

The role of the Retrofit **Coordinator in Pre and Post** Delivery

Supply chain advice pack

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The role of the retrofit coordinator during delivery

What is the role of the coordinator?

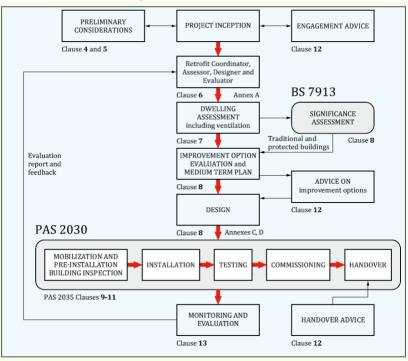
The role of the Retrofit Coordinator (RC) is to manage and oversee energy efficiency upgrades in existing dwellings. The RC is not responsible for all aspects of the process, and will rely upon other roles; such as the Retrofit Assessor, Retrofit Designer and Installer to successfully delivery energy efficiency upgrades.

The requirements of the RC are quite clearly defined within the PAS 2035 standard and organisations have even produced 'checklist' type documents scheduling the key requirements – such as the Retrofit Academy's 'PAS 2035 Compliance Process Map'.

This advice pack is not an exhaustive list of the RC requirements but instead includes all the key activities and other best practice activities.

Challenges in delivery and the role of the retrofit project manager.

If you have taken the opportunity to read the PAS 2035 standard from cover to cover it is, on the face of it, a relatively simply process. You agree the intended outcomes for the project, complete a dwelling assessment, work out the optimal measures to install both now and at a later stage, design said measures, receive statutory approvals for the installation, install the measures, handover the measures, and evaluate the project.



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Source: PAS 2035: 2023

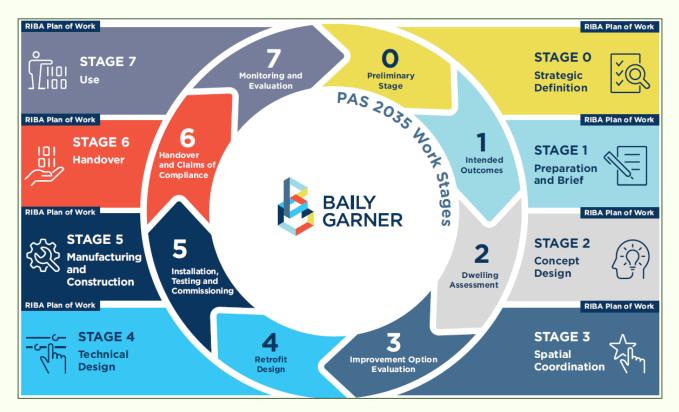
However, this process, particularly when projects are delivered at a large scale, can easily become challenging with complexities creeping in.

To truly deliver an effective Retrofit Project, at the scale and pace required by the Warm Homes schemes there are additional best practice requirements. These requirements are not a 'mandatory' requirement of the RC and you would not find these in the PAS standard, but are recognised by the industry as what is needed to create successful delivery.

Within this advice pack there is reference to both the PAS 2035 mandated requirements and best practice requirements. Keys have been included to differentiate these. Where '**Best Practice**' is indicated this identifies a Best Practice Requirement and '**Standard Requirement**' as a Retrofit Coordinator requirement.

Alignment of the PAS standard and the retrofit coordinator role to the RIBA plan of work

The PAS 2035 and 2030 standards follow a logical sequence and there is natural alignment to the RIBA Plan of Work, which is a well-known and respected process for briefing, designing, constructing and operating building projects which has been divided into eight stages. If you are wishing to deliver a coherent project, then this alignment will only be beneficial.



Source: Baily Garner

Retrofit strategy and property list reviews

Best Practice: Many organisations will have developed a Retrofit or Decarbonisation type strategy for their housing stock. Where such strategies are in place then it is important that the outcomes of the retrofit project align to these. The RC must understand the aims and objectives of the client.

Standard Requirement: The desired project outcomes can then be formalised at project level within the 'Intended Outcomes' document and measured against during delivery.

Best Practice: Setting the project up correctly will only create a strong foundation for success. Work should be undertaken to understand the property stock included in the project. Some organisations have a good understanding of their stock; its condition, previously completed works, the construction, and so on.

Whereas others may have a more limited understanding. But this information is invaluable to aid the formation of a Project Management Control type document commonly known as a Project Execution Plan. This document will detail how the project will be executed, controlled and monitored. This process for example, could influence the programming of the Retrofit Assessments so they are undertaken in a logical sequence rather than at random.

Desktop analysis and archetyping concept

Best Practice: Undertaking desktop analysis of 'property lists' included in a Retrofit Project will only be beneficial at the later stages of the project and provides an opportunity for the RC to familiarise themselves with the property stock. A vast amount of information can be captured from desktop information such as street view and satellite imagery. Basic information can be captured such as wall and roof constructions, property restrictions and constraints, heritage features, etc. Such analysis can even start to consider the type of measures that will be suitable or unsuitable for the property.

Best Practice: Archetyping studies is the process of categorising similar properties together. There is no set way of completing archetyping, but it is a balancing act between too few and too many properties in each archetype. Typically, the individual categories take the form of the key building features such as roof type, external wall construction, floor construction, property size and age, as well as constraints and restrictions, like conservation areas and listed building status. Which can then be applied to group together properties that are similar in their nature.

This process can create efficiencies in retrofit delivery and has been recognised within the 2023 version of the PAS 2035 standard – particularly in relation to retrofit design. For example, with a single archetype-based design being produced which services multiple properties. Naturally, care must be taken to ensure that the standard design is suitable for each dwelling.

Archetyping analysis can also be overlayed onto a geographical map to aid the delivery approach.

This process will drastically help the project team at the later stages of the project and create delivery efficiencies. For example, archetype-based designs could be developed supplemented by additional details for individual properties to create design efficiencies.

The whole-dwelling assessment process

Often called the Retrofit Assessment, the formal name is actually the wholedwelling assessment under the PAS 2035 standard and is undertaken by the Retrofit Assessor (see Retrofit Assessor Advice Pack). However, the quality of Retrofit Assessments can vary dramatically within the industry and the quality of the assessment can have a substantial impact in the design stage. Expectations should be set out early between the Retrofit Coordinator, Designer and Assessor.

Standard Requirement: Upon completion of the Retrofit Assessment the RC should review the information. This provides the opportunity for the RC to build upon the information gathered at the desktop analysis stage and further understand the dwelling.

Best Practice: Often additional information can then be added to supplement the desktop information so that property summaries can be created. This assists members of the project team in planning the next stages. For example, if a cavity wall has been identified, investigations can take place over the presence of existing insulation, the feasibility of installing cavity wall insulation, etc.

Energy modelling and design

Standard Requirement: An Improvement Option Evaluation (IOE) and Medium Term Plan (MTP) are two key documents that are produced by the RC. The IOE assesses and analyses the measures that could be installed to the property. The energy modelling is completed to estimate fuel savings, carbon reductions and balance these against the capital cost. This is a key document to create the package of work that will be designed and installed.

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	Upgrades			Results		Total £	Cumulative	Cumulative
				EPC rating	Space heating demand kWh/m²/yr		Total £	Total inc. OH&P, Prelims
				(SAP score)	SAP (PHPP) values			
	Existing			D (65)	147 (161.7)			
Fabric First Approach	1. Top up roof insulation to 400mm			D (66)	141.1 (155.2)	£1,467.63		£1,930.58
	2. Replace existing cavity fill insulation		N/A	N/A	£0.00	£1,467.63	£1,930.58	
	3. 150mm EWI		C (77)	78.5 (86.4)	£15,380.38	£16,848.01	£22,162.54	
	4. Double glazing		C (79)	69.5 (76.4)	£4,903.43	£21,751.44	£28,612.71	
	5. Air tightness measures		B (82)	49.5 (54.4)	£1,300.00	£23,051.44	£30,322.79	
	6. Thermal Bridging calculations			B (86)	26.5 (29.1)	£1,000.00	£24,051.44	£31,638.23
HVAC	7. Ventilation	Upgrades		CMEV	MVHR			
		Results	EPC rating	B (86)	B (86)	£5,883.22	£29,934.66	£39,377.25
			Energy demand kWh/m²/yr	24.2 (26.6)	13.8 (15.2)			
	8. Low Carbon Heat Source	Upgrades		ASHP	ASHP			
		Results	EPC rating	B (87)	B (89)	£11,475.36	£41,410.02	£54,472.40
			Energy demand kWh/m²/yr	24.3 (26.7)	14.2 (15.6)			
Further Fabric		Upgrades		Floor insulation	Floor insulation			
	9. Floor Insulation	Results	EPC rating	B (87)	B (89)	£10,710.37	£52,120.39	£68,561.25
			Energy demand kWh/m²/yr	24.3 (26.7)	14.2 (15.6)			
Renewable Technology	10. Photovoltaics	Upgrades		PV	PV			
		Results	EPC rating	A (92)	A (94)	£2,846.25	£54,966.64	£72,305.32
			kWp	1.2	1.0			
			Energy demand kWh/m ² /yr	24.3 (26.7)	14.2 (15.6)			

Source: <u>An example Improvement Option Evaluation of a 1950-1966 mid-terraced house of solid wall</u> <u>construction</u> (Baily Garner)

The MTP is another document that is produced at this stage and often overlooked. But it should create a future plan for the property and can be used to influence the asset management plan. To create a seamless transition into the design stage, it is important to liaise with the designer, particularly around challenging details or constraints that have been identified which may inhibit a measure from being installed. These details or constraints do not form part of the basic energy modelling, but can create significant challenges.

Standard Requirement: The Retrofit Design can then be prepared based upon the proposed package of measures which is developed by the Retrofit Designer. This is another area of much conversation and debate within the industry. A PAS 2035 compliant design needs to detailed and sufficient for the installer to effectively install the measure. Particularly when property nuances come into play there is a significant risk, if left uncontrolled, could lead to non-compliances at installation stage. Such non-compliances are well documented in historic retrofit projects and have even recently been reported upon reaching national news – so it is important that we get this right. Upon completion of the design, the RC should review the design to test its adequacy before passing to the Retrofit Installer.

Statutory compliance

Best Practice: Statutory approvals can have a significant effect on the delivery programme and should be considered at an early stage of the project. Early consideration can lead to the mitigation or reduction of the impact and effect. For example, by undertaking early consultation with Local Planning Authorities to discuss the properties, the likely works and application requirements. Or early identification of overhead power cables and the need to liaise with Distribution Network Operators. These restrictions can then be considered in the overall delivery proposal.

Standard Requirement: The Retrofit Coordinator is required to advise the Client of the need for statutory approvals before the proposed work can take place. This is an area that can commonly be overlooked leading to significant risk to the Client organisation. The RC should familiarise themselves with the requirements of Building Regulations Approval, Planning Approval, etc. It is also important to consider that this is an ever-changing landscape, for example with the introduction of the Building Safety Act.

Installation stage

Standard Requirement: The installation of energy efficiency measures are governed by the PAS 2030 standard or for low and zero carbon or renewable energy systems the relevant MCS standard. Under the previous version of the PAS 2035 standard there were more limited requirements of the RC during the installation stage, however this has changed in the 2023 edition.

The RC is now required to have a greater presence to oversee and report on the quality of installations. Given the quantity of properties within retrofit projects it is unlikely that this can be covered by a single person. Therefore, the RC must agree the inspection procedure – the number of inspections, the qualifications and competence of any individual undertaken this on their behalf, etc. But fundamentally this will be a positive change for client organisations.

Best Practice: Quality assurance and control procedures is another well documented area in the construction industry and there are tools that can be deployed to positively influence the installation stage. These principles and tools should no longer be viewed as 'nice to haves' but are essential for construction professionals – particularly with the introduction of the Building Safety Act.

Completion stage and lodgement

Lodgement Process

- The lodgement should not be left to the end of the process.
- Treat it as a continual process, with documents submitted as they become available.

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Project Completion & Soft Landings

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- Completion stage is a key milestone in any project. •
- You must consider that retrofit works can significantly impact how a property operates and should be given additional care at completion.
- Apply a 'soft landings' approach to ease the transition from construction to in-use and ensure smooth operation.

Testing & Commissioning

- PAS 2035 requires testing and commissioning to be specified in the Retrofit Design. So it is important to ensure all installed systems are functioning as intended.
- The Installer plays a critical role in verifying correct operation and providing demonstrations to the end users.

Handover Stage – Measures

- Provide operational info, maintenance guidance, insurance, and warranty • details.
- Ensure both occupant and client receive all necessary documentation.

Handover Stage – Retrofit Advice

- Advice should be delivered throughout the project.
- Avoid technical jargon-make it clear and accessible and explain things like:
 - How the home now operates. •
 - If there are any changes required in occupation behaviour. •
 - What are the maintenance of new elements. •

Recommendations and Top Tips

Agree on handover protocols and methodology at the project's start.

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- Align the project team early, especially as handover can be a busy phase.
- Treat retrofit advice as part of the occupant's journey, not just a final step.

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