

Workshop 3D

Retrofit Projects – Lessons learnt

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Chaired by: Tony Clarke

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NHMF
Maintenance
Conference
2023

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Baseline

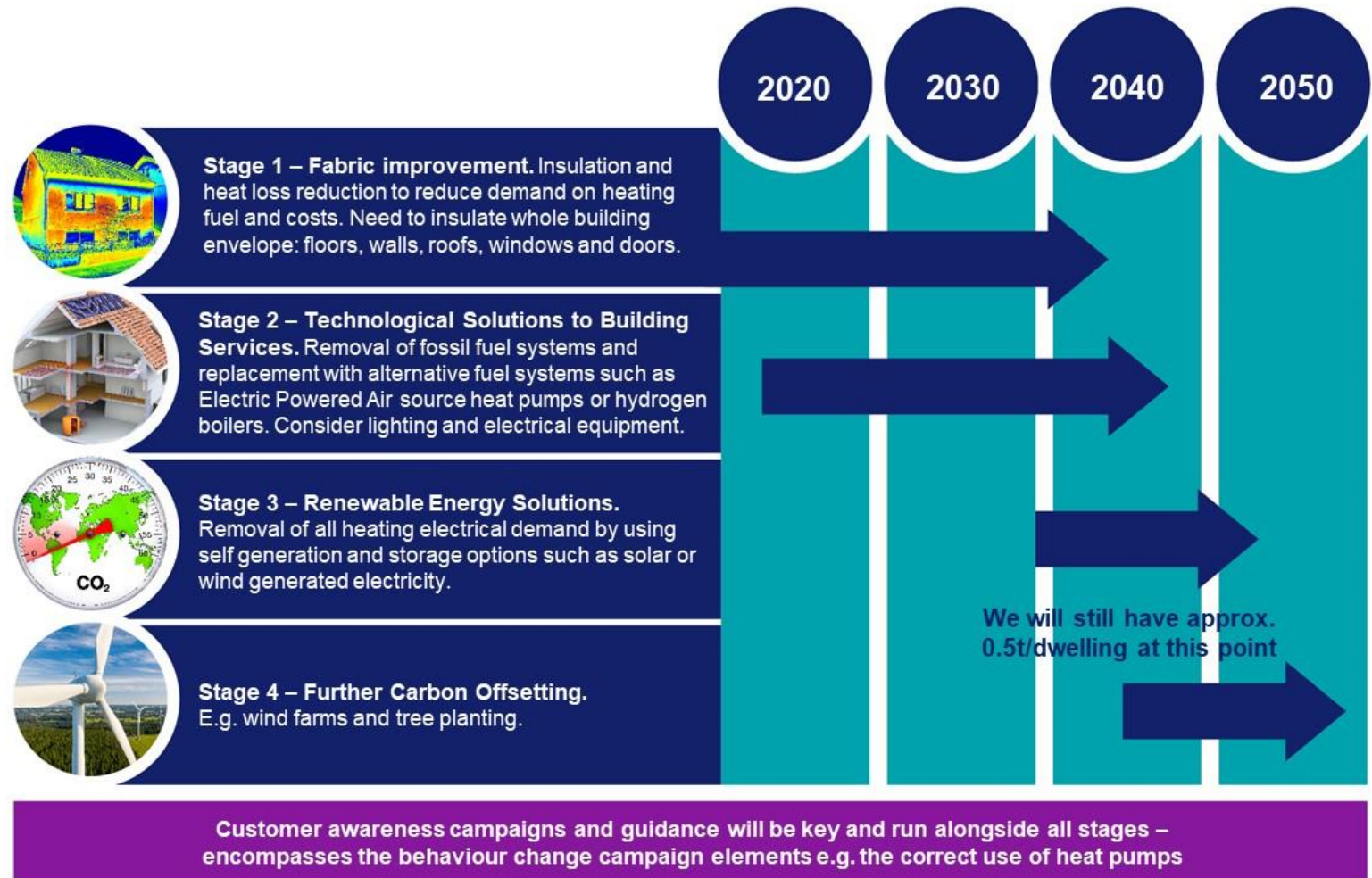
- 28,000 Stock Condition surveys & HHSRS Assessments completed, >27,000 EPC assessments
- >82% of our homes are EPC Band C or higher
- 74 SAP points (Band C) is our average SAP Score across the portfolio V average 70.5 SAP points across Social Rented Sector *
- 31% of our carbon footprint is from our residential portfolio (scope 3)

Key Dates



Developing the Portfolio NZC Strategy

- Staged Approach
- Worst first in terms of energy performance
- Fabric First
- Achieve EPC C by 2030 and future proof ready for NZC for 2050 – no regrets
- Use Parity to model EPC scores



Strategic Challenges to Retrofit Projects

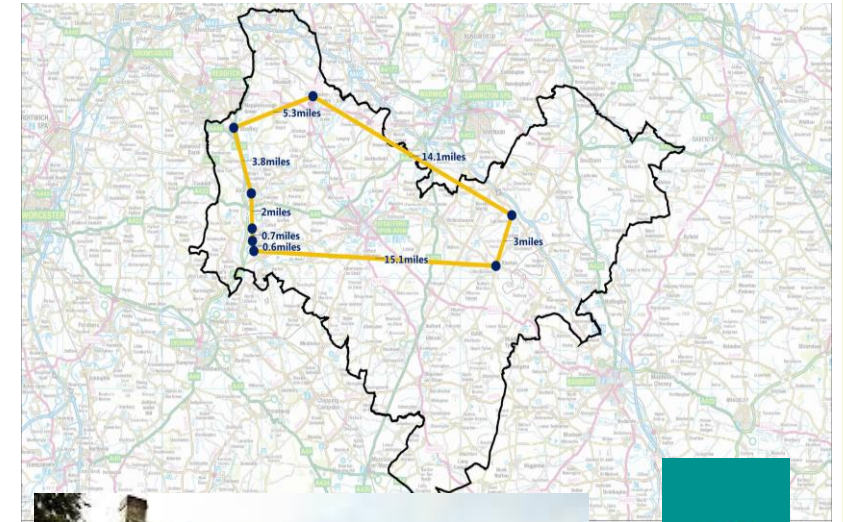
- Cost & Finance
- National Level Issues
- Tenure
- Supply Chain
- Technical
- Customer Engagement

NZC Projects Progress

- SHDF Demonstrator - Stratford on Avon
- SHDF Wave 1 - Stratford on Avon
- SHDF Wave 1 - WMCA
- SHDF Wave 2
- Local Authority Delivery Schemes
- HUGS
- BaU

Stratford SHDF Demonstrator Overview

- 69 homes – mix of bungalows and houses - traditional construction
- Build dates c.1930 – 1960
- Total project cost of £3.6M (£1.4M grant funded)
- Measures include: (“Fabric First” approach)
 - External wall insulation – Cavity Wall Insulation – Internal wall insulation
 - Vapour control barriers
 - Loft insulation to 400mm specification
 - Air Tightness measures
 - Ventilation strategy
 - Replacement heating systems – trial of ASHP/Infra Red/HHRSHs
 - High performing windows & doors to draught proof the property
 - Intelligent heating controls to better manage the environment
 - Renewables eg: PV



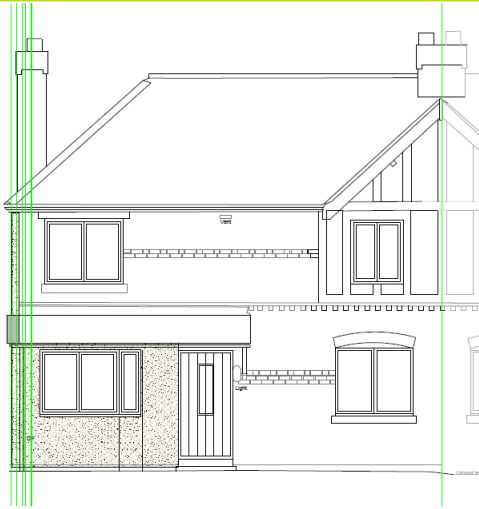
Expect the Unexpected



- Myth busting - technology
- Customer own installations
- Aesthetic objections
- Neighbours
- Project delays
- Boundary issues
- Vehicles
- Border plants/climbers
- Cat flaps
- Incoming mains cables



Project Challenges



- Access
- Dwelling Assessments
- Unknown property issues
- Planning
- Standards & Measures
- BEIS requirements and timelines
- Complexity (PAS 2035, whole house “fabric first”)
- Volatile Market & Competing Pressures
- Skills/Resource shortages (PAS2030 – 2019)





PAS:2035

- PAS 2035 is a specification for what is called ‘whole-house’ retrofit.
- It is the installation of energy efficiency measures (EEMs) considering the requirement of the entire building.
- Includes not only technical standpoints but factors like occupancy, ventilation strategy (“Build tight – Ventilate right”) and occupier comfort.
- PAS 2035 is concerned with assessing domestic dwellings for energy retrofit.
- Identification of areas where improvements can be made.
- Specifying and designing the relevant improvement measures.
- Includes monitoring of domestic retrofit projects.

The Six Stages of PAS 2035

Step 1: Intended Outcomes

Step 2: Risk Assessment

Step 3: Dwelling Assessment

Step 4: Planning and Design

Step 5: Installation and Handover

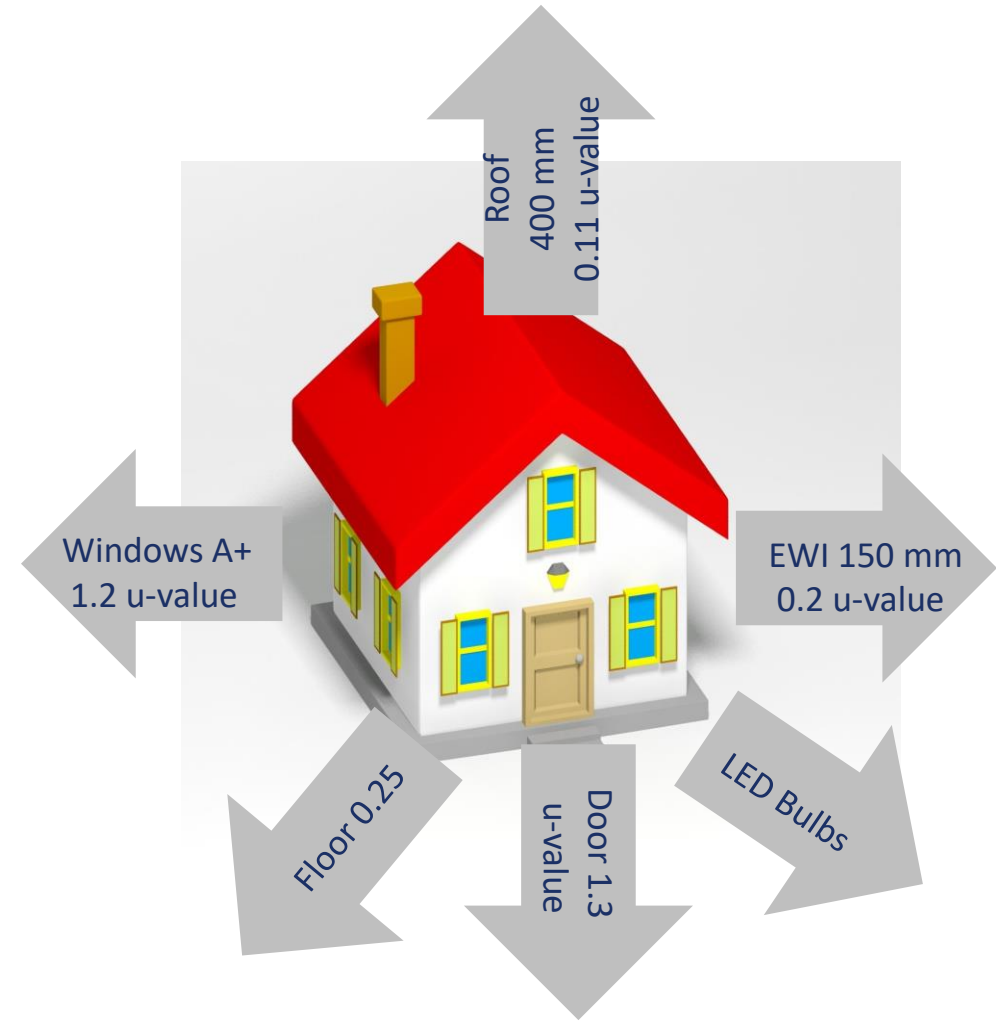
Step 6: Monitoring and Evaluation

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Standards and Specifications

Insulate to avoid need for future retrofit in line with Future Homes Standard 2025

- Improved wall and floor insulation
- High Performance Windows
- High Performance External Doors
- Reduced air permeability through better draughtproofing
>2 Air Changes / Hour
- Mechanical Ventilation and Heat Recovery





WORKING WITH CUSTOMERS TO MAKE NET ZERO CARBON A REALITY

Understand What's Important to Customers



98% utility bills primary concern
(85% very)



97% home being comfortable temperature
(81% very)



25% gone without heating to save money



90% ability to understand your energy use
(59% very)

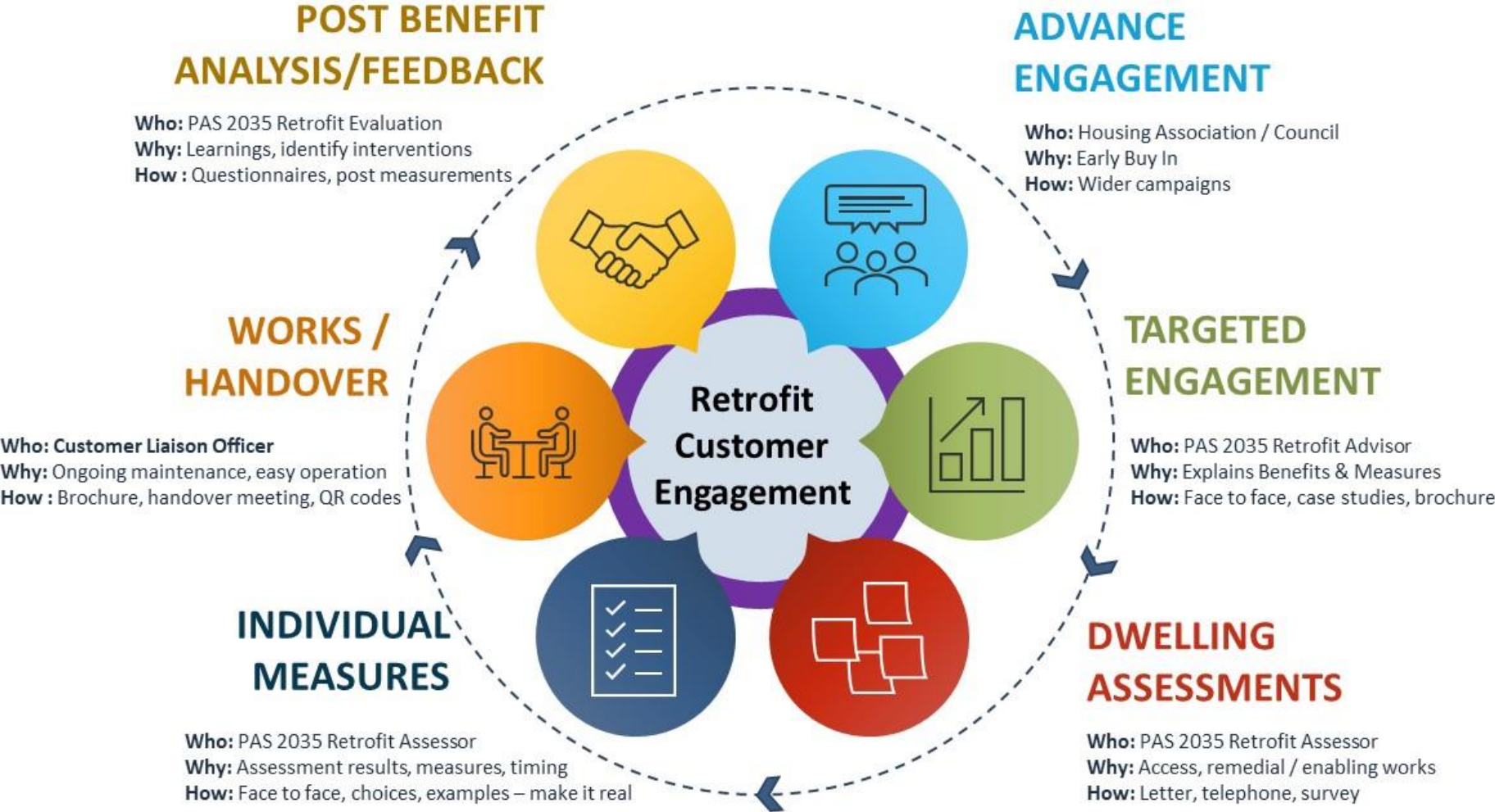


97% having heating that's easy to use
(79% very)



50% having ability to charge an EV
(34% very)

Learnings - Customer Engagement



In Summary

- Good Data is key
- Engage early and keep customers informed throughout
- Don't underestimate the complexity of the project
- Importance of Standards and specifications

Thank you.

See you at the next
conference!