Guidance Note

Fire Industry Association

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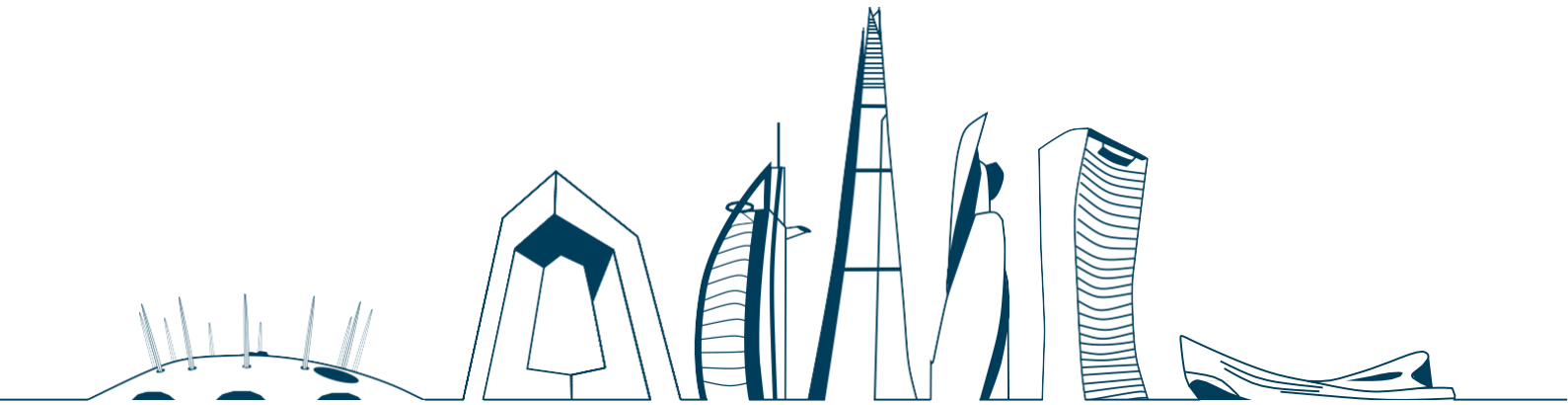

Scope of Works for Fire Engineers

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1) INTRODUCTION

This document has been produced in order to help with development of a standard scope of services for appointing fire engineers to work on construction projects. It is specifically focused on the obligations and legal requirements that apply in England (as that is where the majority of FIA fire engineering members operate) but can also be adapted for other locations.

When appointing a fire engineer to work on a construction project, the scope of services is fundamental. Whilst many organisations have their own standard scope of service for fire engineers that they have developed over the years, there can be large variations between them. In addition, recent changes to regulations in the UK have introduced new obligations and those standard scopes may not necessarily reflect those changes. FIA published an initial version of this standard scope of services in March 2015. FIA have produced this updated scope of services in order to reflect changes in the industry since then as well as the current regulatory requirements.

One particular change in regulations is Part 2A of the Building Regulations. That was introduced due to concerns relating to how construction projects had been designed and constructed, introducing new roles and obligations for everyone who is involved in the design and construction of buildings. One particular aspect of the new regulations is the legal requirement for 'cooperation' and 'coordination' between the different members of the design and construction team. The issues relating to that are described below, and this guide introduces an approach based on a Fire Engineer's Responsibility Matrix which helps define the work that would be required.

The intention of this guide is to provide

a) a summary of the scope of works that would be required, broken down into each RIBA Stage and

b) a Fire Engineer's Responsibility Matrix that would be filled in to supplement the scope of works.

FIA are providing this scope of works free of charge for anyone in the industry to use, or adapt to their own needs if required.

If a client or fire engineer prefers to use their own scope of works, it is possible that the matrix could be used alongside that scope, subject to appropriate coordination of content.

2) OVERVIEW OF PART 2A OF BUILDING REGULATIONS

Part 2A of the Building Regulations was introduced by the Building Safety Act 2022 and creates various new defined roles, as well as specific obligations for those roles. Those roles include Client, Principal Designer, Designer, Principal Contractor and Contractor.

The fire engineer is unlikely to be classified as a Client, Principal Designer or Principal Contractor and the content below is on that assumption.

The main aspects of Part 2A that impact on the fire engineer's role are summarised below: It is important to be clear that Part 2A applies to all projects, not just work on Higher Risk Buildings (HRBs).

a) Clients need to ensure adequate time and resources to ensure that the design and construction comply with requirements

b) Clients need to enable the designers and contractors to cooperate with each other to ensure compliance with all relevant requirements

c) Clients need to ensure the competence of every organization when they are being appointed

d) Every organization should only accept appointments for which they are competent

e) All designers should ensure that the designs they produce are compliant with requirements

f) The Principal Designer has an obligation to "take all reasonable steps" to ensure that there is sufficient cooperation between designers to ensure that the design, if constructed, complies with all relevant requirements

g) The Principal Contractor has an obligation to "take all reasonable steps" to ensure that there is sufficient cooperation between the various parties involved in the construction to ensure that the actual building work should be compliant with all relevant requirements

h) Everyone (including client, designers and contractors) is required to cooperate with each other

The above items include a number of obligations to cooperate. The specific details of what is meant by "cooperate" are not clearly defined in the regulations, although it states that it should be sufficient to ensure that the design (if built) would be in accordance with the regulations.

This is a particular issue for fire engineers, as the fire engineer's work impacts on many other designers (e.g. architect, M&E engineer, structural engineer). Past practice has often been that the fire engineer produces a fire strategy report, attends design team meetings and responds to queries. However, unfortunately evidence shows that past practice has regularly resulted in non-compliant buildings, and Part 2A was introduced in order to change behaviours. As a result, it may not be appropriate to assume that past behaviour is sufficient to comply with this new legal requirement.

The real question is what level of review (if any) the fire engineer should be expected to carry out of designs that are produced by others. There would always be an obligation to review architectural layouts, but again, the extent of that review could be debated. It could also include an obligation to review designs by others. It may also include an obligation to carry out a certain amount of site inspections during construction.

The lack of clarity in the regulations on this topic could result in disagreements between parties either during the design process, or afterwards (e.g. in relation to legal claims). It could also risk the fire engineer being appointed on a project where the client expects expertise on topics that the fire engineer does not have.

3) FIRE ENGINEER'S RESPONSIBILITY MATRIX (FERM)

The intention of the FERM is to provide a method to make it clear from an early stage in the project what level of review (if any) the fire engineer is expected to carry out of each of the various fire precautions that are specified in the fire strategy report.

In many cases, that may be no review required. In others, it may be a thorough review. The expectation would vary depending on factors such as:

a) The type of project. Simple projects such as a 3 story office building would require less review than a 20 storey apartment building.

b) The complexity and criticality of the relevant fire precaution. A simple precaution such as emergency lighting may require less than a complex precaution such as a residential corridor smoke ventilation system.

c) The stage of design. Earlier design stages are likely to require less review than later stages.

The matrix therefore includes each fire precaution as a separate row, and each design stage as a separate column. There are generic design review levels (R0 to R3) and comparable levels for site inspection (C0 to C3).

Decisions can then be made on what level is required for each fire precaution at each design and construction stage.

The review levels that are shown in the matrix can have a significant impact on the overall workload required from the fire engineer. In addition, it would also impact on the competency requirements for the fire engineer. As noted earlier, the client has an obligation to confirm the competency of the fire engineer when they are being appointed, and the fire engineer would have an obligation to only accept work that is within their competency. That means that the matrix should ideally be agreed at the point where the fire

engineer is being appointed in order that those issues can be confirmed at the point of engagement.

It would be important for all relevant parties to have an input into this matrix. The Client and fire engineer would need to be satisfied that the review levels are sufficient, but it should be noted that the Principal Designer and Principal Contractor also have a legal obligations to ensure that there is sufficient coordination on the project, so they should also be consulted.

If a client is using this matrix to support a tender where multiple fire engineers are bidding, the client would initially need to specify the relevant review levels in order that all fire engineers are bidding on the same basis. If necessary, the client could consult with the relevant fire engineers to agree what levels would be appropriate. If any of the fire engineers do not believe that the levels that the client has specified for the tender are sufficient to comply with the obligations of the Building Regulations, the fire engineer should notify that to the Client.

Likewise, if the Principal Designer and/or Principal Contractor do not believe that the review levels as specified in the matrix are sufficient, they should notify that to the Client.

In certain cases the Client may decide that certain aspects of the review are to be carried out by a separate organisation. This may be related to an individual fire precaution (e.g. if the preferred fire engineer does not have the competence to carry out the level of review required on that fire precaution). Alternatively, a client might employ one fire engineering company to produce the fire strategy, and then appoint a separate company to carry out the FERM review, checking the designs against the fire strategy that the other fire engineer has developed (that role is often described as a Fire Guardian role).

It would be essential for the fire engineer to ensure that there is clear evidence that they have carried out the reviews and site inspections as confirmed in the FERM. That would include documentation relating to the specific documents that were reviewed and the site installations that were inspected along with any comments from the fire engineer, and (where relevant) evidence that those comments were addressed adequately.

4) FIRE ENGINEER'S CONFIRMATION/COMPLIANCE STATEMENTS

As noted above, Part 2A of the Building Regulations includes additional obligations for various members of the design team. Designers need to ensure that their design (if built on site) would comply with the requirements of the Building Regulations, but does not specifically create obligations for any overall statements of compliance, particularly of the design as a whole or of the final construction.

However, others in the design team (in particular the Client, Principal Designer and Principal Contractor) do have additional obligations, in particular when working on Higher Risk Building projects, and may want statements from the fire engineer to support their own statements.

If that is the case, the wording that would be required for those statements from the fire engineer should be clarified at the time that the fire engineer is being appointed. This would avoid a situation where, at a critical stage in the design or construction, the Client/Principal Designer/Principal Contractor requests such a statement from the fire engineer and the fire engineer refuses, stating that it was not in their scope of work, or that their scope of works was not sufficient to make a statement to a level that is being requested.

5) RIBA DESIGN STAGE

The following sections describe the typical scope of works that would be expected from a fire engineer during each RIBA Stage. It would be important to ensure that this is appropriate for the project in question and should be modified if required.

6) RIBA 2013 STAGES 0 AND 1 – PREPARATION

Comment: In practice, in most cases there would be no need for a fire engineer to be appointed at these stages. However, if there are specific reasons for including a fire engineer at this stage it would be likely to focus on specific issues. As such it is not possible to identify a generic scope of services for RIBA Stages 0 and 1 and those would have to be developed case-by-case as required.

7) RIBA STAGE 2 – CONCEPT DESIGN

Comment: The RIBA Plan of Works recommends that Planning Applications should typically occur during RIBA Stage 3. As such, the work required for Planning Applications is included in the Stage 3 section. Should the actual project differ, this should be modified.

It should also be noted that whilst the FERM is referenced in this stage, it is likely that the FERM will typically only require a review of architectural GA drawings and a very limited (if any) review of designs of the various fire precautions.

When starting the project the fire engineer would need to initially establish the following criteria

- Confirm the relevant fire safety design objectives for the project
- Confirm relevant fire legislation which will affect the design, and
- Confirm any additional design requirements such as insurance or additional client requirements

Once those are established the fire engineer should carry out a review of the design that has been developed up to that date (typically GA drawings) to identify any aspects of the design where changes would be required, or fire engineering analyses are needed.

The fire engineer should cooperate with others in the design team. This includes attendance at design team meetings (online and/or in person) and responses to queries via email/telephone.

If that cooperation also includes a review of certain designs that are produced by others in the design team, the level of that review should be as described in the FERM shown in Appendix 1. This will include one review of the relevant designs towards the end of this stage, with comments submitted.

Estimates of the numbers of meetings, document reviews and technical queries are shown in the table below. This table is included in order to give an indication of the approximate number of each item that is expected in order that the fire engineer can determine the resources required.

If the fire engineer's review of the design identifies that detailed fire engineering analyses will be required (or beneficial to the projects) the fire engineer should identify that to the client and confirm at what stage of the design those analyses would be required. If those analyses are outside of the originally agreed scope of work, agree with client appropriate variation order as appropriate.

At an appropriate time, produce Stage 2 fire strategy report and circulate to the client and design team. At this stage the report would reflect the fact that the design is at Concept Design stage and so would not be detailed. It may include summaries of potential options where multiple approaches would be possible.

Topic	Details
RIBA Stage 2 duration	weeks
Design team meetings (online)	
Design team meetings (in person)	at
GA drawings to review	
Other drawings/documents to review	
Technical queries via email/telephone	hours of support per week over week duration

8) RIBA STAGE 3 – SPACIAL COORDINATION

Comment: As noted earlier, this section assumes that the Planning Application occurs at the end of this stage (as recommended in the RIBA Plan of Works). Should that differ for the specific project, the text may need to be modified

The FERM is again referenced in this section. Again, at this stage the main review is likely to be the GA drawings but it is possible that an increased level of review of some fire precautions may be required at this stage than in Stage 2, but it would depend on the specific situation.

During this stage the fire engineer should continue the work from RIBA Stage 2.

The fire engineer should cooperate with others in the design team. This includes attendance at design team meetings (online and/or in person) and responses to queries via email/telephone.

If that cooperation also includes a review of designs as produced by others, the level of that review should be as described in the FERM shown in Appendix 1. This will include one review of the relevant designs towards the end of this stage, with comments submitted.

During the run-up to the Planning Application, confirm with the client and design team what documentation may be required from the fire engineer to support the application. That may include a Fire Statement under Gateway 1 and/or the London Plan. If a pre-application consultation is to be held with the BSR, carry that out.

If any fire engineering analyses are required (and in the scope) at this stage, the fire engineer should carry out those analyses. Refer to the summary of fire engineering analyses as described later in this document.

Update fire strategy report to reflect updated design drawings and provide additional level of detail as appropriate for this stage of design.

Topic	Details
RIBA Stage 3 duration	weeks
Design team meetings (online)	
Design team meetings (in person)	at
GA drawings to review	
Other drawings/documents to review	
Technical queries via email/telephone	hours of support per week over week duration

9) RIBA STAGE 4 – TECHNICAL DESIGN

Comment: It is common for the earlier designs of many fire precautions to be produced by the design team which are used for tender. The 'construction stage' designs of those fire safety precautions to then produced by the appointed specialist sub-contractors. The RIBA Plan of Work suggests that those should occur during RIBA Stage 4. However, in practice, that can vary. The scope as described in this document includes work for fire engineers at each stage, including a review of designs as produced by others at the end of each stage (as defined in the fire engineers coordination matrix). However, if there is a need for the fire engineer to review documents mid-stage (e.g. review tender documents part way through Stage 4) then that should be added to the scope.

See comment in RIBA Stage 5 in relation to overlap between RIBA Stages 4 and 5.

During this stage the fire engineer should continue the work from RIBA Stage 3.

If any fire engineering analyses are required (and in the scope) at this stage, the fire engineer should carry out those analyses. Refer to the summary of fire engineering analyses as described later in this document.

Update fire strategy report to reflect updated design drawings and provide additional level of detail as appropriate for this stage of design.

The fire engineer should cooperate with others in the design team. This includes attendance at design team meetings (online and/or in person) and responses to queries via email/telephone.

It would also include a review of designs as produced by others to the level as described in the FERM shown in Appendix 1. Note: in earlier stages this only included one review of the relevant designs towards the end of this stage, with comments submitted. However, as RIBA Stage 4 includes the Building Regulations application, the fire engineer would need to carry out a review of the design prior to the application, then re-review any documents where changes were required as a result of the initial review. That would ensure that the documents that form part of the submission included any comments from the fire engineer.

OPTIONAL: If the project includes plans for Phased Occupation, work with the client and design team in order to develop an approach which ensures acceptable standard of fire safety during that phased occupation. This may include production of a separate Phased Occupation Fire Strategy Report to describe the relevant fire safety issues that would need to be addressed.

During the run-up to the Building Regulations Application, confirm with the client and design team what documentation may be required from the fire engineer to support the application. That would primarily be the fire strategy report, plus the Phased Occupation Fire Strategy report (if relevant).

Topic	**Details**
RIBA Stage 4 duration	weeks
Design team meetings (online)	
Design team meetings (in person)	at
GA drawings to review	
Other drawings/documents to review	
Technical queries via email/telephone	hours of support per week over week duration

10) RIBA STAGE 5 – MANUFACTURING AND CONSTRUCTION

Comment: As noted in the RIBA Plan of Work, RIBA Stage 5 only covers the construction elements of the work. In some projects the construction starts before design is complete. In those cases, RIBA Stages 4 and 5 overlap with each other. The project programme should reflect that.

The only design element included in RIBA Stage 5 is any design that is required to resolve any design changes which become necessary during construction. Those issues are, by definition, impossible to predict and so any work relating to those should either be on the basis of a fixed retention for a certain number of hours of technical support, on a time charge agreement, or for variations to be agreed case-by-case (or a combination of these options).

If, during construction, it is decided that there is an intention to occupy part of the building whilst other parts are still in construction, reference should be made to the text relating to Phased Occupation as described in RIBA Stage 4.

Any site inspections that are carried out by the fire engineer would supplement the QA controls and inspections that should already be in place, facilitated by the Principal Contractor. The fire engineer should review and comment on QA site inspection reports produced by others (see table below for the confirmation of the number of those reports).

The fire engineer should carry out site inspections if those are included in the FERM. After each site inspection the fire engineer should produce a site inspection report describing any issues identified on site.

If the site inspection identifies issues on site which need to be corrected, those should ideally be identified to the client/project manager during the site inspection, with the report to follow. Any further support required from the fire engineer to resolve those issues would either be covered by the budget for hourly support arrangement as shown in the table below, or be the subject of a separate variation agreement.

Note: The site inspection report should identify any concerns (e.g. incorrect construction) that are identified, but in some cases may also take records of the general construction so that it can form part of the record of how the building is constructed – i.e. the reports should identify 'good' as well as 'bad' construction, although clearly differentiated.

If required within the Fire Engineer's Responsibility Matrix, subsequent inspections should check that those corrective works have been carried out.

FIA would encourage the use of benchmarking of key fire precautions (such as fire stopping) particularly where there are any site-specific aspects to the installations. Those should be carried out at an early stage of installation of those fire precautions and the fire engineer's site inspection schedule should be aligned with those benchmarking arrangements.

The fire engineer should attend final commissioning tests of key fire precautions. The number of commissioning tests are as shown in the table below.

Should design changes be required during the construction phase for any reason (e.g. client instructions, or design changes being required due to problems being identified on site) the fire engineer should support the design team in resolving those changes, including support in any Change Control applications which may be required to Building Control. However, by their nature these would be unpredictable, so any work required by the fire engineer to carry this out would be outside of the scope of this document and would require separate variation agreements.

Topic	Details
Site inspections	no.
Review of site inspection reports by others	no.
Attendance at commissioning tests	no.
Technical queries via email/telephone	hours of support per week over week duration

11) RIBA STAGE 6 – HANDOVER

Comment: Handover is a critical stage of the project. In order to reduce the workload at that critical time, it would be essential to plan this stage in advance. That would include ensuring in advance exactly what work the fire engineer is expected to carry out, and ensure that all relevant parties are in agreement with this.

On completion of construction, the project team will need to provide relevant documentation for compliance with Regulations 38 of the Building Regulations. If the building is an HRB, this would be included as part of the information required under Gateway 3.

The fire engineer's main responsibility would be to update the fire strategy report to correspond to the finalised building. Note: the phrase 'as built' is a status that is commonly used in the industry for documentation that relates to the actual completed building. If that is used on the version of the fire strategy report that is produced at this stage, it may mislead people into believing that the fire engineer is guaranteeing that the entire construction is in accordance with that fire strategy report. To avoid confusion, FIA would recommend that either the phrase 'as built' be avoided for the fire strategy, or, if it has to be used, ensure that it includes text to clarify the level of checks (if any) the fire engineer carried out to ensure whether the actual fire precautions that the fire strategy specifies were designed and installed correctly. The Fire Engineer's Responsibility Matrix may be a way to address this.

The Regulation 38/Gateway 3 documentation is likely to also include any site inspection reports which the fire engineer has produced.

Optional: The fire engineer should produce an external wall FRAEW report which can be provided to the fire risk assessor in order to give confidence that the external wall construction is acceptably safe. Note: PAS 9980 is intended for existing buildings, not new buildings, but if the FRAEW report provides enough information to confirm compliance with Stage 1 of the 5 step process in PAS 9980, that should be sufficient. If required the fire engineer should produce relevant EWS1 forms confirming the results of the FRAEW.

Optional: The fire engineer should carry out a pre-occupation fire risk assessment of the building (in order to reduce the risk that the actual fire risk assessment that is required after occupation identifies issues that need to be resolved) it should be carried out at as late a stage in construction as is possible so that the report reflects the completed building. The results should be documented in a pre-occupation fire risk assessment report which would be included as part of the handover pack.

12) RIBA STAGE 7 – USE

Comment: Construction contracts normally terminate at the end of Stage 6. Any work for the fire engineer during Stage 7 would typically be for the occupier of the building, which would be a separate contract. As such, this document does not cover this stage.

13) ISSUES FOR REFERENCE

Fire strategy report

The fire strategy report is a strategic document that describes the overarching fire safety approach for the project and acts as the primary reference for all fire-related design decisions and documentation.

The primary fire safety objectives are to demonstrate how the design complies with relevant fire safety legislation and, if built in accordance with that design, would achieve an acceptable standard of fire safety. Any additional considerations, such as client or insurance requirements to be included in the fire strategy should be clearly identified to the fire engineer as early as possible.

The fire strategy report would give functional requirements for the various fire precautions in the building. Others in the design team can then develop the specific detailed design and product specification based on those functional requirements. Where relevant the fire strategy report would specify the overall system category and may address certain specific aspects of the system where relevant to the fire strategy, but would not be expected to go into detailed design of any fire precaution unless there are any site-specific issues that need to be clarified.

For example, in a particular situation a fire strategy might specify that there needs to be a fire alarm system to BS 5839-1 to an L3 standard, although with additional detection in certain areas to compensate for certain aspects of the building layout. It would not typically be expected to provide more detailed specifications as that would be the responsibility of the fire alarm designer.

If the project involves works on an existing building, the fire strategy report would need to be focused on demonstrating how the proposed works comply with the relevant regulations. As such, it may give an overview of the building as a whole, but the focus of the report would be on the proposed works. That would differ from a fire strategy report that covers the entire building. If there is no existing overall fire strategy report for the building, it is possible that two separate fire strategy reports may be required – i.e. a retrospective fire strategy for the building as a whole and a separate fire strategy for the proposed works.

Fire engineering analyses

Throughout the design, the fire engineer should identify any detailed fire engineering analyses that are required. For any fire engineering analyses that are needed, at an appropriate stage of the design, the fire engineer should:

- Where possible*, discuss the analyses with the key stakeholders, e.g. client, registered building inspector, fire service, insurers etc., and agree the acceptance criteria of the analyses. It is recommended that a Qualitative Design Review (QDR) report is prepared separately to document and facilitate these discussions.
- Ensure that the analysis is carried out in accordance with the approach as agreed
- When the analysis is complete, circulate the conclusions and document the results in a report. This report should then be provided to the project team for inclusion in the submission to the relevant approving authorities, alongside other necessary documentation.
- Update the fire strategy report to reflect the results of the analysis.
- Liaise with approving authorities to seek acceptance

* Note: At the time of issue of this document the industry is addressing the question of whether it is appropriate to have early stage discussions between the design team and regulatory authorities.

Review of designs and site inspection of fire precautions

During design stages the fire engineer should carry out a review of the design of fire precautions as produced by others as summarized in the FERM as shown in Appendix 1.

The fire engineer's scope of works is on the assumption that the design and installation of all fire precautions (as recommended in the fire strategy) are to be carried out by individuals and organisations who have the competence to carry those out to a high standard. Each relevant organization should have their own internal quality control and checking procedures to identify and correct issues prior to any checks by the fire engineer. Should that not be the case, and the fire engineer identifies an excessive number of issues in the design and / or installation of those fire precautions, the fire engineer reserves the right to highlight this to the client and insist that the quality of design and / or installation is improved prior to any further review work by the fire engineer.

If further work is required as a result of issues relating to incorrect design or installation of fire precautions (such as secondary visits due to commissioning tests of active systems not showing correct operation) any additional work required by the fire engineer to resolve those issues would be outside the scope of this document and would be subject to separate additional agreements.

Review of fire performance of construction products

Ideally, all the construction products that are used on the project should have clear documented test or assessment evidence that they would achieve the fire performance as recommended in the fire strategy report. Any review of designs and products that are carried out by the fire engineer would use that as the initial approach.

However, in certain cases that may not be possible. There could be various reasons for this to occur, such as specific aspects of the construction which may not align with standard testing methods, or due to limitations of products that are available on the market. In that case, there would typically be two options:

1) Commission a separate product assessment to confirm whether it would achieve the fire performance as specified in the fire strategy in the situation in which it is to be used on that project
2) Commission a project-specific study (typically from the fire engineer) to determine whether it is possible to verify that the product achieves sufficient performance to comply with the functional requirements of the Building Regulations.

Fire engineering analyses might be used in either of those two approaches.

Typically it would not be known whether (or how many times) those two approaches would be required on a project, or how detailed the analyses would need to be in each case. As such, they would normally be excluded from the fire engineer's scope of works and be dealt with by variations to the scope as and when they occur.

14) APPENDIX 1 DEFINITIONS OF LEVELS R0 TO R3 AND C0 TO C3

DEFINITIONS OF LEVELS R0 TO R3 AND C0 TO C3 FOR EACH FIRE PRECAUTION AS SHOWN IN THE FIRE ENGINEER'S RESPONSIBILITY MATRIX						
Stage	**Rating**	**Summary**	**GA drawings**	**Active fire precautions (e.g. fire alarms, sprinklers)**	**Passive fire precautions (e.g. fire resisting walls, doors)**	**Reaction to Fire**
Design review	R0	No review required	Nothing needed	Nothing needed	Nothing needed	Nothing needed
	R1	Basic level of review	Review GA drawings of typical areas for general layout issues	Review of drawings showing relevant active fire safety precaution being present in appropriate rooms/areas. For fire alarms or sprinklers this involves reviews that heads are present in all relevant locations.	Review of compartmentation drawings showing relevant fire resistance requirements for relevant passive fire precaution.	Review of drawings showing main types of surface materials used in relevant locations and review of specification of those materials
	R2	Intermediate level of review	R1 plus checking travel distances in all areas.	R1 plus review of overall system specification to ensure that aligns with fire strategy requirement. Does not include review of detailed items such as specifications of each component, or issues such as pipe sizing.	R1 plus review of specification of relevant passive fire precaution. Match against relevant locations as shown on compartmentation drawings	R1 plus review of locations and specification of cavity barriers (facades only)
	R3	Thorough level of review	R2 plus checking exit widths and stair widths	R2 plus, where relevant, review of C&E matrix.	R2 plus check that the specified products and detailed drawings achieve the required fire performance. Includes checks that products have evidence of required fire performance within relevant supporting construction (where relevant).	R2 plus review of Materials Register (facades only)

Stage	Rating	Summary	GA drawings	Active fire precautions (e.g. fire alarms, sprinklers)	Passive fire precautions (e.g. fire resisting walls, doors)	Reaction to Fire
	C0	No site inspection required		No site inspection needed	No site inspection needed	No site inspection needed
	C1	Basic level of site inspection			C1	Basic level of site inspection
	C2	Intermediate level of site inspection		As C1 except site inspection approximately every month.	As C1 except site inspection approximately every month.	As C1 except site inspection approximately every month.
	C3	Thorough level of site inspection			C3	Thorough level of site inspection

Note 1: All aspects of the review are in relation to compliance with the recommendations of the fire strategy report.
Note 2: The review levels of active fire systems does not include a full review of all aspects of the system design and specification, even at the highest R3 level. That is because those systems would typically be designed by specialists, and each individual system is typically sourced from a single supplier who would be responsible for ensuring that the relevant components work effectively with each other. As such a full review of the design (e.g. checking issues such as component specification, cable specification, pipe sizing) would be less essential. Even if it were needed it would require someone who is also a specialist in that area. The intention of this matrix is to agree an appropriate level of review to confirm that the fire precautions meet the intention of the fire strategy report, rather than being a full 100% peer review of the system.
Note 3: The site inspection options listed above would not result in a 100% inspection of all areas, even at the highest level. To achieve 100% inspection would effectively require the fire engineer to carry out site inspections much more frequently than would be realistic for a fire engineer to carry out. The inspections as specified are intended to supplement the QA inspections that the contractor(s) are carrying out, and would not replace those inspections.
Note 4: project The above table is a general recommendation but if appropriate could be modified in order to more accurately meet specific requirements.

15) APPENDIX 1 FIRE ENGINEER'S RESPONSIBILITY MATRIX

Options: Design stage (RIBA 2 to 4)
R0 - No review required
R1 - Basic level of review
R2 - Intermediate level of review
R3 - Thorough level of review

Options: Construction stage (RIBA 5)
C0 - No site inspection required
C1 - Basic level of site inspection
C2 - Intermediate level of site inspection
C3 - Thorough level of site inspection

		RIBA STAGE (see notes below)					
Group	**Fire precaution (see notes below)**	**2**	**3**	**4**	**5**	**6**	**7**
GA	GA drawings and elevations	n/a	n/a	n/a	C3		
Active / M&E	Fire alarm systems within apartments	R1	R0	n/a	n/a		
	Fire alarm system in communal and back of house areas	n/a	n/a	n/a	n/a		
	Sprinkler system	n/a	n/a	n/a	n/a		
	Emergency lighting system	n/a	n/a	n/a	n/a		
	Smoke ventilation system in residential corridors	n/a	n/a	n/a	n/a		
	Smoke ventilation system in car park	n/a	n/a	n/a	n/a		
	Smoke ventilation system in basement areas	n/a	n/a	R3	n/a		
	Pressurisation system for stairs	n/a	n/a	n/a	n/a		
	Fire/smoke curtains	n/a	n/a	n/a	n/a		
	Fire exit signage	n/a	n/a	n/a	n/a		
	Fire fighting lift	n/a	n/a	n/a	n/a		
	Evacuation lift	n/a	n/a	n/a	n/a		
	Fire mains	n/a	n/a	n/a	n/a		
	Fire hydrant	n/a	n/a	n/a	n/a		
Passive	Fire compartmentation drawings	n/a	n/a	n/a	n/a		
	Fire resisting walls	n/a	n/a	n/a	n/a		
	Fire resisting floors	n/a	n/a	n/a	n/a		
	Fire doors	n/a	n/a	n/a	n/a		
	Fire stopping (cable penetrations)	n/a	n/a	n/a	n/a		
	Fire stopping (pipe penetrations)	n/a	n/a	n/a	n/a		
	Fire stopping (other)	n/a	n/a	n/a	n/a		
	Fire dampers	n/a	n/a	n/a	n/a		
	Fire resisting ductwork	n/a	n/a	n/a	n/a		
	External wall cavity barriers	n/a	n/a	n/a	n/a		
	Cavity barriers (non-external wall)	n/a	n/a	n/a	n/a		
	Fire resisting glazing	n/a	n/a	n/a	n/a		
	Structural fire resistance	n/a	n/a	n/a	n/a		
Reaction to Fire	External wall materials and surfaces	n/a	n/a	n/a	n/a		
	Internal lining of stairs, protected escape routes, rooms	n/a	n/a	n/a	n/a		
	Roof covering	n/a	n/a	n/a	n/a		

Note 1: The column for RIBA Stage 2 has been provisionally filled in, but for the other stages the level of review that would be required ought to be completed project-by-project. The level of review that is required would depend on the level of coordination that is required. Complex projects and systems would require a higher level of review than simpler ones.

Note 2: RIBA Stages 6 & 7 are greyed out as the design review and construction inspections would be completed by that point.

Note 3: The above list of fire precautions is provisional and should be modified project-by-project to remove items that do not apply to the specific project and add additional items where required. If appropriate, the list could include additional segmentation (e.g. "fire resisting walls" might be broken down into loadbearing and non-loadbearing walls, external walls, etc).

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