

# SESSION 2: RETROFIT - FROM DOMESTIC TO THE PUBLIC ESTATE

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**Midlands Net Zero Hub**



**DAVID ARKLE**  
**AMBER VALLEY BOROUGH COUNCIL**



# Phase 2 Retrofit Reflections from Amber Valley

David Arkle  
Head of Housing and Growth



# Overview

- Share with you what we have achieved with our partners, our approach, some of the challenges and reflections
- Any success is shared with Westville, Futures Housing Group, Marches Energy Agency and the residents that have stoically put up with all the disruption, we hope that they think it has been worth it
- Thanks to all at MNZH who have been reassuring and supportive once we realised that they are on our side
- Thanks to Derbyshire Dales who through their 1A experience gave us the confidence to give 1B a go
- Thanks to the Housing team at AVBC that have taken all the challenges in good spirits (especially the reporting)



# Phase 2 Delivery Summary

- 34 EWI (Ironville) to complete a mixed tenure scheme started within phase 1B (£440k)
- 47 PV on social housing electrically heated bungalows
- 37 standalone lofts
- 63 EWI (Ripley) in a combination of social and owner occupied properties
- £1,298,947(ish) GHG LAD 2 capital claim against an allocation of £720K
- AVBC subsidy £35K (ish) to cover surplus cost over the £10k limit
- 83 private homes
- 88 social homes

# Ironville (1B and 2)



# Ripley (Phases 1B, 2 and 3)



# Solar PV



# AVBC actions to support success

- Recruitment of a dedicated role to focus on delivery, get sign ups, coordinate reporting and do the trouble shooting and sign offs
- Got to grips with the reporting and looked to make the most of the financial flexibility
- Actively promoted loft and cavity offer through Marches Energy Agency
- Offered a range of repayment terms for private landlords to encourage them to participate
- Worked extensively with Future Housing Group to deliver a multi-tenure scheme that helped to generate momentum and support location of compounds
- Lovely spreadsheets!!
- Planned ahead and understood lead times
- Not just focused on social housing

# What we have done ok

- Kept close control of the budget at all times including averages
- We have been flexible and pragmatic including switching allocation of properties between schemes where necessary to optimise average spends
- We are ahead of the curve to fully utilise our phase 3 LAD allocation with over £600k of GHG signed up and under way
- Offered EWI in an equitable way to all residents in a defined geographical area
- Used our Housing renewal policy (1/3 of clients had a long term health condition) to provide additional funding
- Provided some life changing whole house improvements
- Achieved 95% sign up in Ripley (101 properties)
- 70% sign up in Ironville (95 properties)
- Used the stock condition database to identify properties



# Our approach to partnership

- From the outset we understood that an area scheme was likely to be the most successful approach
- Entered the contract in the spirit of partnership and aiming for win, win, wins
- Identified respective strengths including an early recognition of the assurance processes that meant we did not need to micro manage delivery on site
- Understood what MNZH needed from us (the rules)
- Planning ahead through good project management and recognition of the lead times
- Supportive intervention when it was required resolving issues in a spirit of partnership
- Working with Futures and their chosen contractor on LAD3



# What we could be doing better

- We have limited capacity for effective evaluation, consultation and follow up with beneficiaries
  - Need more resource but only at certain times
  - Technical knowledge about power supplies and other related processes that will impact on delivery
  - Struggled with the different approaches to reporting (1B lag especially) especially supporting a staff handover January/February 2022
  - Need reassurance – all new and no idea how our delivery compares with what others are doing
  - Struggling to find suitable and eligible HUG1 properties
  - Not fully grasped the carbon savings elements of the programme
- 

# Looking ahead

- We have done well (apparently) but have only provided EWI for 140 properties despite all our efforts
- How can we make schemes work in areas of higher proportion of private rented properties?
- How can we more efficiently identify areas with suitable properties and eligible owners/occupiers?
- How do we avoid falling into the easy wins trap?
- How do we find practical solutions for our many rows of terraces with gennels/alleyways?
- How can we deliver area based schemes with the £10,000 private sector average cap when low income measures are now hard to find?
- How can we sustain skills/capacity/knowledge to deliver?
- We are signing up households now but don't know if there is any funding post March 2023

# Messages to Policy Makers

- Improvements to properties on one small estate of just over 100 houses are being funded by multiple sources – too complex
- Policy to support making older housing stock more energy efficient has to be more joined up (area renewal?) with adequate lead times to aid good planning
- EPC maybe the best thing we have, but they cannot be fully relied on for policy making because of historical lack of robustness
- Many of our most vulnerable residents are missing out especially in higher areas of private rented homes
- Have a clear strategy to how retrofit is going to be delivered at scale, decide how local authorities are going to fit into that strategy and give us time to build effective housing renewal approaches in the areas that need intervention
- Identify a policy and stick with it and give us enough time to build up a programme that means we can target interventions at those that need it and not just the properties that are easiest to deliver



**Thank you for listening and  
hopefully staying awake**

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**Amber Valley**  
Borough Council

# **ARNOUT ANDREWS RETROFIT ACADEMY**





**RETROFIT**  
ACADEMY CIC

## TRA Support to MNZH members delivering BEIS funded projects

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**Arnout Andrews**

[arnout@retrofitacademy.org](mailto:arnout@retrofitacademy.org)

**07495 339 736**

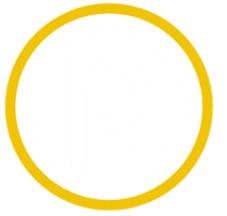


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## Content

- Why are TRA involved?
- Why is support needed?
- PAS 2035 Why? What?
- Toolkit
- Enhanced membership
- Impact & Replicability.....





## OUR MISSION

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To train 200,000 competent retrofitters  
by 2030 to transform the UK's housing stock  
through high-quality, safe retrofit.





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## Why are TRA involved

- Local Government and Social Housing providers have a key role in the delivery of retrofit.
- BEIS funding goes through this group.
  - Sustainable Warmth
  - SHDF
- Most powerful way to improve retrofit?
- TRA developed the Retrofit Coordinator course, we are synonymous with PAS 2035 and the improvement of retrofit delivery.

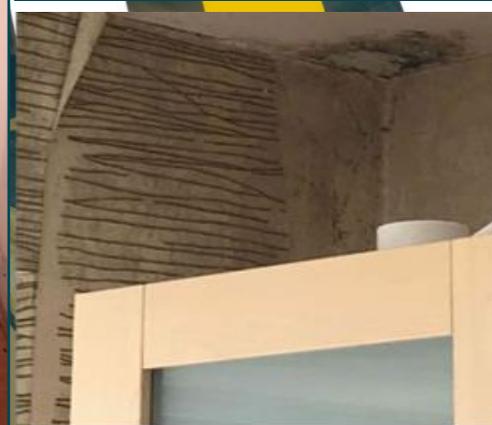




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## Why is help needed?

- Introduction of PAS 2035
  - Turning the super-tanker
- Challenge for stockholding organisations
- Even greater challenge for non-stockholding organisations
- PAS 2035: government's response to industry standards and a framework for an investable future.





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## PAS 2035 – Why & What?

- Makes retrofit fundable for government.
- A standard for the retrofit process. It sits in a framework of other standards etc.
- Compliance mandatory for BEIS funding.

PAS 2035:2019

*Incorporating Corrigendum No. 1*

Retrofitting dwellings for  
improved energy efficiency –  
Specification and guidance



 Department for  
Business, Energy  
& Industrial Strategy

**bsi.**



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# Standards Toolkit

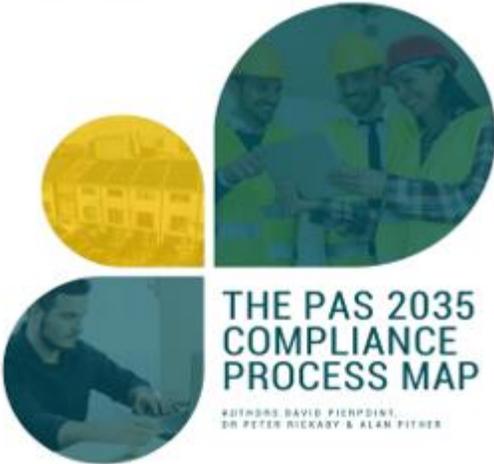
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Retrofitting dwellings for improved energy efficiency – Specification and guidance



Department for Business, Energy & Industrial Strategy

bsi.



## THE PAS 2035 COMPLIANCE PROCESS MAP

BY DR PETER NICKKARY & ALAN FITHER

retrofitacademy.org



## PAS 2035 RETROFIT COORDINATION PROCESS MAP

ACTIVITY	PAS 2035 STAGE	PAS 2035 REFERENCE	RISK RATING	RETROFIT COORDINATION ACTIVITY
08		8.1.1a	40	Ensure that the retrofit design includes complete specifications for interactions listed in range 9 - Figure 10.1
09		8.1.1b	40	Ensure that the retrofit design does not include combinations of measures listed in 8.1.1c
10		10.1.1	40	Ensure that the Retrofit Designer includes in the retrofit design appropriate requirements for testing labelled measures
11		11.2.1	40	Ensure that the Retrofit Designer includes in the retrofit design appropriate requirements for commissioning labelled measures
12		11.2.2	40	Where measures require an approved engineer that the design requires building services to be fully commissioned together
13		12.1.1	40	Ensure that the Retrofit Designer includes in the retrofit design appropriate requirements for maintenance of installed measures
14		9.1.6	A	Ensure that the Retrofit Designer identifies the retrofit design application requirements
15		9.1.7	A	Ensure that the Retrofit Designer creates the retrofit design application requirements with the client and agrees when to apply
16		9.2.0	B and C	Carry out an improvement option evaluation using BESAP, SAP or MTRP with the designer to agree the package of measures
17		9.2.2	B and C	Ensure that the improvement option evaluation includes calculations of energy payback and carbon cost effectiveness
18		9.2.3	B and C	Ensure that the improvement option evaluation uses capital costs, fuel costs and emissions factors from specified sources
19		9.2.4	B and C	If the energy payback is limited, adjust the improvement option evaluation calculations to allow for annual savings
20		9.2.6	B and C	If the dwelling is historically constructed ensure that the retrofit design is consistent with the guidance in BS 7912
21	RETROFIT DESIGN (continued)	9.2.0	B and C	If fabric measures are proposed, ensure existing ventilation and if appropriate include ventilation upgrades to the improvements
22		9.2.6	B and C	Prepare a fabric assessment of the evaluation and identify recommended measures for the medium term strategy plan
23		9.2.7	B and C	Review the improvement option evaluation, the recommended measures and the medium term strategy plan with the client
24		9.2.7	B and C	Agree with the client the scope of the project, the intended outcomes, appropriate performance targets and the budget
25		9.2.8	B and C	Ensure that the retrofit design includes appropriate measures to avoid over-heating during the installed life of the measures
26		9.2.9	B and C	Ensure that measures to inhibit over-heating include local isolation, solar shading, ventilation and thermal capacity
27		9.2.10	B and C	Ensure that the retrofit design specifies the appropriate measured or installed of the proposed measure
28		9.2.3	C	If the dwelling is protected, ensure that signage is considered, and measures are installed in accordance with BS 7912
29		9.2.3	C	If fabric measures include ventilation upgrades are proposed, ensure that the retrofit design includes an air-tightness standard
30		9.2.3	C	If the retrofit design specifies an air-tightness standard, ensure that it also requires appropriate test to demonstrate the testing
31		9.2.2	C	Where the dwelling shows evidence with existing, installed and retained flow for air-tightness testing
32		9.1.8	40	Advise the client on the need for retention approvals, and other make adjustments or coordinate applications for others
33		9.1.10	40	Provide the Retrofit Installer with the retrofit design for the agreed measures and any retention approvals
34		9.1.10	40	Provide the Retrofit Installer with a copy of the report of the retrofit assessment

Delivery Area	Touchpoints	Section No.
PAS2035	Check the following are included in contracts:	1.1
	<b>1. Everything required in PAS 2035</b>	
	2. Elements/items of TRA (The Retrofit Academy) process map	1.2
	3. The organisation [and/or person] that fills each of the PAS roles	1.3
Key Path	Check it has been determined before assessments take place	2
Outcomes	Check they have been identified at the start	3.1
	Review them after the assessments	3.2
	Review them again after <b>Improvement Options Evaluation</b> and retrofit design (in tandem with associated costs)	3.3
Tenant/Homeowner	How to/are the measure[s] and specification[s] determined?	4.1
	<b>Check for evidence that occupants can use the measure[s] installed</b>	4.2
Assessments	Request and review an assessment proforma	5.1
	<b>Specifically look at any issues concerning ventilation, condensation, damp and mould</b>	5.3
	Establish checks and/or review process	5.3
Design	Is there an IOE (Improvement Option Evaluation) – <b>selection of appropriate measures</b> , and an MTP (Medium Term Improvement Plan) in place	6.1
	Challenge why option A is selected instead of B? (e.g. ASHP instead of walls – also 100mm vs 150mm)	6.2
	<b>Check the design detail on a selection of key junctions!</b>	6.3
Install	Check installers are Trademark/MCS certified for the measures being installed	7.1
	Who is responsible for on-site quality assurance?	7.2
	How is on-site work checked?	7.3
	<b>Check the design details align with what takes place on site!</b>	7.4
Commissioning/ Handover/ Measurement/ Survey/ Monitoring	Who looks at/reviews the finished job?	8.1
	Who looks at/reviews the commissioning/handover documents?	8.2
	What determines a successful result (Design and implement a monitoring strategy to answer this question)	8.3

Delivery Area	Touchpoints	Section No.
PAS2035	Check the following are included in contracts: <b>1. Everything required in PAS 2035</b>	<b>1.1</b>
	2. Elements/items of TRA (The Retrofit Academy) process maps	1.2
	3. The <i>organization [and/or person]</i> that fills each of the PAS roles	1.3
Risk Path	Check it has been determined before assessments take place	2
Outcomes	Check they have been identified at the start	3.1
	Review them after the assessments	3.2
	Review them again after <b>Improvement Options Evaluation</b> and retrofit design (in tandem with associated costs)	3.3
Tenant/Homeowner	How is/are the measure[s] and specification[s] determined?	4.1
	<b>Check for evidence that occupants can use the measure[s] installed</b>	<b>4.2</b>
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	Establish checks and/or review process	5.3
Design	Is there an IOE (Improvement Option Evaluation) – <b>selection of appropriate measures</b> , and an MTIP (Medium Term Improvement Plan) in place	<b>6.1</b>
	Challenge why option A is selected instead of B! (I.e. ASHP instead of walls – also 100mm vs 150mm)	6.2
	<b>Check the design detail on a selection of key junctions!</b>	<b>6.3</b>
Install	Check installers are Trustmark/MCS certified for the measures being installed	7.1
	Who is responsible for on-site quality assurance?	7.2
	How is on-site work checked?	7.3
	<b>Check the design details align with what takes place on site!</b>	<b>7.4</b>
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# Touchpoints - list

- **Contract:** Roles and compliance in contracts.
- **Assessment:** Ventilation, condensation, damp and mould
- **Selection of measures** (and spec)
- **Design:** Check construction details.
- **Install:** Check details are being built
- **Check occupier can use** what they have had



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## Toolkit Additional

- Easy access video series
- Checking membership needs





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## Enhanced Membership

- Training
  - Qualifications
  - CPD type 'access' sessions
  - Organisational progress (Fit for Retrofit)
- Consultancy
  - Support/ guidance to help organisations with project delivery

## NEW FULLY FUNDED RETROFIT TRAINING



### WHAT'S ON OFFER?

REVIEW THE MENU OF SUPPORT PACKAGES, TO DETERMINE YOUR REQUIREMENTS:

#### LEVEL 2 LEVEL 2 AWARD IN UNDERSTANDING DOMESTIC RETROFIT

A regulated qualification which provides a comprehensive and easy-to-follow introduction to whole-house retrofit. Learners will gain an understanding of what domestic retrofit is, what it is supposed to achieve, what you need to know when working in the industry, and what to look out for when installing energy efficiency measures in homes.

#### LEVEL 3 LEVEL 3 AWARD IN DOMESTIC RETROFIT ADVICE

The AIM Qualification Level 3 Award in Domestic Retrofit Advice gives learners the knowledge, skills, and confidence to provide retrofit advice. The course is easy to follow and gives you a comprehensive introduction to whole house retrofit. It is ideal for people working in customer-facing roles in social housing or fuel poverty schemes.

#### LEVEL 4 LEVEL 4 AWARD IN DOMESTIC RETROFIT ASSESSMENT

This course leads to the Level 4 Award in Domestic Retrofit Assessment, which enables learners to become an accredited Retrofit Assessor. It is a blended approach, meaning the knowledge content is delivered through eLearning and a half-day Bootcamp. In addition, there is a virtual assessment of a property, followed by the completion of a report based on a Retrofit Academy assessment report template.

#### LEVEL 5 LEVEL 5 DIPLOMA IN RETROFIT COORDINATION AND RISK MANAGEMENT

The AIM Qualification Level 5 Diploma in Retrofit Coordination & Risk Management gives learners the knowledge and skills needed to become a Retrofit Coordinator, a crucial new role required by the PAS 2035 standards. It is ideal for built environment professionals looking for a career managing retrofit projects and prepares learners to undertake all activities required of a Retrofit Coordinator managing retrofit projects.

Working with MIDLANDS  
NET ZERO HUB

Register your requirements here:



## ENHANCED TRAINING FOR HOUSING TEAMS



### RETROFIT ESSENTIALS

A one-day classroom-based course providing a no-nonsense introduction to retrofit, giving you and your team a brief overview of retrofit requirements.



### RETROFIT READY BOOTCAMP

Retrofit Ready Bootcamps are designed for people wanting to understand the core technical principles of good retrofit but without the need to gain a qualification. The course introduces PAS 2035, the key principles of whole house retrofit, including improvements to the building fabric, services, ventilation and renewables.



### FIT FOR RETROFIT ORGANISATIONAL READINESS PROGRAMME

Designed to support social housing providers to become ready to deliver domestic retrofit programmes successfully. Modules include Leadership, Organisational Skills Baseline, Stock Performance and Tenant Engagement.



### FIT FOR RETROFIT CONSULTANCY SERVICE

Consultancy services providing bespoke technical support to your organisation's retrofit projects.



### PAS 2035 RESOURCING

A resourcing solution to connect you with PAS 2035 professionals to support your retrofit projects as employees or consultants.

APPLICATIONS MUST BE SUBMITTED BY NO LATER THAN 21st OCTOBER 2022



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## Replicability & Impact

- At the last count:
  - **775 downloads of the Toolkit.....**
- Is the MNZH support package a model for BEIS?

**ALEX PEARSON**  
**MIDLANDS NET ZERO HUB**



# Supporting the Energy Transition

Alex Pearson – Net Zero Project Manager

<https://www.midlandsnetzerohub.co.uk/>



**Nottingham**  
City Council

Carbon Reduction,  
Energy and  
Sustainability

# Redditch Borough Council PSDS Funded Project.

1. Key contacts & Partnership working
2. Data
3. Project Origination
4. The application process
5. Outcomes
6. An easier way - via the MNZH PSDS team.

# Redditch Borough Council PSDS Funded Project.

## Key contacts:

- Facilities / Estates team
- Finance team – Contracts & Utilities
- Sustainability / Climate change officers

# Redditch Borough Council PSDS Funded Project.

## **Facilities / Estates team**

- Good knowledge of buildings – age and type of equipment installed.
- Maintenance schedules – what can fit into existing programmes?
- Access to drawings/schematics & costings.

## **Finance team – Contracts & Utilities**

- Energy use data, MPAN numbers, running costs

## **Sustainability / Climate change officers**

- Ensuring organisational buy in, carbon reporting and project guidance.

# Redditch Borough Council PSDS Funded Project.

## Data

Use of information to produce a list, and initial kWh & carbon savings  
Cross reference the list with age of equipment and planned maintenance schedule.

# Redditch Borough Council PSDS Funded Project.

## Project Origination

Shortlisting and prioritise in terms of financial and carbon savings.

Sharing the shortlist with the wider team at the council and matching with the recommendations of the 'Heat Decarbonisation Plan'

Ensuring that the project meets the 'lifetime carbon cost' hurdle rate.

Collaboration and 'picking a winner'

# Redditch Borough Council PSDS Funded Project.

The application process.

The application form requires a great deal of detail such as  
Heat loss calculations  
Project costings  
Timelines.

The only way to have these figures ready is collaboration early on in the process.

# Redditch Borough Council PSDS Funded Project.

Outcomes:

A successful grant application:

Redditch Town Hall

Cost £1,175,721 (grant funded)

Annual carbon savings 150 tonnes

Financial savings £14,189 annually

# Redditch Borough Council PSDS Funded Project.

An easier way - via the MNZH PSDS team!

- Building data analysis
- Use of tools such as 'Ongen' & 'On efficiency'
- Help & support through a dedicated team.

# SESSION 2: RETROFIT - FROM DOMESTIC TO THE PUBLIC ESTATE

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