



Essex Climate Action Commission

14th November 2022

Building a retrofit service for households

Russell Smith, Managing Director

Introducing Parity Projects



Clarion 118,000

L&Q 69,000

Peabody 58,000



Hammersmith and Fulham 17,000

Plus Dane 12,000

Wandle 7,000



National Trust 5,000

Octavia 4,000



Ferguslie Housing Association 1,000

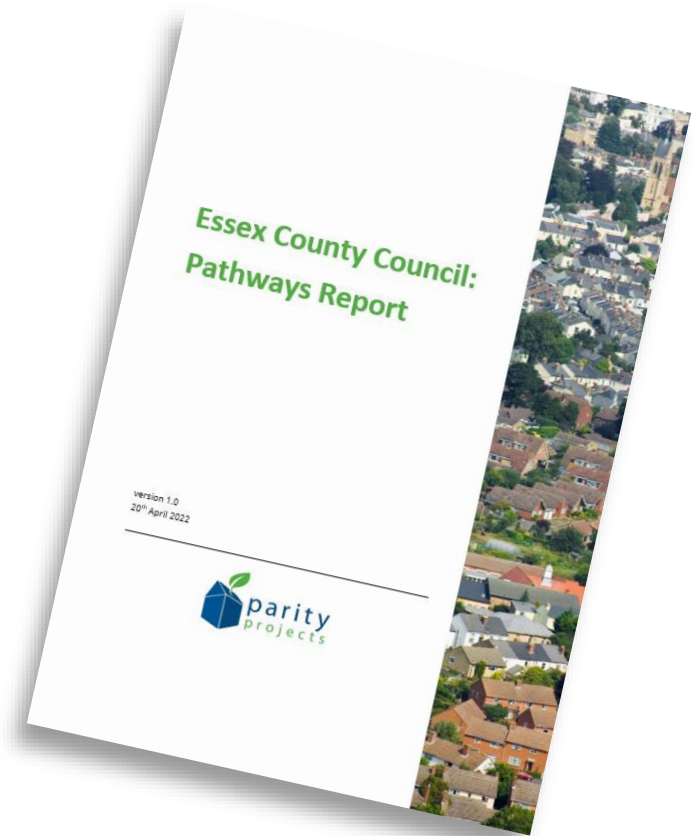
- Focused on energy and housing for the last 14 years
- Currently 20 million homes under analysis:
 - Stock profiling
 - Energy performance profiling
 - Data quality analysis
 - Scenario testing of ways to reach energy efficiency and carbon targets



Scenarios for Essex Domestic Decarbonisation

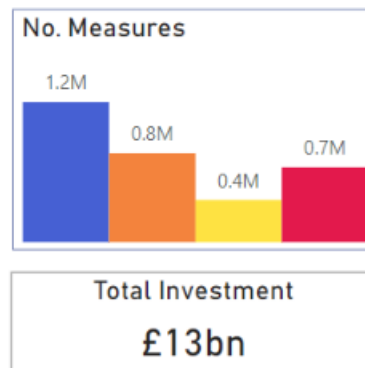
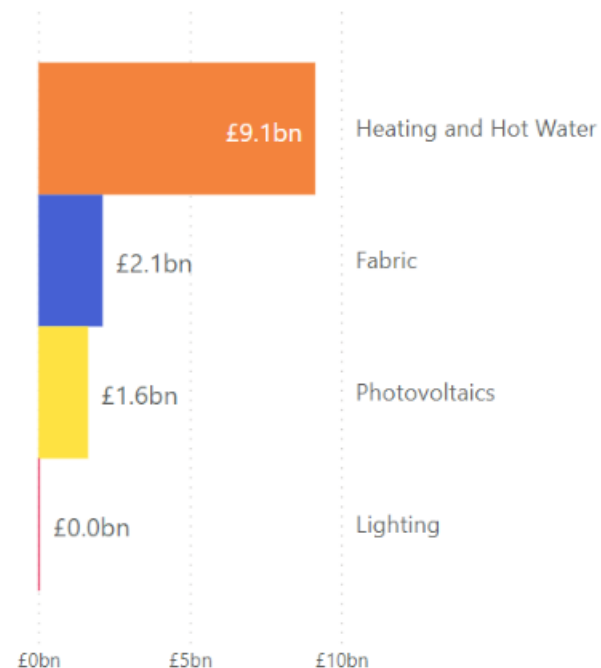
Detailed analysis of every address in Essex. Scenarios modelled:

- Net Zero without disruptive fabric measures
- Net Zero with disruptive fabric measures
- Current common solutions only



Net Zero without disruptive fabric measures

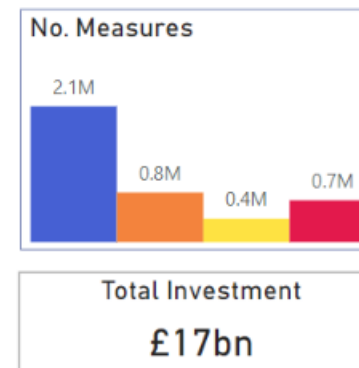
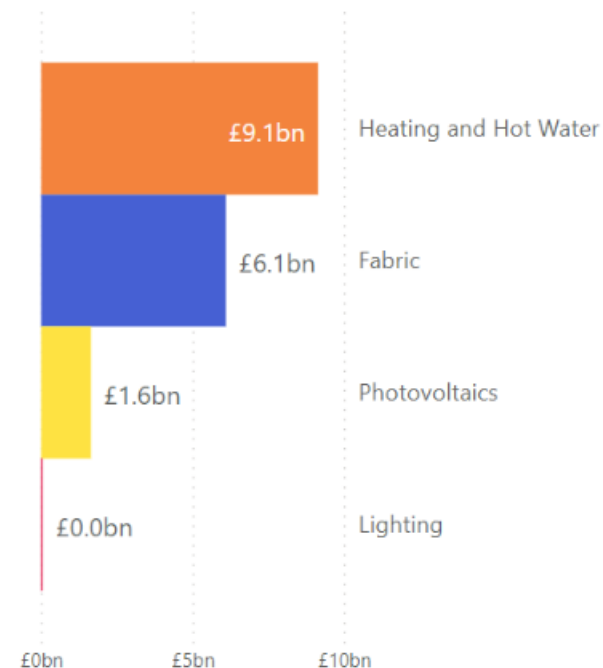
Total Investment



	Total Investment	No. Measures	Average Cost
Heating and Hot Water	£9,148,167,926	775,001	£11,804
Fabric	£2,123,255,887	1,219,763	£1,741
Photovoltaics	£1,638,606,435	367,011	£4,465
Lighting	£41,992,650	652,086	£64
Total	£12,952,022,898	3,013,861	£4,297

Net Zero with disruptive fabric measures

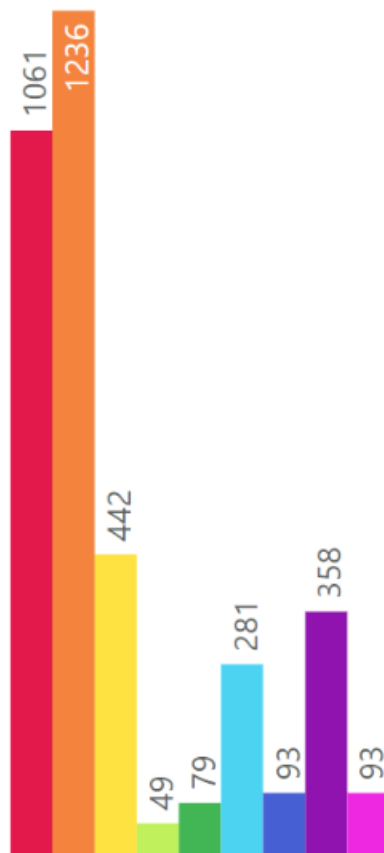
Total Investment



	Total Investment	No. Measures	Average Cost
Heating and Hot Water	£9,148,166,515	774,956	£11,805
Fabric	£6,098,436,618	2,114,417	£2,884
Photovoltaics	£1,638,606,435	367,011	£4,465
Lighting	£41,989,842	652,028	£64
Total	£16,927,199,410	3,908,412	£4,331

Trades

FTE Tradespeople per year of programme

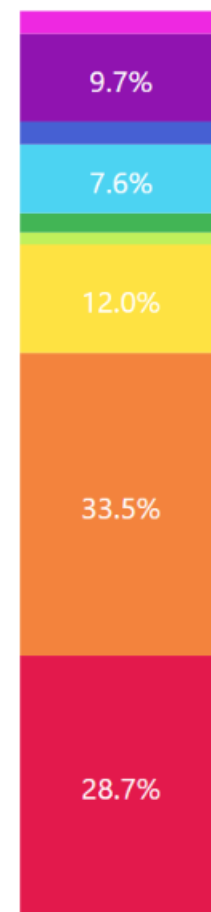


FTE Total per year

3,693

- General Builders
- Insulation Specialists
- Plasterers & Renderers
- Carpenters
- Window Fitters
- Electricians
- Heating Engineers
- Renewable Heat Specialists
- Retrofit Coordinators

FTE Tradespeople per year of programme



Why the need for a local scheme?

- Why Councils?
 - The business case for action is incredibly strong
 - Local branding works: trust is everything
 - The scheme has natural synergies with some council business centres:
 - Planning
 - Building Control
 - Economic Development
 - Education
 - ‘Ground Up’ action can be empowering for all and will create a movement for change.
 - Who else is going to do it?

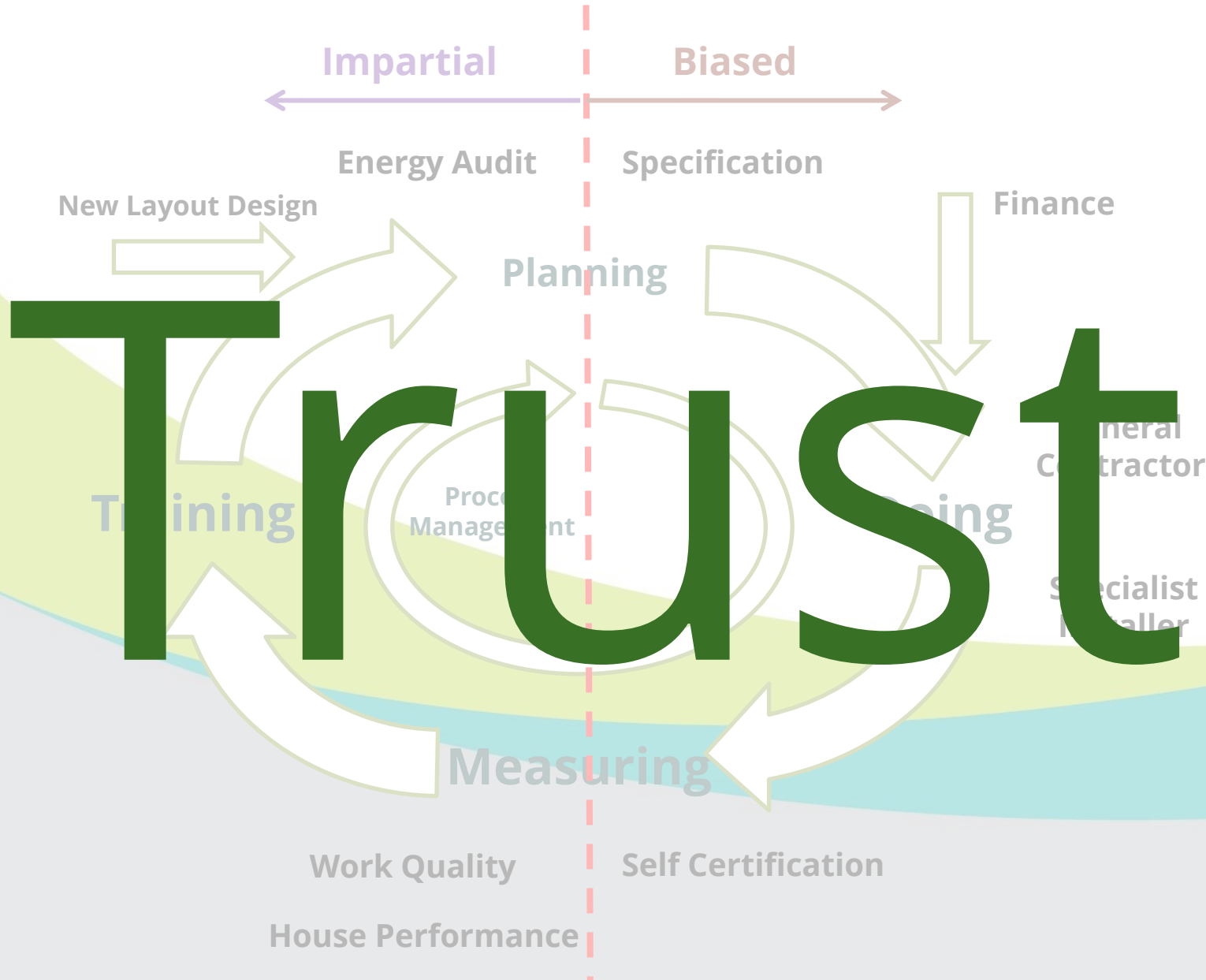


RetrofitWorks: A replicable one-stop-shop model



RETROFITWORKS
BUILDING EFFICIENCY TOGETHER





It's all about
small, local
organisations

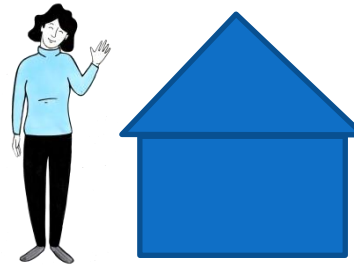
Challenges in the retrofit of a single home

- Retrofit strategy (whole house)
- Detailed design
- Budget
 - Simple economic payback?
 - Need to reduce this payback
- (Finance?)
- Procurement / value for money
- Translating design for the contractor
- Communication between all parties
- Cost control
- Quality Assurance
- Warranties and Guarantees
- Operation and Maintenance Guidance
- (Performance feedback)

the
offer

There is no market for 'retrofit'

Customers



- The offers are narrow and unattractive
- Not aware of measures and benefits
- No confidence in supply chain to deliver

Advocates

Local Charity
/ Council etc



- Want to drive change
- Struggle to identify customers
- No defined, reliable, local supply chain
- Local economy?



RETROFITWORKS
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Practitioners



- Have the capabilities but limited confidence in the market
 - Don't invest
 - Don't promote
- Could use some help to deliver

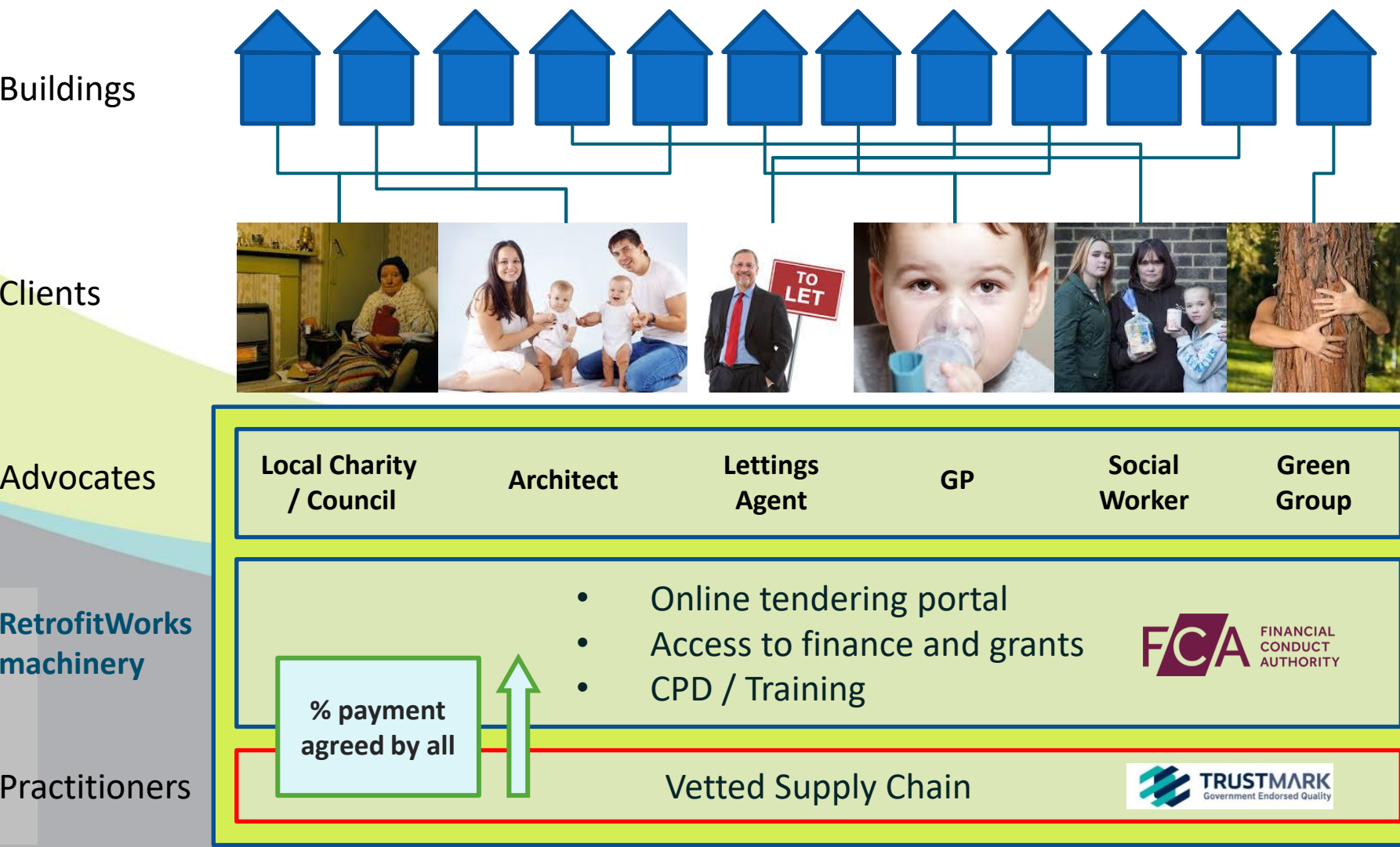
Finance

- Needs confidence in outcomes and ability to deliver to invest

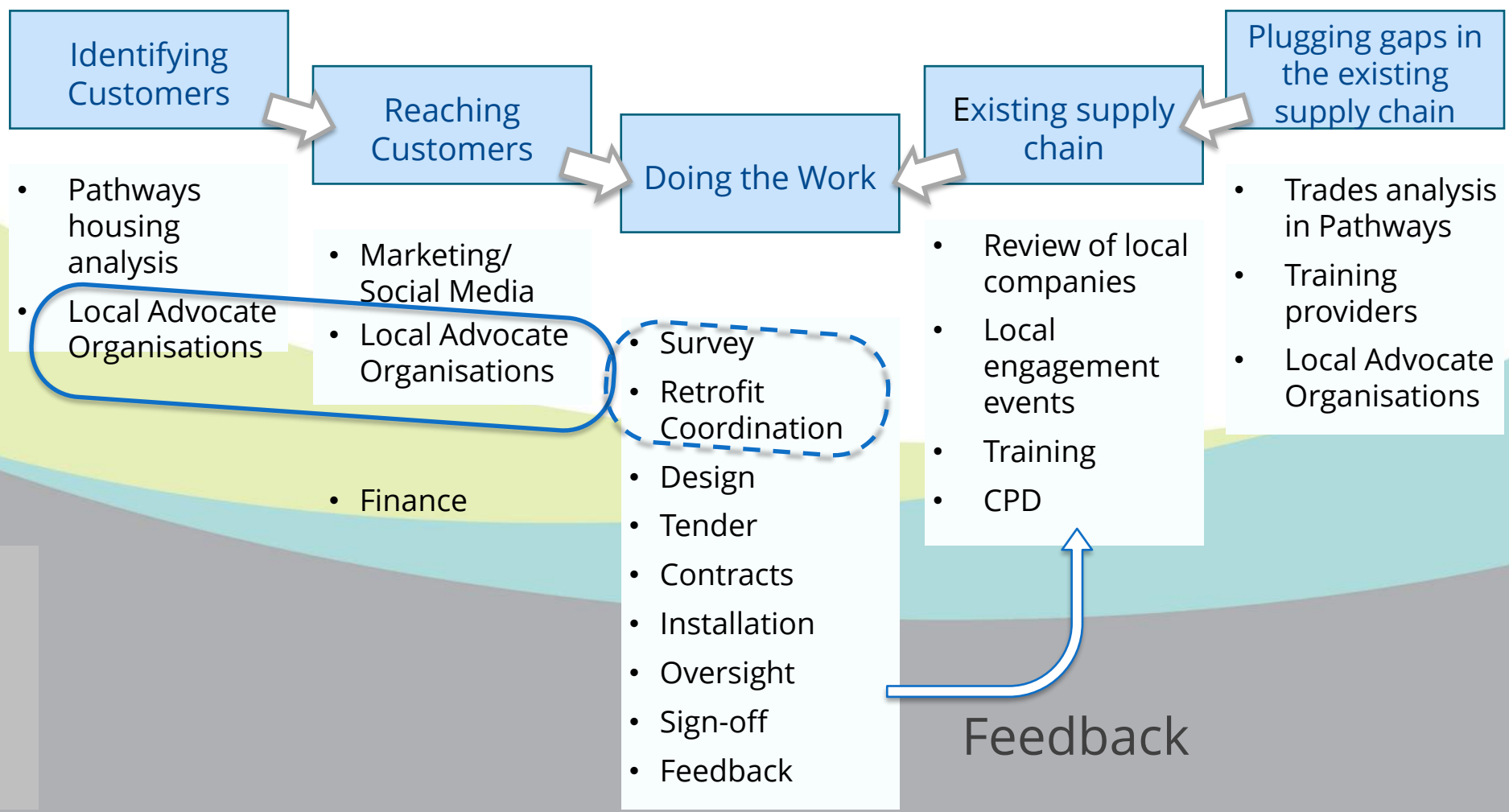


RETROFITWORKS
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Model components



Model components



GREATER LONDON AUTHORITY

- £4.5m fuel poverty programme
- Eligibility:
 - Affordable Warmth criteria under ECO
 - or Flexible Eligibility for ECO (borough specific)
- For eligible households in London boroughs:
 - GLA has £4,000 per property, **1217 homes**:
 - Energy related measures – judgement based on analysis
 - **Damp and indoor air quality issues can be funded in advance of energy works**
 - We apply ECO funding first if applicable, reducing GLA input (currently running at 50%)
 - Some other boroughs have other funds e.g. Merton C.O.F.

Re-
procured
for £38m in
2022

79% vulnerable customers

<5% drop out rate

Lessons transferred to A2P market

BEIS Supply Chain Pilots



Cosy Homes Oxfordshire

- Launched April 2019
- Came into profit late 2021 – 1st ever scheme in the UK to do so.



"I'm not sure we could have done this without them."

- Ready for replication
- <https://cosyhomesoxfordshire.org/>



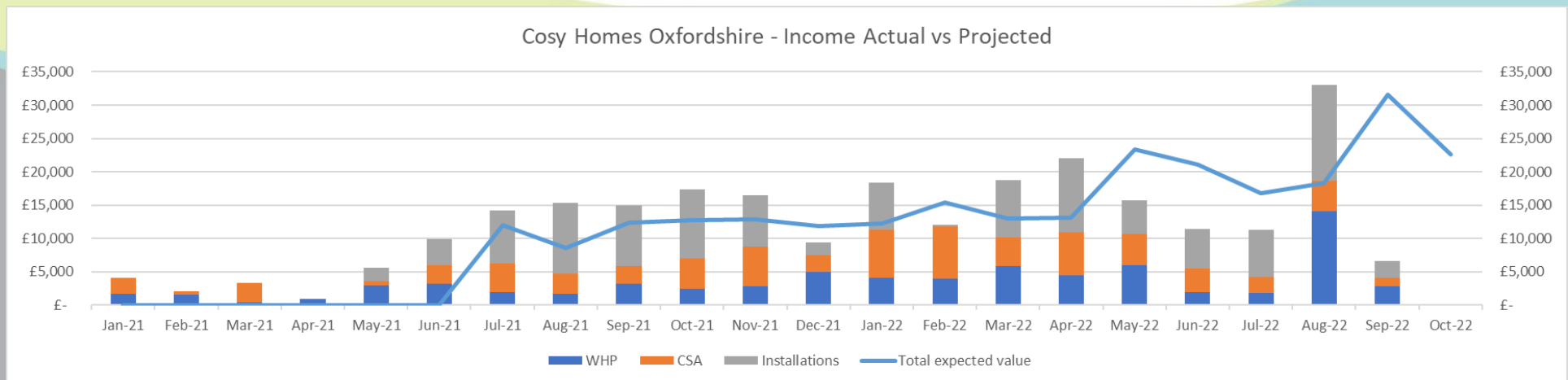
Cosy Homes Oxfordshire

BEIS grant of £734,000 in total over 2½ years from Nov 2018. Graph below shows income since Jan 2021:

- **WHP** = Customer buys Whole House Plan
- **CSA** = Customer Service Agreement - if the job involves some additional works ahead of a tender process, this is charged.
- **Installations** = 10% of the value of the work as income to scheme

WHP and CSA start immediately, but due to supply chain pressures, work took 18 months to start in earnest.

If the £734,000 was an investment, this will not be paid back for several more years.



Cosy Homes Oxfordshire

Lessons from CHO for the next iteration of launch:

- The offer was made with no firm supply chain in place – it was built over time – this delayed the ability to install
- The offer was very wide and no targeted at particular customer areas.
- The offer covered the whole county from the start - a lot of cost was built in travel before income was steady
- No local authority involvement at all

Improvements required for any new scheme:

Cover all possible measures with the supply chain from day 1

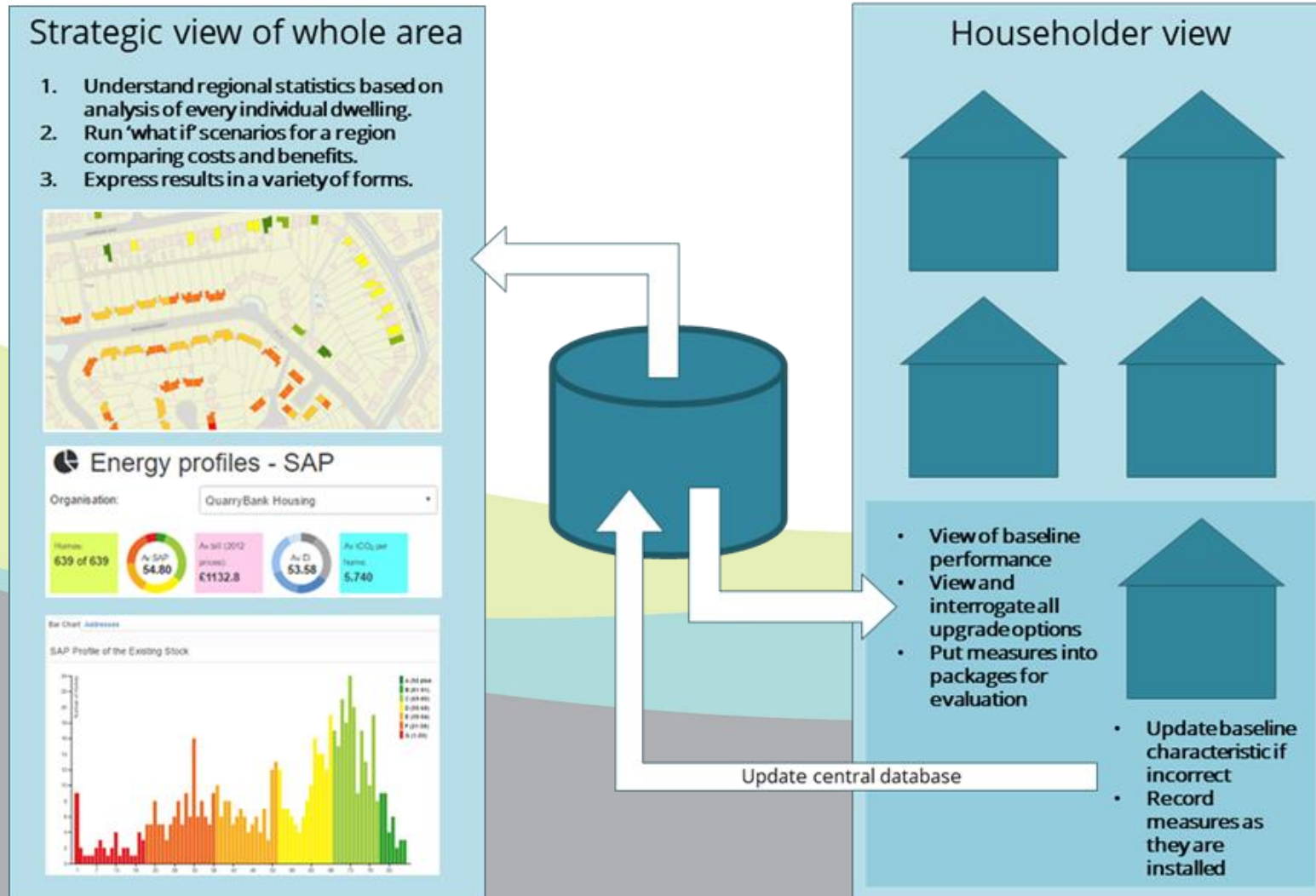
Target certain job types at first, then widen

Commence in one or two parts of the county with a focused offer, then widen


Involve Local Authorities and Community Groups to build the brand



Smart Marketing (1)



Smart Marketing (2)



Address > Home Info > Build Plan > Go








Log In / Register

Our info about 44 As [REDACTED]


Where do we get this data from?

We'll use this data to recommend improvements to your home, so do edit the data if it doesn't look right.

You need to be logged in to edit the property data. You can [log in](#) or [create a new account](#).

	Basics A pre-1900 semi-detached house (more...)	✎ Edit
	Roof Room in roofspace with sloping ceiling, insulation added to sloping walls/ceiling (more...)	✎ Edit
	Walls & Floor Solid brick walls with no insulation, floor above part-heated space (more...)	✎ Edit
	Windows & Doors 90% of windows are double glazing (post-2001), 10% are single glazed (more...)	✎ Edit
	Heating Gas boiler (G rated) (more...)	✎ Edit
	Renewables No photovoltaic solar panels, but there is a roof which may be suitable (more...)	✎ Edit
	Others 83% of lights are low energy (LED or CFL), there are 2 open fireplaces, and mains gas is available (more...)	✎ Edit

Build your Cosy Homes plan >




RETROFITWORKS
BUILDING EFFICIENCY TOGETHER

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Smart Marketing (2)



[Address](#) > [Home Info](#) > [Build Plan](#) > [Go](#)

[Log In / Register](#)

Plan Builder

for [Redacted]

☐ filter to recommended (best zero carbon targeting measures for an unlimited budget)
☒ filter to your selections

Category Filters
☒ All Categories
☒ Basics
☒ Roof
☒ Walls & Floor
☒ Windows & Doors
☒ Heating
☒ Renewables
☒ Others

Showing all possible measures

conflicting measure selected Heating Ground source heat pump & underfloor heating (35°C) £26,275 6.10 tCO ₂ + add ☆	conflicting measure selected Heating Ground source heat pump, current rads (55°C) and controls £18,000 5.64 tCO ₂ + add ☆	conflicting measure selected Heating Ground source heat pump, current rads (45°C) and controls £18,000 5.64 tCO ₂ + add ☆	conflicting measure selected Heating Air source heat pump & underfloor heating (35°C) £32,000 5.47 tCO ₂ + add ☆	conflicting measure selected Heating Air source heat pump, current rads (55°C) and controls £12,000 4.88 tCO ₂ + add ☆	Heating Air source heat pump, current rads (45°C) and controls £12,000 4.88 tCO ₂ in plan ☆
conflicting measure selected Heating New gas combi boiler with flue gas heat recovery £3,720 2.48 tCO ₂ + add ☆	conflicting measure selected Heating New regular gas boiler £3,179 2.32 tCO ₂ + add ☆	conflicting measure selected Heating Gas combi boiler £3,842 2.32 tCO ₂ + add ☆	Walls & Floor Internal wall insulation on alternate wall £10,406 0.89 tCO ₂ in plan ☆	conflicting measure selected Walls & Floor External insulation to alternate walls £8,561 0.87 tCO ₂ + add ☆	Renewables 16 solar photovoltaic panels £11,020 0.72 tCO ₂ in plan ☆
conflicting measure selected Heating [Redacted] + add ☆	Walls & Floor [Redacted] + add ☆	conflicting measure selected Walls & Floor [Redacted] + add ☆	conflicting measure selected Renewables [Redacted] + add ☆	conflicting measure selected Renewables [Redacted] + add ☆	conflicting measure selected Renewables [Redacted] + add ☆

£609 (34%) estimated annual fuel bill saving
 6.86 (80%) estimated tonnes CO₂ saved annually

☒ Air source heat pump, current rads (45°C) and controls (more...) £12,000 remove
☒ Internal wall insulation on alternate wall (more...) £10,406 remove
☒ 16 solar photovoltaic panels (more...) £11,020 remove
☒ Internal insulation to solid walls (more...) £7,316 remove
☒ A++ triple glazed casement windows (more...) £15,489 remove
☒ Removable or permanent chimney seal (more...) £480 remove
☒ Exposed floor insulation (more...) £4,463 remove
☐ [Redacted] £2,163

Estimated Cost: **£64,584**

[Review](#)
[Back a step](#)



The Whole House Plan

cosy homes

cosy homes
oxfordshire

cosy homes
oxfordshire

5: W

Below is

Date

Based on

Your estimate

20,000

18,000

16,000

14,000

12,000

10,000

8,000

6,000

4,000

2,000

0

Figure

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Whole House Plan

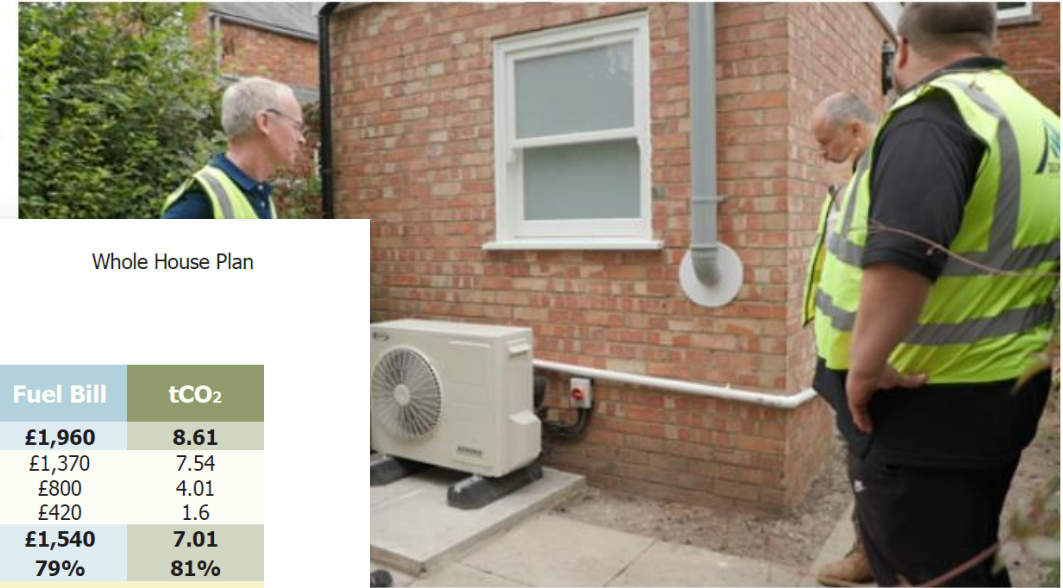
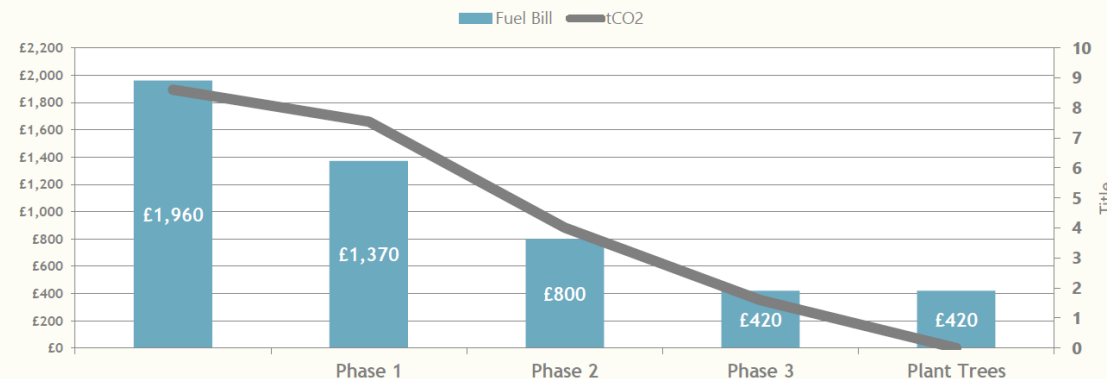
Whole House Plan

Whole House Plan

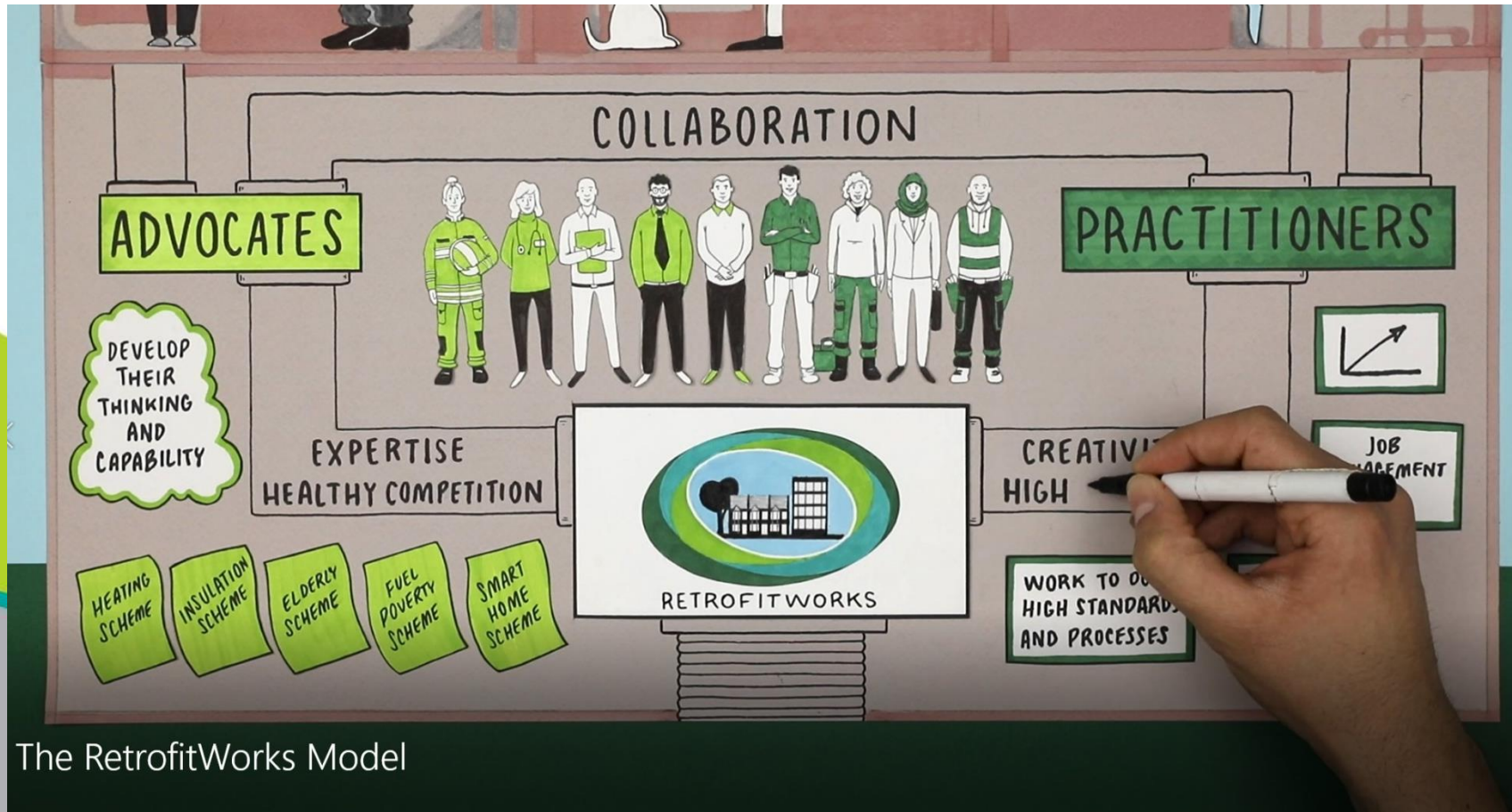
8: Phasing your improvements

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	tCO₂ to zero	70	

How the phasing affects your annual bills & emissions



Animation

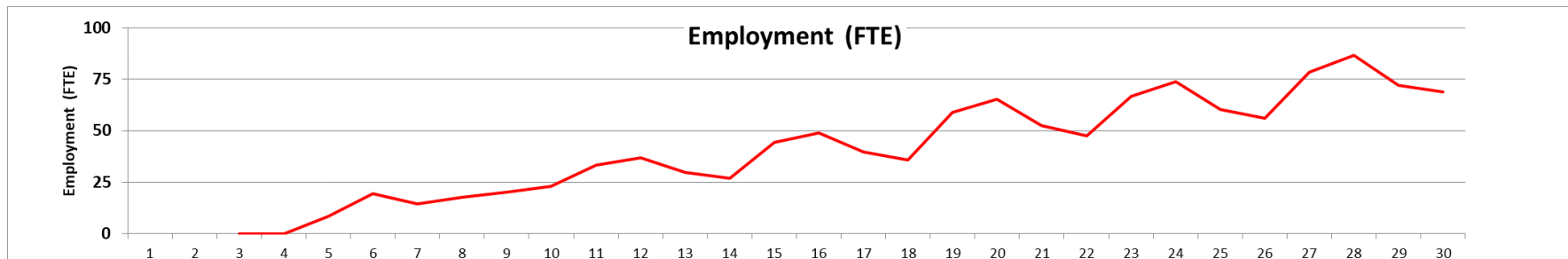
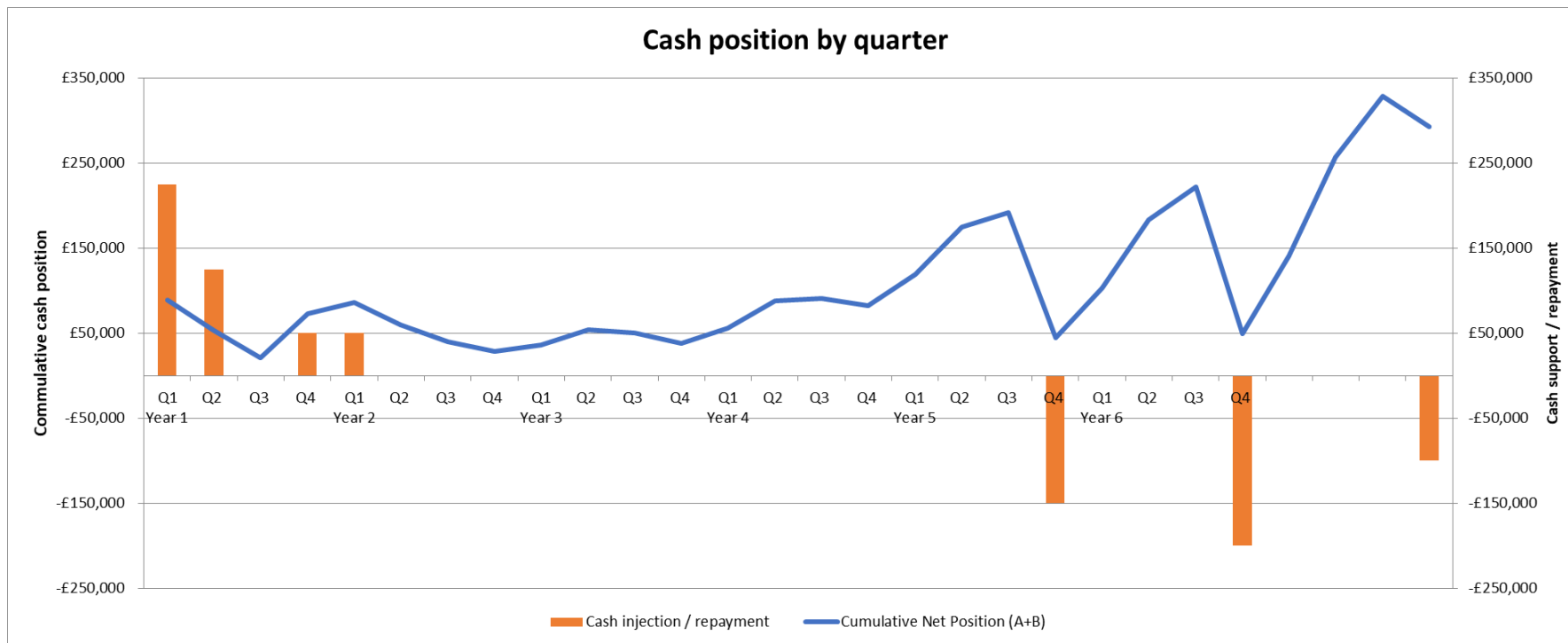


The RetrofitWorks Model

The business case

Working capital – full repayment

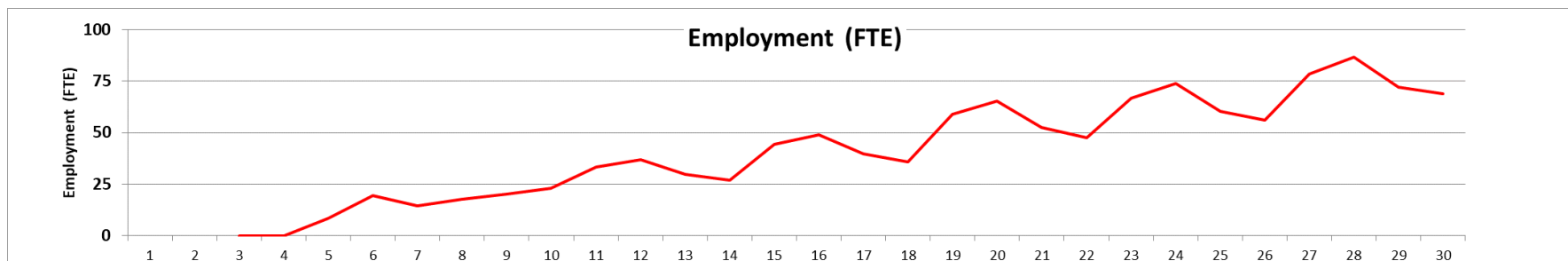
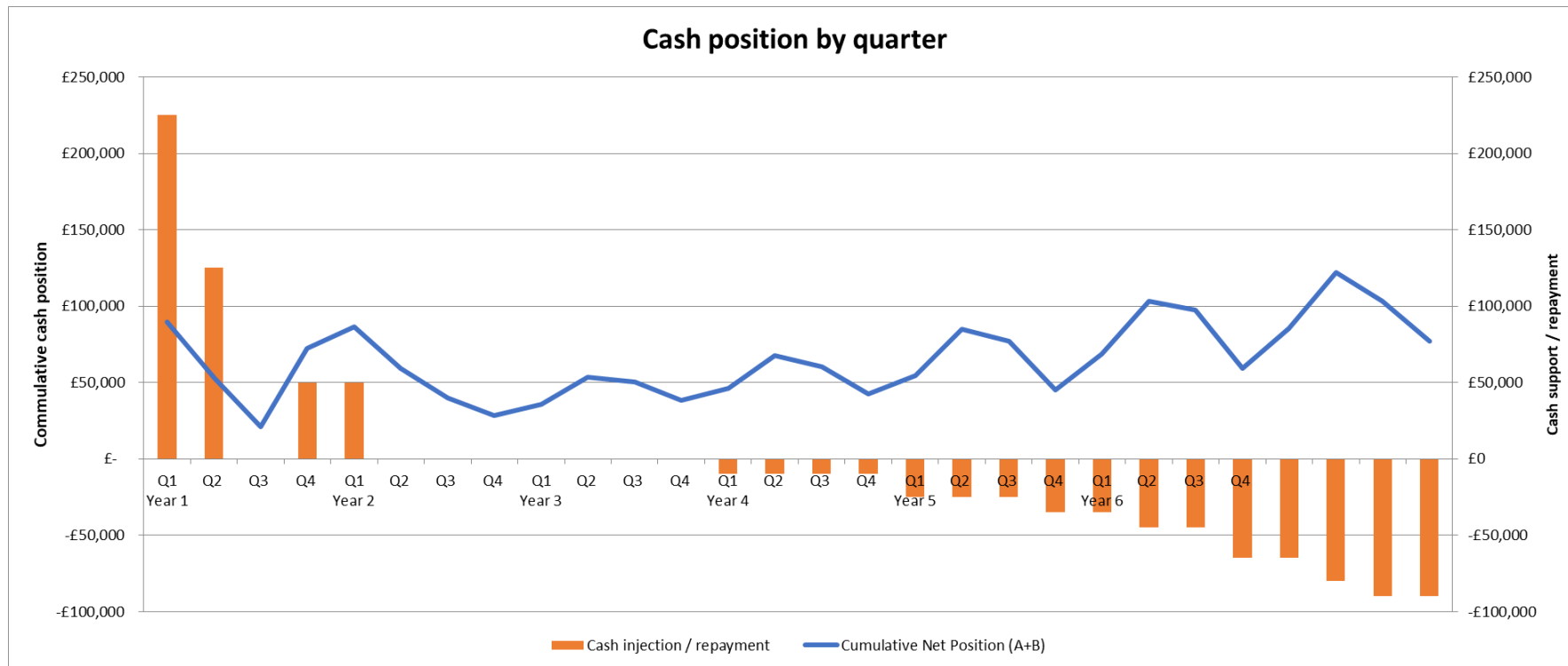
£450,000 – returned after 7 years



Working capital – grant at start

£450,000 input

Surplus: £665,000 available for reinvestment by end of year 7



Conclusions

- Customers
 - Don't know what they want
 - Don't want to deal with contractors
 - Want things put right if they are not
- Contractors have no idea what to how, how to sell it, how to install it.
- Access to finance
- Nimble, responsive, local supply chain
- Community based advocates at the heart
- Digital toolbox

Thank you

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