



RISE

Retrofit information,
support & expertise

Managing site constraints in retrofit projects

Supply chain advice pack

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Introduction

What are site constraints?

Site constraints are factors that may affect the design, installation, or performance of retrofit measures, including building characteristics, occupant needs, environmental conditions, planning requirements, and available resources. Successful retrofit depends on identifying and managing these constraints early to reduce risks, avoid delays, and achieve better project outcomes.

Effective constraint management helps minimise costs, improve quality, enhance building performance, support regulatory compliance, and create safer, more efficient retrofit projects.

Understanding different types of retrofit site constraints

Constraint type	Description	Typical examples	Potential impact on retrofit
Physical	Limitations arising from the building's construction, condition or form	Structural weakness, limited roof capacity, irregular building layouts Hidden building defects	Restricts measure selection, increases costs, affects performance
Access	Challenges associated with reaching the property or work areas	Narrow streets, high-rise buildings, restricted roof access Disruption to residents	Delays works, increases logistics costs, affects programme
Heritage and planning	Statutory or planning restrictions affecting building alterations	Listed buildings, conservation areas, planning conditions Planning conditions where changing the building's external appearance is not possible e.g. installing External Wall Insulation (EWI) when planning regulations require planning permission to make changes to the exterior	Limits retrofit options, requires additional approvals

Occupancy	Constraints caused by residents, tenants or building users remaining in occupation	Vulnerable occupants, schools, offices, healthcare settings Property access conditions	Limits working hours, increases coordination requirements
Environmental	External conditions that influence retrofit delivery or performance	Flood risk, exposure, overheating, moisture issues	Impacts design choices and long-term resilience
Hazardous materials	Presence of materials that present health and safety risks	Asbestos, lead paint, contaminated materials	Requires specialist surveys and remediation

Using a whole building approach

Applying PAS2035 principles

PAS 2035 provides a structured framework for identifying, assessing and managing site constraints throughout the retrofit process. By adopting a whole-building approach, it helps ensure that physical, environmental, occupancy and technical constraints are considered early and addressed through appropriate design, sequencing and measure selection.

As part of the PAS 2035 process, constraints should be identified during assessment and option appraisal, before being considered within retrofit design, risk management and installation planning. This helps project teams understand how building characteristics, site conditions and occupant needs will affect what materials and measures are fitted.

Importantly, PAS 2035 is not just about identifying constraints. It provides a pathway for resolving many of them through appropriate surveys, risk assessments, retrofit design decisions, and the specification of PAS 2030-compliant measures and installation practices.

Building element	Questions to consider
Building fabric	How will retrofit measures affect moisture movement and thermal performance? Are there any defects or hidden issues that need to be addressed before measures are installed?

Heating system	Is the proposed heating solution compatible with the building fabric?
Ventilation	Will airtightness improvements require upgraded ventilation?
Occupants	How will occupants use and operate the building after retrofit?
Services	Are electrical and mechanical systems capable of supporting proposed measures?
Environment	How will future climate risks affect performance?

Supply chain takeaway: PAS 2035 provides a consistent process for anticipating constraints, selecting appropriate solutions and ensuring retrofit measures can be delivered safely, effectively and in line with intended performance outcomes.

Common site constraints and practical mitigation strategies

Constraint	Typical challenge	Mitigation strategy
Limited plant space	Heat pumps or ventilation systems cannot be accommodated	Consider compact systems, external locations or alternative layouts
Occupied homes	Installation disrupts residents	Phased works, resident engagement and clear communication
Structural limitations	Building cannot support retrofit measures	Revise designs
Heritage restrictions Further resource	External insulation not permitted	Explore internal insulation or sympathetic alternatives
Existing services	Unknown cables, pipework or ductwork	Conduct services survey and coordinate trades
Asbestos identified/discovered during surveys or installation	Work cannot proceed safely	Carry out asbestos survey and removal before installation
Poor access	Equipment cannot easily reach site	Plan logistics early and use specialist access equipment

Moisture issues	Increased risk of condensation and mould	Undertake moisture assessment and ventilation review
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Constraint management process

A constraint management process is the ongoing identification, assessment, management and monitoring of factors that could affect retrofit delivery, such as building condition, access, occupancy, heritage requirements or specialist resource needs. The table below outlines each step in the process.

Step	Action
Identify	Recognise potential constraints.
Assess	Understand their impact on cost, quality, and programme.
Record	Document constraints and assign ownership.
Mitigate	Implement actions to reduce risks.
Monitor	Review and update throughout delivery.
Learn	Capture lessons learned for future projects.

Constraint management helps project teams identify, assess and address risks early, reducing delays, additional costs and unintended consequences during retrofit delivery.

Roles and responsibilities

Managing site constraints is a shared responsibility. Effective communication between the client, retrofit team and supply chain is essential.

The table below summarises the key roles involved.

Stakeholder	Primary responsibility	Contribution to managing constraints
Client / building owner	Define project objectives and provide information	Supports decision-making and access
Retrofit coordinator	Oversee retrofit process under PAS 2035	Coordinates risk management and whole-building approach
Retrofit designer	Develop technically appropriate designs	Responds to identified constraints
Surveyor	Assess building condition and identify risks	Provides evidence for design decisions

Contractor	Manage site delivery and programme	Identifies practical installation challenges
Installer	Implement retrofit measures	Reports constraints encountered during works
Specialist consultants	Provide expert advice	Supports resolution of complex issues

Supply chain considerations

Practical actions for managing site constraints

Site constraints cannot always be avoided, but they can often be anticipated, planned for, and managed effectively. The following practical actions can help supply chain organisations reduce risk, minimise delays, and maintain retrofit quality when constraints arise.

Action	Practical application
Plan resources early	Identify whether specialist expertise such as structural engineers, heritage consultants, asbestos contractors or specialist installers may be required and engage them during the planning stage rather than waiting for issues to emerge on site.
Develop a Site Constraint Register	Record known constraints, potential risks, mitigation actions and responsible parties. Review and update the register throughout design and delivery to ensure emerging issues are managed proactively.
Undertake additional investigations where needed	Where surveys identify uncertainty, commission further intrusive investigations, structural assessments or specialist inspections before installation begins.
Sequence works around constraints	Plan installation activities to account for access restrictions, occupied properties, asbestos removal or specialist works, reducing disruption and programme delays.
Build flexibility into programmes	Allow realistic contingency for unforeseen conditions, material lead times, adverse weather, resident access issues, and additional survey requirements.
Use specialist supply chain partners	Develop relationships with specialist contractors who can provide support for heritage buildings, structural alterations, hazardous materials, or complex installation requirements.

Communicate risks early	Raise potential issues as soon as they are identified and agree mitigation measures with clients, designers and delivery partners before they impact programme or costs.
Coordinate across trades	Ensure design teams, assessors, installers and contractors share information and understand how constraints may affect other measures within the retrofit project.
Capture and share lessons learned	Record how constraints were addressed and use this knowledge to improve future projects, particularly for similar property types and recurring issues.

Communication and collaboration

Effective communication is often the difference between a manageable constraint and a costly project issue.

Supply chain organisations should:

- Hold regular project and supply chain review meetings.
- Issue early warnings of potential delivery, procurement or programme risks.
- Maintain clear records of decisions, design changes and agreed mitigation measures.
- Share lead times, procurement schedules and resource plans with project partners.
- Encourage collaborative problem-solving rather than escalating issues only when they become critical.
- If a certain product isn't available, work with the retrofit team to change the design for a different product, don't just make changes.

Supply chain takeaway: The most successful retrofit projects are not those without constraints, but those where constraints are identified early, communicated clearly and managed collaboratively.

Future supply chain challenges

As retrofit activity continues to scale, supply chain organisations may face additional challenges that could affect their ability to manage site constraints effectively. These include:

- Skills shortages, particularly in specialist areas such as retrofit coordination, heritage buildings, structural assessments, and low-carbon technology installation.

- Material and product availability pressures may increase lead times and affect project sequencing.
- Growing demand for specialist expertise, including asbestos removal, conservation specialists and specialist contractors, required to address complex building constraints.
- Increasing regulatory and compliance requirements for businesses to maintain up-to-date knowledge and capability.
- Competition for resources, as more projects compete for the same workforce, products, and services.

Organisations that invest in skills, supplier relationships, training, and collaborative delivery models will be better positioned to respond to these challenges.

Supply Chain Takeaway: Building capability and resilience now can help organisations manage future constraints more effectively.

Best practice checklist

Before design and installation begin, ask:

Question	Yes/No
Have site-specific constraints been identified?	
Have planning and heritage requirements been reviewed?	
Is the appropriate specialist expertise available?	
Have logistics and access arrangements been agreed?	
Have risks and mitigation measures been documented?	
Have contingency allowances been included?	
Have responsibilities been clearly assigned?	
Does the solution align with PAS 2035 principles?	

Conclusion

Site constraints are an inherent part of retrofit delivery. They should not be viewed as barriers, but as project realities that require structured assessment, informed decision-making and collaborative management.

By identifying constraints early, applying whole-building principles, engaging the right stakeholders and implementing effective mitigation strategies, retrofit

professionals can reduce risk, improve performance and deliver successful low-carbon outcomes. Effective management of site constraints is therefore not only a technical requirement but a critical enabler of high-quality retrofit at scale.

Resources



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



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