle West⁹⁶



Learning from the Hastings Commons model, a similar asset-based approach in Knowle West could support long-term stewardship of both community buildings and green infrastructure. Income from uses such as workspace, local services, energy savings or environmental funding could help sustain maintenance and

reinvestment locally and by combining public, philanthropic and mission-aligned finance in this way, the neighbourhood can build a locally grounded stewardship model that strengthens climate resilience while delivering lasting social, environmental and economic value.

Street-scale shared energy systems in Knowle West

Large centralised energy networks are not currently planned for Knowle West, as the neighbourhood’s relatively low heat and electricity demand density makes extension of the city-wide heat network to Knowle West unlikely to be cost-effective in the short to medium term. This is why Knowle West currently falls outside the areas designated by Bristol’s Heat Zone.⁹⁷

However, evidence suggests smaller, street-scale shared energy systems could offer a prac-

tical alternative when designed around local housing types, demand patterns and delivery conditions.

An enabling study through the Mission Net Zero project used Andover Road as a pilot context, building on existing retrofit evidence and resident engagement. The study identified two priority opportunities that could act as demonstrators for wider rollout across Knowle West.⁹⁸

Shared power generation

This project explores locally generated renewable electricity at street or small-cluster scale, combining rooftop solar PV with shared battery storage. A typical street-scale system could support 20–30 homes, increasing use of locally generated energy, reducing bills and easing pressure on the grid.

A shared approach allows participation from households unable to install individual systems, including homes with limited roof space or mixed tenure. For investors, this offers a relatively straightforward entry point with potential revenue through energy savings, grid services and neighbourhood-scale aggregation.

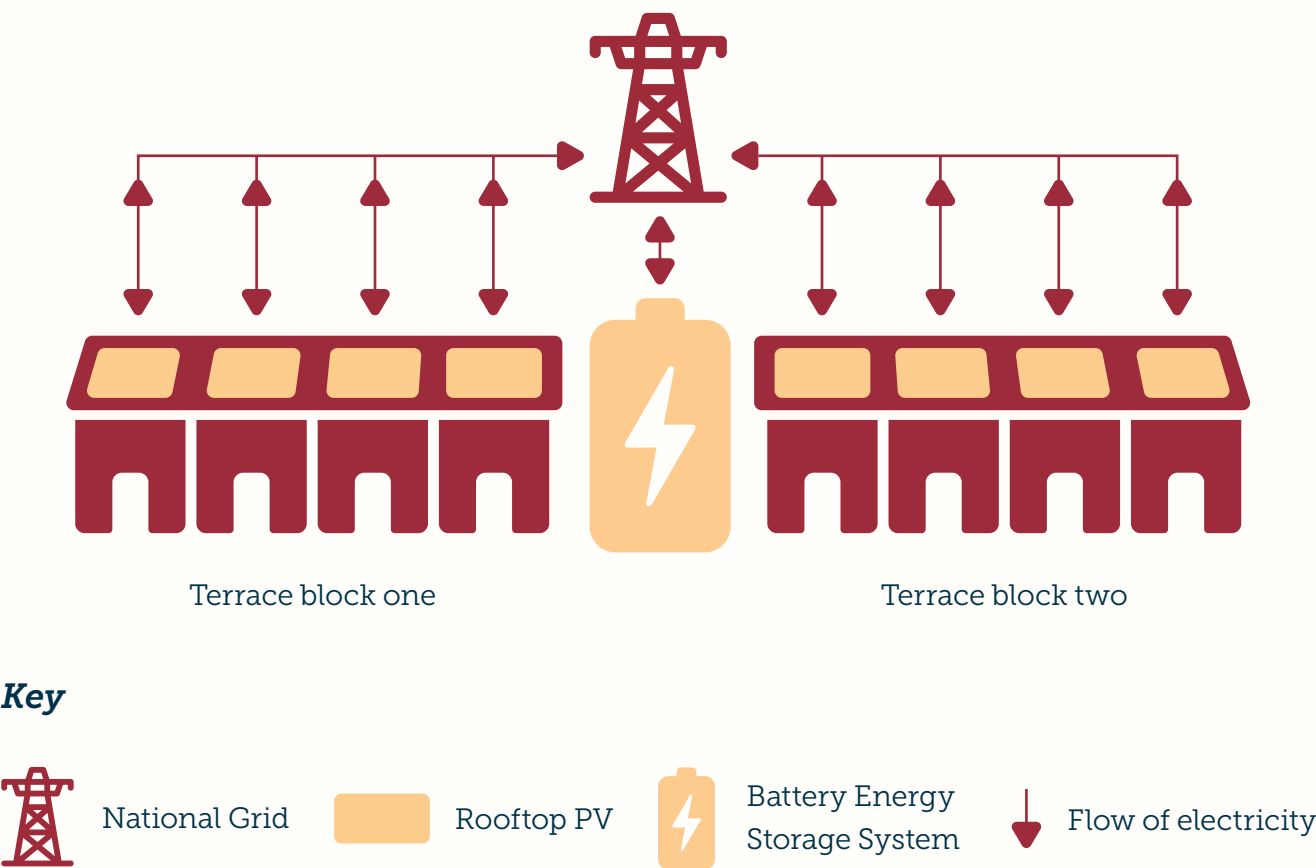
Shared heating

This project focuses on street-scale shared heating for small clusters of homes rather than large district networks. Early modelling suggests systems serving around 15–25 homes could be technically feasible in areas like Andover Road

This approach would retain the benefits of shared infrastructure (coordinated maintenance, system efficiency and potential cost savings) while avoiding the complexity and disruption associated with large heat networks. Crucially, it builds on real-world monitoring, local engagement and typology-specific retrofit learning and positions Knowle West as a testbed for scalable, neighbourhood-based low-carbon heating solutions.

Chart L

Proposed shared power generation system for further exploration⁹⁹



Nature as infrastructure

Knowle West faces growing climate pressures including overheating, surface water flooding, declining air quality and limited everyday access to green space. These issues affect health, housing comfort and quality of life, particularly in a neighbourhood where many residents have fewer resources to adapt individually.¹⁰⁰

Nature-based solutions offer a practical, cost-effective way to respond. Investing in trees, green spaces and water management, particularly in

higher risk areas, can improve environmental resilience while delivering wider social benefits including cooler streets, healthier homes, stronger biodiversity and more attractive neighbourhood spaces.

For many residents, visible local projects such as tree planting or community green infrastructure also provide an accessible entry point into wider climate action, building confidence, stewardship and long-term community resilience.



Urban forestry in Knowle West

This is a longer-term neighbourhood approach to treating trees and green infrastructure as essential climate and community assets. It focuses on developing a coordinated programme to expand street tree cover across Knowle West, creating a connected urban forest embedded within residential streets rather than concentrated only in major green spaces such as Knowle West Health Park and the Northern Slopes.

Delivered at neighbourhood scale, the approach aims to improve everyday environmental quality, strengthen biodiversity, enhance public spaces and support long-term climate resilience, with community leadership and stewardship central to delivery. Innovative financing approaches such as neighbourhood-scale Biodiversity Net Gain (BNG) credits could support ongoing implementation while generating lasting community benefit and can be co-ordinated by trusted local organisations such as the Knowle West Alliance or WeCanMake.¹⁰¹

Rainwater harvesting

This project explores neighbourhood-scale rainwater harvesting to support water reuse and practical local infrastructure improvements. Installations such as water butts, garden attenuation features and small shared systems help households manage rainfall while providing usable water for gardens and community spaces. Alongside environmental benefits, the project would test delivery models, maintenance approaches and community uptake, building evidence for wider roll-out.

As a tangible and engaging intervention, it provides an accessible entry point into climate action while strengthening local resilience. A range of installation options allows solutions to be tailored to different household needs and capabilities as well as funding opportunities.

4.3
Skills

Building local skills, confidence and practical capacity to improve homes, reduce living costs and support everyday life is a clear priority in Knowle West. At the same time, strengthening the green skills supply chain is a growing priority for Bristol, the West of England and nationally as the transition to net zero accelerates.¹⁰³

National demand is significant and government estimates suggest delivery of the Heat and Buildings Strategy could support up to 240,000 green skilled jobs by 2035, while the Construction Leadership Council estimates the UK will need around 500,000 additional professionals and trades.¹⁰⁴ In the West of England, up to 50,000 jobs are expected to support the transition to net zero, including around 14,000 in retrofit.¹⁰¹

Despite this demand, existing training pathways are not reaching everyone. Provision often focuses on upskilling existing contractors or formal apprenticeships, which can remain difficult to access for many residents due to limited awareness, confidence and practical barriers.

Local context also reinforces this challenge. Knowle West has a younger and more diverse population than the Bristol average but faces higher barriers to formal education and training. In Filwood, 28.2% of residents have no formal qualifications (compared to 19.3% in Knowle), and around 16% of 16–17-year-olds are not in education, employment or training, the second highest ward rate in Bristol.¹⁰⁵ This highlights both the need and the opportunity for earlier, locally rooted approaches that connect education, community networks and emerging sectors such as retrofit and low-carbon construction.

There is also a mismatch between skills funding and delivery. Between 2019 and 2022, £3.3 billion of Apprenticeship Levy funding went unspent nationally, while retrofit programmes have faced quality and accountability challenges.¹⁰² Procurement models often favour large national firms, meaning the economic value of retrofit investment can flow out of the communities where work takes place.

In response to this opportunity, Knowle West has developed a place-based, just transition approach that connects community engagement, skills and delivery - building local workforce capacity, improving quality, reducing delivery risk and helping ensure the benefits of retrofit investment stay within the neighbourhood.

“At local scales community-led groups and public services such as libraries, museums and job centres can likewise underpin skills development and provision, with trade unions, student associations and the third sector together having a crucial role to play in creating the conditions needed to transform the skills system nationwide.”

Skills and Net Zero (2023)¹⁰²

The Knowle West Approach

Knowle West’s approach to skills and delivery is place-based and evidence-led, shaped by learning from projects such as Transforming Homes which showed that effective retrofit depends not only on technical measures, but on correct diagnosis, sequencing, trust and continuity at neighbourhood scale.

A defining feature of the model is the direct link between learning and delivery, with training grounded in local housing types, shared retrofit standards and real-world conditions - building practical capability rather than qualifications alone. This also reduces delivery risk while supporting local employment pathways and includes youth-focused programmes that introduce younger residents to green construction and retrofit skills early, helping build a future local workforce.

This work is supported by the Factory, run by KWMC and WeCanMake, which provides neighbourhood infrastructure for coordination, prototyping, testing and learning by-doing. It helps translate technical evidence

into repeatable approaches suited to Knowle West’s housing while acting as a hub for quality assurance, shared understanding and continuous improvement.

Together, these conditions create a clear pathway from engagement and skills development through to street-scale delivery. Local teams gain confidence and capability while reducing reliance on fragmented external supply chains and retaining skills, jobs and value within the neighbourhood. Importantly, this positions Knowle West as a neighbourhood-scale testbed for retrofit skills, delivery models and supply chain development: approaches can be tested and refined locally before supporting wider roll-out across Bristol and the West of England.

In this way, skills development, coordination and quality assurance become part of the investable infrastructure for neighbourhood retrofit, with the following opportunities illustrating how local capability can translate into delivery capacity, workforce development and scalable climate investment over time.





Getting started: The Neighbourhood Trade School

The Neighbourhood Trade School is a locally rooted learning model that helps residents build confidence, practical skills and understanding around low-carbon homes and everyday building improvements. Designed as an accessible entry point within the Knowle West skills pathway, it supports people who may not feel confident engaging with traditional training routes or formal green skills provision, helping build the awareness, capability and trust needed for later engagement and participation in retrofit delivery.

The approach is practical and hands-on, using real materials, tools and examples drawn from the key housing types in Knowle West. Learning focuses on how homes work, why problems such as damp, mould and overheating occur, and what good retrofit looks like in practice. Activities are designed to be inclusive, with no prior experience required, and are shaped around local needs and lived experience.

By building understanding and confidence at neighbourhood level, the Trade School helps address a key barrier to delivery: lack of trust and uncertainty about what works. It supports informed participation, increases readiness for future retrofit and energy interventions, and helps ensure that investment is better understood, better received and more likely to deliver lasting outcomes. In doing so, it reduces social and participation risk while strengthening local capability as part of a community wealth building approach.

*"I feel powerful
and capable"*

Trade School participant¹⁰⁶

"It was such a friendly, kind, welcoming safe space for me. I was put at ease and was helped so much. To come away with such positive memories and a bug hotel and bird house I can be proud of. Connecting with my community is so important too."

"The welcoming, non-judgemental atmosphere made us feel comfortable."

Trade School participants





From learning to delivery: The Trade Crew model

Building on the foundation created through the Neighbourhood Trade School, the Trade Crew model develops locally rooted teams capable of delivering high-quality, low-carbon retrofit at neighbourhood scale. Developed by KWMC and WeCanMake, it provides a progression from learning into delivery, supporting locally accountable teams to deliver retrofit in ways that are trusted, consistent and aligned with neighbourhood needs.

The model prioritises diversity and wellbeing by recruiting local people, including those under-represented in construction, and adapting the Dutch Buurtzorg principle of “humanity over bureaucracy” to housing retrofit.¹⁰⁷ Trade Crews are decentralised and trained in the specific needs of Knowle West’s interwar homes, focusing on warmth, moisture control, air quality and long-term comfort, supported by shared standards and neighbourhood-level quality assurance.

Learning from the Transforming Homes project on Andover Road has directly informed the Trade Crew model, building on the typology-specific retrofit approach already developed for Knowle West homes. Through WeCanBuild, a dedicated delivery vehicle, locally trained Trade Crews are piloting priority fabric improvements designed to address the most common retrofit challenges in these homes, including biomaterial loft insulation and resolving known eaves design issues that contribute to thermal bridging and mould risk. Work is delivered to PAS 2035 standards.¹⁰⁸

“How good it feels to be doing this work on a community level, using more eco-friendly materials, with such an inclusive team. I really hope this is just the start for me.”¹¹⁰

Danae

Female trades person, part of our trade crew

Key statistics¹⁰⁹

- Women make up **15% of the UK construction industry**, with approximately **2%** working on-site.
- Global majority employees make up **6% of the workforce**.
- **60% of LGBTQ+** employees have experienced homophobic and derogatory terms at work.
- Improving mental health of construction workers is vital with the workforce facing a significantly elevated risk of suicide, with rates estimated at **3.7 times the national average**.

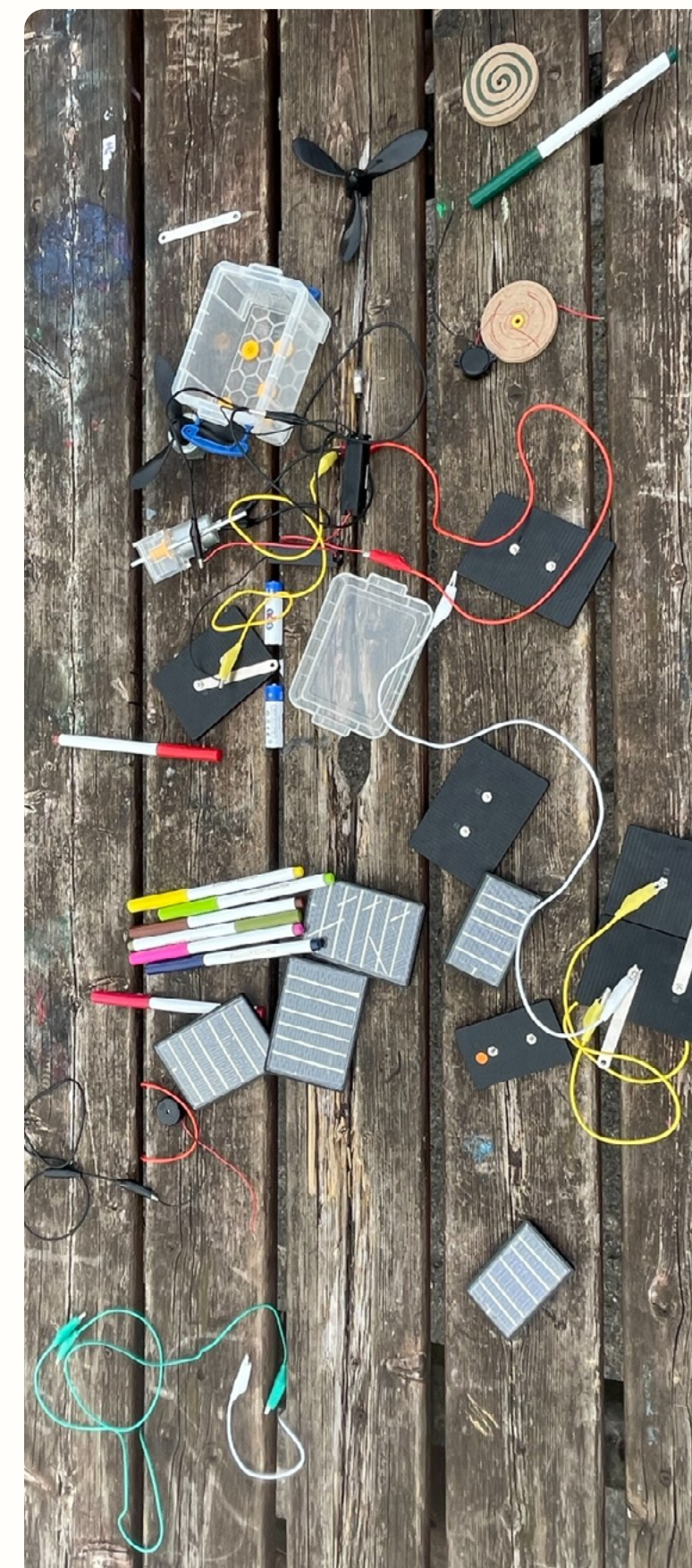
The approach creates a clear pathway from learning to delivery, strengthens local workforce capacity while reducing delivery risk. It supports community wealth by retaining skills and jobs locally and offers potential for repayable income through delivery and service contracts. With an estimated 15,000 similar homes across Bristol’s interwar council estates, and over one million nationally, there is significant potential to scale this approach, both in the city and the West of England region.

The future green workforce: youth engagement

Complementing existing training and delivery activity in Knowle West, there is a growing opportunity to engage young people earlier as part of the neighbourhood retrofit skills pathway. Delivering climate action at scale will depend not only on technical solutions, but on a skilled, locally rooted workforce and early engagement helps build the confidence, awareness and aspiration needed for future careers in green construction and retrofit.

Initial collaboration through the Transforming Homes research programme has begun testing how this can work in practice. Partnerships between KWMC, the University of Bristol, City of Bristol College, the CSE and local youth organisations have piloted hands-on learning, design activities and career exploration linked directly to local housing and climate challenges.

Building this strand alongside the Trade School and Trade Crew models strengthens a fully integrated neighbourhood skills pathway from early engagement through to training and delivery. For investors and partners, this helps ensure the workforce capacity, community trust and long-term delivery capability needed to support scalable retrofit investment in Knowle West and beyond.



Making mini solar panels)

5.

Moving to delivery: Collaboration in action

As regional investment frameworks and national programmes continue to develop, there is a growing opportunity to connect community priorities with emerging funding, policy and delivery structures. By working collaboratively, local organisations, communities and Bristol City Council, can help progress projects, strengthen local capacity and governance, and translate neighbourhood ambitions into practical, investable activity.

This section highlights the shared commitment and intent across communities, Bristol City Council and the wider region to support the transition from early-stage planning to coordinated delivery across Knowle West and the wider Bristol portfolio, acknowledging key routes to delivery and setting out priority areas of focus in the near term.



5.1

A shared commitment

Bristol City Council and local partners share a commitment to supporting meaningful, community-led climate action in Knowle West and across the wider Bristol portfolio of neighbourhood climate investment plans. Building on the learning and opportunities identified through this work, partners intend to continue collaborative exploration of how priorities can be progressed, drawing on emerging regional arrangements, national policy developments and other potential funding sources.

The inclusion of projects in these plans does not imply agreement from any organisation to approve or undertake the work described. The plans are a snapshot in time and a great starting point but further conversations with the community organisations will be needed before developing the projects described to check that these are still what the community wishes to proceed with. The endorsement of these plans does not constitute Bristol City Council approval for the projects within the plans. Implementation of any of the projects by Bristol City Council would be subject to additional governance approvals.

Routes to local delivery: national and regional opportunities

In January and February 2026, the Government published two key policy initiatives - the Warm Homes Plan and the Local Power Plan. Both are expected to support investment in home retrofit, neighbourhood energy infrastructure and skills development,¹¹¹ closely aligning with priorities and opportunities identified by the Knowle West community through this plan. Having clear, community-rooted investment priorities strengthens Bristol City Council’s ability, alongside partners, to align with these programmes and secure resources where opportunities arise.

The community priorities set out in this plan have informed the emerging West of England Clean Energy Investment Plan and proposed delivery mechanisms. Further work is planned to ensure these neighbourhood priorities continue to be integrated with developing regional and citywide plans over the coming months.

Key focus areas

Subject to resources being available, this ongoing collaboration is expected to focus on:

- Strengthening community capacity and governance arrangements
- Developing projects to investment-ready stage
- Aggregating neighbourhood initiatives where this supports scale and efficiency
- Engaging delivery partners, funders and investors
- Ensuring alignment with evolving regional and national programmes.

While progress will depend on funding availability, policy development and continued partnership working, the foundations established through this plan – strong community engagement, clear priorities and coordinated working across Bristol neighbourhoods – provide a credible basis for moving from planning toward delivery.



9

Glossary of terms

Affordability: The extent to which households can reasonably meet the costs of housing, energy and essential living expenses without financial hardship.

Area-based approach: A coordinated approach to improving homes or infrastructure across a defined neighbourhood or area, rather than working one building at a time.

Carbon emissions: Gases released into the atmosphere (such as carbon dioxide) from activities like heating homes, transport and electricity use, which contribute to climate change.

Carbon neutral: When the total carbon emissions produced are balanced by actions that reduce or remove the same amount from the atmosphere.

Climate adaptation: Changes that help people, homes and neighbourhoods cope with the impacts of climate change, such as overheating, flooding or extreme weather.

Climate justice: The principle that climate action should address inequality and ensure that those least responsible for emissions are not unfairly burdened and benefit from solutions.

Climate resilience: The ability of homes, infrastructure and communities to prepare for, respond to and recover from climate impacts.

Community capacity: The skills, knowledge, relationships and resources within a community that enable it to organise, participate in and deliver local projects.

Community Climate Action Plan (CCAP): A plan developed with local residents that sets out a shared vision and priorities for climate and nature action in a neighbourhood.

Community Climate Investment Plan (CCIP): A plan that translates community priorities into practical, fundable projects focused on homes, neighbourhood infrastructure and local skills.

Community-led: Designed, shaped or delivered with strong involvement and leadership from local residents and community organisations.

Community wealth: Economic value, jobs and skills that are generated and retained within the local area rather than flowing out to external organisations.

Decarbonisation: Reducing carbon emissions from homes, transport, buildings and energy systems.

Energy efficiency: Improving how a building uses energy so less is wasted — for example through insulation, draughtproofing or more efficient heating systems.

Fuel poverty: When a household struggles to afford adequate heating and energy services at reasonable cost.

Green infrastructure: Natural and designed features such as trees, parks, green roofs and sustainable drainage that improve environmental quality and climate resilience.

Green jobs: Employment that supports environmental sustainability, including roles in retrofit, renewable energy, nature restoration and low-carbon construction.

Just transition: A shift to a low-carbon economy that is fair and inclusive, ensuring that benefits and opportunities are shared, especially with those most affected by inequality.

Local energy system: Energy generation and supply that happens close to where it is used, such as rooftop solar panels or shared neighbourhood energy projects.

Low-carbon heating: Heating systems that produce little or no carbon emissions, such as heat pumps or heat networks.

Mixed tenure: A neighbourhood with different types of housing ownership, including owner-occupied, privately rented and social housing.

Net zero: Achieving a balance between the carbon emissions produced and those removed from the atmosphere.

Neighbourhood-scale approach: Coordinating improvements across a street or area to reduce costs, increase impact and improve fairness, rather than upgrading one building at a time.

Renewable energy: Energy from natural sources that are constantly replenished, such as solar, wind or hydro power.

Retrofit: Upgrading existing homes or buildings to improve energy efficiency, comfort and climate resilience.

Tenure-blind approach: Designing programmes so people can participate regardless of whether they own or rent their home.

7
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3 Bristol City Council (2022a); Innovate UK (2021)

4 Centre for Sustainable Energy (2024), supported by Eastside Community Trust; Knowle West Media Centre; Southmead Development Trust

5 Centre for Sustainable Energy (2025) Albion Energy & Carbon Modelling Tool (internal housing stock analysis) - see methodology note.

6 Insole, P. (2024) Bristol Homes for Heroes.

7 BCNP & KWMC (2024)

8 Derived from the Knowle West Community Climate Action Plan (Bristol Climate & Nature Partnership & Knowle West Media Centre, 2024).

9 Resident insights referenced throughout this plan derive primarily from engagement undertaken through the Transforming Energy Together programme (2024–25).

10 BCNP & KWMC (2024)

11 Transforming Energy Together engagement programme (2024–25)

12 Bristol City Council JSNA datasets.

13 Drawing on ONS (2022) and various Bristol City Council data sets including Quality of Life (2024) and JSNA (various years).Drawing on ONS (2022) and various Bristol City Council data sets including Quality of Life (2024) and JSNA (various years).

14 ONS (2022); Rightmove (2020); Bristol City Council (2024) Quality of Life in Bristol 2024–25.

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19 Centre for Sustainable Energy (2025) Albion Energy & Carbon Modelling Tool (internal housing stock analysis) - see methodology note.

20 Ministry of Housing, Communities & Local Government Index of Multiple Deprivation (via Bristol City Council JSNA datasets).

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22 CSE modelling, 2026

23 Centre for Sustainable Energy (2025)

24 Carbon estimates presented in this plan are indicative, derived from CSE modelling tools using publicly available datasets and standard assumptions.

25 Bristol City Council (n.d.) Know Your Place

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- 36** Centre for Sustainable Energy (2025)
- 37** Bristol City Council (n.d.) Know Your Place: Housing Department Photographs & 1946 Aerial Overlay (Online map)
- 38** Centre for Sustainable Energy (2025)
- 39** Community housing demonstration projects in Knowle West (WeCanMake; ZedPods Marshall Walk case study).
- 40** We Can Make (n.d) First Two Homes pilot project.
- 41** ZedPods (n.d) Marshall Walk modular housing project.
- 42** Centre for Sustainable Energy local energy infrastructure modelling and spatial analysis (2026) - see methodology note.
- 43** CSE analysis, supplemented with local knowledge through Transforming Energy Together, 2025
- 44** Note: MCS indicates that this figure is 2.8% for Bristol as a whole, highlighting potential issues with EPC data.
- 45** LAEP+, 2026
- 46** CSE rooftop solar potential and energy yield modelling using EPC data and spatial analysis (2026).
- 47** Centre for Sustainable Energy (2025)
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- 49** CSE housing stock analysis using Energy Performance Certificate datasets (2026).
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- 56** CSE local heat demand modelling (THERMOS analysis), 2025.
- 57** DESNZ Heat Network Zone Report (2025)
- 58** Mission Net Zero enabling study (Knowle West case study documentation) - unpublished, available on demand.
- 59** CSE, 2025
- 60** Insights generated through Transforming Energy Together.
- 61** Bristol City Council (2023)
- 62** Knowle West Media Centre (n.d.)
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- 66** Knowle West Alliance (n.d.) Organisation overview.
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