



WEBINAR: PRACTICAL PREPARATION FOR RETROFIT PROJECTS

WEDNESDAY 15 JUNE - MIDDAY



CONTENTS

- Background
- Purpose
- The building
- Current condition
- Major challenges
- Progress

BACKGROUND

- Address: 5-7 Belsize Grove, London, NW3 4UT.
- Shared boundary with a late 1960s apartment block (Straffan Lodge) and a Victorian villa converted flats (similar style as the premise).



BACKGROUND

- Located within Belsize Conservation Area
- Negative visual impact on the street
- Demonstrate the possibility of whole house deep retrofit for traditional buildings
- Social Housing Decarbonisation Fund (SHDF) wave 1
- Following PAS 2035 methodology





PURPOSE

- Increase energy efficiency.
- Improve thermal comfort and occupant health.
- Achieve better moisture and ventilation control within the property.
- Reduce CO2 emissions and the reliance on fossil fuels for heating and hot water.
- Reduce residents' energy bills and fight against fuel poverty.

THE BUILDING

- Mid-19th century building, 4-storey
- Originally two symmetrical villas, converted to flats
- Lift was installed in mid-late 20th century, connecting block in the middle
- Traditional brick construction
- 58 bedsits/self-contained units
- Front elevation: Stucco finished with white paint
- Flank and rear elevations: Fair faced London yellow bricks in Flemish bond with arched brick lintels and stucco bay windows





CURRENT CONDITION AND MAJOR CHALLENGES (CONT'D)

- High occupancy
 - Assumed to be occupied during the works
- Lack of internal space
- Full survey required





CURRENT CONDITION AND MAJOR CHALLENGES (CONT'D)

- Continue renovation and maintenance works
- Heated communal corridors
- Four communal bathrooms on each floor shared by some bedsits
- High moisture content within corridor
- Packed ceiling void
- No gas available
- Electric only for hot water, space heating and cooking.









PROPOSED ELEVATIONS (FRONT)



CURRENT CONDITION AND MAJOR CHALLENGES (CONT'D)

- Within conservation area
 - Aesthetic value and heritage impact
- Article 4
 - Planning consideration
- Technical risks and limitation
 - Traditional solid built
 - 'Breathability' issue
 - Ventilation
 - Prevention of overheating
 - East facing front elevation
 - Cladding safety



PROGRESS

- Project development
 - Material research
 - Renewable energy source feasibility
- Full Planning Permission application
- Specification

SUMMARY

- Demonstrator project
- Difficult to treat mid-19th
 Century property
- Not one-size fit all approach
- Ensuring fuel poverty is minimised





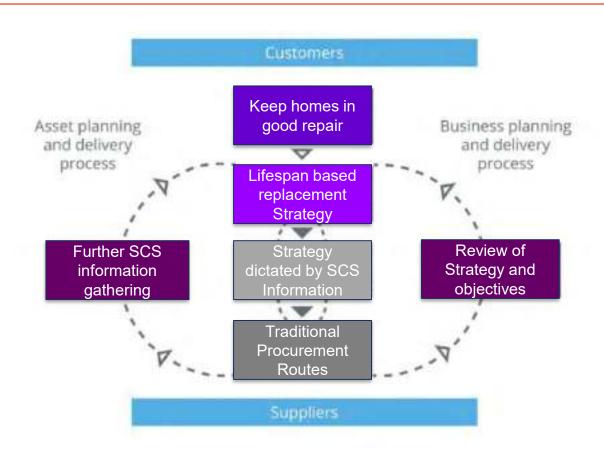
STRATEGIC ASSET MANAGEMENT

What is Strategic Asset Management?

"The activity of aligning property assets with the strategic aims and direction of the organisation and adding both financial and non-financial value to the organisation as a result."

 RICS Strategic public sector property asset management, 3rd edition, September 2021

THE ASSET MANAGEMENT CYCLE

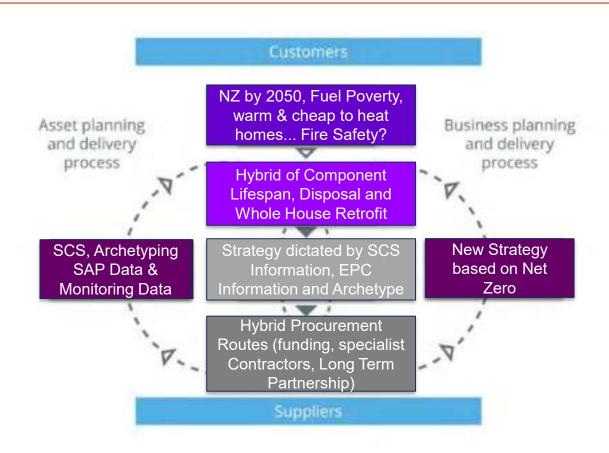


THE CHALLENGE OF NET ZERO

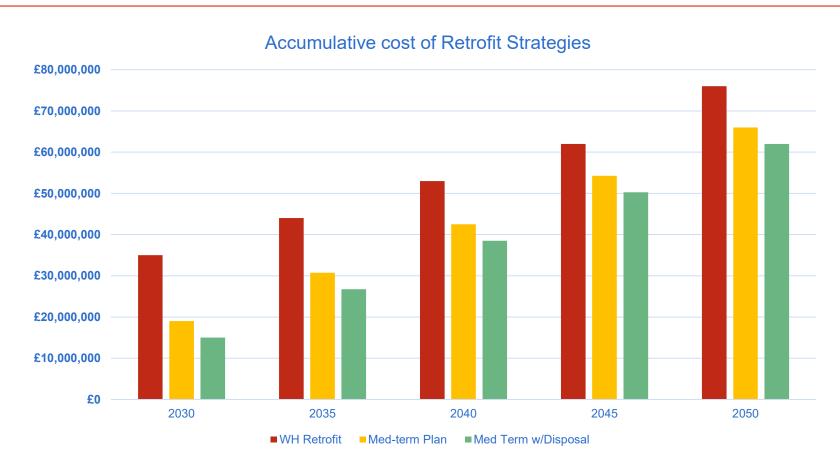
- 1. Climate Emergency
- 2. Nearly-net-Zero
- 3. A 'Just' Transition and Fuel Poverty
- 4. Difficult Retrofit
- 5. Stakeholder/Resident engagement
- 6. Cost

=New Strategy!!!

THE ASSET MANAGEMENT CYCLE



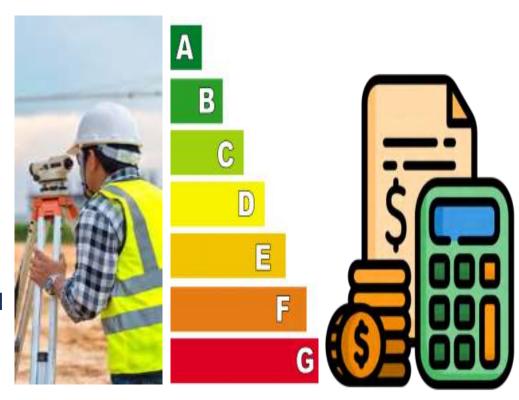
ASSET MANAGEMENT – THE COST OF NET ZERO



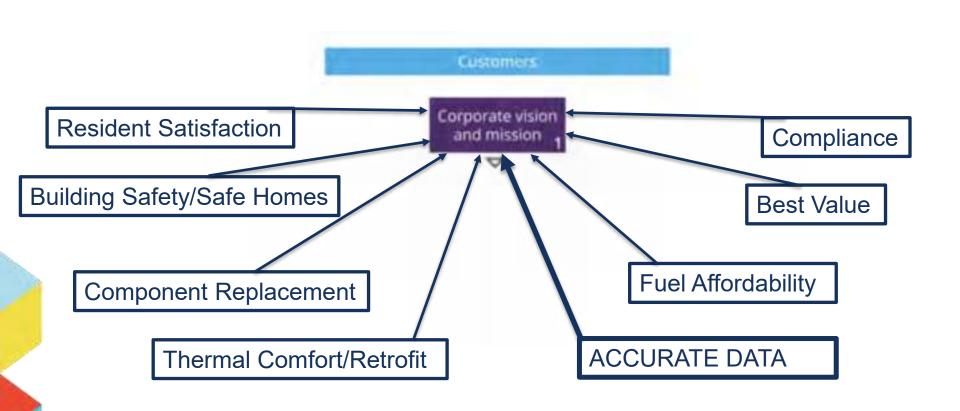
MISSING INFORMATION – SETTING THE STRATEGY

Data Quality issues:

- SCS Data Inadequate/ Incomplete
- EPC Data based on Assumptions
- Poor assumptions around costs



THE IN-DEPTH CORPORATE VISION

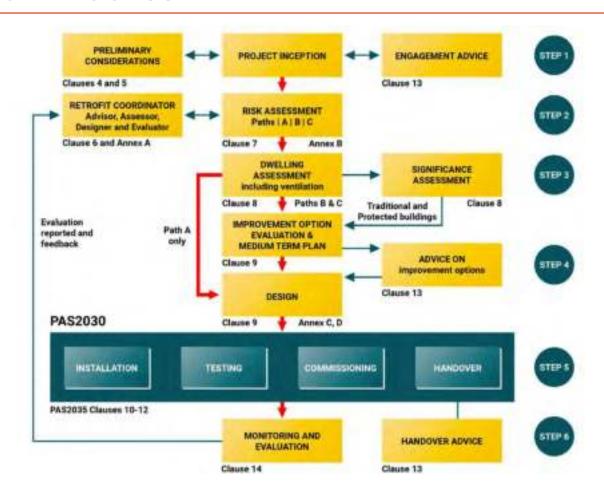




PAS2035 - CORE PRINCIPLES



PAS 2035 - PROCESS MAP



PAS 2035 – RISK ASSESSMENT

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Criterion 1: Number of dwellings in the project

Criterion 2: Number of measures per dwelling

Criterion 3: Technical risk of measures proposed

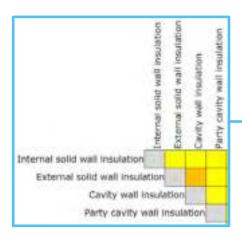
Criterion 4: Combination of measures

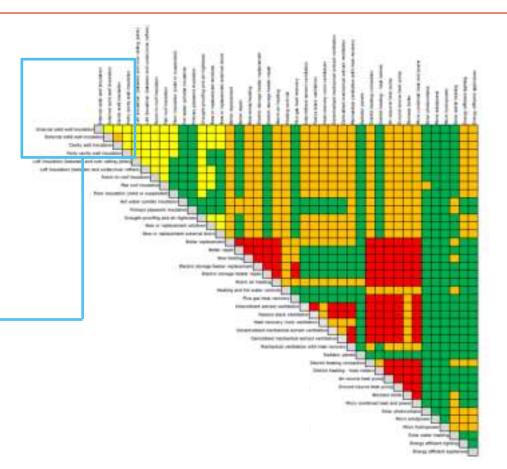
Criterion 5: Construction and Built Form

PAS 2035 - RISK ASSESSMENT

Measures Interaction Matrix

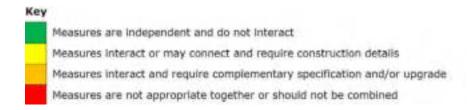
Criterion 4: Combination of measures based on the highest risk combination of measures



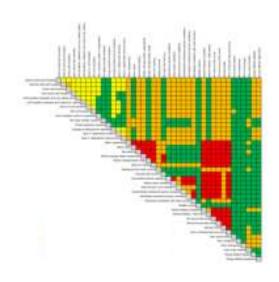


PAS 2035 – RISK ASSESSMENT

Measures Interaction Matrix







PAS 2035 - RISK ASSESSMENT

Low Risk

Medium Risk

High Risk

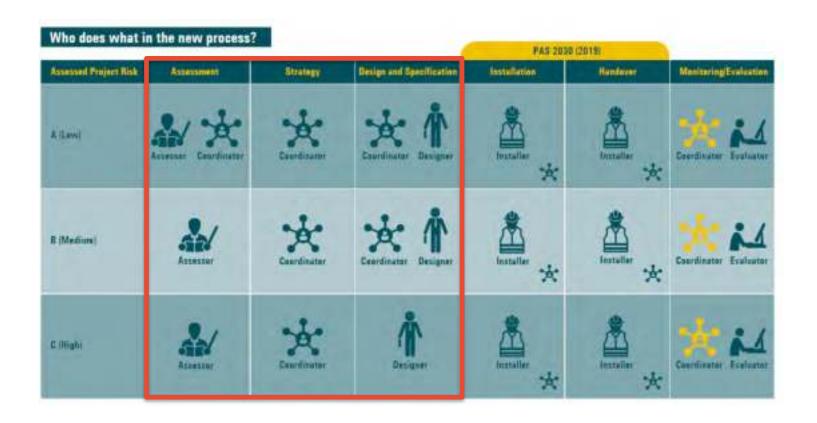
PAS 2035 Path A

PAS 2035 Path B

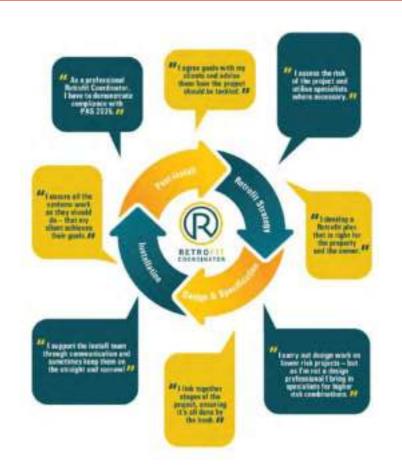
PAS 2035 Path C

Overall Risk Grade		
Highest assessed grade (from Criteria 1 to 5 above)	PAS 2035 Path	Assessed Path
A	A	
В	В	
c	c	

ROLES AND RESPONSIBILITIES – PRE WORKS



ROLES AND RESPONSIBILITIES – RETROFIT COORDINATOR



Retrofit Coordinator

Role Description?

Person with overall responsibility for each stage of the project, sometimes also fulfilling specific project roles for which they are also qualified.

Qualifications Required?

Open College West Midlands Level 5 Diploma in Retrofit Coordination and Risk Management.

Must also be able to demonstrate prior experience and competence in professional practices such as contract management, project management, customer service etc.

Accreditations Required?

Once qualified, must be a member of a TrustMark-approved Retmit Coordinator Scheme (e.g. Elmhurst).

IMPROVEMENT EVALUATION ASSESSMENTS

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PAS 2035 ON SITE

Dealing with existing defects



PAS 2035 ON SITE

Hidden defects





PAS 2035 ON SITE

Detailing







SPECIFICATION WRITING

Sub-optimal specification of products and poor installation

The primary risks involved in the retrofit project are:

Specification for the installation resulting in the planned carbon and energy saving performance not of energy efficiency measures (EEM) being achieved. This can be mitigated by having the design solution specified by a competent professional, having the in existing buildings installation processes delivered in compliance with PAS 2030 and PAS 2035, and monitoring of the actual post installation performance. Particular care needs to be taken in the design and installation of ventilation measures. 4.7.2 Contractors shall have regard to the requirements of PAS 2030:2019 for installation, commissioning, and handover of measures and PAS 2035 for minimising the technical risks of retrofit in respect of sequencing works. 4.7.3 Particular attention shall be paid to thermal bridges, in terms of both identifying them in the property, and designing out or mitigating in the final design and install sequence.

4.5.5

4.5.4

3.3.7

The Contractor is to note the project has been classified Risk Path C in accordance with PAS 2035 and is deemed to have included for all required activities, surveys, reports, testing, quality assurance, and documentation to satisfy compliance in installation, testing and commissioning, and handover with the standard and required risk path.

Works are to proceed in strict accordance with the terms of the ITT and installation in full conformance with PAS 2030 and PAS 2035 to ensure key requirements of the grant funding and performance outcomes are met. Works installers must be PAS 2030 accredited

and hold valid qualifications.



PAS 2030:2017

RETROFIT COORDINATOR (MID AND POST WORKS)



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PAS 2035 RETROFIT COORDINATION PROCESS MAP

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ROLES AND RESPONSIBILITIES (MID AND POST WORKS)

	9.3.4	4	On request, before installation starts, provide the Retrofit Installer's team with a briefing on key points of the design
	9.3.4	4	Always provide a briefing if the dwelling is traditionally constructed or protected or challenging targets are proposed.
	9.1.27 and 13	4	Ensure that any advice provided to the client during the design stage complies with clause 13.
9	10	4	Oversee the installation of improvement measures by the Retrofit Installer in accordance with PAS 2030 and/or MCS
Installation	10 Note	4	Obtain from the Retrofit Installer copies of evidence of compliance of the installation with PAS 2030 and/or MCS
	PA5 2030	V	Ensure that the Retrofit Installer uploads installation documentation to the TrustMark data warehouse (for ECO)
	11.1.2	4	Ensure that testing of installed measures is carried out in accordance with the retrofit design, PAS 2030 and MCS
242-000-000-000-000-000-000-000-000-000-	11.2.3	4	Ensure that commissioning of installed measures is carried out in accordance with the retrofit design, PAS 2030 and MCS
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MEDIUM TERM PLAN

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11.2 Longer Term (Towards 2050)

This project requires a significant reduction in space heating requirement as its objective as part of the Social Housing Decarbonisation Fund scheme.

It therefore encourages a 'whole-house' retrofit to be completed as part of one project and so we are installing high performance fabric improvement measures to 'future-proof' the building.

In addition, following discussions with the client, they have opted for further inclusion the above 'additional measures' to improve the comfort and wellbeing of the resident and reduce emissions further towards the 2050 net zero target.

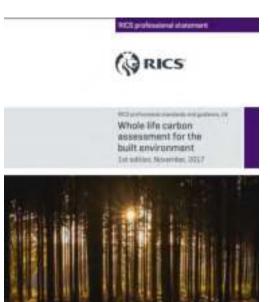
Further potential improvements towards 2050 net zero target over the next 20-30 years:

- · Low energy light bulb installation
- Additional solar PV panel installation (space-permitting)
- Battery storage linked to solar PV
- · Heat recovery technologies (e.g. waste water heat recovery)

THINKING AHEAD TO THE FUTURE

(embodied carbon, wholelife carbon, asset strategy and data management)





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HOW WE CAN SUPPORT CLIENT BIDS?

We can provide:

- Help with funding bids
- Past experience
- Advice on answering the question and key bid considerations



THANK YOU