Members Briefing
Low Carbon Retrofit Strategy & Delivery Plan (SWT Council Homes)

1st September 2022

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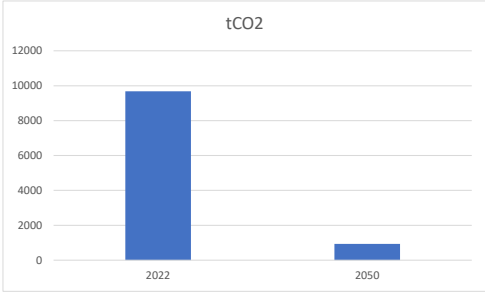

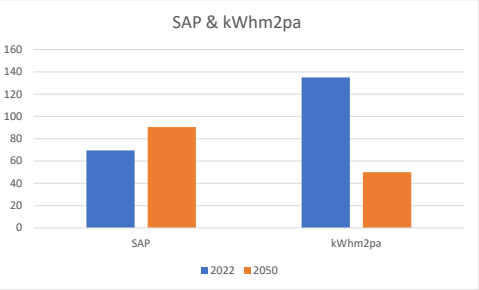

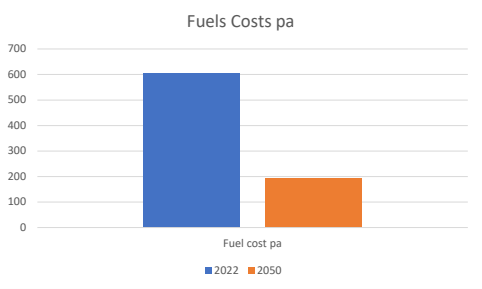

Presentation

1. Report and Timeline
2. What is retrofit
3. SWT homes - baseline position
4. Targets & target setting
5. Delivering on targets

Cutting to the chase

- **The strategy sets the following targets**
  - 2030 – All SWT homes to be EPC C
  - 2040 – SWT Homes to achieve a Heat Demand output of 50 kWh/m2/yr or less
  - 2050 – All homes zero carbon – Fuel switch

- **The Strategy will be delivery by;**
  - Aligning Decent Homes and Retrofit investment
  - Maximising Grants and Subsidy (where aligned to the strategy)
  - Ensuring Good Data Influences Decisions
  - Tenants at the Heart of Zero Carbon
  - a No regrets approach

Report and Timeline – Report Content

Cover Report

Strategy document – Low Carbon Retrofit Strategy and delivery Plan 2022-2028

Appendix 1 - Delivery Plan Timeline

Appendix 2 – Architype Studies

Appendix 3 – Parity Portfolio Data

Appendix 4 – Equality Impact Assessment

Report & Timeline - Timeline

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- July Dec — Tenants Low Carbon Working group
- August — Presentation to Portfolio Holders Housing and Climate Change
  Presentation to SMT
- September — Members Briefing
  Informal Executive
- October — Community Scrutiny
- November — Executive Committee
- December — Full Council
- SWT endorsement?

What is low carbon retrofit

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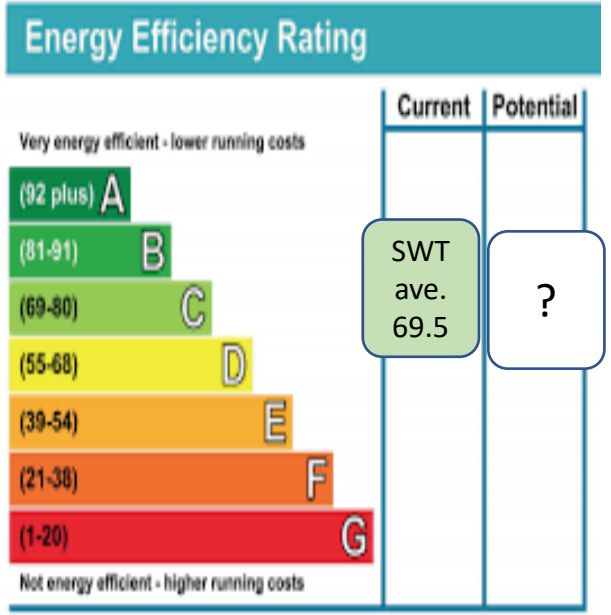
Government require action on climate change;

- Social landlords to achieve EPC C or better (B, A) as measured through the Standards Assessment Procedure (SAP) for all households in their homes suffering from fuel poverty by **2030**.

- Climate Change Act 2019 committed the UK to a legally binding target of net zero by **2050**



What is low carbon retrofit

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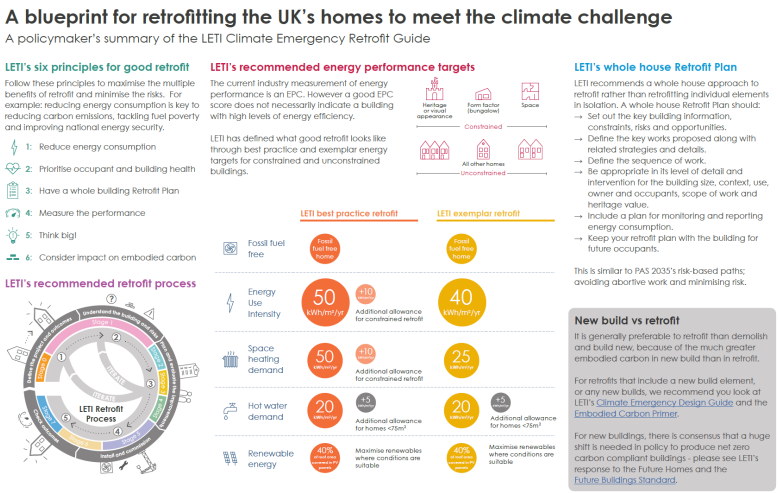
- Retrofit is the process of making changes to existing buildings so that energy consumption and emissions are reduced.
- SWT retrofit strategy builds on some of the knowledge and experience of leading organisations such as the London Energy Transformation Initiative (LETI) and the Good Homes Alliance.
- The strategy endorses the LETI definition of retrofit;

'Retrofit isn't just about reducing carbon emissions. A best practice retrofit should reduce fuel bills and also improve health and wellbeing. Retrofit at scale would also generate significant employment opportunities and stimulate the economy'.



SWT stock baseline

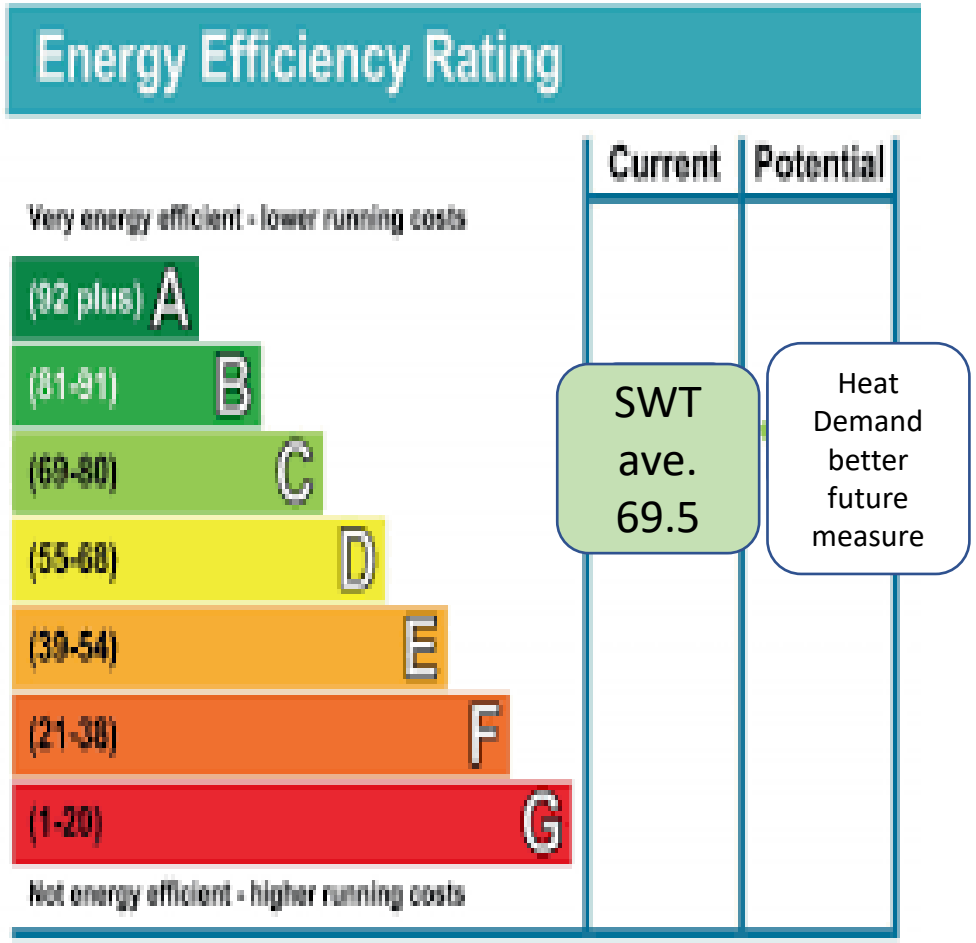
- c5700 existing homes (50% houses, 35% apartments, 15% bungalows)
- 14 architypes (80% conventional construction architype (brick built cavity wall)
- c450 leasehold properties
- 1000 new zero carbon homes over the next 28 years (101 on site + 59 new starts late 2022)
- Loss of stock through Right to Buy and some stock will reach its end of life

Architype	SWT Units
Conventional	4417
Easiform	407
Cornish PRC	359
Woolaway*	218
Airy	24
BISF	77
HSG REV AC	1
Relocat	10
Special PP	3
Rema PRC	43
Stanard WIC	8
Tru-steel	24
Concrete	63
Timber	52
	5706

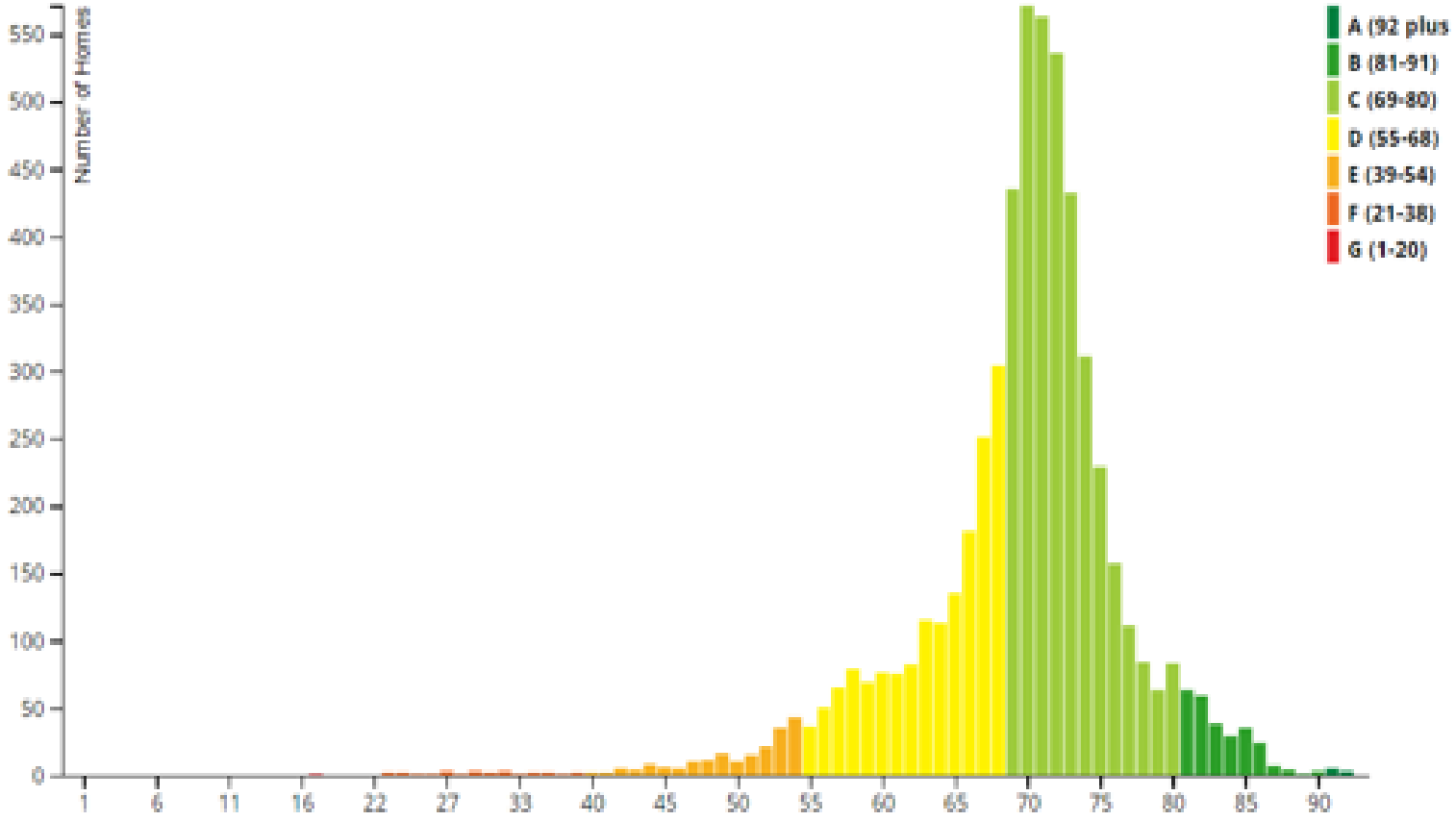
* *Some woolaways are currently under demolition*

SWT stock baseline

- Average stock rating EPC C (SAP 69.5)
- Stock currently releases 9,860 tCO2 pa (landlord controllable components not tenants electrical appliances)
- Average Heat Demand per property is 170 kWh/m2/yr
- 1851 of the c5700 homes EPC Band D, E, F, G



SWT stock baseline



A	8
B	263
C	3575
D	1631
E	193
F	26
G	1

Creating Pathways to Zero Carbon

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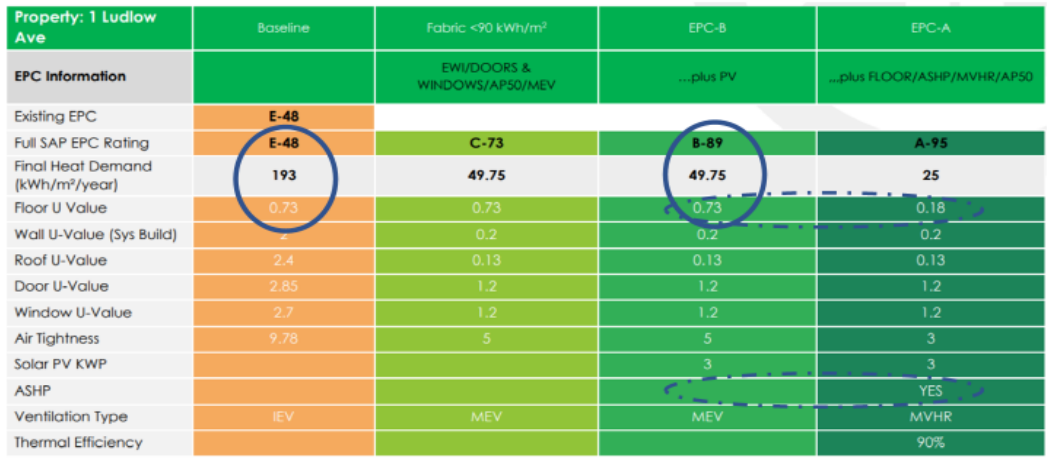
- 12 Architypes studies covering 96% of SWT stock
- Pathways help understand the optimum approach for each property type
- Heat demand below 50 kWh/m2/yr will reduce energy consumption to 9,685 tCO2 pa to 3,587 tCO2 pa (63% reduction)
- Fuel switch away from fossil fuel will ensure zero carbon

	Architype	% of SMT Stock	Heat demand Baseline (kWh/m2/yr)	2040 Heat demand 2050 (kWh/M2/yr	% improvement
1	Conventional House		64	49.75	129%
2	Conventional Apartment		187	25	748%
3	Conventional Bungalow	77.40%	188	41.25	456%
4	Woolaway House semi		TBC	TBC	TBC
5	Woolaway House Terrace	3.80%	TBC	TBC	TBC
6	Cornish House		TBC	TBC	TBC
7	Cornish Apartment		TBC	TBC	TBC
8	Cornish bungalow	6.30%	TBC	TBC	TBC
9	Easiform House		TBC	TBC	TBC
10	Easiform Apartment		TBC	TBC	TBC
11	Easiform maisoneete	7.10%	TBC	TBC	TBC
12	BISF house	1.30%	TBC	TBC	TBC
		95.90%	146	39	444%

VOR Architype Pathway – Conventional Semi (Cavity Wall) target = 49.75kWhm2pa (no floor intervention)



Property: 1 Ludlow Ave	Baseline	Fabric <90 kWh/m²	EPC-B	EPC-A
EPC Information		EWI/DOORS & WINDOWS/AP50/MEV	...plus PV	...plus FLOOR/ASHP/MVHR/AP50
Existing EPC	E-48			
Full SAP EPC Rating	E-48	C-73	B-89	A-95
Final Heat Demand (kWh/m²/year)	193	49.75	49.75	25
Floor U Value	0.73	0.73	0.73	0.18
Wall U-Value (Sys Build)	2	0.2	0.2	0.2
Roof U-Value	2.4	0.13	0.13	0.13
Door U-Value	2.85	1.2	1.2	1.2
Window U-Value	2.7	1.2	1.2	1.2
Air Tightness	9.78	5	5	3
Solar PV KWP			3	3
ASHP				YES
Ventilation Type	IEV	MEV	MEV	MVHR
Thermal Efficiency				90%

Creating Pathways Example 1

VOR Architype Pathway – Conventional Semi (Cavity Wall) target = 49.75kWhm2pa (no floor intervention)

Property: Ave	Baseline	Fabric <90 kWh/m²	EPC-B	EPC-A
EPC Information		EWI/DOORS & WINDOWS/AP50/MEV	…plus PV	…plus FLOOR/ASHP/MVHR/AP50
Existing EPC	**E-48**			
Full SAP EPC Rating	**E-48**	**C-73**	**B-89**	**A-95**
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Floor U Value	0.73	0.73	0.73	0.18
Wall U-Value (Sys Build)	[illegible]	0.2	0.2	0.2
Roof U-Value	2.4	0.13	0.13	0.13
Door U-Value	2.85	1.2	1.2	1.2
Window U-Value	2.7	1.2	1.2	1.2
Air Tightness	9.78	5	5	3
Solar PV KWP			3	3
ASHP				YES
Ventilation Type	IEV	MEV	MEV	MVHR
Thermal Efficiency				90%

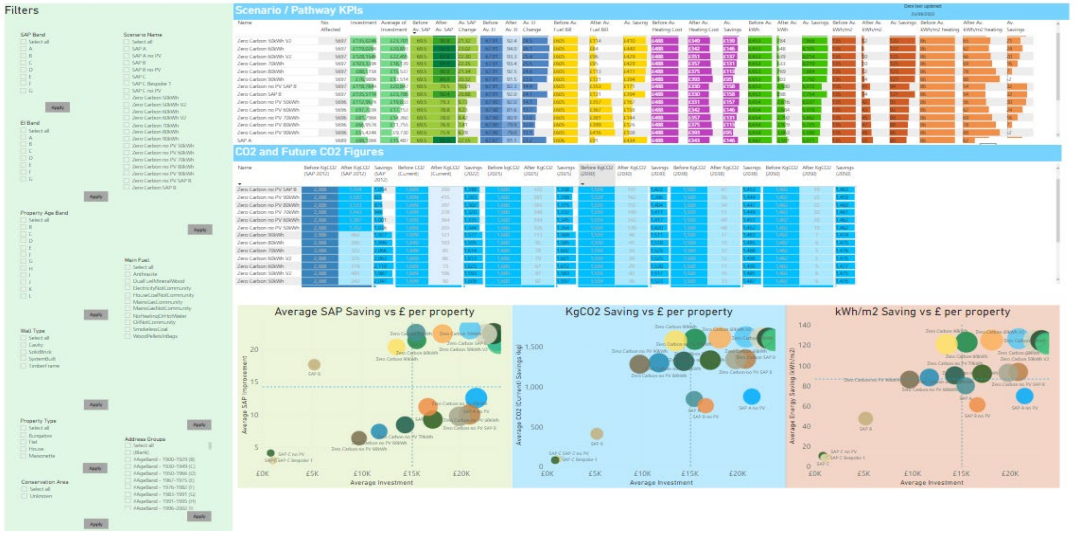
Creating Pathways Example 2

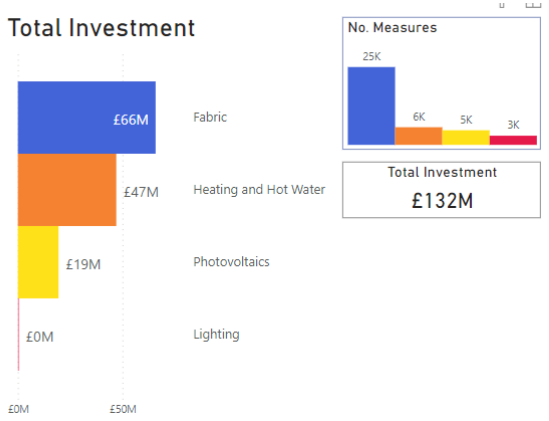
VOR Architype Pathway – Conventional Bungalow (Cavity Wall) target = 42.25wKhm2pa with floors improved during void works

Property: Treboroug	Baseline	Fabric <90 kWh/m²	EPC-B	EPC-A
EPC Information		EWI/DOORS & WINDOWS/AP50/MEV	...plus PV	...plus FLOOR/MVHR
Existing EPC	E-43			
Full SAP EPC Rating	**E-45**	**C-73**	**B-91**	**A-96**
Final Heat Demand (kWh/m²/year)	**188**	**83.25**	**83.25**	**41.25**
Floor U Value	0.72	0.72	0.72	0.18
Wall U-Value	1.55	0.18	0.18	0.18
Roof U-Value	0.27	0.13	0.13	0.13
Door U-Value	3.05/4.5*	1.2	1.2	1.2
Window U-Value	2.8	1.2	1.2	1.2
Air Tightness	6.57	3	3	3
Solar PV KWP			2.5	2.5
ASHP	YES**	YES**	YES**	YES**
Ventilation Type	IEV	MEV	MEV	MVHR
Thermal Efficiency				90%

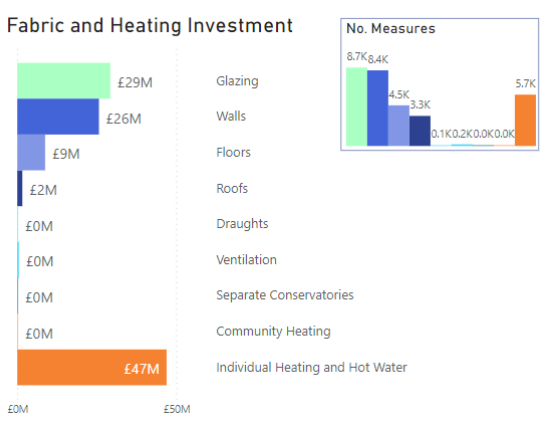
Parity Software - Scenarios & Costings

- Database
- Scenario Modelling Software
- Costings tool

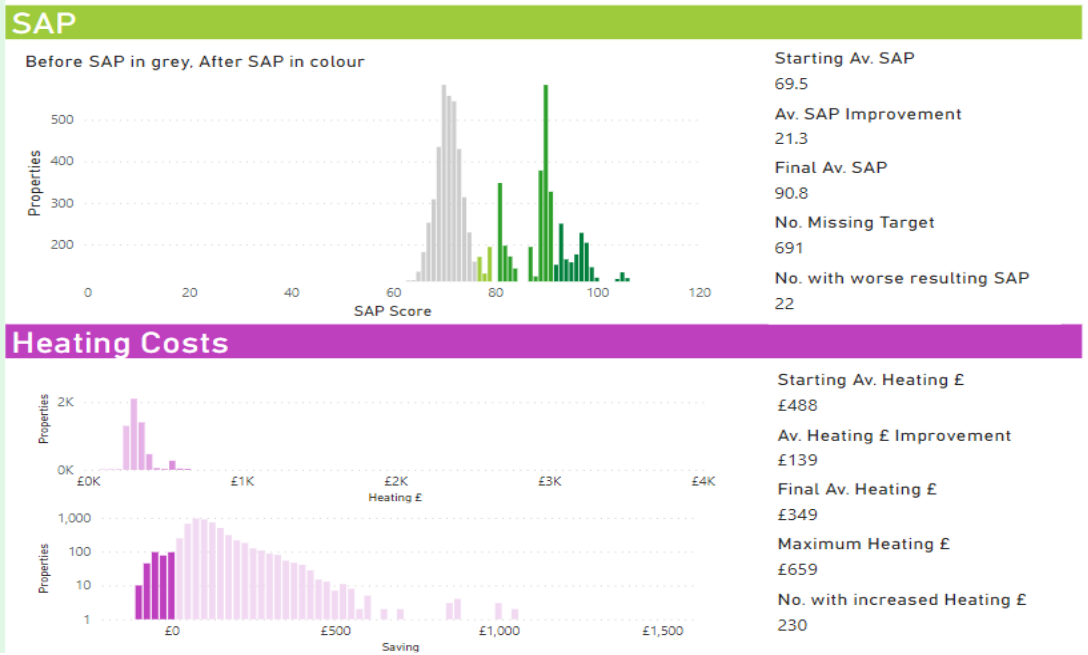




	Total Investment	No. Meausures	Average Cost
Fabric	£65,838,982	25,117	£2,621
Heating and Hot Water	£47,032,740	5,693	£8,262
Photovoltaics	£19,432,622	4,712	£4,124
Lighting	£95,277	2,955	£32
Total	**£132,399,621**	**38,477**	**£3,441**



Fabric, Heating & Hot Water	TotalInvestment	No. Measures	Average Cost
Draughts	£21,023	77	£273
Separate Conservatories	£54,600	26	£2,100
	£95,277	2,955	£32
Ventilation	£487,418	179	£2,723
Roofs	£1,592,808	3,324	£479
Floors	£8,757,392	4,492	£1,950
Walls	£25,677,212	8,359	£3,072
Glazing	£29,248,529	8,660	£3,377
Total	**£65,934,259**	**28,072**	**£2,349**



Individual Property Assessments

PAS 2035 Assessments & Design

- PAS 2035 is a process of assessment and design aimed at de-risking retrofit
- All SWT homes receiving grant for retrofit will have a PAS 2035 Assessment/Survey
- TrustMark certified contractors will be appointed to deliver much of the works
- Retrofit works will be designed into properties to avoid problems such as damp and mould, cold bridging.

Post works inspection and monitoring

- Assessment to understand the difference works have made
- Greater use of SMART controls for tenants and remote technology for the landlord

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Targets & Delivery

Targets & Delivery - Targets

- **2030 – All SWT homes to be EPC C**
  - 1851 currently missing target
  - Enhanced investment in PAS and other surveys
  - 1300 homes to EPC C through small measures – windows, heating replacement, loft insulation, boiler controls
  - 300 homes whole house interventions
  - Improved SWT decent homes specification
  - 223 properties are at risk of not achieving this target

- **2040 – SWT Homes to achieve a Heat Demand output of 50 kWh/m2/yr or less**
  - Circa 4000 homes at risk of missing the target
  - Fabric First Approach primarily through windows replacement and Wall insulation
  - Leaseholder engagement will be critical to deliver improvements to apartment blocks
  - 664 homes at risk of missing this target

- **2050 – All homes zero carbon**
  - c4500 homes using fossil fuel at 2022
  - SWT has c 1,170 Electric heating systems inc. c650 ASHP
  - No SWT homes to use Fossil Fuel by 2050
  - Electric Heat and power through Grid or onsite communal or property renewable heat an power
  - 664 homes at risk of missing this target

Why Fabric First?

	2022 Home	2030 SWT Home	2040 SWT Home	2050 SWT Home
Total Carbon	 9,860 tCO2pa	 c9,500 tCO2pa	 3,587 tCO2pa	 0 tCO2pa
Heat Demand	 170 kWh/m2/yr	 135 kWh/m2/yr	 50 kWh/m2/yr	 50 kWh/m2/yr
Fuel Reduction / Affordability	 N/A	 c1300 properties slight improvement, 300 properties significant improvement	 70% reduction on average	 70% reduction on average
Properties using Fossil Fuel	 c4330	 c4000	 c3200	 0

Delivering – 5 main themes

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1. Alignment of Decent Homes and Retrofit investment
2. Maximise Grants and Subsidy (where aligned to the strategy)
3. Ensure Good Data influences Decisions
4. Tenants at the Heart of Zero Carbon
5. No regrets approach

Delivering – funding 2022-2026

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1. Decent Homes monies c£11.2m for retrofit enhancements
2. 2022 Wave 1 SHDF £370k
3. 2023-2025 Wave 2 SHDF – preparing a bid c£2m-£4m (430-830 homes) –To be finalised Oct 2022
4. 2022-2026 Neighbourhood focused whole house approach with one of the five large energy Companies and a contractor (£25m commitment social & private homes (c250+ SWT home est. c£5m-£7m) –To be finalised Sept 2022
5. £50k to support a show house from Centre for Sustainable Environment (CSE)

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Thank You
Any Question

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