



# Net-zero and offsetting

Sarah Alsbury, Devon County Council

# New target and strategy 2020...

## Reduce **corporate emissions** by 70% by 2030

- Low Carbon Buildings
- Fleet and business travel
- Street lighting.
- Solar PV on assets
- Purchasing accredited green energy

Capital requirement, most offering return on investment

## Carbon offset the residual **corporate emissions**



Invest in woodland creation, peat restoration etc.

## Supply Chain

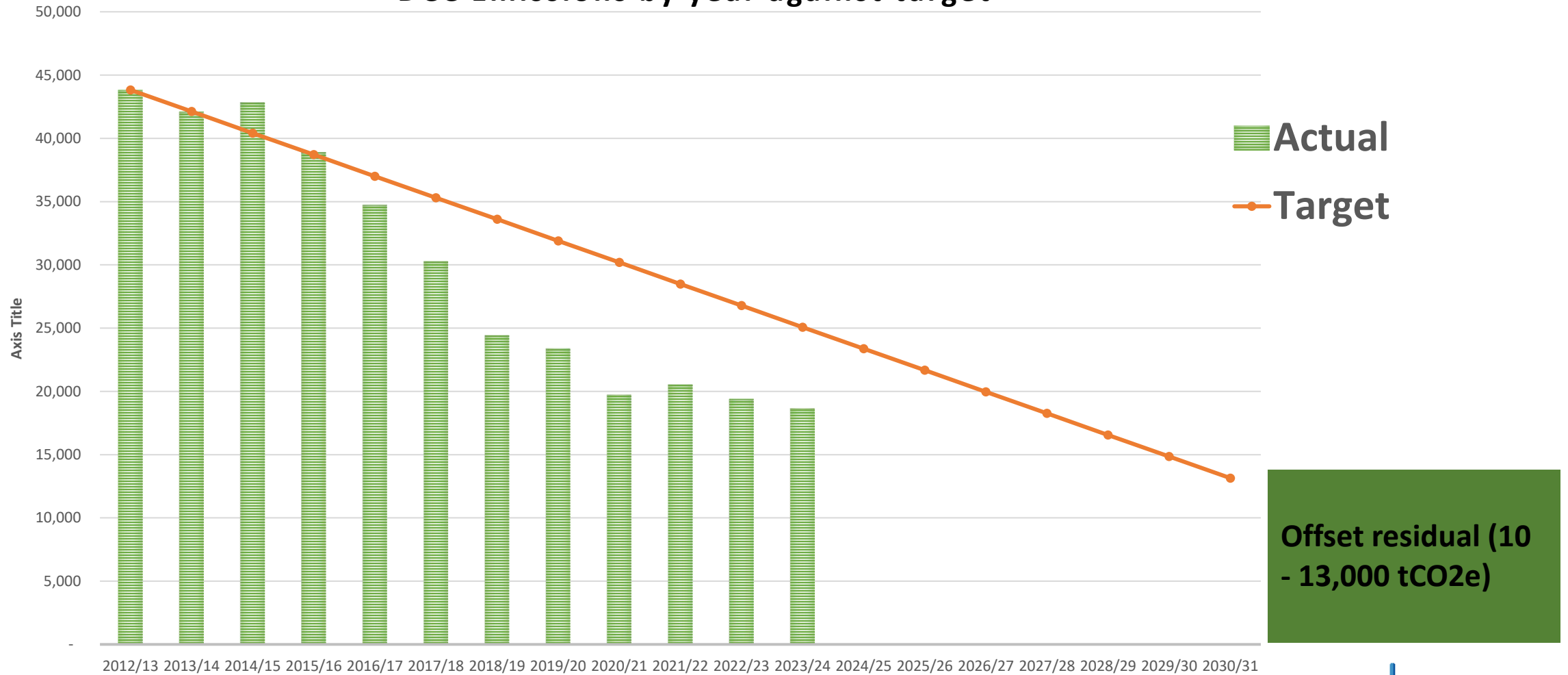
Work with 10 largest as pilot to reduce emissions

**DCC carbon neutral by 2030**



# Doing lots but still a way to go...

## DCC Emissions by year against target



# Offsetting

*“...a tonne of carbon dioxide (equivalent) absorbed or avoided in one part of the world to cancel out a tonne of greenhouse gases emitted elsewhere...”*

## Features of offsetting:

- Voluntary carbon market
- With some verification standards
- Channels money into projects of all kinds – other benefits
- Concerns re quality and greenwashing

## Carbon Offsetting

Your products are supplied in different ways, some generating more carbon emissions than others.



We purchase eligible carbon credits to offset products we offer, supporting projects that reduce or remove greenhouse gases.



# Criteria for credible offsetting...

## Organisation

- Must have a credible carbon reduction plan with ambitious targets to reduce own emissions
- Transparency – publishing plan and data
- Regular monitoring to demonstrate action

## Carbon credit code

- Standard certified by respected third party organisation e.g. ISCC
- Science – genuine saving or sequestration – and monitoring
- Additionality
- Permanence
- Transparency to avoid double-counting
- Third party project verification



**Table 7-1 A red-amber-green (RAG) analysis of the different offsetting approaches' performance against the key indicators, to inform decision making. A grey circle indicates that there is not enough reliable information in the literature to draw a conclusion. For a description of how RAG analysis was carried out see Appendix 2.**

Approach	GHG emission reductions or removals	Abatement cost	Per-unit abatement potential	National abatement potential	Implementation readiness	Speed of impact	Longevity	Confidence in science
Upland peat restoration	Reductions and potential removals	Green	Green	Green	Green	Red	Green	Yellow
Lowland peat restoration	Reductions and potential removals	Grey	Green	Green	Yellow	Red	Green	Red
Woodland creation	Removals	Green	Green	Green	Green	Red	Green	Green
Grassland	Removals	Grey	Yellow	Grey	Yellow	Yellow	Red	Red
Floodplain restoration	Removals	Red	Green	Yellow	Yellow	Red	Yellow	Red
Constructed wetland	Removals	Grey	Grey	Grey	Yellow	Grey	Grey	Red
Saltmarsh restoration	Removals	Grey	Yellow	Red	Yellow	Yellow	Green	Yellow
Seagrass restoration	Removals	Grey	Yellow	Red	Red	Red	Grey	Red

*From Environment Agency – Achieving Net Zero – A review of the evidence behind offsetting, 2021*



Approach	GHG emission reductions or removals	Abatement cost	Per-unit abatement potential	National abatement potential	Implementation readiness	Speed of impact	Longevity	Confidence in science
Kelp restoration	Removals	●	●	●	●	●	●	●
Soils management: arable	Removals and reductions	●	●	●	●	●	●	●
Soils management: pasture	Removals and reductions	●	●	●	●	●	●	●
Hedges and trees outside of woodlands	Removals	●	●	●	●	●	●	●
Enhanced weathering	Removals	●	●	●	●	●	●	●
Biochar	Removals	●	●	●	●	●	●	●
Household insulation	Reductions	●	●	●	●	●	●	●
Household low carbon heating	Reductions	●	●	●	●	●	●	●



## DCC's approach

- To start to offset in run up to 2030
- Trial different approaches
- Focus on nature-based as huge opportunity for Devon's environment
- Develop market
- Certified to a standard



## Issues from start

- Only 2 codes applied in the UK
- Lack of availability for 2030
- Lack of availability in Devon
- Price of land and project costs
- Accounting/credibility of other standards

PEATLAND  
CODE 



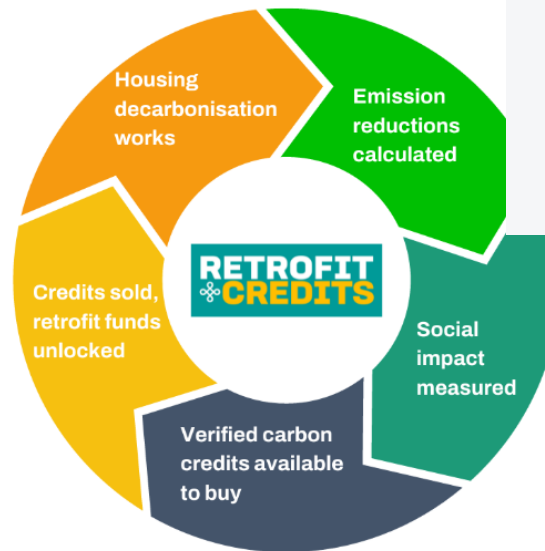
# Options tried

- Buying on open market
- Buying direct from Woodland Trust and through Natural Capital Marketplace
- Buying land and planting with trees
- Buying on open market



# New entrants to the market...

- Wilder carbon
- UK Carbon Code of Conduct
- HACT – retrofit of social housing
- (many others e.g. bio-char, green gas etc.)
- Develop Devon-based projects







# Net Zero Retrofit Pilot - Ross Street and Coldham's Grove, Cambridge





# Today's Agenda



- Description of the pilot
- Preparation and progress to date
- Measures involved
- What have we learnt
- Next steps and expected outcomes

# What does the pilot involve?

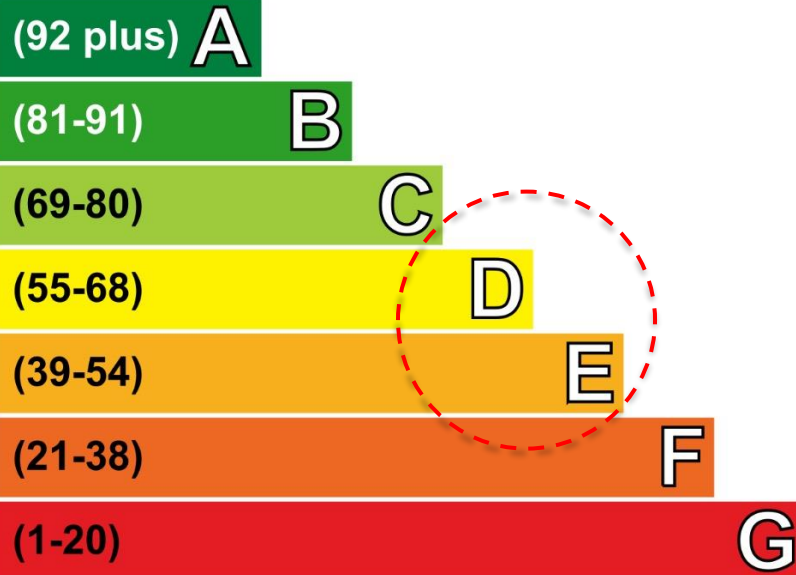


- Ambitious initiative to upgrade fifty 1930s council homes to net zero standards.
- Household participation is voluntary.
- ‘Whole house’ deep retrofit will be delivered with residents remaining in their homes.
- Builds on Cambridge City Council’s ongoing retrofit programme which has installed EWI, triple glazing and new doors to hundreds of homes.

# Why were Ross Street and Coldham's Grove chosen for the pilot?

## Energy Efficiency Rating

Very energy efficient - lower running costs



Not energy efficient - higher running costs

- Nearly 100 years old
- Start with the least efficient homes
- Retrofit homes one street at a time
- Scaling up in the future to benefit from lessons learnt on the pilot.

# What are the aims?

- Significantly enhance resident wellbeing by creating comfortable and healthy homes that are affordable to heat.
- Reach a net zero operational energy standard in as many homes as possible, balancing the electricity needed for heating and hot water with electricity generated onsite by solar panels.
- Explore the feasibility of delivering upgrades that are extensive enough to achieve net zero carbon.
- Support the Council's goal to be net zero carbon by 2030.



# Assembling the team

Cambridge City Council appointed ECD architects to lead a multi-disciplinary design team in 2022, including:

- Keegans (Retrofit Assessors and Coordinators)
- Greengauge (MEP)
- Focus (QS)
- Currie & Brown (PD)
- SOAP Retrofit (Monitoring and Evaluation).

Design team retained to oversee construction and ensure continuity of design responsibility.

Axis Europe PLC selected as main contractor in March 2024 using the Greener Futures Partnership Decarbonisation Delivery framework.





# Pre-start surveys and monitoring

Essential to understand how the poorly insulated 1930s solid wall homes were performing pre-retrofit. Our investigations included:

- Resident surveys
- Energy bill analysis
- Temperature and humidity checks to assess condensation and mould risk.
- Heat transfer co-efficient monitoring (how quickly the property loses heat)
- Air tightness testing

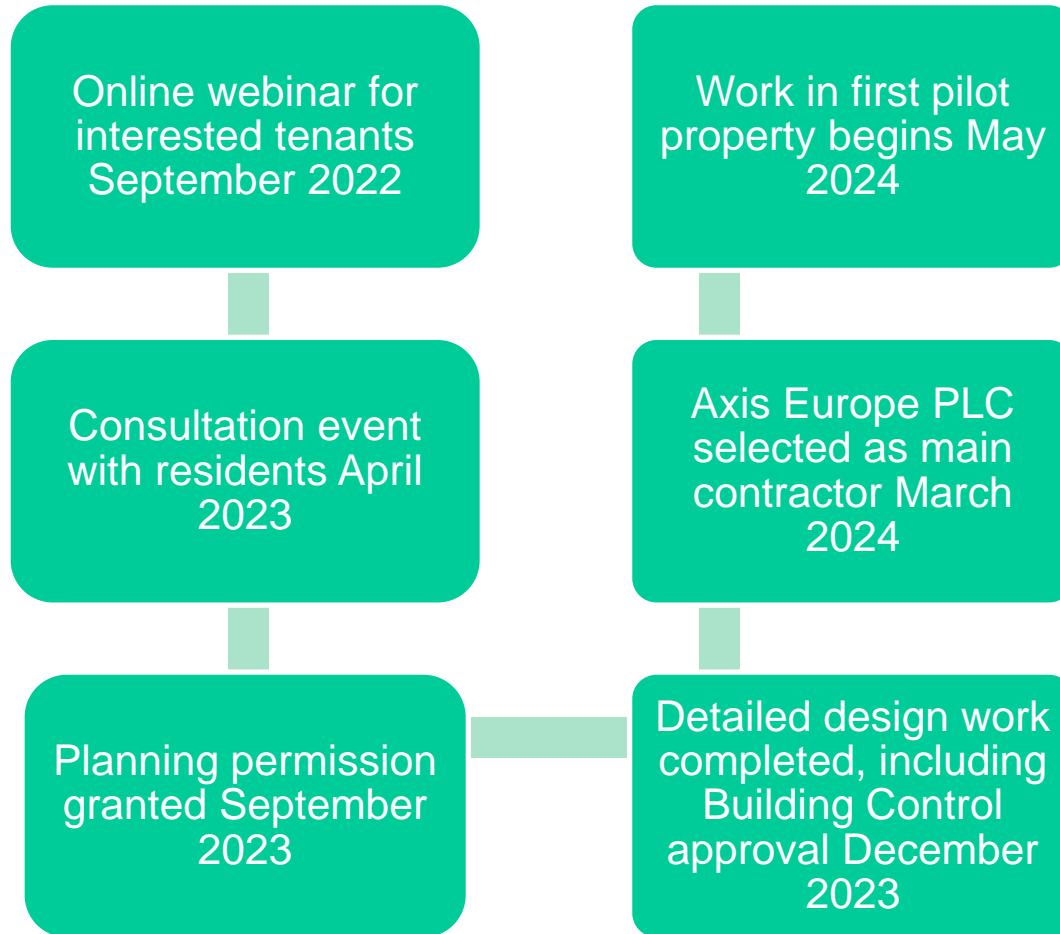


# Design Process



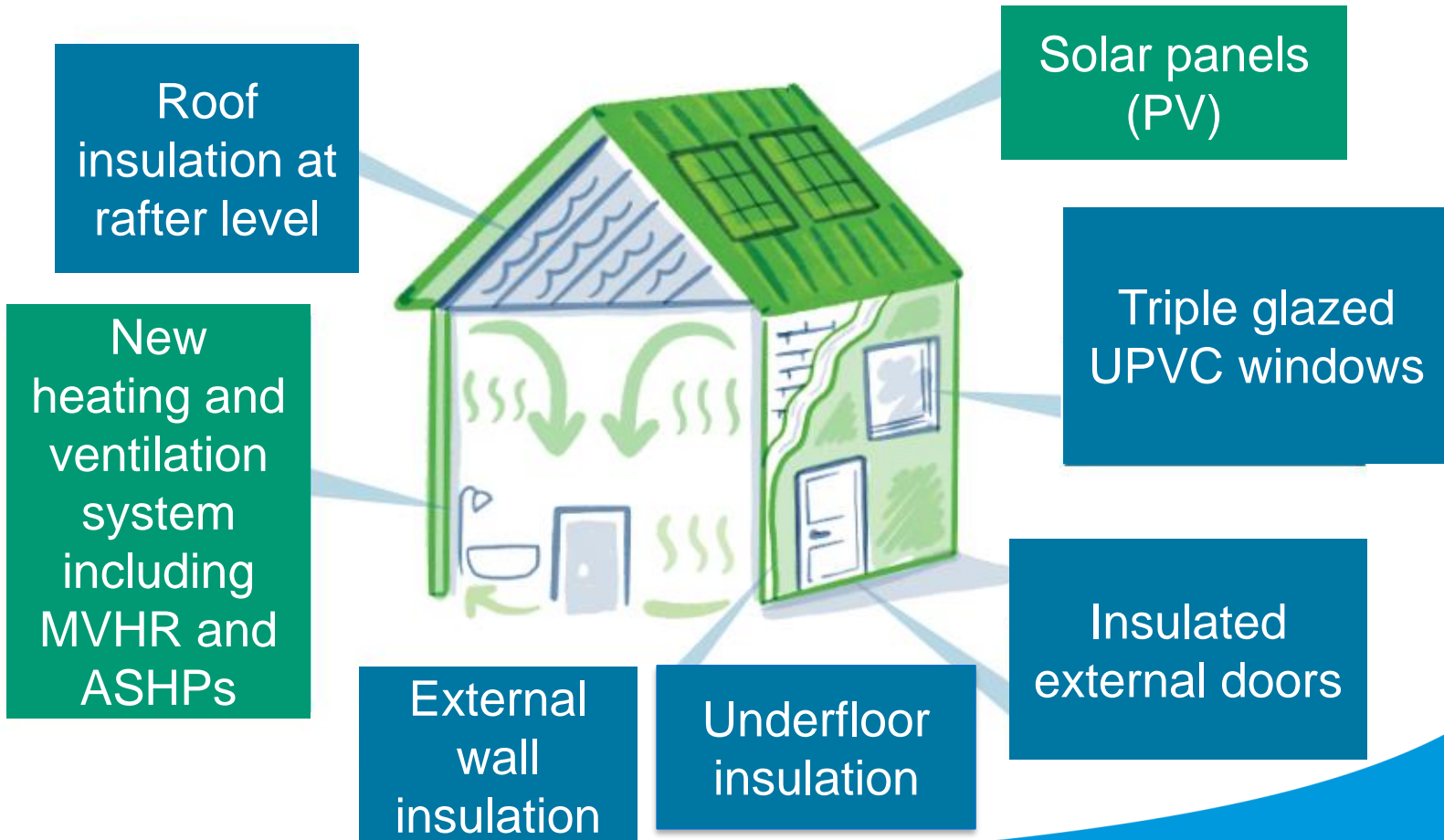
- Homes divided into archetypes- Each has unique design. Route to net zero goal differs slightly from house to house.
- Design process informed by energy modelling in the Passivhaus Planning Package.
- This allowed the design team to identify the most effective and economical combination of upgrade measures to meet the net zero operational energy target.

# Progress to date



# Retrofit Works: Fabric & Energy

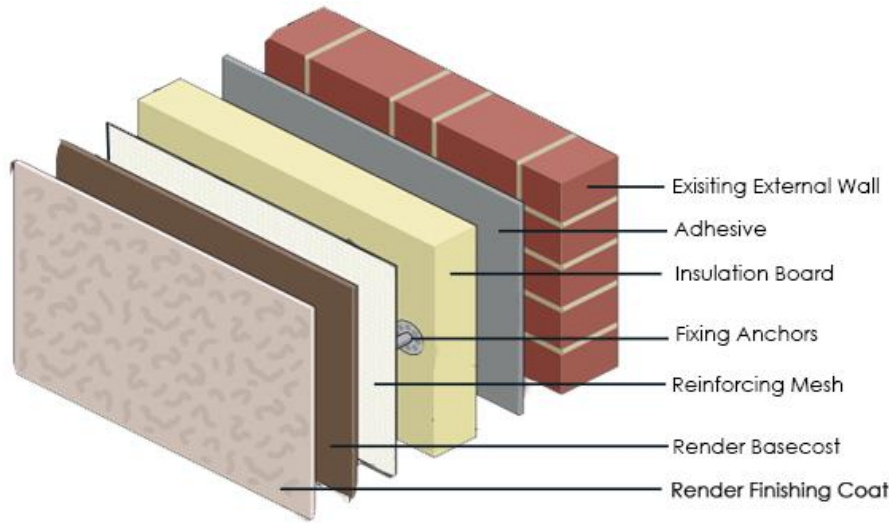
A “whole house” approach with a combination of:



# External Wall Insulation (EWI)



- Reduced heat loss in winter / heat gain in summer.
- 55% of all heat lost from a typical Ross Street home is currently lost through the uninsulated external walls.
- Reduced condensation and mould risk on external walls and around windows.





# Roof Insulation



- Reduced heat loss in the winter, making homes warmer and easier to heat
- Most Ross Street homes have some loft insulation. Around 15% of all the heat lost from these homes is lost through the ceiling/roof. If there is no loft insulation, this increases to 25%).



# Floor Insulation

Most intrusive and challenging part of the pilot, but biggest pay off.



- Our modelling indicates that nearly a third of heat loss in Ross Street homes is likely to be through the floor.
- Flooring upgrade and addition of insulation will reduce heat loss by half.
- Ground floor area only (kitchen not included)
- Assistance available for relocating furniture and possessions
- Secure offsite storage supplied
- Floor covering to be reinstated if possible but replaced if not

# Space heating - Air source heat pump



- Highly efficient – ASHPs typically produce three times more heat energy than the electrical energy they use.
- Reduced carbon dioxide emissions.
- Reuse existing radiators where possible
- Removal of gas supply to properties

# MVHR (mechanical ventilation and heat recovery)



- Improved air quality due to filters which remove pollen and other allergens.
- Reduced heat loss. For a typical Ross Street house, an MVHR unit could reduce heating costs by around 28%).
- Reduced humidity, reducing condensation and mould risk.

# Solar Panels/ Photovoltaics (PV)



- Number of panels depends on the size and orientation of roof. As many as possible!
- Supplies electricity to the home generated from the sun.
- Can contribute to running of MVHR system and ASHP.
- Will enable qualifying tenants to claim Smart Export Guarantee (SEG) payments

# Water heating – Sunamp or Hot water cylinder



- Sunamp unit mounted externally at rear in casing.
- Compact thermal storage that delivers hot water through the use of dense, energy efficient phase change material to store heat.

**OR**

- Hot water cylinder located in first floor cupboard

# Windows and Doors



- Triple glazed UPVC windows
- Insulated composite and UPVC external doors
- Help protect against heat loss
- Help to block out street noise
- Reduced draughts and condensation

*“The support of the fifty tenant households who have volunteered to be part of this project has been key to getting to this point. This will be a journey for them with big transitions to come – their willingness to working with us is crucial to fulfilling the targeted outcomes.”*



Cllr Gerri Bird, Executive Councillor for  
Housing, Cambridge City Council





**Costs and Budget**

As can be expected with competitive tendering, a range of prices were submitted by the contractors - some closer to the Council's allocated budget than others.

As we are selecting a contractor on the basis of quality and price, we don't necessarily appoint the cheapest contractor. That means that depending on which contractor is appointed and their tender price, there may be a requirement to review some of the design and final specifications if the project is over budget.

If there are any design changes, we will notify you prior to works commencing and brief all households on the final design.

**Programme Update**

We are currently working to a construction programme starting in March.

As said previously, the start date is dependent on final costs being within budget and the amount of time required to reduce project costs and/or sign off additional funding if needed.

It is likely that once works start it will happen in phases - therefore not all homes will start building works immediately. You will be reintroduced to the contractor and notified of the details and timeline following their appointment. I hope to be able to update you again soon on progress.

**New Project Staff**

We will have a new dedicated staff member for the project starting in March: Natalie Baker who will act as the Net Zero Retrofit Officer. She will become a Council point of contact for you from March onwards.

I will also be going on maternity leave from around mid February onwards for at least 6 months - there is cover in place for me for that time. I am still keen to stay in touch with progress while I'm away as it is a project I care greatly about!

**CAMBRIDGE CITY COUNCIL**

**Ross Street + Coldham's Grove Net Zero Retrofit Project**

**January 2024 Update**

**Dear Residents**

Happy new year and hope you are well. Following on from our letter in October 2023, we are writing to update you again on progress on the Net Zero project.

**Tenders returned from three contractors**

Our team received bids from three contractors at the end of November. The written bid submissions and prices were closely examined over December by the council, the design team and cost consultants.

Further queries for each contractor, particularly with regards to costs, were sent out before Christmas with responses received last week. These responses and pricing updates need closer review again over the next few weeks.

In parallel to this we are interviewing the three contractors throughout this week (w/c 13<sup>th</sup> Jan). Interview responses are scored and contribute to the selection of the overall winner. All being well, we hope to be in position to appoint the winning contractor at the end of January.



# Resident Engagement

- Online resident webinar Sept 2022
- In person consultation April 2023
- Ongoing door knocking, in person visits, email, text.
- Monthly newsletter posted through doors
- Meet the Contractor in person session April 2024.
- Dedicated website for tenants: <https://www.ross-coldhams.co.uk/>
- Axis dedicated RLO Harry Stanlick
- Axis coffee morning August 2024
- Proposed 'Greening the Streets' project



# Lessons learnt so far- Design/Process

- Planning dept requested ASHPs moved to rear garden.
- Underfloor insulation to living rm/dining area only. Rear extensions have concrete floors, disruption would outweigh benefit.
- Sunamp thermal battery- They're very heavy! We have had to relocate from first floor cupboards/omit. Old staircases could not take weight.
- Large scale gas meter removal- Difficult to coordinate. May need to support tenants to arrange.
- Existing issues, outstanding planned works. We have selected these buildings because they are old, therefore non-retrofit works are uncovered.



# Lessons learnt so far- Residents



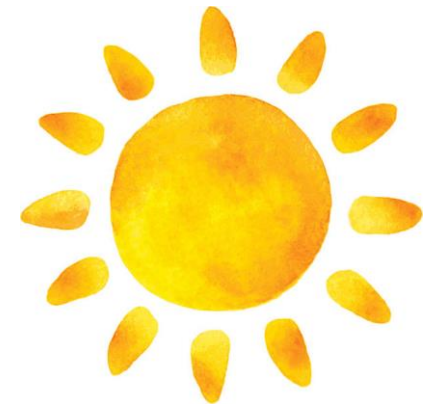
- Rumours! They spread fast. Tackle them swiftly via ongoing communication.
- Lots of old pre-payment meters- Smart meters are needed for Smart Export Guarantee payments.
- Discourage 'cherry picking' of measures by communicating the benefits of a whole house approach.
- De-cluttering- Professional help is available.
- Unwell/ vulnerable tenants. Think creatively to enable works to happen. Work with OTs and NHS.
- Decanting practicalities. Consider Christmas when programming work. 'Where will my hamster go?'
- Floor insulation works- Minimise duration, supply information, support tenants.
- Tenants will be moving from dual fuel tariff to electric only. Need to support them through transition and ensure they are being billed correctly.

# Next steps...



- Ongoing resident engagement throughout work and monitoring period.
- Support for tenants to adapt to new systems and technology.
- In depth Home User Guide to be supplied, along with in-person support.
- Currently investigating support for tenants to change energy tariffs and arrange for removal gas meters.
- 12-month defects period with contractor Axis
- Post work monitoring for up to two years to inform future projects

# Expected Outcomes



- A comfortable home in winter and summer
- Improved energy efficiency
- A refreshed, attractive home in good repair
- Consistent temperature throughout
- Easy to temperature control
- Damp and drafts eliminated
- Excellent ventilation
- Excellent indoor air quality
- Improved health/wellbeing – good for asthma, eczema
- Improved mental health

# Any questions?



[cambridge.gov.uk](http://cambridge.gov.uk)

[facebook.com/camcitco](https://facebook.com/camcitco)

[twitter.com/camcitco](https://twitter.com/camcitco)

# Climate Change Community Champions Programme







Home to approx.  
260,000 residents

Has the largest  
population of  
older people in  
London

One of the fastest  
growing Boroughs  
with young families

# Climate Change Community Champions

## **Objectives:**

To raise awareness of the environment and climate change through small community actions.

To recruit and train volunteer community members to explore, engage and disseminate information and awareness of climate change into the community through a provision of regular participation platforms that are fun, interactive and engaging.

Encourage small green changes that can be made to day to day living.



## Climate Change Community Champions Programme



Funded by the National Lottery Tackling the Planet Grant - £9,9650.00  
Working in partnership with Havering Volunteer Centre who managed the recruitment and training of the 'lead' Champions.

Started May 2022 - June 2023 – due to maximisation of the grant & Volunteer Centre's continued partnership the programme continued until October 2023 and still continues in a reduced form.



**42 'Lead' Champions recruited** – who led on litter picks / promote & disseminating climate change information/ attend events/activities;  
take part and encourage others to take part in Council/Government surveys or consultations.

**73 Community Events/Activities took place in 2022**

**70 Community events/activities took place in 2023**

## Greener initiatives through the themes:

- Recycling & Waste Reduction, Plastic Reduction & Composting
- Food – reducing food waste and understanding food miles
- Cutting emissions within homes & businesses
- Transport & travel
- Better air quality and reducing pollution
- Wildlife & Bio Diversity, Clean & Green Spaces
- Make Do and Mend
- Health & Fitness

# How this was achieved:

Between June 22 – October 23

<p>4 Repair Cafes Upcycling Arts &amp; Crafts activities</p> <p>Bike Repair Workshops</p> <p>6 Composting Workshops</p>	<p>9 Clothes Swop Events School Uniform Swops</p> <p>Repair or upcycle clothing activities</p> <p>Re-useable Nappy demonstrations</p>	<p>Weekly Walk for Health, Weekly Community Gardening</p> <p>Tree appreciation &amp; Mindfulness sessions</p> <p>Promoted a wide range of health &amp; fitness activities</p>	<p>Talks at a range of venues &amp; online: Stop Smoking Air Pollution Vehicle Anti-Idling Reducing travel carbon emissions Cycling activities</p>
<p>Home Energy Efficiency talks and engagement events</p> <p>Promoted the Governments Sustainable Warmth Programme</p>	<p>4 Love Food Hate Waste workshops &amp; Cooking on a budget</p> <p>Nutritional talks and advisory sessions</p> <p>‘Growing Your Own’ talks &amp; demonstrations</p>	<p>Monthly Green Café events – various speakers &amp; activities on a range of subjects.</p> <p>Weekly Litter Picking across the Borough</p>	<p>2022 - The Great Big Green Week 13 events took place across the Borough</p> <p>Eco Fayre &amp; Greening Your Small Business Event</p>



## Energy Efficiency

UK waste 16% of their billed electricity, which can amount to £75 per year per person, because of leaving appliances on 'stand by'.

## Plastic bags

take between 10-12yrs to decompose.

## Stop Food Waste

The UK disposes of around 10million tonnes of wasted food every year.

## Cigarette Butts

Are the No.1 littered single use plastic item in the world. Taking around 10yrs to decompose.



# A RANGE OF THE CLIMATE CHANGE COMMUNITY CHAMPION PARTNERS



Friends of Parks Groups  
The Green Street Group  
Harold Hill Wombles



**BIG SMILE** 😊  
**COLLECTIVE**

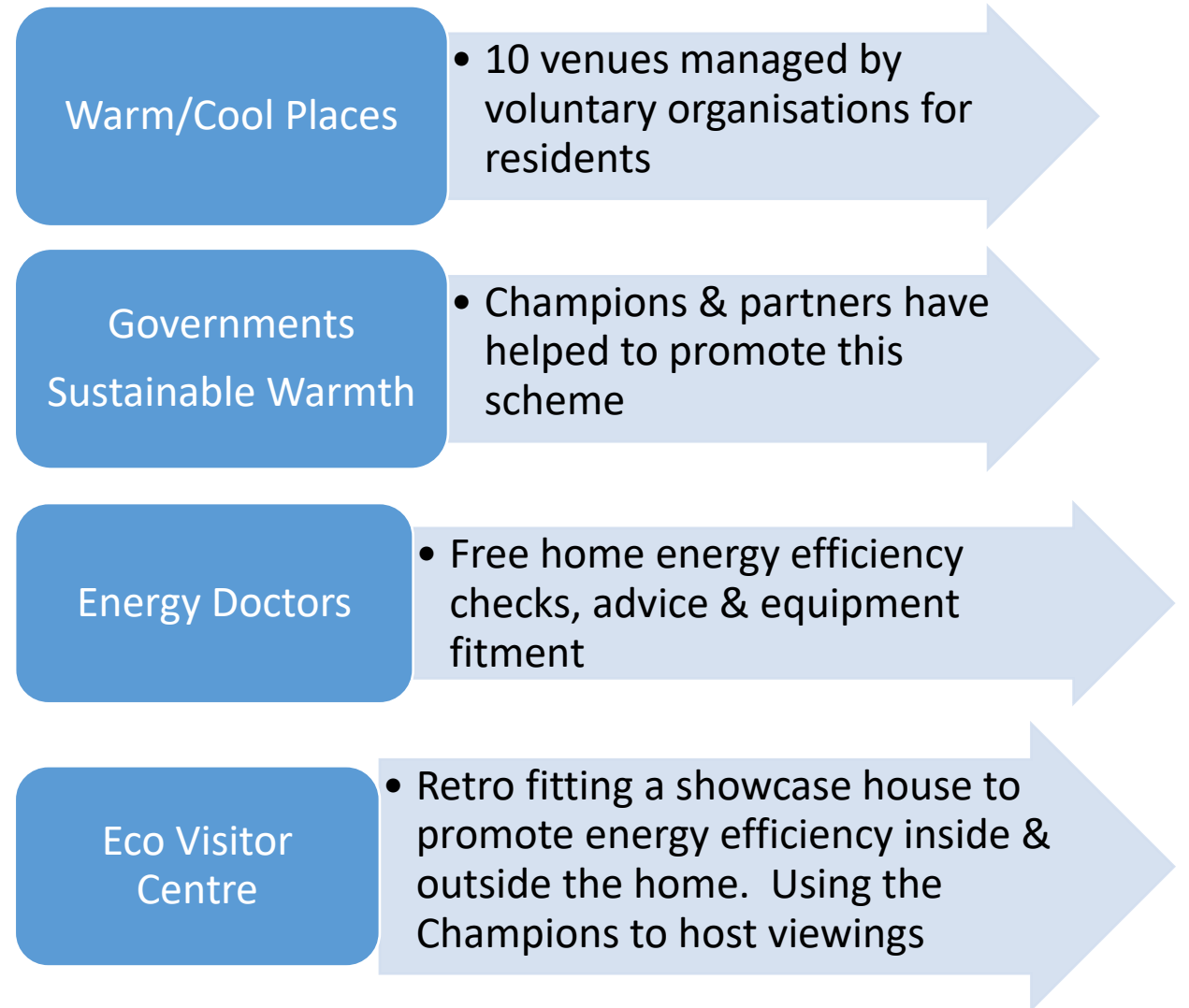
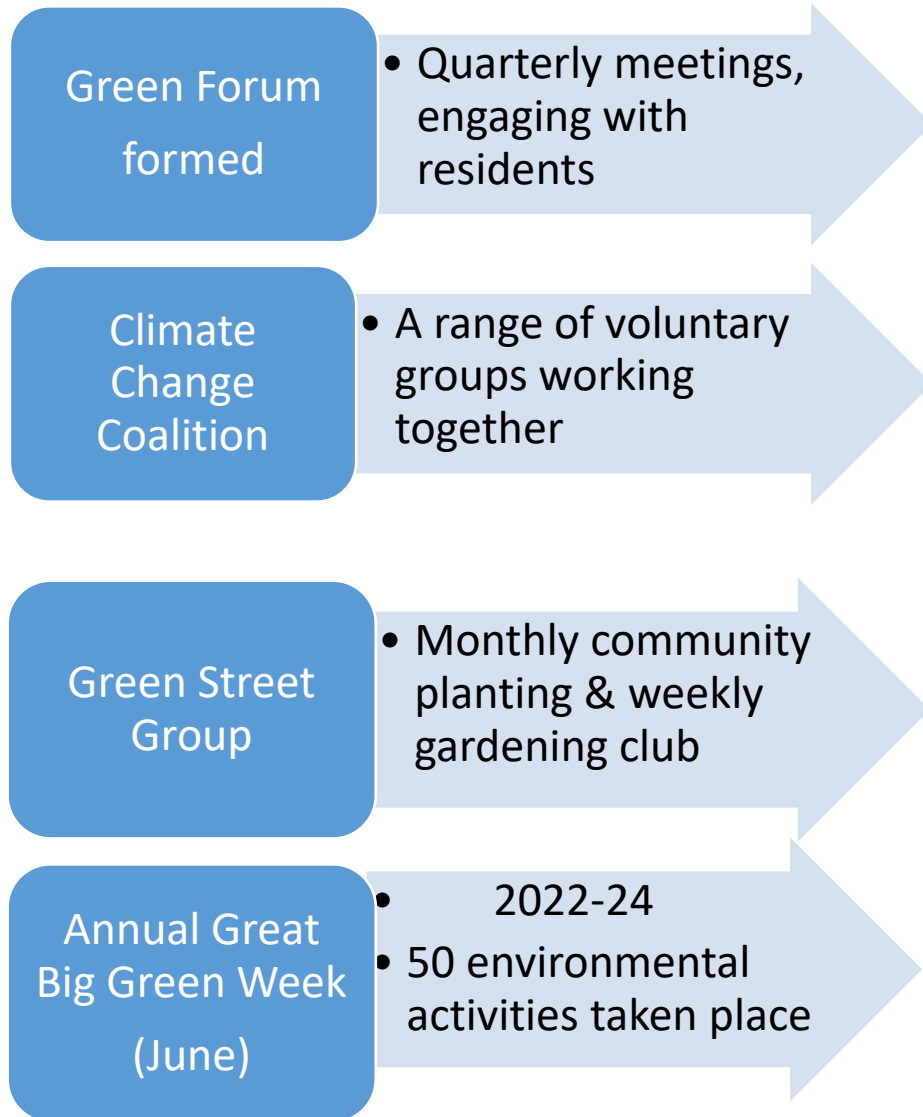
Pantry  
Shelf

# HAVERING CHANGING



Age UK RBH in Partnership with the London Borough of Havering

# Sustainability





# Celebrating Success

**Good Networking & Good Partnership  
working is key**



**This programme could only be achieved with the help of many.**

# Climate Change Community Champions Programme

For more information, ideas and partnership working contact:

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