

South Derbyshire EPCs Portfolio results Session 1

Energy Services supports organisations to switch to renewable and low carbon energy solutions

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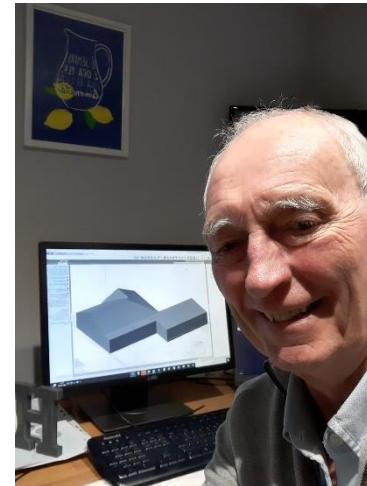


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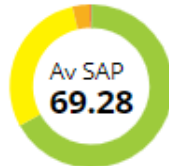
Our journey

- Original contract – 600 EPCs
- XML files and RdSAP generated results
- BEIS:
 - customer liaison
 - 100 additional EPCs
 - Trial of manual versus software approach
 - Report produced with SDDC highlighted as partner organisation
- Overview of portfolio assessed
- “as is” system generated results
- Our recommendations
- Ability to adapt results
- Final results session



Portfolio overview

Homes:
700 of 700

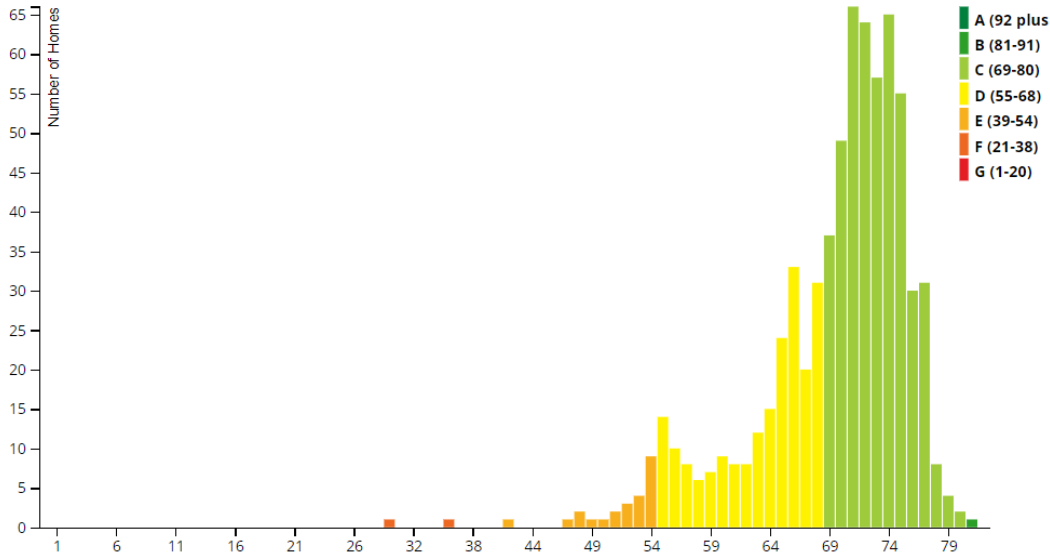
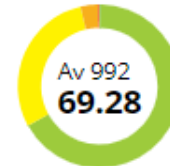


Av tCO₂ per home:
2.435

Av bill (2012 prices):
£550.29

Av heating (2012 prices):
£506.11

Overheating risk
Slight **2**
Med **3**
High **0**

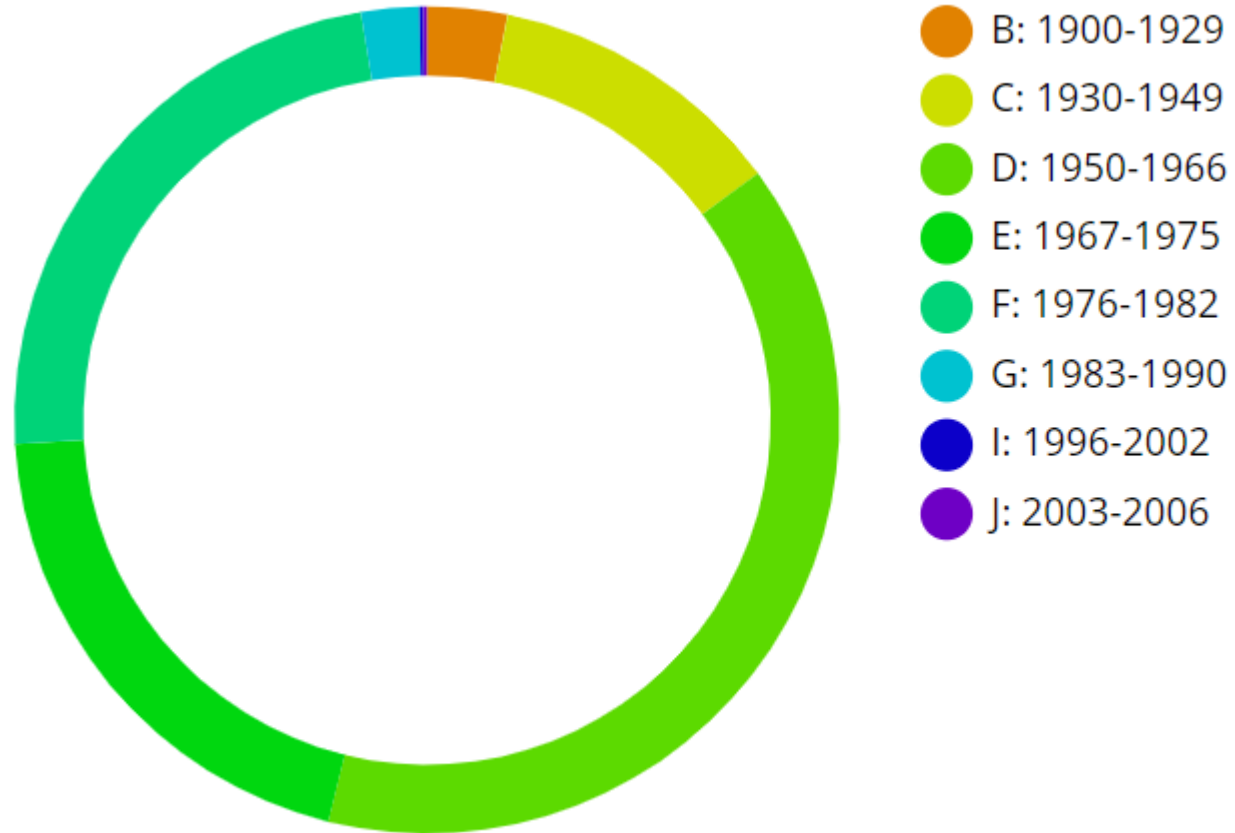


A	0
B	1
C	468
D	205
E	24
F	2
G	0

Batch	total	b	c	d	e	f	g
1	90		87	3			
2	63		52	10	1		
3	63		62	1			
4	55	1	48	6			
5	52		50	2			
6	49		47	2			
7	75		25	44	4	2	
8	105		52	40	13		
9	58		24	30	4		
10	51		17	34			
11	39		7	30	2		
TOTALS	700	1	471	202	24	2	0



Age band



- 80% are 1950-1980 build

Property types

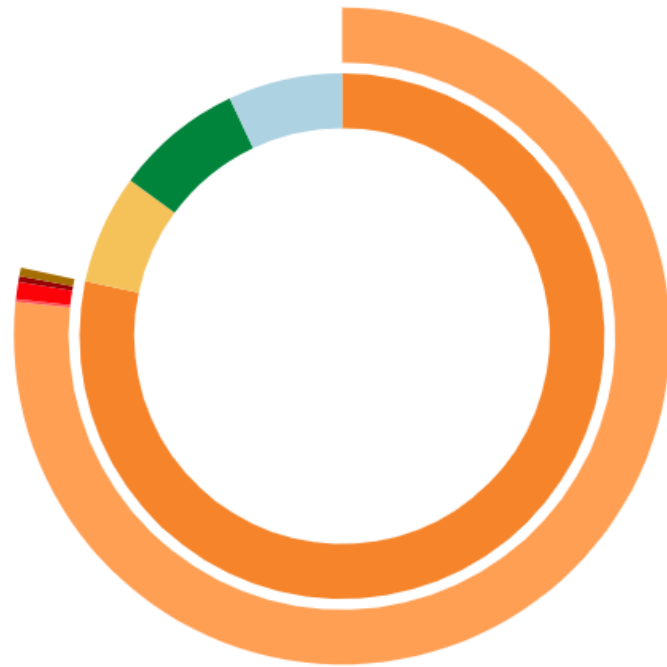


- Houses
- Bungalows
- Flats
- Maisonettes

- Detached
- Semi Detached
- End Terrace
- Mid Terrace

- 22% houses
- 25% bungalows
- 51% flats
- 2% maisonettes

Wall type



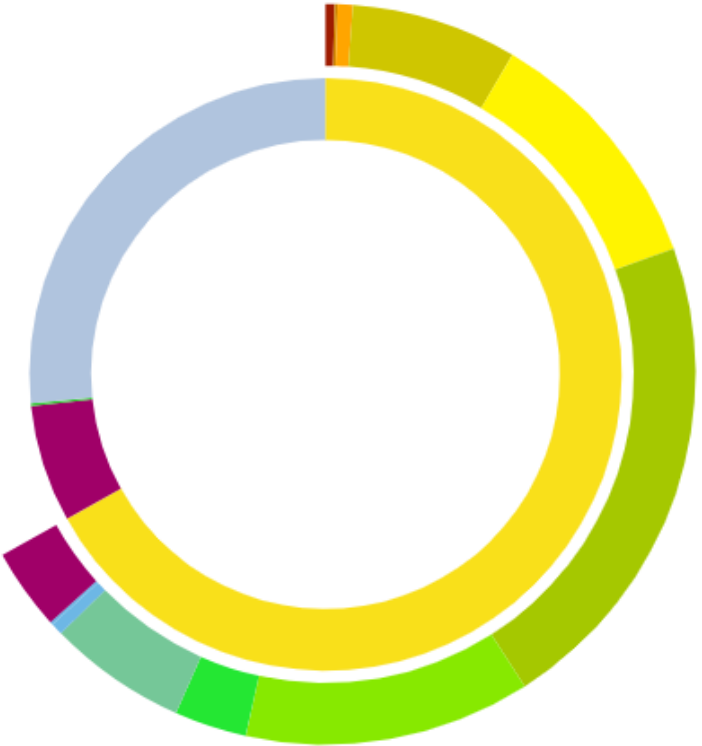
- Cavity
- Solid Wall
- Timber Frame
- System Built

- Cavity: CWI
- Cavity: As Built Pre 1976
- Cavity: As Built 1983-1995 (CWI possible)
- Cavity: As Built Post 1995
- Cavity: External only

- 78% cavity walls



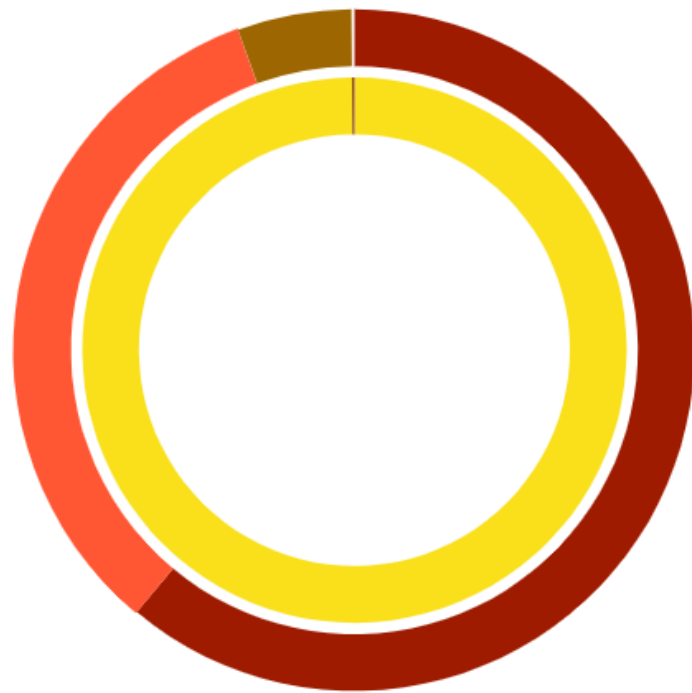
Roof type



- 67% pitched
- 3 homes with no insulation
- 27 homes with unknown amounts



Glazing

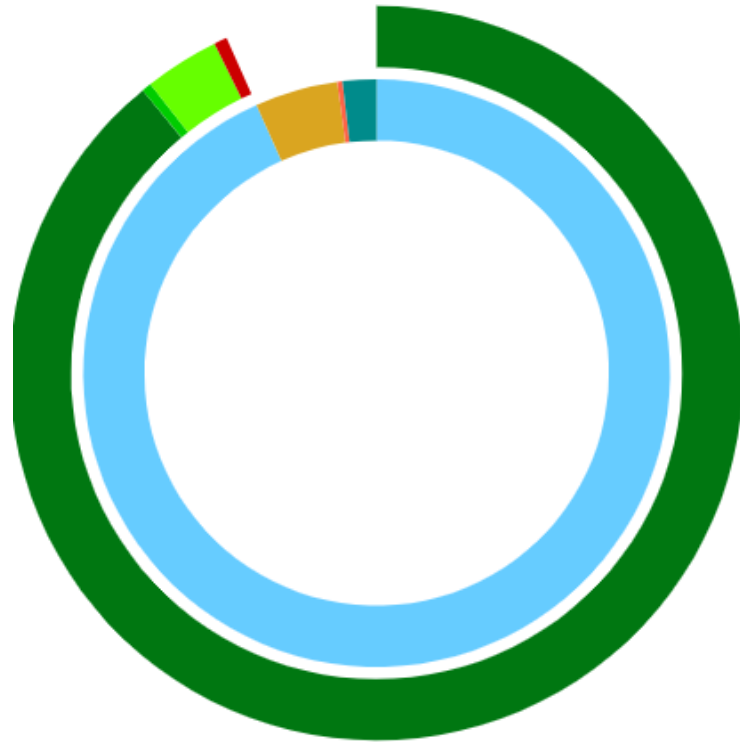


● Double Glazing
● Single Glazing

● Double Glazing Pre 2002
● Double Glazing 2002 or Later
● Double Glazing Unknown Age

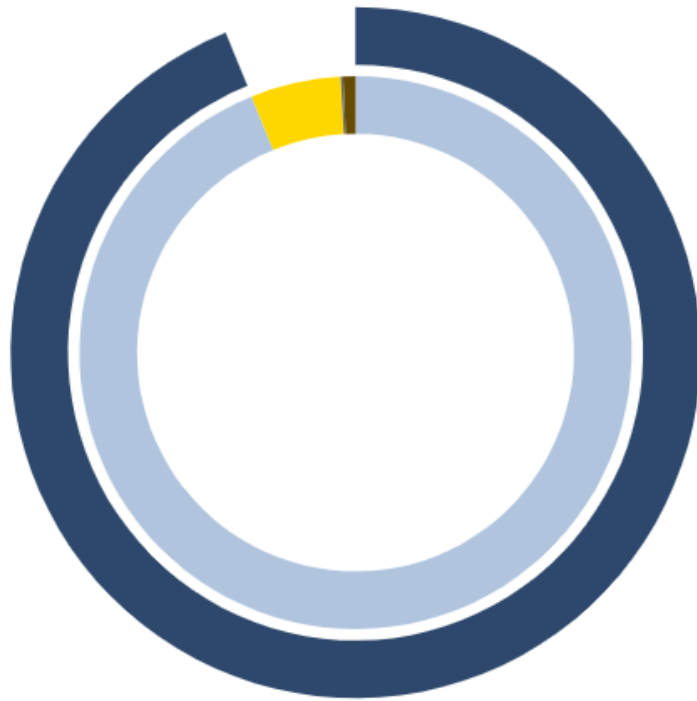
- 1 home with single & double
- 38 double with an unknown age

Heating type



- 89% A-rated boilers
- 5% storage heaters
- 2% heat pumps
- 0.3% room heaters

Main fuel



- Gas
- Electricity
- Oil & Liquid Fuels
- Solid Fuel

Gas (not Community)

- 94% gas
- 5% electricity

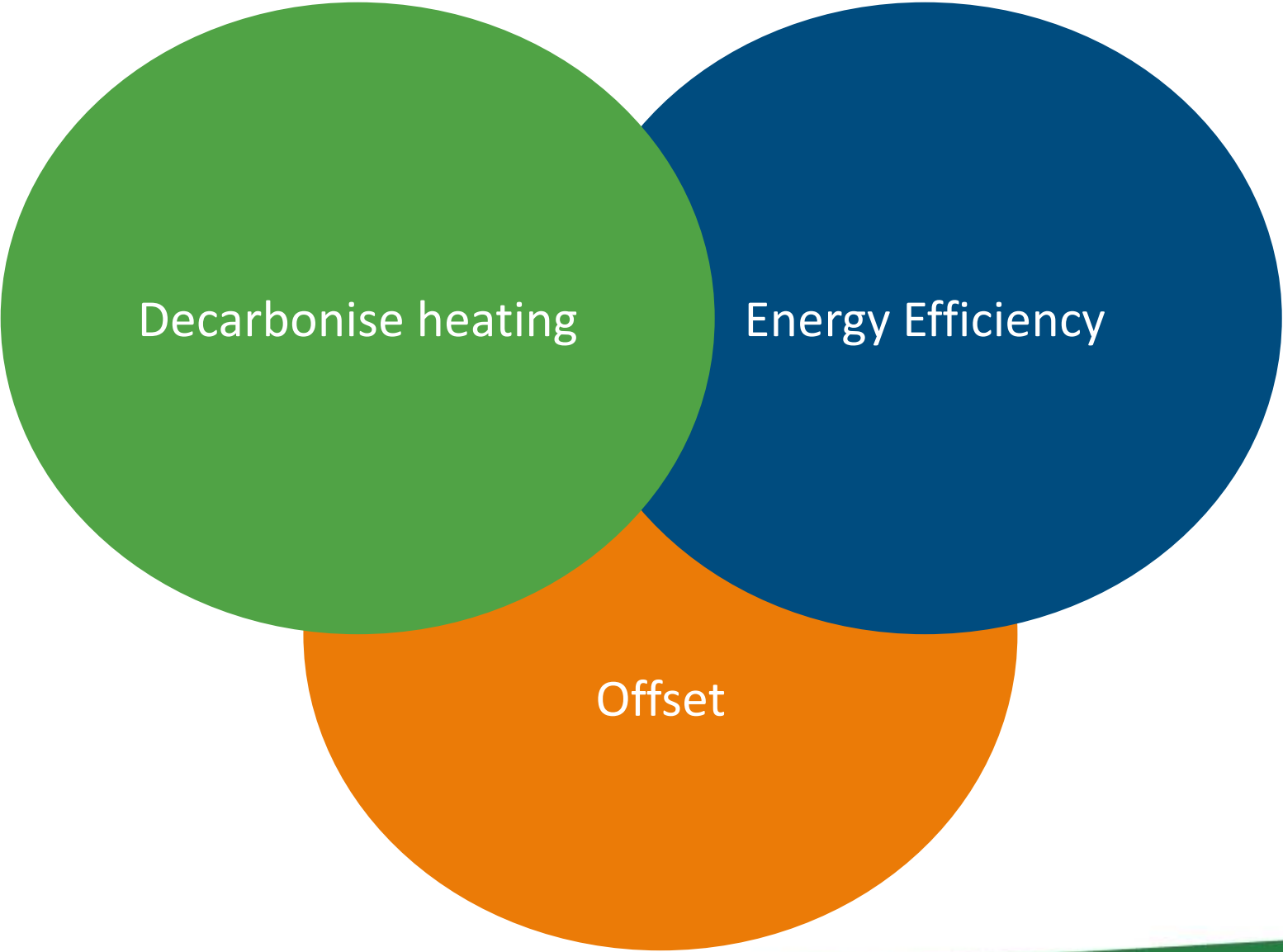
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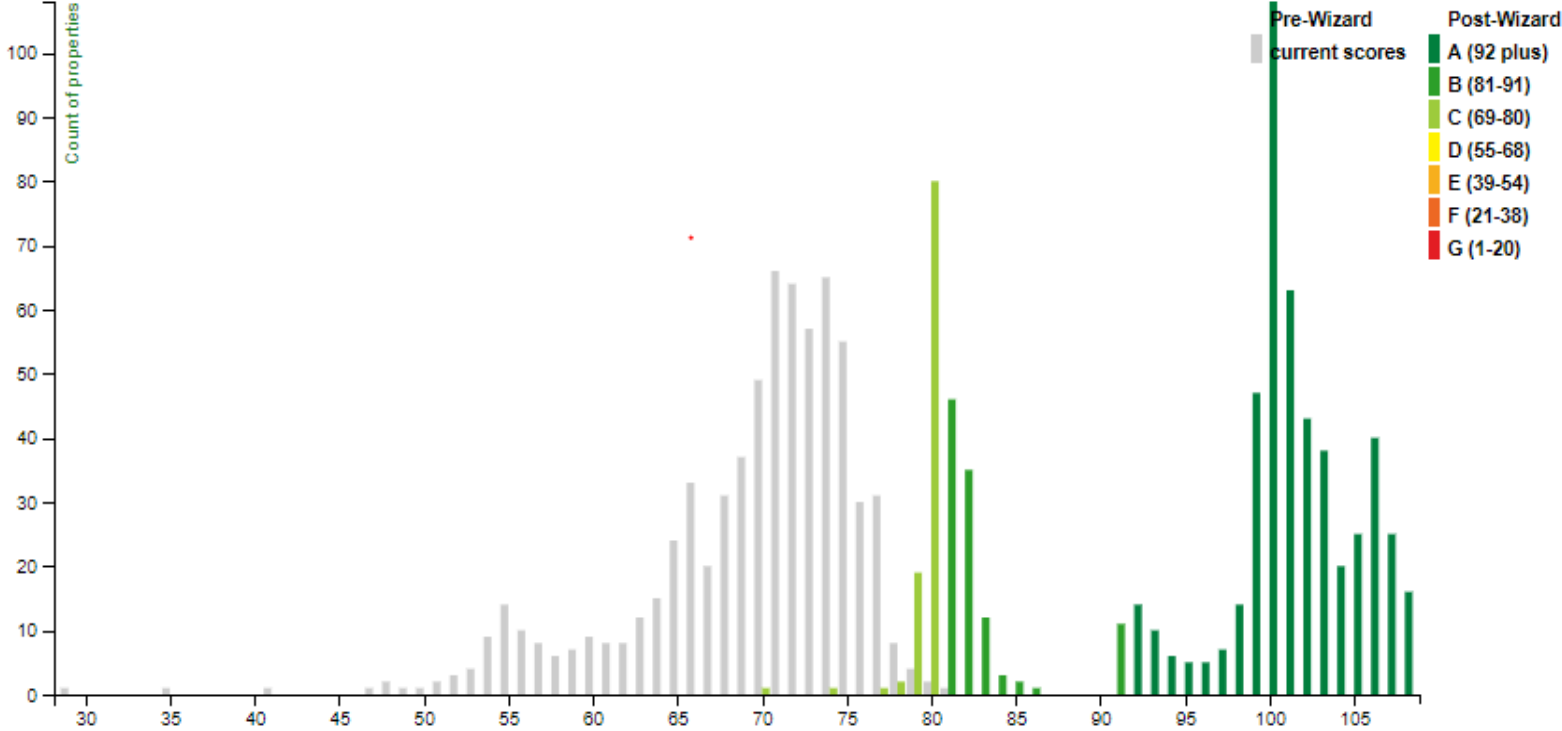
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Zero Carbon SAP 994 (Current Carbon Factors)



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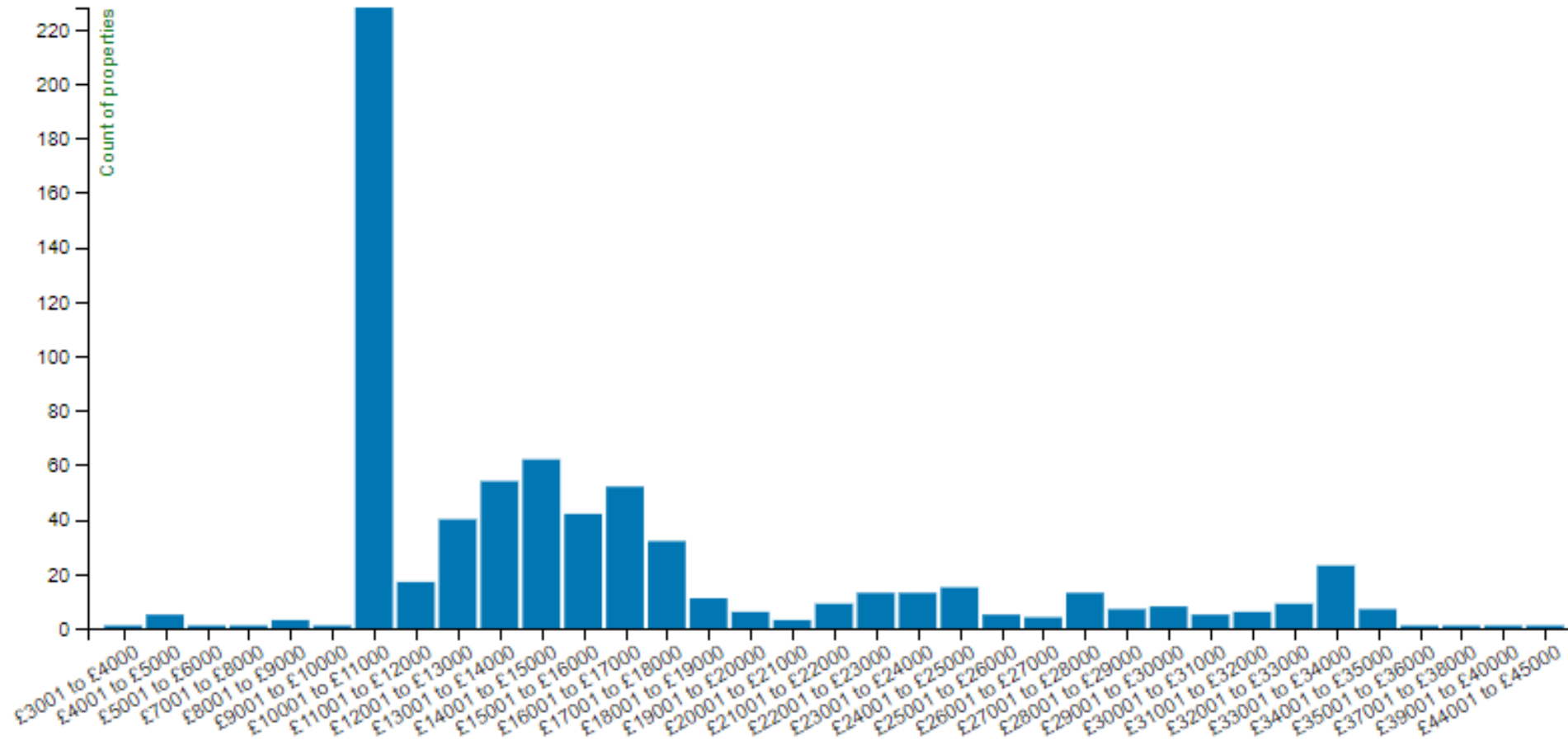
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Investment breakdown



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	Complete Stock	Complete Stock
Homes	700 🏠	700 🏠
Mean SAP	69.28 C (+0.00)	95.18 A (+25.90)
Mean EI	69.35 C (+0.00)	96.58 A (+27.23)
Mean Fuel Bills	£550.29 (+0.00)	£77.78 (-472.51)
Mean Fuel Bill (realistic)	£595.55 (+0.00)	£207.57 (-387.98)
Mean tCO ₂	2.435 (+0.000)	0.232 (-2.203)
Mean 2017 tCO ₂	1.962 (+0.000)	0.999 (-0.963)
Mean 2019 tCO ₂	2.027 (+0.000)	0.112 (-1.915)
Mean 2025 tCO ₂	1.868 (+0.000)	0.057 (-1.810)
Mean 2030 tCO ₂	1.840 (+0.000)	0.048 (-1.792)
Mean 2038 tCO ₂	1.788 (+0.000)	0.030 (-1.758)
Mean 2050 tCO ₂	1.772 (+0.000)	0.025 (-1.747)
Mean Heating Bill	£506.11 (+0.00)	£357.21 (-148.90)
Mean TThreshold	18.47°C (minimal) (+0.00)	18.83°C (minimal) (+0.36)
Mean kWh per M2	161.69 (+0.000)	9.73 (-151.960)
kWh	9,509.73 (+0.000)	553.05 (-8956.680)

Stock comparison pre/post measures

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Fabric measures

Fabric 1739 £4,221,269	Walls 523 £1,814,694	Cavity 373 £1,332,577	Cavity Insulation 1 £530		
			Internal to Cavity 284 £1,244,047		
			Insulate Party Wall 88 £88,000		
		Solid 17 £67,063	Internal to Solid 17 £67,063		
		Timber 32 £236,865	Internal to Timber 32 £236,865		
		Other 101 £178,189	Alternate Wall 101 £178,189	Internal to Alternate Wall 81 £166,696	
				Cavity Insulation to Alternate Wall 20 £11,493	
	Roofs 222 £116,520	Loft Insulation 189 £75,148	Virgin 3 £1,673		
			Top Up 160 £58,152		
			Unknown, No Access to Loft 19 £11,008		
			Unknown, Access to Loft 7 £4,315		
		Flat Roof Insulation 32 £41,048			
	Rafter or Ceiling Insulation 1 £324				
	Floors 450 £743,978	Solid Floors 343 £589,079			
		Suspended Timber Floor 98 £141,178			
		Suspended Not Timber Floor 1 £1,471			
		Exposed Floor 8 £12,250			
Glazing 538 £1,544,577	Double 317 £1,256,317	A+ rated 5 £27,376			
		A++ rated 312 £1,225,346			
	Triple (A++ rated) 1 £10,660				
Doors 220 £277,600					
Draughts 6 £1,500	Chimneys 6 £1,500				

- Wall/roof insulation
- Floor insulation
- Glazing improvements

Building Services and Renewables

Heating and Hot Water 831 £4,648,000	Individual Heating and Hot Water 831 £4,648,000	Heating System 693 £4,081,950	Radiator System 4 £3,600	Gas with FGHRs 4 £3,600
		Heat Pump System 689 £4,078,350	55 Degree ASHP 23 £126,500	45 Degree ASHP 579 £3,217,350
		Secondary Heating 2 £400	Remove Secondary Heating 2 £400	35 Degree ASHP 23 £158,500
		WWHRs 12 £8,150	55 Degree GSHP 2 £18,000	45 Degree GSHP 62 £558,000
		Solar Thermal 124 £557,500		
		Lighting 349 £11,820		
		Photovoltaics 501 £2,340,500		

- Change of heating system – 689 heat pump system
- Lighting upgrades
- Solar PV 500+ properties

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Zero Carbon Investment Costs

Total Scenario Cost: **£11,640,081**

Cost per Home Affected: **£16,629**

Mean 2017 tCO ₂	0.999 (-0.963)	0.999 (-0.963)	0.999 (-0.963)
Mean 2019 tCO ₂	0.112 (-1.915)	0.112 (-1.915)	0.112 (-1.915)
Mean 2025 tCO ₂	0.057 (-1.810)	0.057 (-1.810)	0.057 (-1.810)
Mean 2030 tCO ₂	0.048 (-1.792)	0.048 (-1.792)	0.048 (-1.792)
Mean 2038 tCO ₂	0.03 (-1.758)	0.030 (-1.758)	0.030 (-1.758)
Mean 2050 tCO ₂	0.025 (-1.747)	0.025 (-1.747)	0.025 (-1.747)

Our recommendations

- Focus on fabric first approach – Retrofit
 - Secondary considerations – glazing and controls
 - Engage with PV provider for feasibility studies into PV installations
 - Assess viability of heating system switch for portion of properties linked with relevant funding streams
-
- Tailor measures to your strategic focus/ comfort and feasibility for your tenants
 - Provides forward plan and investment structure for future years

Next steps

- BEIS study concluded CHROM of similar software is the best way forward for generating recommendation's, however need assessor and client input
- What measures do you want to include/ not include linked with strategic objectives/tenant comfort etc.
- Tailor the results to your requirements
- Assess future funding streams
- Provide:
 - Base data
 - Cleansed data
 - EPCs
 - XMLs
- Final results session
- End of contractual obligations



Any Questions?

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