cosy homes oxfordshire

An introduction to Cosy Homes Oxfordshire:
Making home retrofit simple

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21st January 2021

low carbon hub

NATIONAL ENERGY FOUNDATION

RETROFIT WORKS
BUILDING EFFICIENCY TOGETHER

1. What we do
2. Some of the challenges
3. How data can help
4. The National Retrofit Strategy

Our Aims are to:

- Remove the stress from your home retrofit
- Reduce your home carbon emissions
- Lower your energy bills
- Create a more comfortable and healthier home
- Improve your home's EPC rating, unlocking long-term value

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How we can help you

The Client Journey

Overseen & Quality Assured by a Qualified Retrofit Coordinator

- Online Survey
- Home Assessment
- Whole House Plan
- CSA signed BPS produced
- Quotes from Trusted Contractors
- Contracts Agreed
- Works Proceed
- Signed off by Retrofit Coordinator

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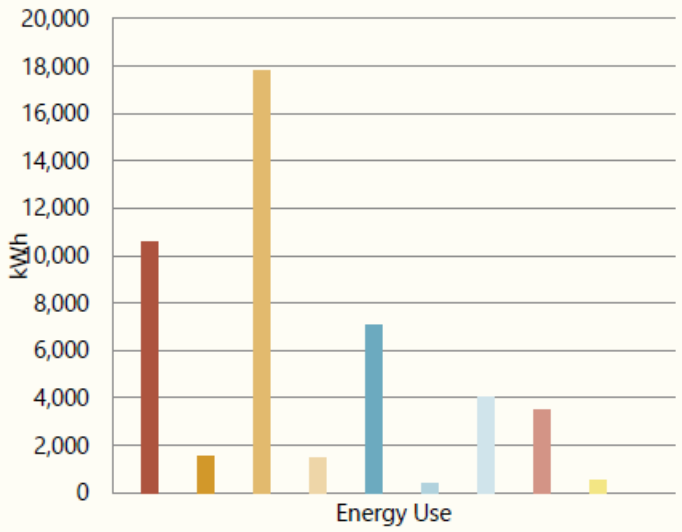
5: Where you are now

Below is the estimated baseline of your home's energy performance, from which we evaluate improvements:

Data Confidence scored out of 10	Energy Rating 1 to 100 – higher is better	Fuel Bills Annual*	Tonnes CO_2 Annual*
10.0	**43 E**	**£1,960**	**8.61**
Based on the data we collected from your home	The national target for all homes by 2035 is **C**[1]	The UK average is **£1,184**[2]	The UK average per home is **3.50**[3]

Your estimated current energy use, bills & emissions



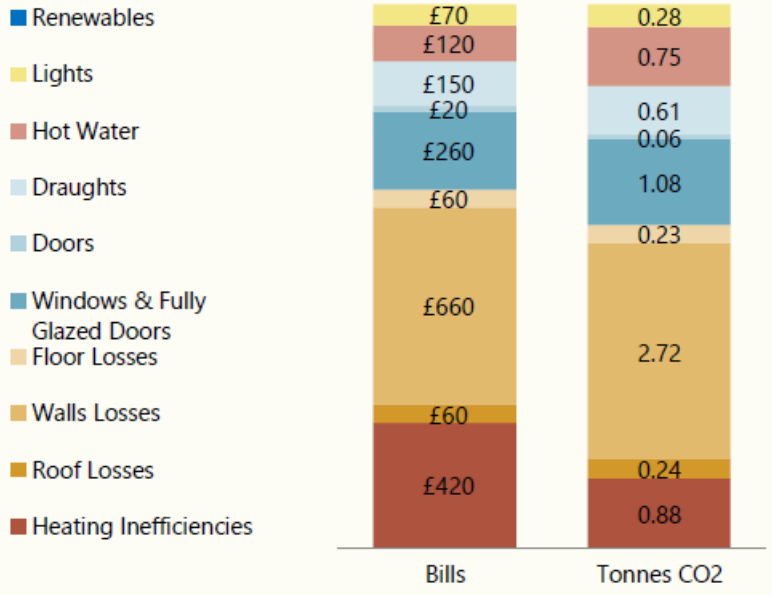
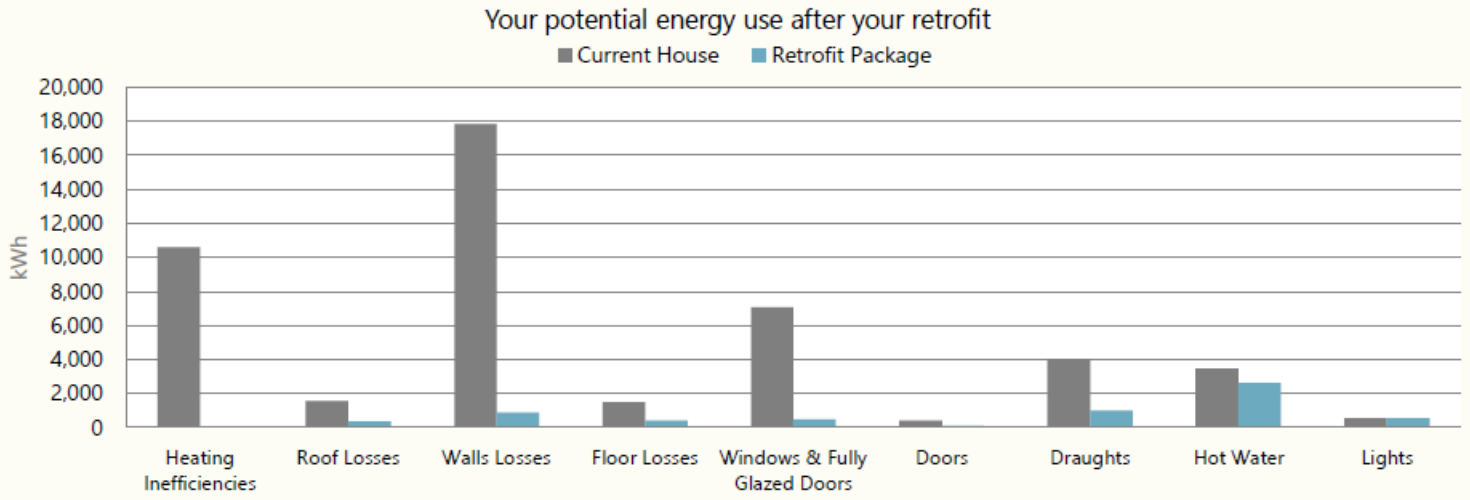


*Figure is net after revenue/adjustments from any renewables; [1]Clean Growth Strategy; [2]OFGEM; [3]Catapult (See References)

6: What you can achieve

Below are the projected energy performance improvements for your home, based on our evaluation:

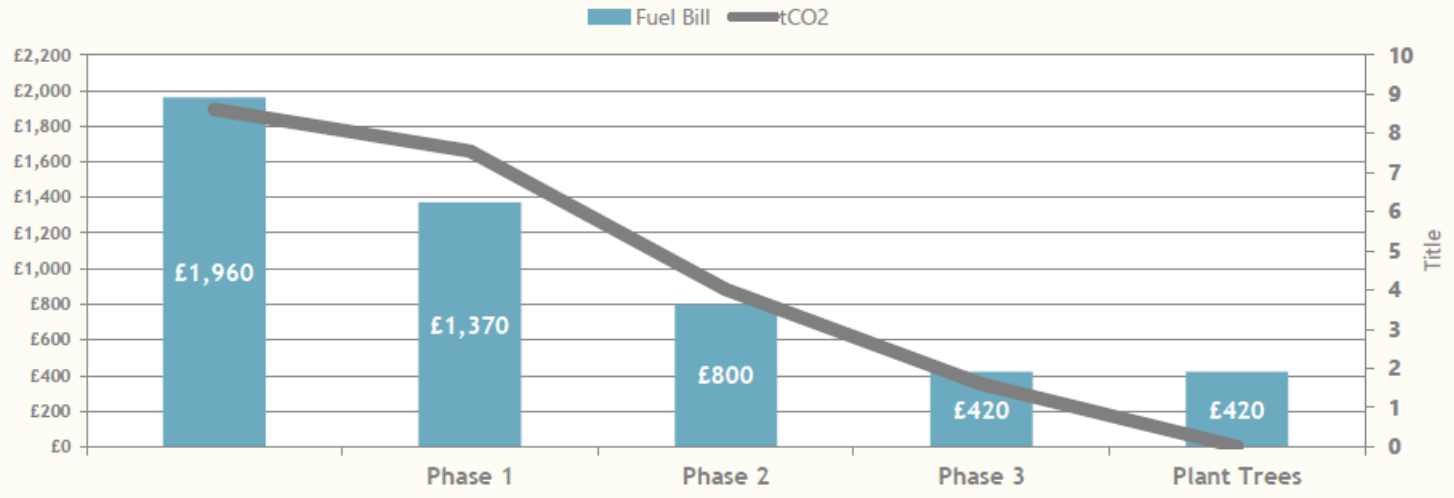
Comparison	Energy Rating	Fuel Bills	tCO_2
Before	**43 E**	**£1,960**	**8.61**
After	**86 B**	**£420**	**1.60**



8: Phasing your improvements

Summary of Packages	Estimated Costs	Energy Rating	Fuel Bill	tCO_2
Where you are now		**43 E**	**£1,960**	**8.61**
Phase 1: Draught-proofing; roof insulation	£7,360	59 D	£1,370	7.54
Phase 2: IWI; new windows and doors; ventilation measures	£54,040	76 C	£800	4.01
Phase 3: ASHP & Solar PV	£18,400	86 B	£420	1.6
Combined savings			**£1,540**	**7.01**
Combined reduction			**79%**	**81%**
Trees that you could plant to bring the remaining	**1.6**	**tCO_2 to zero**	**70**	

How the phasing affects your annual bills & emissions



6.4. Skeiling Insulation

DESCRIPTION			
The skeilings of the original building are to be insulated internally			
REFERENCES	R4		
LOCATION	Second floor		
EXISTING FORM / CONDITION	Zero to 50mm insulation Internal Finish: plasterboard		
ESTIMATED CURRENT U-VALUE		0.6-2 W/m²K	
TARGET U-VALUE		0.4 W/m²K to match insulated cavity wall	
RELEVANT STANDARDS			
Building Regulations Part L1B, Part C and Approved Document 7 Materials and workmanship.			
INTERFACE WITH OTHER ELEMENTS			
The loft insulation will partially link with the insulation to the skeilings and the two insulation layers have to create a continuous insulation layer without gaps.			
INSTALLATION SEQUENCE IN RELATION TO OTHER SITE OPERATIONS			
The insulation of the skeilings and the loft R1should be undertaken together.			
PRODUCT SELECTION			
Insulation options	Woodfibre	Aerogel	Glass / rock wool
Form	Flexible / rigid batts	rigid composite board	Flexible / rigid batts
λ (W/mK)	0.039	0.015	0.032-0.04
Attributes	Sustainable	Vapour permeable, inflammable	Vapour permeable, inflammable
Limitations	Should not be installed where it could become damp		
Plaster finish	Lime/ clay plaster - must be breathable and compatible with insulation: Baumit Klima RK 38 or Breathaplasta lime plaster or similar approved		
Paint	Paint finish to have a Sd (steam diffusion) factor of ≤0.1m rating (Class 1 as per DIN EN ISO 7783 2 (sd [m]) and a VOC content of ≤ 30g/l (as per EU DIRECTIVE 2004/42/CE). Colour to be confirmed by client		
WORK SPECIFICATION			

PRE-INSTALLATION WORK

1. Area to be insulated to be cleared, skirtings removed and set aside for reuse, carpet pulled back to be reset after installation of insulation, and wall paper removed. Fill any gaps in the existing plastered wall.

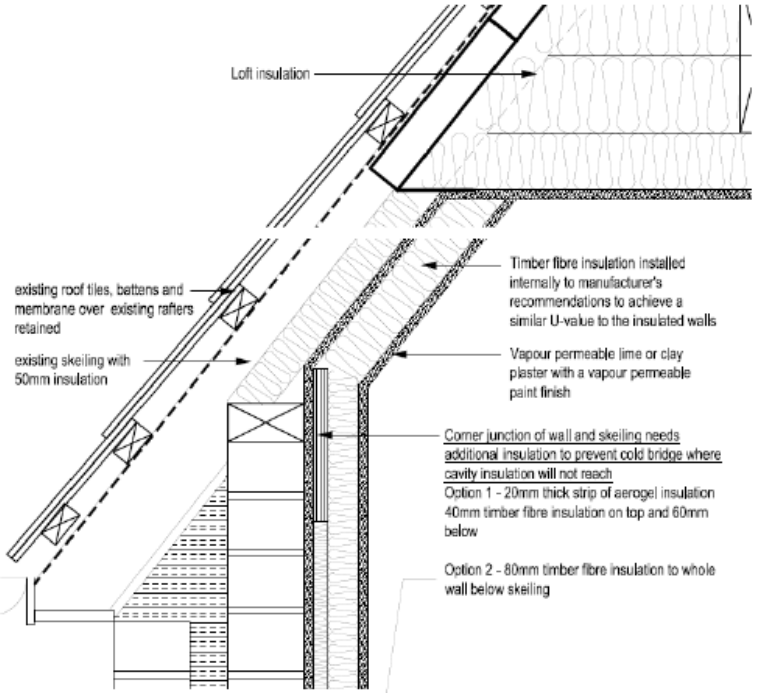
INSTALLATION WORK

2. Install insulation in accordance with manufacturer's recommendations. Ensure a tight fit to adjacent walls, floor and ceiling.
3. Plaster and decorate with vapour permeable materials. Protect floor, walls, ceiling and furniture and clean any drops as soon as possible.
4. Replace skirting and carpet.
5. Clear and clean site.

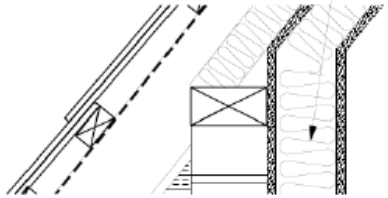
SUPPORTING DIAGRAMS

Condition: INSULATION TO SKEILING WITH 50mm INSULATION

WALL - SKEILING SECTION (AEROGEL INSULATION) - SCALE 1:5 @A4 (Do not scale from this dwg)



WALL - SKEILING SECTION (TIMBER FIBRE INSULATION) - SCALE 1:5 @A4 (Do not scale from this dwg)



PAS 2035

It is the new standard that drives the **'whole house approach'** including the **'fabric first'** methodology and the role of the Retrofit Coordinator.

The Cosy Homes Scheme is built around PAS2035 – so you are in good hands!

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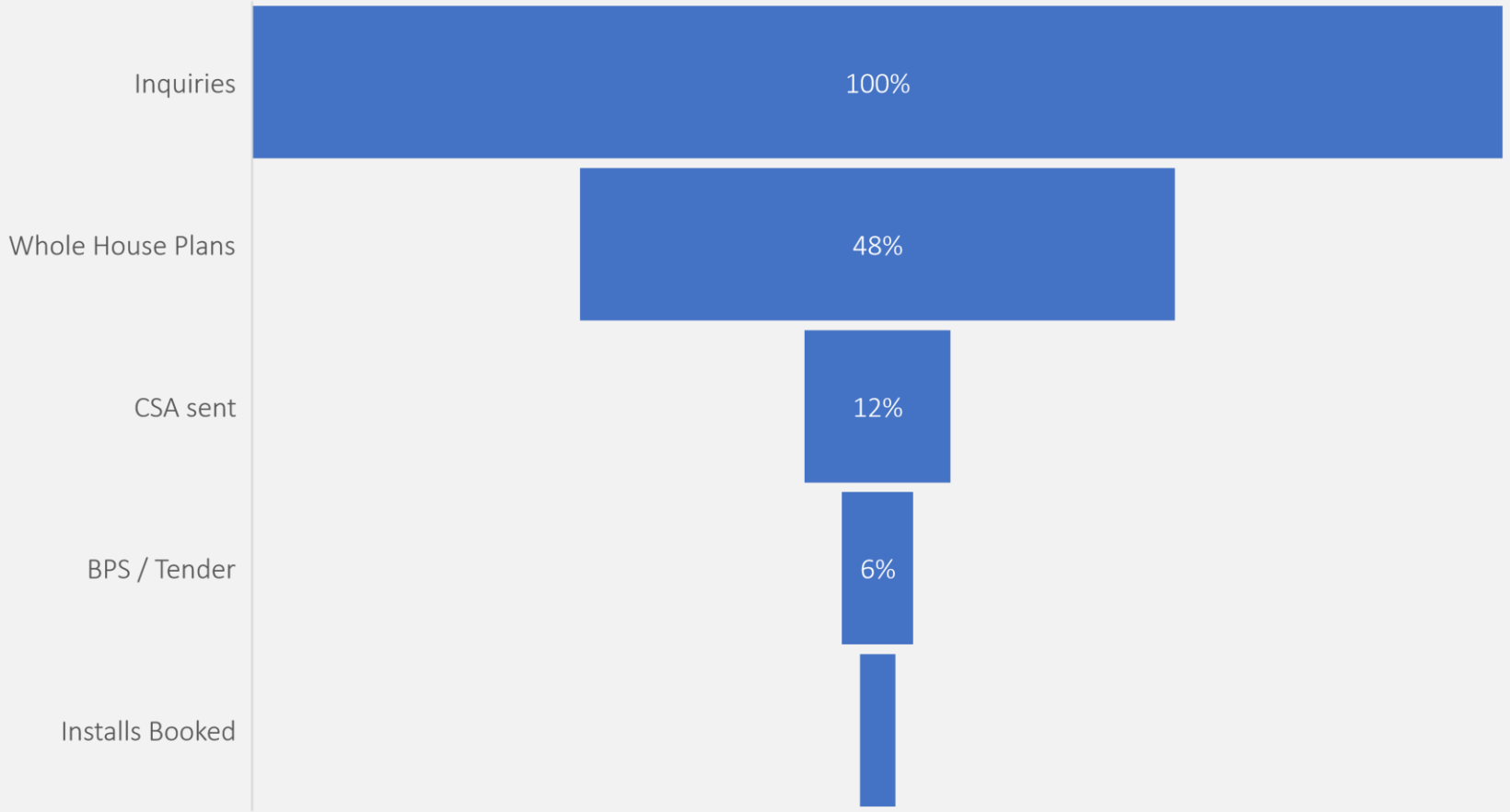
Some of the challenges

The Funnel of Doom!



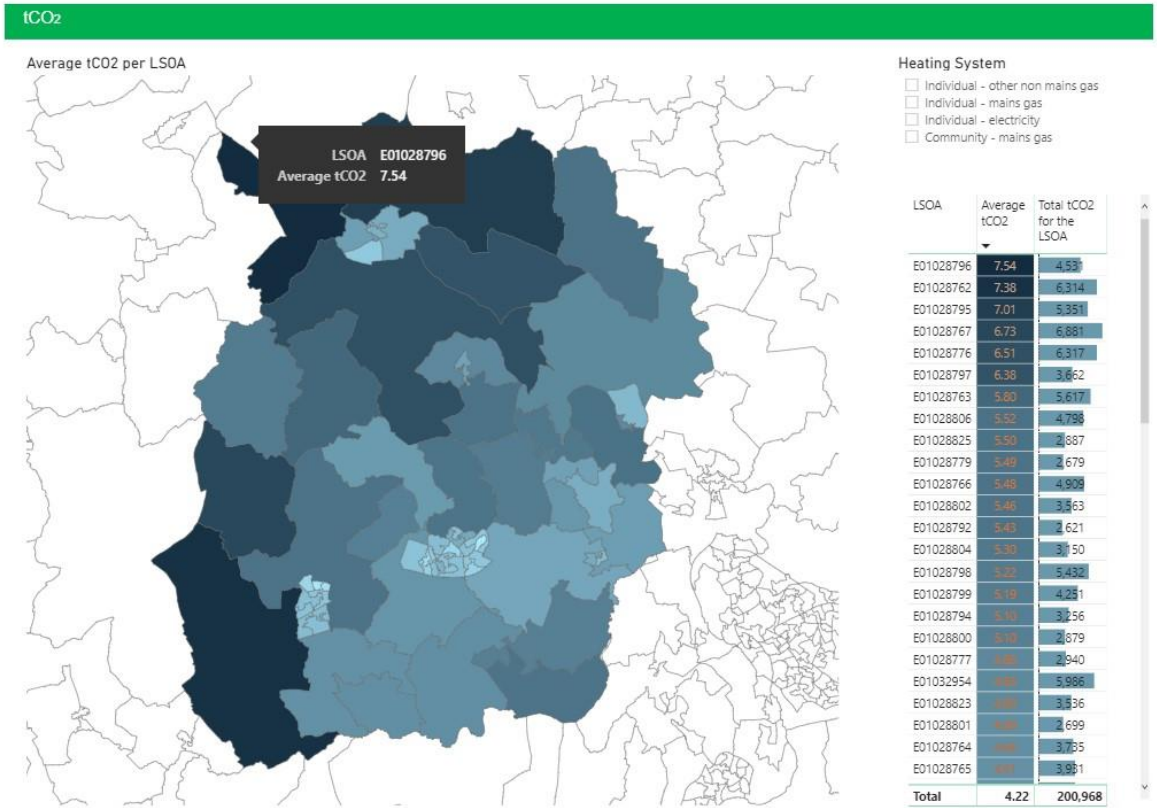

Retrofitting is never
straight forward!

How data can help

Maps - Average CO2

Organisation: West Oxfordshire District Coun

Use the filters at the top to see average CO2 per LSOA by property type, for example



LSOA	Average tCO2	Total tCO2 for the LSOA
E01028796	7.54	4,53
E01028762	7.38	6,314
E01028795	7.01	5,351
E01028767	6.73	6,881
E01028776	6.51	6,317
E01028797	6.38	3,662
E01028763	5.80	5,617
E01028806	5.52	4,796
E01028825	5.50	2,887
E01028779	5.49	2,679
E01028766	5.48	4,909
E01028802	5.46	3,563
E01028792	5.43	2,621
E01028804	5.30	3,150
E01028798	5.22	5,432
E01028799	5.19	4,251
E01028794	5.10	3,256
E01028800	5.10	2,879
E01028777	5.05	2,940
E01032954	4.99	5,986
E01028823	4.89	3,536
E01028801	4.85	2,699
E01028764	4.84	3,765
E01028765	4.81	3,931
Total	4.22	200,968

Energy profiles - SAP

Organisation: West Oxfordshire

Filter portfolios: (none selected) and or not

Homes: 48307 of 48371

Av SAP 60.24

Av EI 55.78

Av tCO_2 per home: 5.176

Av bill (2012 prices): £1020.17

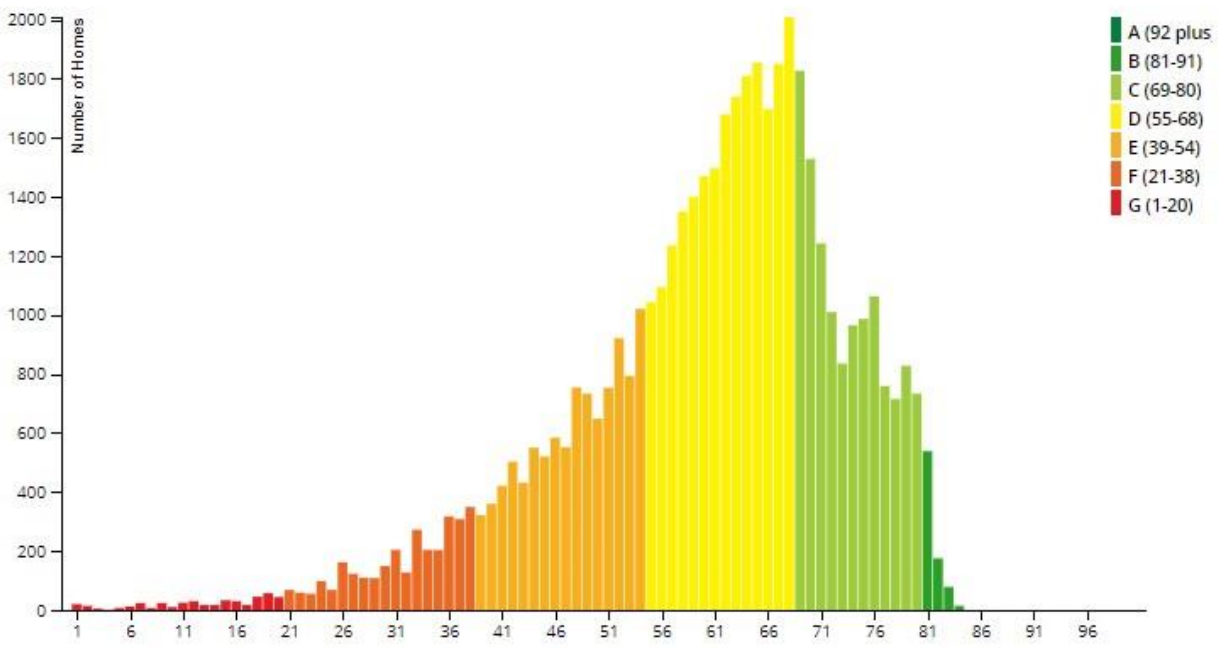
Av heating (2012 prices): £939.55

Overheating risk
Slight 456
Med 101
High 16

Av 992 60.31

- SAP profiles
- EI profiles
- CO2 profiles
- Fuel bills
- Heating & Hot Water bills
- Overheating
- SAP 992
- Housing Profiling
- Confidence Profiling

Bar Chart | Addresses



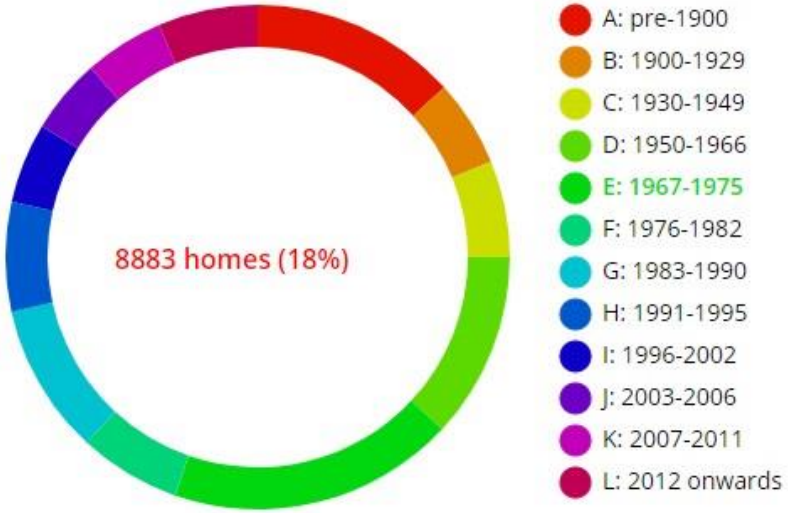
Age Band

Organisation: West Oxfordshire | Filter portfolios: (none selected) | and | or | not | ✖

Chart homes: 48308 of 48371

Pie Chart | Addresses

Energy Profiling
Age Band
Property Type
Wall Type
Roof Type
Glazing
Heating Type
Main Fuel
Confidence Profiling



Hover for home count and breakdown, **Click** for list of homes.
Some homes will fall into more than one Age Band present, because a RdSAP survey can divide a home up into as many as 5 building parts. There may therefore be homes that fall into more than one of the categories above. Please don't worry therefore if the numbers do not appear to add up perfectly. You can inspect the actual addresses in the 'Addresses' tab to look at overlaps in more detail.

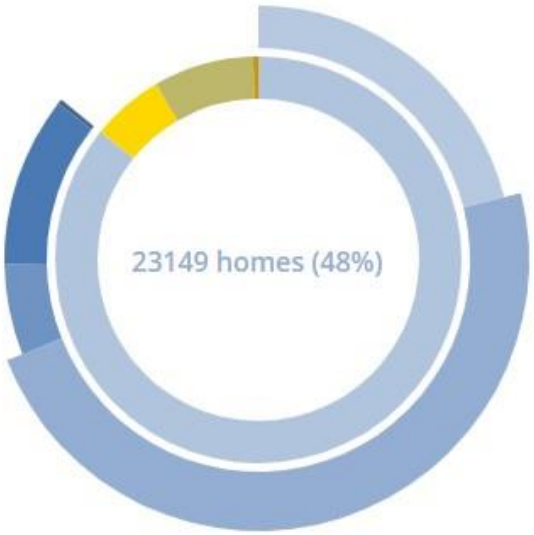
Built form

Organisation: West Oxfordshire Filter portfolios: (none selected) and or not

Chart homes: 48308 of 48371

Pie Chart Addresses

- Energy Profiling
- Age Band
- **Property Type**
- Wall Type
- Roof Type
- Glazing
- Heating Type
- Main Fuel
- Confidence Profiling



- Houses
- Bungalows
- Flats
- Maisonettes
- Detached
- Semi Detached
- End Terrace
- Mid Terrace
- Enclosed End Terrace
- Enclosed Mid Terrace

Hover for home count and breakdown, **Click** for list of homes.

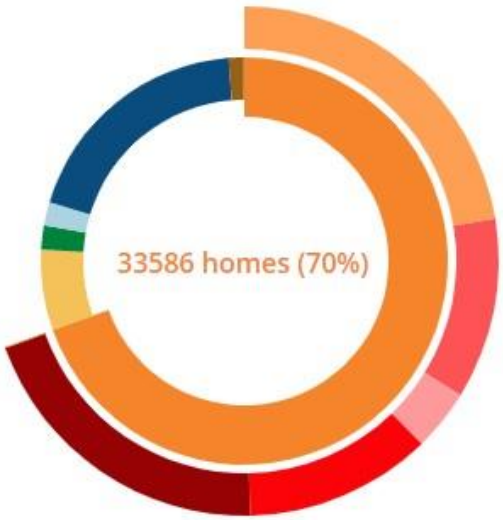
Wall Type

Organisation: West Oxfordshire | Filter portfolios: (none selected) | and | or | not

Chart homes: 48308 of 48371

Pie Chart | Addresses

Energy Profiling
Age Band
Property Type
Wall Type
Roof Type
Glazing
Heating Type
Main Fuel
Confidence Profiling



- Cavity
- Solid Wall
- Timber Frame
- System Built
- Sandstone or Limestone
- Granite or Whin
- Cob
- Cavity: CWI
- Cavity: As Built Pre 1976
- Cavity: As Built 1976-1982 (CWI possible)
- Cavity: As Built 1983-1995 (CWI possible)
- Cavity: As Built Post 1995
- Cavity: Unknown
- Cavity: External and CWI
- Cavity: External only

Hover for home count and breakdown, **Click** for list of homes. Some homes will have more than one kind of wall present, because a RdSAP survey can divide a home up into as many as 5 building parts. There may therefore be homes that fall into more than one of the categories above. Please don't worry therefore if the numbers do not appear to add up perfectly. You can inspect the actual addresses in the 'Addresses' tab to look at overlaps in more detail.

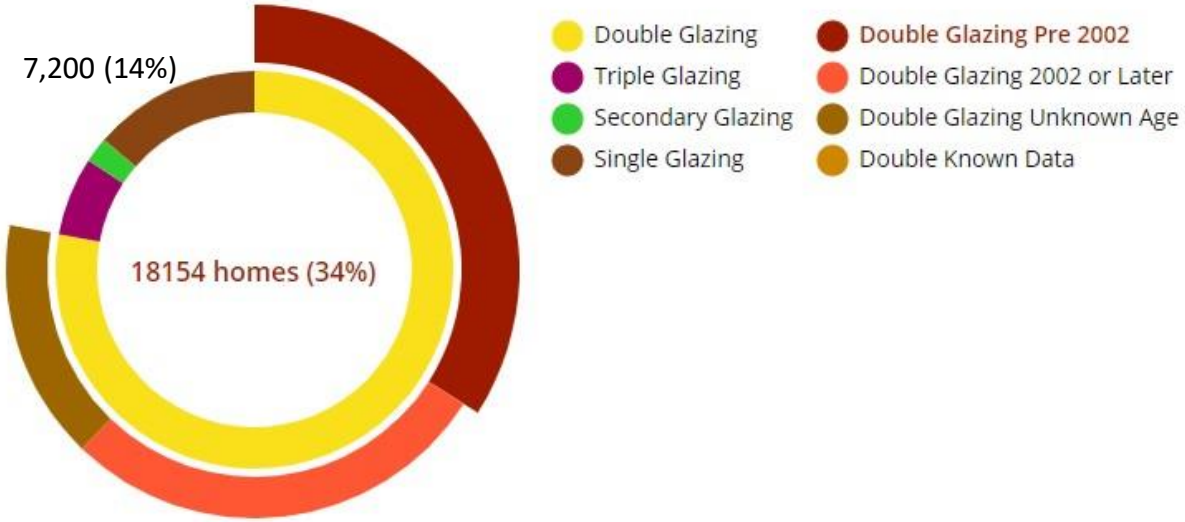
Glazing

Organisation: West Oxfordshire Filter portfolios: (none selected) and or not

Chart homes: 48308 of 48371

Pie Chart | Addresses

- Energy Profiling
- Age Band
- Property Type
- Wall Type
- Roof Type
- Glazing
- Heating Type
- Main Fuel
- Confidence Profiling



Hover for home count and breakdown, **Click** for list of homes. Some homes will have more than one kind of glazing present, because a RdSAP survey can include several glazing types. There may therefore be homes that fall into more than one of the categories above. Please don't worry therefore if the numbers do not appear to add up perfectly. You can inspect the actual addresses in the 'Addresses' tab to look at overlaps in more detail.

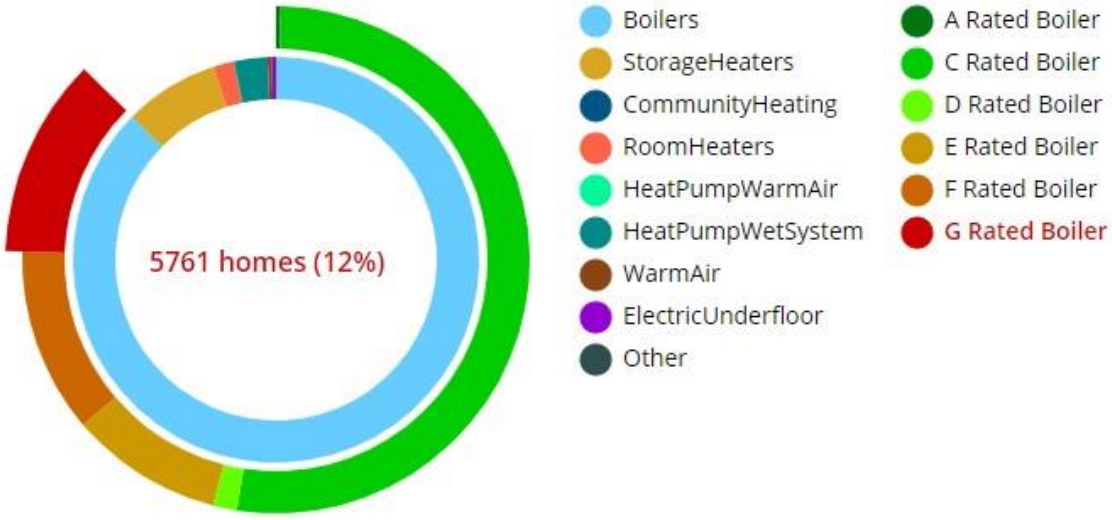
Heating Type

Organisation: West Oxfordshire | Filter portfolios: (none selected) | and | or | not

Chart homes: 48308 of 48371

Pie Chart | Addresses

Energy Profiling
Age Band
Property Type
Wall Type
Roof Type
Glazing
Heating Type
Main Fuel
Confidence Profiling



This chart shows the heating and hot water costs based on typical UK climate. More options will be available shortly.
Hover for home count and breakdown, **Click** for list of homes.

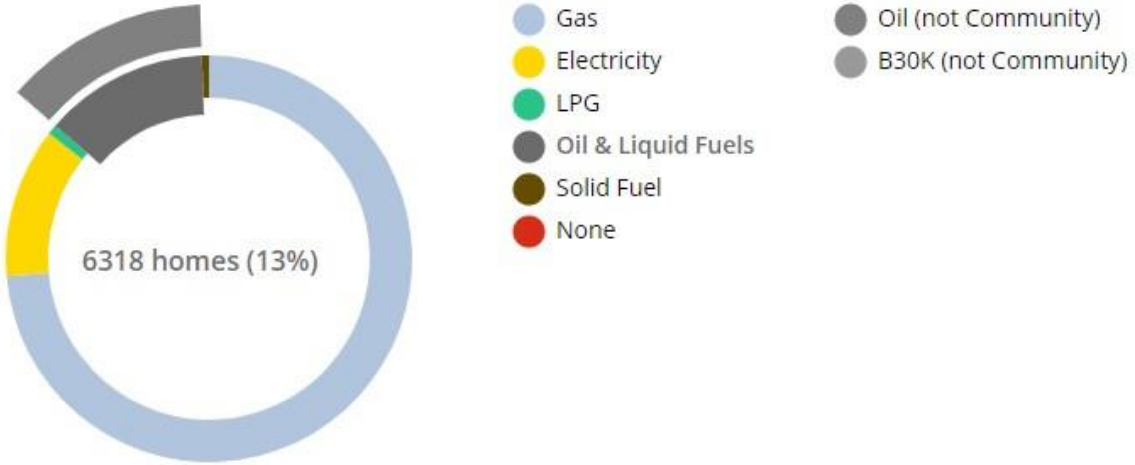
Main Heating Fuel

Organisation: West Oxfordshire Filter portfolios: (none selected) and or not

Chart homes: 48308 of 48371

Pie Chart | Addresses

- Energy Profiling
- Age Band
- Property Type
- Wall Type
- Roof Type
- Glazing
- Heating Type
- Main Fuel
- Confidence Profiling



Hover for home count and breakdown, **Click** for list of homes. Some homes will have more than one fuel, because a RdSAP survey can include two main heating systems. There may therefore be homes that fall into more than one of the categories above. Please don't worry therefore if the numbers do not appear to add up perfectly. You can inspect the actual addresses in the 'Addresses' tab to look at overlaps in more detail.

Construction Leadership Council

constructionleadershipcouncil.co.uk

Photo credit: Nottingham City Homes: Energiesprong Retrofit, Nelius Homes

Greening Our Existing Homes

National retrofit strategy

A consultative document

National retrofit strategy

The deliverables:

1. Building renovation plans. Deploying digital techniques to an agreed standard, an assessment based on survey, EPC input data, energy in-use data, and other relevant data such as location, occupancy, ownership etc., can deliver a building renovation plan or 'passport' for each residential unit or group of units, providing an evidence-based pathway to decarbonisation through fabric and water efficiency and zero carbon heating technologies, according to opportunity and budget.

Building renovation plans enable large-scale area-based and locally-managed programmes to be assembled and market opportunities opened up (including, for example, groups of properties suitable for off-site solutions e.g. Energiesprong). Combined with an end-to-end quality assurance system and post-retrofit evaluation of impact and energy outcome, this provides the conditions for low-risk institutional finance and increased consumer confidence. This would need to be founded on a centrally held property database that enables clarity and continuity on plans as ownership changes.

Examples of where this approach is starting to be adopted in the UK through local pilots can be used to inform a new standardised process and opportunities analysis. For example, learning from the BEIS supply chain pilots can be incorporated.[10]

2. Skills training modules will be informed by existing qualifications and the recently developed Retrofit Coordinator training standards (PAS 2035/2030). Building renovation planning involves the clustering of trades required for retrofit packages and - except for stand-alone measures such as loft insulation - demands co-ordination, and joint liability for outcomes, as well as adherence to standards for specific measures such as those laid out in PAS 2035. The definition of individual and coordinated packages will be an output for the 2020-2024 period to inform the development of new skills and qualifications.

3. Delivery programmes A series of area-based approaches build capacity in a locally relevant way from the bottom-up. Under a national umbrella of standards and expectations, each delivery programme is accountable for its impacts on employment, skills and carbon reduction. Every programme is made locally relevant by being based on the twin platforms of building plans and 'packages' of skills, which reflect the specifics of local housing stock. Delivery programmes can be initiated by local authorities, combined authorities, retrofit partnerships, local economic partnerships, community development groups, supply chain partners etc., to suit the condition, ownership profiles, financial and skills opportunities in diverse localities.

A retrofit partnership is a place-based franchisee of the powerful central brand consisting of advocates, designers, installers and supply chain firms.

> "The cost of each plan will **reduce** as greater numbers are delivered"

[10]https://www.gov.uk/government/publications/energy-efficiency-improvement-rates-local-supply-chain-demonstration-projects/local-supply-chain-demonstration-projects-summaries

The delivery system: Successful delivery of the strategy requires a suite of interdependent modules and if any are left out, the whole ceases to function. Each are dealt with in turn below.

Leadership and Communications

An umbrella to tie diverse local programmes into a coherent whole: A Retrofit Delivery Authority akin to the stature of the Olympics Delivery Authority is needed to oversee and lead strategy delivery, ensuring that all stakeholders, in particular locally-based delivery consortia, are fully enfranchised and that standards are high.

Supported transition and a research and innovation culture

Provide a safe development environment for new entrants and existing organisations so that they grow to meet the new demands as well as extending in capability.

Performance Standards

Ensuring homes perform as promised.

Finance and Grants

Financial support and fiscal incentives in a variety of ways to suit the variety of ownership models.

Training and Accreditation

Building up an army of professionals and trades that can do the work fully and well. This involves developing the skills of the existing workforce and recruiting and training new entrants.

Materials and Equipment

Scaling up the supply of materials and equipment in line with demanding quality standards.

Creating Customer Demand

A comprehensive approach to giving every homeowner a vision of what their home needs, the belief that it is needed and a route to achieving the change.

Compliance and Quality regime

Creating an industry culture that ensures all jobs are done to high, enforced standards.

Proposal for the partnership approach to funding the programme: It is proposed that a partnership approach is adopted to funding the national retrofit strategy. The costs are outlined in the table below. Critically, the Government is being asked to invest £5.3 billion over the next four years.

2021
200,000 homes

£3.64bn* programme
36,000 direct jobs sustained (27,000 indirect)
Government invests £1.16bn
Govt revenue **£2.69bn**
Tax benefit per £, **£1.36**
Private capital **£2.5bn**
Health benefits **£316m**
Additional GDP **£4.76bn**

Avoided CO2 emissions: 0.532Mt

2022 - 2024
855,000 homes

£16.8bn programme
100,000 direct jobs sustained (80,000 indirect)
Government invests £5.3bn
Govt revenue **£12.4bn**
Tax benefit per £, **£1.84**
Private capital **£11.4bn**
Health benefits **£1.4bn**
Additional GDP **£21.9bn**

Avoided CO2 emissions: 2.53Mt

By 2030
12,300,000 homes

£235.7bn programme
500,000 direct jobs sustained (390,000 indirect)
Government invests £75.4bn
Govt revenue **£174.4bn**
Tax benefit per £, **£1.58**
Private capital **£160.2bn**
Health benefits **£22.1bn**
Additional GDP **£308.7bn**

Avoided CO2 emissions: 46.8Mt

Net Zero homes from 2040
27,300,000 homes

£523.7bn programme
Jobs sustained down to **70,000** (40,000 indirect)
Government invests £167.6bn
Govt revenue **£387.6bn**
Tax benefit per £, **£1.84**
Private capital **£356.1bn**
Health benefits **£55.9bn**
Additional GDP **£686.1bn**

Avoided CO2 emissions: 84.9Mt

Other benefits:

- **£436** energy bill saving per home on average per year
- Can be regionally focused targeting the **greatest need.**
- **6,000** avoided deaths p.a.
- **800,000** jobs (retrofit and related)
- Household disposable incomes **2**% higher
- For every **£1** invested - **£2** back in economy

£436 energy bill saving
per home on average

*All figures are cumulative.

Thank you!

Here to help from small jobs like upgrading insulation and boilers to whole house energy efficiency solutions

HAPPY HEALTHY HOMELY



cosy homes oxfordshire

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STBA SUSTAINABLE TRADITIONAL BUILDINGS ALLIANCE

I'm a member Community Energy England

Association for the Conservation of Energy

NHIC NATIONAL HOME IMPROVEMENT COUNCIL