



RISE

Retrofit information,
support & expertise

Project Management: Understanding design intent on site

Supply chain advice pack

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Introduction

Delivering successful retrofit projects relies not only on good design, but on how well that design is understood and delivered on site.

Under the PAS framework:

- PAS 2035 defines the design, coordination and whole-house approach
- PAS 2030 sets out the installation requirements, workmanship standards, and compliance criteria for measures on site

These standards are interdependent. PAS 2035 defines *what should be achieved*, while PAS 2030 ensures it is *installed correctly in practice*.

This means that site teams play a critical role in translating design intent into compliant, high-quality installations.

Retrofit measures are interconnected, and outcomes depend on site teams accurately translating drawings, specifications, and manufacturer guidance into installed systems. Even well-designed projects can fail if design intent is not properly understood or implemented on site.

When design intent is not clearly understood or correctly delivered, it can result in:

- Reduced energy performance
- A gap between predicted and actual outcomes (the “performance gap”)
- Increased risk of defects such as moisture, condensation or overheating
- Non-compliance with PAS 2030 and PAS 2035
- Rework, delays, and increased costs

Buildings can use around **100-150% more energy** than predicted at design stage (and in some cases up to 2x more)¹

Building errors and rework account for around **11% of project costs**, with poor communication between teams the leading cause²

This advice pack explains what design intent is, why it matters, and how the supply chain plays a critical role in delivering it effectively on site.

What is design intent – and why does it matter?

Design intent is the **planned outcome of a retrofit project**, defined through:

- Technical drawings

¹ UK Parliament (2024), [Retrofitting homes for net zero](#)

² Visibuild (2025), [The true cost of rework in construction](#)

- Specifications and schedules
- Manufacturer instructions
- PAS 2030 installation requirements and workmanship standards
- PAS 2035-compliant retrofit designs

It sets out how a building should perform once works are complete, including energy efficiency, ventilation, moisture behaviour, and occupant safety.

While PAS 2035 defines the intended outcomes, **PAS 2030 governs how those outcomes must be delivered on site**, including installation methods, material selection, tolerances, and required evidence.

Understanding design intent is critical because:

- Retrofit systems are **interdependent** (fabric, ventilation, heating, etc.)
- Poor interpretation can lead to **unintended consequences** (e.g. condensation, overheating, system failure)
- Compliance depends on both **correct design (PAS 2035)** and **correct installation (PAS 2030)**

For Project Managers, confidence in delivery relies heavily on **site teams correctly interpreting and implementing this intent**.

From design to delivery: where things go wrong

Breakdowns commonly occur between:

- Designers → Project Managers
- Project Managers → Site teams
- Different trades working simultaneously

Common challenges on site:

- Drawings that lack clarity or detail
- Specifications not fully understood
- Conflicting information across documents
- Manufacturer requirements overlooked
- Correct specification materials unavailable
- On-the-spot decisions made without consultation

Impacts of poor interpretation:

- Rework and increased costs
- Programme delays
- Failed audits or non-compliance
- Reduced building performance

- Increased risk of defects (e.g. moisture issues, poor airtightness)

Under PAS 2035, design decisions are based on a whole-house approach. Even small deviations from the design can significantly affect overall system performance and lead to PAS 2030 non-compliance.

What Project Managers need from site teams

To deliver compliant, high-quality retrofit, Project Managers rely on site teams to:

1. Follow the agreed design

- Install measures exactly as specified
- Work to PAS 2030 installation standards and tolerances
- Avoid substitutions without approval
- Respect sequencing and integration between measures
- Make sure the latest approved design is issued and design versions are controlled

2. Raise questions early

- Clarify unclear drawings or specifications
- Use formal processes (e.g. RFIs – Requests for Information)

An RFI is a formal process used to clarify drawings, specifications, or design intent before proceeding)

- Prevent issues before installation begins

3. Avoid making assumptions

- Do not “adapt” designs on site without approval
- Recognise that small changes can have system-wide impacts
- Maintain alignment with PAS 2035 design intent and PAS 2030 requirements

4. Provide accurate site evidence

- Capture installation stages through photos and records
- Demonstrate PAS 2030 compliance and quality standards
- Support audit and handover requirements

5. Communicate effectively

- Maintain clear, ongoing communication with PMs and designers
- Escalate risks, constraints, or issues early

What matters most on site?

Delivering design intent successfully on site depends on understanding how different types of information work together. No single document provides the full picture - site teams must use drawings, specifications, sequencing, and manufacturer guidance collectively to deliver compliant, high-quality outcomes.

The table below highlights the key elements that define design intent in practice, what they mean on site, and the risks of getting them wrong.

Area	What to understand	Why it matters	Risk if ignored
Drawings	Layouts, dimensions, junctions and build-ups	Show how elements fit together and where critical details sit	Misalignment, gaps, or incorrect installation
Specifications	Materials, performance requirements, PAS 2030 standards	Define what must be installed and how	Non-compliance, incorrect materials, performance issues
Manufacturer instructions	Approved installation methods, tolerances and system requirements	Required to meet warranties and quality standards	Installation failure, voided warranties
Sequencing	Order of activities and dependencies between trades	Ensures work is completed in the correct order	Rework, delays and damage to completed work
Interfaces	Junctions between different systems (e.g. windows, insulation, services)	Critical points where performance is most affected	Thermal bridging, air leakage, system failure

Evidence and records	Photos, product labels, and installation records	Demonstrates compliance and supports QA processes	Audit failure, lack of traceability
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Understanding these elements as a combined system is essential. Design intent is not delivered through a single drawing or document - it is achieved through the **accurate interpretation and coordination of all information on site.**

Errors most often occur when one source of information is relied upon in isolation or when dependencies between measures are not fully understood.

Critical Technical Areas

Certain elements require particular attention, as errors here can significantly impact performance:

- Ventilation systems → airflow, positioning, commissioning
- Moisture management → vapour control layers, insulation continuity
- Thermal performance → insulation installation, thermal bridging
- Fire safety → materials, clearances, escape routes
- System interfaces → where multiple measures meet (e.g. windows + insulation)

These areas are often where design intent is misunderstood.

Digital evidence and record keeping

Providing accurate evidence is essential for:

- PAS 2030 and PAS 2035 compliance
- Quality assurance and audits
- Demonstrating that installation matches design

What to record:

- Before, during, and after installation photos
- Key junctions and hidden elements
- Product labels and installed systems
- Any deviations and agreed changes
- Any design queries and technical clarifications
- Handover records

Why it matters:

- Protects both contractors and clients
- Enables traceability and accountability

- Supports smooth project handover

When should you ask questions?

Site teams should raise queries whenever:

- Drawings or specifications are unclear
- Site conditions differ from assumptions
- Materials or products are unavailable, or a different product is suggested
- Installation seems impractical or unsafe
- Different documents appear to conflict

Good practice:

- Raise **Requests for Information (RFIs)** before work starts
- Provide clear descriptions and photos
- Await approval before proceeding

Early questions prevent costly rework and ensure alignment with design intent.

Common pitfalls to avoid

Many issues on retrofit projects arise not from poor intent, but from small decisions made on site without full understanding of the design.

For example, relying solely on drawings without consulting specifications or manufacturer guidance can result in incorrect materials or installation methods. While these decisions may seem minor, they can compromise PAS 2030 compliance and overall system performance.

Another frequent issue is making on-the-spot decisions to maintain programme. Even small changes can affect other measures, compliance requirements, or performance outcomes.

Poor coordination between trades is also a major risk. Retrofit systems are highly interdependent, and gaps in communication can result in clashes, damage to completed work, or missed detailing at critical interfaces.

Other common risks include:

- Not following manufacturer guidance
- Missing or incomplete photographic evidence
- Assuming previous jobs follow the same approach
- Overlooking critical junctions and detailing



Avoiding these pitfalls is essential to ensuring **quality, compliance, and long-term performance**.

Summary

Understanding and delivering design intent on site is critical to the success of retrofit projects.

PAS 2035 defines what outcomes are required, while **PAS 2030 ensures those outcomes are delivered correctly through installation**. Aligning these two standards is essential for achieving compliant, high-quality retrofit.

While designers and Project Managers define the intended performance, **these outcomes are ultimately delivered by the supply chain on site**.

By following design requirements, working to PAS 2030 standards, asking questions early, and providing clear evidence, site teams play a central role in:

- Reducing risk
- Avoiding rework
- Achieving compliance
- Delivering high-quality retrofit at scale

Resources



Podcast: All RISE podcasts are available [here](#).

Podcast: "Retrofit reimagined: lessons from Aura's evolution" available [here](#).



Masterclass: All RISE masterclasses are available [here](#).

Masterclass "Resourcing and skills management" available [here](#).



Advice pack: All RISE advice packs available [here](#).

Advice pack: "Internal Wall Insulation – Assessing and Design" available [here](#).

