



RISE

Retrofit information,
support & expertise

Higher Risk Buildings Retrofit

Supply chain advice pack

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Introduction

This pack provides guidance on the retrofit of high-rise residential buildings. The focus of the content is on practical delivery and retrofit, technical design considerations, and delivery risks. While covering regulatory compliance, readers should also refer to the 'Higher-Risk Buildings & The Building Regulations – Supply Chain Advice Pack' which focuses on regulatory compliance in respect high rise buildings and retrofit, and covers in detail key elements of the Building Safety Act (2022).

High-rise retrofit projects are complex due to a number of factors. These factors include building height, occupancy, logistical constraints, and evolving regulatory requirements. It is critical to appreciate the ways in which retrofit of high-rise buildings can differ from other building types, as well as to understand the core principles which guide an effective and compliant strategy more generally.

A coordinated, multidisciplinary approach to retrofit of high-rise buildings is essential. Properly taking these steps can ensure safe, compliant, and effective delivery, and the best project outcomes.

Readers that would like this document in a more accessible format should contact rise@turntown.co.uk.

Definition and regulatory context

A high-rise building, or higher-risk building, is generally defined as follows:

- A building with **at least 7 storeys** or **over 18 metres** in height, and
- Containing at least **two residential units**.

In the Building Safety Act 2022 (BSA 2022), the term 'higher-risk building' (HRB) is used. This term is largely interchangeable with high-rise building, though the latter can be more broadly applied. For the purpose of this pack, the definition of high-rise building that aligns with the HRB threshold as above shall be used.

Below we include some further key definitions. Please refer to the '[High Rise Building Regulations – Supply Chain Advice Pack](#)' for further information.

Key regulatory definitions

- **Higher-Risk Building (HRB):** Buildings at least 18 meters in height or having at least 7 storeys, and containing at least two residential units, including hospitals, or care homes.

- **Building Safety Regulator (BSR):** A standalone body which oversees the safety and performance of all buildings, with a focus on HRBs.
- **Accountable Person (AP):** The duty holder responsible for assessing and managing fire and structural risks in an occupied HRB.
- **Principal Accountable Person (PAP):** If a building has more than one AP, the PAP is responsible for the overall building structure and common parts.
- **Building Regulations Principal Designer (BR PD):** A mandatory duty holder responsible for planning, managing, and monitoring design work to ensure compliance with Building Regulations under the Building Safety Act (BSA).
- **Golden Thread of Information:** A mandatory, accurate, and up-to-date digital record of building information, ensuring safety, fire, and structural details are securely held and managed throughout a building's life cycle.
- **Relevant Building:** Used in the context of leaseholder protections, referring to buildings at least 11 meters high or with at least 5 storeys.

Competence requirements

Ensuring competence across all roles is critical to managing risk in high-rise retrofit projects. Lack of adequate skills, ineffective supervision, poor training and behaviours all **undermine the required level of competency** to properly carry out a high-rise retrofit project.

Frameworks such as **The Building Safety Competence Framework 2021**, developed through BSI Flex (BS 8670-1:2024), and created in response to findings from the Hackitt Review, provide a core code of practice defining the skills, knowledge, experience, and behaviours required for built environment professionals. It ensures that **individuals designing, building, and managing safety-critical systems** do so to recognised standards, and through the BSI Flex initiative, purports to be able to respond quickly to any changes across the industry.

The document provides a set of core principles of competence, including leading and managing safety, communicating safety, delivering safety, risk management, regulations and processes, building systems, ethics, and fire/ life safety.

The **SKEB framework (Skills, Knowledge, Experience, and Behaviours)** is used to assess competency for those working in the built environment, from designers to construction workers, to verify legal requirements under the BSA. The SKEB framework breaks down individual competency into four distinct pillars:

- **Skills:** The practical, cognitive abilities and physical aptitude needed to perform a specific task to the correct safety specifications.
- **Knowledge:** The theoretical and regulatory understanding of building safety principles and procedures.
- **Experience:** The hands-on, practical exposure and participation in real-world scenarios that allow professionals to apply their skills and knowledge safely.
- **Behaviours:** The professional, ethical, and communicative conduct that proves an individual's ongoing commitment to building safety.

A lack of appropriate skills, knowledge, experience, and behaviour (SKEB) competency in these areas has been identified as a significant risk across the sector more generally. And competence at all levels remains the biggest risk to quality in high-rise retrofit. Ensuring the right culture, competence, training and skills at various levels is a long-term task. The implementation of **professional practices in retrofit of higher-risk buildings** on the ground and at management level provides a route for important, incremental improvements going forward.

Standards and accreditation

In terms of assessing accreditation for undertaking the various roles in retrofitting high-rise buildings and the standards to be adopted, the below list provides certain key information.

- **Fire Safety Accreditation:** Specific BAFE accreditation may be required for fire-safe systems in social housing high-rises.
- **PAS 2038:2021:** The standard for retrofitting non-domestic (commercial) buildings, focusing on fabric-first approaches, ventilation, and stakeholder engagement.
- **BS 8670, PAS 8671 and PAS 8672:** Standards for competence of contractors and Principal Designers.
- **RICS Chartered Building Surveyors:** Specialised surveyors required for higher-risk buildings to ensure structural and safety compliance.
- **RICS Accredited Training:** The RICS now offers an External Wall System Assessment Training Programme, which is an Ofqual-regulated Level 6 qualification accredited by ABBE (Awarding Body for the Built Environment).
- **EWS1 form (External Wall System):** Form must be completed by a member of a relevant professional body, such as the Royal Institution of Chartered Surveyors (RICS), Institution of Fire Engineers (IFE), or another similar body.

In order to ensure the correct individuals undertake the correct tasks in a PAS 2035-compliant high-rise retrofit, **the Retrofit Coordinator and Client** should have heed to the above including requirements for specialist input above and beyond the competence of those undertaking core PAS 2035 roles. The Retrofit Coordinator will remain responsible for ensuring overall competence with each party responsible for demonstrating their own competence.

Key technical considerations

Understanding existing performance

Internal flats typically perform better thermally than exposed units due to reduced exposure to external conditions. Envelope heat losses are a key driver of overall building performance, and early-stage analysis should therefore focus on elements



such as walls, roofs, windows, and communal systems. **Mid floor and non-flank wall flats** will perform better than those on lowest or top floors or flank walled flats with greater heat loss envelopes.

Pre-construction information

It is critical under PAS 2035 that existing relevant defects are rectified prior to retrofit improvement works. These may include issues around damp and mould and structural cracking that will impact the energy performance of the building, a resident's thermal comfort, and project intended outcomes. **A full suite of surveys should be undertaken** including engaging the necessary specialists as part of the assessment and coordination phase with early intervention for more significant issues that may affect a project's viability. Existing landlord information should be obtained including current energy performance data, repairs records, and live complaints to ensure a robust and proactive approach to project management.

Whole-building approach

Retrofit projects should be considered holistically, adopting a whole-building approach. Key elements such as external walls, roofs, balconies, and windows are interdependent, and poor coordination between these components can introduce risks, including thermal bridging and water ingress. **A long-term asset management strategy** should be used to guide the sequencing of works to ensure optimal outcomes.

Insulation strategy

The choice of insulation strategy is critical and depends on project constraints. **External Wall Insulation (EWI)** provides better thermal continuity but is often constrained by façade considerations. **Internal Wall Insulation (IWI)**, while having less impact on the building's external appearance, can cause internal disruption and introduce thermal bridging risks. Concrete ring beams, slabs and balconies present some of the common challenges. These risks must be mitigated through detailed thermal bridge analysis and moisture risk assessments using temperature factor (fRSI) calculations.

Leaseholder considerations

Leaseholder engagement is a significant factor in retrofit delivery. The Section 20 consultation process can have a substantial impact on programme timelines. In **mixed tenure blocks**, early engagement with leaseholders and clear communication of costs are essential to avoid delays and ensure transparency.

Communal systems

Retrofit strategies must take into account the risks associated with fire safety and heat distribution within communal systems. **Upgrading plant and control systems**

can often deliver significant performance and efficiency benefits and should be prioritised where feasible.

Fabric-first approach

A fabric-first approach prioritises improvements to the building envelope before upgrading building services. This ensures that energy demand is reduced at source before introducing new technologies.

Key measures include improving insulation to walls, roofs, and floors; enhancing airtightness; upgrading windows and doors; and mitigating thermal bridges.

Key principles underpinning this approach include adopting a whole-building perspective, ensuring that ventilation is addressed alongside insulation upgrades to maintain indoor air quality, and carefully sequencing works to avoid inefficiencies and rework.

Building services strategy

Efficiency improvements

Improving the efficiency of building services is **a core component of retrofit**. This includes the installation of high-efficiency heating systems, the use of smart controls such as thermostats and thermostatic radiator valves (TRVs), the upgrade to LED lighting, and the introduction of mechanical ventilation systems, such as Mechanical Ventilation with Heat Recovery (MVHR), where appropriate.

Low-carbon technologies

The integration of low-carbon technologies should be considered in line with site constraints. **Air Source Heat Pumps (ASHPs)** are often limited by space and installation constraints, whereas **Ground Source Heat Pumps (GSHPs)** may be more suitable for communal systems and can deliver higher levels of efficiency. **Solar photovoltaic (PV) systems** can also be incorporated; however, their application is often constrained by limited roof space and the complexity of metering arrangements. Systems exist to split and distribute generation from solar PV systems, though the technicalities of distribution and billing should be navigated.

Health, safety and logistics

Health and safety

All works must comply with relevant health and safety legislation, including the **Work at Height Regulations (2005)**. Operatives should be appropriately trained in



harness use and fall-arrest systems to minimise risks associated with working at height. Asbestos awareness is also essential to ensure safe working practices when dealing with existing building materials and structures. In addition, all lifting equipment must comply with the **Lifting Operations and Lifting Equipment Regulations (LOLER)** to ensure safe and effective operation.

Logistics

Scaffolding is a major cost and programme driver and must therefore be carefully planned and managed. Resident access and privacy must also be considered throughout the works to minimise disruption and maintain acceptable living conditions. Furthermore, limited site space on high-rise projects requires detailed logistical planning to ensure safe and efficient delivery.

Sequencing

Retrofit works should follow a **logical and structured sequence**. Typically, this begins with fire safety works, followed by structural repairs. Building envelope upgrades are then undertaken, after which building services are installed. Finally, reinstatement works are completed to return affected areas to their original or improved condition.

Stakeholder engagement

High-rise retrofit projects involve multiple stakeholders, including landlords or freeholders, leaseholders, residents, and managing agents. Effective stakeholder engagement is therefore critical to the success of the project.

Key engagement measures should include clear and consistent communication, such as floor-by-floor updates, and the use of resident champions to facilitate engagement. **Pre-works information packs** should be provided to ensure residents are informed ahead of construction activities. **Visual timelines and mapping** can help stakeholders understand the programme and impact of works, while post-completion feedback should be collected to inform future improvements.

Handover and compliance

Responsibilities

Clear responsibilities should be defined at handover to ensure ongoing compliance and maintenance. Installers are responsible for providing installation and maintenance advice in accordance with PAS 2030. **The Retrofit Coordinator** is responsible for ensuring documentation and overall compliance with PAS 2035.

The landlord is responsible for ongoing maintenance in line with manufacturer guidance.

Party	Example table heading	Standard
Installer	Installation and maintenance advice	PAS 2030
Retrofit Coordinator	Documentation and compliance	PAS 2035
Landlord	Ongoing maintenance	Manufacturer guidance

Required documentation

A comprehensive set of documentation should be provided at handover. This includes PAS compliance certificates, warranties and guarantees, resident handover packs, and maintenance manuals. These documents ensure that the building can be properly managed and maintained following completion of the retrofit works.

Monitoring and evaluation

PAS 2035 sets out different levels of monitoring and evaluation requirements depending on the scope and risk profile of a project. As a minimum, all projects must undertake basic monitoring and evaluation, while an intermediate level is required where there are notable discrepancies between the intended outcomes and the results achieved. For high rise buildings, there may be **more complexity in both design and logistics**. As part of the retrofit, a monitoring and evaluation plan should be developed so it is adequately equipped to properly measure the project's in-use outcomes.

Monitoring and evaluation play an essential role in transparently demonstrating the success of retrofit projects. By continuously tracking and reviewing performance, this process ensures that energy efficiency targets are achieved, resident satisfaction is enhanced, and lessons learned are captured to inform future schemes. In addition to being a requirement under PAS 2035, monitoring and evaluation provide a vital evidence base for understanding the effectiveness of retrofit interventions and contributing to the delivery of a more sustainable housing stock.

Summary and recommendations

A fabric-first, whole-building approach should be adopted to maximise the effectiveness of retrofit works. It is essential to ensure that **competent and accredited professionals are engaged throughout the project lifecycle**. Safety

and compliance requirements must be integrated at every stage of the project to minimise risks. Resident engagement and clear communication should be prioritised to support successful delivery. Finally, projects should be planned with a focus on long-term asset performance and decarbonisation objectives.

Resources

	Podcast: All RISE podcasts are available here .	HRB masterclass: “Building safety in high rise with Casey” available here .	
	Masterclass: All RISE masterclasses are available here .	HRB masterclass “High Rise Retrofit with Baily Garner” available here .	
	Advice pack: All RISE advice packs available here .	HRB advice pack: “HRB & Building Regulations” available here .	

This pack aims to share insights, good practices, and lessons learned from the sector. It is intended for informational purposes only and does not constitute as recommendations or endorsements of specific suppliers, products, or services or as legal advice. Please always check the latest regulations.



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