Dudley Fields: Net Zero Neighbourhood

July 2024

making the **difference**

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Foreword

The Net Zero Neighbourhood is a pioneering effort that focuses on retrofitting homes and implementing low-carbon infrastructure on a neighbourhood scale. By taking a neighbourhood-wide approach, we aim to create a cohesive, sustainable community that is resilient to the challenges of climate change. This project is not just about reducing emissions; it is about realising our *We Are Walsall 2040* vision and transforming our neighbourhoods into vibrant spaces where residents can thrive.

By investing in our homes, improving active and sustainable travel networks and enhancing biodiversity in the area, we hope to improve the quality of life for residents of Dudley Fields, both inside and outside of their homes. More efficient homes will help keep residents warm in the winter and cool during the summer. Improved active travel options and outdoor spaces will help to provide a healthy environment for all.

Retrofitting our housing stock is a huge challenge but as with any challenge comes opportunity. We will be working together with community groups, Walsall Housing Group, the West Midlands Combined Authority, local colleges, schools and businesses to educate, upskill and support residents to drive this project forward. This holistic approach being developed will ensure that the benefits are felt by all residents and create a model that can be replicated across our borough.

This Net Zero Neighbourhood is an exciting opportunity to enhance the lives of the residents of the Dudley Fields Estate and the surrounding area, while making sure that the transition to a low carbon economy is a just transition for all.

As we move forward to the second phase of this exciting project, it is essential that we continue to engage with residents, listen to their needs and adapt our approach based on their feedback. The success of our Net Zero Neighbourhood depends on the active participation of our communities. Together, we can create communities that are not only net zero but also vibrant, inclusive, and resilient.

Councillor Gary Flint

Walsall Council, Portfolio Holder for Health & Wellbeing

Executive summary

The Dudley Fields Net Zero Neighbourhood has been weighted towards housing decarbonisation fuel and lower levels of income, comparative to England. The community must be involved in the process of identifying opportunities, barriers and benefits to living more sustainable lifestyles for this to be a long-term success.

There are three dominant housing archetypes with the majority of properties being classified as EPC D or below. Deep retrofit can be structured within a holistic asset management plan to upgrade the whg homes, which can extend to the low-income privately-owned properties which should also attract funding support. There needs to be a clear understanding of which measures the 'able to pay' owner occupiers and private landlords might receive in order to fully engage them and how that will be extended over the lifespan of this programme.

Travel and transport were the next priority as the community has lower car ownership than the England average. This is actually a plus in terms of creating a Net Zero neighbourhood, but residents need more support to ensure that active mobility and public transport options lead to greater social and economic opportunities.

A light touch review of green space and options for biodiversity was conducted at this initial stage. Dudley Fields is a well-served community in terms of amenity spaces with mature trees, wild areas and pathways adjacent to a canal. It is recognised that as part of the net zero ambitions of this community, there will be many opportunities to tap into additional programmes to encourage biodiversity and nature in both shared and private spaces.

The ‘Recommendations’ section includes a summary of priorities for the development of a Net Zero Neighbourhood across: community engagement, housing decarbonisation, local energy, travel/ transport, biodiversity and green spaces, data management and modelling for the financial case.

Amenity space in Dudley Fields and the community garden to the rear of the whg centre.
Credit: Sarah Daly

Turner & Townsend

Introduction

Dudley Fields: Net Zero Neighbourhood

Vision and objectives

Exploring new approaches to creating low carbon communities is part of WMCA's strategy to reach net zero carbon emissions by 2041.

Net Zero Neighbourhood (NZN) vision

The Net Zero Neighbourhood (NZN) programme aims to explore new approaches to creating low carbon communities. The programme has been established by WMCA as part of its strategy to cut regional carbon emissions to **net zero by 2041,** in line with Walsall Council's target for the borough to also be net zero by 2041. In addition, whg aims to reach EPC C by 2030 for its social rented homes.

This NZN model is built around retrofit. As such, it is important to highlight that it is designed to enable/facilitate multiple interventions to both eliminate and mitigate carbon emissions. This can be delivered through renewable energy generation, green and blue infrastructure, sustainable travel and mobility, and integration of circular economy principles.

Founding objectives and principles

We are Walsall 2040 is the council's vision to be *'the most improved borough in the region, a vibrant place where people are proud to live and residents in all neighbourhoods have the same life chances'*[1]. The NZN provides whg and Walsall Council with a focal point to achieve Walsall's 2040 vision, by engaging local partners and stakeholders in identifying the solutions and resources to deliver sustainable lifestyles in the Dudley Fields neighbourhood. The detailed interventions for a net zero neighbourhood will be developed in consultation with the residents of Dudley Fields, underpinned by principles and objectives agreed by whg and Walsall Council:

- Private residents are able to afford retrofit measures and technologies to improve indoor air quality and energy efficiency.
- Residents are engaged and active in their community.
- Provide scalable solutions, starting with 145 homes at Dudley Fields, Bloxwich, including five properties across Chase Road for a total of 150 properties.

Principles for Dudley Fields NZN

Mitigate fuel poverty

Interventions should lessen financial stress and health risks associated with fuel poverty.

Mixed-tenure approach

30.6% homes are social rented compared to 23.7% in borough. Interventions in the neighbourhood should be tenure-blind to mitigate against a two-tier approach to achieving net zero.

Co-created and connected space

Everyone should have choice and agency over the development of a NZN. The process supports a sense of community and inclusive perspectives when defining the future of the neighbourhood.

Energy efficient

Interventions across all tenures of homes should aim to be 'net zero' ready to avoid future amends. Further, community ownership of renewable energy generation will be explored.

Partnership working

Political and executive support is secured at the most senior level within the authority. Joint steering groups are established for the delivery team between different stakeholder groups.

Safety and healthy

Interventions should improve residents' health, mitigate poor air quality and overheating, improve access to green spaces and provide safe active travel routes.

Scalability

Interventions should be measurable to support learning across other NZN.

Engage funders

Blended finance models which contribute towards the design or delivery of the programme should be explored throughout the development, delivery and lifecycle of the NZN.

1 We Are Walsall 2024 https://go.walsall.gov.uk/sites/default/files/2023-07/We%20Are%20Walsall%202040%20Borough%20Plan.pdf

Policy landscape

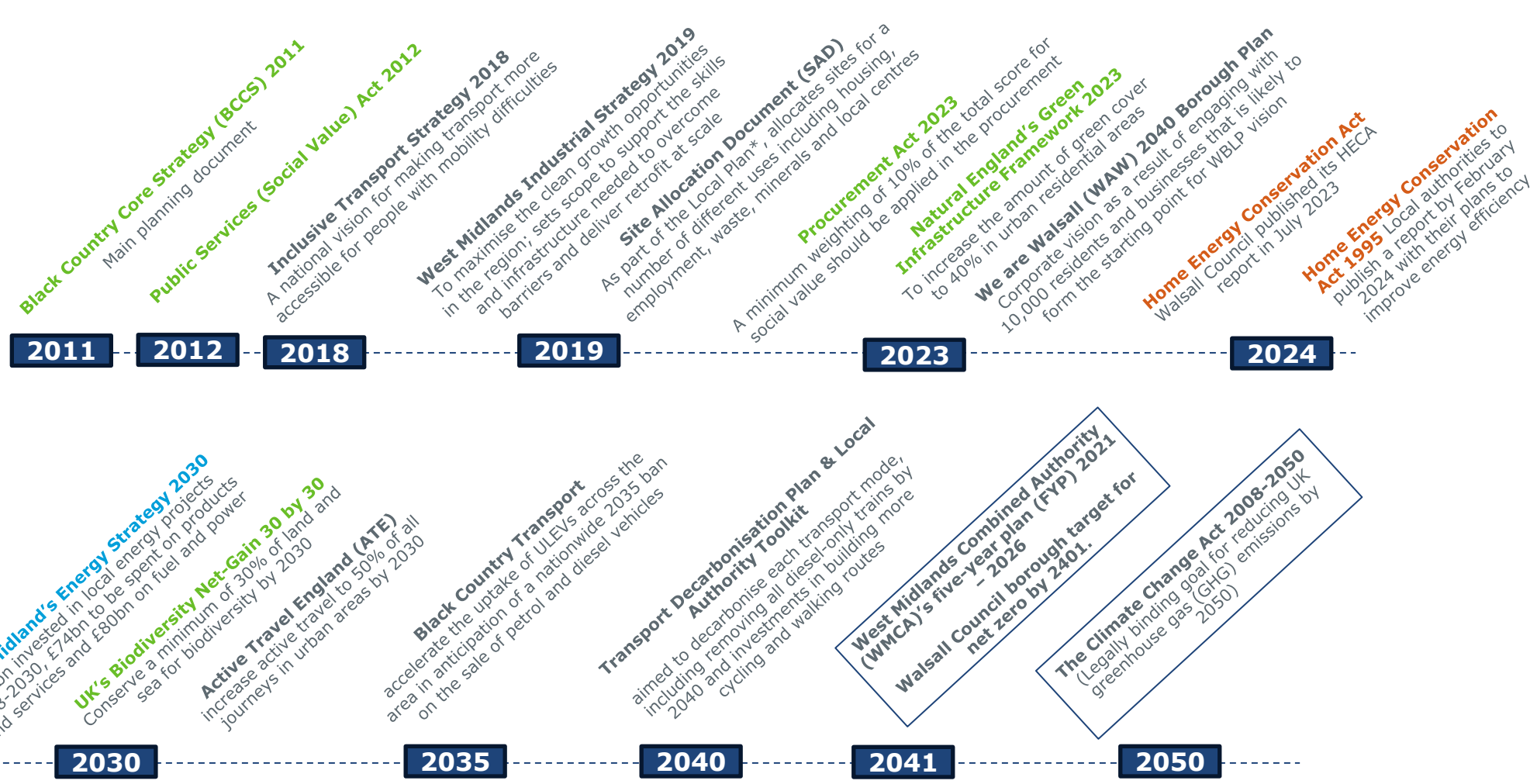
Aligning with Walsall Council and the borough's target to reach Net Zero Carbon emissions by 2041 along with other relevant policies and regulations is key to futureproofing the Net Zero Neighbourhood (NZN) Programme

Key:

- Housing retrofit
- Energy Systems (domestic focus)
- Transport
- Community and co-benefits
- Indirect obligations

- Walsall Council Net Zero Strategy (currently being developed)
- Walsall Borough Local Plan (WBLP) currently in development
- *Local Plan currently includes:

- Black Country Core Strategy (BCCS)
- Walsall Site Allocations Document
- Unitary Development Plan
- Walsall Town Centre Area Action Plan



Framework

The adoption of the *Net Zero Carbon Buildings Framework* from UKGBC provides two approaches to arriving at net zero carbon emissions with offsetting as a last resort.

Net Zero Carbon Buildings Framework from UKGBC

The Net Zero Carbon Buildings Framework, developed by UKGBC, provides essential guidance for achieving net zero carbon emissions in construction and operational energy.

It follows a reduction first approach, emphasising reducing energy demand before considering low-carbon energy sources. Prioritising energy efficiency is crucial.

Prior to reduction, there is an important stage of avoidance which plays the most significant role in achieving net zero.

Two approaches to net zero carbon:

- Construction: this includes extensions or other significant building upgrades, minimises embodied carbon during the building's construction phase and encourages sustainable material choices, with efficient design and construction practices.

- Operational Energy: balances energy consumption with on-site renewable energy generation. This includes solar panels, wind turbines, heat pumps and other renewable sources.

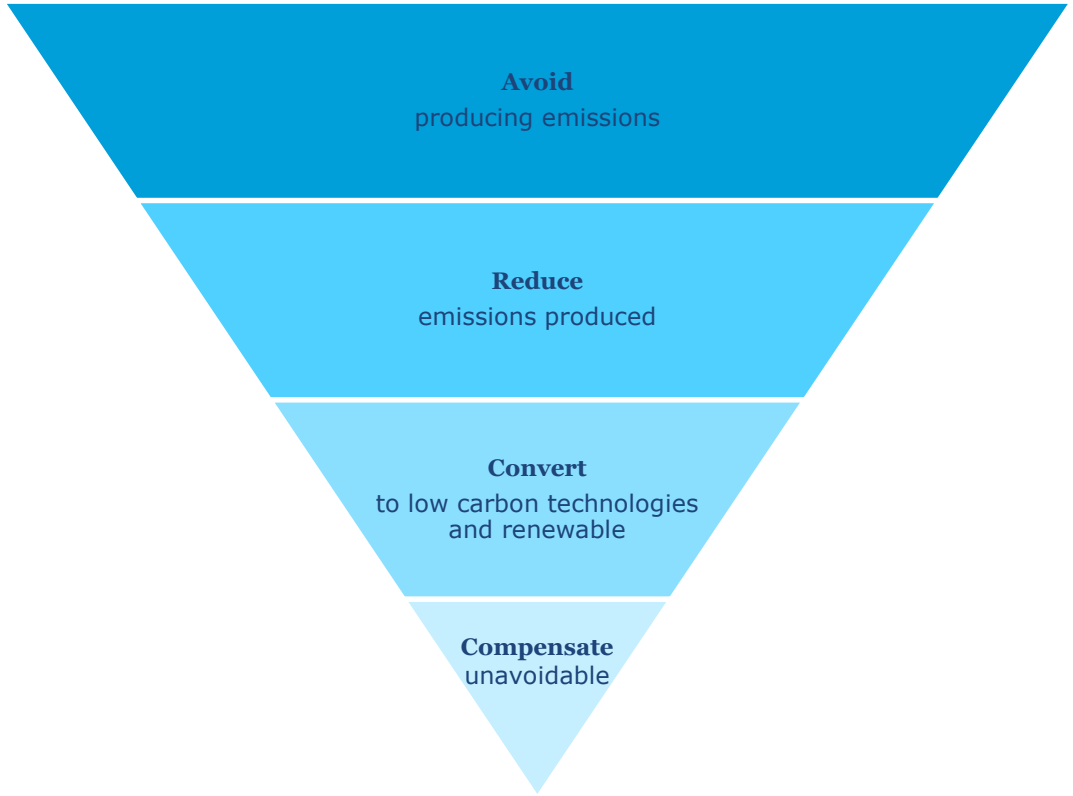
A best practice approach will consider both approaches in early decision-making to find the best balance for the asset being treated, as it is not a one size fits all approach. For example, it is important to recognise that treating the fabric of a building first may not be possible e.g. where funding eligibility criteria excludes a household.

Offsetting as a last resort: supporting local communities

Offsetting carbon emissions should be a final step in whg, the council and WMCA's sustainability efforts. It should prioritise initiatives that directly benefit the local community, including investing in projects such as local reforestation, renewable energy, or community-based conservation efforts.

By aligning offsetting with community well-being, a positive impact can be created beyond mere carbon reduction.

Operational emissions	Embodied emissions	Consumption-based emissions
Emissions that occur continually throughout the lifetime of the neighbourhood. They are measured on an annual basis and include emissions due to energy used in buildings, public spaces and transportation, or emissions arising from processing waste.	Emissions from the materials and construction processes of buildings and infrastructure, including new construction, retrofits and redevelopment.	All goods and services have an emissions impact and as the people in a neighbourhood buy food or clothes, travel on holiday or invest in new technology, they are increasing their emissions impact.



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Understanding the Dudley Fields neighbourhood

The local area

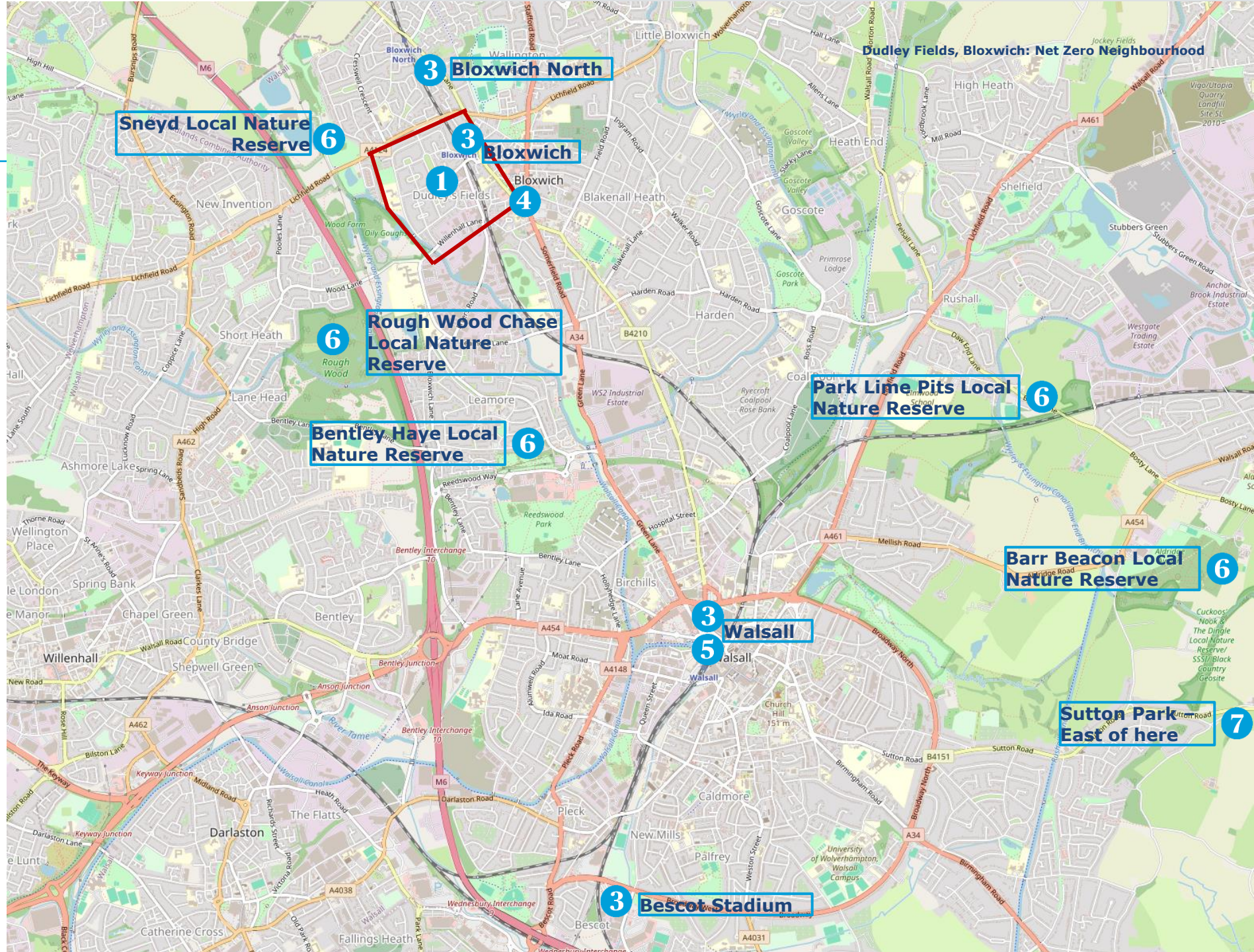
The area

Bloxwich, Walsall

Points of interest

1. Dudley Fields
2. Motorway junctions
3. National Rail stations
4. Bloxwich town centre
5. Walsall town centre
6. Nature reserves
7. Sutton Park

Study area outlined in red



Source: Open Street Maps

The area

Dudley Fields, Bloxwich

Points of interest

1. Dudley Fields
2. Schools
3. Canal
4. Railway
5. Recreational land
6. Conservation area
7. Care facilities

Study area outlined in red

Source: Google Maps

The area

Study area, Dudley Fields

Features across next slides

1. Housing on Ashley Road
2. Housing on Heather Road
3. Housing on Chase Road
4. The green area on Ashley Road
5. Housing along Coalway Road
6. Canal

Source: Google Maps

Dudley Fields, Bloxwich

Site photos with numbers corresponding to study area, Dudley Fields

Bloxwich town

Housing on Ashley Road

Housing on Heather Road

Housing on Chase Road

The green area on Ashley Road

Dudley Fields, Bloxwich

Site photos with numbers corresponding to study area, Dudley Fields

Housing along Coalway Road

Bloxwich train station

Canal

Station Street footbridge

Bus timetable

Housing stock

Three property archetypes share similar characteristics and challenges, with 97% of all properties at EPC D or below.

Archetypes

The property archetypes found within the area are British Iron and Steel Federation (BISF), Wates and traditional solid and cavity wall homes. (See appendices 1, 2 and 3 for further detail.)

Of the 145 homes, the majority are semi-detached properties, with the exception of a small number of maisonettes and one bungalow. There are 16 flats on the estate. There are no existing heat pumps installed in the study area.

Common characteristics across archetypes include:

- Low thermal efficiency
- Presence of external and cavity wall insulation, which is now failing and requires replacing
- Steel as a common building material, which can be affected by corrosion

Other buildings

There are no commercial buildings in the Dudley Fields estate, as a result this neighbourhood will focus solely on residential buildings. In the area surrounding the estate, there are commercial buildings including schools, shops and a community centre, as further outlined in slide 30.

Tenure

There is a mix of property tenures with socially rented, private rented and owner-occupied homes.

- There is a greater proportion of social rented, at 50% compared to 23.7% in the borough. This is even more pronounced with the national average being 17.1%
- Only 50% of homes are privately owned, lower than the national average of 62.5%
- 8.3% of households in the Bloxwich West ward are lone parents of dependent children (Bloxwich West Ward Profile, Walsall Council 2024).

Key tenure type data, including the number of privately-rented homes, is unknown. As such, we recommend further investigating this during engagement with the community.

Housing stock characteristics summarised

Archetype	Number of Households
Traditional Solid/Cavity Wall	50 homes *
British Iron Steel Federation	50 homes
Wates	50 homes
Tenure Type	
Social rent	75 homes
Privately owned	75 homes
SAP	
EPC C	5 homes
EPC D	93 homes
EPC E	50 homes
EPC F	2 homes

*split between solid/cavity (to be further investigated)

Housing stock

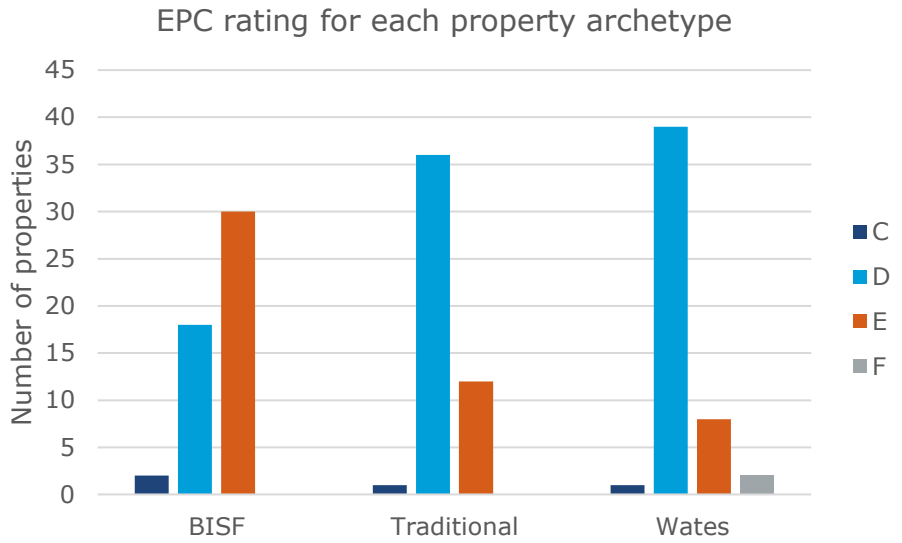
Observations on energy performance by tenure and by build type

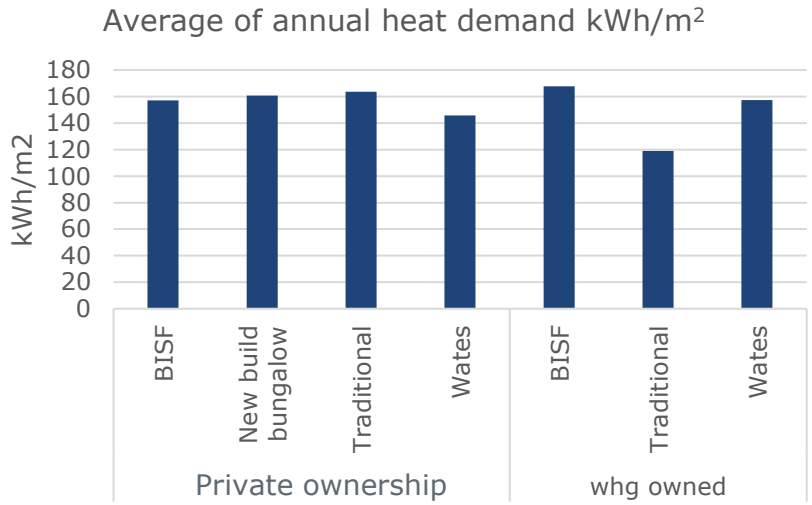
Build type

- Only 3% of properties meet an EPC C, the highest EPC rating in the estate.
- 62% (93) properties are EPC D.
- Out of these 93, Wates properties account for 42%, or 39 properties, with BISF properties accounting for the least at 20%, or 18 properties.
- 30% (50) properties are EPC E.
- The situation with EPC E properties is the inverse of D rated properties, with BISF accounting for the most homes with 60 (30), while Wates accounts for the least only 16% (8).

Tenure type

- Of the 50 Wates properties on the estate, 30 of these are whg homes, or 34% of all social homes on the estate.
- As a result, there is a disproportionate number of whg customers who are struggling with low thermal efficiency and high energy demand.
- Dudley Fields as a leader in net zero living, presents an opportunity to improve the living standards of the neighbourhood. This will be a key message when engaging with the community.





Source: Existing asset data combined with further insights from the Dudley Fields Technical Statement, February 2022

Energy systems

A high heating demand of 1,510,581.45 kWh , coupled with a strong reliance on gas, suggests that a phased approach to decarbonisation is optimal.

Nationally, around 5% of homes currently have low carbon heating. The UK is dominated by fossil fuel gas – with 85% or about 24.5 million homes heated by natural gas.

With all 145 properties in the Dudley Fields' neighbourhood connected to mains gas, a low carbon solution and overall demand reduction will play a vital role in the transition to net zero.

Heat demand and boilers

- The heat demand of the Dudley Fields estate is 1,510,581.45 kWh. Using the Government 90 kWh/ m^2 target, that results in roughly "breaking even" on fuel bills, it would mean Dudley Fields exceeds a suitable heat demand position by 39.8%.
- Boiler replacement varies throughout Dudley Fields with at least 50% of the boilers over 10 years old. This indicates an imminent high failure rate and it could be useful to anticipate this in phase out.

District Network Operator

- Cadent is the natural gas Distribution Network Operators (DNO) in the area and has no publicised planned upgrades. It has broader goals and is leading on blended hydrogen and industrial decarbonisation, but there is currently no specific mention of decarbonising domestic energy.
- National Grid, the electrical DNO, has no area-specific upgrades noted. They are committed to supporting the UK's net zero target by 2050 and are leading efforts to deliver a smart, digitalised electricity network to enable net zero for stakeholders by 2028.

Previous feasibility

- Walsall Council previously conducted a study for energy systems at the borough level, with a focus on heat networks, but there are no current plans to bring this forward for Dudley Fields.

Approach

- A phased approach to energy decarbonisation could be implemented in the short term, with suitable upgrades in the long term. This could mean installing ASHPs at first, replaced by a communal heat source later to provide renewable power at a community-scale.

Housing stock emissions baseline

Dudley Fields has a 27% higher-than-average annual dual fuel bill and a lower-than-average energy efficiency score.

Baseline

The baseline data for Dudley Fields is drawn from applying national averages for carbon and fuel bills to the stock data available.

The process highlights the importance of obtaining accurate data upfront to establish an accurate baseline and properly determine solutions suitable to the characteristics of each property.

Social rented dwellings had a median energy efficiency score of C in all English regions putting Dudley Fields behind this national median with a 62% proportion of D rated properties, with all properties below EPC C making up 97% of the total.

The average annual dual fuel (gas and electricity) bill for a three-bedroom house is around £1,680. This places Dudley Fields at around 27% higher, prompting a clearer view of actual energy bills and heat demand.

Modelling methodology

The Annual Heat Demand [kWh] has been based on the LAEP data attributed to each of the properties with the Dudley Fields Estate, including 8, 80, 84, 86 and 92 Chase Road, along with 31, 41, 53, 55, 61, 69, 73, 75, 79, 83, 95 and 97 Coalway Road.
The premise area [m^2] is then used to determine the Annual Heat Demand per unit area (kWh/m^2). There are instances where the area in LAEP is lower than what is recorded in property specific EPCs. The LAEP data has been used in this case.
Fuel bill costs are average figures and actual costs can vary depending on various factors such as the number of residents, lifestyle, and specific energy usage. The figures used are calculated based on information from over 350,000 EPCs that were created from January to March 2024.

*Based on average per EPC, actual energy usage and fuel bills will provide a more accurate view of the baseline. (LENDERS Fuel Bill Prediction Tool (epcmortgage.org.uk)



Number of homes
75 social
75 private

Highest properties in a single EPC band:
93 (EPC D)

Average CO_2e per home:
1.71 tonnes

Average heating demand whg owned
145.9 kWh/m^2

Average heating demand privately owned
154.4 kWh/m^2

Average fuel bill (£/per year)
£2,157.12*

Demographics

The community is characterised by an equal balance of female and male residents and limited ethnic diversity with 93% of resident's identifying as white.

Data

Understanding the demographic characteristics of a community supports a localised and 'inclusive' approach to Net Zero Neighbourhoods.

Using the 2021 census data to 'build a custom profile area tool', we developed a 'snapshot' of the community in Dudley Fields.

The snapshot is comprehensive, including five output areas covering the entire estate. This study area includes 150 homes; in Dudley Fields there are 145.

Data for certain areas outside of Dudley Fields was also included. Therefore, this data is not only representative of Dudley Fields, but it is also the closest we could obtain, providing much greater specificity than reviewing ward level data.

In some instances, the findings have been supplemented with other data sources, which have been referenced.

Key characteristics

- An almost equal balance of female (49.9%) and male (50.1%) residents
- A higher young and working age population than the Walsall average.
- Limited ethnic diversity, witnessed through 93% of residents' ethnicity being white, 19/20 residents born in the UK and 97% of households using English as their main language.
- The ethnic groups which are minorities within the community, reflect ethnic minorities on a national level. These are Black, Asian and Mixed ethnic groups.

This 'inclusive' approach is underpinned by The Inclusive Growth Framework, which when combined with the EQUANS Logic Model enables the monitoring and progress on the following factors:

Power and participation, affordable and safe places, connected communities, education and learning, health and wellbeing and equality.

Please see Appendix 2 for further details.

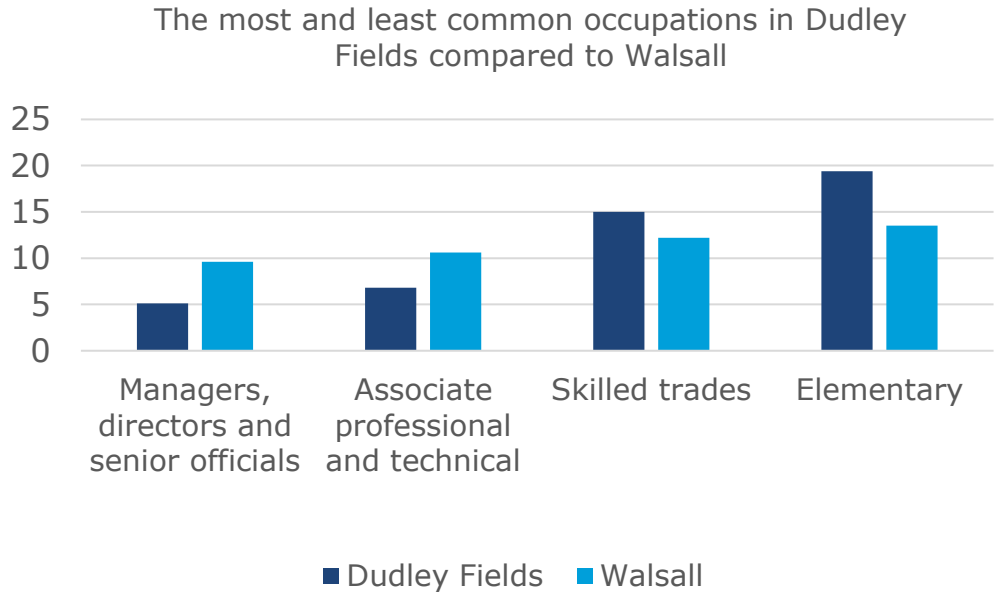
Area map showing the combined five ONS output areas used to collect community data.

Source: Office for National Statistics, 2021 Census, 2021

Employment and education

Highly skilled jobs are the least likely occupations amongst the neighbourhood's residents. This is consistent with a higher-than-average proportion of residents with no formal qualifications.

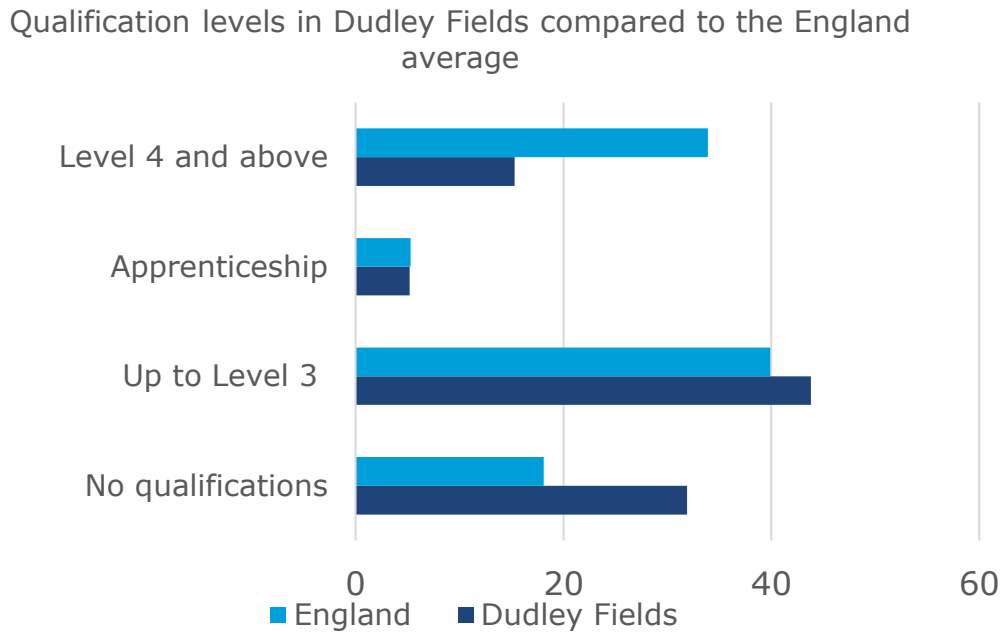
Employment:



51.4% are **in employment.**

- This is 1.3% lower than that of Walsall.

Qualification:



- In Dudley Fields, the least common occupations are higher skilled jobs. The most common jobs are skilled trades and elementary roles with a higher average than Walsall.
- Compared to England, Level 4 qualifications and above, are significantly lower in Dudley Fields and no qualifications significantly higher. Engagement strategy should be tailored to suit specific communication requirements (determined through community segmentation activities).

Deprivation and fuel poverty

A higher-than-average percentage of residents experiencing deprivation reflects the need for NZN solutions which address fuel poverty and quality of life.

1 2 3 4

72.3% of residents are in **up to three deprivation dimensions.**

- Compared to 51.6% in England and 59.5% in Walsall.

Deprivation as defined by the ONS 2021 Census.

Dudley Fields is in **Deprivation decile 1**

- Deprivation decile 1 represents the 10% most deprived neighbourhoods nationally.

Source: Ministry of Housing, Communities & Local Government, 2019.

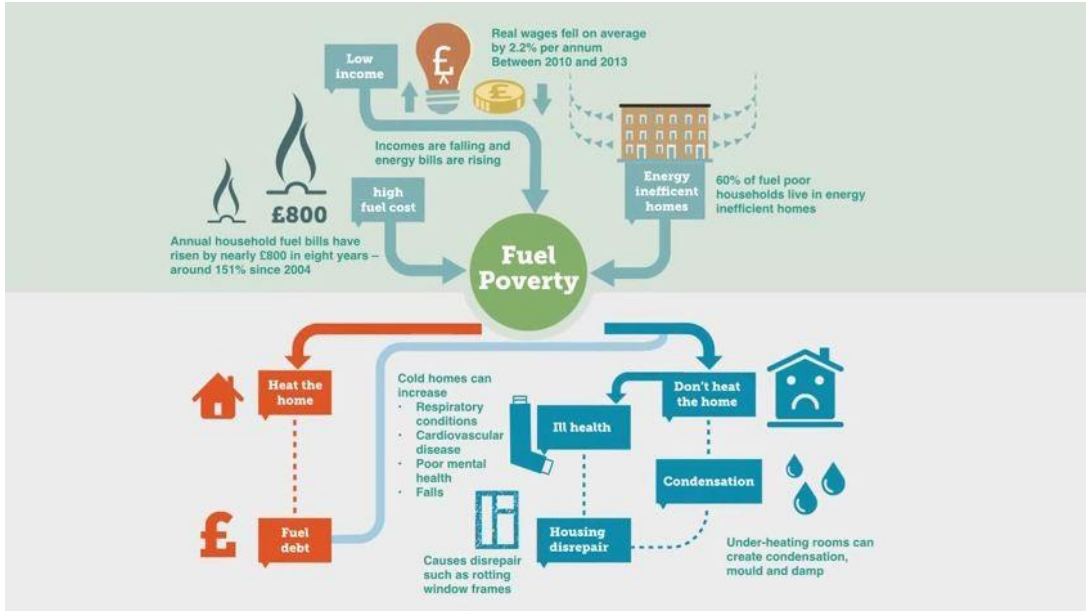
In Walsall North **21.7%** live in **fuel poverty**

- This is higher than the West Midlands' average of 17.8%

Source: National Energy Action (NEA), 2024

The NEA defines fuel poverty as households that needs to spend more than 10% of its income on energy to provide a satisfactory heating regime.

- The majority of residents live in the worst deprivation nationwide, fuel poverty is higher across the ward than in the West Midlands.
- There is a strong correlation between lower qualifications, increased manual labour, high deprivation and increased fuel poverty.
- There is a tangible need for NZN solutions which address co-benefits such as improved building comfort and levels of resident wellbeing.



Source: Camden - Tackling fuel poverty in Camden

Health

Lower than England average health outcomes justifies the need for a NZN which supports delivery of more comfortable homes and active travel options.

24.2% are people with disabilities under the Equality Act.

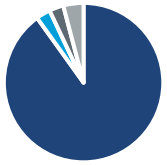
- This is 6.9% higher than the average for England.

73.3% residents rated their **health as good or very good.**

- This is below the 82.1% England average.

- The general health of the ward is poorer than that of the England average. Similar to fuel poverty statistics, this presents a point of buy-in for residents in the Net Zero Neighbourhood.
- As 10% of residents provide unpaid care, there may be a higher proportion of the community who would be less amenable to more intrusive installation of measures.
- The higher rate of disability in Dudley Fields should be carefully considered when developing the engagement plan – accessibility is essential. Greater understanding of disability types will inform this.

Provision of unpaid care in Dudley Fields



- Provides no unpaid care
- Provides 19 hours or less unpaid care a week
- Provides 20 to 49 hours unpaid care a week
- Provides 50 or more hours unpaid care a week

Source: Independent Living – ONS Health Index

Community assets and facilities

The community's assets and facilities include green spaces such as country parks, nature reserves and playing fields plus other amenities

- Across Dudley Fields there is plentiful access to green space, most notably with pockets of 'plantable space'. These are small grassland areas with little to no vibrancy by way of flora.
- All dwellings in the site boundary have access to rear gardens and the flats adjacent to the site have access to a larger area of green space.
- Southwest of Dudley Fields is Roughwood Country Park – which connects to Bentley Haye Local Nature Reserve, a notable community asset. A canal runs through Roughwood Country Park and connects residents to Walsall and Wolverhampton.
- However, there is limited accessibility to the canal. The canal towpath runs west of Dudley Fields and is only accessible by a set of steep concrete steps. There is dense greenery (large bushes and trees) surrounding the access point and no direct street lighting.
- Southwest of Dudley Fields is a primary school, which has significant playing fields.
- There are two registered community centres, the Romanian Community Centre and the whg Community Room. This seems generous for a community of this size.

Transport

Context of sustainable transport and mobility

People need access to a wide range of facilities and opportunities, goods and services for travel to work, education and training; health provision; shopping/retail; personal business; leisure etc.

Facilities are not necessarily near their homes which generates a need to travel. To access those facilities requires mobility for connectivity.

People generally choose suitable and affordable means of mobility that make the connections they require as easy and quick as possible.

Approach

Dudley Fields' residents have similar access needs to others; but have specific additional barriers to both mobility and connectivity (creating an unmet access need).

The pattern of mixed tenure of homes in Dudley Fields will influence travel behaviours. Research in 2007, for example, demonstrated that car ownership (and therefore the need for car parking) tends to be lower for those in social housing than for privately-owned homes (see reference to residential car parking research in the transport appendix). Occupiers of social housing were shown to be around 30% less likely to have access to a car compared with owner-occupiers. This could indicate residents in social housing are more reliant on other means of travel. This presents an opportunity to promote public transport and active travel for the neighbourhood – which is a positive low carbon action.

Observations and conclusions in the transport section of this report, looking at transport characteristics, access, mobility and connectivity, are based on examination of available data (in the following pages or linked in the transport appendix) and on two site visits to Dudley Fields by the team's transport planning specialist in April 2024.

Connectivity barriers

These barriers to connectivity are important to understand through consultation with Dudley Fields' residents, when developing interventions to enable residents to choose sustainable transportation options

Affordability/transport poverty

Capital costs (barriers to ownership)

Revenue costs (vehicle maintenance, insurance, fares and tickets).

Awareness/Confidence

Personal capability – whether I could learn to cycle safely, how far I could walk?

Travel options – do I know all the travel options for my journey? Can I use Google Maps to research all modes?

Ownership (means of travel)

Enables more travel choices, but assumes capital and revenue costs are affordable

Shared economy – availability does not always require ownership.

Physical

Personal capability (age, medical, parents with small children, etc)

Physical barriers (severance, distance) eg crossing the railway or canal.

Safety

Perceptions of danger

Highway safety

Personal safety on public transport

Personal safety when walking alone.

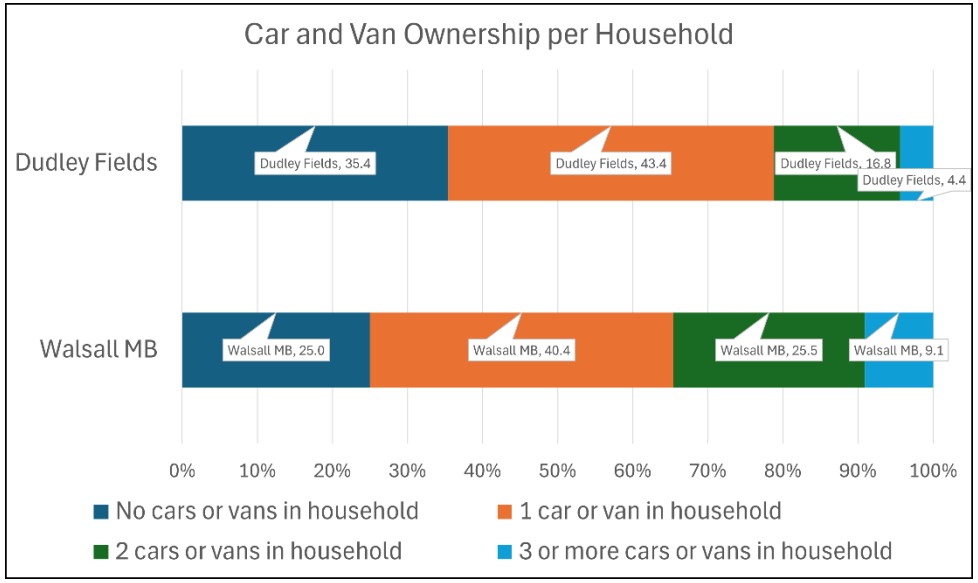
Transport characteristics from Census 2021

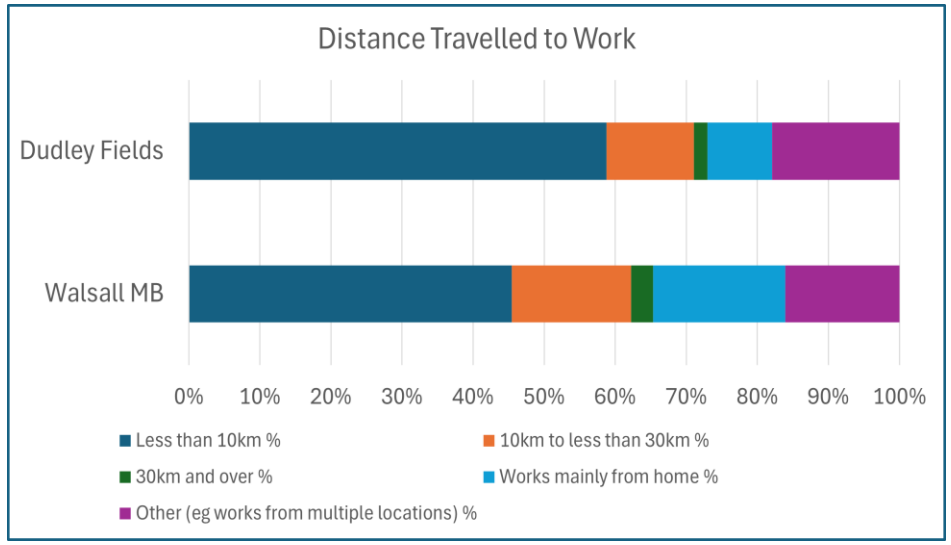
The national census provides three key measures relevant to transport:

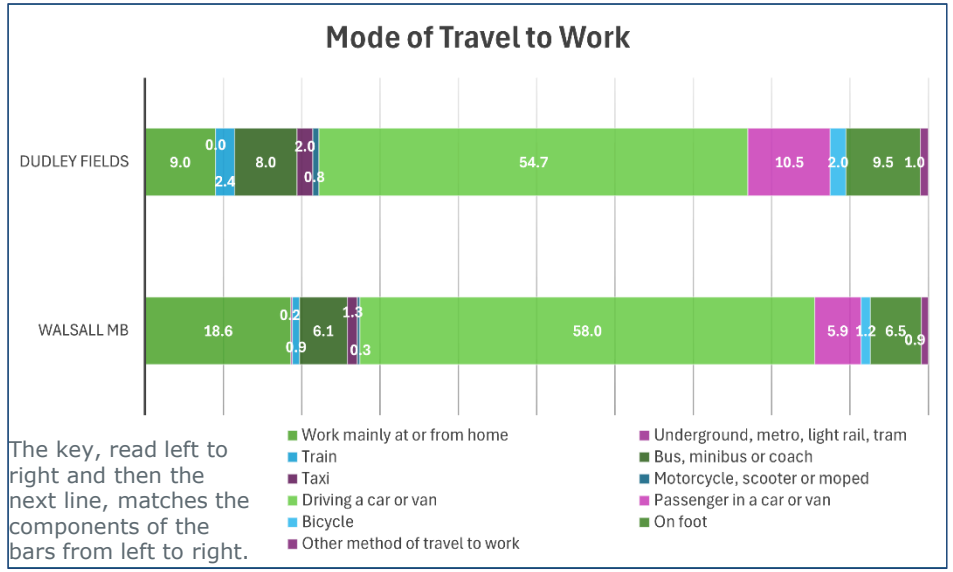
- Household ownership of cars and vans
- Distance travelled to work
- Mode of transport used for journeys to work

Dudley Fields is characterised by:

- Low car ownership – comparatively more households without cars, and fewer with 2+ cars
- Shorter distance travelled to work
- Low proportion of people home working
- More people getting to work by active travel, public transport, taxi and lifts in cars







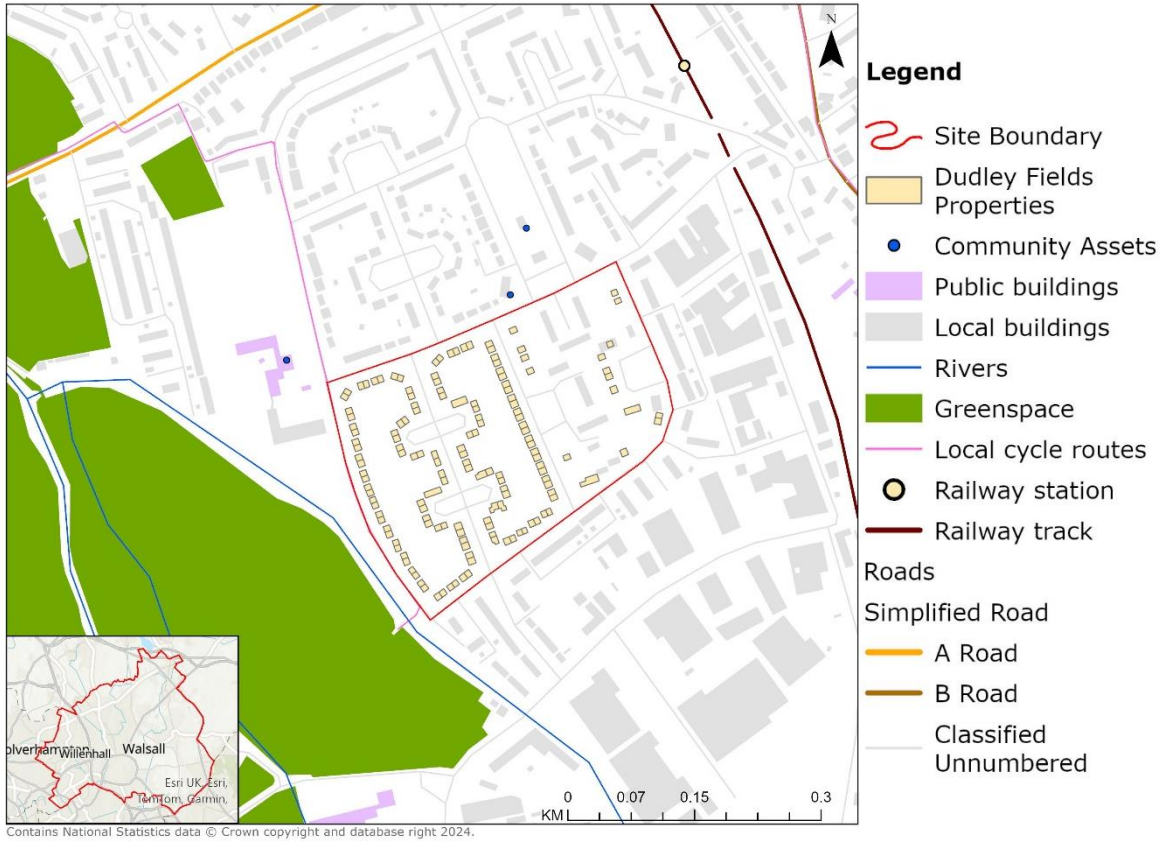
Local roads and active travel

Local roads

- Straightforward access to the wider road network (principal roads, M6 motorway)
- Car ownership is relatively low – 35.4% of households do not own a car or van (25% Walsall) – see data from Census 2021.
- Local parking mostly on street. Evidence of verge parking. A few dwellings have on-plot parking. No evidence of 'parking stress' (demand>supply).
- Dudley Fields is covered by a 20mph speed limit and a 7.5 tonne weight limit (except for loading).
- Traffic calming (speed cushions) on Heather Road only. Signs of past speed cushion removal on Central Drive and Coalway Road.

Active travel (walking, cycling, wheeling)

- Footways in generally good condition and of a suitable width for walking. Better crossings on Elmore Green Road and wider footways there and on Croxdene Avenue have been provided recently through the Bloxwich Town Deal.
- Some local facilities (shop, community hub, hairdresser etc) at southern end of Sneyd Hall Road, not far outside the study area.
- Local industrial area offers some opportunities for walking/cycling to work.
- Limited evidence of cycling or other 'wheeling'. One north-south designated cycle route on the western edge of the study area. Cycling possible on canal towpath (access via stepped footbridge off Ashley Road, but slope onto towpath from Willenhall Road is too steep for some).
- Recently installed cycle parking (12 stands) at Bloxwich station is covered by CCTV. There was no evidence of use on either visit in April.
- Observation of some young people using scooters.
- Speeding traffic observed – especially larger vehicles. May discourage walking or cycling. Traffic calming may be required.



Public transport

Trains

Bloxwich station is north-east of the Dudley Fields study area, just 8-12 minutes' walk away.
Services are operated by West Midlands Rail.
Access from the road to both platforms is step-free.

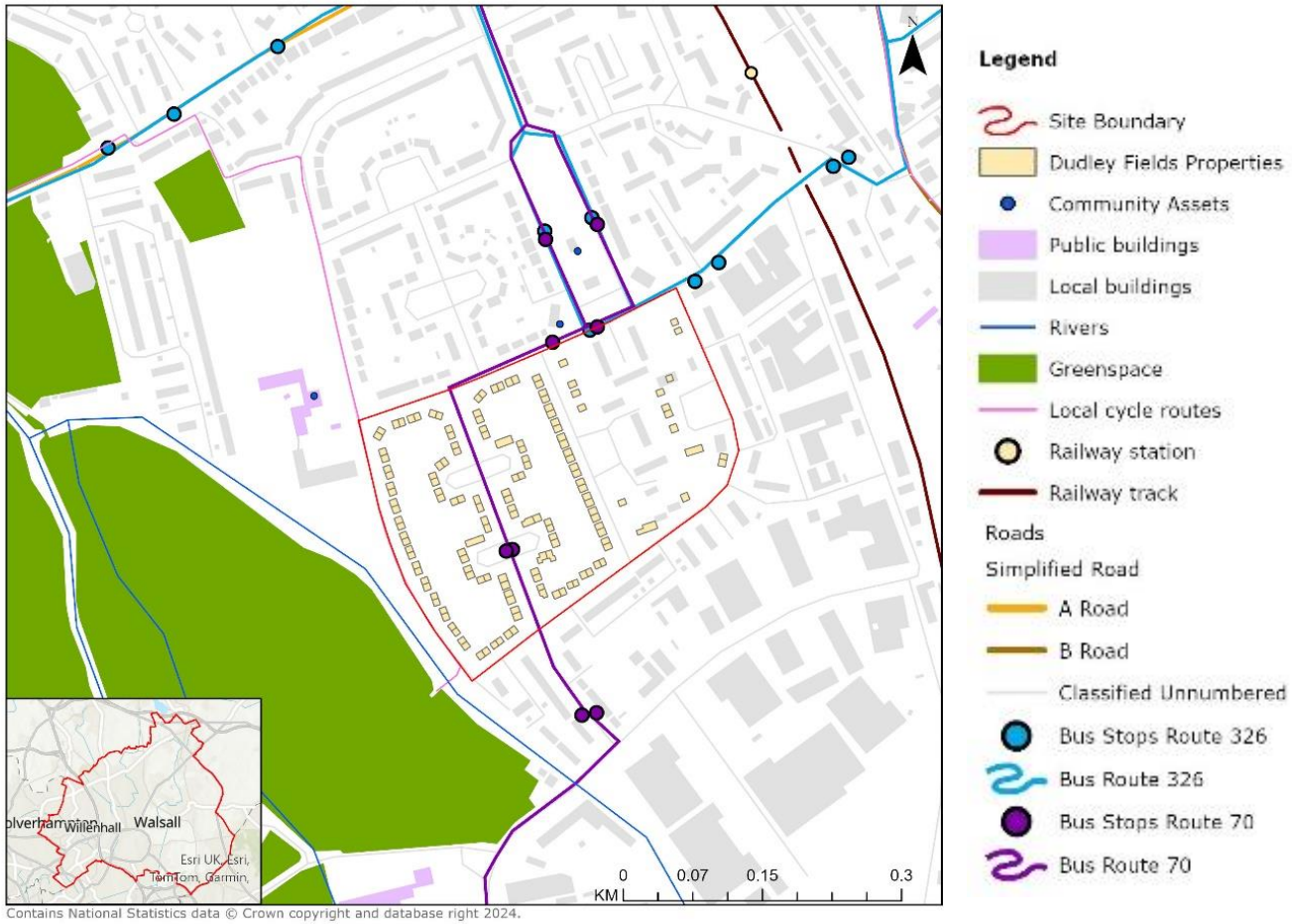
Buses

Two local services run through Dudley Fields. Bus 70 serves stops on Heather Road and Central Drive. Bus 326 stops on Central Drive. Further evaluation can identify if the frequency is adequate.

Services per hour	Mon-Sat	Sun
Bus 70: Bloxwich-Walsall	2	1
Bus 326: Bloxwich-Willenhall-Bilston	2	0
Train: Rugeley-Birmingham New St	2	1

Door-to-door

For people with mobility needs or challenges, there is also a 'Ring & Ride' service. Ring & Ride provides a demand-responsive solution and is booked 24-hours in advance.
24.2% of people in Dudley Fields have a disability (as defined by the Equality Act 2010), further evaluation required to see how many access this service.
https://www.tfwm.org.uk/who-we-are/what-we-do/accessible-transport.



Public transport access and fares

From/To	Walk Distance
Heather Road N end to Bloxwich Station	525m
Heather Road N end to stop for Bus 9 (on Sneyd Lane) to Wednesfield and Wolverhampton	640m
Heather Road N end to Bloxwich High Street (Victoria Road) bus stops (via Central Drive) for other services	1,050m
Heather Road S end to Bloxwich High Street (Church Street) bus stops (via railway footbridge) for other services	1,200m

Journey type	Ticket Type	Adult Fare
Single bus journey		£2.00 max: government fare cap; ends 31/12/2024
Multi-journeys by bus	Bus	£4.80 1-day, £39.00 10-days Other periods available
Train to/from New Street	Anytime Return	£9.00
Season ticket to New Street	Train Zone 5 - Zone 1	£32.40 for one week Other periods available
Rail, bus and tram	Network	£10.50 for one day Other periods available
Smart card (tap-in-tap out)	Swift	Load Bus, Train or Network tickets, or pre-paid pay-as-you-go

Note: Bus fares rose on 29 June 2024 – for example, a 1-day Bus ticket went from £4.50 to £4.80; and a 10-day Bus ticket from £36.00 to £39.00. Bus fares are capped to the daily bus fare.

Transport and community involvement

Before settling on a final action plan for potential transport measures, it is very important to ensure Dudley Fields residents (both social rented and privately owned) are as involved as possible.

This will enable:

Confirmation of *actual* transport needs, travel habits, mobility and connectivity barriers (surveys, travel diaries, interactive workshop).

Discussion of the links between transport choices and reduced environmental impact.

Community identification of potential transport action plan measures that would be of most help to them and make the best contribution to decarbonisation.

Creating conditions where the community has increasing influence and ‘ownership’ of the measures, driving them forward and monitoring the impacts/outcomes – from early promotion activities through to developing a new local Mobility Hub and Neighbourhood Travel Plan.

Strategic objectives for community engagement

A review of the local area's housing stock, transport and demographics indicates three key considerations to underpin for community engagement activities. These are developed upon further in the Net Zero Project Deliver Pathways section.

Addressing fuel poverty

Gathering household level, accurate and recent data

Engaging mixed tenure properties

Turner & Townsend

Portfolio of intervention options

Dudley Fields: Net Zero Neighbourhood

Defining net zero for Dudley Fields

An important aspect to be determined is the definition for net zero and what can be achieved in retrofitting existing housing stock, to achieve this, without shifting to offsetting.

The ambition for net zero for Walsall Council overall falls into two distinct target years.

Social housing stock	**2030**
Private housing stock	**2041**

Net zero refers to achieving a balance between the amount of greenhouse gas emissions produced and the amount removed from the atmosphere. For Dudley Fields that means retrofitting existing housing stock is a cost-effective way to reach net zero targets.

Put simply, a net zero operational home is one that is energy efficient and is heated and powered by low carbon energy. The overarching principle is to generally follow a fabric-first approach, but this does not consider the embodied carbon associated with the retrofit, so a low carbon heating (LCH) solution could prove to reduce whole life carbon more than a fabric first approach. This aspect will need to be investigated with deeper assessment of each archetype and combined monitoring data to understand the impact. Energy modeling combined with an embodied carbon assessment should be undertaken for a sample study. A further requirement is the impact of future climate and designing for climate resilience. In the drive to achieve net zero, retrofit enables climate adaptation measures and working with residents to increase climate resilience should be capitalised upon.

Through the initial target setting and assessments, a suitable target for homes can be determined to define the net zero ambitions for the neighbourhood. The following are some targets that will be explored, with the most suitable applied to the retrofit strategy

Target date	Baseline demand	Potential targets to achieve net zero		Design for Climate resilience
2030	Average heating demand whg owned **145.9 kWh/m²**	LETI *guide targets of a **60-80%** reduction in total energy consumption **Social -** 58.36 – 29.18 kWh/m²yr **Private -** 61.76 – 30.88 kWh/m²yr	Other heat demand targets: **SHDF** – 90 kWh/ m²/yr **EnerPHit** – 25 kWh/ m²/yr	**Nature-based solutions** - Urban trees and vegetation - Green roofs and walls - Rain gardens and bioswales **Non-nature based technical solutions** - Shutters or brise soleil to reduce overheating for climate resilience
2041	Average heating demand privately owned **154.4 kWh/m²**			

*Source: LETI (London Energy Transformation Initiative) Climate Emergency Design Guide, https://www.leti.uk/cedg

Housing decarbonisation - Retrofit guide

Initial assessment

Monitor energy use over at least six months, aiming for a whole year to establish baseline. Ideally this includes high consumption periods e.g. UK winter months.

Conduct retrofit assessments to determine potential improvements for each archetype.

Prioritise where there is no/out of date EPC

Review existing energy performance data using SAP ratings and carbon emissions.

Initial assessment may be repeated considering previous assessments.

Set objectives and targets

whg will establish specific targets aligned with their overall sustainability goals, for energy savings, EPCs and emissions reduction.

Setting realistic targets per archetype for example getting the EPC F Wates homes prioritised for retrofit to EPC C/NZ-ready.

Retrofit measures will ensure whg's goal of net zero by 2030 for social stock, as well as working towards WMCA's net zero by 2041 goal for the overall neighbourhood.

Undertaking fabric first only where sensible, where it is not, targeting LCH solutions.

Financial planning

Determine the budget available for retrofit, considering potential funding sources such as loans, grants and partnerships.

Using a phased approach, based on budget available, measures done now should tie into future projects/ plans through phased whole-house planning.

Identify retrofit opportunities

Monitoring equipment gives a view of energy use, moisture levels , indoor air quality among other aspects to show the worst performing homes for energy use, damp and mould risk etc.

Tailored approach to focus on worst homes, not a blanket approach, only do what is needed.

Engage stakeholders

Ensure all residents and other stakeholders are consulted and engaged with to gather their thoughts, concerns and build support for the retrofit measures taking place.

Communicate benefits of the retrofit measures such as reduced energy bills, environmental sustainability and improved comfort.

Establish resident willingness for monitoring of homes and demonstrate value and data captured.

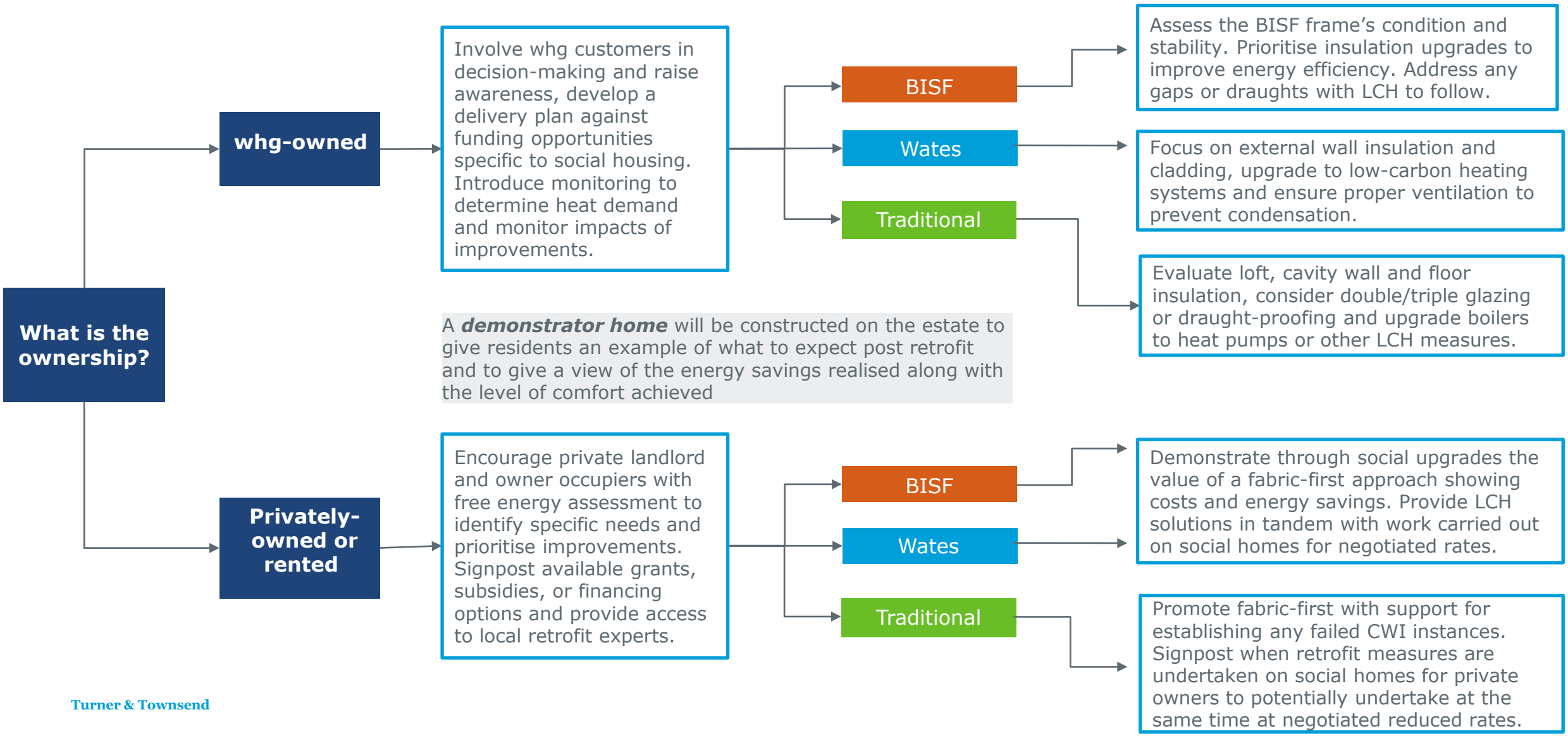
Measurement and verification

Once implemented, conduct regular assessments to measure energy savings and carbon reduction.

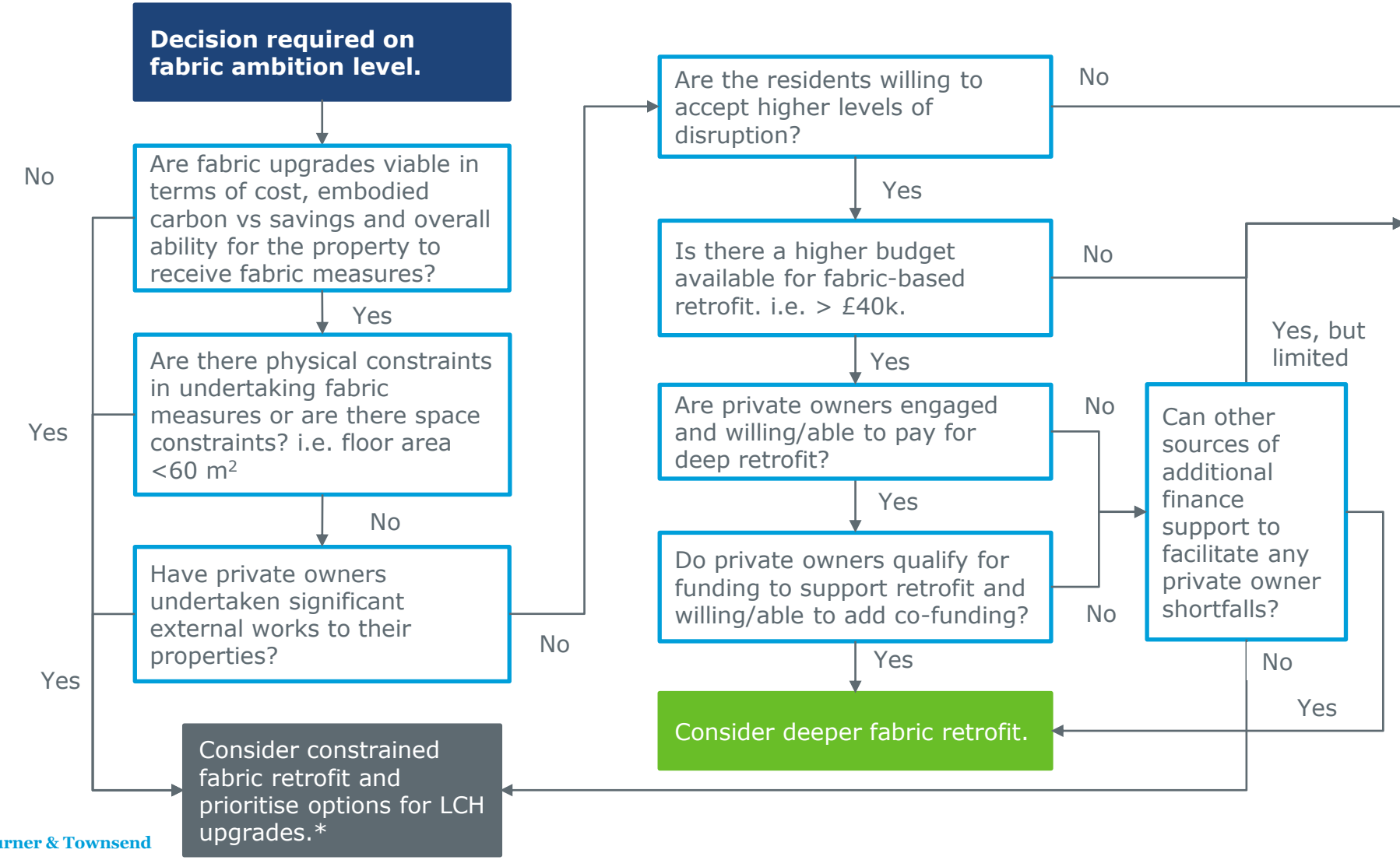
The assessments would be for a minimum of a year post installation, with longer periods to be investigated through resident engagement

A mix of digital meters and in person assessments to cover thermal performance, (temperature sensors), indoor air quality (digital meters and manual sampling) and moisture and humidity levels to record risk indicators such as damp and mould

Retrofit decision tree – overall



Retrofit decision tree – fabric approach



To achieve a 2041 net zero neighbourhood, engagement with private residents to undertake works on their property to any level of fabric retrofit is vital. To aid retrofit of able-to-pay households, funding through CStR will utilised to undertake assessments to provide valuable guidance and support on the most affordable/desirable retrofit solutions.

Housing decarbonisation - retrofit delivery plan

whg and the council's overall ambitions and targets for decarbonisation and achieving net zero can be broadly broken down into two categories.

- Social housing stock – net zero by 2030
- Privately owned - net zero by 2041.

The social stock allows for a great level of control with whg being able to implement retrofit over an aligned timeline to achieve net zero by 2030. This would largely focus on upfront monitoring, followed by a fabric first retrofit where relevant and lastly a switch to LCH based on reduced energy demand. The privately owned stock will be more complicated with significant funding support required along with careful community engagement for buy-in to undertake the required retrofit between now and 2041.

	2024 - 2030	2031 - 2041
Planning	Develop methodology on smart metering Engage private owners to carry out retrofit Boiler replacement programme including advice to private owners Establish support for remaining private owners with private funding Establish supply chain relationships for retrofit Set up energy centre in demo home Exploration of current LCH solutions Considerations around communal heating sources	Phasing out of all remaining fossil fuel energy supply
Delivery	Install smart meters prior to retrofit Retrofit of social homes – focus on fabric measures where relevant Demon-strator home Support private owners with retrofit LCH upgrades to priority homes Replace gas boilers with LCH alternative future proofed for DH/communal solutions	Move to full solar/renewable energy and LCH for entire stock Private homes retrofit delivery through developed private funding routes Support remaining private owners retrofit through negotiated supply chain.
Monitoring and evaluation	Model trialling of monitoring of environmental sensor Identify homes where fabric first is not suitable – prioritise for LCH Collect energy use and operation data	Provide real time anonymised data to community on savings realised in neighbourhood Support private home retrofit through oversight and project management support along with quality assurance.

Housing – possible typical solutions for each archetype

BISF

- External wall insulation – with a focus on minimising cold bridging due to the steel frames of the existing structure, and the difference in finish on ground floor vs first floor.
- Floor insulation in suspended floors – needs to be investigated for level of intrusion to occupants to establish viability.
- LCH with intelligent whole house ventilation, heating, cooling and hot water

Wates

- External wall insulation – with a focus on minimising cold bridging and protecting/treating reinforcement in the concrete panels that may have become exposed.
- Upgrades of windows and doors. With a view to reduce/eliminate cold bridges and issues with windows installed on the concrete mullions.
- Increase loft insulation to at least 270 mm where possible.

Traditional

- Increase loft insulation to at least 270 mm where possible.
- Cavity wall insulation – 50 social and private traditional homes, extent of cavity wall, as built with no insulation to be investigated.
- Installing double or triple-glazed windows and energy-efficient doors to improve thermal performance

Applicable to all

- Installing energy-efficient lighting fixtures and controls.
- External shading solutions for homes that recieve excess internal solar heat gains.
- Suitable ventilation, especially where airtightness has been increased, to provide suitable indoor air quality to prevent associated health risks.
- Replace boilers aligned to replacement cycles and failures with an ASHP or alternative LCH solution.
- Alternative domestic hot water solutions such as solar water heating or smart water tanks as applicable to each home.
- Solar photovoltaic panels, min 2.5 kWp with battery, where appropriate.

Housing – insulation solutions for each archetype

BISF

- Structural External Wall Insulation can enable BISF homes to be insulated without applying any additional loads to the weak outer leaf.
  - Previous applications have demonstrated that thermal performance can be improved greatly with the U value of the walls dropping from 1.29W/m2K to 0.22W/m2K
  - The decorative dashing aggregate can revive the facades of the houses.
- Structural External Wall Insulation systems are based on the performance of a lightweight stainless steel wire space frame with a 105mm insulation core. Panels of at least 1200 x 2400mm due to their spanning capability can be fixed into the steel frame, through the existing cladding, without requiring any fixings going into the weak outer leaf.

Wates

- Investigate the level of corrosion, particularly on the corners of the building, were water soaked into the concrete tends to cause spalling.
- Where joint and panel failure has occurred, the join must be treated first by cutting into them, putting some new steel structure in there or test the strength to make sure the building is structurally sound first of all.
- Where there's evidence that minor structural failure is likely, it would generally be the route to specify a structural EWI solution.

Traditional

- Identify the harder to treat properties in terms of fabric measures through initial assessment and prioritise for LCH upgrades.
- Evaluate the mix of insulation measures that provide the most optimal energy reaction, least impact on embodied carbon and still provides a suitable value for money solution.
  - Thickness of insulation to be considered at a property level to avoid a one size fits all solution.
  - Consideration of a hybrid CWI and EWI solution especially where most beneficial for reduction thermal bridges

Applicable to all

- Pre-retrofit installation of sensors to establish indoor air quality, temperature, humidity levels, etc. to prioritise properties with issues and design solutions based on data monitored at a property level.
- This could mean that a fabric first approach may not always be the way forward and homes that are performing highly in terms of energy efficiency will have a focus on LCH solutions with minor fabric upgrades such as draughtproofing, reduction of cold bridges, etc.
- Where it is practical and feasible, consider the use of low embodied carbon insulation

Energy systems methodology

To decarbonise the energy systems of Dudley Fields a desktop-based options analysis has been conducted.

The methodology is detailed below:

- Data from the LAEP+ tool was reviewed to assess the heat demand both within the estate and in the locality. This gave an indication as to the level of energy demand and potential anchor loads to meet that demand.
- Low-carbon energy technologies were reviewed to examine how to use heat sources available.
- Low-carbon technologies that utilise these energy sources are identified and specified based on the building type, age and condition of the estate.
- The spatial and technical context of the site has been investigated and options for decarbonising the energy system are presented in the following slides.
- These energy system options will reduce operational carbon on the estate because of their low-carbon nature, but no set evaluation per technology for carbon has been completed.
- Consideration was also given to retrofit plans for the estate as part of the energy systems review.

Some assumptions and limitations from this review include:

- Desktop only evaluation.
- No financial or carbon evaluation conducted.
- Assumed full load of heating from all properties, mixed tenure may present a challenge to some options.

Potential energy systems

Heat sources:

- Ground - heat from the ground can be utilised using a Ground Source Heat Pump (GSHP), either through boreholes or shallow piping. Using boreholes, which take up less area and can be quickly drilled under the roads, is more suitable. However, there is a triangular area of land between the canal, estate and Busill Jones Primary School that could be suitable and some green spaces within the development.
- Water - heat from the canal could be utilised using an industrial Water Source Heat Pump, the proximity of the canal to the estate makes this a viable option but it would need to be modelled. Planning and permissions from the Canal and River Trust and Environment Agency would need to be sought.
- Both ground and water source heat pumps would require a centralised energy centre and heat network to be created to reach all the properties.
- Air – heat from the air can be utilised using Air Source Heat Pumps (ASHP). This would typically be individual units in each house, however, there are opportunities to create an ambient loop, connecting the systems together to improve efficiency.
- Energy from Waste (EfW): Planning permission has been given in principle for a new EfW site to be built less than a kilometre from the Dudley Fields Estate. An EfW site collects non-hazardous waste, otherwise destined for landfill and combusts it, generating waste heat which could be connected via a pipe and heat exchangers to the estate. This would need to be modelled alongside other options and further investigations into whether Encyclis has already assigned the heat in principle to another use.

Electricity sources:

- Domestic Solar PV - Solar PV panels on household rooftops would bring energy bills down and mitigate electricity consumption increases from heat pump solutions. There are different ownership models that could be employed to implement this including, community energy scheme, council owned, microgrid or individually owned. In grouped schemes, storage could be included to improve efficiency of the energy system at the estate. Busill Jones Primary School would also offer an opportunity for community solar due to its proximity to the estate.
- Solar/Wind Farm - The estate could connect to a solar farm or wind turbines through a Power Purchase Agreement (PPA) where the generation could be remote. This allows zero carbon electricity to be consumed by the estate without additional upfront capital costs. It could be a community-owned scheme to provide cheap energy in perpetuity.

Energy systems options analysis

Option	Description	Pros and Cons	Stakeholders	Application to Dudley Fields	Delivery Model
Retrofit estate with heat pumps and solar PV	Air Source Heat Pumps (ASHP) • Electric heating systems that extract heat from the air. They are three times more efficient than traditional boilers; they can produce more heat with less energy input. For every one unit of energy used, it can produce between 2.5 and 4+ units of heat.	+ Clean energy + Smaller footprint + Highly efficient compared to standard electrical heat + Lower upfront costs compared to GSHP - Some properties may need more expensive insulation	Dudley Fields' residents, Retrofit contractor, whg, Walsall Council planning department	Properties within Dudley Fields will receive some retrofit measures, including low-carbon heating if they are eligible. This will be after sufficient insulation and ventilation measures.	Landlord owned for the whg properties, but individually owned for owner occupied or private tenanted properties.
	• Solar PV can help reduce the additional power requirements from the grid as heating and transport move away from fossil fuels. • Solar can also be an asset for the community to enable local solutions to the energy demand.	+ Reduce consumer bills + Sell energy back to the grid + Reduce grid dependence + Quiet + Low maintenance + Scalable + Grants/funding available - Install costs - Performance affected by the weather - Not all roof types/orientations are suitable - Could create unfair access to cheap energy for some and none for others	Dudley Fields' residents, Retrofit contractor, whg, Walsall Council planning department	Solar PV would assist in generating clean power to be used within the estate. This could be installed on individual properties to improve their SAP score.	Landlord owned for the whg properties, but individually owned for owner occupied or private tenanted properties. whg could facilitate as a roll-out

Energy systems options analysis

Option	Description	Pros and Cons	Stakeholders	Application to Dudley Fields	Delivery Model
Heat Network	• Walsall Council have previously conducted feasibility studies in utilising a district heat network from the proposed Encyclis Energy from Waste (EfW) plant. • At the neighbourhood level, smaller heat networks that combine communal ASHP/GSHP and thermal storage could help alleviate fuel poverty and provide comfort for residents.	+ Cost effective + Utilise waste heat + Reduce consumer bills + Catalyst for local growth - Installation cost - Can still be powered by gas	Encyclis, Walsall Council, Dudley Fields residents, whg	If the plans proceed, a connection to Dudley Fields could present an option in the future.	Ideally owned and run by a private energy provider, however there is an option that the council could own the network, that the Dudley Fields community benefits from.
Community Energy	• A community solar energy plant would supply the homes with power either solar or wind energy. This can be local, remote or a combination. • This model could use a Power Purchase Agreement (PPA) and a local energy company that owns the energy generated at the site, sells the power to the grid.	+ Financially resilient community + Local value creation + Equality of members - Reliant on community buy in and engagement	Local energy company, Walsall Council, whg, residents, Walsall Council planning department.	Dudley Fields could explore this option by conducting a feasibility study into suitable locations and partners	This could be a council owned model, community owned, or owned by a commercial business that sells energy at a preferential rate.
Ambient heat loop	• Similar to a district heating system, the ambient loop system operates at significantly lower temperatures than traditional communal high temperature heating systems. • The water is sent at a medium temperature around the network. • Each building then has a heat pump to use this ambient loop as a heat source, giving or taking heat from it. • Helps to balance a network if some properties are hot and some are cold.	+ Minimises energy loss + Consumer bill savings - Installation costs	Ambient loop installers, Walsall Council, Whg, residents, Walsall Council planning department.	Dudley Fields could have this as an offshoot of the heat network. This could be explored once the retrofit insulation and ventilation measures have been installed.	This is likely to be a council owned model, that would require significant investment from key stakeholders.

Energy systems next steps

To continue reviewing the options to decarbonise the energy system for Dudley Fields, it is recommended to follow these steps:

- Reduce the number of options based on application of local knowledge to prepare for the next stage of feasibility studies.
- The LAEP+ tool can also be used to reduce the options taken forward for feasibility studies.
- The objectives of the Construction Skills through Regeneration (CStR) scheme should also be consulted within the appraisal to help keep the benefits within the locality such as: employing local companies as part of the supply chain, employing local people and buying local goods and services.
- Conduct a formal options appraisal, by proceeding with two or three energy system options. This appraisal should cover key aspects such as:
  - Stakeholder engagement plan
  - Costing plan per option
  - Funding mechanisms (this includes but is not limited to: SHDF, ECO+, ECO 4, Boiler Upgrade Grant, Green Heat Network Fund, CStR).

From this full options appraisal, more informed decisions can be made to decarbonise the energy systems of Dudley Fields.

Transport – selecting appropriate interventions

- Subject to community engagement and feedback about transport needs, potential transport measures or interventions need to be tested for their specific relevance.

- The toolkit of transport solutions recommended in this report have been assessed for:

1. Addressing the needs identified from the available desktop evidence
2. Little or no reliance on 'structural' (eg significant socio-economic) change
3. Deliverability: ease and pace of implementation
4. Fit with net-zero and transport policy objectives
5. Likelihood of support from other agencies/potential partner organisations
6. Aimed at overcoming identified connectivity barriers
7. Likely affordability within the NZN programme

Actions centred around promoting Active Travel (walking, cycling, wheeling) have the best fit with these criteria overall – especially in terms of costs, ease of implementation and potential support from other agencies. Promotion of Active Travel helps realise co-benefits of better health through more physical activity and positively supports the low-income community.

Actions centred on awareness raising about travel options and opportunities also fit the criteria well. This is strongly linked to stronger community involvement in the NZN project.

Actions centred on physical infrastructure (e.g. better paths/routes for walking and cycling), or public transport will take longer from inception to delivery, are more dependent on outside agency commitment/support and are likely to be more expensive – though that does not rule them out from consideration.

Ideally, the aim should be to create a new Mobility Hub (centred around the existing community centre facility and activities) to provide co-located travel solutions, such as a car club (using EVs), EV charging, hire of bikes/ebikes/scooters/ mobility scooters, bike repairs/buying advice, travel information etc.

Transport – Toolkit of Solutions

Mobility Hub Stage 1

Making bikes available

- Low-cost /subsidised/interest-free loans to buy a bike and cycling equipment
- Bike, e-bike, mobility scooter hire – and e-scooters when legally permitted

Training for cycling

- Learning 'road sense' and personal safety techniques (may also encourage more walking)
- Higher profile for existing cycling training available in the wider area
- Training targeted for women
- Training targeted for people in ethnic minorities

Mobility Hub Stage 2

Biking support

- Bike repairs and maintenance advice
- Creating secure bike storage at home or shared lockable street stores
- Local cycling groups (including women's groups) and group trips

Decarbonising the car:

- Ride sharing network
- Community car club (with Black Country Transport/Transport for West Midlands support)
- Electric vehicle (EV) charging (see emerging WMBC EV strategy)

Promotion (Mobility Hub activity)

Promoting active travel

- Promoting walking and cycling for health
- Local promotional bike events (eg getting people to try different kinds of bikes designed for different purposes)

Across different modes:

- Improving awareness of all lower-carbon travel options
- Personalised travel planning (reducing need to use car)

For Further Investigation with transport partners

Paths and routes

- Technical audit of key walk and cycle routes
- Local disability access audit
- Integrate with local schools' green travel plans and measures (eg walking bus, safe cycle storage and cycling training)

Targeted fares discounts, linked to:

- Personal mode shift commitment
- Personal financial need or job searching
- Fixed time period/time limited
- Interest-free season ticket loans

Offer extra, direct services by bus:

- 'Bend' or 'extend' existing bus routes (new routes too expensive)
- Community transport role?

Active Travel | **Cross-Mode**

Car Travel | **Public Transport**

Transport toolkit – cost, timing, agencies

Toolkit item	Logic Model reference	Barriers addressed	Relative cost	Timing	Key agencies/ partners
Promote (active travel)	IM.23	Awareness	£	Immediate	TfWM, WMBC, local cycle clubs, retailers
Make bikes available	O.13, IM.23, O.17	Affordability, Ownership	££	Immediate	TfWM, WMBC, retailers
Biking support	O.13, IM.23, O.18	Affordability, Awareness, Ownership, Physical	££	Immediate	TfWM, WMBC, local cycle clubs, retailers
Training for cycling	IM.23	Awareness, Physical, Safety	££	Immediate	TfWM, WMBC, local cycle clubs
Paths and routes	IM.23, IM.26, IM.27, O.18	Physical, Safety	£££	Short-term	TfWM, WMBC
Target fares discounts	IM.24, O.14	Affordability	£££	1-2 years	TfWM
Bus network changes	IM.22, IM.24, O.15	Affordability, Physical	££££	2-3 years	TfWM
Cross-mode activities	O.16	Awareness	££	Immediate	TfWM, BCT, WMBC
Decarbonising the car	O.12, O.13	Affordability, Ownership	£££	1-2 years	TfWM, BCT, WMBC

TfWM = Transport for West Midlands
BCT = Black Country Transport
WMCA = West Midlands Combined Authority

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Net zero project delivery pathways

Dudley Fields: Net Zero Neighbourhood

Roles

Roles and responsibilities required to deliver retrofit to a mixed-tenure estate

Partnership developing the Net Zero Neighbourhood

West Midlands Combined Authority (WMCA)

Leading financing and coordinating retrofit initiatives, allocating funds for retrofit projects across the region. Along with developing policies and strategies to promote energy efficiency and decarbonisation, it facilitates collaboration with local councils, housing groups, and other stakeholders for effective use of funds and tracking project outcomes. WMCA also plays an important role ensuring neighbourhood data feeds into regional planning and supports in follow on technoeconomic feasibility studies.

Walsall Council

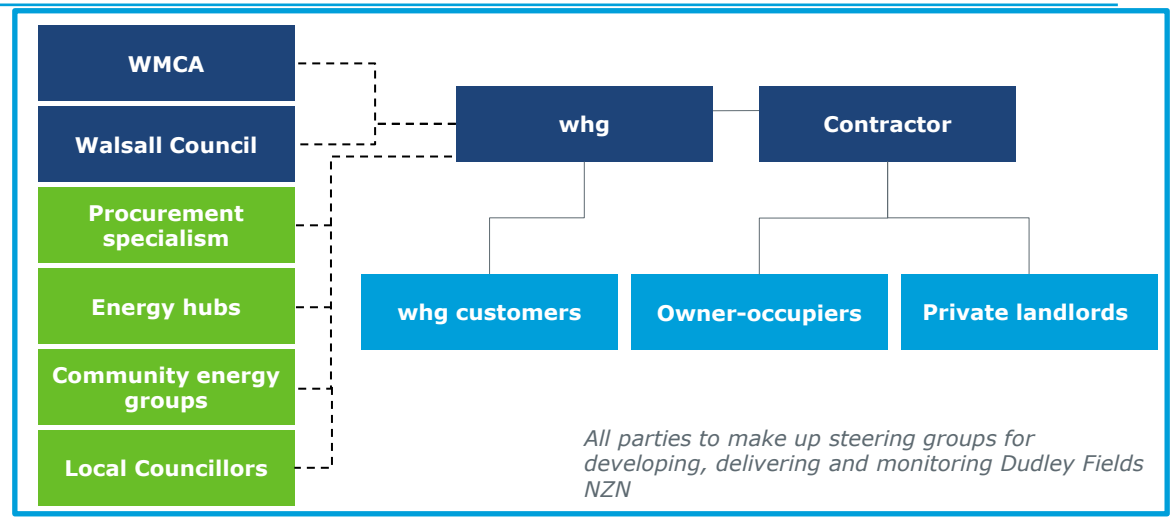
Overall management of housing stock within the council, identifying retrofit needs based on housing conditions and energy efficiency goals. Granting planning permissions for retrofit work and engaging residents and community groups in decision-making and ultimately ensuring retrofit projects adhere to regulations and standards. This extends to the Council's housing team working with private homeowners including private landlords and private tenants

whg

Through ownership and management of the housing stock, perform a project management role overseeing retrofit projects, including procurement, contractor management and quality control. Communicating with tenants, addressing concerns, and obtaining consent while aligning such with financial planning for retrofit costs and exploring funding options. Ultimately also collecting data on energy usage and retrofit impact.

Private landlords

Property owners within the mixed-tenure estate need to be buy-in for collaboration, involving coordinating with whg and Walsall Council housing team. They will also need to consider compliance and that their properties meet energy efficiency standards as well as informing tenants about retrofit activities and potential disruptions. Private renters also need to be engaged based on their role of using the property and engaging in decision making for the estate's wider initiatives.



Energy hubs

Energy hubs provide expertise and resources relating to energy efficiency and fuel poverty reduction, offering technical guidance and advice on insulation, heating systems and renewable energy. There could be further support for training local retrofit professionals and contractors, along with exploring new technologies and best practice. Walsall Energy Action Project (WEAP) are creating energy hubs un the region, including at Bloxwich Launchpad

Community energy groups

Community groups represent residents' interests and promote engagement, advocating for residents' needs during retrofit planning, Educating residents about the benefits of retrofit and providing feedback to Walsall Council and whg.

Procurement specialism

Bringing in knowledge of procurement processes, responsibility over supply chain management, strategic guidance on managing procurement of materials, services, and contractors.

Contractor

A contractor will be in place to manage retrofit works in the private properties in the Dudley Fields estate.

Role of the community, stakeholders and partners

By identifying and segmenting our distinct stakeholder groups, we are able to devise more effective methods for engagement.

Aligned to the Human-Centric Design process, it is important to understand the community, stakeholders and partners key to this project. A stakeholder mapping and prioritisation workshop with whg and WMBC, identified seven key stakeholder groups, at varyingly high levels of influence and interest to the project.

Who are our stakeholder groups?

It is advised that the following community groups are drawn into engagement:

1. Dudley Fields general population
2. Young families
3. Elderly and vulnerable people
4. Local councillors
5. Community groups and assets (e.g. hubs, schools, centres)
6. whg's customer facing teams
7. Walsall Council

Maintenance of stakeholder segmentation:

- Quarterly stakeholder mapping activities should be undertaken with the community key masters.
- Dudley Fields' ambassadors should provide quarterly nominations for additional ambassadors considered to be able to support the engagement.
- The project team should review the appropriateness and effectiveness of segmentations on a quarterly basis.

Segmentation of stakeholder groups by role:

It is recommended that the stakeholder groups are communicated through the below segmentations to harness their influential role on the project.

Segmentation	Who?	Why?	Method for engagement
Community influencers	Individuals in influential positions within the community such as local councillors, community group and asset leaders, members of whg's customer-facing teams and departmental officers of Walsall Council.	To effectively manage expectations of those with influence and understand their viewpoints in a controlled setting to support key decisions.	▪ Starting early in the project. ▪ Hybrid meetings with written follow-up. ▪ Scale-down engagement over the lifetime of the project.
Dudley Fields ambassadors	A selection of individuals that represent all segments of the resident population.	Ambassadors will act as local champions by disseminating information and feeding back community views.	▪ Start early in the project to identify ambassadors. ▪ Engagement segment fully aligned to when community engagement begins (steering group). ▪ Maintain involvement consistently through project lifetime.
Youth Advisory Group (YAG)	Young people who live local to Bloxwich and in surrounding areas.	To support the engagement of the community through the dissemination of information,	▪ Existing YAG structure ▪ Develop mini-projects that can be used to upskill the YAG and engage the wider community. ▪ Maintain involvement consistently throughout project lifetime.
Insightful extended partners	A network of other project teams delivering NZN and Community Hubs	To share experience and learnings from delivering NZN and other community energy projects.	▪ Utilise existing forum for NZN insight sharing. ▪ Engage hubs through Walsall Council following the submission of NZN. Meet quarterly for guidance and maintain through to final delivery phase.

Community engagement: Strategic objectives

Community engagement is central to the Net Zero Neighbourhood approach, which seeks to deliver interventions 'with' a community as opposed to 'to' a community. Effective community engagement is critical to delivery – without it the viability of the project is at risk.

Central to the community engagement plan (CEP) is a set of strategic objectives which will unlock NZN success through said engagement. These objectives are interdependent:

Build trust

No.	Objective	Rationalisation	Relevance to community baseline
1	Raise awareness and secure community buy-in.	Awareness raising of the project and co-benefits is key to meeting all objectives. Securing buy-in to the project will underpin the co-design process.	▪ Identified tangible need for energy efficiency improvements in homes. ▪ Lower than national average of Level 4 qualifications and higher than national average of no qualifications – significant upskilling piece.
2	Meaningfully engage with the Dudley Fields community on a continual, planned basis.	Implement a robust engagement plan that will reach all community members and meet their communication needs.	▪ As expected, stakeholder mapping workshop identified that different demographics have different preferences for communication.
3	Leverage key stakeholder groups.	Positively manage stakeholders to utilise their influence and importance to the project.	▪ Community key actors identified as influential stakeholders who are likely to impact the views of the community.
4	Create effective opportunities for co-creation of solutions with a guided approach.	Community input into the appropriateness and amenability of proposed solutions is required for effective community buy-in to the project.	• Majority of residents live in the worst deprivation nationwide – their participation to deliver and embed lasting change is critical.
5	Enact broader sustainability change management.	To support long-term change to a healthier and more resilient community, broader sustainability change management is required.	

Community engagement with compelling propositions

A methodology for community engagement defined by needs, segmentation and data

Further segmentation is required to underpin the community engagement strategy and associated activity. Segmentation will support the project to communicate key messages by understanding each specific group.

Segmentation by engagement need:

Through the stakeholder mapping and prioritisation workshop we identified two key segmentations of community members, by way of their preferred communication.

No.	Segment	Identified preferred communication method	Key considerations
1	Young families and individuals	▪ Concise information via social media ▪ Informal in-person engagement. ▪ Through existing community structures e.g. schools notably Bloxwich and Walsall Academy.	▪ Influenced by a future life in Dudley Fields. ▪ Long term behaviour change is critical as expected to be long term residents.
2	Elderly and vulnerable individuals	▪ More likely to engage with printed materials that are given or posted ▪ In-person events at whg community room with skilled presenters and relatable storytelling.	▪ Influence is unclear and not fully understood by project team. ▪ Suspicion surrounding scams may impact trust-building. ▪ Expected increased difficulty to communicate co-benefits.

Method for community segmentation by need:

- Consolidated Analysis Centres, Inc (CACI) methodology will support segmentation.
- Using CACI database (consumer and demographic data), segments are based on CACI standard variables. The data sets are combined to identify anomalies, gaps additional needs.
- This is likely to identify 'hard-to-reach' residents who will require a different engagement approach and support through the retrofit process.
- Anomalies identified via the CACI exercise should be followed up with neighbourhood teams and identified Dudley Fields ambassadors.
- Engagement with Dudley Fields residents should be undertaken via a sample survey to deepen understanding of their engagement preferences (needs), motivations and willingness to engage. The results should be mapped and synthesised to define detailed segmentations.
- Following this, the engagement strategy should be tailored according to segment needs.
- Once complete, the segmentation should be updated and reviewed on a six-monthly basis, as the project and the community's communication needs evolve.
- We are mindful that each community is a collection of individuals with different needs and interests. It is not a homogenous group whose views can always be consolidated into a single 'community view'.

Community engagement strategy

A high-level engagement strategy which defines key actions under phased focus areas for Year 1 of delivery

Build trust → **Leverage trust**

Date and engagement focus*	Aug 24 - Sep 24	Oct 24 – Dec 24	Jan 25 – April 25	May 25 – July 25	Oct 24– July 25
	Deepen the understanding of Dudley Fields community segments	**Raise awareness**	**Secure community buy-in**	**Consult**	**Start works**
High level activity	▪ Complete detailed community segmentation based on engagement needs. ▪ Deepen understanding of accessibility requirements across neighbourhood. ▪ Work with community to identify value of community assets as places to hold engagement vents e.g. whg community room and other familiar spaces. ▪ Identify most fuel poor homes for intervention using the Fuel Poverty Vulnerability Indicator (FPVI). ▪ Brief the core and wider project team on the NZN aims and strategic objectives. ▪ Establish a community NZN steering group and identify any existing groups who could foster this forum. ▪ Map key messaging with the community steering group. ▪ Promote and install monitors to engage customers through learning. ★	▪ Test and consolidate key messaging. ★ ▪ Conduct public consultation on sense of place/areas of value ▪ Define co-benefits with a cross-section of the community ▪ Hold informal engagement sessions e.g. bingo, world food evening, community walk. ▪ Soft launch programme through in-person and digital communications ▪ Engage with existing local forums and community hubs ▪ Distribute sustainable behaviours survey ▪ Deliver targeted engagement activities to promote co-benefits ★ ▪ Implement transport engagement recommendations	▪ Conduct an outcomes setting workshop with key stakeholders (identified segments) and drawn down on logic model indicators ▪ Prepare social value strategy especially relating to local skills/employment in retrofit ▪ Monitor survey findings ▪ Analyse findings from sustainable behaviours survey ▪ Do survey findings impact expected solutions? ▪ Weekly-drop-ins for questions and queries ▪ Identify the unengaged and prepare a new approach ▪ Provision of guidance and support on applicable retrofit measures ●	▪ Update segmentation as required. ▪ Present solutions to the community along with the identified high value assets, outcomes set and key survey findings. ★ ▪ Re-issue survey with additional questions relating to solution designing. ▪ Hold a series of consultations to co-design solutions in a structured approach e.g. community debate. ▪ Monitor survey results and overall engagement. ▪ Share the planned works programme with the community	▪ Create a forum for complaints, questions and suggestions. ★ ▪ Continue to run informal events. ▪ Enlist a NZN Project Officer to hold weekly drop-ins to respond to queries across the NZN. ▪ Share customer retrofit success case studies to improve buy-in from private landlords, private tenants and owner occupiers who have refused retrofit works ●

*Each focus will run throughout the strategy and project with notable focus when identified as required.

Work to be delivered by the existing climate change team until the employment of the NZN Project Officer and NZN Steering Groups.

Tenure type key

No symbol: Whole community

★ whg customers

● Private owner/landlord/tenant

Baseline relevance					
Engagement objective met	1, 2, 5	2, 4, 5	1, 2, 3	1, 3, 4	1, 2, 5

Best practice community engagement: Harnessing the community

A series of case studies on best practice for effective community engagement

Case study	Gravesham Borough Council
Intervention and tenure	Clean heating in social housing
Approach	• Pre-engagement: consulting customers in person to find out their current energy bills and experiences with the current energy system. This helped shape design. • Resident Liaison Officer (RLO) held weekly coffee mornings – customers had an opportunity to socialise and discuss the project. • Contractors facilitated and paid for several engagement days, including: fish and chip lunches and afternoon teas – an opportunity to 'give back' to customers during their patience in during works. • RLO undertook frequent post monitoring surveys to determine satisfaction, identify improvement needs and provide assistance with systems. Two, four and six month follow up surveys. • Resident videos publishes – showing footage of heat pump installation and resident feedback (use of other resident case studies) • Library of 'self help' videos produced on how customers can use their new systems – user friendly.
How it worked	• 100% customers noticed improvement in their heating and hot water • 90% customers noticed improvement in energy bills

Case study	South-East London Community Energy Co-op
Intervention and tenure	Area-based retrofit for cross tenure
Approach	• Street level approach to retrofit through the 'Future Fit Streets programme'. • Provided free retrofit guidance to households on the street. • Guidance was delivered by a qualified Retrofit Coordinator (RC) and included development of whole house plans, support for accessing funding, and support in engaging with suppliers.
How it worked	• Success in engaging through existing community groups. • Information sharing in a familiar setting attracted greater numbers (there was a better turn out to 'retrofit parties' in neighbours' homes than an event at a community hall). • Finance to install measures has been a challenge for the project resulting in a low level of retrofit activity.

Lessons for NZN engagement:
Community centric engagement

- Leverage existing community groups and build more community cohesion.
- Target informal yet appealing events which respond to the detailed community segments identified early on.
- Not all events must have a direct output related to the plan, events can be used to build up trust informally.
- Through community ambassadors the project team should seek out local and familiar venues to hold engagements.
- Consider upskilling the Housing and project team in Level 2 Retrofit Advisor qualification to provide detailed guidance and answer questions effectively.
- Leverage interactive knowledge and awareness building tools such as demonstrator homes for residents to tour.

Best practice community engagement: Co-design

A series of case studies on best practice for effective community engagement and co-design

Case study	Royal Borough Kensington & Chelsea
Intervention and tenure	Masterplan consultation
Approach	• Drop-ins, workshops and face-to-face meetings were offered to community groups. • To extend the 'reach' of the consultation, RBKC used the digital platform **Built ID** to reduce the barriers to community engagement with a variety of consultation tools. • The first survey RBKC launched used heavy social media advertising. • Built ID responses represented a different demographic to traditional responses – under 35, pro-development and ethnically diverse. • Longer-term engagement will be key in identified hard to reach communities to build long term relationships.
How it worked	• Drop-ins in busy locations and pop-ups in supermarkets were very successful. • Workshops advertised with 7,000 flyers attracted only a handful of attendees. • Engagement via community groups was the most successful method. • A less formal, personal approach generated more trust and useful dialogue. The RBKC team had more time to explain key issues. • Social media advertisement attracted 1,200 unique users. The council collected demographic data and feedback they would not otherwise have received. The second round of responses was significantly less – expected the novelty wore off.

Case study	Greater Cambridge Shared Planning
Intervention and tenure	Local Plan consultation
Approach	• A range of face to face and digital methods translated the consultation document. Digital: • created a digital, accessible, mobile-friendly and graphics-led website. Unlike conventional consultations, this allowed anonymous responses via 'one click'. Formal representations by named respondents were also collected, including an extensive social media campaign of paid and organic posts. In person: • Pop ups at busy supermarkets, schools and train stations. A formal 'big debate' organised by a range of community groups and pecha kucha style events held involving children from the Cambridge Schools Eco Council and attracted a capacity audience.
How it worked	Digital: • Efforts translated to over 4,000 unique visitors to the website. • Local Facebook groups and commissioned YouTube videos got hundreds of thousands of views. • Online survey achieved a higher proportion of ethnic minority respondents and people with physical and mental health conditions. In person: • Pop-ups reached over 6,000 people. • Consultation events resulted in over 7,000 comments received.

Lessons for NZN engagement:
Paired digital innovation with in-person warmth.

- Focus engagement through existing networks.
- Invest in engaging digital technology and consider innovative methods for surveys, this will appeal to segment one.
- Consider busy locations where drop-ins could be held to engage those unlikely to attend scheduled events (segment one).
- Debate style events which can put a positive spin on opposing views are valuable.

Community engagement: Example activity propositions

Below are three examples of engagement activity provided as a starting point to support the preparation of wider engagement, following the 'deepen the understanding of Dudley Fields' focus phase in the strategy. It is recommended that all activities delivered are specific to the engagement needs of the community.

Youth Climate Council

- A forum to leverage engagement through local schools.
- Climate councils will convene bi-monthly at local participating schools on a rotational programme.
- To support the education and involvement of young people in climate conversations to drive sustainable change.
- Debates will be utilised to create a positive environment for individuals to challenge views and develop broader skills.
- The role of the council:
  - facilitate in-depth conversations about the NZN
  - a point of consultation with young people who are in full-time education
  - a forum for young people to discuss priority matters and points of consideration to the project board.

Cycling training

- Free or subsidised training in the local community to improve 'road sense' and personal safety techniques
- Training will be tailored to sub-groups including women and ethnic minorities.
- Completed training to provide a discount code for local bike selling event.
- School children to receive a 'bike to school by foot' event to familiarise them with bike routes to school, specific nodes to be aware of and high traffic areas.
- Potential to create a cycling club for ongoing engagement.

Green employability sessions

- Raise awareness in schools and education settings to present the emerging opportunities within the retrofit sector
- Connect local people to green jobs opportunities as a co-benefit and buy-in opportunity for the NZN.
- Sessions would make local people aware of the range of jobs in retrofit and provide foundational training using real life examples of homes in Dudley Fields.
- Connect individuals in the community to further training and employment opportunities with contractors leveraged by social value in contractor procurement.
- Provide awards and accreditations for individuals who have attended a certain number of sessions as local retrofit experts and points of contact for others in the community for information.
- Accredited individuals to recruit further people from their local communities to participate and achieve awards.
- Supports the development of a more resilient economy whilst promoting the benefits of retrofit throughout Dudley Fields in an informal manner.

Community engagement: Survey design

Method

COM-B

- Capability – psychological and physical ability to participate in an activity
- Opportunity – factors that make behaviour change possible
- Motivation – conscious and unconscious cognitive processes that direct and inspire behaviour

Survey design brief

Aims and objectives:

- Consolidate aims and objectives across project team/board.
- Align aims and objectives to strategic engagement objectives

Questions:

- Aim for 10-15 questions in total
- Sub-divide questions by theme
- All demographic or personal questions at the beginning of the survey.
- Combine qualitative and quantitative questions, positioning qualitative as opportunities to provide depth on quantitative responses. Always include a don't know or not applicable option.
- In new iterations, do not edit or amend any standing questions to build a baseline.
- Anonymous response mechanism, with the opportunity for respondents to opt-in for a follow-up focus group

Distribution:

- Utilise existing community networks, organisations and groups e.g. schools to promote the survey.
- Develop the survey on a digital platform with a QR code for easy sharing and develop paper copies for offline customers.
- Will need to create a database for private landlords/private tenants/owner-occupiers.
- Use incentives to increase response rates. Even small rewards can significantly increase participation/accuracy.

Analysis:

- Use Microsoft Forms or Survey Monkey for ease of use/analysis; or for more complex longitudinal studies, opt for a survey analysis provider e.g. SPSS.
- Complete regular data cleaning and quality checks.
- Scoring method for quantitative questions and thematic analysis for qualitative questions.
- Consistently baseline survey results, to find trends, changes and barriers to change.

Ownership and data management

- Ensure clear accountability for survey and data management.
- A survey operations manual detailing agreed processes and owners should be produced
- Data management should always follow GDPR regulations and managers should be appropriately trained

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Recommendations

Dudley Fields: Net Zero Neighbourhood

Dudley Fields - Net Zero Neighbourhood summary priorities

This document provides the groundwork to understand the opportunities and potential options for Dudley Fields to transition to a Net Zero Neighbourhood. The next steps will involve reviewing the findings with key stakeholders both at partner organizations and in the community to develop a detailed plan for decarbonising homes, promoting sustainable behaviours and accessing funding.

	Priorities
Community and stakeholder engagement	• Establish a steering group of representatives from stakeholder segments, with terms of references and required commitment to develop and monitor the development of the NZN. Consider two forums, one with predominantly local stakeholders and residents, the other with staff from Partner organisations. Both should have a cross over representative such as the NZN Officer. • Segmentation of community to deepen understanding of engagement needs. Segmentation of stakeholders by role to leverage influence to support engagement of NZN. • Programmatic approach to community engagement, strategy divided into focus stages. • Build your understanding of the community through survey methodology. • Engagement should respond to the needs of the community, best practice shows success with innovative digital communications, informal in-person approaches and educational activities. • Consider engagement resourcing for the programme lifetime, funding options for low income and able to pay private owners.
Housing decarbonisation	• More data required on private tenures, agree the hierarchy of interventions in conjunction with the local energy review. Fabric-first is still deemed to be the de facto solution but may not be required if there is abundant renewable local energy.
Local energy	• Reduce the number of options based on application of local knowledge to prepare for the next stage of feasibility studies. Conduct a formal options appraisal, by proceeding with two or three energy system options. This appraisal should cover stakeholder engagement plan, costing plan and funding mechanisms
Travel/ transport	• Promote active travel, raise awareness of travel options, actions centred around physical infrastructure or public transport, create a mobility hub
Biodiversity and green spaces	• Assess through tools and community engagement the current greenspaces available and current/potential areas or housing stocks vulnerable to climate risks such as overheating and flooding. • The condition of green spaces has an impact on the benefits they can convey. A coherent urban greening plan could be developed that includes improving the quality of spaces already existing. It is important that spaces are safe, attractive and welcoming to residents and visitors. • Exploring accreditations and standards for green space could be a point of pride for the community such as the Roughwood Country Park to the West of the estate exploring achieving the Green Flag Award. • Engage with stakeholders and communities to encourage maintenance and use of improved green spaces. • Our proposed community engagement approaches empower young people's voices and connect them to green jobs and opportunities – centering community building in sustainable solutions.
Data management	• There will be many sources of data from community segmentation/feedback and housing data that needs to be managed in a common form. The expectation is that WMCA will define this as part of the Net Zero Accelerator so that there is a regional standard.
Modelling for financial case	• Modelling data to create viable/investable business cases is one of the requirements of the wider programme. Again, the expectation is that a central standard for this will be set based on the cumulative outputs of the initial seven studies.

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Appendices

Dudley Fields: Net Zero Neighbourhood

Appendix 1 Policy Review

Indirect Obligations

	Policy	Description/Target
National	**The Climate Change Act 2008-2050**	Contains a legally binding goal for net zero emissions by 2050
Regional	**The WM2041 Five Year Plan 2021-26**	Identifies the importance of energy efficiency measures in commercial property types and contains a goal to become a net zero economy by 2041
National	**Environmental Improvement Plan 2023**	Sets out how the UK will work with landowners, communities and businesses to deliver each of our goals for improving the environment, matched with interim targets to measure progress
National	**Powering up Britain: Energy Security Plan 2023**	Britain's plans for energy security, seizing the economic opportunities of the transition, and delivering net zero commitment
National	**UK's Biodiversity Net-Gain 30 by 30**	Conserve a minimum of 30% of land and sea for biodiversity by 2030
Organisational	**Walsall Housing Group's Sustainability Strategy 2023-2025**	Existing housing stock to EPC C by 2030, operational net zero carbon goal by 2050.
Organisational	**Walsall Council's Climate Emergency declaration target**	Net zero borough by 2041 target.

Direct Obligations

	Policy	Description/Target	Areas of influence
Regional	**West Midlands Industrial Strategy**	Sets out the vision to maximise the clean growth opportunities presented by the region's skills and infrastructure. Includes scope to support the skills and infrastructure needed to overcome barriers and deliver retrofit at scale.	Home retrofit, Energy Systems, Transport, Community and co-benefits
Regional	**West Midland's Energy Strategy 2030**	Between 2018 and 2030, more than £15bn will be invested in local energy projects across the three LEPs of the West Midlands, and £74bn will be spent on products and services (like cars and homes). A further £80bn will be spent on fuel and power to drive our industry and to power those same homes and cars.	Home retrofit, Energy Systems, Transport
National	**Domestic Minimum Energy Efficiency Standards (MEES)**	As many fuel poor households as practical in Band C by 2025, explore opportunities to use renewable / low energy technologies in all existing and new homes by 2023, and retrofit 290,00 homes by 2026 (UK-wide) with all heating systems to be net zero compatible by 2050. Enable heat network zones to be designated by 2025, delivery over £15bn of investment in local energy projects by 2030.	Home retrofit, Energy Systems
National	**Home Energy Conservation Act 1995**	Local authorities (LAs) to publish a report by 29 February 2024 outlining their plans to promote improved energy efficiency in their areas.	Energy Systems
National	**Private-Rented Energy Efficiency Standard 2015**	Intended to improve the standard of energy efficiency in both the domestic and non-domestic private rented sector in England and Wales	Energy Systems
Regional	**Black Country Core Strategy 2011-2026**	A planning and regeneration plan for the whole of the Black Country. It is used to guide planning and development decisions.	Community and co-benefits
Regional	**We are Walsall (WAW) 2040 Borough Plan**	Corporate vision as a result of engaging with 10,000 residents and businesses that is likely to form the starting point for Walsall Borough Local Plan (WBLP) vision (currently in development).	Home retrofit, Energy Systems, Transport, Community and co-benefits

Appendix 1 Policy Review

Direct Obligations (continued)			
	Policy	**Description / Target**	**Areas of influence**
Regional	**Local Transport Plan Core Strategy 2024**	Sets out policies to promote safe, integrated, efficient and economic transportation.	Transport
National	**Transport Decarbonisation Plan**	Aimed at decarbonising each transport mode, including removing all diesel-only trains by 2040 and investments in building more cycling and walking routes, electric vehicles, and more.	Transport, Community and co-benefits
Regional	**Transportation Decarbonisation Local Authority Toolkit**	Sets out how local councils should go about planning and delivering carbon reduction measures locally to reduce transport-related CO2.	Transport
National	**The UK Green Building Council**	**UKGBC:** set up in to investigate and recommend new ways forward to reach zero-carbon buildings.	Community and co-benefits
National	**Natural England's Green Infrastructure Framework**	**Framework**: Aimed at planners and developers, the Green Infrastructure Framework will help increase the amount of green cover to 40% in urban residential areas. The 5 key standards: • **Urban Nature Recovery Standard** • **Urban Greening Factor (UGF) for England** • **Urban Tree Canopy Cover Standard** • **Accessible Greenspace Standards** • **Green Infrastructure Strategy**	Community and co-benefits
National	**Inclusive Transport Strategy**	Works towards making transport more accessible for people with mobility difficulties.	Transport, Community and co-benefits
National	**Active Travel England (ATE)**	Contains an objective of increasing active travel (taking in walking, 'wheeling' and cycling) to 50% of all journeys in urban areas by 2030. This is funded by the government's second Cycling and Walking Investment Strategy (CWIS2).	Transport
Regional	**A Strategic Transport Plan for the Midlands**	Seven Sub-national Transport Bodies (STBs) set up across England, with Midlands Connect to decarbonise transport.	Transport
Regional	**WMCA Movement for Growth**	A transport policy framework providing strategies to realise Movement for Growth's objectives through the West Midlands-wide Local Transport Plan (LTP).	Transport
Regional	**Black Country Transport (BCT)**	Dudley, Sandwell, Walsall and Wolverhampton MBCs collaborate on local transport policy and interventions. BCT's Ultra-Low Emission Vehicle (ULEV) Programme may prove relevant to whg's Dudley Fields NZNP.	Transport
Regional	**Walsall Council's Local Plan**	Includes policies around transport and environmental requirements for new development.	Transport, Community and co-benefits
Regional	**Site Allocation Document (SAD)**	As part of the Local Plan, allocates sites for a number of different uses including housing, employment, waste, minerals and local centres.	
National	**Public Services (Social Value) Act 2012**	Requires public authorities to have regard to economic, social and environmental well-being in connection with public services contracts; and for connected purposes.	Community and co-benefits

Appendix 2 Housing archetypes

BISF

British Iron Steel Federation

Number of homes **30 social** **20 private**	**EPC C - 2** **EPC D - 18** **EPC E – 30**
Average heating demand **157.3 kWh/m²**	Total CO_2e: **86.9 tonnes**

Background

- Most of BISF were built after 1940.
- The BISF house has never been classed as defective under the Housing Act and is considered one of the most successful post war system builds.
- The structure is a hot or cold rolled steel frame.
- External wall cladding is most common, with profiled steel sheathing at first floor level. At ground floor level cement rendering is applied to metal lathing.
- The internal wall lining is plaster board on timber battens or fibre board.
- Roofs are steel trusses with steel purlins supporting either asbestos (most common) or metal sheathing.
- Typically have poor thermal performance of 1.29W/m^{2}K and the high fuel costs for residents.

Barriers to retrofit:

- Corrosion can occur along the homes structure, including the profiled sheathing at first floor level horizontal, the vertical steel stanchions and the horizontal rails that support the cladding.
  - This is due to condensation, and the impervious nature of some of the structural elements. Here, moisture may enter and become trapped. This needs to be considered and resolved, prior to any EWI retrofit.
- Corrosion can also result in structure that is not able to carry the load of EWI, bringing about additional considerations for a fabric first solution.
  - Applying EWI to a compromised structure can result in these issues being hidden and may unknowingly deteriorate further.
- Higher heating demands, resulting in larger low carbon heating solutions compared to traditional properties due to lack of energy efficient technology.
- Asbestos is used in the roofing of BISF homes; therefore, this would need to be removed, as it can become dangerous when disturbed, making the retrofit more time consuming and costly.
- Door canopies to be removed and a suitable anchor position required for refitting post EWI.
- Gas meters on structure need to be worked around or DNO involvement to move it requires proper planning.

Appendix 2 Housing archetypes

Wates

Pre-fabricated reinforced concrete

Number of homes **30 social** **20 private**	**EPC C - 1** **EPC D - 51** **EPC E – 8** **EPC F - 2**
Average heating demand **145.8 kWh/m²**	Total CO_2e: **109.4 tonnes**

Background:

- Approximately 30,000 Wates houses and low-rise flats (two and three storeys) were constructed in the UK in the 10-year period up to 1955.
- Wates houses are designated defective under the 1984 Housing Defects Act.
- Wates houses are generally based on prefabricated, loadbearing, reinforced, tray-shaped concrete panels erected around a special jig.
- The horizontal joints between the panels interlocked into a mortar bed, whilst the vertical joints were hollow and required filling with fine concrete after erection. Steel reinforcement was sometimes inserted into the horizontal and vertical joints.

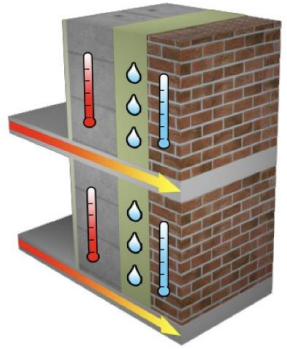
Barriers to retrofit:

- Carbonation is likely to occur since concrete is highly alkaline. Carbonation can reach the depth of the steel reinforcement, resulting in concrete spalling.
- Chloride attack of concrete can also occur, leading to the steel suffering corrosion. This can also result in the concrete spalling, which needs to be remediated prior to any EWI installation.
- Corrosion of the reinforcement in the flange of the panel may occur, which can affect the front face of the concrete or the internal lining. This means the structure could be weakened and does not provide a flush surface for EWI or IWI, allowing for potential water ingress.
- Cracking along the vertical joints between the panels, and the panel corners, leading to damp penetration/moisture ingress. This needs to be dried out prior to closing up by installing EWI or allowing for ventilation.
- It is expensive and time consuming to repair a Wates property to a mortgageable standard, meaning social landlords will likely continue to hold this stock and be required to maintain it.

Appendix 2 Housing archetypes

Traditional

Masonry cavity wall construction



Number of homes **27 social** **23 private***	**EPC C - 1** **EPC D - 34** **EPC E – 12**
Average heating demand **163.7 kWh/m²**	Total CO_2e: **77.9 tonnes**

*includes 1 new build bungalow

Background:

- Pre-war solid wall homes (typically brick).
- Cavity wall homes built from 1920s onwards.
- Unlike cavity walls in the early 1920s, the cavity size has increased to 50mm-75mm so that sufficient insulation could be added.
- Roofs are also ventilated, and it is standard to have UPVC double glazed windows.

Barriers to retrofit:

- Accumulation of sediment and dirt over time in the cavity, affecting thermal performance.
- At times there has previously been CWI which has failed, which requires testing, meaning additional time and costs. The remediation is either:
  - Following the warrantee route where possible.
  - Extracting and replacing the failed CWI.
- Traditional homes can demand significant maintenance and repairs, adding to the cost of ownership. Neglected maintenance can make certain retrofit solutions much more costly to undertake.
- Regular upkeep is essential to preserve their condition and prevent deterioration, a deteriorated structure adds complexity to retrofit and requires all remediation work to be undertaken first.

Appendix 3 Transport – emerging new government policy

On 17 July 2024, the new Labour government announced the contents of the King's Speech, with 40 new parliamentary bills. Among these are proposals for transport (and promoting increased low carbon means of travel), including:

- Rail nationalisation (new Railways bill and new Passenger Railway Services (Public Ownership) bill), restructuring the rail industry under Great British Railways
- Putting bus franchising into the hands of all local authorities (new Better Buses bill) – Richard Parker, the new WMCA Mayor (Labour, elected in May 2024) had already made this a policy priority for the West Midlands
- Reviving a northern leg of HS2 (new High-Speed Rail (Crewe to Manchester) bill)

Other policy areas to be reviewed include:

- The future of airport expansion

Key features of the new transport legislation could include:

- Better coordination of all rail passenger services, more coordination with stakeholders (eg WMCA) on improving services in their area, more railway reopening, better services
- Allowing local transport authorities (in this case, WMCA/TfWM) to specify all bus routes, service levels and fares – rather than having to rely on bus operators to deliver bus services commercially, with powers only to fill network gaps and to coordinate travel information

Appendix 3 Transport policy documents - hyperlinks

National policy and guidance – subject to change by Labour government:

- https://www.gov.uk/search/policy-papers-and-consultations
- https://www.gov.uk/government/publications/transport-decarbonisation-plan
- https://www.gov.uk/government/collections/transport-decarbonisation-local-authority-toolkit
- https://assets.publishing.service.gov.uk/media/66152059c4c84de468346aea/dft-transport-adaptation-strategy-consultation.pdf
- https://www.gov.uk/government/publications/inclusive-transport-strategy
- https://www.gov.uk/government/publications/transport-investment-strategy
- https://www.gov.uk/government/publications/transport-infrastructure-efficiency-strategy
- https://www.ciht.org.uk/news/dft-publishes-policy-paper-strategic-road-network-and-the-delivery-of-sustainable-development/
- https://www.gov.uk/government/publications/cycling-and-walking-plan-for-england
- https://www.gov.uk/government/organisations/office-for-zero-emission-vehicles
- https://www.gov.uk/government/publications/future-of-freight-plan
- https://www.gov.uk/guidance/transport-user-personas-understanding-different-users-and-their-needs

Other key policy and strategic transport information:

Midlands Connect transport strategy

West Midlands Combined Authority

Transport for the West Midlands – Our Strategy

Black Country Transport

Appendix 3 Transport measures – useful documents

Active Travel:

Sustrans – national sustainable transport charity – National Cycle Network, policy, cycling infrastructure, research

Encouraging cycling in the West Midlands (TfWM)

£3.5m for cycling and walking (WMCA)

Active Travel England (gov.uk)

Active Travel Local Authority Toolkit (gov.uk)

Active travel funding (active-travel.uk), including in West Midlands – NB: this is not from Active Travel England!

Public transport

Walsall area public transport map (TfWM)

Buses in Bloxwich (bustimes.org)

Bus service details – route 70 (bustimes.org)

Bus service details – route 326 (bustimes.org)

Cross-modal

Journey Planner (TfWM)

Plan Your Journey (Traveline)

West Midlands takes a major step towards region-wide travel app (Intelligent Transport)

Mobility Hubs (ComoUK)

Mobility Hubs (mobilityhubs.uk)

Mobility Hubs (TfWM)

Car travel

Car Clubs:

Car Clubs, Local Authority Toolkit (gov.uk)

Community Car Sharing (ComoUK)

Starting and Running Successful Schemes (ComoUK)

Marketing Support Guide (ComoUK)

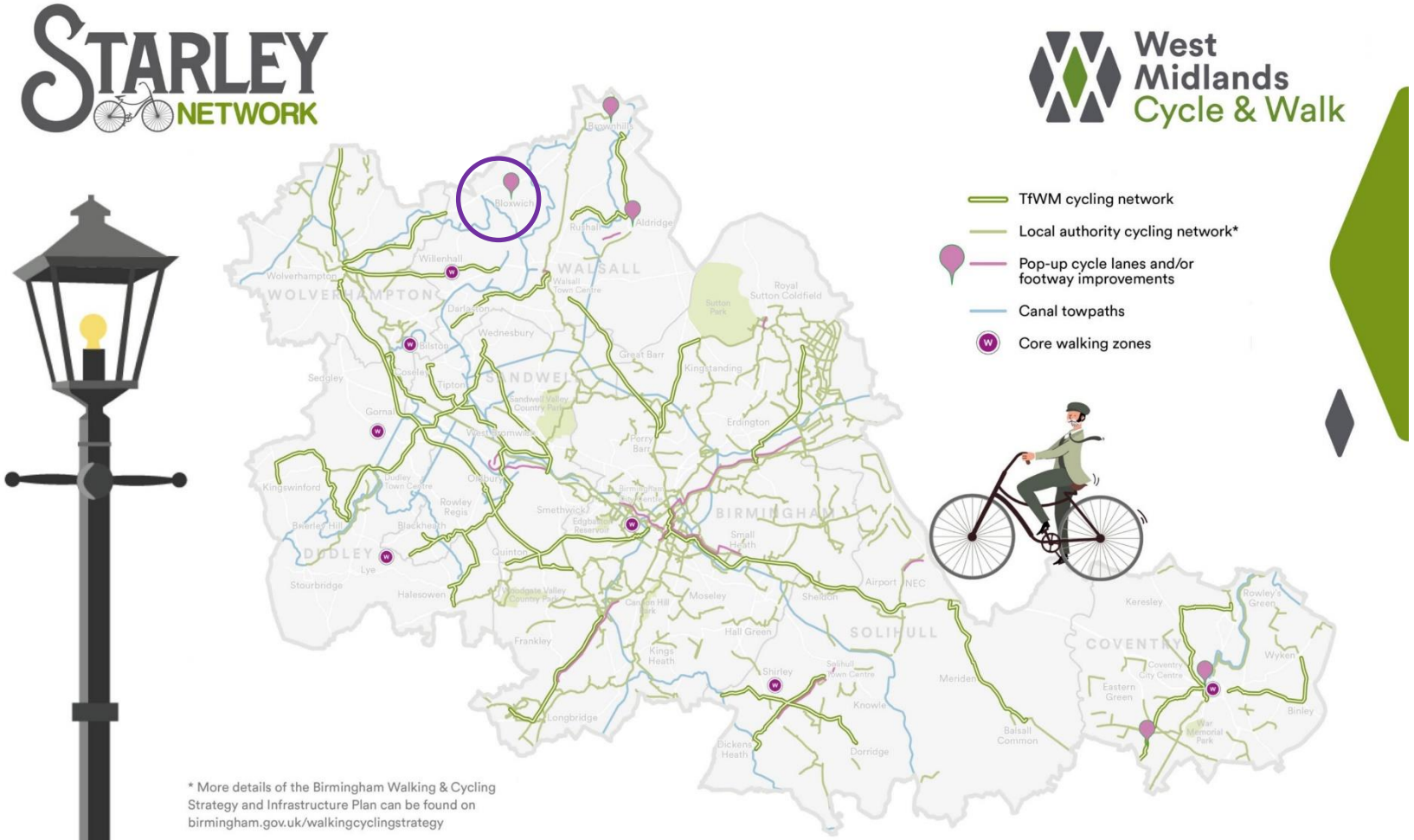
EVs and EV Charging

On-street residential charging scheme (gov.uk/OZEV)

Charge point grant for landlords (gov.uk/OZEV)

Zemo Partnership

Appendix 3 Transport - West Midlands Local Cycling and Walking Plan (LCWIP)



TfWM Cycling Network

- Network of locally strategic cycle routes.
- Developed through WMCA's LCWIP in 2019.
- Known as the Starley Network
- Also highlights canal towpaths. TfWM working with Canal & River Trust to make more towpaths suitable for cyclists.

No specific provision for strategic routes in/around Bloxwich (circled) other than the Wyrley & Essington canal towpath. The 'pop-up' proposal in Bloxwich was for the High Street.

Consultation began on 29 July 2024 on the Black Country Walking, Wheeling and Cycling Plan – plans for a high-quality active travel network.

Appendix 3 Transport -Residential Car Parking Research (DCLG, 2007)

The Department for Communities and Local Government (DCLG) published Residential Car Parking Research (2007). The original report is no longer available online, but the outputs were used by various local authorities as a basis to determine expectations for parking supply in new residential development – for example Nottinghamshire, Derbyshire and Leicestershire County Councils.

This research considers expected levels of car ownership and the factors which have a significant influence on car ownership and car parking demand, including *household tenure*:

- Dwelling size (number of 'rooms'), type and *tenure*;
- Dwelling location;
- Availability of allocated and unallocated parking spaces;
- Availability of on-and off-street parking;
- Availability of visitor parking; and
- Availability of garage parking.

On average, "households occupying rented accommodation can have up to 0.7 fewer cars than owner-occupied households in dwellings of similar size and type".

As the objective of a NZN is to decrease the need for car ownership/parking this is supplied for reference only.

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Final	Natalie Gardner	Sarah Daly	XX/07/2024