**Appendix 15 - FRP-013 – Employer Requirements Process**

**The Requirement**

To set clear minimum standards to be incorporated into contracts for goods and services that implement the highest standards of fire safety.

**Process to Meet Requirement**

RBKC have drafted Employer Requirements (contained at the end of this document).

The ERs will be delivered to key stakeholders across RBKC Housing Management for them to mandate compliance with amongst their staff, contractors and suppliers. This will be supported by training carried out by the RBKC fire safety team.

The ERs should be implemented through formal contracts in the course of procurement of all goods and services, and with current suppliers.

**Process to Record and Monitor Compliance**

Records of contracts to be maintained which reference / contain the fire safety ERs.

**Process to Evaluate Compliance**

Audits of procurement of goods and services to ensure that ERs have been adopted, applied and evidenced. It is envisaged that annual audit of the process will be sufficient.

**Process to Implement Improvements**

Corrective action, in terms of communicating and further training, as well as revision of the ERs in response to queries and clarifications required, will be undertaken continuously as well as following completion of audit.

**RBKC Housing Management – Fire Safety Employer’s Requirements (ERs)**

# Introduction

These ERs relate to all new-build projects and refurbishment projects.

They form a critical component of RBKC Building Safety Cases, in that all new work must comply with these Requirements. RBKC are implemeting Building Safety Cases retrospectively in a phased programme. Whilst it is noted that in many cases that Building Safety Cases may not be in place for buildings in which capital refurbishment works are taking place (particularly in buildings of relatively low height), at least for some time into the capital programme, the ERs and construction fire safety control process should be followed.

Project managers are responsible for familiarizing themselves and their design teams with the Requirements, and providing a statement of compliance with the ERs. This statement, as well as a project summary, should be provided in writing to the RBKC fire safety team.

Where work relates to new-build projects, it is considered reasonable to incorporate all fire safety ERs, and any variation to the ERs will require explicit express agreement with the RBKC Head of Fire Safety, and will only be given in cases where robust engineering analysis and justification is provided in support of such variation.

Where work relates to refurbishment, it is recognized that there may be challenges in meeting all ERs. In such cases, betterment to the extent practicable must be the guiding principle. The project team will also be required to clearly demonstrate why the full ER cannot be adhered to.

In the case of existing situations that incorporate non-compliances, projects must, where they directly interface with the non-compliance, or could reasonably address it by minor variation / addition to the proposed works, address the non-compliance as part of works.

# Fire Safety ‘Red Lines’

The Employer requires that our buildings:

* Do not overly rely on performance-based engineering solutions
* Do not incorporate open plan flats with bedrooms as inner rooms located off risk rooms that are the sole point of access
* Do not incorporate timber frame construction type (i.e. we will only accept concrete or adequately-protected steel frame construction)
* Do not use combustible materials as part of any external wall system, to include cladding or insulation, **for any building height (including those under 18 metres)**
* Do not have any balconies that are formed of, or contain any amount of, combustible material, as any part of the construction or aesthetic detailing
* Only use materials that achieve A1 or A2, S1, D0 as defined through test to BS EN 13501
* (Where fire safety engineering is used as part of the design) are designed only be fire engineers who are appropriately registered as such, as either Incorporated or Chartered Engineers with the ECUK, and who can demonstrate such registration; we will not accept fire engineering services by unregistered personnel who artificially claim to be fire engineers
* Are provided with a suitable suppression system, which may involve a residential sprinkler system in accordance with BS 9251:2014, a residential water mist system in accordance with BS 8458:2015, or a bespoke system with a design and implementation that is fully-supported by sound engineering justification made by a fire engineer that is either Incorporated or Chartered through the ECUK and who has experience in designing such systems
* Are fire-stopped by companies who are third-party accredited by an appropriate recognized UKAS Scheme, including LPS 1531 or FIRAS – this is our requirement for all fire-stopping carried out within the buildings and must be clearly demonstrated to us
* Have fire safety designs that are referred for approval to the RBKC Head of Fire Safety at each RIBA Stage to ensure that the premises as designed can be managed compliantly under the Regulatory Reform (Fire Safety) Order 2005
* Have suitable shutdown facilities for photovoltaic systems, where these are provided
* Are provided with egress facilities that increase accessibility so far as is reasonably practicable
* Are provided with full building floor plans, showing all fire precautions, supported by simple information for use by the end user, in the form of a fire safety building manual, and to comply with the requirements of Regulation 38 of the Building Regulations

# Fire Strategy

* The design team will deliver a fire strategy that conforms to either the approach detailed within Approved Document B Volume 1 2019 or BS 9991:2015.
* An overview fire strategy document will be prepared that provides detail of the approach adopted and the rationale. Particular attention will be paid to addressing the approach to meeting the functional requirements of Building Regulations, namely means of warning and escape, fire spread – linings, fire spread – structure, external fire spread and access and facilities for the fire and rescue service.
* Consideration will be paid to both active and passive fire safety measures, not limited to alarms, smoke ventilation system, suppression and compartmentation.
* The fire strategy document should also clearly make reference to requirements for planned, preventive maintenance. Where the approach detailed in Approved Document B is utilized, whilst not an explicit requirement of that approach, fire safety management will be addressed within the fire strategy document.
* The Employer will also require that all information related to a Building Safety Case is set up in a manner that allows fire safety to be managed effectively for the lifecycle of the building. This will necessitate inclusion of clearly annotated fire safety-specific floor plans and recorded information, with use of BIM, where appropriate.

# Fire-Resisting Structure and Linings

As noted in the ‘red lines’ structure will meet the requirements of Regulation B2, and will not incorporate timber frame.

Steel and concrete frames will be protected and sub-divided (compartmented) using materials having suitable fire-resistance.

Compartment walls - are constructed from either brickwork or dense concrete block, it is important that all perpends are fully filled and not merely ‘buttered’. Compartment walls constructed from stud partitioning are to be of a specification to meet with building control and fire officer’s requirements for fire separation/resistance. In this regard, steel framing and Metsec framing systems are acceptable.

RBKC fire safety should be consulted if these systems are proposed. All compartment walls are to be taken up to the underside of the concrete floor slabs to maintain fire separation and fully fire sealed. They shall comply with Local Planning Authority, Building Regulations airborne and impact sound insulation requirements. Robust Details are an acceptable method of compliance.

Compartment all construction to comply with Building Regulation Standards and identification of fire break walls to be clearly identified on the Architects fire strategy plans and agreed with the building control and fire officers.

No foams or plastic-based materials will be used in the wall assemblies within common parts. No combustible materials at all will be used on external walls, balconies, roofs, etc.

# Emergency Lighting

An emergency lighting system should be provided to all communal areas, escape routes, stairs, work areas, bin rooms, to illuminate plant and electrical cupboards, car parks, outside all exit doors, at all changes of direction or level, to illuminate all fire fighting equipment. The installation should comply with the recommendations of BS 5266-1 and the requirements of BS 5266-8 and BS EN 1838.

Emergency fittings shall be LED emergency version of the matching communal lighting and shall be designed to be part of the communal lighting in looks and control.

Emergency lights should be designed to operate in the event of local mains failure of the same circuit. The system should be a self-test system with control and indicating equipment kept in a landlord-controlled area that is documented clearly on floor plans contained within the building fire safety manual provided to satisfy Regulation 38 of the Building Regulations.

To future-proof, the Employer requires that systems can be remotely monitored as well as being self-test, automatically reporting failures using an open protocol-type system.

# Fire Detection and Alarm System Requirements - Dwellings

Each individual dwelling will be provided with domestic smoke and heat alarms, provided to a minimum standard of Grade D1 Category LD2 as defined by BS 5839-6:2019. Where any form of compensation is required for existing situations, such as balcony escapes that were provided for original design but have, over years of the building being in use, been compromised and are no longer viable, or where separation between flats may not fully meet current standards, LD1 will be provided.

Detectors should be provided on separate fused circuits, with non-removable lithium battery or capacitor back-up. To mitigate unwanted fire signals, multi-sensor alarms should be used in preference to smoke alarms for circulation and habitable risk rooms, unless smoke alarms are proven through design risk assessment to be more appropriate. Heat alarms should be provided in kitchens. Positioning of alarms should be in accordance with the recommendations of the British Standard.

Alarm sound pressure levels should achieve 85dB(A) at the door frame of each bedroom within the property. Where flats are designated as accessible, consideration of visual alarm devices will be necessary. Interfacing of other warning devices should also be considered (for example, vibrating pillows).

# Fire Detection and Alarm Systems – Common Parts

On the basis that purpose-built flats will have a designated ‘stay put’ policy in operation, fire detection systems in common areas should not be provided with fire alarm warning sounders or visual alarm devices, which could cause confusion in respect of fire procedures.

Fire detection equipment for the purposes of actuating devices in support of the fire strategy (i.e. smoke ventilation systems) should be provided in accordance with the recommendations contained in BS 5839-1:2017, with detection provided as per Category L5. As detection is provided to achieve fire strategy aims and not to provide general warning, manual call points should not be provided (although specific ventilation equipment should be provided with controls for use by the fire and rescue service).

Control and indicating equipment should be provided as per BS 5839-1 and should be readily located within a main entrance (where provided), with additional CIE (repeater panels) in other routes into the building. A diagrammatic zone plan should be provided.

All fire detection and alarm system should be open protocol (i.e. not managed or closed protocol) to allow future serviceability and maintainability.

# Smoke Ventilation Systems

Smoke ventilation systems should be provided to meet the functional requirements of Building Regulations B1 and B5.

The Employer requires that pressurization systems are not used, due to sustainability issues with such systems, as well as practical implications to adopting such an approach to smoke control (i.e. we recognize that these systems can fail in conditions that exceed the design parameters, including multiple doors open simultaneously).

Approaches that will be acceptable include use of natural smoke shafts (preferred), automatically-opening ventilators (AOVs) where external walls are provided to lobbies, or mechanical ventilation. Whichever approach is used, the Employer requires that suitable justification of the adopted approach is clearly recorded, including information pertaining to hand calculations or computer models (where these are used in support of selection of a particular method).

Staircases will be provided with AOVs for the purpose of facilitating replacement air, where necessary. Given the potential for health and safety impact during operation of an AOV in adverse weather, particular attention will be paid to avoiding rain ingress.

Other replacement air provision (such as, at low level within a natural shaft) will be considered and justified.

With all smoke ventilation systems, care will be taken that adverse wind conditions do not undermine system performance, and this will require sound engineering justification, including, where necessary, through modelling and calculation.

Any smoke ventilation system should be open protocol and particular consideration will be paid to maintainability and serviceability.

Any system used will be provided with all facilities for manual and automatic operation, and will comply with the relevant section of BS EN 12101.

Manual call points or buttons shall be type so that only a button press is required to close/ reset. Breakglasses shall not be installed. Simple control buttons to enable closing and resetting by unskilled persons without tools, keyfobs or other special devices shall be installed on the ground floor and within sight of the each AOV to enable safe closing. Auto closers and wet weather sensors should be installed to roof vents. AOVs should not act as roof access points.

# Suppression Systems

The Employer requires that suppression is provided to afford our residents protection that exceeds minimum legislative requirements.

We therefore require that either residential sprinklers or residential water mist systems are provided within our dwellings, that meet appropriate standards (i.e. BS 9251, BS 8458, or a fully-engineered system). To ensure robustness of these systems, we require that backup power supplies are provided to the system, as well as dual pumps.

We require that careful consideration is given to minimizing the risk of accidental discharge, and that facilities for inspecting or testing the system are provided as far as possible within the common parts, minimizing reliance on entering the flats to carry out testing or maintenance of the system.

Where retail units are provided within a block, these should be provided with a suitable suppression system. This is particularly important where food outlets are provided, where ductwork and canopies provided for the extraction of cooking fumes must be provided with wet chemical extinguishing systems.

# Fire-Resisting Doors and Doorsets

Fire-resisting doors should meet the standard for either FD30S or FD60S (as determined by the building fire strategy, based on location). It is noted that statutory guidance may not require smoke seals on certain doors (e.g. some riser cupboards), although the Employer requires a higher standard than minimum in these instances, requiring that all fire doors are fitted with cold smoke seals. Smoke seals are to be of the brush type (as opposed to plastic fin) to ensure that they are hard-wearing and lower maintenance.

Self-closing devices are to be overhead arm-type closers (as opposed to floor spring or recessed Perko-type closers) to ensure that they are robust. Where practicable, self-closers are to be provided on the external (common parts side) face of the flat entrance door, to allow simple maintenance by the Employer and easy identification of issues with the device without necessitating entry into the flat.

Fire doors within common parts (i.e. not front entrance doors) are to be provided with FIRE DOOR KEEP SHUT or FIRE DOOR KEEP LOCKED signage as appropriate to the designation of the fire door.

All fire doors will have performed to the certified duration under appropriate BS 476-22 and/or EN 1634-1 fire tests. The Employer requires that the doors will have been tested from both sides, and that all hardware provided on the doors was included within the test (e.g. ironmongery, letterboxes, spy holes, etc.). Certificates will be provided within Regulation 38 information, including full floor plans showing the location of all fire-resisting doors. The door and frame will also be provided with a simple visual indication of the fire-rating of the doorset for ease of future inspection and check.

The door and doorset as tested will be provided, without any variation or deviation from the type to which test data relates.

# Fire-Resisting Glazing

All fire-resisting glazing must meet the appropriate fire-rating, achieving both integrity and insulation qualities under appropriate British and/or European fire tests. A clear marking must be provided on every individual piece of glazing. The Employer will consider failure to adhere to this requirement as failure to adequately demonstrate that the glazing achieves the appropriate fire-rating, and will require that the Contractor remedies any such glazing. Fire-Resisting Walls

Fire-resisting compartment walls will be adequately formed of blockwork supported by fire-stopping to ensure a full seal between floor slabs. All walls will ensure that adequate fire-rating is achieved to support the fire strategy and can be evidenced through appropriate test data under either the appropriate BS 476 test or European equivalent. All fire-resisting walls will be clearly indicated within the Regulation 38 floor plan information delivered at the end of the project.

All fire-stopping is to be undertaken by a UKAS-accredited third-party certificated fire-stopping company.

# Photovoltaic systems and green roofs

Where PV systems are provided, they will be provided with facilities for shutdown by the fire and rescue service in a suitable location at access point(s) to the premises. A specific fire risk assessment will be undertaken by a fire engineer supported by an electrical engineer to confirm that the risk of fire within the array and surrounding areas is minimized as far as possible. It will be ensure that the array does not generate a direct current voltage that is defined as ‘prescribed voltage’ by the Regulatory Reform (Fire Safety) Order 2005 without express agreement by the RBKC Head of Fire Safety and the London Fire Brigade, who will require evidence that appropriate control measures are incorporated.

PV locations will be isolated from domestic dwellings and will not be included on walls to the block. An acceptable location is likely to only be on a flat roof or in the ground surrounding the block, and needs to be considered carefully to ensure that any fire that affects the array cannot foreseeable spread to the building. Consideration to fire-fighting operations must be undertaken. Access facilities to reach the array must also be assessed and be appropriate to comply with the Construction (Design and Management) Regulations 2015.

Green roofs must be easily maintainable so that plants cannot dry out and become a fire hazard. Careful consideration of this is a requirement of any design.

# Rising Mains

Where deemed necessary to comply with Regulation B5, dry or wet rising fire mains will be provided, formed of galvanized steel, and complying with the guidance contained in the current version of BS 9990.

# Fire Safety Signs and Notices

All signs and notices are to comply with the relevant section of BS 5499. In addition to statutory signage, the Employer requires that notices clearly indicating the layout of the premises and the location of fire exits and fire precautions (such as fire doors, smoke control systems, detection, etc.) are prominently displayed in a suitable aesthetic appearance on each level, also clearly detailing the evacuation procedure (i.e. ‘stay put’).

# Regulation 38 Information

On completion of the project, a fire safety manual must be provided as a separate document, with full floor plans showing all fire precautions, a fire strategy document, a fire maintenance document, a pre-occupation fire risk assessment, and information relating to all fire precautions discussed in the above commentary.

# Access and Accessibility (Fire Safety)

A fire service drop release /override switch shall be fitted to entrance doors to blocks to enable emergency release by the fire and rescue service.

All fire exit doors should be provided with hardware that is easily and readily openable by users of varying physical ability.

Where flats are provided for persons with restricted mobility or physical ability (i.e. upper body strength), friction-less closers will be used.

# Lifts (Fire Safety)

Lift parts shall be readily available from standard UK suppliers. All parts shall come from one principal suppler.

Passenger lifts shall be provided as indicated on the contract drawings, which must be accessible for wheelchairs. Lifts shall be provided in all flatted blocks that have four floors or more.

To ensure robust accessibility facilities (by ensuring adequate means of self-egress), lifts should meet a minimum standard for an evacuation lift in accordance with BS EN 81-76. Where fire-fighting lifts are provided in accordance with BS EN 81-72 (i.e. to comply with Regulation B5), these can be considered to meet the Employer’s requirement for egress, providing that a suitable strategy is agreed and documented.

# Construction

During construction, particularly in occupied buildings, construction site areas will be separated from occupied areas by fire-resisting construction achieving 60 minutes’ fire-resistance (FR60).

As noted within the ‘red lines’, our requirement is that all fire-stopping is carried out by third-party certified companies.

It is noted that the Fire Safety Order applies to construction work as well as the requirements of CDM, and, as such, the Articles of the Order must be complied with at all times, demonstrable under co-operated and co-ordinated risk assessment procedures.

Hot works are a recognized risk. RBKC require that hot works permit arrangements are put in place for any hot works. These will require fire watch checks every half-an-hour as a minimum for a period of two hours at least.

RBKC are operating a blanket ban on acetylene, due to the significant hazard associated with this gas. Safer alternatives must be used. Contractors must not bring acetylene to site, and must ensure that their sub-contractors or staff are aware of this prohibition.

Site storage must be in a fire-resisting container. Welfare and storage units must be located at least six metres from any RBKC building. Where this is not achievable, any such units must be fully fire-resisting, including doors and doorsets, and must not be provided with windows that face RBKC buildings.

Site logistics must be carefully planned to ensure that means of escape are not, at any time, compromised.

Variation to agreed materials or designs on site is prohibited without express inclusion in the CFSC and approval from the RBKC fire safety team. Any unauthorized variation will be required to be immediately rectified, without cost to RBKC, by the Principal Contractor.