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Navigating PAS 2035:2023

The New Standard Explained

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Today's Agenda

- State of Play - Industry Updates
- Introduction to PAS 2035:2023
- Key Changes to the Standard
- Impact on Retrofit Roles
- Live Q&A Session

State of Play – Industry Updates

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Industry Updates

Industry Updates

- PAS 2023 now live!
- EPC Reform under consultation
- Schemes & funding announced for the foreseeable
- WH:SHF Wave 3 underway
- Checks & Balances - closer focus on audits and compliance
- MEES Consultation - closing May 2nd

RdSAP10 coming 15th June!

- There will be significant changes to the methodology
- Window measurements, extended ventilation details, battery storage, air pressure test results
- Increased time on site but a more accurate assessment

ECO4 & GBIS Consultation Update

- Loft & Cavity Wall Insulation can be combined under GBIS
- Smart Thermostats allowed as secondary measures for low-income homes
- ECO4 delivery can count toward GBIS targets, up to 75%
- Annual GBIS targets removed, it's now a single target per supplier
- ECO4 ABS can be assigned to GBIS until 31 July 2026
- TrustMark License Plus not to be used in ECO4 or GBIS

More on the horizon...

- New Retrofit Assessor Standard
- Home Energy Model
- Future PAS changes...

Introduction to PAS 2035:2023

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PAS 2035 Reminder...

Purpose:

PAS 2035:2023 provides a comprehensive framework for the whole retrofit process, from assessment and design to installation and evaluation.

Scope:

It covers the roles and responsibilities of all stakeholders, including Retrofit Assessors, Designers, Coordinators, and Installers.

Key Elements:

Assessment: Detailed assessment of the building to identify appropriate EEMs.

Design & Coordination: Development of a retrofit plan based on the assessment.

Installation: Overlaps with PAS 2030 requirements to ensure installations are done correctly.

Evaluation: Post-installation evaluation to verify the effectiveness of the measures.

PAS 2030 Reminder...

Purpose:

PAS 2030:2023 specifies the requirements for installing energy efficiency measures (EEMs) in existing buildings.

Scope:

It covers the qualifications and competencies of installers, the processes they must follow, and the standards they must meet to ensure high-quality installations.

Key Elements:

Installer Competence: Ensures installers have the necessary skills and qualifications.

Installation Process: Outlines procedures to follow for each Energy Efficiency Measure (EEM).

Quality Assurance: Mandates ongoing quality checks and audits to maintain high standards.

PAS 2035:2023 – The New Standard!

Why the update?

PAS 2035 was updated in September 2023 to reflect evolving best practices, address implementation feedback, and align with the UK's net zero emissions goals.

Key Updates:

Emphasis on a "**whole-house**" approach rather than focusing on individual EEMs.

Introduces mandatory **air tightness strategies** for certain projects.

Moisture control has been enhanced to align with BS5250 management of moisture in buildings.

New **ventilation requirements** introduced to prevent damp/mould.

Heritage Building retrofits must comply with BS7913 with most being treated as high risk.

Retrofit Coordinator & Designer **roles redefined** with stricter qualifications and requirements for on-site visits.

Focus has been placed on mitigating and adapting to **climate risks** in retrofit projects.

More accessible than before, PAS 2030:2023 and PAS 2035:2023 are free to download.

Key Changes to the Standard

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Removal of Risk Paths

Risk paths would have previously been assigned to projects, but this has now been replaced with 'Category'.

Categories are calculated by the number of 'Minor' and 'Major' measures within the project.

This is specified further in table '3.1 Energy efficiency measures' on approved document F.

In line with Clause 3.8 of ADF, use Table 3.1 to count all existing and planned energy efficiency measures, including those added since construction.

Table 3.1 Energy efficiency measures

	Category of measure
Roof insulation	
a. Renewing loft insulation, including effective edge sealing at junctions and penetrations	Minor
b. Loft conversions or works that include changing a cold loft (insulation at ceiling level) to a warm loft (insulation at roof level)	Minor
Wall insulation	
c. Installing cavity wall insulation to any external wall	Minor
d. Installing external or internal wall insulation to less than or equal to 50% of the external wall area	Minor
e. Installing external or internal wall insulation to more than 50% of the external wall area	Major
Replacement of windows and doors⁽¹⁾	
f. Replacing less than or equal to 30% of the total existing windows or door units	Minor
g. Replacing more than 30% of the total existing windows or door units	Major
Draught-proofing (other than openings)⁽²⁾	
h. Replacing a loft hatch with a sealed/insulated unit	Minor
i. Sealing around structural or service penetrations through walls, floors or ceiling/roof	Minor
j. Sealing and/or insulating a suspended ground floor	Major
k. Removing chimney or providing another means of sealing over chimney, internally or externally	Major

NOTES:

1. If the energy efficiency works involve only replacing windows, then the guidance in paragraphs 3.14 to 3.16 may be followed as an alternative means of demonstrating compliance.
2. Draught-proofing measures might not, on their own, constitute building work. This work may be controllable under the Building Regulations if carried out as part of other building work.

		Number of minor measures						
		0	1	2	3	4	5	6
Number of major measures	0	Category A						
	1	Category B						
	2	Category B						
	3	Category B						
	4	Category B						

Diagram 3.1 Chart for categorising impact on ventilation when carrying out works in existing dwellings

Medium Term Plan Update

As a result of the new Categories, the following changes have been made to the Medium Term Plan:

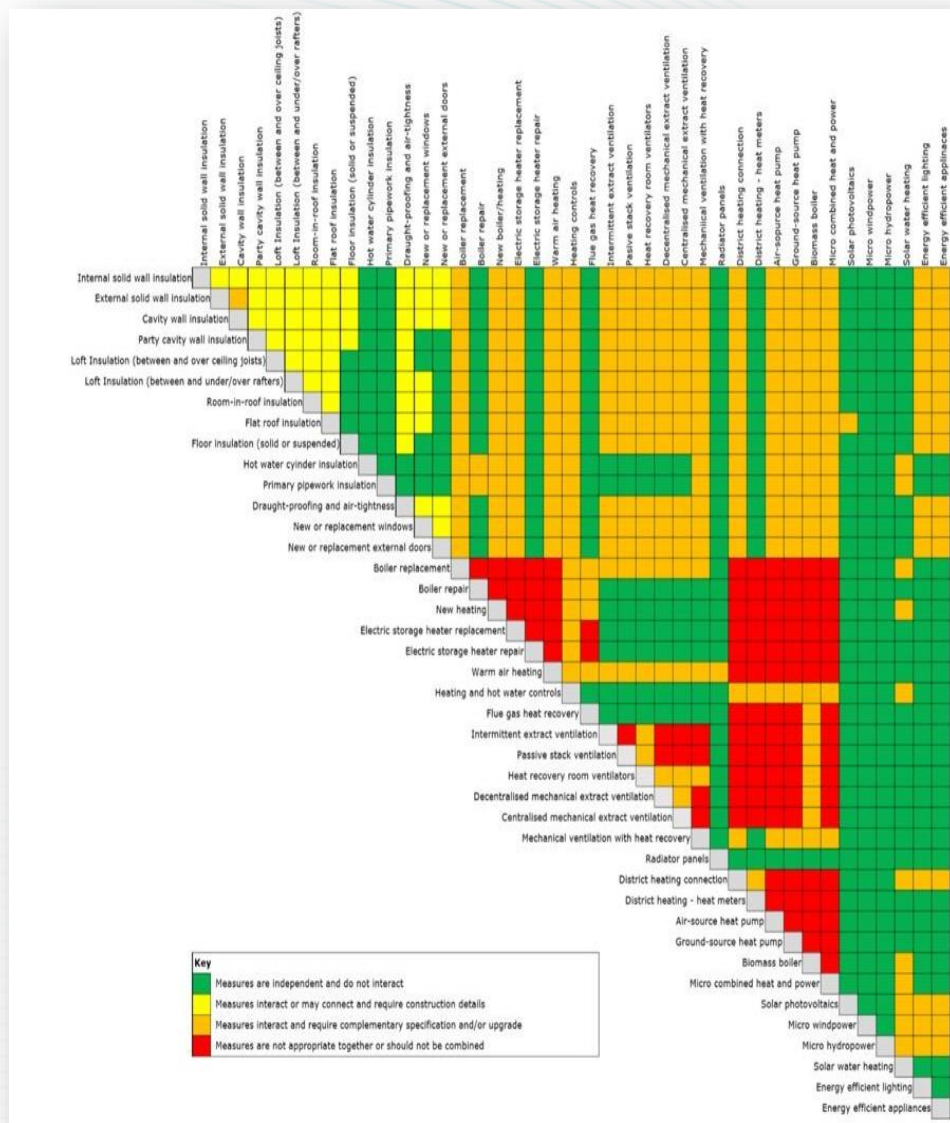
- Risk Path will be replaced by 'Category'
- New measure interaction matrix will impact the defined Category

Medium Term Plan	
Date: 25/10/2024	
Address:	
Project reference: SH-P-64	
The purpose of this plan is to guide the staged or phased improvement of the dwelling to which it applies by identifying the improvements that are needed by 2050 in order to achieve energy efficiency and sustainability (i.e. net zero carbon), and an appropriate order for their implementation, and by highlighting critical interactions between them.	
Project details	
Project reference	SH-P-64
Company name	ECO Surv
Number of dwellings	3
Number of improvements	3
Overall risk grade	B

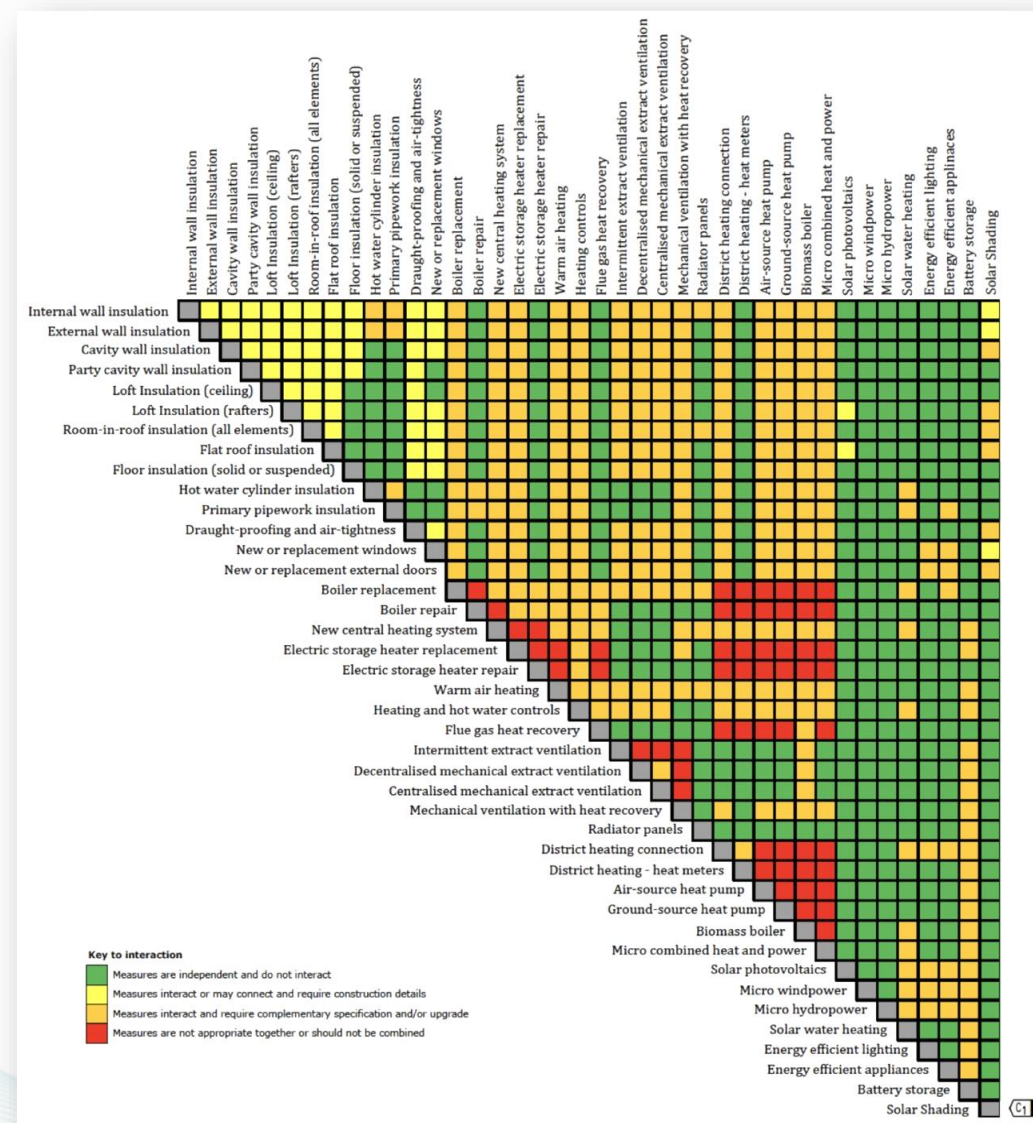
Before...

Medium Term Plan	
Date: 02/06/2023	
Address:	
Project reference: 111	
The purpose of this plan is to guide the staged or phased improvement of the dwelling to which it applies by identifying the improvements that are needed by 2050 in order to achieve energy efficiency and sustainability (i.e. net zero carbon), and an appropriate order for their implementation, and by highlighting critical interactions between them.	
Project details	
Project reference	111
Company name	ECOSurv
Number of dwellings	1
Number of improvements	1
Category	C

After...



Before...



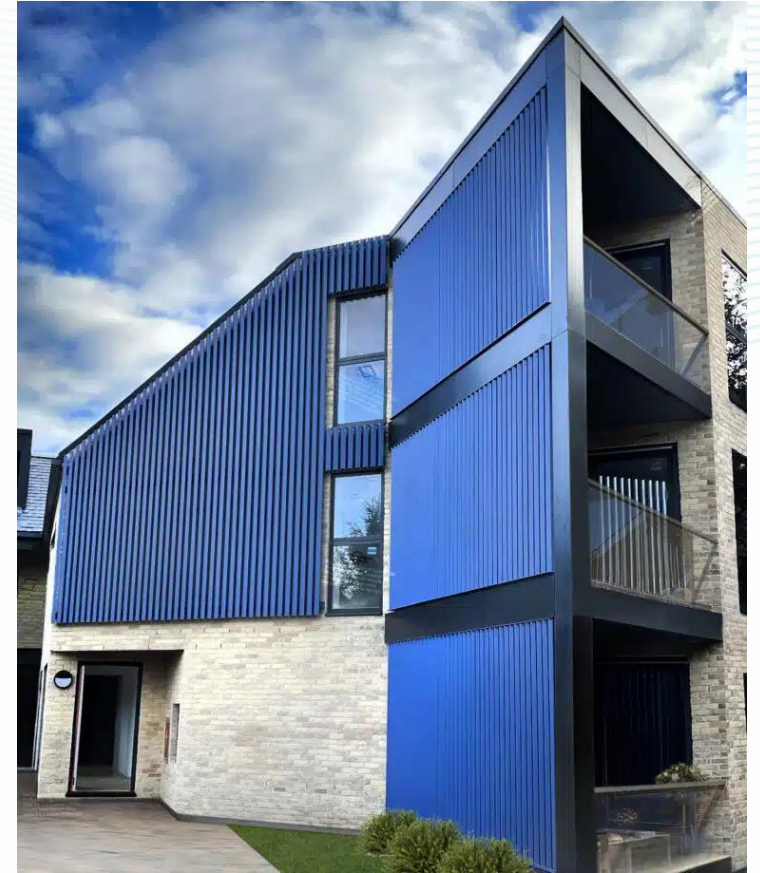
After...

Measure Interaction Matrix

Measure Interaction Matrix

With the new measure interaction matrix, the key changes to be aware of are:

- New measures added:
 - Battery Storage
 - Solar Shading
- Additional conflicts that differ from PAS 2019
- *For example:*
 - In PAS 2019 – A project including Solar PV and Loft Insulation would be Risk Route A
 - In PAS 2023 – The same project with the same measures would now be Risk Route B



'Air Tightness Strategy' Required for Fabric Measures

An 'Air Tightness Strategy' is now required. This is a mandatory requirement from TrustMark. An air tightness strategy is a planned approach to reducing unwanted air leakage through a building's envelope to improve energy efficiency, comfort, and moisture control. It involves identifying leakage points, specifying sealing methods and materials.

If a Retrofit Coordinator specifies an Air Tightness Target for the project then an Air Tightness Test must be undertaken. Testing must be conducted by professionals certified under the Elmhurst Air Tightness Scheme or the Air Tightness Testing and Measuring Association (ATTMA).

Complete Ventilation Checklist is needed on all projects, this is taken straight from Approved Document F (Table D1)

Ventilation

- Pre Install Ventilation Assessment:
 - Inspect existing ventilation
 - Record position, type, make, and model of all fans
 - Record size and location of all background ventilators.
 - Conduct functional testing following BSRIA Guide 46/2022
 - Report any fans with air flow rates below minimum standards or inadequate air movement.
- Post-Installation Testing:
 - Verify that the building meets the required air tightness & ventilation standards after EEMs are implemented.
- Testing Methodology:
 - Utilise blower door tests to measure air leakage
 - Calculate air changes per hour (ACH) and air permeability rates
 - Pulse testing



Heritage Impact Assessment

During the significance survey, if an area of significance has been recognised, a Heritage Impact Assessment must now be undertaken.

This applies when a building is flagged as Significant according to BSI 7913 (Code of practice for conservation of historic buildings)

- Traditional Construction
- Located in a Conservation Area
- Identified in a Local Plan
- Flagged by the RC or assessor as having heritage value



Key Reminders:

- If unsure, treat the building as significant – better safe than sorry.
- The Significance Survey is critical – get it right on the first visit.
- If missed at assessment, the Retrofit Coordinator may need to complete it later.

Heritage Impact Assessment

Table E.1 – Key values of significance

Values ^{A)}	Explanation	Example
Architectural and aesthetic	The quality of design, construction and craftsmanship of buildings and the character of their setting.	Local materials, decorative brickwork or render, arches, lintels and other details all contribute.
Communal	Many people value the appearance of older buildings.	Traditional buildings and associated streetscapes provide a clear sense of place and identity.
Evidential	Older buildings and their setting can inform us about how and why they were built, and how they were used.	Surviving original fabric provides valuable evidence.
Historical	Buildings may have associations with specific people or events or illustrate a past way of life.	The birthplace or residence of a historical figure, or an association with a particular industry.

^{A)} Table E.1 draws on guidance from BS 7913 and is adapted for use in unprotected traditional buildings.

NOTE 2 Retrofit work can also provide an opportunity to reveal and enhance significance. For example, a new double-glazed timber sash window to the original pattern might replace a later replacement window that has diminished the significance of the dwelling.

Reminder: To work on traditional buildings, Retrofit Assessors and Retrofit Coordinators, must be Level 3 Older Traditional & Buildings qualified

BS 7913:2013



BSI Standards Publication

Guide to the conservation of historic buildings

bsi.

...making excellence a habit.™

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Mandatory RC On-site Audits

A site visit is mandatory for all PAS 2035:2023 projects where EWI, IWI, RIRI, UFI, PHI, or FRI are installed.

Site visits must be completed by a qualified, TrustMark registered, and active Retrofit Coordinator or a suitably qualified designer.

What should a site visit cover?

- Verification that measures are installed as designed.
- Assessment of workmanship quality and compliance with the design brief.
- Identification of risks or deviations from PAS 2035 processes.
- Evidence gathering (e.g. photos, notes) to support project documentation and assurance.

PAS 2023: Key Documents List

Summary of documents required to lodge a **TrustMark assessment:**

- Pre Installation RdSAP
 - Full property assessment
 - Condition report
 - Occupancy assessment
 - Ventilation assessment
 - Ventilation assessment checklist
 - Significance Survey*
 - Heritage Impact Assessment
- *Conditional*

Summary of documents required to lodge a **TrustMark project:**

- Intended outcomes
- Improvement option evaluation
- Medium term plan
- Floor Plan

and then all the required design & install docs...!

Impact of PAS 2023 on Retrofit Roles

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Retrofit Roles

Assessment (PAS 2035): Begins with a comprehensive assessment by **Retrofit Assessors**.

Design & Coordination (PAS 2035):

A **Retrofit Coordinator** oversees the technical process to ensure the compliant delivery of measures.

A **Retrofit Designer** creates a detailed plan based on the assessment.

Installation (PAS 2030): Certified **Retrofit Installers** carry out the installations following PAS 2030 guidelines.

Evaluation (PAS 2035): Post-installation evaluations are conducted to ensure the measures meet the desired outcomes.

Retrofit Assessor – PAS 2035:2023

Accreditations & Qualifications:

- Level 3 Traditional & Older Buildings, now required as standard for a project involving any traditionally constructed building.

Additional/Changed Requirements:

- Enhanced data collection, for example...
 - Ventilation & Condition survey additional questions
 - Measuring existing fan rates
 - Measuring windows
 - Measuring trickle vents
 - Other background ventilation

Retrofit Coordinator – PAS 2035:2023

Accreditations & Qualifications:

- Level 3 Traditional & Older Buildings, now required as standard for a project involving any traditionally constructed building.

Additional/Changed Requirements:

- A site visit is mandatory for all PAS 2035:2023 projects where the following measures are installed across ECO4/GBIS/SHDF:
 - External Wall Insulation (EWI)
 - Internal Wall Insulation (IWI)
 - Room-in-Roof Insulation (RIRI)
 - Underfloor Insulation (UFI)
 - Park Home Insulation (PHI)
 - Flat Roof Insulation (FRI)
- A 'Heritage Impact Assessment' is now needed for significant heritage properties.

Retrofit Designer – PAS 2035:2023

Accreditations & Qualifications:

- CIOB, CIAT, RICS (or equivalent) qualifications now required to allow for complex projects to be undertaken by qualified professionals
- Level 3 Traditional & Older Buildings, now required as standard for a project involving any traditionally constructed building.

For three or more interacting fabric measures or any that include any fabric measure or replacement windows on a high rise or system-built dwelling the retrofit designer shall be, MCIAT or FCIAT, ARB, MCIOB or FCIOB or MRICs or FRICs.

Additional/Changed Requirements:

- Air tightness strategy now mandatory for fabric measures
- Risk pathways have been removed and replaced by 'Categories'
- A site visit is now required for particular projects across ECO/GBIS/SHDF. If a Retrofit Coordinator does not undertake this, a Retrofit Designer can fulfil this capacity.

Retrofit Installer – PAS 2030:2023

Accreditations & Qualifications:

- PAS 2030:2023 Accreditation to be undertaken by Installers before commencing any PAS 2035:2023 projects.
- NVQ Qualifications (or equivalent) for measures for Install Operatives

Additional/Changed Requirements:

- An Air Tightness Strategy is required for fabric measures which is created by the Retrofit Coordinator.
- As a result, the installer should consider Air Tightness Tests as well as Air Tightness Targets.
- Mandatory Independent Verification of Pre-Installation Inspections

Elmhurst Energy Training Courses

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Elmhurst Energy Training Courses

The UK's largest independent provider of energy assessment, retrofit and property professional training, software and accreditation.

Courses include:

- Retrofit Assessor Training
- Level 3 Traditional & Older Buildings
- Level 5 ABBE Retrofit Coordinator Training
- Background Ventilation and L1 Airtightness Training
- On Demand RdSAP 10 Update

Course Discount:

Code ECO20 for 20% Off!*

**The code is exclusive to those attending today's session.
It expires on 31st May 2025 and can only be used on a single transaction.*

ECO Surv Software

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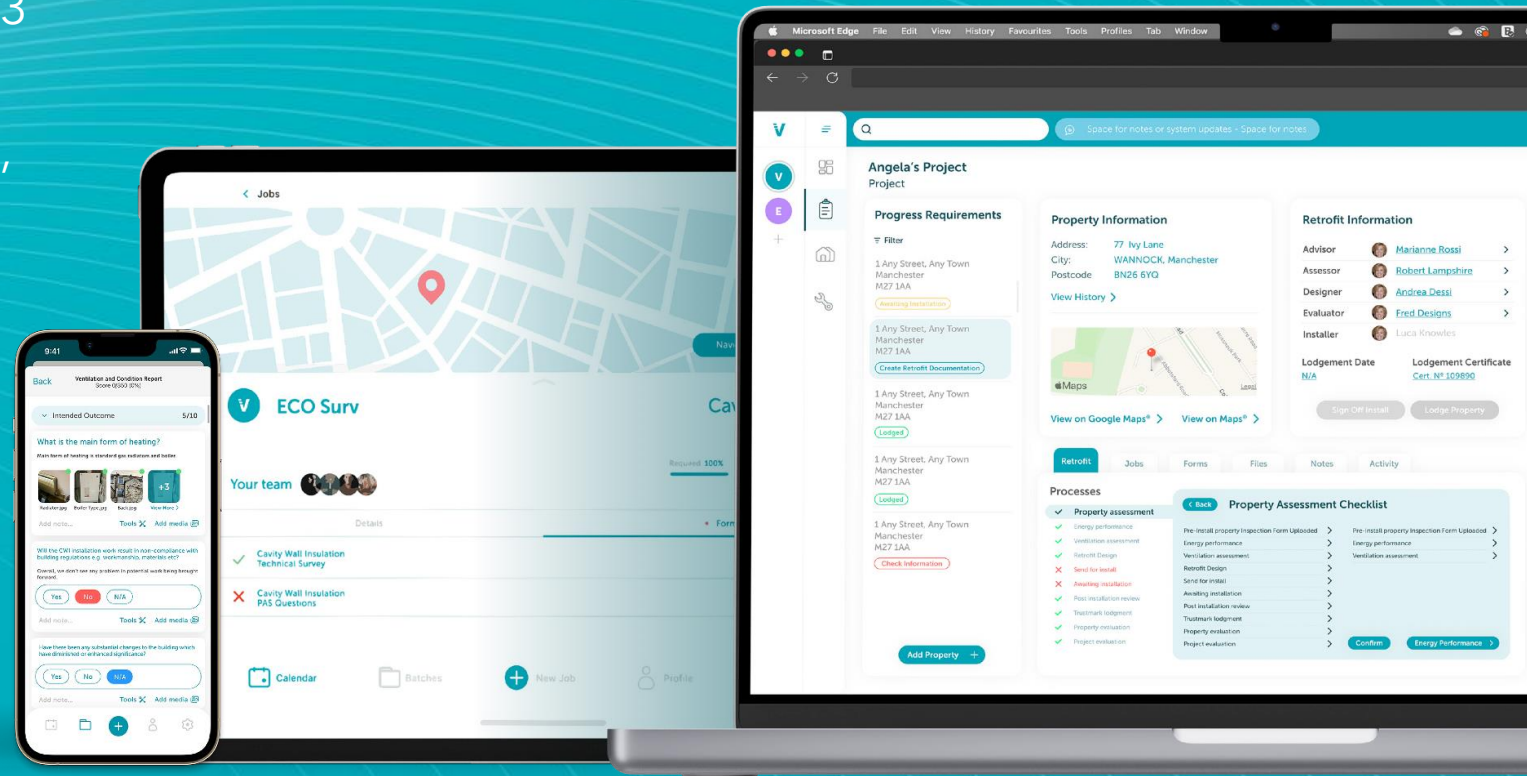


Comply & Thrive with ECO Surv's Platform

- Award-winning SaaS platform and mobile app supporting retrofit projects end-to-end
- Ensures compliance with PAS 2035:2023 standards
- Real-time visibility into project progress, compliance status, and measures
- Ability to lodge into TrustMark's data warehouse

Webinar Discount:
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Live Q&A Session

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Thank you!

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