

**Report  
for  
The Grenfell Tower Inquiry**

**GRENFELL TOWER:  
THE FIRE RISK ASSESSMENTS OF CARL STOKES**



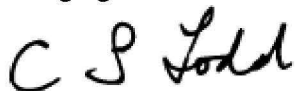
*Fire Safety Consultants*

**August 2020**

## **GRENFELL TOWER: THE FIRE RISK ASSESSMENTS OF CARL STOKES**

Report by:

Colin Todd MBE, MSc, FIFireE, MIRM, MSFPE,  
CPhys, FInstP, C.Build E, FCABE, CEng, FIET  
Managing Director



C.S. Todd & Associates Ltd  
Hutton Roof  
Eglinton Road  
Rushmoor  
Farnham  
Surrey GU10 2DH

Tel:

Fax:

E-mail: [office@cstodd.co.uk](mailto:office@cstodd.co.uk)

Website: [www.cstodd.co.uk](http://www.cstodd.co.uk)

Reviewed by:

Steven Daws MSc, CEng, FIFireE, C.Build E, FCABE  
Technical Director

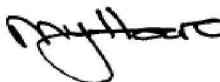


Stephen Robinson BEng, MSc, CEng, MIFireE Associate  
Director and Head of Fire Engineering



Malcolm Hoare, MIFireE

Associate Director and Head of Specialist Training



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# 1. INTRODUCTION

- 1.1 I have prepared this report on the instructions of the Grenfell Tower Inquiry (“the Inquiry”). My instructions were set out in a letter, dated 29 May 2019 and signed by Ms Cathy Kennedy, Deputy Solicitor to the Inquiry.
- 1.2 My instructions require that, to assist in Phase 2 of the Inquiry, I prepare a report that addresses the adequacy of fire risk assessments in the case of Grenfell Tower, including those carried out pursuant to the provisions of the Regulatory Reform (Fire Safety) Order 2015 (the “Fire Safety Order”) and in particular:
1. To describe the training, skills and qualifications that ought to be possessed by a person competent to carry out a fire risk assessment (“FRA”) on a building such as Grenfell Tower;
  2. To describe what steps a competent person could be expected to take when conducting and reporting on an FRA of a building such as Grenfell Tower; and
  3. To examine the FRAs carried out by Carl Stokes (or anyone else) and identify the respects, if any, in which, in my view, they fell short of the standards to be expected of a reasonably competent fire risk assessor.
- 1.3 To address my instructions, I consider, within this report, the competence of Carl Stokes. I do so on the basis of his training, experience and qualifications, in conjunction with the FRAs that he carried out for Grenfell Tower (and other blocks of flats within the RBKC estate).
- 1.4 For the purpose of preparing this report, I have examined around 12,000 documents (albeit, in some cases, multiple duplicates of the same document), provided to me by the Inquiry, comprising witness statements, emails plus attachments, and a miscellanea of other documents, disclosed to the Inquiry by Carl Stokes, Salvus Consulting Limited (“Salvus”) and others. I have also studied the Phase 1 reports of other experts instructed by the Inquiry. Drafting of this report was delayed by a further instruction to delay completion of the report until the Inquiry received a second witness statement, with associated evidence, from Carl Stokes and was made available to me; this occurred in March 2020.
- 1.5 By way of explanation, Carl Stokes carried out FRAs at Grenfell Tower, and other properties managed by the RBKC Tenant Management Organisation (“the TMO”), on behalf of his company, C S Stokes and Associates Limited, from December 2010 until June 2016. Salvus were responsible for the FRA in 2009, but Salvus used the services of Carl Stokes for the FRA in question.
- 1.6 Clearly, the volume of documents studied is too extensive to list within this report. Accordingly, within the report, I cite only significant supporting evidence that is directly relevant to information, opinions and conclusions contained within the report.
- 1.7 In addition to my study of the above documents, I have based the opinions and conclusions expressed in this report on:



- Visits to Grenfell Tower during 2017;
  - My experience in fire risk assessment, in conjunction with my education, training and experience in the field of fire safety, as set out in Annex E to this report.
- 1.8 The following section of this report contains a short summary of the report. In Section 3, I provide an explanation of the legal requirements in relation to FRAs for blocks of flats. In Section 4, by way of background and context, I set out my understanding of the history of FRAs at Grenfell Tower and the circumstances in which it came about that Mr Stokes carried out FRAs for Grenfell Tower.
- 1.9 In Section 5, I consider the training, skills and qualifications of a competent fire risk assessor. In this connection, for reasons that I explain later in this report, there is no explicit requirement under the Fire Safety Order for those carrying out FRAs to be competent. However, there is a requirement for the FRA to be suitable and sufficient, which clearly depends, at least to some extent, on competence on the part of the person who carries out the FRA. In Section 6, I consider the competence of Carl Stokes to carry out FRAs for Grenfell Tower (and, more generally, to give advice on fire safety for Grenfell Tower).
- 1.10 In Section 7, I describe the steps that a competent person could be expected to take when conducting and reporting on an FRA of a building such as Grenfell Tower. In Section 8, I identify any respects in which, in my view, the FRAs of Carl Stokes fell short of the standards to be expected of a reasonably competent fire risk assessor. In Section 9, for rigour, I benchmark Carl Stokes' FRAs against relevant, recognized guidance. In Section 10, I consider the competence of Carl Stokes in relation to miscellaneous advice given to the TMO. Finally, in Section 11, I set out my principal conclusions in respect of the matters that I am instructed to address.
- 1.11 Annex A to this report contains a Competence Standard for fire risk assessors, produced by a stakeholder group, styled as the "Fire Risk Assessment Competency Council", in 2011; this Standard is regarded within the fire safety profession (and by myself) as an authoritative articulation of a reasonable standard against which competence of fire risk assessors should be judged. In Annex B to this report, for completeness and rigour, I set out my findings of an exercise in which I benchmarked Carl Stokes' FRAs, subsequent to 2012, against the recommendations of the British Standards Institution (BSI) publication PAS 79:2012, which constitutes current established guidance and a recommended methodology for carrying out FRAs.
- 1.12 Annex C contains a list of evidence to which I refer in this report. Annex D contains relevant references, such as guidance documents, to which I refer in this report. Where reference is first (and, with significance, subsequently) made within the report to a document in Annex C or Annex D, the reference is followed by square brackets, within which the number of the document in the Annex is given. Annex E sets out my education, training, qualifications and experience in the field of fire safety.

1.13 With particular reference to my experience in the subject of fire risk assessment, it may be relevant to note the following:

- I have carried out FRAs, and have been responsible for quality assurance of FRAs carried out by others in my consulting practice, since FRAs first became a legal requirement in December 1997. Even prior to that date, between 1982 and 1997, I carried out inspections of buildings for the purpose of advising on the safety of occupants from fire, in much the same manner as carrying out a fire risk assessment. I also carried out inspections of blocks of flats, including high-rise local authority blocks, during this period, albeit that these buildings did not fall within the scope of fire safety legislation at that time.
- I am the technical author of the BSI publication PAS 79, which is nationally recognized guidance on fire risk assessment. PAS 79 contains a methodology for carrying out an FRA, as well as a template for recording the significant findings of an FRA. I authored the first version of PAS 79 in 2005, as well as subsequent revisions in 2007 and 2012. I am currently contracted by BSI to revise PAS 79 to create a new PAS 79-1, which will address non-domestic premises, and PAS 79-2, which will address the subject of fire risk assessment for housing, including blocks of flats.
- Since soon after its inception in 2003, I have chaired the Institution of Fire Engineers' Panel that is responsible for registering fire risk assessors on the Institution's Register of Fire Risk Assessors and Auditors (and inspecting officers of enforcing authorities, who are registered on the auditors' section of the Register). As a member of the Panel, I regularly carry out interviews of applicants to the Register, and I am authorized to sign off new interviewers and lead interviewers after monitoring of their performance.
- Since its inception in 2008, I have chaired the Fire Risk Assessment Council of the Fire Industry Association ("FIA"), member companies of which include companies that carry out FRAs. In October 2019, I was re-elected by the Council as Chairman for a further term of two years.
- I chaired the FIA group that produced a first draft of the third party certification scheme, BAFE SP205, which is a third party certification scheme for companies (including sole traders) that carry out FRAs (whether on a commercial basis or in-house) and is operated by British Approvals for Fire Equipment ("BAFE").
- I have delivered training and continuing professional development for the two certification bodies that are authorized by BAFE to carry out third party certification of fire risk assessment companies under the BAFE SP205 scheme.
- I have delivered in-house training courses on fire risk assessment for many fire and rescue services; these courses have been attended by delegates from around 50% of fire and rescue services in the UK.
- I have carried out audits of fire risk assessment companies on behalf of one of the above certification bodies for the purpose of recommending as to whether the applicant companies should be certificated by the certification body.

- 1.14 Inevitably, in addressing my instructions, it is necessary for me to comment, or opine, on matters of law. In this connection, I do not hold myself out as qualified in the field of law. Accordingly, comments and opinions on matters of law are based on my practical experience as an expert witness in around 100 cases involving prosecutions, appeals and determinations by the Secretary of State, and my long-standing working relationships with both regulators (by which I refer to the relevant Government Departments) and enforcing authorities, particularly fire and rescue authorities.
- 1.15 I have previously prepared a report on the same subject matter, as addressed in this current report, for the Metropolitan Police Service (“MPS”). I understand that MPS have disclosed that report to the Inquiry. Although a considerable number of documents disclosed to me for the purpose of this current report were not available at the time of my report for the MPS, the substantive conclusions of this current report are not materially different from those set out in my report for the MPS.
- 1.16 In preparing this report, I understand that my duty is to assist the Inquiry on matters within my expertise. I have complied, and will continue to comply, with that duty. I am aware of the requirements of Part 35 of the Civil Procedure Rules (CPR 35) and the supporting Practice Direction 35 (PD 35), and of the Civil Justice Council Guidance for the Instruction of Experts in Civil Claims (dated August 2014).
- 1.17 I confirm that I have made clear which facts and matters referred to in this report are within my own knowledge and which are not. Those that are within my own knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer. Where, in my experience, a range of opinions on any matter exists amongst fire safety specialists, I have summarized the range of opinion, while clearly giving my opinion along with the reasons for it. I have also identified any assumptions that I have made in reaching my conclusions.
- 1.18 I have previously advised the Inquiry of any potential conflicts of interest in relation to my role as an expert witness for the Inquiry. Since the time of my previous report to the Inquiry in March 2018, the only new potential conflict of interest to arise is the employment, since 11 September 2019, of my son, Keith Todd, as Head of Fire Safety at the Royal Borough of Kensington and Chelsea (“RBKC”).
- 1.19 In order to mitigate any risk to the independence of any opinions that I express in my report for the Inquiry, it has been agreed between the Inquiry and RBKC to put measures in place to prevent exchanges of information that might involve the risk of a conflict of interest. These measures include:
- (1) an agreement that, insofar as it concerns fire safety matters, Keith Todd will not in any way participate or be involved in the giving or consideration of advice to RBKC in relation to any evidence given or proposed to be given, or any submissions it makes or considers making, to the Inquiry concerning:
    - (i) the Grenfell Tower fire; or
    - (ii) any actions, decisions or omissions of RBKC or the TMO before or after the fire; and that Keith Todd and I will not in any way discuss any fire

safety matters relating to RBKC (whether in relation to the Grenfell Tower fire or otherwise).

- (2) Keith Todd and I have both signed an undertaking that we will not discuss in any way whatsoever matters which relate to any steps which may be considered, proposed or taken by RBKC concerning fire safety including, but not limited to:
- (a) any evidence given or proposed to be given, or any submissions to be made or considered to be made, by RBKC to the Inquiry; and
  - (b) any fire safety measures formulated, considered or implemented by RBKC in respect of its housing stock (whether in relation to the Grenfell Tower fire or otherwise).
- 1.20 For completeness, I also record that I was a member of a Fire Industry Association (FIA) Special Interest Group that was responsible for guidance produced in May 2020 by the FIA on the issue of cladding and external wall construction in fire risk assessments for blocks of flats [D17]; as such, I assisted in the drafting of the guidance. I was also a member of a further FIA Special Interest Group that was formed to present to the Home Office FIA views on the recommendations of the Phase 1 report of the Grenfell Tower Public Inquiry.
- 1.21 I would also note that my practice is currently contracted by BSI to draft a new, MHCLG-funded Publicly Available Specification (PAS) on fire risk appraisal and assessment of external wall construction and cladding. I will have a role in management of this project and drafting a small amount of its content. The content, as in the case of any PAS will be the ultimate responsibility of a Steering Group, comprising representatives of relevant sector organizations.
- 1.22 I confirm that I have no potential conflict of interest of any kind other than as set out above. I do not consider that any interest which I have disclosed affects my suitability to give expert evidence to the Inquiry on any issue on which I have given evidence and I will advise the Inquiry if, between the date of this report and the Inquiry hearings, there is any change in circumstances which affects this statement.
- 1.23 I reserve the right to alter my opinions and conclusions in the light of any further information of which I am currently unaware. Under such circumstances, I recognize, and will comply with, my obligation to inform the Inquiry.

## 2. EXECUTIVE SUMMARY

### Requirements for FRAs

- 2.1 The Fire Safety Order requires that a suitable and sufficient FRA is carried out. It is clear, from the evidence provided to me, that the TMO took responsibility for the FRAs required by the Order at Grenfell Tower.
- 2.2 For a block of flats, the scope of the Fire Safety Order (and, hence, the FRAs) includes the common parts and non-domestic areas, such as plant rooms, but does not include the flats themselves.
- 2.3 Prior to the fire at Grenfell Tower in June 2017, and in the aftermath of the fire, the general consensus of opinion was that, in the case of a block of flats, external wall construction, including cladding, fell outside the scope of the Fire Safety Order. That was the view of the LFB after the fire at Shepherd's Court in 2016, and of the then Department for Communities and Local Government ("DCLG") immediately following the fire at Grenfell Tower; it was also the understanding of a fire safety inspecting officer of LFB, who carried out an audit at Grenfell Tower on 27 October 2016.
- 2.4 In my experience, it has always been the case, since the Fire Safety Order came into force in 2006, that FRAs for blocks of flats did not consider external wall construction. This view is also supported by guidance produced by the Fire Industry Association in May 2020. I also note that, in June 2020, a senior and very experienced officer of LFB, seconded as the National Fire Chiefs Council ("NFCC") Building Safety Programme Hackitt Lead commented publicly (on the LinkedIn website) that "*....the RRO is yet to cover cladding.*" (The RRO is a synonym of the Fire Safety Order.)
- 2.5 While, since the Grenfell Tower fire, there has been retrospective consideration of the fire performance of external wall construction of buildings, the assessment of this risk is, in my opinion, quite specialized and beyond the competence of typical fire risk assessors (and typical fire and rescue service fire safety officers). In my experience, this opinion is also commonly held by most (if not all) competent companies that carry out fire risk assessments for blocks of flats. Again, my opinion is supported by the guidance published by the Fire Industry Association in May 2020.
- 2.6 Measures for use by, or the safety of, fire-fighters are also outside the direct scope of the Fire Safety Order, but, where these measures were provided under building regulations (or other legislation), the Fire Safety Order requires that they are subject to suitable maintenance and are maintained in efficient working order and good repair.
- 2.7 It is common for dutyholders to engage the services of an external consultant to carry out their FRAs. However, the duty for the FRA to be suitable and sufficient remains with the Responsible Person and/or any other person who has control of the



premises. Nevertheless, it is well-established that this duty is also imposed on the external consultant who carries out the FRA.

### **FRAs for Grenfell Tower**

- 2.8 Until 2009, FRAs for Grenfell Tower and other properties within the TMO-managed estate were carried out by TMO staff. In 2009, it was found by LFB that these FRAs were not suitable and sufficient. From then onwards, there is significant evidence that LFB cooperated closely with the TMO over a considerable period of time to assist the TMO in achieving compliance with the Fire Safety Order and to progress towards a situation in which the FRAs were suitable and sufficient to the satisfaction of LFB.
- 2.9 In my opinion, the level of assistance afforded to the TMO by LFB was commendable. I would also commend the approach of the LFB officers involved, who adopted the pragmatic approach appropriate in the case of an old building that was not designed to current standards. The stated objective of the officers was to achieve “safe buildings and not necessarily compliant ones”, noting that rigid application of Approved Document B under the Building Regulations “would clearly not be feasible”.
- 2.10 The TMO accepted the opinion of LFB in relation to their FRAs and, almost immediately, took the decision to engage the services of external consultants to carry out FRAs of the entire TMO-managed estate. Buildings were classified as “*High Risk*”, “*Medium Risk*” and “*Low Risk*”. Grenfell Tower was deemed to fall into the “*High Risk*” category, but primarily only because of the height of the building, rather than other risk factors.
- 2.11 It was determined that priority should be given to “*High Risk*” buildings, and a specification, against which companies offering fire risk assessment services could tender, was drawn up by the TMO. I have examined that specification and consider it to be typical of specifications around the time in question.
- 2.12 Four tenders were received for the FRAs. Each of the four tenderers was interviewed by the TMO. I have examined pro-formas, interview notes and the scoring system used in this process, and I consider that the matters investigated at each interview were appropriate. The interview process culminated in the shortlisting of two tenderers. Shortlisting was based solely on perceived quality and ability to deliver the service, rather than price.
- 2.13 The TMO considered that the two shortlisted tenderers were “*head and shoulders*” above the other tenderers. The scores awarded in the interview process to these two tenderers were quite similar, but the price tendered by one tenderer, Salvus, was lower for the total package of FRAs than the other tenderer (though, as it happens, Salvus’ price for the FRAs at Grenfell Tower was 28% higher than that of the other tenderer). Accordingly, the contract was awarded to Salvus.
- 2.14 Salvus employed Carl Stokes on a six-month fixed term contract to carry out the FRAs for blocks of flats that included Grenfell Tower. In my opinion, on the basis of Mr Stokes’ CV, most (if not all) companies involved in the provision of FRA

services would have been content to employ Mr Stokes for the project in question. Salvus have advised the Inquiry that Carl Stokes was not involved in any of the minuted progress meetings with the TMO, or meetings with LFB, nor was he involved in management aspects of the FRA programme.

- 2.15 In this connection, it is relevant, for the purpose of this current report, that, in March 2010, there was email correspondence between the Managing Director of Salvus, Andrew Furness, and representatives of the TMO, including the senior lift engineer of the TMO, which resulted in a decision by Salvus that, from 4 March 2010, for FRAs of blocks of flats over 18m, the FRA would record that the TMO had confirmed that lifts serving the block meet the requirements for firefighting lifts as per a specification provided by the TMO senior lift engineer.
- 2.16 Mr Furness also advised the TMO to record the same information in their documented response to the action plans of the FRAs carried out before 4 March 2010; this would have included the FRA for Grenfell Tower, which was carried out by Carl Stokes, as an employee of Salvus, on 30 September 2009. Mr Furness also noted that the FRAs would, in relation to disabled people, include a wording to the effect that, during the production of any personal emergency evacuation plan (“PEEP”), the TMO would consider the use of the lift for evacuation purposes on a case by case principle.
- 2.17 In 2010, both Salvus and Mr Stokes, in the guise of his sole trader company, C S Stokes and Associates Limited, (along with three other tenderers) were invited to tender for the FRAs for the medium and low risk blocks. The tender from Carl Stokes was successful, as, from tender evaluation and interview, he was rated as first for quality and lowest for price.
- 2.18 Subsequently, as new FRAs for the high risk blocks became due, Mr Stokes was instructed by the TMO to carry out these high risk FRAs, including, of course, that for Grenfell Tower, the previous FRA for which Mr Stokes had carried out on behalf of Salvus.
- 2.19 Mr Stokes carried out this first FRA for Grenfell Tower as a sole trader in December 2010. Thereafter, he carried out further FRAs for Grenfell Tower in 2012, 2014, April 2016 and June 2016. My understanding of the reason for two FRAs in 2016, is that, in April 2016, the refurbishment was nearing completion.

### **Training, Skills and Qualifications of Competent Fire Risk Assessors**

- 2.20 There are currently no express or statutory requirements in relation to the education, training, skills and qualifications of fire risk assessors; the Fire Safety Order does not even require that fire risk assessors are competent, but only that the FRAs themselves are suitable and sufficient, a phrase that is very open to interpretation.
- 2.21 In practice, a fundamental requirement for competence in fire risk assessment involves primarily education, training and experience in the practice of fire safety. Commonly, this can be found in persons with suitable experience as fire safety officers in fire and rescue services, which is the most common background for those employed as fire risk assessors.

- 2.22 Only a minimal amount of additional training and experience is normally necessary to “convert” this competence in the practice of fire safety to competence in fire risk assessment. In my opinion little, if any, special competence is required, in relation to the principles of fire safety, to enable a competent fire risk assessor to carry out a Type 1 (non-intrusive) FRA for a high-rise block of flats with a straightforward layout, such as Grenfell Tower.
- 2.23 In 2011, following growing concern regarding the competence of fire risk assessors, a group of around 30 stakeholder bodies came together, with the encouragement of Government, to establish agreed, industry-wide criteria against which the competence of a fire risk assessor could be judged. I reproduce that Competence Standard as Annex A to this current report.
- 2.24 In effect, the Competence Standard recognizes that few, if any, fire risk assessors can possess in-depth expertise in every aspect of fire safety. The field of fire safety encompasses aspects of many other disciplines, including building construction, mechanical engineering, electrical engineering, structural engineering, law, physics, chemistry, materials science, behavioural psychology and management. While in-depth knowledge in all relevant aspects of such disciplines cannot be expected, a broad awareness of all relevant matters is required (i.e. the fire risk assessor is something of a “general practitioner”, rather than a specialist in a narrow discipline).
- 2.25 Competence (in any profession) also depends on continuing professional development (CPD). CPD is often described as “formal” or “non formal”. For example, formal training, attendance at conferences, etc, would constitute formal CPD, while self-study would constitute informal CPD.

### **Competence of Carl Stokes**

- 2.26 I now turn to the competence of Carl Stokes. I base my consideration of his competence, to some extent, on the information contained in his CV. I begin by consideration of Mr Stokes’ training.
- 2.27 I am content that, in 2006, Mr Stokes was awarded the European Diploma in Fire Safety by the Fire Protection Association. In my opinion, this is a credible qualification, which is equivalent to a Level 4 Diploma, meaning that it is equivalent to the academic learning of a Higher National Certificate. The training includes a one-week residential course on fire risk assessment.
- 2.28 Mr Stokes also appears to have successfully completed a 3-day course, which incorporated course tests, on fire detection and alarm systems. I have examined the programme for this course. In my opinion, it provides more than enough training than would be required in the subject of fire detection and alarm systems for the purpose of carrying out FRAs.
- 2.29 According to his CV, between 2005-2009 Mr Stokes attended the National Occupational Standards (NOS) Courses 2-12. These courses comprised modular training of duration from, typically, 1-5 days. Completion of the NOS courses, which included training in fire risk assessment of both simple and high risk



premises, would be regarded as suitable training for a competent inspecting officer enforcing fire safety legislation within a fire and rescue service.

- 2.30 I can also confirm that, while employed by Oxfordshire Fire and Rescue Service, Mr Stokes successfully completed a 3.5-day examinable course on fire risk assessment, which was delivered by my consulting practice. That course was approved by the IFE for the purpose of their Register of Fire Risk Assessors.
- 2.31 I now turn to the experience of Mr Stokes, who was employed by fire and rescue services between September 1986 and September 2009. I discount, as not greatly relevant, his experience in operational firefighting between 1986 and 1994.
- 2.32 However, my understanding of Mr Stokes' CV is that, between January 1994 and September 2009, Mr Stokes was employed by Oxfordshire Fire and Rescue Service as what would commonly be described as a fire safety officer. Accordingly, his experience during these years appears to have included enforcement of the Fire Safety Order, consultation with licencing authorities and building control bodies, acting as liaison officer for Oxford University and lead fire service officer for four major hospital construction projects.
- 2.33 It is also relevant to note that, in his CV, Mr Stokes states that he has experience of undertaking audits of the common parts of high-rise residential tower blocks. He also refers to experience in FRAs of private flats under the Housing Act, presumably assisting the local authority, which is responsible for enforcement of the Act.
- 2.34 Mr Stokes also notes in his CV that he was part of a working group that drafted very well-known and established guidance on fire safety in certain types of housing (albeit that the guidance excludes purpose-built blocks of flats from its scope). It would appear that he also carried out work for the Fire Brigades Union, including a reference booklet for fire safety officers and installing engineers of fire alarm systems.
- 2.35 On the assumption that Mr Stokes' experience in Oxfordshire Fire and Rescue Service between 1994 and 2009, was, primarily, as a fire safety officer, my opinion is that his experience in the practice of fire safety was substantial and would be more than adequate for transition into the field of fire risk assessment. With regard to his specific experience in fire risk assessment, the June 2016 FRA for Grenfell Tower recorded that Mr Stokes had been carrying out FRAs for seven years, which I consider to be a substantial period of time.
- 2.36 I now turn to the formal qualifications of Mr Stokes. In this connection, in his FRAs, Mr Stokes sets out a plethora of post-nominals. I deal with these in short, by noting that the majority of these post-nominals do not exist as such and are, in my opinion, in totality, extremely misleading. The only relevant and valid post-nominal relates to his European Diploma to which I referred in paragraph 2.27; the other post-nominals would appear to relate simply to various courses he attended, in effect, as part of his CPD.
- 2.37 I now turn to the matter of Mr Stokes' CPD. In this connection, there is evidence that Mr Stokes carried out some formal CPD. That included review of, and

comment on, the LGA Guide on Fire Safety in Purpose-Built Blocks of Flats. In this connection, a search of the email archives of my consulting practice has brought to light correspondence between Mr Stokes and my practice on this subject. I have provided all such email correspondence to the Inquiry.

- 2.38 More generally, in my opinion, there is evidence from Mr Stokes' FRAs that he did maintain an awareness (presumably from non-formal CPD) of serious fires and lessons to be learned from them. There is also evidence to suggest that he took some interest in legal cases involving the Fire Safety Order.
- 2.39 In view of the information outlined above, while I discount a number of post-nominals used by Mr Stokes, I am in no doubt whatsoever that Mr Stokes' education, training and experience were eminently suitable for the purpose of carrying out FRAs of Grenfell Tower (and other buildings within the TMO-managed estate).

### **Steps in an FRA**

- 2.40 Various "text book" guidance exists as to the steps that should be carried out by a competent person in carrying out an FRA of a building, such as Grenfell Tower. Such guidance can be found in the original Government guidance to the Responsible Person on fire risk assessment for premises in which people sleep ("the CLG Guide"), in the British Standards Institution (BSI) guidance on fire risk assessment (PAS 79) and in the Local Government Association guidance on fire safety in purpose-built blocks of flats ("the LGA Guide").
- 2.41 The CLG Guide applies to a wide, disparate range of premises in which people sleep, giving only scant attention to purpose-built blocks of flats. The guidance on FRAs is over-simplistic. It includes a simple one-page sample of a record of the significant findings of an FRA, the brevity of which, in my opinion, would preclude compliance with the Fire Safety Order.
- 2.42 PAS 79 sets out nine practical steps that have been agreed by stakeholders in all versions of this guidance. These expand on the measures that should be considered in each step of an FRA.
- 2.43 PAS 79 also includes a stakeholder-agreed template for recording the significant findings of an FRA. Use of this template is not required for conformity with PAS 79, but it is widely used by fire risk assessors, and it was incorporated within the fire risk assessments carried out by Carl Stokes for the TMO from the time that he was contracted to carry out FRAs by the TMO.
- 2.44 The LGA Guide defines four different "Types" of FRA for purpose-built blocks of flats. Type 1 is the default FRA for compliance with the Fire Safety Order. The other Types of FRA involve intrusive inspection (i.e. opening up of construction) and/or examination of fire safety measures within the flats themselves.
- 2.45 The LGA Guide contains a four-page appendix on the steps that should be carried out in undertaking an FRA for a purpose-built block of flats for compliance with the Fire Safety Order. The guidance in this appendix follows the nine steps of PAS 79,

but, for each step, sets out specific matters that should be considered and further, more detailed steps that should be taken.

### **The FRAs of Carl Stokes**

- 2.46 I have carried out detailed benchmarking of the FRAs of Carl Stokes, principally for Grenfell Tower, but also other properties in the TMO-managed estate, against the CLG Guide, PAS 79 and the LGA Guide. I have also, for complete rigour, benchmarked the FRAs against clauses 4-19 and Annex D of PAS 79, the latter of which contains the template to which I referred in paragraph 2.43.
- 2.47 In short, in my opinion, Mr Stokes' FRAs conformed to the steps specified in all three guidance documents. Since, as noted above, his FRAs incorporated an adapted form of the FRA template provided in Annex D of PAS 79, Mr Stokes was, in effect, compelled to consider the matters advocated as relevant in PAS 79.
- 2.48 In paragraphs 2.27-2.39, I discussed the education, training, qualifications and experience of Mr Stokes in relation to the practice of fire safety in general, and in fire risk assessment in particular. In addition, for the purpose of this current report, I have considered the practical skills of Mr Stokes in carrying out FRAs for high-rise blocks of flats, by study of his documented FRAs. I am assisted in that respect by the level of detail recorded in Mr Stokes' FRAs; the FRAs are amongst the most detailed of the many thousands of FRAs I have studied.
- 2.49 Within the FRAs, there are many "tell-tale" indications that Mr Stokes is competent to carry out a suitable and sufficient FRA in general, and, more specifically, FRAs for high-rise blocks of flats such as Grenfell Tower. Moreover, it is clear that Mr Stokes carried out a thorough examination of all areas of the buildings, including plant rooms and the roof. He also appears to have been meticulous in checking of records. However, I do not agree with Mr Stokes' statement that FRAs need not be given to the fire authority, which I consider inappropriate.
- 2.50 In all Mr Stokes' FRAs from 2012 onwards, he made reference to external cladding, even though, as noted in paragraph 2.3, there is a substantial body of opinion that external cladding is outwith the scope of the Fire Safety Order. In the case of the June 2016 FRA for Grenfell Tower, Mr Stokes' FRA noted that the refurbishment included new external cladding, which he stated was "fire rated". He also stated that there had been approval of the cladding and its fixing system by the RBKC building control department.
- 2.51 There is evidence that, during the construction project, Mr Stokes was concerned regarding the method of fixing the cladding. As a result of his concerns, Mr Stokes recommended to the TMO that it be confirmed that the building control department of RBKC were satisfied with the fire performance of the cladding that was to be used and the method of its fixing. I am unclear as to what action was taken by the TMO in response to this recommendation and to any feedback to Mr Stokes on the matter.
- 2.52 However, the proposed plans for the refurbishment would have been subject to approval by RBKC building control officers, following consultation with LFB.

Moreover, the building control department issued a Completion Certificate. Furthermore, there is evidence that, quite separately, Mr Stokes took steps to confirm with Rydon that the new cladding met the requirements of the Building Regulations, and he claims to have been provided with a statement by Rydon to the effect that the cladding did comply with the Building Regulations.

- 2.53 Accordingly, it was, in my view, reasonable for Mr Stokes to assume that the cladding, and its method of fixing, complied with the relevant requirements of the Building Regulations 2010. In this connection, I consider it important to note that an FRA is not a compliance audit (in relation to, for example, the requirements of the Building Regulations). In any FRA, it is not only reasonable, but is essential, to make assumptions regarding compliance with the Building Regulations, particularly in the case of a recent, major refurbishment.
- 2.54 Accordingly, other than by cutting out a sample of the cladding and sending it for analysis, or by double checking the work of RBKC building control department, neither of which would have been at all appropriate for the purpose of an FRA, there was, in my opinion, no way that Mr Stokes could have become aware of the very hazardous nature of the polyethylene core aluminium composite material or deficiencies in the installation of the cladding. While Mr Stokes' assumption regarding the fire performance of the new cladding was, with the benefit of hindsight, totally incorrect, this does not, in my opinion, detract from the competence of Mr Stokes to carry out FRAs for high-rise blocks of flats.
- 2.55 Arising from my study of Mr Stokes' FRAs, I also consider it relevant to bring to the attention of the Inquiry the issue of leaseholder flat entrance doors across the TMO-managed estate. It is clear that there was considerable discussion and correspondence between the TMO and LFB on this matter, the upshot of which was that LFB refused to assist the TMO by taking action against leaseholders who would not address issues in relation to the fire performance of their flat entrance doors. In my opinion, the position adopted by LFB was inappropriate and not consistent with the position of certain other fire and rescue authorities.
- 2.56 Notwithstanding the above, the LGA Guide advises that flat entrance door assemblies that were deemed to satisfy the requirement for 30 minutes' fire resistance at the time of construction of a block of flats or manufacture of the door are likely to continue to provide adequate performance in the event of fire provided they remain in good condition; the Guide advises that upgrading of these doors, simply to satisfy current, more onerous fire resistance tests, should not be a generic recommendation of an FRA for all blocks of flats.
- 2.57 There is evidence that Mr Stokes did examine leaseholder doors to confirm the adequate condition of the doors. Accordingly, it is likely to be the case that the failure to replace these doors is simply a failure to satisfy the TMO policy on flat entrance doors (which was to replace original doors with new 30-minute fire resisting doors), rather than any breach of the Fire Safety Order.
- 2.58 It is relevant to note that Mr Stokes' FRAs contain an error in relation to the lifts at Grenfell Tower and, in all probability, all other lifts in high-rise blocks within the TMO-managed estate. He advised that the lifts were firefighting/evacuation lifts,



which, certainly in the case of the lifts at Grenfell Tower, was not correct. However, I am inclined to the view that this information was based on information agreed between Salvus and the TMO at the time Mr Stokes was employed by Salvus to carry out FRAs (see paragraphs 2.15-2.16). Nevertheless, in 2011, Mr Stokes appears not to have understood, or to have ignored, a change in position of the TMO senior lift engineer in relation to the status of these lifts.

- 2.59 As discussed above, Mr Stokes incorporated within his FRAs a template included within PAS 79, but he made minor adaptations to this template. One particular adaptation was an amendment of wording in the PAS 79 template, the latter of which indicated that firefighters' switches on lifts should be tested every week. Mr Stokes altered the wording from "weekly testing" to "monthly inspection".
- 2.60 There is some ambiguity as to what Mr Stokes intended should be carried out in the monthly inspections, but I note that he made no recommendations to the TMO for weekly testing of these switches, nor have I seen any records to show that weekly testing was carried out. For objectivity, I would note that, in my experience, many competent fire risk assessors who do not use the PAS 79 template tend to overlook this matter, which is also commonly overlooked by many organizations that, nevertheless, demonstrate a commitment to fire safety in their buildings.
- 2.61 In Section 8 of this report, I give extensive and detailed consideration to both positive and negative findings arising from my study of Mr Stokes' FRAs. Inevitably, in the very detailed study of these FRAs warranted by the tragic fire at Grenfell Tower in June 2017, there are, in my opinion, some minor deficiencies, but, in general, these are outweighed by the many positive aspects of Mr Stokes' FRAs.
- 2.62 An FRA will not necessarily identify every deficiency in fire precautions, particularly those of a minor nature, nor does the existence of an FRA preclude the occurrence of a serious fire or the need for ongoing management of fire safety; an FRA is something of a "snapshot" of the fire risk at the time of the FRA, somewhat akin to the MoT test of a motor vehicle.

#### **Miscellaneous Advice Given by Carl Stokes**

- 2.63 Between 2010 and the time of the fire at Grenfell Tower in June 2017, Mr Stokes quite frequently gave advice on fire safety matters to the TMO, sometimes unilaterally, when he observed matters that caused him concern. In general, I have found the advice to be appropriate and competently provided by Mr Stokes. I would take issue with only three significant matters in the advice Mr Stokes gave the TMO, which I discuss in the paragraphs below.
- 2.64 Firstly, he advised Claire Williams that the lifts at Grenfell Tower were firefighting lifts. I have previously discussed the likely route by which Mr Stokes came to this conclusion.
- 2.65 Secondly, Mr Stokes advised against the provision of premises' information boxes (PIBs). I disagree with that advice and do not consider that familiarization visits by a fire and rescue service constitute an alternative to the provision of PIBs. While, at the time in question, PIBs were not commonplace in general needs blocks of flats,

there was, in my opinion, no need to recommend against them in the light of a request by LFB for their provision.

- 2.66 Thirdly, Mr Stokes appeared to believe that conformity with the recommendations of BS 5839-6 in relation to smoke/heat alarms in flats constituted a requirement under the Building Regulations 2010. This is incorrect (though the same error can be found in one of the Inquiry's expert reports). BS 5839-6 recommends a level of coverage that is, in fact, greater than specified in Government recommendations that support the Building Regulations.
- 2.67 In the interest of objectivity, I consider it necessary to opine that, in the context of the extensive advice provided by Mr Stokes to the TMO over a period of seven years, the above issues, which have come to light only as a result of very close scrutiny of all correspondence between the TMO and Mr Stokes that has been disclosed to the Inquiry, do not detract from the competence of Mr Stokes in the practice of fire safety and fire risk assessment.

### **Conclusions**

- 2.68 In summary, while there is no legal requirement for a fire risk assessor to possess any particular education, training or qualifications, in my opinion, the education, training and experience of Carl Stokes was sufficient for him to carry out FRAs for high-rise blocks of flats, such as Grenfell Tower. In my opinion, Carl Stokes was competent to carry out FRAs for Grenfell Tower.
- 2.69 Any shortcomings in the FRAs carried out by Mr Stokes are, in my opinion, quite minor in the overall context of a suitable and sufficient FRA. The obvious exception is a statement that would imply that the cladding at Grenfell Tower satisfied the requirements of the Building Regulations 2010, which, in my opinion, was a reasonable assumption on the part of Mr Stokes. A further exception is Mr Stokes' assumption that the lifts were firefighting lifts, which is likely to have resulted from an assumption based on information originally agreed between Salvus and the TMO in 2009, while not taking into account a change in the position of the TMO's senior lift engineer in relation to these lifts in 2011.
- 2.70 With regard to the cladding, Mr Stokes was clearly aware of the fire hazards of cladding, and the need for its compliance with the Building Regulations. Accordingly, during the refurbishment project, Mr Stokes advised the TMO to confirm that the cladding and its method of fixing were satisfactory to the building control department of RBKC. In this connection, it is fair to say that the fire performance of the cladding was a matter for control under the Building Regulations at the time of its design and installation, rather than a matter for investigation in a fire risk assessment (the scope of which, in my opinion, it did not fall within) after it had been installed. In contrast, Mr Stokes acknowledges in his second witness statement that what he describes as "compliance of the façade" was not within his ability.
- 2.71 In my opinion, Mr Stokes was absolutely right to voice his concerns regarding the sample of cladding that he observed. I consider it entirely appropriate for any person engaged to advise on any aspect of fire safety, no matter how limited, to draw

attention to any matter outside the scope of the work for which they are engaged, if they consider that matter might impact on the safety of the public; competence in the matter should not be a pre-requisite for voicing concern.

- 2.72 However, it is, by definition, within the character of a competent person that they should recognize the limits of their own ability and be prepared to supplement their own knowledge, where necessary, by the expertise of others. In my opinion, the action of Mr Stokes in referring the matter of cladding to the building control body, if, as he states, this was outwith his own ability, was precisely the action of the competent person defined above.
- 2.73 Indeed, the Inquiry might consider that Mr Stokes' advice to the TMO had the potential to avert the Grenfell Tower tragedy. Tragically, for reasons that it is for the Inquiry to determine and not for speculation by an expert witness, that potential did not materialize.
- 2.74 Finally, with regard to the FRAs carried out by Carl Stokes, the Inquiry may consider that the tragic circumstances of the fire at Grenfell Tower in June 2017, involving such a dreadful death toll, begs the question as to how it might be the case that the June 2016 FRA for Grenfell Tower might be regarded as suitable and sufficient in the context of the Fire Safety Order.
- 2.75 In my opinion, the unprecedented circumstances of this fire were completely outside the potential for such an FRA to address. With the knowledge we now have of the reasons that the fire spread so extensively through the building, I am of the opinion that a fire risk assessment intended to satisfy the Fire Safety Order could not possibly have determined that a tragedy of this nature, resulting from a multiplicity of failures, but fundamentally the fire hazard of the cladding, was even a remote possibility.

### 3. LEGAL REQUIREMENTS FOR FIRE RISK ASSESSMENTS

- 3.1 Article 9(1) of the Fire Safety Order requires that the “*Responsible Person*” must make a suitable and sufficient assessment of the risks to which “*relevant persons*” are exposed for the purpose of identifying the “*general fire precautions*” he needs to take to comply with the requirements and prohibitions imposed on him by or under the Order. This assessment is universally described as a “fire risk assessment”.
- 3.2 If the premises comprise a workplace, the “*Responsible Person*” is the employer if the workplace is to any extent under his control. If the premises are not a workplace, the “*Responsible Person*” is the person who has control of the premises in connection with the carrying on by him of a trade, business or other undertaking (for profit or not). (Where the person in control of the premises does not have control in connection with carrying on a trade, business or other undertaking, the Responsible Person is the owner of the premises.)
- 3.3 By virtue of Article 5(3) of the Fire Safety Order, the fire safety duties imposed on the Responsible Person, including the duties imposed by Article 9, are also imposed on every person, other than the Responsible Person, who has, to any extent, control of the premises so far as the requirements relate to matters within his control.
- 3.4 By virtue of Article 5(4), this other person on whom the Fire Safety Order imposes duties includes anyone who, by virtue of any contract or tenancy, has an obligation of any extent in relation to maintenance or repair of the premises, including anything in or on the premises, or the safety of the premises. Hereafter, in this report, I refer to these other dutyholders as “Article 5(3) persons”.
- 3.5 While the Fire Safety Order applies to the common parts and non-domestic areas of a block of flats (see below), it is a moot point as to the identity of the “*Responsible Person*”, particularly where, as is commonly the case, there is both a freeholder and a managing agent. I am aware of one prosecution case (possibly the first of its kind), in which the Prosecution successfully argued that the managing agent of the block of flats in question was either the Responsible Person or the Article 5(3) person, but were relatively ambivalent as to which mantle was the more appropriate.
- 3.6 In practice, it makes little difference as to whether, for example, a managing agent is a Responsible Person or an Article 5(3) person. In the case of premises that are not a workplace, the duties imposed on the Responsible Person and the Article 5(3) person are the same, and they are imposed, in both cases, only to the extent of the person’s control.
- 3.7 It is only in the case of a workplace that a difference in the extent of the fire safety duties differs; in the case of a workplace, the duty imposed on an employer, as Responsible Person, to ensure the safety of employees from fire is relatively unconditional, whereas the duties imposed on the Article 5(3) person remain imposed only to the extent of their control.
- 3.8 My own opinion, based on my understanding of the relationship between RBKC and the TMO, is that, for the purpose of the Fire Safety Order, the TMO were the



Responsible Person, while RBKC were an Article 5(3) person. However, for the purpose of this report, it is not necessary to further explore the identity of the Responsible Person or the Article 5(3) person.

- 3.9 By virtue of Article 2 of the Fire Safety Order, “*relevant persons*”, the safety of whom is the primary objective of the Fire Safety Order and, hence, the FRA carried out thereunder, comprise any person who is or may be lawfully on the premises and any person in the immediate vicinity of the premises who is at risk from a fire on the premises.
- 3.10 “*Relevant persons*” do not include firefighters carrying out firefighting activities. However, the Fire Safety Order does require maintenance of facilities provided within a building for use by, or the safety of, firefighters under legislation, such as building regulations.
- 3.11 In the case of a block of flats, the “*premises*” in respect of which the Fire Safety Order imposes duties on the Responsible Person (and, hence, the Article 5(3) person) comprise the common parts (i.e. corridors, lobbies, stairways and communal facilities), plant rooms, etc, but not the flats, which, as domestic premises, are outside the scope of the Fire Safety Order (other than in relation to the power to issue a prohibition notice). However, the residents within the flats are “*relevant persons*”, as they are located in the immediate vicinity of the common parts and are at risk from a fire in the common parts.
- 3.12 It follows that the consideration of means of escape within individual flats, and the provision of fire safety measures, such as smoke alarms, fall outside the scope of the Fire Safety Order and the FRA required by Article 9 of the Order. The safety of occupants of a flat from fire is addressed by other legislation, which I discussed in Section 10 of my March 2018 report for the Inquiry [C1].
- 3.13 There is a substantial body of opinion (generally held by the fire risk assessment profession and the London Fire Brigade prior to the Grenfell Tower fire, as well as both the then Department for Communities and Local Government and the Home Office immediately after the fire) that the external walls of a block of flats are outside the scope of the Fire Safety Order. While, in the case of a purpose-built block of flats, the Fire Safety Order applies to parts of the premises which are used in common by the occupants of more than one flat, it is generally argued that it is not reasonable to regard the external walls as “used” by the occupants of more than one flat.
- 3.14 I could postulate counter-arguments to the above position. For example, it could be argued that an external wall of a block is “used” as a substrate on which certain services that serve multiple flats are supported. Alternatively, it might be argued that, in, for example, an old block of flats with external wall construction that does not satisfy modern building regulations, this issue impacts on the fire evacuation strategy, the latter of which falls within the scope of Article 15 of the Fire Safety Order. However, my opinion is that these arguments are somewhat puerile and that, in fact, it was never envisaged, in the drafting of the Fire Safety Order, that external wall construction would fall within the scope of the Order.

- 3.15 Accordingly, while only a Court can determine the meaning of legislation, in my experience, there was, at the time of the Grenfell Tower fire, a general opinion that external wall build up, including cladding, cavity barriers, etc, fell outside the scope of the Fire Safety Order and, therefore, did not, strictly, need to be considered in an FRA. Certainly, in my experience, prior to the Grenfell Tower fire, external wall construction would not normally have been considered by fire risk assessors as a matter of custom and practice.
- 3.16 This opinion is emphatically supported in guidance produced by the Fire Industry Association (FIA) in May 2020 [D17]. (The FIA is the largest fire protection trade association in the UK, and member companies include many companies that carry out fire risk assessments, all of which are required to be third party certificated for the purpose as a condition of membership. As recorded in Section 1 of this current report, I was a member of the FIA Special Interest Group responsible for the guidance document to which this paragraph refers, and I was involved in the drafting of the guidance.)
- 3.17 Moreover, in my experience, the assessment of the fire performance of external wall construction is quite specialized, beyond the competence of typical fire risk assessors (and fire and rescue service fire safety officers) and, often, incapable of informed opinion purely on the basis of a visual inspection; intrusive inspection, involving destructive exposure and, sometimes, testing of materials, might be necessary. Again, this opinion is widely held within the fire safety profession, and is supported by the FIA guidance to which I referred in the previous paragraph.
- 3.18 Notwithstanding the above, the Public Inquiry are probably aware that the Government has introduced a Fire Safety Bill that will “*clarify*” that building owners and managers of multi-occupied residential premises of any height must fully consider and mitigate the risks of any external wall systems in discharging their duties under the Fire Safety Order. An MHCLG Advice Note [D15] strongly advises building owners to consider the risks of any external wall system in their FRAs, irrespective of the height of the building, ahead of the planned “*clarification*”.
- 3.19 I respectfully suggest that this “*clarification*” is somewhat disingenuous on the part of the Government, and that the “*clarification*”, to which MHCLG (and the Home Office in their explanatory note on the new Fire Safety Bill) refer, is little more than a euphemism for “reinterpretation” or “extension of scope”. In my experience, given the reaction of fire risk assessors and fire risk assessment companies to the MHCLG Advice Note, this opinion is overwhelmingly held within the fire risk assessment sector, within which there are calls for fire risk assessors explicitly to exclude detailed consideration of external wall construction in their FRAs and advise the Responsible Person that this is a matter, if necessary, for specialist advice by others. This is the advice to fire risk assessors within the FIA guidance, to which I referred above<sup>1</sup>.

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<sup>1</sup> It is also relevant to note that, more recently, in June 2020, Mr N Coombe MBE, a senior and experienced officer of LFB, stated publicly (on the LinkedIn website) that “...the RRO is yet to cover cladding.” Mr Coombe was seconded into the Home Office shortly after the Grenfell Tower fire, and, since 2019, has been seconded as the NFCC Building Safety Programme Hackitt Lead. He is a member of the Industry Safety Steering Group chaired by Dame Judith Hackitt [D19].

- 3.20 By virtue of Article 4 of the Fire Safety Order, “*general fire precautions*” comprise:
- (a) measures to reduce the risk of fire on the premises and the risk of the spread of fire on the premises;
  - (b) measures in relation to the means of escape from the premises;
  - (c) measures for securing that, at all material times, the means of escape can be safely and effectively used;
  - (d) measures in relation to the means for fighting fires on the premises;
  - (e) measures in relation to the means for detecting fire on the premises and giving warning in case of fire on the premises; and
  - (f) measures in relation to the arrangements for action to be taken in the event of fire on the premises, including:-
    - (i) measures relating to the instruction and training of employees; and
    - (ii) measures to mitigate the effects of the fire.
- 3.21 Accordingly, for an FRA to be suitable and sufficient, and thereby compliant with Article 9(1) of the Fire Safety Order, it is necessary for the FRA to give consideration to each of the matters from Article 4 of the Fire Safety Order as set out in paragraph 3.20 above. To further assist the Inquiry in interpretation of the term “*general fire precautions*”, in practice, in my opinion, the measures in question may be described in more common parlance as follows:
- measures to prevent the outbreak of fire;
  - compartmentation, fire stopping (e.g. of service penetrations in fire-resisting walls and floors), fire doors, etc;
  - suitably protected escape routes and fire exits;
  - emergency escape lighting, fire exit signage and smoke control;
  - fire extinguishers;
  - fire detection and fire alarm systems;
  - appropriately disseminated fire procedures;
  - instruction and training of employees in fire safety;
  - arrangements for management of fire safety.
- 3.22 Article 8 of the Fire Safety Order imposes a general duty in relation to adequacy of general fire precautions, but more specific duties are imposed by Articles 10-22 of the Fire Safety Order. Many of these Articles impose more specific requirements in relation to the general fire precautions to which Article 8 makes reference. For example, Article 14 makes requirements in relation to escape routes, fire exits, emergency escape lighting and escape route signs.
- 3.23 While FRAs must give consideration to all of the matters described in the above paragraphs, it is not necessarily the case that each of the measures described were required at Grenfell Tower. Under the Fire Safety Order, physical fire precautions need only be provided “*where necessary*”. The obvious general fire precautions that

would not be necessary at Grenfell Tower, as a purpose-built block of flats, are a communal fire alarm system and fire extinguishers within the common parts (though fire detectors were necessary as part of the smoke control system).

- 3.24 Article 9(3) of the Fire Safety Order requires that the FRA must be reviewed “regularly”, so as to keep it up to date and particularly if:
- (a) there is a reason to suspect that it is no longer valid; or
  - (b) there has been a significant change in the matters to which it relates, including when the premises’ special, technical and organisational measures, or organisation of the work, undergo significant changes, extensions or conversions.

Where changes to an FRA are required as a result of any such review, the Responsible Person must make them.

- 3.25 The term “regularly” is not defined in the Fire Safety Order. It is commonly considered that best practice is for FRAs for most buildings to be reviewed annually. In the case of a high-rise block of flats, such as Grenfell Tower, this would be consistent with published guidance on fire safety in purpose-built blocks of flats [D1].
- 3.26 It should be noted that review of an FRA is not synonymous with carrying out a new FRA. It is quite common for a full and detailed FRA to be carried out, after which there are then annual reviews on one or more occasions before the next full and detailed fire risk assessment. Nevertheless, for the highest risk premises, new, full FRAs might be carried out annually [D1].
- 3.27 There are various reasons to suspect that an FRA may no longer be valid (e.g. when a material alteration takes place, a significant change occurs in factors that were taken into account in the original FRA, or a significant change in fire precautions occurs).
- 3.28 If the review of an FRA has arisen simply from the passage of time, all aspects of the original fire risk assessment might need to be revisited to ensure that they have not been subject to change. If there has been little or no change, a short review document might be completed. If the review has arisen purely as a result of a specific material alteration, it might be the case that an even more limited review and documentation of findings is sufficient.
- 3.29 Clearly, after the last refurbishment at Grenfell Tower, there was a requirement for the FRA to have been at least reviewed or, preferably, for a completely new FRA to have been carried out. In my opinion, the scope of the refurbishment was such that a completely new fire risk assessment was appropriate.
- 3.30 It is common for the relevant dutyholders (i.e. the Responsible Person and the Article 5(3) person) to engage the services of an external fire risk assessor to carry out FRAs for the premises for which the dutyholders are responsible, reflecting an expectation that an external consultant who specializes in FRAs will have greater expertise in carrying out an FRA than the dutyholder.

- 3.31 However, it is not uncommon for the dutyholder to carry out the regular reviews of the FRAs required by Article 9(3) of the Fire Safety Order, while periodically re-engaging the services of the external fire risk assessor to carry out new, full FRAs.
- 3.32 This practice is based on the reasonable premise that routine reviews of FRAs (i.e. reviews triggered solely by the passage of time, rather than known material alterations to the premises) are primarily concerned with checking that there are no significant changes to the premises or their fire precautions that would be detrimental to fire safety, and that existing fire safety measures continue to be maintained in place.
- 3.33 Regardless of whether the services of an external specialist are used to carry out FRAs, as case law has demonstrated, the legal responsibility for compliance of the FRA with the requirements of the Fire Safety Order remains with the Responsible Person or Article 5(3) person on whom the Fire Safety Order imposes a duty in relation to carrying out the FRA. In some cases, in which a breach of Article 9(1) of the Fire Safety Order is alleged, prosecution proceedings have been pursued against the dutyholder, while no proceedings have been taken against the external fire risk assessor.
- 3.34 Equally, by engaging in a contract to carry out an FRA, the fire risk assessor becomes an Article 5(3) person, on whom a duty to ensure that the FRA is suitable and sufficient is imposed because, in effect, the contract to carry out an FRA results in an obligation on the fire risk assessor in relation to the safety of premises. In this connection, there have been numerous successful prosecutions of external fire risk assessors, sometimes, but not always, along with successful prosecution of their client; at the time of writing this current report, I am aware that further prosecution cases are in progress.



## **4. BACKGROUND TO FIRE RISK ASSESSMENTS AT GRENFELL TOWER**

- 4.1 In this section of my report, I set out my understanding of the background to the FRAs carried out for Grenfell Tower. I also outline the circumstances whereby these FRAs came to be carried out by Carl Stokes.
- 4.2 As is the case for all blocks of flats, FRAs for Grenfell Tower were required by the Fire Safety Order to be carried out from 1 October 2006. I have been presented with no evidence as to the history of FRAs for Grenfell Tower prior to 2009, but that history is irrelevant to this report.
- 4.3 (It might be argued that, under previous legislation, known as the Workplace Fire Precautions Legislation (see Section 8 of my March 2018 report [C1]), from 1 December 1997, FRAs were required to be carried out for those parts of Grenfell Tower that were deemed to constitute a workplace; however, in the case of blocks of flats, any such FRAs would have been carried out in pursuance of the safety of employees, and, as such, they were, at most, considered to be something of a token gesture, as those at potential material risk from fire in a block of flats are the residents, the safety of whom was outwith the direct scope of this legislation.)
- 4.4 I would note, in passing, that it was often some years after the Fire Safety Order came into force before freeholders began routinely to carry out FRAs for purpose-built blocks of flats; moreover, prior to the Lakanal House fire in Camberwell on 3 July 2009, enforcement of the Fire Safety Order, and the requirement for FRAs by fire and rescue authorities, was relatively minimal. (I discussed the culture of enforcement of the Fire Safety Order in the case of blocks of flats in my March 2018 report to the Inquiry [C1], as well as my report to the MPS on Carl Stokes' June 2016 FRA for Grenfell Tower.)
- 4.5 Against that background, there is evidence that, at least by 2009, FRAs had been carried out for Grenfell Tower. These had, apparently, been carried out by in-house staff of the TMO, rather than by any external fire risk assessors. In principle, there was nothing untoward about such a practice. Indeed, the Government position, when the Fire Safety Order was introduced, was that the Order did not impose any new major burden on those for whom the Order imposed duties, because, for example, Responsible Persons would frequently be able to carry out their own FRAs without the need to employ external specialists.
- 4.6 In 2009, LFB carried out audits of TMO-managed blocks of flats under the Fire Safety Order. It was found by LFB that the FRAs carried out by the TMO staff were not "up to a satisfactory standard" [C2]. (I am not aware as to the alleged deficiencies in the FRAs.)
- 4.7 Again, such a situation was far from uncommon; many organizations endeavoured to carry out their own FRAs, consistent with the above Government "party line", only to find that the skills of in-house employees were inadequate to carry out a suitable and sufficient FRA, and that the appointment of external specialists was, in fact, necessary.

- 4.8 There is considerable evidence that LFB cooperated closely with the TMO over a considerable period of time to assist the TMO in achieving compliance with the Fire Safety Order and, in particular, to ensure that the TMO progressed towards a situation in which FRAs for the TMO-managed estate, including Grenfell Tower, were suitable and sufficient to the satisfaction of LFB [e.g. see C3, C4 and C5].
- 4.9 In my opinion, the cooperation and assistance afforded to the TMO by LFB was commendable [C4]. My overall impression of the approach of LFB to cooperation with, and rendering assistance to, the TMO in this respect was, in my opinion, consistent with the Cabinet Office's "*Enforcement Concordat*" [D2], which recommended that enforcement of legislation should be helpful and fair, rather than heavy-handed.
- 4.10 I would also commend the approach of individual fire safety officers involved in liaison with the TMO, who, for example, (in my opinion, quite properly) advised the TMO that the objective was to achieve "safe buildings and not necessarily compliant ones", such that, for example, rigid application of Government guidance on the measures appropriate for compliance with current building regulations (i.e. Approved Document B [D3]) "would clearly not be feasible" in the case of the existing TMO-managed building stock [C6].
- 4.11 In this connection, guidance on measures required for compliance with current building regulations is not intended to be applied retrospectively to existing buildings, nor has this ever been the case. Moreover, to do so would commonly be impracticable. All fire safety guidance documents, codes of practice and standards are subject to regular revision, and new versions frequently make more onerous requirements and recommendations than previous versions. It would not be reasonably practicable continually to make changes, often of a major nature, to existing buildings and their fire safety measures in consequence of these regular revisions. Indeed, it could reasonably be argued that retrospective application of new guidance would preclude raising of standards, as those drafting guidance would be reluctant to impose significant changes on existing buildings and their fire safety measures.
- 4.12 The TMO appear to have accepted the advice of LFB in respect of the inadequacy of the FRAs carried out by their in-house staff. Accordingly, they took the decision to engage the services of external consultants to carry out FRAs for the entire estate for the purpose of compliance with the Fire Safety Order [C7 and C50].
- 4.13 For this purpose, in consultation with LFB, buildings within the estate were grouped into three categories, according to a (somewhat subjective) categorization of potential fire risk. The nomenclature adopted for the three risk categories was "*High Risk*", "*Medium Risk*" and "*Low Risk*". Grenfell Tower was deemed to fall into the "*High Risk*" category, apparently because of, *inter alia*, the height of the building. (All blocks of six floors and above were considered to be potentially high risk [C64].)
- 4.14 It was determined that priority would be given to carrying out FRAs for the "*High Risk*" buildings, after which attention would be focussed on the "*Medium Risk*" and "*Low Risk*" buildings. In my opinion, this strategy was perfectly sound. It was also

agreed with LFB that work involved in upgrading fire precautions, to the extent identified as necessary by FRAs, could be carried out over a period of five years [C8].

- 4.15 In pursuance of the decision to appoint an external fire risk assessment company, a detailed specification, against which tenderers for the FRA work could quote, was drawn up [C9]. I have read this specification, and, generally, I consider it to be adequate. It is consistent with typical specifications of the time for FRA work involving a very large estate of properties and, judging its contents by the standards of 2009, there are no material omissions or errors.
- 4.16 If considered in comparison with today's typical specifications of local authorities and other large users of FRA services, the specification lacks definitive requirements for competence (of the FRA company and the fire risk assessors carrying out the FRAs), a subject that is currently very much to the fore as a result of the Hackitt Review [D4].
- 4.17 However, it is important to note that, in 2009, there were no third party certification schemes for FRA companies. The TMO specification required that tenderers operated a quality management system (QMS) that conformed to BS EN ISO 9001 [D5], which, in fact, is a more onerous requirement, in terms of management of quality, than is required under the main third party certification scheme that now exists for FRA companies (BAFE SP205) [D6]. Preference was expressed for the QMS to be certificated by a United Kingdom Accreditation Service (UKAS) accredited third party certification body. Accordingly, in my opinion, in 2009, the requirements of the specification in terms of quality management were sufficient.
- 4.18 The specification did require that "*the consultant*" (by which I assume was intended to mean those fire risk assessors carrying out the FRAs for the successful tenderer) must hold "*a current fire risk assessment qualification e.g. from IOSH, NEBOSH, the Northern Ireland Fire Safety Panel or similar to be submitted for approval by the TMO before the consultant's tender is accepted*" [C10]. This is a somewhat unusual miscellanea of supposed qualifications.
- 4.19 The first two bodies (IOSH and NEBOSH) are concerned with health and safety; NEBOSH are an awarding body that can award qualifications in health and safety; they do offer a certificate in fire safety and risk management, though my understanding is that it is intended mainly for those who have a responsibility for fire safety in their workplace, rather than for professional fire safety consultants. The Institute of Safety and Health (IOSH) did, at one time, maintain a register of their health and safety practitioner members who offered fire risk assessments.
- 4.20 The Northern Ireland Fire Safety Panel is a forum in which authorities that enforce fire safety legislation and building regulations come together to discuss common standards and policies. In 2002, I developed, and delivered, a three-day fire risk assessment course, which the Panel arranged in Northern Ireland. Subsequently, on behalf of the Panel (and then, later, on behalf of my own consulting practice) I delivered many of these courses (of 3.5 days' duration) to enforcing authorities (and then as public courses of 4.5 days' duration) in Great Britain.
- 4.21 The course incorporated an examination (of around three hours) and was recognized by the Institution of Fire Engineers (IFE) as a means of "fast tracking" applicants onto the Institution's Register of Fire Risk Assessors and Auditors ("the IFE Register").



However, it would not be appropriate to regard completion of the course as a formal qualification. At this stage in my report, I would note that, in December 2007, Carl Stokes did undertake this course, and successfully passed the course examination, while employed as a fire safety officer by Oxfordshire Fire and Rescue Service.

- 4.22 Ideally, to ensure the competence of the fire risk assessors, the specification might have required that the assessors be registered on the IFE Register (or on one of the other professional registers operated by the Institute of Fire Prevention Officers or the Institute of Fire Safety Managers, or would be certificated under a recognized certification scheme for fire risk assessors operated by Warrington Certification, which later became known as Warringtonfire). However, in 2009, the Warrington Certification scheme had only just been accredited by UKAS, while, across the UK, the cohort of registered fire risk assessors across the three professional body registers amounted to only around 150 fire risk assessors.
- 4.23 Accordingly, in 2009, it would, arguably, have been quite restrictive to limit the fire risk assessors for the TMO estate to those so registered; in my experience, it would certainly not have been universal custom and practice for registration to be a specified pre-requisite of tender specifications.
- 4.24 It was decided by the TMO that five organizations should be invited to tender for the “*High Risk*” FRAs. The invitation to the five organizations to tender for these FRAs was issued on 17 July 2009, with a stated deadline of 7 August 2009 for submission of tenders [C11]. Tenderers were invited to submit fixed fees for five defined sizes of “*High Risk*” building, described as “*Very small blocks*”, “*Small blocks*”, “*Medium blocks*”, “*Large blocks*” and “*Extra large blocks*”.
- 4.25 In my opinion, this was a reasonable categorization of the TMO-managed estate for the purpose of obtaining the FRA tenders. Grenfell Tower was categorized as “*Large*”, as this term was defined as blocks containing between 101 and 150 dwellings [C12].
- 4.26 Tenderers were also invited to submit two different prices for each size of block, according to whether the FRAs for all “*High Risk*” blocks would be completed within 6 months or 12 months. The invitation also required that prices be quoted for periodic reviews of FRAs, hourly rate work for ad hoc advice, etc.
- 4.27 One of the organizations invited to tender was the building control department of RBKC, who volunteered their services for the work. However, they did not, ultimately, submit a tender for the FRA project. The reasons given by the building control department for declining the invitation to tender included the extent of work required within the timescale permitted for the work and the extent of detail, required by the TMO specification, to be obtained within the permitted timescale [C13].
- 4.28 Four organizations submitted tenders in accordance with the required pricing format. The decision of the TMO in respect of these tenders appears to have been based on a combination of the anticipated quality of work and competence of the FRA company, as perceived by the TMO, and the overall price for the “*High Risk*” FRA programme, with greater emphasis on the former, rather than price. In this connection, all four tenderers were interviewed by representatives of RBKC and the TMO.

- 4.29 From a study of the handwritten notes of these interviews and the reports of the interviewers' conclusions [C14], my opinion is that there was proper scrutiny of the four tenders. The interviews were clearly based on pre-prepared pro-formas, with pre-determined questions for discussion with tenderers [C14]. For each interview, there were two separate pro-forma questionnaires; one of these contained eight generic questions for discussion with each tenderer, while the other contained specific questions for the tenderer in question, based on the tenderer's tender return.
- 4.30 The generic questions related to the matters outlined below, with a maximum score of five points for the first seven matters, resulting in a maximum possible score of 35, with a maximum of a further 10 points allocated to the specific questions in relation to the particular company's tender, so an overall maximum of 45 points. It should be noted that this scoring, which resulted in shortlisting of two tenderers, did not take cost into account, but only perception of competence, management standards and ability to deliver the service.
- 1) Interpretation of the Fire Safety Order in relation to residential blocks and the extent to which it impacts upon the residents and their dwellings.
  - 2) The approach to FRAs in residential blocks and experience of putting this into practice, with an example of a complex issue which arose from a residential FRA and how this was resolved.
  - 3) Following the fire at Lakanal House, the view of the tenderer on its impact on the scope of residential FRAs and how they are undertaken.
  - 4) How it was anticipated that residents' physical disabilities, vulnerabilities, etc, impacted upon the FRA and the extent to which this could influence the resulting risk rating.
  - 5) Arrangements for producing plans, which the TMO specification required to be produced for each block that was assessed.
  - 6) Predicted turnaround time between completion of each FRA and delivery of the report.
  - 7) Ability to complete the FRA programme for the "*High Risk*" blocks within 6 months as opposed to 12 months, and how this would be achieved.
  - 8) Any additional requirements which, if not considered, could prevent the work from being carried out as comprehensively as required.
- 4.31 The findings of the interviews were that two of the four consulting practices that tendered were considered to be "*head and shoulders above*" the other two practices [C55]. This appears to have been based on the perceived potential quality of the FRAs and the ability to deliver the service that the TMO required. I am, obviously, aware of the names of all four practices, but, as this report will, ultimately, be disclosed to the public, I consider it inappropriate to name all four companies in this report.
- 4.32 Accordingly, while I refer to the successful tenderer, Salvus, by name, I refer to the unsuccessful tenderers simply as companies A, B and C. To explain to the Inquiry something of the analysis of tenders carried out by the TMO, which, ultimately,

resulted in the appointment of Salvus, I set out below some basic information regarding the four tenderers and their tenders.

4.33 In this connection, I draw attention to the following:

Company A:

This company specializes in the provision of consulting services related to fire safety, particularly fire safety training but also fire risk assessment. The company is based in West London and appears to be very small in size, but, currently, financially stable.

Current limited company information shows that there is only one director, who is also the company secretary. Their audited accounts, dated August 2018, show that their total current assets are around £43,000 (apparently representing the amount owed by debtors), while their total net worth (current assets minus current liabilities) is £208.

The current website of the company claims that they provide services throughout Greater London and beyond, with services in London provided by consultants who have all served with the fire and rescue service.

The director of the company, in conjunction with a fire safety consultant (who is known to me), attended the interview with the TMO. At interview, it was stated that four consultants would be allocated to the FRA programme and that completion of the programme in six months was very achievable.

In the eight areas for discussion, the company scored 24 points out of a maximum of 35, with a further seven points for their responses to the specific questions in relation to their tender, so 31 points overall, which was the highest of the four scores. They were, accordingly, shortlisted for consideration.

The overall cost quoted for the programme, taking into account prices for the different sizes of block, was the highest of the four tenders. The price quoted for an FRA of Grenfell Tower was £400, or £440 if the FRA programme was carried out within six months of appointment [C15].

Company B:

This organization also specializes in the field of fire safety. The organization is well-known to me, and I am aware that, as an organization, they have considerable experience in carrying out FRAs on a national basis.

This is a large organization with 12 directors and has extremely high financial stability, with a net worth, as at May 2018, of just under £1 million.

The interview with the TMO was attended by two representatives of the organization (both of whom are well-known to me). At interview it was stated that three consultants (described in the TMO interview notes as “part time employees”) would be allocated for completion of the programme in six months, or two consultants for completion in 12 months.

In the eight areas for discussion, the company scored 14.5 points out of a maximum of 35, with a further two points for their responses to the specific questions in relation to their tender, so 16.5 points overall, which was the lowest of the four scores. They were, accordingly, not shortlisted for consideration. They were informed by the TMO that their “*experience and technical and managerial abilities were limited*” resulting in their fourth place in the interview process [C16].

The overall cost quoted for the programme, taking into account prices for the different sizes of block, was the second lowest and was described to them by the TMO as a “*very competitive fee quotation*”. The price quoted for an FRA of Grenfell Tower was £450, or £475 if the FRA programme was carried out within six months of appointment [C17].

Company C:

This company is a further micro firm, which specializes in the provision of training and consultancy in health and safety. Current business records show that the company is a subsidiary of a larger company. The most recent accounts show that the total net worth of the company is £1,350, and the company is currently shown by Experian as a maximum financial risk.

I have been unable to identify any current website for the company. However, I have examined the website of the company, as it existed in June 2009. The website, at that time, did indicate that FRAs were a service that the company could provide.

The interview with the TMO was attended by three representatives of the company, one of whom is shown on the June 2009 website of the company as the managing director and a chartered health and safety practitioner. A second representative was shown on

the June 2009 website as a consultant concentrating on general health and safety consultancy.

The third representative is shown on the interview notes as affiliated to a different company, perhaps (though this is speculation on my part) as a potential sub-contractor, given that, in the “About Us” on the June 2009 website, none of the persons listed is indicated as having any specific experience in fire safety; the company to which this third representative is shown as affiliated did offer specific services in the field of fire safety and fire risk assessment.

In the eight areas for discussion, the company scored 20 points out of a maximum of 35, with a further five points for their responses to the specific questions in relation to their tender, so 25 points overall, which was the second lowest of the four scores. They were, accordingly, not shortlisted for consideration. They were informed by the TMO that their *“technical ability was considered to be good but the interview panel had reservations about your management skills and as a consequence placed you in third place [C18]”*.

The overall cost quoted for the programme, taking into account prices for the different sizes of block, was the second highest of the four submissions. The price quoted for an FRA of Grenfell Tower was £725, regardless of whether the programme was carried out over 6 months or 12 months [C19].

Salvus Consulting Limited: This company, which is based in High Wycombe, is a safety consultancy, whose scope of services include health and safety, fire safety and environmental matters. Their total net worth, as at March 2018, is £195,400, and the company remains financially stable. They had, apparently, since April 2009, been engaged to deliver RBKC’s corporate health and safety training programmes.

The interview with the TMO was attended by Andrew Furness who was (and remains) the managing director of the company, along with Steve Wain, who was stated to be a senior fire risk assessor. In 2007, Mr Furness co-authored a publication on fire safety management, which remains in print and is said to be used as a handbook for students on NEBOSH fire safety courses [C20].



It was said at interview that Steve Wain would lead the FRA programme, while Andrew Furness would be responsible for quality control. It was also stated that the company would allocate four consultants to the programme, enabling them to complete the programme within six months; no additional charge was quoted by the company for completion of the programme in six months, rather than 12 months.

In the eight areas for discussion, the company scored 22 points out of a maximum of 35, with a further seven points for their responses to the specific questions in relation to their tender, so 29 points overall, which was the second highest of the four scores. They were, accordingly, shortlisted for consideration.

The overall cost quoted for the programme, taking into account prices for the different sizes of block, was less than that quoted by the other shortlisted tenderer. However, the price quoted for an FRA of Grenfell Tower was £565, regardless of whether the programme was carried out over 6 months or 12 months, which was actually the second highest of the four prices quoted for FRAs of large blocks, and is 28% higher than the price quoted by the other shortlisted tenderer [C21].

Salvus were informed by letter (incorrectly dated 26 July 2009, but presumably 26 August 2009) that their tender was successful [C22]. The letter indicated an intention to arrange for Salvus to attend a project briefing meeting and a meeting with LFB, both of which were to take place before the agreed start date of 24 September 2009.

- 4.34 Subsequent initial liaison between Salvus and the TMO appears to have been undertaken, on the part of Salvus, primarily by Andrew Furness. Salvus have advised the Inquiry that:

*"Several other members of the Salvus Team were involved in the KCTMO contract and Carl Stokes was not present or party to any of the minuted progress meetings with KCTMO (copies attached on separate upload) or meetings with the Fire & Rescue Service, during the term of the Salvus contract. Neither was Carl Stokes involved in the management aspects of the Fire Risk Assessments (i.e. a separate Risk Assessment was prepared in this respect and is attached as TMO FRA Management Report) or the KCTMO contract."* [C23]

- 4.35 For the purpose of later sections of this current report, it is relevant to note, at this stage, that there was email correspondence between Mr Furness and the TMO regarding what were described (in the case of Grenfell Tower and, in all

probability, certain other high-rise block of flats, erroneously) as “*fire fighting lifts*”; the TMO senior lift engineer, Robin Cahalarn was included in the email correspondence [C24]. (I return to the status of these lifts in Section 8 of this report.)

- 4.36 The outcome of this correspondence was that, on 3 March 2010, Mr Furness sent an email to Janice Wray, the TMO’s Health and Safety Advisor, with copies to other parties including Mr Cahalarn, stating that, in the FRAs for all (high-rise) blocks visited on or after 4 March 2010, Salvus would include a statement that, *inter alia*, “*TMO has confirmed that lifts serving the block (over 18m in height) meet the requirements for fire fighting lifts as per specification provided by TMO senior lift engineer*” [C24].
- 4.37 Furthermore, the email suggested to Janice Wray that, as the TMO worked through the action plan in respect of previous FRAs (i.e. those carried out before 4 March 2010, which had questioned the specification of lifts in high-rise blocks in relation to suitability for use by the fire and rescue service in the event of fire) the TMO include the same statement “*...to indicate closure, thereby showing that TMO is actioning the findings of the FRA’s thus complying with the requirements of the Fire safety order (sic)*” [C24].
- 4.38 In the same email, Mr Furness also stated that the FRAs would, in a paragraph relating to disabled persons, include the following wording, namely “*During the production of any PEEP TMO will consider the use of the lift for evacuation purposes on a case by case principle*”. Mr Furness also asked whether this paragraph was applicable to include in blocks under 18m in height [C24].
- 4.39 In fact, a meeting attended by various persons including the TMO senior lift engineer, concluded that “*most of the Borough’s lifts met the majority (but not all) of the criteria which define a firefighting lift*” [C25]. An actual specification of the key lift parameters was sent to LFB for their information in July 2010, along with a table of locations at which so-called “firefighting lifts” were provided [C26]. The email, within which the specification was incorporated, acknowledged that the lifts in the TMO-managed high-rise blocks of flats did not fully satisfy all the criteria for firefighting lifts.
- 4.40 While it is obvious from this specification that a key feature of a firefighting lift, namely duplicate power supplies, was not included, I would not consider it reasonable for operational personnel of LFB to have examined the specification in sufficient detail to have determined this, as they would not be expected to possess expertise in firefighting lift design. (Local LFB crews were also given instruction on the use of the lifts [C27].)
- 4.41 Evidence provided by Salvus shows that Carl Stokes was employed to support the existing Salvus team, specifically on the TMO FRA project, on a six-month fixed contract basis, commencing 24 September 2009, with a view to extending the contract should the successful completion of the initial contract for FRAs of the high risk blocks lead to further work [C23]. (In my report to the MPS, I suggested that it was possible that Mr Stokes might have acted as a sub-contractor to Salvus, and that is how, in his first witness

statement [C57], Mr Stokes describes his relationship with Salvus; evidence produced by Salvus alleges that this was not the case and that he was personally employed under a fixed term contract of employment.)

- 4.42 At this stage, I would note that, based on the training and experience of Mr Stokes, as set out in his CV [C28], it is my opinion that most companies involved in the provision of fire risk assessment services (arguably, all companies involved in such activities as a mainstream of their work) would have been entirely content to employ Mr Stokes for the purpose that he was employed by Salvus.
- 4.43 Mr Stokes carried out an FRA of Grenfell Tower, as an employee of Salvus, on 30 September 2009 [C29]. This appears to be the only FRA carried out by Mr Stokes for Grenfell Tower in his role as an employee of Salvus.
- 4.44 As the timely completion of the six-month FRA programme for the high risk blocks neared completion, the TMO, as originally intended, focussed their attention on the next stage of work, namely the FRAs for the medium risk and low risk blocks. For this purpose, Salvus were invited to tender for the work, but Mr Stokes, in the guise of his sole trader company, C S Stokes and Associates Limited, was, in August 2010, also invited to tender [C57 and C62]. Three other companies were also invited to tender for the work [C63].
- 4.45 In my opinion, the decision to invite Mr Stokes to tender for this work was not unreasonable. Mr Stokes had already carried out FRAs, including that for Grenfell Tower, and it was intended that he continue to do so, on behalf of Salvus, if Salvus' tender had been successful. The only possible disadvantage would be that associated with employment of any sole trader, namely the absence of any internal peer reviews of FRAs prior to submission (plus the more minor potential for delay in the programme as a result of sickness, etc.).
- 4.46 However, the TMO were not entirely devoid of any knowledge of fire safety; for example, Janice Wray was employed as the TMO health and safety adviser, and it is abundantly clear from evidence that she liaised quite closely with Carl Stokes on fire safety matters, albeit relying on his expertise on many matters of detail. It would appear that Mr Stokes was also able to convince the TMO that he had access to resources that would take into account unforeseeable incapacitation [C63].
- 4.47 The specification for the work was very similar to that originally prepared in 2009 for the high risk blocks. The tender evaluation process was similar to that carried out for the high risk blocks. Of the five tenders, the tender from Carl Stokes (i.e. C S Stokes and Associates Limited) was considered to be first in quality and lowest in price for a six-month programme (as opposed to a 12-month programme), a period for which LFB had expressed a preference [C63]. Accordingly, Mr Stokes' company was engaged, under a formal contract, to carry out the FRAs for the medium risk and low risk blocks.



- 4.48 My understanding is that Mr Stokes was subsequently instructed to carry out fire risk assessments for the high risk blocks, such that, in effect, he was responsible for all FRAs for the TMO-managed estate. My further understanding is that there was no formal extension of Mr Stokes' contract for this purpose, nor do I consider that this was essential. In this connection, the TMO specification for the FRAs of medium risk and low risk blocks was almost identical to that for the high risk blocks and was, in my opinion, sufficiently general for it to be so.
- 4.49 Subsequent to his engagement directly by the TMO, Mr Stokes carried out FRAs for Grenfell Tower in:
- December 2010 [C30];
  - November 2012 [C31];
  - October 2014 [C32];
  - April 2016 [C33];
  - June 2016 [C34].
- 4.50 My understanding of the reason for two FRAs in 2016 is that, in April 2016, the building was about to be handed over to the TMO following the refurbishment. The June 2016 FRA was carried out after the handover of the building to the TMO. It was the June 2016 FRA, completed after the refurbishment, that was current at the time of the fire in June 2017.
- 4.51 For avoidance of doubt, to assist the Inquiry, I would note that in my opinion:
- 1) The circumstances that led to the appointment of an external consultant to carry out FRAs on behalf of the TMO are unremarkable and were, in my experience, quite commonplace at the time in question.
  - 2) The process by which the TMO appointed Salvus to carry out FRAs was adequate; a reasonable specification was produced for tender purposes, and the selection process, by which Salvus were appointed, was quite thorough.
  - 3) It was reasonable for Salvus to employ Mr Stokes to carry out the FRAs.
  - 4) It was reasonable for the TMO to appoint Mr Stokes to carry out the FRAs, subject to acceptance of the inherent disadvantages of appointing a sole trader for this work.

## 5. TRAINING, SKILLS AND QUALIFICATIONS OF A COMPETENT FIRE RISK ASSESSOR

- 5.1 I am instructed to advise the Inquiry as to the training, skills and qualifications that ought to be possessed by a person competent to carry out an FRA on a building such as Grenfell Tower. I address this matter in this current section of my report by, firstly, considering the matter of competence of fire risk assessors in general and, thereafter, considering the (quite limited) number of additional considerations that apply to more specific competence in relation to FRAs for high-rise blocks of flats. Ongoing competence also depends on continuing professional development (“CPD”). Accordingly, in this section, I also discuss the requirement for CPD on the part of competent fire risk assessors.

### Competence of Fire Risk Assessors: General

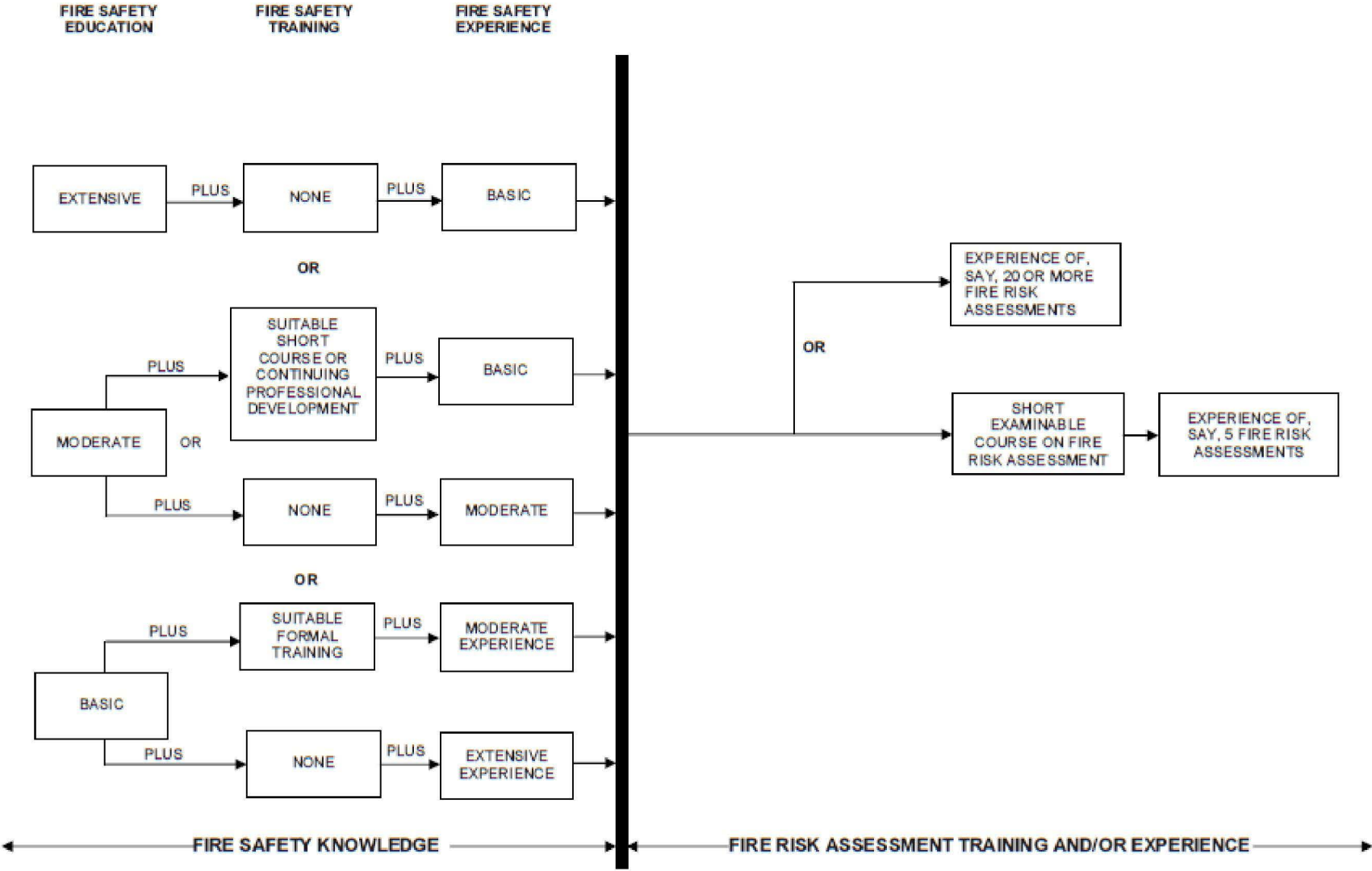
- 5.2 With regard to the general issue of competence of fire risk assessors, as noted in Section 1, there are, currently, no express or statutory requirements in relation to this matter; the Fire Safety Order does require that FRAs are “suitable and sufficient”, but there is no express requirement for FRAs to be carried out by competent persons.
- 5.3 Article 18 of the Fire Safety Order does require that the Responsible Person must appoint one or more competent persons to assist him in undertaking the “*preventive and protective measures*”. By definition, these are the measures identified by the Responsible Person in consequence of a risk assessment as the general fire precautions required for compliance with the Fire Safety Order. (The term “*general fire precautions*” has the meaning given by Article 4 of the Fire Safety Order, and it includes all the measures, such as means of escape, compartmentation, managerial arrangements, including maintenance, etc, that are necessary for the safety of building occupants.)
- 5.4 Article 18(8) requires that, where there is a competent person in the Responsible Person’s employment, that person must be appointed as the competent person described above, in preference to a competent person not in his employment. In a large organization, such as the TMO, this competent person is not necessarily a person who carries out the FRAs; indeed, were it otherwise, by virtue of Article 18(8), it would not be possible for organizations to employ the services of external fire risk assessors. The competent person will often be responsible for management of, or liaison with, any external fire risk assessors; in the case of the TMO, I would regard Janice Wray as fulfilling the role of the competent person to whom Article 18 refers.
- 5.5 The absence of any specific requirement of the Fire Safety Order in relation to competence of fire risk assessors is by no means an oversight. The objective of the reform of fire safety legislation that led to the Fire Safety Order, under the powers of the Regulatory Reform Act 2001, was rationalization and simplification of the complex legislation under which fire safety was previously controlled, with a view to reducing burdens on business.
- 5.6 Accordingly, as discussed in Section 3, the Government position was that the requirement for FRAs under the Fire Safety Order was not a new burden; FRAs

were already required in workplaces, under the Workplace Fire Precautions Legislation, for the purpose of ensuring the safety of employees.

- 5.7 The Government position in relation to that legislation, which came into force on 1 December 1997, was (in my opinion, somewhat disingenuously) that many employers would, with the assistance of guidance produced by Government, be able to carry out their own FRAs, without the need to engage in the expense of employing external specialists. It was argued by the Government that the same situation would apply under the Fire Safety Order.
- 5.8 Notwithstanding the above, soon after the Fire Safety Order came into force (and, arguably, well before this), it rapidly became clear that particular skills were required to carry out FRAs for all except the smallest of premises. In that connection, I refer to the IFE position (which I drafted for the Institution), namely that, in general, other than in the case of simple, low risk premises, fire risk assessors, particularly those offering their services on a commercial basis (e.g. consultants), need:
- a) a good understanding of the legislation under which the FRA is required;
  - b) a sound underpinning combination of education, training, knowledge and experience in the principles of fire safety;
  - c) an understanding of fire development and the manner in which people behave when exposed to fire;
  - d) training and/or experience in carrying out FRAs;
  - e) an understanding of the fire hazards, fire risks and occupants especially at risk from fire that are likely to occur in the premises, or part of the premises, for which the FRA is carried out.
- 5.9 The further position of the IFE is that, in the context of the above list, education is likely to involve formal education of a relatively academic nature, often culminating in a qualification (although not necessarily to degree level). Training involves training of a practical nature, often given “on the job”. Knowledge can be obtained by academic study, training, working alongside others, short courses, continuing professional development or any combination of two or more of these.
- 5.10 The further IFE position is that it is not implied that education, training and experience in the principles of fire safety need each be extensive, provided that the combination of each results in adequate knowledge. Moreover, a high level in respect of any one of these might compensate for a lower level in another.
- 5.11 The position set out in paragraphs 5.8-5.10 inclusive has been reproduced, verbatim, in every version of PAS 79 [D8], the BSI guidance on fire risk assessment (of which I am the author), including the first version of PAS 79, which was published in 2005. PAS 79 is widely regarded as authoritative guidance on the subject of fire risk assessment. It is now commonly specified in tender specifications for FRAs. As well as setting out a process for carrying out FRAs, as noted, PAS 79 provides “high level” guidance on the competence required of fire risk assessors.

- 5.12 Accordingly, paragraph 7.2 of PAS 79:2012 (page 17) recommends that all FRAs should be carried out by a competent person, who need not possess any specific academic qualifications but should:
- a) understand the relevant fire safety legislation;
  - b) have a thorough knowledge and understanding of the Government guidance document relevant to the premises in question;
  - c) have appropriate education, training, knowledge and experience in the principles of fire safety;
  - d) have an understanding of fire development and the behaviour of people in fire;
  - e) understand the fire hazards, fire risks, and relevant factors associated with occupants especially at risk within premises of the type in question;
  - f) understand the causes of fire and means for their prevention;
  - g) understand the design principles of fire protection measures;
  - h) have appropriate training and/or experience in carrying out FRAs.
- 5.13 With further regard to the blend of education, training and experience required of a competent fire risk assessor, I reproduce, as Figure 1 (below), a schematic that was included in the 2005 and 2007 versions of PAS 79. (It was not included in the 2012 version of PAS 79, as, by then, a more formal Competence Standard, which might be described as more “outcome based” had been published.) I originally developed this schematic to assist the IFE in reviewing the suitability of the education, training and experience of applicants to the IFE Register of Fire Risk Assessors. Its purpose was to reinforce the point that, for example, extensive practical experience can lead to competence equivalent to a combination of formal training and less experience. The “Competence Standard”, which I discuss later in this section of my report, is readily available on the websites of the stakeholders that produced it, and it is included, in full, in the 2012 version of PAS 79.

Figure 1: Schematic example of appropriate education, training and experience of fire risk assessors





- 5.14 It should be noted that the schematic incorporates two separate components as a basis for competence, the major component comprising sound education, training and experience in the principles of fire safety, such as to provide underpinning knowledge in these principles. The second, simpler component, which needs to be “bolted on” to this underpinning knowledge of fire safety, comprises training and/or experience in the specific subject of fire risk assessment. It remains the policy of the IFE that both components are required for registration of applicants to the IFE Register of Fire Risk Assessors.
- 5.15 It should be noted that, to some degree, skills in the practice of fire safety are often based, to a significant extent, on what might be described as experiential learning (particularly in the case of fire risk assessors with a background in fire and rescue services). Similarly, the skills arising from the “bolt on”, to which I referred above, often come from examination of the FRAs of Responsible Persons and their fire risk assessors, often in conjunction with experience in employment by a fire risk assessment company; again, this might amount largely to experiential learning.
- 5.16 The reason for this “bolt on” is that, particularly in the early days of the Fire Safety Order (but, in my experience, even today), the most common background for fire risk assessors was, and remains, experience in enforcing the Fire Safety Order (and earlier fire safety legislation) within fire and rescue authorities. As such, often, their education, training and, particularly, experience have related to relatively rigid application of prescriptive codes of practice, with only minimal opportunity to exercise professional judgement that would result in risk-proportionate fire precautions, above or below the standards of those prescribed in the relevant code of practice.
- 5.17 As originally noted in Clause 7 of the 2005 and 2007 versions of PAS 79, only a minor amount of training and/or experience might then be necessary to convert their competence in the principles of fire safety to competence in fire risk assessment. For example, successful completion of a short, examinable course, plus experience of carrying out, say, five FRAs over a period of, say, three months might be sufficient. Alternatively, in the absence of such formal training, experience of carrying out a greater number of FRAs (say, 20 or more) over a longer period of time (say, six months) might be equally sufficient.
- 5.18 By 2011, in the light of experience, including the emergence of inadequate fire risk assessments for premises that suffered multiple fatality fires, there was growing concern regarding the competence of those who provide fire risk assessment services to dutyholders on a commercial basis (i.e. for a fee). Accordingly a “task and finish” group, entitled the Fire Risk Assessment Competency Council (“FRACC”), comprising around 30 stakeholder bodies, came together, with the encouragement of Government, to establish agreed, industry-wide criteria against which the competence of a fire risk assessor could be judged (e.g. by bodies involved in the registration or certification of fire risk assessors).
- 5.19 In discussions during the drafting of the Competence Standard, stakeholders recognized that few, if any, fire risk assessors can possess in-depth expertise in every aspect of fire safety. The field of fire safety encompasses aspects of many other disciplines, including building construction, mechanical engineering, electrical

engineering, structural engineering, law, physics, chemistry, materials science, behavioural psychology and management. It is virtually impossible for any fire risk assessor to have intimate knowledge of the granular detail of each discipline relevant to fire safety.

- 5.20 However, it would be correct to say that the fire risk assessor does need a broad awareness of all aspects of these disciplines relevant to fire safety. (In this connection I draw an analogy with a medical general practitioner, who can advise on the general health of a patient, but needs to defer to specialists in relation to particular issues.)
- 5.21 Accordingly, in the Competence Standard, the field of fire safety is subdivided into 10 different subject areas, each of which is the subject of a separate appendix within the Competence Standard. The agreed premise on which the Competence Standard is based is that a competent fire risk assessor will have a basic knowledge of every one of the topics within the appendices, but cannot be expected to have specialist knowledge, beyond the topics contained within the appendices, in each subject area.
- 5.22 I represented the Fire Industry Association (“FIA”) on the FRACC, and I drafted some of the content. The FIA also provided the secretariat for the FRACC. I reproduce the Competence Standard in full as Annex A to this current report. Within that Annex will be found a list of the majority of the stakeholders who formed the FRACC.
- 5.23 The Competence Standard is freely available for download from the websites of most fire and rescue authorities, the IFE and the FIA. More significantly, at every interview of applicants to the IFE Register of Fire Risk Assessors, the interviewers are furnished with a copy of the Competence Standard, and the interviewers are required to use the Competence Standard as a basis for their determination of the competence of the applicant.
- 5.24 It is relevant to note that, in relation to the external envelope of the building, the Competence Standard requires only that fire risk assessors understand the role of fire resisting external walls in protection of external escape routes (an issue that did not arise at Grenfell Tower), visual damage to the building envelope (an issue that did not arise at Grenfell Tower) and the fire hazards of sandwich panels (which were not present at Grenfell Tower); there is no suggestion that the fire risk assessor have competence in the design of external walls or the fire performance of cladding. As a member of the working group that prepared the Competence Standard, I am able to state categorically that there was no expectation that fire risk assessors possess competence in these matters.
- 5.25 Finally, in relation to the general skills required of a competent fire risk assessor, I consider it relevant to draw attention to the fact that competent fire risk assessors need not possess high-level academic qualifications (e.g. arising from education to degree standard, though a minority of fire risk assessors may be so educated).
- 5.26 Indeed, in my opinion, even chartered engineers, registered by the IFE as fire engineers, need not necessarily possess the practical skills required to carry out an FRA of an existing building; the experience of some fire engineers often relates

primarily to design of complex buildings in accordance with the requirements of building regulations, such that, when faced with an existing building designed in accordance with earlier building regulations, they have difficulty in adopting the pragmatic, risk-based approach required in an FRA, but struggle to do little more than audit a building against guidance that supports current building regulations.

- 5.27 I have no doubt that the opinion of some qualified fire engineers might be contrary to the opinions expressed above; some fire engineers might well believe that academic education in fire engineering renders them capable of carrying out an FRA, but, in my experience, academic education in fire engineering does not impart the practical skills necessary to carry out an FRA. Moreover, my view does reflect the policy of the IFE in relation to registration of fire risk assessors; while a chartered or incorporated engineer, registered with the Engineering Council by the IFE, is not, for the purpose of registration, required to provide further evidence of knowledge and skill in the practice of fire safety generally, they are required to present the same evidence, and to be subject to the same interview process, in relation to fire risk assessment, as an applicant who has no engineering qualifications.

### **Competence of Fire Risk Assessors for High-Rise Blocks of Flats**

- 5.28 In expressing opinions on the competence required to carry out FRAs for high-rise blocks of flats, I focus primarily, as instructed, on blocks of flats such as Grenfell Tower. In this connection, in my opinion, many so-called High Risk Residential Buildings (“HRRBs”) are not of a complexity that requires significant additional competence on the part of fire risk assessors, in relation to the principles of fire safety, beyond that required for FRAs of many other types of premises. In my further opinion, this view is entirely applicable to Grenfell Tower.
- 5.29 In this connection, the layout of Grenfell Tower on each of the upper floors was identical and simple to understand. The design of means of escape was very straightforward, comprising a limited distance of travel through a lobby to reach the single stairway that was provided as means of escape. In terms of physical fire precautions, the fire risk assessor would be required to consider only the following matters, which would, equally, need to be considered for virtually any other type of building, namely:
- measures to prevent fire within the common parts and plant areas, which, in a block of flats, are much simpler than in, for example, an office, shop, factory, etc;
  - the design of the means of escape, which, as noted above, was extremely simple, particularly compared to the design of means of escape in, say, a large office building;
  - emergency escape lighting and its routine testing and maintenance;
  - compartmentation and fire stopping, principally comprising consideration of flat entrance doors, but also, for example, visual integrity of walls in the common parts, fire stopping of cables within risers, etc, the latter of which must be considered in any FRA and which, even in moderately sized office buildings, can

necessitate much more extensive visual inspection than in the case of a high-rise block of flats;

- physical protection of the escape stairway, principally comprising an examination of stairway doors, which are much more extensive in number in many commercial buildings, and walls;
- fire safety signs, which, in a block of flats with a single staircase, need, at most, be minimal, whereas much more extensive signage is required in a commercial building with multiple directions of escape;
- the provision of fire extinguishers, which is extremely simple in a block of flats because no fire extinguishers are required within common parts; in a commercial building there is a need to ensure adequate provision of fire extinguishers throughout circulation spaces, etc;
- fire detection and alarm systems, which in a commercial building are extensive in scope and often quite complex, whereas, in a block of flats, there is no communal fire alarm system in the common parts; the provision of smoke alarms within flats is a possible consideration, but is extremely simple and is, in any case, outwith the scope of the Fire Safety Order.

5.30 I acknowledge that, in a high-rise block of flats, there are further considerations, such as fire safety measures associated with refuse chutes and smoke control provisions. The former is very simple to understand and address, while many commercial buildings require smoke control arrangements that can be significantly more complex than found in blocks of flats. Moreover, in an FRA, it would not be expected that the original smoke control design calculations (if any), etc, be re-evaluated, since it would be a reasonable expectation that these matters were properly resolved under the relevant building regulations; there would, nevertheless, be a need for the fire risk assessor to understand the design principles of the system.

5.31 Furthermore, in a commercial building, there are many issues that must be considered in an FRA, but that do not normally arise in the case of an FRA for a block of flats. Examples are sprinkler systems, other special fire suppression systems (e.g. in IT rooms or plant rooms), portable heating appliances (which do not arise within the common parts of a block of flats), fire safety measures within commercial kitchens, the use of dangerous substances, such as flammable liquids and gases, etc.

5.32 Equally, I do acknowledge that experience in carrying out FRAs for blocks of flats (or, at least, some form of fire inspections or audits, such as carried out by the fire and rescue service in pursuance of enforcement of the Fire Safety Order) is important. This is something of a “Catch 22” situation, in that a fire risk assessor will not have experience of FRAs for blocks of flats until they have carried out their first few FRAs, but, on the other hand, an end user of the assessor’s services would, ideally, not wish to be the first to use the services of a fire risk assessor for their blocks of flats.

5.33 Nevertheless, the benefits of experience in carrying out FRAs for blocks of flats relate not to assimilation of new, or complex, fire safety principles, but simply an understanding of custom and practice, particularly good practices, principally in



relation to management considerations, though often necessitating an understanding of design codes at the time of construction of the block. Management considerations include arrangements for promulgation of fire safety information to residents (particularly in relation to the “stay put” strategy normally adopted in blocks of flats), policies in relation to housekeeping within common parts, routine inspections of common parts, etc.

- 5.34 Accordingly, to the extent that additional competence might be required in order to carry out an FRA for a block of flats, the competence is likely to be experiential learning, rather than training in any fundamental fire safety principles that would be unique to a block of flats.
- 5.35 It should be noted that, within this section of my report, I have not referred to consideration of external wall construction or cladding by fire risk assessors. As discussed in paragraphs 3.13-3.16 of this current report, external wall construction and cladding have previously been considered outwith the scope of an FRA for a block of flats, and it was not custom and practice for consideration of such matters in the FRA.
- 5.36 Furthermore, I would note again that the FRACC Competence Standard, an agreed and authoritative standard in the fire risk assessment sector, does not suggest that fire risk assessors need to be competent in the fire performance of external wall construction. In this connection, under the heading “*The building envelope, e.g. fire-resisting external walls, curtain walls*”, only three areas of required knowledge are specified, namely:
- The significance of their role in protecting external escape routes at boundaries.
  - The significance of any immediately visible damage.
  - The importance of remedying any immediately visible damage in sandwich panel constructions using combustible insulating cores.

### **Continuing Professional Development (CPD)**

- 5.37 For competence to be maintained, there is a need for ongoing CPD; this is true in any profession, including non-engineering professions, such as medicine or law. In the practice of fire safety in general, and fire risk assessment in particular, CPD is necessary to ensure that practitioners remain up to date with new research, new technologies, changes in relevant legislation, lessons from prosecution cases and determinations (e.g. by the Secretary of State regarding correct interpretation or application of fire legislation) and lessons from fires (particularly those involving multiple fatalities).
- 5.38 CPD is often described as “formal” or “non-formal” and can comprise various forms of blended learning, engagement with others in the profession, etc, in which new knowledge or information is assimilated, including that arising from:
- formal, examinable training, including online and face-to-face (formal CPD);
  - attendance at seminars, conferences and professional body meetings (formal CPD);



- self-study, including study of online information, reading of journals, etc. (non-formal CPD);
  - participation in the work of committees, working groups, etc. (formal CPD);
  - delivery of training that necessitates preparation of material (formal CPD);
  - writing articles (formal CPD).
- 5.39 IFE policy is that Registrants on their Register of Fire Risk Assessors must carry out at least 25 hours of CPD per annum, of which no more than half should be non-formal CPD; a log of the CPD must be kept and submitted to the IFE every two years. This is arguably a high standard yardstick for fire risk assessors, though, in my experience, not one necessarily achieved by even all competent fire risk assessors.

### **Overview of Training, Skills and Qualifications of a Competent Fire Risk Assessor**

- 5.40 By way of summary, competence of fire risk assessors arises from a blend of education, training and experience in the practice of fire safety generally and fire risk assessment in particular, the more major component being the former. The most common source by which fire risk assessors achieve the required competence is experience in enforcement of fire safety legislation within fire and rescue services.
- 5.41 The subject areas in which all fire risk assessors should possess a good awareness, although not necessarily in-depth knowledge in each area, can be found within the FRACC Competence Standard and comprise the following 10 subjects:
- The assessment of risk from fire.
  - The legislation relevant to the building in question.
  - The appropriate guidance for the building in question.
  - The behaviour of fire in buildings.
  - The effects of fire on people and the behaviour of people in fire situations.
  - Means of escape from fire.
  - Fire prevention.
  - Passive fire protection.
  - Active fire protection.
  - Management of fire safety.

### **Current Industry Consideration of Competence**

- 5.42 The Inquiry are, no doubt, aware of the industry response to Dame Judith Hackitt's "Building a Safer Future Report" [D4], particularly the "Raising The Bar" interim report of the Steering Group on Competence for Building a Safer Future [D7] ("the CSG"). Under the CSG, 12 working groups were formed to enable individual sectors to develop competence frameworks. Working Group 4 ("WG4") was concerned with the competence of fire risk assessors. I was invited to join WG4,

but, at the request of the Inquiry legal team, declined the invitation, though, with the agreement of the legal team, I acted as an Observer, in which role I was furnished with copies of all papers produced by WG4.

- 5.43 The recommendations of WG4 include a recommendation that it be a statutory requirement that those carrying out FRAs of “high risk residential buildings” (HRRBs) must be registered as qualified to do so by those persons’ professional bodies under a form of third party certification scheme.
- 5.44 It was further recommended by WG4 that the Fire Risk Assessment Competency Council (see below), which has now been incorporated within the Fire Sector Federation, should develop and introduce an enhanced level of competence for fire risk assessors undertaking work on HRRBs. In pursuance of such a requirement, WG4 proposed that there be a new fire risk assessors’ register, compiled from existing registers, providing the public with access to competent fire risk assessors [D7].
- 5.45 Dame Judith Hackitt regarded HRRBs as comprising high-rise blocks of flats. This is contrary to widely expressed professional opinion (e.g. as expressed by the then Chief Fire Officers Association, which has now become the National Fire Chiefs Council) following the multiple fatality fire at Lakanal House, a high-rise block of flats in Camberwell, in 2009, namely that “high-rise is not high risk”. In passing, but with some relevance to this current report, I would note that, in my opinion, the view expressed by CFOA was, and remains, correct (subject to appropriate compliance with relevant building regulations).
- 5.46 In my opinion, based on my extensive experience in fire safety and fire risk assessments for purpose-built blocks of flats, many HRRBs are not of a complexity that requires additional competence on the part of fire risk assessors, in relation to the principles of fire safety, beyond that required for FRAs for many other types of premises, though experience of the fire risk assessor in carrying out FRAs for such buildings is important. In my opinion, certain premises, such as those with complex managerial and staffing arrangements, used to accommodate people with special vulnerabilities, often require a greater level of competence on the part of fire risk assessors than an HRRB. Indeed, this was recognized, to some extent, by WG4, which proposed extending the scope of so-called complex buildings, for which special competence might be required, well beyond HRRBs [D7].
- 5.47 The recommendations of the CSG, and WG4 in particular, remain, at the time of writing this current report, only proposals, which would take years, rather than months, to implement. Accordingly, I do not further consider these proposals, which I include only for completeness, within this current report, as they are not directly relevant to the subject matter of this report, nor directly to the view of the fire safety profession on competence of fire risk assessors at the time that FRAs were carried out for Grenfell Tower by Carl Stokes.

## 6. COMPETENCE OF CARL STOKES

- 6.1 Against the background of the training, skills and qualifications required to establish the competence of a fire risk assessor, which I discussed in the previous section of this report, I now turn to the competence of Carl Stokes to carry out FRAs for Grenfell Tower.
- 6.2 In that connection I would stress, again, that there are, currently (and were, during the years in which Mr Stokes carried out FRAs for Grenfell Tower), no statutory requirements in relation to the training, skills and qualifications, or even, competence, of a fire risk assessor. Basically, there is no obstacle to anyone offering the service of carrying out FRAs, regardless of their competence to do so.
- 6.3 I would emphasise that there is no single route to competence, nor are third party certification or registration schemes for fire risk assessors, in any way, mandatory. Such verification of competence is purely voluntary on the part of fire risk assessors. Those carrying out FRAs on a commercial basis come from diverse professional backgrounds, though the most common is, in my experience, enforcement of fire safety legislation within fire and rescue services, which, as discussed below, was the background of Carl Stokes.
- 6.4 Simply because of an absence of any commercial pressure (i.e. by clients) to seek third party verification of their competence, there are many competent fire risk assessors who have little or no interest in any third party verification of their competence. In the wake of the Grenfell Tower fire, on the one hand, applications to the IFE for registration on the IFE Register have increased (probably because more clients are demanding independent verification of fire risk assessors' competence). However, paradoxically, the massive workload for fire risk assessors that has arisen from the fire means that, on the other hand, in the absence of sufficient registered fire risk assessors, non-registered assessors are likely to find no difficulty in finding work without the need to seek registration.
- 6.5 In the paragraphs that follow, I consider, separately, in turn, the training, experience and qualifications of Mr Stokes in, firstly, the practice of fire safety, and, secondly, the field of fire risk assessment. Thereafter, I consider the matter of Mr Stokes' CPD.
- 6.6 Mr Stokes' CPD is a matter in respect of which only limited evidence has been disclosed to me, and it is quite likely that, in any case, as Mr Stokes was not, for example, registered by the IFE on their Register of Fire Risk Assessors (necessitating that a CPD log be kept), he, understandably, felt no need to keep a formal CPD log suitable for disclosure; indeed, in his second witness statement [C68], Mr Stokes states that he did not keep a CPD log or written record of CPD. However, from documents disclosed by Mr Stokes, particularly his FRAs, I have been able to draw some conclusions about his approach to CPD, and to identify certain CPD that was carried out by him.
- 6.7 My consideration of these matters is based, primarily, on the CV of Mr Stokes, disclosed by Salvus, as personnel information held on Mr Stokes by Salvus [C28],

who, as discussed in Section 4 of this report, employed Mr Stokes on a fixed-term contract to carry out FRAs for the TMO between September 2009 and March 2010. I make the assumption that this CV is accurate. (This information was not available to me at the time I prepared my report for the MPS in relation to the competence of Mr Stokes.)

- 6.8 By consideration of these matters, I am able, in this section of my report, to conclude as to whether Mr Stokes satisfied the criteria that would generally be accepted in the profession as pre-requisites for competence in fire risk assessment (at least, “on paper”).
- 6.9 In Section 8 of this report, I consider, in some depth, the FRAs that Mr Stokes carried out for Grenfell Tower (and, to some extent, other buildings within the TMO-managed estate). This enables me, in that section of my report, to reach conclusions regarding the skill of Mr Stokes to carry out FRAs for Grenfell Tower that led from his training, experience and qualifications.

### **Training of Mr Stokes**

- 6.10 In relation to relevant training of Mr Stokes, I consider, firstly, his training in the field of fire safety. In this connection, as discussed later in this section of my report, Mr Stokes was employed by fire and rescue services between September 1986 and September 2009. During this period Mr Stokes obtained qualifications in management studies. I discount these qualifications as irrelevant to the subject matter of this current report.
- 6.11 In November 2001 (incorrectly described as 2002 in Mr Stokes’ CV), Mr Stokes successfully completed a course on “Managing Safely”, a course, which includes an assessment, approved and validated by the Institute of Occupational Safety and Health (IOSH) [C71]. In my opinion, this course is not particularly relevant to this section of my report, as it relates to the basics of health and safety for line managers in any sector (including the fire and rescue service), rather than specifically to fire safety (but I do not discount that there may have been some, probably small, element of fire safety within the training in question).
- 6.12 In 2005, Mr Stokes obtained a National Examination Board in Occupational Safety and Health (“NEBOSH”) Certificate, passing with Credit. NEBOSH offer a number of qualifications at “certificate” level, the most common of which is the NEBOSH National General Certificate in Occupational Health and Safety (the “General Certificate”).
- 6.13 It is the General Certificate that was awarded to Mr Stokes [C72]. This Certificate is intended simply for managers and supervisors who have some responsibility for health and safety as part of their other responsibilities in a workplace. Training for the General Certificate does contain a limited element of fire safety, but only a very basic level.
- 6.14 Accordingly, with regard to the IOSH and NEBOSH qualifications, the extent of training in fire safety that study for the assessments or examinations would involve would not be greatly relevant to this section of my report. However, it would be

correct to say that the training would be likely to have provided a basic understanding of the approach to general risk assessment, albeit primarily in the context of health and safety assessments.

- 6.15 In 2007, Mr Stokes was, according to his CV, awarded the “Europe Diploma in Fire Safety” by the Fire Protection Association (FPA). I am content that Mr Stokes, in his CV, is actually referring to the Confederation of Fire Protection Associations Europe (CFPA) Diploma in Fire Prevention.
- 6.16 The CFPA is an association of 23 national fire protection organizations in Europe; the UK member organization is the FPA. For the purpose of my report for the MPS, I confirmed with the FPA that Mr Stokes was awarded the Diploma in 2006 (rather than 2007, as stated in his CV), when, clearly, he was still employed by Oxfordshire Fire and Rescue Service, so he probably undertook much of the study in his own time. Subsequently, Mr Stokes has disclosed the certificate awarded by the FPA [C70].
- 6.17 For many years, I lectured on the Diploma course (and its forerunner) for the FPA, and I marked one of the study units. In my opinion, the European Diploma is a qualification of good standing, which, in the UK, can only be provided by the FPA. The qualification is a Level 4 Diploma, meaning that it is equivalent to the academic learning of a Higher National Certificate (HNC).
- 6.18 The Diploma qualification normally takes around 12-24 months of mainly home-based, part-time study to achieve. Students undertake a one-week residential course on fire risk assessment, after which they undertake distance learning in eight topics, each requiring approximately 15 hours of study. Thereafter, the course is completed by undertaking a three hour examination.
- 6.19 In May 2009, Mr Stokes obtained a “Diploma in Fire Detection & Alarm Warning Systems” from the Association of Building Engineers (ABE). I was not aware of this qualification at the time of writing my report for the MPS. However, I am now aware that the ABE did provide this three-day residential training course, which was actually delivered by the Fire Industry Association. The relevant attendance certificate, verifying 18 hours CPD, is included as an exhibit [C90] to Mr Stokes’ second witness statement [C68].
- 6.20 From a study of the course programme, I have also ascertained that the modules within the programme were described as “*fire alarm design*”, “*advanced detector and alarm design*” and “*installation, commissioning and maintenance of fire systems*”. I have examined the topics addressed in each module. In my opinion, they provide more than enough training than would be required in the subject of fire detection and alarm systems for the purpose of carrying out FRAs.
- 6.21 According to his CV, between 2005-2009, Mr Stokes attended the “National Occupational Standards (NOS) Courses 2-12, including Fire Science and Engineering”. Mr Stokes refers to these as “Fire Prevention Association (FPA)” courses, clearly meaning Fire Protection Association courses. My understanding of these courses is that they were designed primarily for fire safety officers in the fire and rescue service (though they were open to those outside the fire and rescue



service), making them sound training for anyone subsequently engaged in fire risk assessment.

- 6.22 Each “NOS Course” in the sequence quoted by Mr Stokes involved modular training of duration from, typically, 1-5 days and addressed subjects that included fire risk assessment of both simple and high risk premises, evaluation of fire safety design submissions, including means of escape (within which was considered means of escape for disabled people), structural fire protection and fire service access, building construction and materials, principles of fire engineering and fire engineering guides. Completion of the NOS courses, to which Mr Stokes refers, would be regarded as suitable training for a competent inspecting officer enforcing fire safety legislation within the fire and rescue service.
- 6.23 In an appendix to his second witness statement [C68], Mr Stokes includes certificates that verify that he successfully completed seven of these NOSs (representing 23 days training). I set out below the subject matter and duration for each NOS.
- NOS-2. Underpinning knowledge & risk assessment of simple premises (five days) [C79].
  - NOS-3. Evaluate design submissions against Approved Document B (five days) [C80].
  - NOS-4. Fire-fighting lifts, atrium buildings & means of escape for the disabled (one day) [C81].
  - NOS-4.2. Fire safety and hazardous material sites (one day) [C82].
  - NOS-5. Underpinning knowledge & risk assessment of high risk premises (five days) [C83].
  - NOS-8. Fire safety during building works (one day) [C84].
  - NOS-10. Life safety fire safety engineering (five days) [C85].
- 6.24 In 2008, Mr Stokes obtained an “Advanced Professional Certificate in Investigative Practice” from Bond Solon, a highly reputable organization that provides legal training for non-lawyers [C89]. This training, which led to a Level 7 BTEC Certificate, is designed for those with a regulatory, enforcement and/or prosecution role within their organization. While this training would not provide technical skills in fire safety *per se*, it would assist in development of an analytical approach to the issue of compliance or non-compliance with legislation.
- 6.25 In my opinion, the various training described above, particularly the European Diploma and the NOS courses, is sufficient to create the level of competence in the practice of fire safety required of a competent fire risk assessor. I now turn to what I previously described as “bolt on” training in the more specific area of fire risk assessment.
- 6.26 In that connection, Mr Stokes’ CV indicates that he successfully completed a 3.5-day course developed and presented by my consulting practice on behalf of the Northern Ireland Fire Safety Panel, provided on an in-house basis for Oxfordshire

Fire and Rescue Service, by whom Mr Stokes was employed at the time. I presented this course in conjunction with a colleague.

- 6.27 The objectives of this short course (which my practice continues to present on both a public and in-house basis, though now, for the public, over a period of 4.5 days) are simply to “convert” those with a substantial background in the more traditional practice of fire safety to the less prescriptive, and more risk-proportionate, culture of fire risk assessment. The course was the first such course to be approved (now “recognized”, as the term “approved” is no longer used) by the IFE for the purpose of their Register of Fire Risk Assessors, following monitoring of an entire course by two representatives of the IFE.
- 6.28 The records of my consulting practice show that Mr Stokes did participate in this course in December 2007, and that he passed the course test, which is an open book test that normally takes around three hours to complete [C66 and C67]. In view of the passage of time since this course was delivered, the course test papers have now been destroyed. However, I have provided an outline of the course programme to the Inquiry [C56].
- 6.29 In the context of Figure 1, I would regard Mr Stokes’ education in fire safety to be “moderate”. In this connection, PAS 79: 2007 suggested that moderate education might comprise a formal course carried out over several weeks, or in several modules. In the context of Figure 1, Mr Stokes also did attend a short, examinable course in fire risk assessment.

### **Experience of Mr Stokes**

- 6.30 Mr Stokes’ CV indicates that he was employed as an operational junior officer in Berkshire Fire and Rescue Service (“BFRS”) between September 1986 and April 1994. I largely discount this experience as having any significant relevance to Mr Stokes’ skills in fire safety and fire risk assessment, as training and experience as an operational fire-fighter does not bring about any significant skills in the practice of fire safety (though, obviously, it does provide practical experience in the behaviour of fire in buildings).
- 6.31 However, in his first witness statement, Mr Stokes states that, during employment by BFRS, he was seconded to the fire safety department (for a period of time unspecified in his statement). He further states that, during that secondment, he inspected buildings (which would, indeed, be the role of an inspecting officer in fire safety), “including high-rise buildings” [C57]. I would not expect these buildings to have included high-rise blocks of flats, as, at the relevant time, such buildings were outwith the scope of legislation enforced by the fire and rescue authority.
- 6.32 Mr Stokes’ CV further shows that, from January 1994 until his retirement from the fire and rescue service in September 2009, he was employed as an “Enforcement, Audit, Building Control and Technical Fire Protection Officer” with Oxfordshire Fire and Rescue Service. (This is not a fire and rescue service job title and, though perhaps a pedantic point, appears simply to represent a description of various job titles and roles held by Mr Stokes within Oxfordshire Fire and Rescue Service,

which would clearly, as noted in Mr Stokes' second witness statement [C68], more commonly be described as the role of a fire safety officer.)

- 6.33 Certainly, the above description reflects the narrative in Mr Stokes' CV that he was responsible for enforcement of the Fire Safety Order within a geographical area of Oxfordshire and was, therefore, involved in auditing Responsible Persons' FRAs, as well as undertaking enforcement action as and when required if the Fire Safety Order was breached, or if the FRA was not suitable and sufficient.
- 6.34 Mr Stokes also states, in his CV, that his work entailed licensing and building regulations consultations and partnership working with other enforcement bodies. In my experience, experience of fire safety officers within fire and rescue services in the statutory consultations between building control bodies and the fire and rescue service, in relation to plans for new buildings to which, following construction, the Fire Safety Order will apply, provides valuable insight into the design of buildings; this is of significant value in developing the competence of officers as potential fire risk assessors.
- 6.35 In his CV, Mr Stokes records that he was the fire service liaison officer for Oxford University and that this entailed acting as a point of contact for the University, and assuming responsibility for all matters relating to fire safety in all University and College buildings. I have significant experience in dealing with fire safety of historic university buildings; I concur with the view of Mr Stokes, expressed in his CV, that the fire safety arrangements in such buildings are not straightforward, and that there is a need for what Mr Stokes describes as "flexibility and adaptation, rather than prescriptive arrangements".
- 6.36 In his CV, Mr Stokes also refers to his experience as the lead fire service officer for four private finance initiative (PFI) hospital projects, each valued at over £100 million. He also states that, before this, he was the lead on the new Ministry of Defence Joint Services Command and Staff College, a £130 million project.
- 6.37 Notably, in his CV, Mr Stokes states that he has experience in undertaking both audits (which I assume to mean on behalf of Oxfordshire Fire and Rescue Service), and risk assessments of the common parts of high-rise residential tower blocks under the Fire Safety Order, and also "fire assessments of the private flats/dwellings" under the Housing Act (presumably for the purpose of assisting the local authority, which is responsible for enforcement of the Act).
- 6.38 Mr Stokes' CV also records that he was part of a working group for a very well-known and established fire safety guidance document on fire safety in certain types of housing (though excluding purpose-built blocks of flats), originally published by Local Authority Coordinators of Regulatory Services (LACoRS) [D9].
- 6.39 Mr Stokes also states that he carried out work for the Fire Brigades Union (FBU), including a reference booklet for fire safety officers and installing engineers of fire alarm systems, which he further states was intended to raise the standard for installation engineers of fire alarm systems and provide fire safety officers with a quick reference guide [D10]. I confirm, from my own knowledge, that this guidance

document was, ultimately, published in 2010 and involved collaboration between the FBU and the Fire and Security Association (FSA).

- 6.40 I make the assumption that, as stated in his first witness statement [C57], Mr Stokes' experience in Oxfordshire Fire and Rescue Service, between January 1994 and September 2009, was, for the majority of his time, as a fire safety officer. On this basis, in my opinion, the period of experience, in conjunction with the activities described above, equates to substantial experience that would constitute more than sufficient experience for a transition into the field of fire risk assessment.
- 6.41 In this connection, in specifying requirements for employment of fire risk assessors with a fire and rescue service background, my own consulting practice sets a minimum period of eight years' (preferably continuous) experience as a fire safety officer, which is consistent with the minimum period suggested by PAS 79: 2007 for a definition of "extensive experience" (See Figure 1).
- 6.42 In the FRA for Grenfell Tower that was current at the time of the fire in June 2017 (i.e. the June 2016 FRA), Mr Stokes states that he had been carrying out FRAs for seven years. This is consistent with his CV, which records that he retired from Oxfordshire Fire and Rescue Service in September 2009, and with data on C S Stokes and Associates Limited available on Experian, which shows that the company was incorporated in February 2009.
- 6.43 In the context of Figure 1, Mr Stokes also had sufficient training and experience in fire risk assessment to contribute to competence; he had successfully completed a short, examinable course on fire risk assessment (in fact, more than one such course) and had experience of carrying out well over five fire risk assessments.

#### **Qualifications of Mr Stokes**

- 6.44 I now turn to the formal qualifications of Mr Stokes, while noting, once again, that there is no legal requirement for those carrying out FRAs to hold any qualifications, nor would qualifications alone necessarily establish competence in fire risk assessment.
- 6.45 In his FRAs, Mr Stokes includes, after his name, what can only be interpreted as a plethora of post-nominals, which, in my opinion, would be likely to be interpreted by a member of the public as formal qualifications or professional body memberships. I reproduce the format in which these are set out below:

*Mr C. Stokes, ACI Arb, FPA Dip FP (Europe), Fire Eng (FPA), NEBOSH, FIA BS 5839 Part 1 System Designer, BS 5839 Part 6, Competent Engineer BS 5266, IFE Assessor/Auditor (FSO).*

- 6.46 I set out below my interpretation and understanding of each of these apparent post-nominals:
- ACI Arb are recognized post-nominal letters, which Associates of the Chartered Institute of Arbitrators (CI Arb) are entitled to use. Associate is an entry level to the CI Arb and indicates some knowledge of Alternative Dispute Resolution



achieved through one of the CIArb's introductory courses, or an equivalent course, or adequate level of experience. While this basic level of knowledge in the field of arbitration has no bearing on fire safety, when I previously examined the CIArb membership list, it did include a C. Stokes. Subsequently, within Appendix 1 to his second witness statement [C68], Mr Stokes included a certificate confirming his admission as an Associate to the Institute [C69]; as evidence of continuing membership, he also included a receipt of his latest membership payment [C78].

- FPA Dip FP (Europe). By use of these post-nominals, Mr Stokes is undoubtedly indicating that he successfully completed the Confederation of Fire Protection Associations Europe (CFPA) Diploma in Fire Prevention (though he has used the incorrect post-nominals, which should be CFPA(EU) Dip). I discussed this qualification in paragraphs 6.15-6.18 of this report, in which I described the qualification as of good standing and equivalent to a Level 4 Diploma.
- Fire Eng (FPA). These post-nominals do not exist. I can only assume that, by use of them, Mr Stokes is indicating that he undertook some training in fire engineering delivered by the FPA. The FPA do not currently offer any training in fire engineering in their training prospectus, but it could be the case that Mr Stokes attended either some form of short course on fire engineering delivered by the FPA to officers of Oxfordshire Fire and Rescue Service when Mr Stokes was employed by them, or attended a public FPA course at a time when the FPA did, for a while, offer short (several day) courses in fire engineering. On the other hand, he may be referring to those NOS courses (see paragraphs 6.21-6.22) that addressed fire engineering. However, whatever the explanation, to use these post-nominals is misleading.
- As discussed in paragraph 4.19, NEBOSH offer a number of different qualifications, so, clearly, using NEBOSH as a postnominal is meaningless. It would appear that Mr Stokes' NEBOSH qualification comprises the NEBOSH National General Certificate in occupational health and safety [C72]. This qualification does not entitle him to use any post-nominals. Again, to use these letters is misleading.
- FIA BS 5839 Part 1 System Designer. "FIA" is the abbreviation for the Fire Industry Association, which is a trade association (of which I am a Board member). Mr Stokes has disclosed a certificate issued by the FIA in May 2009, verifying that he attended and passed a one-day course (of six hours CPD) on fire detection system design [C73]. While the training does include course tests, this one-day course would not adequately make a fire service officer competent in the design of fire alarm installations. Equally, while evidence has not been disclosed as part of his second witness statement [C68], as discussed in paragraph 6.19, Mr Stokes was awarded a "Diploma in Fire Detection & Alarm Warning Systems" from the Association of Building Engineers. However, none of this training would entitle him to the use of any post-nominals. Again, I regard this reference as misleading.
- BS 5839 Part 6. BS 5839-6 is simply a British Standard for the design, installation, commissioning and maintenance of fire alarm systems in domestic premises. Its use as a post-nominal is meaningless. Mr Stokes is, apparently, endeavouring to convey the fact that, in September 2012, he undertook a one-day



course (providing six hours CPD) on BS 5839-6, delivered by the Fire Industry Association [C74]. Completion of this course does not provide entitlement to any form of post-nominals. To use the British Standard number as a form of post-nominal is, in my opinion, highly misleading.

- Competent Engineer BS 5266 seems to constitute another misleading claim. BS 5266 is a suite of British Standards, each with a different part number, dealing with the subject of emergency lighting. Mr Stokes is, apparently, endeavouring to convey the fact that, in April 2010, he attended and passed a one-day emergency lighting course, delivered by the FIA [C75]. As noted by Mr Stokes in his second witness statement [C68], this course did relate, in part, to the layout and positioning of emergency lighting.

In further fairness to Mr Stokes, I should point out that the course was described as the “ICEL Competent Engineer Course”, and it qualified for 6 hours CPD; there would also have been short tests during the day. (ICEL is the Industry Committee for Emergency Lighting, which is a trade association.) ICEL also referred to this course as a “Competent Engineer Course”. However, this is a very basic course that was intended to give a brief overview of BS 5266 Parts 1, 7 and 8. It could not possibly turn a fire officer into a competent emergency lighting engineer, and the certificate does not entitle holders to use any post-nominals.

- IFE Assessor/Auditor (FSO). This is probably the most misleading of all the post-nominals. As Chairman of the Institution of Fire Engineers (IFE) Panel that is responsible for registration of fire risk assessors as competent to carry out FRAs, the manner in which the post-nominals are set out would imply to me that Mr Stokes was registered as a fire risk assessor by the IFE, albeit that registration does not entitle registrants to use post-nominals in this way. Several other colleagues in the fire safety profession have brought to my attention, in my role as Chairman, that by using these post-nominals on his fire risk assessments and elsewhere, Mr Stokes is, apparently, registered by the IFE. Registration by the IFE does permit the registrant to describe themselves as an IFE Registered Assessor or Auditor (but not both), but does not confer the use of any designatory letters for use after the registrant’s name.

However, I can confirm that Mr Stokes is not, and never has been, registered by the IFE as either a fire risk assessor or an enforcing authority auditor. As far as I can tell from IFE records, Mr Stokes has never even applied to the IFE for registration. It transpires, from Mr Stokes’ second witness statement [C68], that Mr Stokes is referring to his attendance on a fire risk assessment course that is formally recognized by the IFE, namely that delivered by my consulting practice.

According to that witness statement, Mr Stokes’ understanding was, originally, that the course permitted him to use the designation “*IFE Assessor/Auditor (FSO)*”, based on wording to which he refers on the course certificate [C76]. However, nothing in that certificate implies entitlement to use the designation in question; it is merely recorded that the course was approved by the IFE.

Mr Stokes states that he has since been informed by the IFE that he “...*should have paid membership and gone through the process of being added to the IFE register*”. In this connection, I am aware that, following the Grenfell Tower fire,

Mr Stokes did have a telephone conversation with the IFE, after which he changed the reference to this course on his website (see below).

However, his second witness statement over-simplifies and underestimates the process of registration by the IFE as a competent fire risk assessor, which is not simply, subsequent to successful completion of an IFE-recognized training course, payment of a fee and following some form of administrative process. The registration process involves scrutiny of the applicant's CV, examination of sample fire risk assessments, examination of CPD and attendance at an interview.

Successful completion of an IFE recognized course merely reduces the number of fire risk assessments that must be submitted to the IFE for selection of two for examination (from 20 to 5) and the reduction in the required period of experience in carrying out fire risk assessments (from six months to three months); accordingly, the successful completion of an IFE-recognized fire risk assessment training course is only a minor (and not even compulsory) component of the evidence of competence required by the IFE.

As he undertook training by the FPA for the purpose of the CFPA Europe Diploma, Mr Stokes would have participated in the one-week FPA fire risk assessment course, which is also recognized by the IFE. Accordingly, Mr Stokes' competence in the subject matter of fire risk assessment was verified in two, independent fire risk assessment courses, both recognized by the IFE for the purpose of the IFE Register of Fire Risk Assessors and Auditors. Accordingly, I would be very surprised if Mr Stokes had been incapable of achieving registration by the IFE had he chosen to apply for registration. However, he had not done so and was, therefore, not entitled to imply any form of recognition by the IFE as a fire risk assessor, nor to use a non-existent designation after his name.

I have examined the website of Mr Stokes' company as far back as May 2013. Between then and July 2017, Mr Stokes described his qualifications as set out above (though as a list, rather than post-nominals). After July 2017, Mr Stokes changed the reference to IFE (correctly) to read "*Fire risk assessment training course-recognised by the IFE*".

- 6.47 Mr Stokes and his company do not appear to have been registered or certificated by any professional or certification body as competent to deliver FRAs, but as stressed throughout this report, there is no requirement for him to be registered or certificated as a pre-requisite for carrying out FRAs. It is simply a commercial decision for Mr Stokes as to whether he would wish to demonstrate his competence in this way, and for his clients to determine whether they would wish reassurance of this nature.
- 6.48 It is clear that either Mr Stokes is somewhat lacking in understanding regarding the proper use of post-nominals or that he was, at least, endeavouring to overstate his qualifications; in either case, the manner in which he set out the supposed post-nominals would, in my opinion, significantly mislead clients and potential clients as to his qualifications, regardless of his level of competence.

## Continuing Professional Development (CPD)

6.49 In Section 5 of this report, I asserted that maintenance of competence requires that CPD be carried out. In paragraph 6.6, I noted that I have been presented with only limited evidence of Mr Stokes' CPD, and that Mr Stokes did not keep a formal CPD log. However, in that paragraph, I also noted that, from the evidence that has been presented to me, I am able to express some opinions on the matter of Mr Stokes' CPD, both formal and non-formal (see paragraph 5.37 for examples of each type of CPD).

6.50 With regard to formal CPD, I have been able to identify certain elements in Mr Stokes' CV and second witness statement that would satisfy the definition of this; I also cited these as part of his relevant experience, but they, equally, constitute formal CPD. Specifically:

- While I previously referred to his successful completion of my company's examinable fire risk assessment course in December 2007 as training in fire risk assessment, this course, equally, was formally allocated 24 hours approved CPD by the IFE, virtually the entire CPD requirement of the IFE for annual CPD for fire risk assessors;
- I previously noted that Mr Stokes' reference to a Diploma in fire detection and alarm systems related to attendance in 2009 on a three-day ABE course on this subject. The ABE awarded delegates 18 hours of CPD for this course.
- In May 2009, Mr Stokes attended and passed an FIA training course on fire detection design [C73], for which he was awarded six hours CPD.
- In September 2012, Mr Stokes attended and passed an FIA course on BS 5839-6 [C74], relating to fire detection in domestic dwellings, for which he was awarded six hours CPD.
- In April 2010, Mr Stokes attended and passed an FIA course on BS 5266, Parts 1, 7 and 8, relating to emergency lighting, for which he was awarded six hours CPD.
- From my own knowledge and records, I am aware that, in March 2011, Mr Stokes engaged in communication with my practice at the time we were drafting the LGA guidance on fire safety in purpose built blocks of flats (see below), culminating in a letter, on TMO-headed paper (though quoting his home address), to us setting out suggestions for recommendations, and areas for coverage, in the new guidance; this was almost certainly in response to a public request for such comments and suggestions [C35].

Interestingly, this letter refers to statements made in "the Rosepark case", referring, no doubt, to the Fatal Accident Inquiry into the deaths of 14 residents in Rosepark Care Home in Lanarkshire in 2004, of which Mr Stokes was clearly aware.

- From my own knowledge and records, I am aware that, in May 2011, Mr Stokes completed (apparently on his own behalf and that of the TMO) a pro-forma comment document produced by my practice, on behalf of Local Government Improvement and Development (LGID), to whom we reported in respect of production of what is now known as the LGA Guide to Fire Safety in Purpose-

Built Blocks of Flats [C36]. This document facilitated comments from the public on a draft version of the LGA Guide that was made available for public comment. Within the appendices to his second witness statement [C68], Mr Stokes has attached a copy of his response [C88]. From a review of Mr Stokes' comments, it is clear to me that he had studied the draft quite thoroughly.

- According to Mr Stokes' second witness statement [C68], he attended the one-day course that my practice presents on the LGA guidance on fire safety in purpose-built blocks of flats. Mr Stokes does not state the date on which he attended this course, though he does describe the course as relating to the "then new" 2012 guidance. I am unable to assist, from the records of my practice, as to Mr Stokes' date of attendance, but, in the appendix to his second witness statement, Mr Stokes includes the course notes, with handwritten annotations of a delegate (presumably Mr Stokes), within which there is a flyer for my practice's 2013 training courses [C87], strongly suggesting that the course was attended in 2012 or 2013. This course was subsequently awarded six hours CPD by the IFE.
- As noted in paragraphs 6.38 and 6.39 of this report, Mr Stokes was involved as a member of a working group that produced the now very well-known and recognized guidance on fire safety in certain types of housing, published by a body then known as LACoRS [C77]. His CV also records that he carried out work for the FBU for the purpose of drafting guidance on fire detection and alarm systems. These activities comprise relevant formal CPD.
- In a letter dated 24 October 2012, Mr Stokes stated that he was a "Member of the Construction Industry CPD Certification Service", by which means he kept up to date with "new developments, techniques and materials in the construction sector" [C59]. I have no knowledge of this body and cannot comment, as an expert, on its activities. However, in his second witness statement [C68], Mr Stokes states that he attended CPD designated training two or three times a year and that these training courses were usually one-day events consisting of various presentations on different current topics of interest in the construction industry.
- The Fire Risk Assessment Council of the Fire Industry Association, the former of which I am Chairman, arrange periodic CPD days to assist fire risk assessors with ongoing CPD. In 2011/2012, Mr Stokes attended three of these one-day events, the first dealing with a general update for fire risk assessors, the second addressing PEEPs, while the third was concerned with "The Law". These provided a total of 18.5 hours CPD [C91], [C92] and [C93].
- I also note that, in the above letter, Mr Stokes states that he was currently undertaking the "Fire Door Inspection Scheme (FDIS) Diploma delivered by the BWF-CERTIFIRE Scheme and the Guild of Architectural Ironmongers (GAI)". I am aware of the FDIS diploma, which was new in 2012, but I have seen no evidence that Mr Stokes successfully completed the training.
- In her witness statement, Janice Wray states that "I was aware that Carl regularly attended seminars, legal updates and briefings in fire safety as he would often provide me with feedback and a summary of the information presented and outline any impact it might have on the TMO" [C61].
- In his second witness statement, Mr Stokes states that he subscribed to "various update services such as the IFSEC Global fire briefs in order to keep up to date



with trends and key topics in the fire industry”. He also states that he attended “Firex” events. Firex is a well-recognized annual conference and exhibition, at which there are various seminars and display of products. He further states that he attended annual fire lectures given by the Worshipful Company of Firefighters, one of which, in 2014, was entitled “*High Rise – Not High Risk*” [C86]. Mr Stokes has disclosed, within the appendices to his second witness statement [C68], the programme and his brief written notes relating to this lecture of just over one hour’s duration, at which matters such as high-rise firefighting and “stay put” were apparently discussed.

- In addition, in the appendices to Mr Stokes’ second witness statement [C68], he includes evidence, in the form of certificates of attendance, at various relevant CPD events between 2006 and 2015. As I regard these as less significant than the specific formal CPD to which I referred above, I have not itemized the training and events in question. However, I note that they relate to matters associated with building regulations, fire safety legislation, fire safety in open air events and venues, car park ventilation systems, shaft ventilation in residential and commercial buildings, means of escape, fire safety in open flat layouts and fire safety for deaf and hard of hearing people.

6.51 I now turn to Mr Stokes’ non-formal CPD. By its very nature, non-formal CPD is less likely to be recorded (e.g. on a CV), such that there may be no record of it. However, as noted in paragraphs 6.6 and 6.49, from a study of documents disclosed by Mr Stokes, particularly his FRAs, I believe that I can make some relevant comments on Mr Stokes’ approach to non-formal CPD and on specific aspects of such CPD.

6.52 In this connection, I draw attention to the following:

- There is evidence, from Mr Stokes’ FRAs, that he did not only study the draft of the LGA Guide, to which I referred in paragraph 6.50 and which was circulated for public comment, but that he was also familiar with the published version, to which he refers in his FRAs.

In this connection, in the published version of the Guide, there was emphasis on the fire hazards of cladding that was not included in the draft circulated for public comment. The final version was published in June 2011.

Accordingly, it is, in my opinion, relevant to note that, prior to the publication of the Guide, none of Mr Stokes’ FRAs made reference to cladding; the last of his FRAs in which there was no such reference is that for Raymede Tower, the last of the 2011 FRAs that have been disclosed to me and which was carried out on 28 June 2011.

In contrast, in the first 2012 FRA disclosed, which was carried out for Trellick Tower on 11 June 2012, and all subsequent FRAs for blocks of flats, every FRA made specific reference to cladding. This would very strongly suggest to me that Mr Stokes’ references to cladding in his FRAs was born of study of the published version of the LGA Guide.

- There is evidence, from Mr Stokes’ FRAs, that he maintained an awareness, through non-formal CPD, of legal developments in interpretation or application of the Fire Safety Order. These include, for example, reference in his FRAs to a



Determination by the Secretary of State, which related to a case involving a requirement by a Fire and Rescue Authority for intumescent strips and smoke seals to be fitted to bedroom doors in a hotel. In addition, Mr Stokes brought to the attention of the TMO a case involving prosecution of a contractor as a person having duties by virtue of Article 5(3) of the Fire Safety Order.

There is also reference in FRAs to the Prestatyn maisonette fire (North Wales), a case which, in my experience, is not particularly well-known in the fire safety profession, involving the murder of five residents of a flat by arson, and involving the imprisonment of the landlord of the flats for an offence under the Fire Safety Order.

- There is also evidence that Mr Stokes maintained an awareness of serious fires and lessons to be learned from them. In this connection, his FRAs make reference to high-profile fires at Lakanal House, London in 2009 and at Shirley Towers (incorrectly described in his FRAs as “Shirley Heights”), Southampton in 2010 (a fire in which two firefighters died); I have also already referred to Mr Stokes’ knowledge of a fire at Prestatyn in 2015, which involved imprisonment of the landlord of the flats.

In addition, from examination of the records of my consulting practice, it has come to light that (presumably as a simple matter of courtesy following our drafting of the LGA Guide), in October 2011, Mr Stokes contacted me, and subsequently sent information, regarding a fire at a tower block in Lambeth [C37].

### **Overall Opinion on Training, Experience and Qualifications of Mr Stokes**

- 6.53 I conclude this section of my report with my overall opinion on the education, training and qualifications of Carl Stokes in relation to his suitability as a competent person to carry out FRAs for high-rise residential buildings, such as Grenfell Tower.
- 6.54 In this connection, I draw the attention of the Inquiry to Figure 1 in Section 5 of this report.
- 6.55 For the purpose of that figure, I would regard;
- Mr Stokes’ education in fire safety as “Moderate”.
  - For the purpose of Figure 1, therefore, no additional training would be necessary, subject to experience in the practice of fire safety that is “Moderate”. In fact, there is evidence that he participated in certain training, as well as relevant CPD.
  - Mr Stokes’ experience in the practice of fire safety was such that the experience can be described as “Extensive” for the purpose of Figure 1.
  - Mr Stokes’ “bolted on” training and experience in fire risk assessment satisfied the criteria in Figure 1;
  - At the time of the June 2016 FRA for Grenfell Tower, it would appear that he had been carrying out FRAs for seven years.
- 6.56 In view of the circumstances outlined above, while I discount a number of the post nominals used by Mr Stokes, in that they are not, in my opinion, relevant

qualifications, I consider that Mr Stokes' education, training and experience were suitable for the purpose of carrying out FRAs for Grenfell Tower (and other buildings within the TMO-managed estate). This opinion is supported by both the principles adopted by the IFE for the purpose of their Register of Fire Risk Assessors, and by the principles espoused by PAS 79. In Section 8 of this report, I consider Mr Stokes' practical skills in carrying out the relevant FRAs.

## 7. STEPS EXPECTED OF A COMPETENT FIRE RISK ASSESSOR

- 7.1 I now describe the steps that a competent person could be expected to take when conducting and reporting on an FRA of a building such as Grenfell Tower. For the purpose of my report, I consider, firstly, the theoretical, “textbook” steps to which guidance on carrying out FRAs (for any type of building) refers. Thereafter, I consider the practical steps involved in the work of carrying out an FRA for a high-rise block of flats such as Grenfell Tower.
- 7.2 With regard to the theoretical steps described in guidance, I consider the guidance contained in the relevant guide produced by Government, the more detailed guidance contained in PAS 79 [D8] and that set out in the LGA guidance on fire safety in purpose-built blocks of flats [D1].
- 7.3 With regard to the practical steps that, in my opinion, a competent fire risk assessor would take in carrying out an FRA for a high-rise block of flats, such as Grenfell Tower, my opinion on this matter is based on:
- my own experience of carrying out FRAs;
  - monitoring the work of experienced consultants within my own practice, and quality assurance of their documented FRAs;
  - observation of consultants from other practices (e.g. for the purpose of third party certification audits);
  - study of documented FRAs produced by other practices (e.g. for the purpose of third party certification work, registration of fire risk assessors by the IFE, as an expert witness in prosecution cases involving FRAs for blocks of flats, and in considering previous FRAs by others, prior to FRAs subsequently carried out by my practice);
  - discussion and consultation with colleagues in the fire safety profession (including those in fire and rescue services and other consulting practices) in the course of my work for professional and trade association bodies.
- 7.4 In considering relevant practical steps, I also refer to the model pro-forma for a suitable and sufficient FRA in England and Wales, contained within Annex B of PAS 79. That annex is, in BSI parlance, “informative”, meaning that, while it is offered for use by readers of PAS 79, the use of the model pro-forma is not mandatory for conformity to PAS 79.
- 7.5 However, as noted in PAS 79 itself, the format of the pro-forma was, at the time of publication of PAS 79 in 2012, considered by the then Chief Fire Officers’ Association to be one suitable format for recording the significant findings of a suitable and sufficient FRA. A major value of the pro-forma is that, in effect, by virtue of its “tick box” format, it forces the fire risk assessor to consider all relevant matters that must be addressed in the FRA required by Article 9 of the Fire Safety Order. (However, as advised in PAS 79, simply ticking the relevant boxes within the pro-forma, without adequate recording of supporting information in the space

allocated for commentary within the pro-forma, would not conform to the recommendations of PAS 79 and would be unlikely to satisfy fire safety legislation.)

- 7.6 In practice, the model pro-forma is very widely used for the documentation of FRAs, including those for high-rise blocks of flats and other housing premises (for which, as noted in Section 1 of this report, I am currently engaged by BSI to draft a new Part 2 of PAS 79).
- 7.7 Indeed, such is the common use of the PAS 79 model pro-forma, that there is, in my experience, a common misconception (by specifiers/users of FRAs, including some local authorities and corporate bodies, and fire risk assessors themselves) that conformity with PAS 79 necessitates, or even comprises solely, use of the model pro-forma; in fact, PAS 79 sets out a recommended process for carrying out an FRA, while the model pro-forma was originally intended as simply one suitable format for documentation of significant findings.

### **Relevant Government Guidance on FRAs**

- 7.8 The earliest guidance on the FRAs required by the Fire Safety Order is that contained in the then CLG “sector-specific guides” on what CLG described as “fire safety risk assessments”. There are 12 such guides, each dealing with a different type of premises.
- 7.9 One guide (Guide No 3) is concerned with premises in which people sleep [D11]; it is that guide that was originally relevant to the common parts of purpose-built blocks of flats, but the guide also addresses a wide range of disparate premises, particularly hotels, but also hostels, university halls of residence, residential conference centres, houses in multiple occupation and even narrow boats; only scant attention is given to the common areas of blocks of flats. I refer to this guide hereafter as “the CLG Guide”.
- 7.10 The CLG Guide (along with equivalent guides for other sectors) was published in 2006, which was later than the first version of PAS 79 which was published in 2005. However, the 2005 version of PAS 79 was intended to support legislation that preceded the Fire Safety Order (namely, the Workplace Fire Precautions Legislation).
- 7.11 It was not until 2007 that PAS 79 was revised to support the FRAs required by the Fire Safety Order. PAS 79:2007 notes that the PAS is largely consistent with the approach to fire risk assessment set out in all the CLG guides, but that, in the particular area of fire risk assessment, the PAS expands on the advice in these guides.
- 7.12 The CLG Guide advises that there are five steps in an FRA. The figure five was chosen simply to parallel the “five steps to risk assessment” that was, at the time, commonly quoted in the health and safety profession. In practice, in my opinion, the concept of five steps does not work at all well in fire risk assessment, and (as will be readily observed below) it was necessary for the authors of the CLG Guide (who were not practitioners in fire risk assessment) to, in effect, amalgamate completely separate processes to limit the recommended steps to five.

7.13 However, for completeness in my response to my instructions, I reproduce, as Figure 2 in this current report, the relevant figure, showing the five steps in the CLG Guide.

7.14 With regard to these steps, I would make the following observations, namely:

- 1) The first step is reasonably logical, but the idea of identifying the sources of oxygen is very academic and is included simply to utilize the “fire triangle”, an over-simplistic explanation of fire (commonly used in basic fire safety training).

I have no doubt that the authors would argue that it serves as a reminder for fire procedures to include closing doors and shutting down air conditioning, or that some residents might need to inhale oxygen, but such use occurs within flats, which are outside the scope of the Fire Safety Order.

However, it would be correct to say that an FRA should identify possible sources of ignition and fuel, the latter comprising, for example, inappropriate combustible materials deposited in the common parts by residents.

- 2) The identification of people especially at risk reflects the requirement of Article 9(7)(b) of the Fire Safety Order that the prescribed information that must be recorded in an FRA includes any group of persons identified by the FRA as especially at risk. In workplaces, hotels, etc, this does include, of course, disabled people, but, as discussed in Section 12 of my March 2018 report [C1], identification of disabled people in an FRA for a block of flats creates enormous practical difficulties.
- 3) Because of a shortage of further steps, Step 3 includes a plethora of different processes and issues, encompassing both fire prevention (i.e. measures to prevent the occurrence of fire) and fire protection (measures that do nothing to prevent fire, but contribute to safety of occupants after fire occurs). It is, in my experience, universally recognized in the practice of fire safety that fire prevention and fire protection are entirely different matters that need to be addressed independently.
- 4) Formulating an emergency plan, giving information to people, cooperating and coordinating with others is not part of carrying out an FRA. An FRA simply checks as to whether such measures are already in place.
- 5) Reviewing and revising the FRA, as necessary, is a requirement of the Fire Safety Order, but, other than determining the frequency for review, does not form part of the fire risk assessment process itself.

7.15 The CLG Guide also contains a sample format for recording the significant findings of an FRA. I reproduce the example of a completed record, which is included in the CLG Guide, as Figure 3 to this current report. The over-simplicity of the example will be readily obvious to the Inquiry. In my opinion, if a documented FRA took such a form, it would absolutely breach Article 9(1), in that it would not be suitable and sufficient; moreover, in my experience, it would not be acceptable to any enforcing authority.



- 7.16 Notwithstanding the above, in Section 9 of this report, for completeness, I do benchmark the steps carried out by Carl Stokes in his FRAs for Grenfell Tower against the five steps set out in the CLG Guide.



Figure 2 – “Five Steps to Risk Assessment” (reproduced from relevant CLG Guide)

Risk Assessment – Record of significant findings			
Risk assessment for		Assessment undertaken by	
Company	Warwick Towers Hotel	Date	20/02/2006
Address	38 High Street Any Town AA11 6ZZ	Completed by	A Smith
		Signature	A Smith
Sheet number	Floor/area	Use	
1	First floor	Restaurant and accommodation	
Step 1 – Identify fire hazards			
Sources of ignition		Sources of fuel	Sources of oxygen
<ul style="list-style-type: none"> <li>Heat from cooking</li> <li>Smoking materials</li> </ul>		<ul style="list-style-type: none"> <li>Oil in deep fat fryer</li> <li>Furniture and bedding</li> <li>Laundry and cleaning material</li> </ul>	<ul style="list-style-type: none"> <li>Normal air circulating by kitchen extract and air handling equipment</li> </ul>
Step 2 – People at risk			
<ul style="list-style-type: none"> <li>Customers and staff in restaurant, guests in accommodation on upper floors</li> <li>Guests in accommodation on upper floors, cleaning staff and especially mobility impaired occupant of room 122</li> </ul>			
Step 3 – Evaluate, remove, reduce and protect from risk			
(3.1) Evaluate the risk of the fire occurring		<ul style="list-style-type: none"> <li>High risk of ignition of over heating cooking oil residue in extract equipment</li> <li>Moderate risk of carelessly discarded smoking material by staff or guests</li> </ul>	
(3.2) Evaluate the risk to people from a fire starting in the premises		<ul style="list-style-type: none"> <li>Fire in kitchen could spread to restaurant and upper floor via poorly maintained extract equipment, or via wedged open fire doors</li> <li>Fire in bedroom or cleaning store could spread to escape routes due to poorly fitting fire doors and poorly maintained door hold open devices</li> </ul>	
(3.3) Remove and reduce the hazards that may cause a fire		<ul style="list-style-type: none"> <li>Unable to remove. Introduce programme of regular cleaning of fryer surround and extract equipment and ensure staff are familiar with the temperature controls</li> <li>Introduce a safe smoking policies. Ensure all staff are aware of risks and check with regular patrols</li> </ul>	
(3.4) Remove and reduce the risks to people from a fire		<ul style="list-style-type: none"> <li>Ensure all staff are properly trained to use extinguishers. Ensure all doors protecting escape routes are closed</li> <li>Repair all fire doors so that they close effectively, arrange for all door open devices to be regularly serviced</li> </ul>	
Assessment review			
Assessment review date	Completed by	Signature	
Review outcome (where substantial changes have occurred a new record sheet should be used)			

Figure 3 – “Example record of significant findings” (reproduced from relevant CLG Guide)

## **PAS 79:2012**

- 7.17 In drafting PAS 79, it was considered appropriate to set out more practical steps that should be followed in the process of carrying out a suitable and sufficient FRA. Accordingly, no account was taken of the five steps in the CLG Guide; my proposal for nine, more practical, steps was agreed within the profession at the time of drafting every version of PAS 79 (in 2005, 2007 and 2012).
- 7.18 The nine steps are described in sub-clause 11.1 of PAS 79:2012 as follows:
- a) obtain information on the premises, the processes carried out on the premises and the people present, or likely to be present, on the premises;
  - b) identify the fire hazards and means for their elimination or control;
  - c) assess the likelihood of fire, at least in subjective terms;
  - d) determine the fire protection measures currently in the premises;
  - e) obtain relevant information about fire safety management;
  - f) make an assessment of the likely consequences to people in the event of fire, at least in subjective terms;
  - g) make an assessment of the fire risk;
  - h) formulate and document an action plan, in which recommended actions are prioritized (other than in the case of an action plan comprising only minor matters that can be actioned without delay);
  - i) define the date by which the fire risk assessment should be reviewed.
- 7.19 An entire clause is then dedicated to each of the nine steps. In these clauses (Clause 12 – Clause 20), detailed advice is given to the fire risk assessor on the actions that should be taken, matters that should be investigated, advice that should be given, etc.
- 7.20 In Annex B to this report, I benchmark Carl Stokes' FRAs for Grenfell Tower against all clauses of PAS 79:2012, including Clauses 12-20.

## **LGA Guide on Fire Safety in Purpose-Built Blocks of Flats**

- 7.21 The Inquiry are, undoubtedly, familiar with this guide ("the LGA Guide"), to which there was reference, on various occasions, in Phase 1 of the Public Inquiry. The LGA Guide was produced in 2011 in consequence of problems with enforcement of the Fire Safety Order and the quality of FRAs after the fire at Lakanal House in 2009; it remains current. An entire part (Part D) of the seven parts, into which the guidance is divided, is devoted, in conjunction with an appendix (Appendix 2), to the subject of fire risk assessment. For the purpose of this current report, the relevant guidance is primarily that set out in Appendix 2, as this appendix sets out the steps that should be carried out in the process of carrying out an FRA for a purpose-built block of flats.
- 7.22 Appendix 2 simply reiterates the nine steps defined in PAS 79, but, for each step, the LGA Guide sets out specific matters that should be considered, and further, more detailed steps that should be taken, by the fire risk assessor. As this detailed

guidance is set out on four full pages of the LGA Guide, I do not reiterate the detail in this current report. However, in Section 9 of this report, I do benchmark Carl Stokes' FRAs for Grenfell Tower against Appendix 2 of the LGA Guide.

- 7.23 However, it should be noted, while the process of carrying out an FRA is addressed in Appendix 2, within the main body of the LGA Guide, Part D defines four different "types" of FRA, each with a different scope and objective in relation to the work carried out on site. In abbreviated form, the four types of FRA can be described as set out in the paragraphs that follow.
- 7.24 A Type 1 FRA is the basic FRA required for the purpose of satisfying the Fire Safety Order. As such, it can be regarded as the default FRA, in that, if a specifier (such as a building owner or management company) were to require one of the other Types of FRA, it would be expected that they would make this very clear in their specification. (As discussed in Section 8 of this current report, the original TMO specification for FRAs, to which Carl Stokes was required to conform, was produced prior to publication of the LGA Guide, so, of course, made no reference to the Type of FRA required.)
- 7.25 The scope of a Type 1 FRA is limited to the common parts, as these are the areas that fall within the scope of the Fire Safety Order. (As previously discussed, in my experience, fire risk assessors would not consider the external walls, or cladding, of a building to constitute common parts, and this is consistent with the opinion of the then DCLG (now MHCLG) in the immediate aftermath of the Grenfell Tower fire.)
- 7.26 I am aware that it was also the position of the LFB even prior to the Grenfell Tower fire (e.g. following the fire at Shepherd's Court, Shepherd's Bush in August 2016). (As an aside, I would note that, in Phase 1 of the Public Inquiry, there appeared to be an implication that the Shepherd's Court fire involved "cladding"; in fact, without wishing to engage in semantics, the external fire involved what more accurately could be described as spandrel panels beneath windows, which is why the fire spread took the form of a vertical ribbon, without lateral spread.)
- 7.27 I would also note that the exclusion of external cladding from the scope of the Fire Safety Order also appears to have been the understanding of a fire safety inspecting officer of LFB, Michele McHugh, who carried out an audit (of compliance with the Order) at Grenfell Tower on 27 October 2016 [C60]. In her witness statement, Ms McHugh states:
- "On arrival at the Lancaster West Estate's office we were taken to Grenfell Tower by the maintenance manager Mr Seamus Dunlea who gave us access to the building. I noted the cladding, which was attractive, and would probably have commented on it but did not record any notes as we are not required to inspect it under current legislation."*
- 7.28 A Type 1 FRA is described in the LGA Guide as "non-destructive" (often, now described as "non-intrusive"). This means that there is no opening up of the building structure (e.g. by cutting holes to examine compartmentation). However, a Type 1 FRA does include examination of at least a sample of flat entrance doors, and it considers, so far as reasonably practicable, the separating construction between the flats and the common parts without any opening up of construction.



Accordingly, entry to flats, beyond the area of the flat entrance door, is not involved. It may also be appropriate to lift a sample of readily available false ceiling tiles. It would also normally be appropriate to examine a sample of service risers, and to check reasonably accessible roof voids, provided access is practicable at the time of inspection.

- 7.29 A Type 2 FRA is also limited in scope to the common parts, but, in this case, there is a degree of destructive inspection, carried out on a sampling basis. This would usually necessitate the presence of a contractor, for the purpose of opening up construction and making good after the inspection. If opening up needs to be carried out within flats (e.g. to check the integrity of the compartmentation between flats and common parts), this can often only be carried out in vacant flats.
- 7.30 A Type 2 FRA is usually a one-off exercise, which is carried out only if there is good reason to suspect serious deficiencies in compartmentation that could lead to spread of fire beyond the flat of fire origin. As noted in the LGA Guide, the age of the block alone is not generally sufficient to justify the need for a Type 2 FRA. Indeed, it is, unfortunately, common experience that consideration of compartmentation in the most modern blocks of flats is often, because of the poor quality of modern workmanship, more likely to be necessary than in the case of old blocks of flats.
- 7.31 A Type 3 FRA is non-destructive and differs from a Type 1 FRA, in that the scope of work goes beyond the scope of the Fire Safety Order by including consideration of certain fire precautions within the flats (by inspection of a sample of flats), as well as fire safety within the common parts. The principal fire precautions that are examined within flats comprise means of escape for residents in the event of a fire within their own flat and the provision of fire detectors within the flats to give residents a warning of such a fire.
- 7.32 A Type 3 FRA may sometimes be appropriate for rented flats, but only if there is reason to suspect serious risk to residents in the event of a fire in their flats (e.g. because of inadequate provision of smoke alarms), or reason to suspect widespread, unauthorized material alterations within the flats (e.g. removal of partitions to make a flat more open plan, etc.). A Type 3 FRA is not, generally, possible in the case of long leasehold flats, as there would not normally be right of access for this purpose.
- 7.33 A Type 4 FRA has the same scope of work as a Type 3 FRA, but includes a degree of destructive inspection, in both the common parts and the flats, carried out on a sampling basis, again necessitating the services of a contractor; again, destructive inspection within flats can often be carried out only in vacant flats.
- 7.34 Although Type 4 FRAs have become more common following the fire at Grenfell Tower, prior to that time, Type 4 FRAs were relatively uncommon; the LGA Guide advises that a Type 4 FRA will only be appropriate in limited circumstances, such as when a new landlord takes over a block of flats in which the history of work carried out is unknown and there is reason to suspect serious risk to residents from both a fire in their own flats and a fire in neighbours' flats.



### **Practical Steps for an FRA for a High-Rise Block of Flats**

- 7.35 In practice, the approach of a fire risk assessor to an FRA for a high-rise block of flats is not greatly different from the approach adopted in a low-rise block. It is simply that, in the case of a high-rise block, there are additional matters to consider, such as special facilities for the fire and rescue service (e.g. rising mains, by which the fire and rescue service can obtain water, and lifts for use by the fire and rescue service during a fire).
- 7.36 Many of the matters considered in an FRA for a commercial building do not even arise in the case of an FRA for most blocks of flats (e.g. communal fire detection and alarm systems, fire extinguishers, etc.). Equally, an additional factor to consider is engagement with residents, particularly to impart to them information on the “stay put” strategy that is normally relevant; the importance of this was highlighted by the fire at Lakanal House in 2009.
- 7.37 As in the case of any FRA, the matters to be considered by a fire risk assessor can be broadly grouped into three distinct categories, namely fire prevention (measures to prevent the occurrence of fire within the common parts), fire protection (measures to maintain the safety of the common parts in the event of a fire within the common parts and within any flat) and management of fire safety.
- 7.38 This necessitates liaison between the fire risk assessor and the organization that has control of the premises, in conjunction with a thorough inspection of common parts and non-domestic areas, such as plant rooms, access to which will need to be facilitated by those managing the block.
- 7.39 In considering fire prevention, it is necessary to consider measures to control or mitigate the common causes of fire (“fire hazards”). These fire hazards include:
- malicious ignition (partly addressed by consideration of security against unauthorized entry to the block);
  - inspection, testing and maintenance of electrical installations and plant (necessitating liaison with the organization having control of the block to check that inspection and testing is carried out at the appropriate frequency);
  - control over smoking (which is, invariably, in place, to the extent practicable, because of the Smoke-free (Premises and Enforcement) Regulation 2006);
  - heating within the common parts;
  - policy on housekeeping within the common parts (again, necessitating liaison with management) and the actual housekeeping within common parts (determined at the time of inspection);
  - lightning (a somewhat specialist area and of much less significance than other hazards, given that lightning results in only around 0.1% of all fires which, rarely, if ever, result in loss of life, though, in a high-rise block, absence of lightning protection should be queried by a fire risk assessor, while consideration should be given to maintenance of existing lightning protection systems).
- 7.40 With regard to fire protection, matters that should be considered include:

- means of escape from fire (both design and current condition);
- emergency escape lighting;
- fire safety signs (which might be of limited extent, particularly in a building with only a single stairway, but should normally include fire procedure notices);
- provisions for smoke control (though fundamental review of, for example, design calculations would not normally be considered necessary);
- compartmentation (limited, in the case of a Type 1 FRA, to visual observation of readily accessible areas);
- flat entrance doors;
- automatic fire detection (to the extent necessary, which is usually only as part of a smoke control system);
- fire extinguishers (but, normally, only within plant areas);
- the presence of measures to assist the fire and rescue service (primarily rising mains and lifts, but usually without any need for consideration of original design).

7.41 With regard to management of fire safety, matters to be considered include:

- fire safety policy of the organization;
- structure for management of fire safety;
- the evacuation strategy and its relationship with active and passive fire protection measures;
- training of any employees with responsibility for day-to-day fire safety at the site;
- arrangements for testing and servicing of fire protection measures and equipment;
- arrangements for engagement with, and provision of information to, residents;
- arrangements for routine inspection of the common parts.

7.42 As in the case of the “text book” advice on the steps involved in carrying out an FRA, in the following section of this report, I benchmark Carl Stokes’ FRAs of Grenfell Tower against these practical considerations.

## **8. FIRE RISK ASSESSMENTS CARRIED OUT BY CARL STOKES**

- 8.1 I now consider the competence of Carl Stokes to carry out FRAs for Grenfell Tower, taking into account my opinion on the training, skills and qualifications of a competent fire risk assessor.
- 8.2 In Section 6 of this report, I considered Carl Stokes' education, training, experience and qualifications in respect of the practice of fire safety in general and in fire risk assessment in particular. In this current section of my report, I consider the practical skills of Mr Stokes in relation to FRAs for blocks of flats, particularly high-rise blocks of flats, such as Grenfell Tower.
- 8.3 I do so by reference to my study of all FRAs of Mr Stokes that were disclosed to me, but, in particular, the FRAs for Grenfell Tower, including that carried out by Mr Stokes on behalf of Salvus in September 2009; I place particular emphasis on the FRA carried out for Grenfell Tower in June 2016 (as that was the most recent FRA for Grenfell Tower at the time of the fire in June 2017).
- 8.4 My study of the FRAs is also consistent with my instructions to examine the FRAs carried out by Carl Stokes and identify the respects, if any, in which, in my view, they fell short of the standards to be expected of a reasonably competent fire risk assessor. In this current section of my report, I use my study of the FRAs as an indication of the competence of Mr Stokes. In Section 9 of this report, for rigour, I benchmark the FRAs of Mr Stokes against the guidance discussed in Section 7 of this report.
- 8.5 In my experience, the documented findings of an FRA provide significant evidence as to the competence (or, sometimes lack of competence) of the fire risk assessor. I have been assisted in reaching conclusions regarding the competence of Mr Stokes by the extent of detail included in the documented findings of his FRAs. Aside from a positive reflection on the efforts of Mr Stokes to document a suitable and sufficient FRA, the level of detail enhances the reliability of the conclusions set out in Section 11 of this report.
- 8.6 The level of detail is, in my experience, well in excess of that normally included in fire risk assessors' FRAs (though some of the text is standard wording incorporated in all Mr Stokes' FRAs). The documented FRAs are amongst the most detailed of the many thousands of FRAs I have studied; in my opinion, the level of detail goes well beyond that necessary for the FRA to be regarded as suitable and sufficient.
- 8.7 Equally, this does not, in my opinion, detract from the adequacy of the FRAs, though it results in the potential for some key information to be "lost" in the body of text. Nevertheless, to the extent that this is the case, that issue is largely rectified by Mr Stokes' separate recording of the "significant findings".
- 8.8 From a study of the FRAs, there are many "tell-tale" indications (which are set out in paragraph 8.9 below) that Mr Stokes is competent to carry out a suitable and sufficient FRA in general, and, more specifically, FRAs for high-rise blocks of flats, such as Grenfell Tower, notwithstanding certain minor errors or deficiencies

described later in this section of my report. Indeed, were Mr Stokes to apply for registration by the IFE on their Register of Fire Risk Assessors, I would have no hesitation, on the basis of his training, experience and examination of his FRAs, in recommending him for registration, subject only to formal interview, which is a normal part of the registration process.

8.9 By way of example, from my reading of Mr Stokes' FRAs, particularly the June 2016 FRA for Grenfell Tower:

- There is evidence that Mr Stokes was quite meticulous in the detail he recorded, though I have slight concerns that some of the content was standard wording, which he incorporated in all his FRAs, as something of a "cut and paste"; for example, for some reason, the June 2016 FRA for Grenfell Tower contains a section on pest control, in which it is recorded that pigeon netting had been erected to cover the flat balconies, which Mr Stokes states were inspected visually from the ground, when in fact, there are no flat balconies.
- There is evidence that Mr Stokes has a good knowledge and understanding of not only the Fire Safety Order, but the extent to which other legislation is relevant to fire safety in blocks of flats (e.g. the Housing Act 2004). A minor error in this respect is that Mr Stokes recorded that the Responsible Person was the Chief Executive of RBKC, when, in fact, as discussed in Section 3 of my report, the Responsible Person was a body corporate, rather than an individual person. However, in my experience, this is a common error. I also disagree with Mr Stokes regarding the absence of any requirement to disclose an FRA to the relevant enforcing authority (see paragraphs 8.13 - 8.18).
- It is clear that Mr Stokes is aware of, and gave attention to, every relevant Article of the Fire Safety Order.
- It is clear that Mr Stokes carried out a thorough examination of all areas of the buildings, including plant rooms and roofs.
- The FRAs contain a good description of the buildings, their layout and construction.
- There is clear evidence that Mr Stokes was familiar with PAS 79 and, in FRAs carried out in 2012 and thereafter, the LGA Guide. His FRAs incorporate a template from PAS 79. From 2012, the FRAs make reference to the LGA Guide, and references to the subject of cladding in his FRAs are almost certainly based on mention of cladding in the LGA Guide.
- In addition, there is evidence that Mr Stokes was aware of lessons learned from high profile fires. As well as reference to the fire at Lakanal House and a fire at Shirley Towers in Hampshire (in which two firefighters died), there is reference to a little-remembered fire at Prestatyn, involving the murder of five residents of a small property by arson, and involving the imprisonment of the landlord for an offence under the Fire Safety Order.
- There is evidence of very careful checking of records (e.g. of maintenance, etc.). Mr Stokes refers extensively to records and certificates held at the TMO "Hub" in Kensal Road. My impression is that he checked these records personally.

- 8.10 In the sub-sections that follow, I consider what I believe to be some key aspects of the FRAs and their reflection on the competence of Mr Stokes. Thereafter, in further sub-sections, I consider, in more granular detail, positive and negative aspects of the FRAs, from which I draw further conclusions in respect of the competence of Mr Stokes.

### **Scope of Fire Risk Assessment**

- 8.11 The scope of the FRAs was, largely, that of a Type 1 FRA, as defined in the LGA Guide and discussed in Section 7 of this current report, though the term “Type 1” to describe this FRA of the common parts, plant areas, etc. did not exist until publication of the LGA Guide in 2011.
- 8.12 As discussed in Section 7, in a Type 1 FRA, there is no need to consider fire precautions within individual flats (other than in relation to their effect on the common parts), as this is a matter for a Type 3 FRA, the scope of which includes the flats as well as the common parts. However, there is evidence that, as Mr Stokes notes in his FRA, Mr Stokes did consider, to some extent, fire precautions within the flats, over and above the need to do so for a Type 1 FRA, so extending the scope to elements of a Type 3 FRA.

### **Legal Statement within the Fire Risk Assessment**

- 8.13 Within the FRAs, there is a section headed “*Legal Statement*”, in which Mr Stokes correctly noted that the fire and rescue authority “police” compliance with the Fire Safety Order. Mr Stokes goes on correctly to state that the fire and rescue service have the power to undertake an audit of the FRA to determine if it is suitable and sufficient or not. He points out that other agencies can ask if an FRA had been completed, but it is not for them to “*view, enforce or make judgement on*” the FRA.
- 8.14 Thereafter, within this section of his FRAs, Mr Stokes advises the recipient of the FRAs that they do not have to give a copy of their FRAs to anybody, not even the fire authority. He also advises that, if a copy is given to “them” (presumably referring to the fire and rescue authority), this could be “*used against you at a later date*”.
- 8.15 I find the incorporation of the above statement very surprising. Not only was it unnecessary and likely to be regarded as confrontational by inspecting officers of LFB when they studied the FRAs at the time of any audits, the statement is, in my opinion, incorrect as a matter of law. Any audit of premises by a fire and rescue authority under the Fire Safety Order actually begins with a study of the FRA. As he is a previous inspecting officer of a fire and rescue service, I find it difficult to believe that this is not known to Mr Stokes.
- 8.16 I believe it possible that Mr Stokes was making a somewhat academic distinction between the FRA, constituting the detailed information that he documented, and the significant findings of the FRA, which he appeared to consider constituted simply a schedule of defects and rectification measures. If that is the case, in my experience, such a distinction is very unusual, though not unique. Moreover, it would be incorrect to regard the significant findings of an FRA as simply a default action list.



For example, by virtue of Article 9(7)(a) of the Fire Safety Order the significant findings, which must be recorded, include measures which have been taken by the Responsible Person pursuant to the Fire Safety Order.

- 8.17 The advice ignores the fact that, under Article 27(1)(c) of the Fire Safety Order, an inspecting officer has the power, at any reasonable time, to require the production of any records which are required to be kept for compliance with the Order, or which it is necessary for the inspecting officer to see for the purposes of an examination or inspection under Article 27.
- 8.18 The inspecting officer is also empowered to take copies of such records. Thus, for example, in the case of prosecution of a Responsible Person for a failure to ensure that their FRA is suitable and sufficient, it would be normal practice for the fire and rescue authority to require that a copy of the FRA be provided to them. Moreover, Mr Stokes, to some degree, contradicts himself, in that, within the same section of his FRA, he notes that, under certain circumstances (which would apply in the case of Grenfell Tower), a record of any significant findings from the FRA must be kept available to be inspected.

### External Cladding

- 8.19 The report of Phase 1 of the Public Inquiry concluded that the external cladding at Grenfell Tower was the main cause of the rapid fire spread that occurred in the fire in June 2017. As previously noted in this report, the matter of external cladding is raised in all of Mr Stokes' FRAs from 2012 onwards, even though, as discussed in Section 3 of this report, the consensus of opinion, at the time in question, was that external cladding was outwith the scope of the Fire Safety Order and, hence, outwith the scope of an FRA carried out under the Order.
- 8.20 I reproduce in full below Mr Stokes' narrative on the subject of cladding, set out within his June 2016 FRA.

*"New external cladding has been fitted to this building as part of the project of refurbishment/construction work being undertaken on and within this building. The original external face of this building has been over clad, the new **fire rated** (my emboldening and underlining) cladding is fixed to the out (sic) face of the building by metal fixings and the whole process has been overseen by the RBKC Building Control Department and Officers. They have approved and accepted the fixing system and cladding used."*

- 8.21 In this connection, it is relevant to note that, in his October 2014 FRA, Mr Stokes recommended that the building control officer's response to the proposed work, including the overcladding of the building, be requested, and that a copy of the response be kept with the FRA [C32]. More specifically, it is relevant to note that, during the FRA, Mr Stokes noted that a sample of cladding (which had been fixed to the building to show the proposed new cladding to residents), was fixed on timber battens, which would, of course, be combustible [C32]. (In fact, this method of fixing was purely used for the temporary fixing of the cladding sample.)
- 8.22 As a result of his concerns, Mr Stokes recommended that the contractor provide the following information:

- “1. The scope of works covering how this cladding? (sic) How will the cladding be fixed to the building?
  2. What fixings will be used?
  3. The fire rating of the cladding and the fixings?
  4. The Building Control Officers acceptance of this fixing system and the cladding used? ”
- 8.23 There is a paucity of evidence as to the action taken by the TMO in response to this recommendation, and as to any feedback to Mr Stokes on the outcome of such action. However, there is evidence in an email from Mr Stokes to Janice Wray [C54] that, quite separately, Mr Stokes requested, and received, confirmation from the refurbishment contractor, Rydon, that the cladding was compliant with the Building Regulations. I also draw attention to a handwritten note, headed Grenfell Tower, which I assume was disclosed by Mr Stokes [C41]. In the note, point 3 of 18 points in the note reads:
- “Cladding external Non combustible metal fixing signed off by B/C.”*
- (presumably using the abbreviation B/C to mean building control).
- 8.24 Moreover, the proposed plans for the refurbishment would have been subject to approval by the building control department. The approval process would have involved consultation between the building control department and LFB, though, in practice, I would not expect LFB to have given great attention to compliance with the Building Regulations in respect of external wall construction.
- 8.25 Furthermore, the building control department issued a Completion Certificate [C42]. Such a certificate constitutes evidence (though not conclusive evidence) of compliance with the Building Regulations. In view of the circumstances outlined above, including Mr Stokes’ expression of concern that the cladding be subject to approval by the building control department, it was, in my opinion, reasonable for Mr Stokes to assume that the cladding, and its method of fixing, complied with Requirement B4 of Part B of Schedule 1 to the Building Regulations 2010 in relation to external wall construction. In this connection, in the significant findings of his June 2016 FRA, he recommended that, when the refurbishment was completed, documentation provided to the TMO must include a completion certificate issued by RBKC building control department and all “Regulation 38” information required under the Building Regulations [C34].
- 8.26 In this connection, I consider it important to note that an FRA is not a compliance audit (in relation to, for example, the requirements of the Building Regulations). In any FRA, particularly FRAs carried out prior to the Grenfell Tower fire, it is not only reasonable, but is essential, to make assumptions regarding compliance with the Building Regulations (unless there are obvious indications to justify suspicion of non-compliance). In any case, for reasons already discussed in this current report, at the time of Mr Stokes’ FRAs, it was certainly not custom and practice for fire risk assessors to consider the fire performance of external wall construction or cladding, particularly in the case of blocks of flats.

- 8.27 Moreover, even if it had been relevant for Mr Stokes to make further investigations into the details of the cladding, insulation and the wall build up, this would not have been possible by simple visual inspection; it would have been necessary to carry out intrusive inspection, involving cutting out a sample of the newly installed cladding, an action that would have been absurd. Equally, any examination of documentation and plans in relation to the new cladding would simply have involved duplication of effort in relation to work that should have been (and could reasonably be expected to have been) carried out by the building control department.
- 8.28 Notwithstanding the above, the assertion by Mr Stokes that the cladding was “*fire rated*” is of some relevance. The term “*fire rated*” has no recognized, proper definition (other than in American English). The term is often used loosely to refer to elements of construction, such as a wall or a door, that have fire resistance (i.e. an ability to prevent the passage of flame from one side of the element to the other); it may also be used to refer to the propensity of a material to permit fire spread over its surface. Clearly, Mr Stokes is not referring to fire resistance, but appears to be stating the information that the cladding would have adequate performance if exposed to fire, which is clearly incorrect.
- 8.29 I have been unable, from study of the evidence presented to me, conclusively to determine the basis for Mr Stokes’ assertion that the cladding was “*fire rated*”, or whether (perhaps on the basis of some evidence of which I am unaware) the assertion was reasonable. Accordingly, I am reluctant to speculate as to the basis for Mr Stokes’ assertion in this respect. However, the source of the information may have been Rydon, who, according to an email sent by Mr Stokes to Janice Wray, confirmed that the cladding complied with the Building Regulations [C54].
- 8.30 However, in the context of my discussion of the matter of external cladding in this sub-section of this report, I am not of the opinion that the assertion detracts from the competence of Mr Stokes to carry out FRAs for high-rise blocks of flats. Nevertheless, given the simple truism that the assertion is incorrect, it is an equal truism that the June 2016 FRA was not entirely accurate (though in relation to a matter that was, at the time in question, generally regarded as outwith the scope of the FRA required by the Fire Safety Order and that was the subject of information provided by others).

#### **Residents’ Flat Entrance Doors**

- 8.31 Mr Stokes noted that, with the exception of 14 entrance doors to flats that he specifically listed, all flat entrance doors were certificated as providing 30 minutes’ fire resistance. With regard to reference to the certification of the doors, Mr Stokes stated that he found evidence at the TMO “Hub” at Kensal Road that the doors were third party certificated.
- 8.32 I am aware that, in a fire resistance test carried out by BRE in February 2018, an undamaged flat entrance door removed from Grenfell Tower achieved only around 15 minutes’ fire resistance. I am not, at the time of writing this report, aware as to the reason for the failure of the door to achieve 30 minutes’ fire resistance.

- 8.33 While a shortfall of a few minutes' fire resistance might result from some minor variation in the construction of the door or uncertainty in fire-resisting testing, the apparent shortfall in the fire resistance of this door is significant in terms of its suitability for use at Grenfell Tower. If the performance of this door reflects the performance of other flat entrance doors (which is presently unclear to me), this might well be material in terms of the circumstances of the fire, depending on the mode of failure.
- 8.34 Even if this door and other doors failed significantly to afford a fire resistance of 30 minutes, this would not, in my opinion, reflect on the competence of Mr Stokes or the adequacy of his FRA. It is generally impossible to determine, purely from a visual inspection, as to what fire resistance might be afforded by a fire-resisting doorset, particularly in the case of the composite doors in question.
- 8.35 Furthermore, prior to replacement of the original doorsets across the TMO-managed estate, Mr Stokes had examined the specification for the doors produced by the manufacturer, Manse Masterdor Ltd, and he had examined the manufacturer's website [C58]. As a result, he requested confirmation from the TMO that it was the fire-resisting version of their doors that were to be fitted, that relevant documentation was provided to confirm this, that self-closing devices and intumescent seals would be fitted to the doors and that the doors would meet the current Building Regulations [C58]; there is evidence that, at a meeting between Mr Stokes and the TMO on 10 March 2011, it was confirmed to Mr Stokes that self-closing devices and cold smoke seals would be fitted to the doors (in conjunction with "fire rated" letter boxes) [C58].
- 8.36 I understand that the doors were fitted with intumescent strips and smoke seals, as well as fire-resisting letterboxes. These features would be typical of a 30-minute (or greater) fire-resisting doorset, but not a non-fire resisting doorset. Mr Stokes also found documentary evidence that 30-minute fire-resisting doorsets had been installed. Therefore, it would, in my opinion, have been reasonable for Mr Stokes to have accepted that the doorsets would afford 30 minutes' fire resistance.
- 8.37 With regard to the flat entrance doors that had not been replaced, the number of doors in question (14) is very similar to the number of leasehold flats at Grenfell Tower. Given that Mr Stokes also refers to the fact that doors had been replaced on "*tenanted flats*", this would suggest to me that the doors of leasehold flats had not been replaced, almost certainly because it was considered that this was the responsibility of the leaseholder, as would most commonly be the case in leasehold flats.
- 8.38 With further regard to the doors that had not been replaced, it is clear from the FRA that Mr Stokes did examine a sample of these doors to confirm that they were 44mm thick (as would be the case in a traditional fire-resisting door), that they fitted properly in their frames and that any gaps between the door and the frame were acceptable in size. He also noted that the letterbox was within the lower part of the door; the significance of this is that it is less likely to be affected by fire than if it were in the top half of the door, where positive pressure would tend to force hot gases through the letterbox.



- 8.39 Since Mr Stokes noted in his FRA that the doors in question were the original doors (i.e. had not been replaced by leaseholders), it is almost certain that they satisfied the requirements for fire resistance at the time of their installation. Recognized guidance [D1] is that such doors do not normally need to be replaced for compliance with the Fire Safety Order; their failure to achieve 30 minutes' fire resistance in current fire resistance tests results from a change in the test methods and failure criteria over the years. In that sense, replacement of flat entrance doors with doors that would meet the current standard for 30 minutes' fire resistance would be something of a bonus.
- 8.40 There is some support for this view in the latest (January 2020) consolidated advice note produced by the MHCLG, which is based on the guidance of the Government's Expert Panel, formed to advise Government in the wake of the Grenfell Tower fire [D15]. On the subject of flat entrance doors, the MHCLG guidance is that they should be replaced if building owners suspect that they do not satisfy the fire and smoke resistance recommended in the LGA Guide [D1].
- 8.41 That Guide recommends acceptance of old flat entrance doors that met the standard for 30 minutes' fire resistance at the time the block was constructed or the time the door was manufactured (a "notional FD 30 door"), provided other fire safety measures are satisfactory. It is well-known that, because of changes in the fire resistance test over the years, such doors would achieve less than 20 minutes' fire resistance if tested in accordance with current fire resistance tests.
- 8.42 There is evidence that Mr Stokes was alert to the potential risk associated with replacement of an original fire-resisting door with a non-fire resisting door by leaseholders. In this connection, in the "significant findings" table of his June 2016 FRA, Mr Stokes noted that (presumably at the actual time of his inspection) the entrance door to Flat 112 was being replaced. Accordingly, he made a recommendation to the TMO that it should be confirmed that the replacement door would afford 30 minutes' fire resistance.
- 8.43 Nevertheless, it is very relevant to note that, in his FRAs, including that for Grenfell Tower, Mr Stokes makes a statement, which, in view of its significance to Phase 2 of the Inquiry, I reproduce in full below:
- "The TMO does not have any control over or legal powers to intervene if the leaseholder changes the flat entrance door. The lease agreement clearly defines that the entrance door is demised to the leaseholder so if there is an issue over the conformity of the flat's entrance door to either the standards required of the Fire Safety Order or the Building Regulations this is a private matter between the leaseholder and the enforcement authority.*
- There have been meetings on this subject between the TMO and the local LFB fire safety team leaders, minutes of these meetings are held by the TMO Health and Safety team manager along with the relevant policies and procedures. If the apartment is a tenanted one with a TMO tenant not a leaseholder then the TMO has control and will undertake any appropriate actions needed."*
- 8.44 It is, therefore, clear from the FRA that Mr Stokes regarded replacement of original fire-resisting doors (which would not afford 30 minutes' fire resistance when tested in accordance with current fire resistance tests) with 30-minute fire-resisting



doorsets as a “private matter” between the leaseholder and the enforcing authority. In my opinion, the matter is not quite that simple.

- 8.45 There is a major and well-known issue surrounding flat entrance doors in leaseholder flats. In my experience, the most common situation, under a long lease, is that the flat entrance door is demised to the leaseholder, in which case (according to other provisions within the lease), in my experience, the common view of lawyers is that the freeholder has no power to require the leaseholder to rectify any deficiencies in their flat entrance door.
- 8.46 However, other situations sometimes arise under the lease. In some leases, ownership of the flat entrance door is retained by the freeholder. In others, the freeholder owns the first few millimetres of depth of the door, so permitting the freeholder to decorate the external face of the door (e.g. in keeping with other doors in the block).
- 8.47 Regardless of the situation in civil law, it was not appropriate, in my opinion, for the TMO simply to divorce themselves from any necessary action in relation to inadequate flat entrance doors, even if the statement in the FRA is, strictly, correct, in that the TMO had no powers to act. Indeed, there is evidence that the TMO did not divorce themselves from the need for action and that they wrote to leaseholders in respect of this matter, with contemplation of legal action if leaseholders would not fit appropriate flat entrance doors [e.g. see C46, C51, C52 and C53].
- 8.48 In my opinion, if the flat entrance door was demised to the leaseholder, the leaseholder became a person with duties under the Fire Safety Order by virtue of Articles 5(3) and 5(4) of the Fire Safety Order (see paragraph 3.3 of this report). If my opinion is correct, LFB were empowered to issue a notice to leaseholders requiring that any necessary work be carried out on flat entrance doors. However, I am aware that, in the meetings with LFB, to which Mr Stokes refers, LFB advised RBKC and TMO that LFB would not take such action, instead suggesting TMO should enforce the terms of the lease or refer the matter to RBKC for action under the Housing Act 2004 [C47, C48 and C94].
- 8.49 In my opinion, the LFB position was inappropriate or incorrect. My opinion is supported by an opinion of legal counsel for RBKC in a request for guidance of the Secretary of State on the responsibilities of RBKC and LFB in respect of this matter; counsel argued that the LFB position was untenable and unsustainable [C45 and C65]. However, I have personal experience of a case in which it was quite clear that residents were at serious risk as a result of deficient flat entrance doors, but LFB steadfastly refused to issue a notice against leaseholders, who, despite extensive efforts by the freeholder, refused to fit self-closing devices, or carry out other urgent improvement work, to their flat entrance doors. In that particular case, the freeholder and I were informed by a member of LFB legal department that it was not the “will of Parliament” that there should be enforcement action against leaseholders.
- 8.50 Again, I disagree with this view. In my opinion, there was no “will of Parliament” in respect of this matter. It was more the case that this issue was not anticipated when the Fire Safety Order was drafted. Moreover, I am aware that the view of LFB

is not shared with certain other fire and rescue authorities in England, at least one of which has taken enforcement action against a leaseholder.

- 8.51 I should make it clear that, if leaseholders' flat entrance doors were adequate, there would be no need for enforcement action. However, the position of LFB, as set out in those meetings, did not relate to the specific condition of the doors at Grenfell Tower, but a generic point of principle in relation to the entire TMO-managed estate. Moreover, it would appear that Mr Stokes became aware of an internal LFB document, which acknowledged that leaseholders were, indeed, duty holders under Article 5(3) of the Fire Safety Order, against whom enforcement action could be taken [C49].
- 8.52 Accordingly, this may be a matter for the Public Inquiry to consider in Phase 2. With regard to this current report, bearing in mind the confusion and contention regarding the status of flat entrance doors (which continues today), I do not consider that the assertion of Mr Stokes reproduced in paragraph 8.43, detracts from his competence as a fire risk assessor.
- 8.53 Regardless of the power to take action under the Fire Safety Order, there can be no doubt that, if the condition of flat entrance doors created a risk to those other residents using the communal escape route, there was power to take action under the Housing Act 2004. Enforcement of the Housing Act 2004 is the responsibility of the housing authority (i.e. the local authority), who normally use their environmental health officers for this purpose. While, under the Act, a local authority cannot take enforcement action against itself, it can take action against leaseholders. In this case, the housing authority was RBKC.
- 8.54 Accordingly, if the TMO were concerned that leaseholders' flat entrance doors should be upgraded or replaced to ensure the safety of residents (as opposed to simply a matter of best practice), it was open for the TMO to alert RBKC, so that they could take enforcement action. There is protracted correspondence and meetings on this matter, over a considerable period of time, involving RBKC, the TMO and LFB. It is outwith the scope of this report to examine this correspondence and records of meetings, but a chronology of the matter was provided by RBKC to the Inquiry on 28 September 2018 [C46].

### **Engagement with Residents**

- 8.55 In the FRA, Mr Stokes makes various assertions as to means of communicating fire safety information to residents. For example, he states that, when residents took occupation of their flat, they were given a residents' handbook and a tour of the building. If this is correct, I would regard it as an important fire safety measure. It would appear that the information in question was based on a meeting between Carl Stokes and Janice Wray on 24 September 2010 [C44].

### **Firefighting Lifts**

- 8.56 In his FRAs, Mr Stokes asserts that the lifts at Grenfell Tower were firefighting lifts, such that they would be suitable for use during a fire not only by the fire and rescue service, but for evacuation of disabled people. (It is correct that a modern

firefighting lift is suitable for evacuation of disabled people, but this strategy is not normally adopted in blocks of flats.)

- 8.57 In this connection, the original lifts (i.e. when the building was constructed in 1974) in Grenfell Tower would have been “fire lifts” or “firemen’s lifts”, which were intended for use by the fire and rescue service during a fire. However, there were very few measures in the design of such lifts that enhanced their safety for this purpose. The distinguishing feature from normal passenger lifts was a switch at fire and rescue service entrance level, by which the fire and rescue service could recall the lift to that level, after which controls to summon the lift on each level would be disabled, so that the lifts could only be controlled from within the car. (When not required by the fire and rescue service, these lifts are used as the normal passenger lifts in the building.)
- 8.58 From 1986, a modern “fire-fighting lift”, conforming to BS 5588-5 [D12] has incorporated additional fire safety features, the most significant of which is that there are two power supplies, wired in fire-resisting cables, so that, if one power supply fails during a fire, the other power supply will be connected automatically. Since 2003, further enhancements have been incorporated in “firefighters lifts”, conforming to BS EN 81-72 [D13], though there is little distinction between these lifts and lifts conforming to BS 5588-5, and the term firefighting lift is commonly used to describe a lift conforming to BS EN 81-72.
- 8.59 It would appear likely that Mr Stokes’ understanding of the lifts at Grenfell Tower (and other high-rise blocks managed by the TMO) was probably based on misinformation, misunderstanding or miscommunication in the agreement between Salvus and the TMO regarding the status of the lifts in question and the manner in which they would be described in FRAs across the TMO estate, at the time he carried out FRAs as an employee of Salvus. I referred to this matter in paragraphs 4.35-4.38 of this report. Accordingly, I do not rehearse the discussion again in this section of my report.
- 8.60 However, it is clear to me that, while it might have been reasonable for Mr Stokes to accept the original information agreed between Salvus and the TMO (in which, as discussed in paragraph 4.34, he had no involvement), Mr Stokes did appear to lack knowledge in the standards for lifts designed for use by the fire and rescue service, both modern and historical.
- 8.61 In this connection:
- as noted, Mr Stokes accepted, at face value, that a lift with a dedicated power supply (as opposed to a duplicate power supply) could be regarded as a firefighting lift;
  - although Mr Stokes was not qualified in electrical engineering, it is likely that examination of circuit labelling (if adequately provided) would have shown that there was only a single power supply to the lifts;
  - during the refurbishment of Grenfell Tower, Mr Stokes advised Claire Williams, in response to a question from her as to whether the lifts were firefighting lifts or firemen’s lifts, that the lifts were firefighting lifts, presumably based on his

original understanding at the time he was employed by Salvus [C38]. (I am unclear as to any implications of his incorrect advice to Ms Williams.);

- Mr Stokes' response included a somewhat flippant or sarcastic definition of firemen's lift, apparently copied from a dictionary, namely a method of lifting people [C38]; in fact, my understanding is that the lifts were not upgraded as Mr Stokes assumed, in which case they would, indeed, correctly be described as firemen's lifts, consistent with the terminology of the standards at the time of their installation and enabling distinction with a modern firefighting lift;
- Notwithstanding the above, from my examination of Mr Stokes' second witness statement [C68], Mr Stokes appears to have assumed that, because the lifts were replaced in 2005, for compliance with the then current Building Regulations, the new lifts would be required (with certain qualifications) to meet the then current standard for firefighting lifts. I disagree that this is a valid assumption.

Aside from the fact that, as acknowledged in BS 8899 [D16], it is not always practicable to upgrade an old firemen's lift to a modern firefighting lift, under the "non worsening" principle adopted under building regulations, replacement of "like for like" fire safety measures, without upgrading to current standards, is not a material alteration that would require approval under building regulations.

Equally, in the above witness statement, Mr Stokes does acknowledge that the then current standard for firefighting lifts, BS 5588-5 [D12], referred to the European standard, BS EN 81-72 [D13] (for "firefighters lifts"), the latter of which did not apply to lifts installed in existing buildings or important modifications to existing lifts installed before the publication of the European standard.

- 8.62 Nevertheless, it is clear that Mr Stokes did have some knowledge of the requirements of modern firefighting lift standards. For example, he identified in his FRA that the lift cars at Grenfell Tower were not provided with an escape hatch (for use by firefighters trapped in the lift). This feature was not included in the early requirements for firemen's lifts. Accordingly, while, in my opinion, many fire risk assessors would have overlooked, or at least considered it unnecessary to comment on, the absence of the trap door, this absence and Mr Stokes' awareness of its absence, presented Mr Stokes with something of a "tell-tale" sign that the lifts were not firefighting lifts (though, this omission was probably of no major concern to LFB).
- 8.63 Nevertheless, Mr Stokes does not appear to have resolved subsequent information he was given by Janice Wray to the effect that none of the lifts in the TMO-managed estate were firefighting/evacuation lifts. In this connection, I set out in full below the contents of the relevant email chain [C40], beginning with an email from the TMO Senior Lift Engineer, Robin Cahalarn to Janice Wray of the TMO.
- 8.64 Mr Cahalarn's email reads as follows:

*"As recently discussed, standards on firefighting/evacuation lift, which are not retrospect (sic) have become a lot clearer over the last year, none of the TMO lifts are fire fighting or evacuation lifts.*



*The two stock do have some of the requirements, but the cost to meet the recommended standards would prevent us upgrading our lifts"*

8.65 Janice Wray forwarded this email to Carl Stokes, who replied as follows:

*"As far as I know the requirements for a fire fighting/evacuation lift did not change in the March 2010 edition of Building Regs, next time I am in the Hub could we sit down with Robin as he might have different information than me. Does he have copies of the information he is taking (sic) about he could forward to me?"*

8.66 While I would not consider it likely that Mr Cahalarn's position resulted from the coming into force of the Building Regulations 2010, I am, as was Carl Stokes, unclear as to the clarifications in the standards for firefighting lifts and evacuation lifts, to which Mr Cahalarn refers. In response to Carl Stokes' reply to her, Janice Wray simply replied to Carl Stokes by email stating "I'll ask him". I have not discovered any evidence as to how the matter was resolved (if at all), but Mr Stokes did continue to refer to the lifts in the high-rise buildings as "fire-fighting/evacuation lifts".

8.67 Notwithstanding the above, as noted in paragraph 3.10 of this report, firefighters are not relevant persons for the purpose of the Fire Safety Order. Therefore, while Article 38 of the Fire Safety Order requires maintenance of facilities provided, under other legislation, for use by firefighters, the scope of the Fire Safety Order does not extend to the provision, or upgrading, of such facilities; initial provision is a matter for building regulations, after which there is no legislative requirement for upgrading the facilities or equipment to current standards. Accordingly, in my experience, FRAs rarely give material consideration to lifts for use by the fire and rescue service; it would be even rarer for an FRA to recommend upgrading of firemen's lifts to modern standards. Moreover, there are many buildings in London in which old-style firemen's lifts still exist. In my experience, fire and rescue authorities do not expect these to be upgraded in consequence of an FRA.

8.68 I do acknowledge that, because Mr Stokes believed that the lifts at Grenfell Tower were firefighting lifts, he did incorrectly assume that they would satisfy the requirements for evacuation lifts, which are lifts designed to be suitable for the evacuation of disabled people in the event of fire (but are usually found in commercial buildings, rather than blocks of flats, where no evacuation lift operator is normally available).

8.69 The Inquiry will be aware that my views on legislative requirements for facilities and arrangements for evacuation of disabled people from blocks of flats are diametrically opposed to the views of another of the Inquiry's experts, Dr Lane. Accordingly, I do not digress into this issue within this current report. However, I would note that, in November 2019, an investigation by BBC London News found (unsurprisingly) that none of the tower blocks in London in respect of which the BBC were able to obtain information, had evacuation lifts for use by disabled people; this is unsurprising, because it is not normal practice to install evacuation lifts in blocks of flats, though firefighting lifts are suitable for evacuating disabled people in the event of fire, as the specification for these lifts exceeds that for an evacuation lift.



- 8.70 However, I would note that, in the event of a fire within a flat, communal lobbies effectively comprise safe refuges for any disabled people who need to evacuate their flat(s). Moreover, a block of flats normally has a “*stay-put*” strategy and, given that lifts do not automatically return to ground but only do so when the fire and rescue service operate the firefighters’ switch, all residents, including disabled people, will continue to use the lifts prior to the arrival of the fire and rescue service; when the fire and rescue service arrive, they can determine the need for evacuation of disabled residents and whether lifts should be used for this purpose. It would not be expected that a fire in a flat would either disable any normal passenger lift or render its use untenable.
- 8.71 On the basis of the above discussion, I do not consider that any lack of depth of knowledge regarding lift standards on behalf of Mr Stokes, or his apparent acceptance of the position agreed between Salvus and the TMO, detracts from the competence of Mr Stokes to carry out FRAs for high-rise blocks of flats, such as Grenfell Tower. As discussed in paragraph 5.19 of this report, few, if any, fire risk assessors can possess in-depth expertise in every aspect of fire safety. Moreover, as discussed above, the design standards for facilities already provided for use by the fire and rescue service do not, strictly, fall within the scope of the FRA required by the Fire Safety Order.
- 8.72 Moreover, I do not consider that, if Mr Stokes had appreciated that the lift provided for use by firefighters was a firemen’s lift, as opposed to a firefighting (or firefighters) lift, it would have been incumbent on him to treat this as a significant finding or a deficiency in fire safety measures, such as to necessitate upgrading of the lift. (He would not, of course, have suggested that the lift was suitable for evacuation of disabled people, but, in practice, it would not seem that this error led to any strategy for use of the firemen’s lift for this purpose, and I discuss the issue of disabled evacuation elsewhere in this report.)
- 8.73 I do not, within this report, wish to give undue prominence to the matter of the firemen’s lift, as, viewing fire safety measures at Grenfell Tower holistically, I do not consider that the design of the lift significantly affected the risk to relevant persons from fire. However, before leaving the subject of the lift, I consider it relevant to note that I do not agree that, as implied at paragraph 119 of Mr Stokes’ second witness statement [C68], it was reasonable for Mr Stokes, in advising Claire Williams in March 2014 that the lift at Grenfell Tower was a firefighting lift, to rely on the matters to which Mr Stokes refers in that paragraph, namely that:
- i. “...*various professionals were involved in the works on the lifts, and those works were again subject to Building Control sign off and consideration by the LFB as part of the Building Regulations process*”. In this connection, I would not expect the work carried out on the lifts as part of the refurbishment of the Tower to trigger, for example, a requirement for upgrading of the lift under the Building Regulations.
  - ii. “*The LFB attended the Tower on various occasions, for example to carry out s.7(2)(d) visits, and at no point raised any concerns*”. I would not expect operational crews to raise such concerns, particularly as London is awash

with buildings, including blocks of flats, with old-style firemen's lifts. Moreover, I would expect Mr Stokes to be aware of this fact.

- iii. *"The LFB were also given instruction on how to use the lifts...."* Also, *"At no point was I made aware that the LFB had any concerns about the lifts"*. My comments on this point are much as those set out in relation to the previous point; indeed, I would not expect that LFB did have any concerns about the lifts.
- iv. *"At all times the lifts were serviced and at no point did the maintenance company raise any concerns about the lifts."* I would not expect a maintenance company to raise fundamental issues in respect of the presence of a firemen's lift, nor, indeed for the maintenance company to have any concerns.

- 8.74 However, I am sympathetic to the further point made by Mr Stokes in paragraph 119 of his second witness statement [C68] to the effect that, other than with respect to the lack of an emergency trap door, which he raised in his FRAs from 2012 onwards, there was nothing obvious, when he carried out his FRAs, that caused him to reconsider whether the lifts were *"compliant fire-fighting lifts"* (but see 8.63-8.66).

### **FRA Template**

- 8.75 The original Salvus FRAs follow a standard format. The format takes the form more commonly adopted in health and safety risk assessments, in which, rather than setting out a narrative in relation to fire safety measures, discussion of the measures is triggered by a table of pre-defined hazards, each described by the effect of an absence of an adequate fire safety measure. For example, one defined hazard is rapid fire and smoke spread. The tabular template then records the people who would be at risk, the existing control measures in place, a categorization of the risk with these control measures in place and a yes/no column identifying whether further action is required. In general, by means of the consideration of pre-determined, defined hazards, all relevant aspects of fire safety were considered, albeit with some brevity. LFB indicated that they were "more than happy" with the Salvus pro-forma [C6].
- 8.76 The FRAs carried out by Mr Stokes on behalf of his own company from 2010 onwards were considerably more detailed and so were more thoroughly documented. The format comprised a detailed narrative, followed by a template, adapted from a template included in PAS 79, comprising tick boxes and associated commentary, and thereafter, an action plan incorporating recommendations.
- 8.77 I have examined the adapted PAS 79 template used by Mr Stokes and compared it with the template included in the 2005, 2007 and 2012 versions of PAS 79. From this examination, I am satisfied that the template used by Mr Stokes was adapted from the 2007 version. Although the 2012 version was subject to extensive stakeholder review at the drafting stage, the process for carrying out an FRA, as recommended in the 2012 version of PAS 79, did not materially differ from the process set out in the 2007 version. Similarly, the templates in the later two versions

(use of which is not necessary for conformity to PAS 79) did not materially differ.

- 8.78 It is not uncommon for fire risk assessors to adapt the PAS 79 template to satisfy their own requirements, or those of their clients, for documentation of the significant findings of an FRA. Having examined the FRAs of Mr Stokes, I am of the opinion that, taking into account the general narrative of the FRAs in conjunction with the information in the PAS 79 template, Mr Stokes' adaptation of the template did not, in any way, prejudice his consideration, and documentation, of relevant matters, save in one respect, which I discuss below.
- 8.79 In this connection, a major objective of the PAS 79 template is to drive fire risk assessors to consider all relevant matters; if any relevant matter is overlooked, the template cannot be completed. In respect of testing and maintenance, to assist fire risk assessors, the appropriate frequencies for testing and maintenance of the most commonly encountered fire protection systems and equipment are set out in the template.
- 8.80 Accordingly, in relation to firefighting lifts, the PAS 79 template (in both the 2007 and 2012 versions) requires that the fire risk assessor records whether "*weekly and monthly testing, six monthly inspection and annual testing*" is carried out. In his adapted template, Mr Stokes changed the question in the template such as to record whether "*monthly inspection of switches and annual testing of the firefighting/evacuation lifts*" was carried out, with records kept.
- 8.81 I am unclear as to why Mr Stokes omitted any reference to weekly testing. It might be that he considered that this frequency of testing was somewhat impracticable and unnecessary in the case of a block of flats (as opposed to a commercial building), in which case I would agree with his view; weekly testing is included in the PAS 79 template, simply because it is recommended in other standards.
- 8.82 I attach greater significance to Mr Stokes' change of the word "*testing*" to the word "*inspection*". In fire safety (and I would suggest, the field of engineering generally) there is a distinction between inspecting and testing; indeed, the common use of the phrase "*inspection and testing*" underlines the distinction between the two activities. By analogy, a dry rising main should be inspected every six months, but should be subjected to a test, involving charging of the main with water, on an annual basis.
- 8.83 On the one hand, this may be a matter of loose terminology, in that Mr Stokes intended that the monthly inspection include a test of the firefighters' switch. In support of this possibility, it might be said that inspection of a switch would be a somewhat puerile activity; on the other hand, in some old firemen's lifts, the switch was located behind a glass-fronted panel, which could be subject to vandalism.
- 8.84 I am inclined towards the view that Mr Stokes did not intend that the firefighters' switch be tested every month. I base this opinion on Mr Stokes' recording in the FRA that the requisite activity in relation to the firefighters' switch was carried out. Yet, I have found no evidence of any record to show that the firefighter's switch was tested (at any frequency, in any of the TMO high-rise blocks of flats). I am of the distinct impression, from the evidence presented to me, that Mr Stokes was scrupulous in his examination of records relating to testing and maintenance, almost

to the point of pedantry. It would appear anomalous to me that Mr Stokes advocated monthly testing of the firefighters' switch and that records be kept, but failed to observe that there were, as far as I can ascertain, no records of any such tests.

- 8.85 However, in his second witness statement, dated 13 March 2020 [C68], Mr Stokes notes, firstly, that he would not have checked the operation of the switch at the time of his FRA; I consider that Mr Stokes was correct not to do so. Nevertheless, Mr Stokes also states that he would have made sure that there were records of monthly inspections of the lifts by competent lift engineers; he states an expectation that he would have expected these inspections to check the operation of the firefighters' switch. It is not normal practice for monthly inspections of lifts to be carried out by lift engineers. Moreover, I have not been presented with any evidence that monthly inspections were carried out by lift engineers.
- 8.86 In that second witness statement, Mr Stokes also states that, in relation to the firefighters' switch, he "*understood that this would have been checked by ESAs and should have in any event have (sic) been checked by the LFB during their visits.*" I have been presented with no evidence that would form a basis for Mr Stokes' understanding in relation to the ESAs. The ESAs were required to check that lifts operated correctly, but this would not imply to me that they were required to confirm the correct operation of the firefighters' switches; it is a matter for evidence of fact as to whether they were trained to do so or were even in possession of the drop keys required to operate the switches [C95]. Moreover, at the time of Mr Stokes' most recent FRAs, LFB had long since ceased to test firefighters' switches on a routine basis, nor was it, in my opinion, incumbent on them to do so.
- 8.87 However to contextualize this matter, the most recent guidance documents from Scottish Government on both fire safety in high-rise blocks of flats and in specialized housing (both published subsequent to the Phase 1 report of the Inquiry) recommend (e.g. in a table of maintenance and testing requirements) "*monthly inspection and annual testing and maintenance*", which is almost identical to the recommendations of Carl Stokes. (For objectivity, I would also note that the guidance refers to BS EN 81-72 [D13] for further information; that standard advocates regular testing of the firefighters' switch and gives weekly as a "*typical*" frequency. I would also note that, in Scotland, operational fire and rescue service crews normally test these switches every three months.)

#### **Detailed consideration of Mr Stokes' FRAs**

- 8.88 In order to satisfy my instructions, in this final sub-section of this current section of my report, I set out detailed comments arising from my examination of Mr Stokes' FRAs, particularly the June 2016 FRA. For ease of reference, I consider, separately, positive findings and negative findings.

##### Positive Findings

- 8.89 Positive findings are as follows:
- The FRA contains a review date and a table for recording each subsequent review.



- The scope of the FRA clearly included plant rooms, risers, and the roof. Mr Stokes reported on housekeeping standards in the plant rooms. There is significant evidence that a thorough inspection was carried out with both positive reporting and reporting of defects.
- Mr Stokes correctly refers to all relevant legislation (including, for example, the Equality Act 2010).
- There are correct references to all relevant guidance documents and Mr Stokes is clearly aware of their contents. He is also aware of relevant information on the website of LFB.
- There is consideration of disabled people.
- Mr Stokes reasonably recorded the assumption that the refurbishment work had been carried out in compliance with the Building Regulations.
- Certain matters that were outside the normal scope of a Type 1 FRA were considered, such as certain fire precautions within flats, access for the fire and rescue service and fire spread beyond the building. Mr Stokes also carried out a test of the override facility on the electronic lock on the entrance door; testing of equipment is not normally carried out as part of an FRA.
- There is a good description of the construction, and there is evidence that he is aware of the risk of sandwich panels (which were not used at Grenfell Tower).
- There was a recommendation, in the June 2016 FRA, that, after all construction work was completed, plans of the building should be updated.
- There is evidence of an understanding of the “stay put” strategy.
- There is evidence that Mr Stokes understood the importance of communicating fire safety information to residents.
- There is evidence that Mr Stokes considered previous fire loss experience.
- There is evidence that Mr Stokes was familiar with PAS 79 and recognized the steps that PAS 79 advocates in carrying out a fire risk assessment.
- There is evidence that Mr Stokes had made himself familiar with the lessons learned from other fires involving flats.
- There is evidence that Mr Stokes examined a sample of flat entrance doors. In the case of those that had not been replaced, Mr Stokes gave consideration to their adequacy to the extent that he also considered the significance of the location of the letterbox in the door. In the June 2016 FRA, Mr Stokes noted that the door to Flat 112 was being replaced and the door to Flat 24 was damaged.
- In the June 2016 FRA, Mr Stokes recorded that inspection and testing of the electrical installation was up to date, but he correctly recommended that a new inspection and test be carried out when the construction work was completed.
- Mr Stokes verified that labels in the building in respect of electrical inspection and testing confirmed the record held by the TMO.
- There is evidence that Mr Stokes was aware of the fire hazards of photovoltaic systems (though there was no system at Grenfell Tower).



- There is extensive evidence of checking of records, which was clearly carried out, as dates of tests, inspections, etc. are recorded in the FRA.
- There is extensive consideration of housekeeping standards, etc.
- There is evidence that Mr Stokes considered quite detailed matters in relation to emergency lighting, such as its provision in a disabled toilet in the community room.
- Mr Stokes considered the relevance of signs on each floor level indicating the floor number. The significance of this became evident in the findings in relation to the Shirley Towers fire; in 2013, the coroner's Rule 43 letter recommended that it should be mandatory (potentially by an amendment to the Fire Safety Order, which has never been made) for floor numbers to be displayed on staircase landings and in lift lobbies of high-rise buildings. In Mr Stokes' FRA, there was also consideration of a notice at ground floor level indicating which flats were located on which level for the assistance of the fire and rescue service.
- Mr Stokes examined the provision of smoke alarms within the new flats. He advocated the provision of fire detection in the newly created flats beyond the minimum required under the Building Regulations.
- There is evidence that Mr Stokes understood the latest thinking on the disadvantages of dry powder fire extinguishers.
- As previously discussed, Mr Stokes noted the absence of a roof hatch within the lift cars, which is something of a detail, but is a facility incorporated in a modern firefighting lift.
- There is evidence that Mr Stokes checked the contents of training material used in staff training.
- There is evidence that Mr Stokes was a strong advocate of documentary evidence for all management actions taken. For example, he complained that, while handbooks, incorporating fire safety advice, were provided to residents, there was no documentary evidence that this had been carried out. He also required confirmation that weekly tests of a fire alarm system in plant rooms on the roof and in the basement were being carried out and that emergency lighting was being tested.
- In his June 2016 FRA, Mr Stokes considered the need for the boxing club and the nursery to carry out their own fire risk assessments and advocated that the TMO should obtain copies of these.
- Mr Stokes clearly examined fire extinguishers, since he identified in his June 2016 FRA some extinguishers that had not been maintained since October 2014.
- In his June 2016 FRA, Mr Stokes made a recommendation regarding handover of information from the contractor to the TMO for compliance with Regulation 38 of the Building Regulations 2010. This is commonly overlooked when construction work is carried out, and Mr Stokes was presumably aware of the potential for this.
- Mr Stokes recommended that, when contractors had completed their work, printouts of flue gas analysis be attached to the boilers. This is a matter that a

fire risk assessor would not normally consider, as it relates to health and safety, but is indicative of thorough consideration given to safety by Mr Stokes.

- Mr Stokes noted rusting on a hatch and its frame, which constituted an alternative means of escape from the boiler area of Grenfell Tower; again, this is indicative of attention to detail in a thorough inspection.
- Mr Stokes drew attention to painting of intumescent strips on some fire doors, which probably did not affect their performance but is bad practice; again, this is indicative of attention to detail in Mr Stokes' inspection.
- Mr Stokes found information that would suggest that the gas supply to the building was shut off if automatically-opening vents in the smoke control system operated. He correctly pointed out that this should not be the case.
- While noting that the lightning protection system had been subject to maintenance, Mr Stokes asked for confirmation that the system had actually passed the test carried out, as this was not clear from the documentary evidence.

#### Negative Findings

8.90 Notwithstanding the many positive aspects of the FRA, I would make a number of minor criticisms, some of which I have described previously in this report.

8.91 I summarize these below:

- There is evidence that some of the wording in the FRA is simply standard wording, which can be found in other FRAs, from which there may have been an element of "cut and paste". The most blatant of these is, as discussed in Section 8 of this report, reference to pest control and visual inspection of pigeon netting on balconies, which did not even exist at Grenfell Tower.
- It is unclear as to whether there was contact with the contractors, who, at the time of the June 2016 FRA, still had control of some lower floors, and any contact with the nursery and the boxing club, to consider any necessary co-operation that was required between them and the TMO to co-ordinate the fire safety measures required under the Fire Safety Order. However, there was confirmation that Rydon had carried out their own fire risk assessment, and it may be that, at the time in question, the nursery and the boxing club were not in operation.
- I refer again to the inappropriate statement regarding the need to provide the FRA to the enforcing authorities and the potential for the FRA to be used against the TMO.
- I refer again to the misleading use of post-nominals, though this does not impact on the validity of the FRAs.
- I refer again to the incorrect identification of the Responsible Person, which Mr Stokes recorded as the Chief Executive of RBKC. However, again, this does not impact on the validity of the FRAs.
- I refer again to the information that the cladding at Grenfell Tower was "fire rated", though this is not so much a criticism of the FRA as a possible issue in relation to information made available to Mr Stokes. Moreover, as already

discussed, it was not custom and practice to consider external wall construction within an FRA.

- I refer again to the issue of the firemen's lifts, which Mr Stokes regarded as firefighting lifts. I previously discussed this issue, and, unless the information is simply an inappropriate "cut and paste" from another FRA, the issue is more one of information made available to Mr Stokes, rather than the adequacy of his work in carrying out the FRA.
- As previously discussed, better information might have been provided in relation to enforcement action against leaseholders if their flat entrance doors were inadequate. However, it is clear that Mr Stokes examined a sample of these doors, in respect of which there were not necessarily any deficiencies.
- In discussing housekeeping, Mr Stokes indicates that the policy in the common parts was one of "managed use", as defined in the Local Government Association guidance on fire safety in purpose-built blocks of flats. While this can be acceptable, Mr Stokes suggests that pushchairs within flat lobby areas would be acceptable, provided they do not cause an obstruction. This is a moot point, particularly given Mr Stokes' apparent knowledge of a fatal fire in a small terraced property in Prestatyn, which was divided into two flats; that fire was started in a pushchair. However, equally it might be said that Mr Stokes had taken that fire into account, since he advised that no combustible items should be piled up on the pushchairs (which was the case in the Prestatyn fire).
- In his June 2016 FRA, there is something of a contradiction in comments on risers, in that he requested documentation to verify that the new fire-resisting riser doors would afford 30 minutes' fire resistance, but, elsewhere in the FRA, Mr Stokes stated that panels above the riser doors did not need to be fire resisting because the risers were sealed at floor level. If the risers were sealed at floor level, there would be less need for fire resistance of their enclosure, but an element of fire resistance might still be of value depending on the services within the riser cupboards and any fire hazards that they might constitute. However, I do not consider this to be a major issue.
- As previously discussed, Mr Stokes did not appear to consider the need for regular testing of the firefighters' switch, which was provided to enable firefighters to ground the lifts and bring them under control solely from the lift cars. However, it would be harsh to suggest that this oversight would mean that the FRA, as a whole, was not suitable and sufficient.
- There is a shortage of information on the smoke control system at Grenfell Tower.

8.92 I do not consider that, in aggregate, with the possible exception of the information on the external cladding at Grenfell Tower, any of the above negative features of the FRAs were such that it could be said that the FRA was not suitable and sufficient; to the extent that it could be said that it was not suitable and sufficient, any significant shortcomings appear to be based on information provided to Mr Stokes and reasonably accepted by him, and/or the relevant shortcomings would not be expected to result in the risk of death or serious injury of any relevant person.

8.93 With regard to the external cladding, identification of the serious fire risk that it created would, obviously, if acted upon, have averted the risk of death of relevant

persons clearly demonstrated by the fire. While, on the one hand, it is my strongly held opinion that the cladding was outside the scope required of a suitable and sufficient FRA, it could equally be argued that if, at his own prerogative, a fire risk assessor includes in his FRA information beyond the minimum required by legislation, the Responsible Person is entitled to rely on that information.

- 8.94 However, as previously discussed, it would not have been possible for Mr Stokes to reach a conclusion as to the fire performance of the cladding by simple visual inspection. As previously stated, an FRA under the Fire Safety Order is not an audit of compliance with the Building Regulations. In my opinion, it was reasonable for Mr Stokes to assume that cladding installed as part of a major refurbishment requiring approval under the Building Regulations, and subject to a Completion Certificate, would satisfy the requirements of the Building Regulations in relation to external wall construction.
- 8.95 Given my opinions on the exclusion of external wall and cladding from the scope of the Fire Safety Order, it might be questioned as to whether Mr Stokes should have expressed an interest in the fire performance of the cladding and/or referred to the matter in his FRAs; certainly, if he had not raised the matter when he observed a sample of the cladding, I would have had no criticism of this or regarded it as any failure on his part. It is also relevant to note that, in his second witness statement, Mr Stokes notes that, unsurprisingly, the matter of what he describes as “*compliance of the façade*” was “*neither within my remit, nor my ability*”.
- 8.96 A question of this nature often arises when a practitioner in one aspect of fire safety, engaged to perform a task within their competence, identifies what they believe to be some issue that relates to fire safety, but is neither within their competence nor the scope of their terms of engagement. An example is that of a fire extinguisher, or fire alarm, maintenance technician, who may, fortuitously, identify a deficiency in means of escape, such as an obstructed exit that they believe might form part of the means of escape in case of fire.
- 8.97 Design of means of escape is not expected to, nor in reality would it normally, lie within the circle of competence of these maintenance technicians. Similarly, a fire risk assessor engaged to carry out a fire risk assessment for the purpose of compliance with the Fire Safety Order might identify a risk to property or business continuity, such as a defect in a fire suppression system in an unmanned data centre. The Fire Safety Order is not concerned with property protection or protection of business continuity, so the issue is outside the required scope of the FRA.
- 8.98 The issue can arise even where there is some proximity between the scope of work for which a competent person is engaged and the nature of the deficiency observed. Thus, for example, a fire alarm maintenance technician was prosecuted (albeit unsuccessfully) for design defects in a fire alarm system, in which he had no involvement, simply because, during his maintenance work, he had, fortuitously, identified some design deficiencies that had no bearing on his work, but which he drew to the attention of his client; the prosecution alleged that, in effect, by commenting on these defects, he was carrying out a design review and should, therefore, have also identified other design defects.



- 8.99 The Prosecution decided to offer no evidence in the above case after an expert witness report opined that maintenance does not involve a design review. Subsequently, the relevant British Standard was amended to advise that a maintenance technician may, at their own prerogative, draw attention to design deficiencies, but that this should not be regarded as an indication that the technician has identified, or endeavoured to identify, all such areas of non-compliance with the design standard.
- 8.100 In my opinion, for the safety of the public, and the benefit of the client, anyone engaged in fire safety work should draw attention to any fire safety issues outwith their terms of engagement that they happen to observe if these are of concern to them; in my further opinion, competence in the matter concerned is not, and should not be, a pre-requisite that can preclude “value added” advice by any professional person that can potentially cause a fire hazard, or a risk to the public, to be addressed. The matter should be recommended for consideration by those who are competent and/or responsible for doing so.
- 8.101 For the purpose of my instructions, it is not my role to act as an advocate for Carl Stokes; indeed, to do so would contravene the requirements of the CPR. However, my instructions do require that I opine on the competence of Carl Stokes to carry out FRAs for buildings of the nature of Grenfell Tower. I do so in this report, regardless of whether these opinions are positive or negative. In my opinion, Mr Stokes’ concern regarding the cladding and its fixings at Grenfell Tower is further evidence that he was competent.
- 8.102 In referring to this further indication of Mr Stokes’ competence, I rely for support on guidance produced by the HSE on the matter of competence in relation to health and safety legislation [D18]. The guidance refers, for simple situations, to an awareness of the limitations of one’s own experience and knowledge, and to the willingness and ability to supplement existing experience and knowledge, when necessary by obtaining external help and advice. Regardless of the situation, this now tends to be widely regarded as an important part of the character of a “competent person” in fire safety.
- 8.103 Mr Stokes alleges, in his second witness statement, that, in effect, the issues he raised in respect of cladding were outwith his ability; having studied Mr Stokes’ education, training and experience, I would expect that this would be the case. If the Inquiry accepts that allegation, in advising that the matter of cladding be referred to the building control body, Mr Stokes was, indeed, recognizing his own limitations and recommending that further help and advice be obtained from a body charged with ensuring compliance of external wall construction with the Building Regulations. As such, he was, in my opinion, exhibiting the character of a competent person.
- 8.104 Mr Stokes’ recommendation that it be confirmed that the cladding and its method of fixing had been subject to approval by the building control body had, in my opinion, potential to prevent the Grenfell Tower tragedy. It is matter for the Inquiry, and not for speculation in this report (in the absence of any evidence presented to me), as to how it came about that this potential aversion of the tragedy did not materialize. However, it was, in my opinion, reasonable for Mr Stokes, having raised the matter



and, on the basis of evidence (though somewhat slim in nature), having received assurance in respect of compliance of the cladding with the Building Regulations, to assume compliance for the purpose of his final FRA for Grenfell Tower.

## **9. BENCHMARKING OF THE FIRE RISK ASSESSMENTS AGAINST RELEVANT GUIDANCE**

- 9.1 In this section of my report, for further completeness, I benchmark the FRAs of Carl Stokes against the three recognized guidance documents, to which I referred in Section 7 of this report, namely the CLG Guide [D11], PAS 79 [D8] and the LGA Guide [D1]. In Annex B, for complete rigour, I set out more detailed benchmarking of the FRAs against Clauses 4-19 and Annex D of PAS 79.

### **Benchmarking against the CLG Guide**

- 9.2 As shown in Figure 2 at paragraph 7.16 of this current report, to which I now refer the Inquiry, the CLG Guide advocated five steps in the FRA process. In his FRAs, Mr Stokes refers to the five steps, though describing them as those advocated by the Health and Safety Executive (HSE) (on which the CLG based their five steps).
- 9.3 With regard to Step 1, Mr Stokes' FRAs properly considered all relevant sources of ignition and fuel within the common parts and non-domestic areas of the premises for which he carried out FRAs, including Grenfell Tower. In my opinion, the documented findings of the FRAs clearly indicate that all relevant areas were thoroughly inspected in this respect.
- 9.4 With regard to Step 2, Mr Stokes clearly recognized the scope of relevant persons, within the meaning of the Fire Safety Order, and gave particular consideration to disabled people, including plans of the TMO to make special arrangements for those with mobility impairment (though he did, incorrectly, describe the lifts as fire-fighter/evacuation lifts, a matter that I have already discussed in some detail within this report).
- 9.5 With regard to Step 3, Mr Stokes properly considered fire detection and warning, firefighting, escape routes, lighting (particularly emergency escape lighting), signs, notices and maintenance.
- 9.6 With regard to Step 4, Mr Stokes' FRAs recorded the significant findings of the FRAs and set out an action plan. It was not the role of Mr Stokes, as the fire risk assessor, to prepare an emergency plan, inform and instruct people, cooperate and coordinate with others or to provide training. However, these matters were appropriately considered in his FRAs.
- 9.7 With regard to Step 5, Mr Stokes' FRAs provided a suggested date for both review of the FRAs and completion of new FRAs, no doubt reflecting the TMO policy on the frequencies for review and repeat of FRAs.
- 9.8 In short, in my opinion, Mr Stokes' FRAs conformed to the very simplistic approach to FRAs set out in the CLG Guide.

## **Benchmarking against PAS 79**

- 9.9 As discussed in Section 7, PAS 79 advocates nine steps in the process of carrying out an FRA. In his FRAs, Mr Stokes acknowledges the nine steps advocated by PAS 79 and adds to them.
- 9.10 With regard to Step 1, Mr Stokes comprehensively gathered relevant information in respect of the building, its occupants, previous fire history, etc, all as recommended in PAS 79.
- 9.11 With regard to Step 2, as recommended in PAS 79, Mr Stokes' FRAs considered the fire hazards (i.e. causes of fire) and the measures to eliminate or control these hazards. In this connection, all three versions of PAS 79 incorporated, within an informative (i.e. non-mandatory) annex, a "prompt list" of hazards that were appropriate for consideration in an FRA, along with relevant control measures. All of these hazards and relevant control measures were considered in the FRAs of Mr Stokes.
- 9.12 Step 3 in the PAS 79 nine steps comprises a subjective assessment of the likelihood of fire, taking into account the fire hazards identified and the control measures in place.
- 9.13 Using a matrix offered by PAS 79 as a means of assessment of fire risk, Mr Stokes concluded that the likelihood of fire was "Medium", which is defined in the PAS 79 FRA template as indicative that there were normal fire hazards (e.g. potential ignition sources) for the type of occupancy, with fire hazards generally subject to appropriate controls (other than minor shortcomings). In my opinion, this was a reasonable conclusion on the basis of the information available to Mr Stokes in respect of Grenfell Tower and documented in his FRAs for Grenfell Tower.
- 9.14 Step 4 in the PAS 79 nine steps involves determining the physical fire protection measures (measures that contribute to safety in the event of fire), relevant to protection of people in the event of fire. In my opinion, Mr Stokes gave due consideration to all relevant fire protection measures to the extent appropriate in a suitable and sufficient FRA.
- 9.15 Step 5 in the PAS 79 nine steps involves determining relevant information about fire safety management. PAS 79 notes that this will involve discussion with management, but might also involve examination of documentation, such as records of testing, maintenance, training, etc. In my opinion, Mr Stokes gave appropriate consideration to fire safety management, though, as previously discussed in this report, he did not definitively address the regular testing of the firefighters' switch for the lifts of any of the high-rise blocks for which he carried out FRAs.
- 9.16 Step 6 in the PAS 79 nine steps comprises a subjective assessment of the consequences to occupants in the event of fire. For this purpose, the fire risk assessor is expected to consider various fire scenarios, the extent of injury that could occur to occupants in these scenarios and the number of people affected. This assessment is principally based on the fire risk assessor's findings in Steps 4 and 5, but also takes account of information obtained in the first Step.

- 9.17 Using the matrix offered by PAS 79 as a means of assessment of fire risk, Mr Stokes concluded that the consequences of fire at Grenfell Tower were “Slight harm”, which is defined in the PAS 79:2012 FRA template as indicative that outbreak of fire was unlikely to result in serious injury or death of any occupant (other than an occupant sleeping in a room in which a fire occurs).
- 9.18 In the context of an FRA of the common parts and non-domestic areas of Grenfell Tower, and in the absence of knowledge of the serious risk of fire spread created by the cladding, this was, in my opinion, a reasonable conclusion.
- 9.19 Step 7 in the PAS 79 nine steps is to make an assessment of fire risk and decide if the fire risk is tolerable, by combining the likelihood of fire and the consequences of fire. Using the matrix offered by PAS 79 as a means of assessment of fire risk, Mr Stokes concluded that the fire risk at Grenfell Tower was “Tolerable”, which, in the parlance of PAS 79, suggests that no major additional controls were required, but that there might be a need for improvements that involve minor or limited cost.
- 9.20 In the matrix, tolerable risk is the outcome of medium likelihood of fire and slight harm in the event of fire. Again, this conclusion needs to be considered in the context of the reasonable expectation, based on the scope of the fire risk assessment required by the Fire Safety Order, that any fire in a flat would be confined within that flat; also, the reasonable absence of any expectation that, as actually occurred in June 2017, there were simultaneous fires in over 20 flats. By analogy, fire safety design of buildings, and fire risk assessments, do not address the potential of multi-seated arson.
- 9.21 Step 8 in the PAS 79 nine steps is to formulate an action plan to address shortcomings in fire precautions in order to reduce the fire risk. In my opinion, Mr Stokes formulated a reasonable action plan in relation to the findings identified in his FRAs.
- 9.22 Step 9 in the PAS 79 nine steps is to set a long stop date for review of the FRA if no review was necessary at an earlier time as a result of changes or a reason to suspect that an FRA is no longer valid. Mr Stokes was aware of the TMO policy in this respect.
- 9.23 In short, in my opinion, Mr Stokes’ FRAs conformed to the nine steps recommended by PAS 79.

### **Benchmarking against the LGA Guide**

- 9.24 As discussed in Section 7, the LGA Guide advocates use of the nine steps in PAS 79, but, over four pages of text in Appendix 2 of the Guide, elaborates in some detail on each step, particularly in relation to fire prevention and fire protection measures that should be considered.
- 9.25 For brevity, I do not set out, in this current report, the content of these four pages. However, I would note that the LGA Guide acknowledges that measures to assist the fire and rescue service, such as fire mains and firefighting lifts, are not required by

the Fire Safety Order, but would normally be required under building regulations, so adequate maintenance of these measures should be verified in an FRA.

- 9.26 In his FRAs, Mr Stokes acknowledges the LGA Guide and advises, in FRAs carried out from 2012, that the type and scope of the FRA is that defined in the LGA Guide as Type 1 (see paragraphs 7.24-7.28). As discussed in paragraphs 7.24-7.28, a Type 1 FRA is the default FRA for compliance with Article 9 of the Fire Safety Order. I previously concluded in this report that Mr Stokes had taken an interest in the LGA Guide at the time of its drafting and was clearly familiar with its contents.
- 9.27 As correctly noted by Mr Stokes, his FRAs overlapped into a Type 3 FRA (over and above the minimum requirements of the Fire Safety Order), because consideration was given to electrical and heating installations within the flats, along with their testing and maintenance regimes, and the provision of fire detection within flats.
- 9.28 I have considered Mr Stokes' FRAs in relation to the guidance in Appendix 2 of the LGA Guide. In short, in my opinion, in carrying out his FRAs from 2012 onwards, Mr Stokes properly considered the advice in Appendix 2 of the LGA Guide.



## 10. MISCELLANEOUS ADVICE PROVIDED BY CARL STOKES

- 10.1 In accordance with Mr Stokes' contract with the TMO, between 2010 and the time of the fire at Grenfell Tower in 2017, Mr Stokes quite frequently gave advice on miscellaneous fire safety matters that arose within buildings in the TMO-managed estate. This advice was most commonly given in response to queries raised by staff of the TMO, particularly Janice Wray. However, there is evidence that Mr Stokes proactively offered advice on matters that came to his attention during visits to blocks in relation to other un-associated matters.
- 10.2 I have examined an extensive amount of correspondence between Carl Stokes and the TMO in relation to these matters. Problems on which Mr Stokes advised included complaints from residents, the hazard of mobility scooters in common parts, storage in common parts, hoarding and leaseholder flat entrance doors. In general, I have found the advice to be appropriate and competently provided by Mr Stokes.
- 10.3 However, I have identified three matters in respect of which the advice given by Mr Stokes was incorrect or inappropriate, namely:
- As previously discussed, he incorrectly advised Claire Williams that the lifts at Grenfell Tower were firefighting lifts. I have discussed this extensively in previous sections of this report, and, therefore, I do not further discuss the matter in this current section of my report.
  - Mr Stokes strongly advised against the provision of premises information boxes (PIBs) (which had been requested by LFB), apparently for no other (stated) reason than the duty of LFB to carry out familiarization visits for compliance with Section 7(2)(d) of the Fire and Rescue Services Act 2004 [C27]. I disagree with that advice and do not consider that familiarization visits by a fire and rescue service constitute an alternative to the provision of PIBs, though, in my experience, PIBs were not commonplace in general needs blocks of flats at the time in question.
  - Mr Stokes appeared to consider that conformity with the recommendations for the provision of fire detection in flats, given in BS 5839-6 [D14], was necessary for conformity with Approved Document B (ADB) [D3] under the Building Regulations 2010 [C39].

Accordingly, he queried the reason that smoke alarms were provided in only the hallways of some of the new flats created during the refurbishment project, given that BS 5839-6 recommends the provision of additional detection.

He further queried why other flats were provided with additional smoke alarms and questioned an apparent response by the RBKC building control officer to the effect that this was because, in the case of these flats, the length of the hallway exceeded 9m. It would appear that Mr Stokes did not understand the relevance of the figure of 9m [C43].

In fact, in my experience, it is extremely well-known to those with even the most basic knowledge of the requirements in England and Wales for fire detection in domestic premises (including, in my experience, even an apprentice electrician)

that, while BS 5839-6 recommends the additional alarm devices in kitchens and lounges, this is simply good practice recommended in a British Standard, whereas conformity with ADB does not necessitate the provision of these additional alarm devices.

Indeed, in my experience, this is an extremely well-known difference between requirements imposed under the building regulations in England and Wales and those imposed in other devolved administrations in the UK (i.e. Scotland and Northern Ireland).

In Scotland and Northern Ireland, the recommendations of BS 5839-6 are adopted in the guidance that supports the building regulations in these regions of the UK; in England and Wales, in 2006, a positive decision was taken by the relevant Government department not to require these additional alarm devices, on the basis that the resulting additional cost for new dwellings could not be justified.

Equally, the same misinterpretation of ADB as encountered in the advice of Mr Stokes can be found in one of the Inquiry's expert reports, which also, incorrectly, alleges that provision of smoke alarms solely in hallways contravened the Building Regulations 2010. Accordingly, while I have not previously experienced such misinterpretation within the fire safety profession, it would appear to be the case that Mr Stokes was not alone in his misconception.

With regard to the 9m, the relevance of which Mr Stokes did not appear to understand, this figure is the maximum figure for distance of travel within hallways of dwellings advocated in ADB. Accordingly, at Grenfell Tower, additional smoke alarms had clearly been provided in some of the new flats as compensation for travel distance that exceeded 9m.

- 10.4 In the interest of objectivity, I consider it necessary to opine that, in the context of the extensive advice provided by Mr Stokes to the TMO over a period of seven years, the above issues, which have come to light only as a result of very close scrutiny of all correspondence between the TMO and Mr Stokes that has been disclosed to the Inquiry, do not detract from the competence of Mr Stokes in the practice of fire safety and fire risk assessment.

## 11. CONCLUSIONS

- 11.1 In view of the extensive discussion of the competence of Mr Stokes and adequacy of his FRAs within previous sections of this report, my conclusions in respect of the matters that I am instructed to address are, no doubt, obvious to the Inquiry.
- 11.2 However, for completeness and formality, in the paragraphs below, I summarize my conclusions in respect of the matters that I am instructed to address.
- 11.3 There is no legal requirement for a fire risk assessor to possess any particular education, training or qualifications; the requirement, under Article 9 of the Fire Safety Order, is simply that the FRA must be suitable and sufficient. In practice, this does necessitate an appropriate blend of education, training and experience in the practice of fire safety, in conjunction with certain experience and/or training in fire risk assessment.
- 11.4 The most significant factor is an ability in the practice of fire safety. This ability is very commonly, as in the case of Carl Stokes, developed by training and experience, within a fire and rescue service, in enforcement of fire safety legislation, though other routes to competence are possible. Very little additional training or experience is required to “convert” an experienced fire safety officer of a fire and rescue service into a competent fire risk assessor. Moreover, few, if any, additional skills are required to carry out an FRA for a high-rise block of flats with a straightforward layout, such as Grenfell Tower.
- 11.5 The steps that a competent person could be expected to take when conducting and reporting on an FRA for a building, such as Grenfell Tower, involve a structured approach, such as that set out in PAS 79.
- 11.6 This comprises collation of information about the building, consideration of causes of fire and means for their control, consideration of the fire protection measures installed to secure the safety of occupants in the event of fire and investigation of the management of fire safety by the relevant dutyholder under the Fire Safety Order. This then leads to an assessment of the level of fire risk and formulation of an action plan to reduce the risk to as low as reasonably practicable.
- 11.7 In my opinion, the FRAs carried out by Carl Stokes, both on behalf of Salvus in 2009 and on behalf of his own company between 2010 and 2016, were carried out competently, with comprehensive consideration of all relevant fire safety measures required by the Fire Safety Order (and some measures outwith the scope of the Order).
- 11.8 While there were some minor deficiencies in these FRAs, these were, in my opinion, outweighed by the many positive aspects of the FRAs. However, in the light of the tragic fire in June 2017, it is relevant to re-state my opinions in respect of the assertion in Mr Stokes’ June 2016 FRA that, in effect, the fire performance of the new cladding at Grenfell Tower, which was the fundamental cause of the disastrous fire spread, was satisfactory, in the light of the information available to Mr Stokes.

11.9 In this connection:

- external wall construction has always been regarded as outside the scope of the Fire Safety Order and, hence, outside detailed consideration in fire risk assessments;
- nevertheless, Mr Stokes not only showed awareness of the potential hazards of cladding, but advised the TMO, during the refurbishment project, to confirm that the cladding and its method of fixing was satisfactory to the building control department of RBKC;
- there was no way that, by visual inspection, Mr Stokes could have determined the fire performance of the cladding and its method of construction;
- in my opinion, it was entirely reasonable for Mr Stokes to have assumed that the building control process had adequately addressed compliance of the cladding with the relevant requirements of the Building Regulations 2010.
- A letter from LFB to RBKC containing advice regarding the issue of external fire spread, following the fire at Shepherds Court in August 2016, was forwarded by email from Janice Wray to Carl Stokes on 19 April 2017. In my opinion, Mr Stokes' reply to Janice Wray [C54] is very significant and I reproduce it in full below.

*"Noted.*

*That is why I asked Rydons for the information and compliance for the cladding and will dowsing (sic) of Grenfell.*

*Rydons provided all the information and stated compliance with the requirements of the Building Regs."*

It would appear, therefore, that Mr Stokes' assumption that the cladding afforded adequate fire performance was not simply based on a passive assumption that the matter had been addressed under the Building Regulations, but that he had taken steps to confirm compliance with Rydon.

- 11.10 Equally, given the events on the night of the fire at Grenfell Tower in June 2017, it is relevant, for the purpose of this report, to highlight the failure of Mr Stokes definitively (or at all) to identify the apparent absence of routine testing of the firefighters' switch for the lifts.
- 11.11 If Mr Stokes had not adapted a template contained within PAS 79 for recording the significant findings of an FRA, he would have been "directed" by the template to address weekly testing of this switch. Equally, it should be noted that use of this template is not necessary for conformity with PAS 79. Moreover, in my experience, many competent fire risk assessors who do not use the PAS 79 template tend to overlook this matter, which is also commonly overlooked by many Responsible Persons that, nevertheless, demonstrate a commitment to fire safety in their buildings.
- 11.12 In conclusion, in my opinion, Carl Stokes was competent to carry out FRAs for Grenfell Tower, taking into account his training, skills and qualifications in the practice of fire safety and the FRAs that he documented.





## **ANNEX A**

### **COMPETENCE STANDARD FOR FIRE RISK ASSESSORS**

# **FIRE RISK ASSESSMENT COMPETENCY COUNCIL**

## **Competency Criteria for Fire Risk Assessors**

**Version 1**

**Published : 21/12/11**

## Foreword

Fire safety legislation requires that, for most premises except private dwellings, a fire risk assessment must be carried out to determine the risks to people from fire. The legislation also requires that suitable measures are taken to ensure the safety of people from fire. The appropriate fire precautions are determined by the fire risk assessment.

There is no legislative requirement for the fire risk assessment to be carried out by a competent person. This is to avoid an implication that every duty holder under the legislation needs to employ the services of a fire safety specialist, such as a consultant, to carry out their fire risk assessment.

For small, simple premises, it is often the duty holder that carries out the fire risk assessment. Arguably, in these premises, the duty holder is the best person to do so because of their intimate knowledge of the premises and the activities therein. Guidance to support those wishing to carry out the fire risk assessment themselves has been made available by the Government.

However, for many premises, the duty holder seeks the services of an external consultant („a fire risk assessor“). In the case of larger, more complex or high risk premises, this is often appropriate, as the task might well be beyond the ability of the duty holder.

Some members of the business community have suggested that it would be helpful for those who want to use the services of a commercial fire risk assessor to be able to access information on those with an appropriate level of competency in fire risk assessment to help them comply with the legislation. There has also been growing concern regarding the competence of those who provide these fire risk assessments on a commercial basis (i.e. for a fee). Data from the English Fire and Rescue Service suggests that the main compliance failure leading to enforcement action is a failure by duty holders to carry out a suitable and sufficient fire risk assessment. This is coupled with the emergence of inadequate fire risk assessments for premises that have suffered multiple fatality fires.

As a result of these concerns, the Fire Risk Assessment Competency Council, which comprises a broad group of relevant stakeholders (listed as participants), emerged from the fire sector with the encouragement of Government. Its objective has been to establish agreed, industry-wide, criteria against which the competence of a fire risk assessor can be judged. It is anticipated that these criteria will be used by professional bodies and third party certification bodies who register or certificate fire risk assessors and, by commercial companies providing fire risk assessment services.

While it is very unlikely that third party certification of this nature will become mandatory under legislation, Government acknowledges the benefits to duty holders of third party certification of fire protection products and services as a means of assisting in compliance with legislation. This includes fire risk assessment services.

This document will be subject to periodic review by the Fire Risk Assessment Competency Council, so that it can be updated to reflect current thinking and experience in the fire safety community.

A sister document „Fire Risk Assessment – A guide for businesses“ has been produced to assist duty holders in assessing whether they can undertake the fire risk assessment in house or whether they should appoint an external contractor who specialises in fire risk assessment.

## Participants

Acknowledgement is given to the following organizations that assisted in the development of this document;

Association of Building Engineers (ABE)  
Association of Fire Consultants (AFC)  
Association for Specialist Fire Protection (AFSP)  
Awarding Body of the Built Environment (ABBE)  
British Approvals for Fire Equipment (BAFE)  
British Fire Consortium (BFC)  
BRE Global Ltd (BRE)  
Chartered Institute of Environmental Health (CIEH)  
Chief Fire Officers' Association (CFOA)  
Chief Fire & Rescue Advisors Unit (CFRAU)  
Confederation of British Industry (CBI)  
Construction Products Association (CPA)  
Department for Communities and Local Government (DCLG)  
Fire Industry Association (FIA)  
Fire Brigades Union (FBU)  
Fire Protection Association (FPA)  
Federation of British Fire Organisations (FOBFO)  
Institution of Fire Engineers (IFE)  
Institute of Fire Prevention Officers (IFPO)  
Institute of Fire Safety Managers (IFSM)  
International Fire Consultants Certification Ltd (IFCC)  
Institute of Occupational Safety & Health (IOSH)  
National Examination Board in Occupational Safety and Health (NEBOSH)  
Passive Fire Protection Federation (PFPF)  
Royal Institute of British Architects (RIBA)  
Royal Institution of Chartered Surveyors (RICS)  
Skills for Justice  
Warrington Certification Ltd (WCL)  
United Kingdom Accreditation Service (UKAS)

## Fire Risk Assessor Competency

A person is regarded as competent where they have sufficient training and experience or knowledge and other qualities to enable them properly to implement their role.

In the case of **simple premises**, where the fire risk assessor might, for example, be an employee of the occupier, it is possible that the following attributes of a fire risk assessor might be sufficient in conjunction with a study of suitable guidance documents. Even in such a simple premises, the fire risk assessor will need:-

- a) An understanding of relevant current best fire safety practices in premises of the type in question;
- b) An awareness of the limitations of the fire risk assessor's own experience and knowledge;
- c) A willingness and ability to supplement existing experience and knowledge, when necessary, by obtaining external help and advice.

**Complex premises** will require a higher level of knowledge, understanding and, preferably, experience on the part of the fire risk assessor. For such premises, there will be a need for the specific applied knowledge and skills of an appropriately qualified specialist. In such cases, evidence of specialist training and experience, or membership of a professional body, or certification by a third party certification body, may assist in demonstrating competence.

In general, other than in the case of simple, low risk premises, fire risk assessors, particularly those offering their services on a commercial basis, need an appropriate knowledge of:

- The assessment of risk from fire (appendix A)
- Applicable Legislation (appendix B)
- Appropriate Guidance (appendix C)
- Behaviour of fire in premises (appendix D)
- Effects of fire on people and behaviour of people in fire situations (appendix E)
- Means of Escape (appendix F)
- Fire Prevention (appendix G)
- Fire Protection (appendix H – includes Passive & Active)
- Management of Fire Safety (appendix I)

Competence does not necessarily depend on the possession of specific qualifications, although such qualifications might contribute to the demonstration of competence.

In the context of the above paragraph, knowledge can be obtained by academic study, training, working alongside others, short courses, continuing professional development or any combination of these.

Education is likely to involve formal education of a relatively academic nature, often culminating in a qualification. Training involves training of a practical nature, often given on the job.

It is not implied that education, training and experience in the principles of fire safety need each be extensive, provided that the combination of each results in adequate knowledge. Moreover, a high level in respect of any one of these might compensate for a lower level in another. It is essential that the level of competence be sufficient to allow the fire risk assessor to identify correctly the significant risks (especially combined risks) and to draw up a list of appropriate actions to address them.



## **Definitions**

### **Duty holder**

In this document, the term duty holder is used to define where appropriate;

In England and Wales, the responsible person as defined in Article 3 of Regulatory Reform (Fire Safety) Order 2005.

In Scotland, the person on whom duties are imposed under Sections 53-54 of the Fire (Scotland) Act 2005.

In Northern Ireland, the person on whom duties are imposed under Articles 25-26 of the Fire and Rescue Services (Northern Ireland) Order 2006.

### **Fire Hazard**

Source, situation or unsafe act with potential to result in a fire (e.g. an ignition source or an accumulation of waste that could be subject to ignition).

### **Fire Hazard Identification**

Process of recognizing that a fire hazard exists and defining its characteristics.

**Fire Risk** combination of likelihood and consequence(s) of fire.

### **Fire Risk Assessment**

overall process of identifying fire hazards and evaluating the risks to the safety of persons in the event of fire, taking account of existing risk controls (or, in the case of a new activity, the proposed risk controls).

### **Fire Protection System, Active**

A system which in the event of fire can function only after its operation has been either manually or automatically initiated.

### **Fire Protection System, Passive**

A system that carries out its function without requiring any manual or automatic initiation of its operation in the event of fire.

### **RSET**

Required Safe Egress Time

### **ASET**

Available Safe Egress Time

## *Appendix A*

### **The Assessment of Risk from Fire**

It is innate to the process of carrying out a fire risk assessment that there be an assessment of fire risk. A competent fire risk assessor must be able to make a subjective judgement – albeit based largely on objective evidence – of the overall risk to life from fire in the premises for which a fire risk assessment is carried out.

Accordingly, the fire risk assessor should be able to;

- Appreciate generally the concept of risk assessment as it applies to fire.
- Understand the terms “fire hazard” and “fire risk” and appreciate the relationship between the two.
- Within the fire risk assessment, reach a subjective opinion on differing levels of fire risk for the purposes of making comparisons in premises where the fire risk assessment is being carried out.

To enable the fire risk assessor to carry out the above, the fire risk assessor should;

- Be aware of the broad range of methodologies of fire risk assessments available.
- Be able to apply an appropriate methodology of fire risk assessment in respect of the premises to which the fire risk assessment relates.
- Be able to identify fire hazards (both common and process) and the risks associated with those hazards.
- Be able to apply an understanding of fire hazard and fire risk in the premises in context, to make an informed judgement on the appropriate level of fire precautions in the premises where the fire risk assessment is being carried out.
- Be able to express fire risk for the client in such a manner as to provide at least, a broad comparison of the fire risk at different premises within a single estate of properties.

## ***Appendix B***

### **Applicable Legislation**

It is not expected that the fire risk assessor will have the skills of a legal expert. However, it is necessary for the fire risk assessor to have a good understanding of the applicability, principles, objectives and intent of the legislation under which the fire risk assessment is carried out, and of any associated legislation

Accordingly, the fire risk assessor should be able to;

- Generally determine the extent to which fire safety arrangements in premises are adequate and whether duty holders comply with the relevant fire safety legislation.
- Identify failures to comply with the specific legislation, particularly those that may lead to the commission of an offence.
- Within the action plan of the fire risk assessment, write a sufficient outline requirement for any measures required to achieve compliance with the relevant legislation.

To enable the fire risk assessor to carry out the above, the fire risk assessor should;

- Be aware of the relevant enforcing authority for the legislation under which the fire risk assessment is carried out.
- Be able to understand and interpret actions of enforcing authorities.
- Be able to interpret the requirements of the enforcing authorities as set out in notices.
- Be aware of the relevant requirements of the legislation in respect of fire risk assessment and the duties the legislation places on various persons.
- Be aware of any specific local acts relating to fire.
- Be aware of the nature of non-compliances that may occur.
- Be aware of the nature of the offences that may be committed.
- Be aware of the guidance that supports the legislation (see Appendix C).
- Be aware of the principles of prevention (as defined in the relevant European Directive).
- Be able to distinguish between the general fire precautions (fire safety measures) required by fire safety legislation and the process fire precautions required by health and safety legislation.

To enable the fire risk assessor to carry out an appropriate risk assessment they must have regard to legislative and regulatory requirements of the country in which the assessment is taking place.

Reference should be made to the following sub appendices:-

Appendix B1 – England and Wales

Appendix B2 – Scotland

Appendix B3 – Northern Ireland

These do not cover every eventuality and a competent assessor should be capable of identifying when other laws or regulations need to be considered.

## Appendix B1 England and Wales

- Have a good understanding of the Regulatory Reform (Fire Safety) Order 2005 (“the Fire Safety Order”).
- Be aware of which enforcing authority enforces the Fire Safety Order in any premises for which a fire risk assessment is carried out.
- Understand the meaning of the term “Responsible Person” and be able to identify the Responsible Person in premises for which a fire risk assessment is carried out.
- Understand the meaning of “Persons having control of premises” and be able to identify such persons.
- Understand the meaning of the term “Relevant Persons”.
- Understand the meaning of the term “General Fire Precautions”.
- Understand the manner in which the Fire Safety Order applies to premises.
- Be fully aware of the requirements of Article 9 of the Fire Safety Order in respect of risk assessment.
- Understand the relationship between the Fire Safety Order and the Dangerous Substances and Explosive Atmospheres Regulations 2002.
- Understand the relationship between the Fire Safety Order and licensing legislation.
- Understand the relationship between the Fire Safety Order and the Health and Safety at Work etc Act 1974.
- Understand the relationship between the Fire Safety Order and the Housing Acts.
- Understand the meaning of the term “Reasonably Practicable”.
- Understand the concept of proportionality of general fire precautions to risk.
- Understand the distinction between the failure to comply with the requirements of the Fire Safety Order and an offence under the Order.
- Understand the relevant requirements of the Health and Safety (Safety Signs and Signals) Regulations 1996.

## Appendix B2 Scotland

- Understand the relationship between Part 3 of the Fire (Scotland) Act 2005 (“the Act”) and the Fire Safety (Scotland) Regulations 2006 (“the Regulations”). Have a good understanding of the Act and the Regulations.
- Be aware of which enforcing authority enforces the Act and the Regulations in any premises for which a fire risk assessment is carried out.
- Understand the meaning of the term “Employer” and be able to identify the Employer in premises for which a fire risk assessment is carried out.
- Understand the meaning of “Persons having control of premises” and be able to identify such persons.
- Understand the meaning of the term “Relevant Persons”.
- Understand the meaning of the term “Relevant Premises”.
- Understand the meaning of the term “Fire Safety Measures”.
- Understand the manner in which the Act and the Regulations apply to premises.
- Be fully aware of the requirements of Part II of the Regulations in respect of fire risk assessment.
- Understand the relationship between the Act, the Regulations and the Dangerous Substances and Explosive Atmospheres Regulations 2002.
- Understand the relationship between the Act, the Regulations and licensing legislation.
- Understand the relationship between the Act, the Regulations and the Health and Safety at Work etc Act 1974.
- Understand the relationship between the Act, the Regulations and housing legislation.
- Understand the meaning of the term “Reasonably Practicable”.
- Understand the concept of proportionality of fire safety measures to risk.
- Understand the distinction between the failure to comply with the requirements of the Act or the Regulations and an offence under the Act.
- Understand the relevant requirements of the Health and Safety (Safety Signs and Signals) Regulations 1996.



## Appendix B3 Northern Ireland

- Understand the relationship between Part 3 of the Fire and Rescue Services (Northern Ireland) Order 2006 (“the Order”) and the Fire Safety Regulations (Northern Ireland) 2010 (“the Regulations”).
- Have a good understanding of the Order and the Regulations.
- Be aware of which enforcing authority enforces the Order and the Regulations in any premises for which a fire risk assessment is carried out.
- Understand the meaning of the term “Employer” and be able to identify the Employer in premises for which a fire risk assessment is carried out.
- Understand the meaning of “Persons having control of premises” and be able to identify such persons.
- Understand the meaning of the term “Relevant Persons”.
- Understand the meaning of the term “Relevant Premises”.
- Understand the meaning of the term “Fire Safety Measures”.
- Understand the manner in which the Order and the Regulations apply to premises.
- Be fully aware of the requirements of Part II of the Regulations in respect of fire risk assessment.
- Understand the relationship between the Order, the Regulations and the Dangerous Substances and Explosive Atmospheres Regulations (Northern Ireland) 2003.
- Understand the relationship between the Order, the Regulations and licensing legislation.
- Understand the relationship between the Order, the Regulations and the Health and Safety at Work (Northern Ireland) Order 1978.
- Understand the relationship between the Order, the Regulations and housing legislation.
- Understand the meaning of the term “Reasonably Practicable”.
- Understand the concept of proportionality of fire safety measures to risk.
- Understand the distinction between the failure to comply with the requirements of the Order or the Regulations and an offence under the Order.
- Understand the relevant requirements of the Health and Safety (Safety Signs and Signals) Regulations (Northern Ireland) 1996.

### **Appropriate guidance**

The fire risk assessor should have knowledge of the suites of guidance produced by the applicable government departments together with other guidance produced by industry, standards making bodies, etc. that apply to the premises on which the fire risk assessment is being undertaken.

Much of this guidance cross references other guidance and it is the duty of the competent fire risk assessor to be able to navigate through these sets of guidance and to maintain their currency as guidance is refreshed and new guidance is produced. This will form part of their formal continual professional development which will need to be evidenced to allow for 3<sup>rd</sup> party certification.

Accordingly the fire risk assessor should be able to;

- Determine the appropriate guidance applicable to the premises to which the fire risk assessment is being carried out, whilst fully appreciating that guidance should not be applied prescriptively.
- Apply such guidance in a proportional manner, keeping in mind the use to which the premises are being put.
- Understand the limitations and/or dangers of applying small parts of different guidance documents (“cherry picking”) as a solution.
- Evidence how they are maintaining their currency in respect of applicable guidance and standards.

### **Behaviour of fire in buildings**

The behaviour of fire in a building will be determined by a combination of its structural design, construction materials, passive and active fire safety elements, the use to which the building is put, nature and quantity of combustible materials and the standard of management applied.

Active and Passive fire safety is covered in Appendix H and Management of fire safety is covered in Appendix I.

Although the structural performance of the building is not strictly within the remit of a fire risk assessor, as this should have been dealt with when it was built, a fire risk assessor must have regard to this aspect.

Accordingly, the fire risk assessor should be able to;

- Generally determine how fires can start and the how the spread of fire and products of combustion can impact on components of the building .
- Identify failures and/or changes to the building that could change the way a fire and products of combustion travel through the building.

To enable the fire risk assessor to carry out the above, the fire risk assessor should have;

- Knowledge of the principles of combustion (triangle of fire).
- Knowledge of fire growth and how it gets progressively bigger.
- Knowledge of movement of smoke and other products of combustion.
- An awareness of how construction materials behave in a fire.
- An awareness of how different structural designs of buildings behave in a fire.
- An awareness of how fire spread can be inhibited by passive and active fire protection methods (see Appendix H).
- An awareness of how to identify that the subsequent use or alteration of the building can invalidate pre existing fire safety precautions and/or strategies.

## **Effects of fire on people and behaviour of people in fire situations**

It is not expected that the fire risk assessor will have the skills of a behavioural psychologist. However, whilst most other aspects of fire safety are concerned with physical or system based issues, understanding human behaviour in the event of a fire is an essential part of the knowledge of a fire risk assessor's role.

Accordingly, the fire risk assessor should be able to;

- Anticipate the way people will generally behave in fire situations.
- Identify potential problems arising from the likely behaviour of people in the premises for which a fire risk assessment is being carried out.
- Within the action plan of the fire risk assessment, taking account of the likely behaviour of people in the premises in the event of fire, make recommendations for managerial or other measures considered necessary..

To enable the fire risk assessor to carry out the above, the fire risk assessor should;

- Be aware of hazards to people from fire, namely loss of visibility, elevated temperature, toxic gases and oxygen depletion.
- Be aware of current professional thinking and practical guidance on human behaviour in fire, including case studies.
- Be able to anticipate the likely behaviour of people in fire for those premises being assessed.
- Be aware of the effect of splitting of family groups.
- Be aware of the likely response of people to discovery of a fire.
- Be aware of the likely response of people to a fire alarm signal.
- Understand the effect of frequent false alarms on willingness to evacuate.
- Understand the importance of the actions of those in charge at the time of a fire.
- Understand the importance of staff training and the influence of training and drills on occupant behaviour in the event of fire.
- Understand the importance of a structured emergency plan.
- Understand the effect of different cultures on fire and evacuation behaviour.
- Understand the effect of escape route design on evacuation behaviour, including the tendency to use familiar egress routes.

## **Means of Escape**

The proper provision of means of escape is an essential part of fire safety measures in all premises. A fire risk assessor must have regard to this important aspect.

Accordingly, the fire risk assessor should be able to;

- Understand the means of escape strategies for different types and occupancy of premises.
- Understand the principles of fire related emergency planning and evacuation.
- Understand the implications of how different needs of people can affect the selection of the appropriate means of escape.

To enable the fire risk assessor to carry out the above, the fire risk assessor should;

- Understand that all persons within the premises should be able to reach a place of ultimate safety before life-threatening conditions arise; either unaided or with the
- assistance of staff – without FRS assistance. (RSET versus ASET)
- Understand that any emergency plan should be compatible with the normal every-day use of the premises.
- Understand the principles relating to alternative escape routes, dead ends and single direction of escape.
- Understand the principles relating to horizontal and vertical escape.
- Understand the principles relating to travel distances and travel times.
- Understand the principles relating to provision of adequate number(s) and dimensions of routes and exits.
- Understand the principles relating to appropriate use of door releases and other escape devices.
- Understand the principles relating to protected escape routes.
- Understand the principles relating to relative and ultimate places of safety.
- Understand the principles relating to means of escape other than stairs.
- Understand the relationship between fire detection systems and means of escape.
- Have an awareness of how smoke control systems can assist means of escape.
- Have an awareness of the provisions for, and maintenance of, evacuation signage. Have an awareness of the provisions for, and maintenance of, emergency lighting.
- Have an awareness of procedures and methods of assisted evacuation including the need for the training of staff in the emergency procedures and use of such equipment.



## **Fire Prevention**

Fire Prevention should be regarded as a vital part of fire safety and is an important part of any assessment. The law requires that one takes appropriate steps to reduce the likelihood of fire and of the spread of fire on the premises and to mitigate the effects of any fire that occurs.

Accordingly, the fire risk assessor should be able to;

- Understand and apply the appropriate principles of prevention.
- Identify and have an understanding of the different types of hazard.
- Evaluate the risk, and consider the appropriate method of managing the risk.

To enable the fire risk assessor to carry out the above, the fire risk assessor should;

- Understand the term „as low as reasonably practicable“ (ALARP).
- Understand how ALARP should be applied proportionately to the risk in the premises.
- Understand that removal of the hazard should be the first step in fire prevention.
- Understand if the hazard cannot be removed the next step is to reduce the risk.
- Understand that if the risk cannot be reduced to an acceptable level then appropriate protective measures will need to be implemented.
- Understand the need to maintain the measures undertaken above, especially when changes are made to the use, structure or layout of the premises.

## **Appendix H Fire Protection**

It is not expected that a fire risk assessor will carry out any engineering evaluation or examination of detailed design of passive or active fire protection systems or equipment, but such systems and equipment should be considered in terms of their suitability for the premises, and requirements in respect of appropriate maintenance and necessary testing.

A competent fire risk assessor must have the ability to identify correctly the passive and active elements of fire protection/design and their role in the provision of fire safety in the premises. This will include how they may interact e.g. if the fire alarm system triggers a door release mechanism to release held open doors to the closed position.

The sub-appendices below identify the elements that should be used to evaluate the competence of fire risk assessors.

Accordingly the fire risk assessor should be able to:

1. Determine the need for fire protection systems and equipment;
2. Identify any major failings in the level of passive and/or active fire protection provided by existing systems and equipment from documentation, by observation and, where necessary inspection of measures that are not immediately visible;
3. Write a brief outline requirement for new or upgraded systems and equipment, within the action plan of the fire risk assessment
4. Demonstrate an ability to correctly identify the purpose, function and suitability of passive or active elements of fire protection/design.
5. Understand the availability and value of third party certification schemes for persons, systems and products.

To enable the fire risk assessor to carry out an appropriate risk assessment they must have regard to the passive and active systems installed within the premises and any necessary interaction between the two.

Reference should be made to the following sub appendices:-

Appendix H1 – **Passive fire protection**

Appendix H2 – **Active fire protection**

## **Appendix H1 – Passive fire protection**

The fire risk assessor should have a knowledge and understanding of the role in the provision of fire safety, including the types of fire performance requirements (load bearing capacity, integrity, insulation, reaction to fire performance etc.) of the following:-

### **Fire protection to structural frame**

- The significance of any immediately visible damage.

### **Fire resisting walls, floors and ceilings forming escape routes**

- Their location in the building.
- The need to maintain the fire resistance:
  - of and above any suspended ceilings.
  - below any raised floors.
  - where they are penetrated by services (cables, pipes, ducts etc.).

### **Cavity barriers**

- Their location in the building.
- Their importance in particular types of premises construction.

### **Fire-resisting glazing**

- Its location in the building.
- Types of fire resisting glazing and relevant limitations in the use of non-insulating types. The significance of any immediately visible damage and the need to repair it.

### **Fire doors and furniture**

- The importance of correct fitting of the door in the frame including door gaps.
- The importance of suitable fire rated ironmongery e.g. self-closing devices, latches etc..
- The need for appropriate intumescent protection:
  - around the periphery of the door leaf.
  - to ironmongery.
  - to glazing.
- The provision and condition of any smoke seals.
- The ability to self-close.
- The ability of any door retention device to release e.g. on the operation of any fire alarm/detection system (from documented maintenance records/checks).
- The assistance of any third party labelling in ascertaining the above.
- The limitations on techniques for upgrading fire door performance e.g. using intumescent coatings, self-adhesive intumescent strips etc..

### **Fire-resisting dampers (mechanical or intumescent)**

- Their location in the building.
- Their operation (from maintenance records).
- Their operation as part of any smoke control system (from maintenance records/checks).

### **Fire-resisting ductwork**

- Its location in the building.
- The need to maintain the fire resistance where it penetrates compartment and/or fire resisting walls/floors by the use of suitable penetration seals.

**Fire-resisting service ducts and shafts**

- Their location.

**Fire fighting shafts and stairwells**

- Their location in the building.

**Penetration seals for pipes, cables and other services**

- Their location in the building.
- Their visible condition including the use of unsuitable repairs.
- The use of sealing systems not supported by test evidence relevant to the end use of the product.

**The building envelope, e.g. fire-resisting external walls, curtain walls**

- The significance of their role in protecting external escape routes at boundaries.
- The significance of any immediately visible damage.
- The importance of remedying any immediately visible damage in sandwich panel constructions using combustible insulating cores.

**Wall and ceiling linings in escape routes**

- The significance of extensive over painting.
- The significance of large quantities of combustible items (notice boards, notices etc.).

## **Appendix H2 – Active fire protection**

The fire risk assessor should;

### **For Fire Detection and Alarm (FD&A) Systems and Voice Alarm Systems:**

- Be able to determine the appropriate category of FD&A system to match the risks for a (non domestic or domestic) premises.
- Be able to determine the circumstances where a Voice Alarm system is appropriate for the risks.
- Understand how FD&A systems interlink with other systems and equipment.
- Understand the need for door release mechanisms to fail safe and the need for ancillary equipment.
- Understand the circumstances in which there is a need for a connection to an alarm receiving centre.
- Be aware of the importance of avoiding false alarms, and have an awareness of elementary measures for their avoidance.
- Be aware of available adaptations to FD&A systems for deaf and hard of hearing people.
- Understand how phased evacuation and staged alarm systems interact.
- Be aware of the basic requirements for siting manual call points.
- Understand the common types of detectors and their limitations.
- Understand the common alarm devices and their limitations.
- Be aware of situations in which cables should be fire resisting.
- Be aware of the need for zone plans and their value to the Fire and Rescue Service. Be aware of the certificates that should be issued by “Competent Persons” and key points contained in them.
- Understand the appropriate frequency and nature of routine testing and maintenance.

### **For Emergency Voice Communication systems (EVC):**

- Understand the need for, and purpose of, EVC systems.
- Be aware of the main components and their locations.
- Understand the appropriate frequency and nature of routine testing and maintenance.

### **For Emergency Escape Lighting (EEL):**

- Be aware of the common forms of EEL system, their principles of operation (i.e. self contained and central systems) and modes of operation (maintained & non maintained).
- Be aware of limitations in the use of standby generators.
- Understand situations where maintained EEL is necessary.
- Be aware of the basic requirements for positioning of luminaires and understand the meaning of “Point of Emphasis”.
- Be aware of the relationship between EEL and signs.
- Be aware of the certificates that should be issued by “Competent Persons” and key points contained in them.
- Understand the appropriate frequency and nature of routine testing and maintenance.

### **For First Aid Fire Fighting Equipment:**

- Have an understanding of the situations in which fire fighting equipment are necessary.
- Have an understanding of the different fire extinguishing agents, their applications and limitations.
- Have an understanding of the different roles of portable fire fighting equipment and hose reels.
- Be aware of the basic requirements for selection, provision and siting of fire fighting equipment.
- Understand the appropriate frequency and nature of routine inspection and maintenance.

### **For Fire Suppression systems:**

- Be aware of the common forms of fire suppression systems and their principles of operation.



- Be aware of the situations where an automatic fire suppression system is necessary for compliance with legislation or for life safety purposes.
- Be aware of the basic guidance for siting of devices such as sprinkler heads.
- Be aware of the certificates that should be issued by “Competent Persons” and key points contained in them.
- Understand the appropriate frequency and nature of routine testing and maintenance.

**For Smoke Control systems:**

- Understand the different types and roles of smoke control systems that may be found in premises and their principles of operation.
- Be aware of the situations where a smoke control system is necessary for compliance with legislation or life safety.
- Be aware of the certificates that should be issued by “Competent Persons” and key points contained in them.
- Understand the appropriate frequency and nature of routine testing and maintenance.

**For Access and Facilities for the Fire and Rescue Service:**

- Understand the types of, and need for, access and facilities for the Fire and Rescue Service.
- Understand the appropriate frequency and nature of routine testing and maintenance.

## *Appendix I*

### **Management of Fire Safety**

Management of Fire Safety is a wide ranging subject and can include all those matters covered in the previous appendices (A to H inclusive).

Accordingly, the fire risk assessor should be able to;

- Demonstrate a knowledge and understanding of the principles and practices of Management of Fire Safety.
- Understand how they relate to the protection of life of persons within and around premises.
- Assess the management capabilities and controls in place, balanced against and pertinent to, the occupation and purpose of the premises.
- Give clear and appropriate advice to the duty holder.

To enable the fire risk assessor to carry out the above, the fire risk assessor should have an appropriate knowledge and understanding of;

- Available resources and status of responsibility of the person responsible for management of fire safety.
- Staffing levels (staff-occupant ratio).
- Fire training – including fire drills and responsibility levels in event of a fire.
- Emergency and evacuation procedures (including existing emergency plan, its compatibility with ordinary every day use of the premises and its provisions for disabled persons).
- Signs and signage.
- Work control – contractors and similar (Permit systems etc.).
- Communications procedures (alerting to fire, internal communication etc.).
- Maintenance and testing of fire safety systems and record keeping.
- Degraded systems planning.
- Abnormal occupancy planning.
- Fire load management.
- Monitoring of special or unusual hazards.
- The documentation required by legislation.

In addition the fire risk assessor should have a knowledge of the issues relating to people especially at risk and the appropriate types of evacuation strategies, including;

- The presence of and an awareness of how mobility and other disability limitations can affect the evacuation strategy of the premises.
- The presence of and an awareness of how children and the very elderly can affect the evacuation strategy of the premises.
- The presence of and an awareness of how people asleep or otherwise unable to escape quickly or unaided can affect the evacuation strategy of the premises.
- An awareness of the different lone workers, isolated workers.
- An awareness of personal emergency evacuation plans (PEEPs).
- An understanding of the different types of evacuation strategies including simultaneous evacuation, phased evacuation, progressive horizontal evacuation, zoned evacuation.

## **ANNEX B**

### **BENCHMARKING OF CARL STOKES' FIRE RISK ASSESSMENTS AGAINST PAS 79:2012**

## BENCHMARKING OF CARL STOKES' FIRE RISK ASSESSMENTS AGAINST PAS 79:2012

In this annex, simply for rigour, I set out the findings of an audit of the FRA, which I carried out against the recommendations of PAS 79, which is recognized guidance on the methodology of fire risk assessment.

Clause of PAS 79	Topic and Key Recommendations	Compliance of Grenfell Tower FRA
4	Concepts of fire risk and fire hazard. Recommendations for separate consideration of fire hazard and fire risk.	Clear understanding exhibited by Mr Stokes. Sample template in PAS 79 used, which leads to separate consideration of fire hazard and fire risk.
5	Principles and scope of fire risk assessment. Recommendations for matters to be taken into account and documented (e.g. details of the premises, occupants, previous fires and action plan). Noted that fire engineering design does not need to be reviewed from first principles, but maintenance of systems included in the solution needs to be considered.	Very clear and extensively detailed description of premises. Fire hazards, fire protection measures and fire safety management all fully considered. Action plan provided separately.
6	Responsibility for adequacy of the fire risk assessment. Notes that competent person within the Responsible Person organization should oversee any third party fire risk assessor and confirm their competence. Recommendation that Responsible Person should ensure that the fire risk assessor has access to relevant people, relevant documentation and relevant information.	Evidence that Mr Stokes was competent and liaised with the TMO. Extensive evidence of access to documentation and information.
7	Competence of fire risk assessors. Recommendations for the fire risk assessor to: a) understand relevant fire safety legislation. b) have a thorough knowledge and understanding of relevant Government guidance documents. c) have appropriate education, training, knowledge and experience in the principles of fire safety. d) have an understanding of fire development and the behaviour of people in fire. e) understand the fire hazards, fire	In my opinion, Mr Stokes is capable of demonstrating compliance with the recommendations of this clause.

Clause of PAS 79	Topic and Key Recommendations	Compliance of Grenfell Tower FRA
	<p>risks and relevant factors associated with occupants especially at risk within the premises.</p> <p>f) understand the causes of fire and means for their prevention.</p> <p>g) understand the design principles of fire protection measures.</p> <p>h) have appropriate training and/or experience in carrying out fire risk assessments.</p>	
8	Benchmark standards for assessment of fire precautions. Recommendations for use of appropriate guidance documents. Justification for departures from recommendations of recognized codes.	Mr Stokes has clear knowledge of the relevant standards and their recommendations, though there is a suggestion that he might be unduly rigid in his application of these.
9	Assessment of premises design and fire precautions that do not conform to current standards. Recommendations for fire risk assessor to have a basic understanding of original standards and for judgement to be applied to departures from current standards.	Evidence of use of judgement, with rationale for recommendations (e.g. in relation to adequacy of original flat entrance doors).
10	Documentation of findings. Recommendations for matters that should be recorded.	Very thorough documentation of FRA, using extensive descriptive information and free text in conjunction with the template from PAS 79.
11	Nine steps to fire risk assessment.	Follows the structure of PAS 79 in conjunction with Mr Stokes' own text.
12	Relevance of information about the premises, the occupants and the processes.	Evidence that all relevant information has been taken into account.
13.	Identification of fire hazards and means for their elimination or control. Recommendations for consideration of the common causes of fire, including poor housekeeping.	All relevant hazards and control measures considered.
14.	Assessment of the likelihood of fire.	Correctly judged as "Medium" on the basis of the information available.
15.	Assessment of fire protection measures. Recommendations for consideration of active and passive fire protection measures. Note that there is no recommendation in PAS 79 for consideration of external cladding.	All relevant measures considered, though reference to significant findings document for more information, but no further information included in that document, so there is a shortage of documented information on the smoke control system.



Clause of PAS 79	Topic and Key Recommendations	Compliance of Grenfell Tower FRA
16.	<p>Assessment of fire safety management. Recommendations for consideration of:</p> <ul style="list-style-type: none"> <li>a) fire procedures.</li> <li>b) arrangements for summoning the fire and rescue service.</li> <li>c) the nomination of people to respond to fire.</li> <li>d) where appropriate, the nomination of people to assist with evacuation.</li> <li>e) arrangements for liaison with the fire and rescue service.</li> <li>f) arrangements for routine inspections of the premises and their fire precautions.</li> <li>g) in premises in multiple occupation, arrangements for co-operation and co-ordination between occupiers.</li> <li>h) staff training.</li> <li>i) fire drills.</li> <li>j) provision of information to third parties.</li> <li>k) testing and maintenance of fire protection systems and equipment, including equipment for use by firefighters.</li> <li>l) maintenance of the workplace.</li> <li>m) appropriate records, which the fire risk assessor is encouraged to study.</li> </ul>	All relevant matters considered in the documented FRA, except arrangements for routine testing of the firefighters' switch for the lifts.
17.	Assessment of likely consequences of fire.	Considered by virtue of use of the matrix in PAS 79. Correct conclusion reached (in the absence of knowledge of the hazard presented by the external cladding).
18.	Assessment of fire risk.	Addressed by virtue of use of the matrix in PAS 79 (though minor editorial error by not using the version for premises in which people sleep). Assessment of the risk as "tolerable" is, in my opinion, correct in the absence of knowledge of the hazard presented by the external cladding.
19.	Formulation of an action plan.	Suitably prioritized action plan provided.
Annex D	Key factors to consider in assessment of means of escape.	Evidence that key factors were considered in the FRA.



## **ANNEX C**

### **EVIDENCE TO WHICH THIS REPORT REFERS**

## EVIDENCE TO WHICH THIS REPORT REFERS

Reference	Document	Relativity Reference
C1	Expert Report of Colin Todd. Legislation, Guidance and Enforcing Authorities relevant to Fire Safety Measures at Grenfell Tower. March 2018.	CTAR00000001
C2	Minutes of TMO meeting – fire risk assessments. Kensington & Chelsea Town Hall. Room 140. Thursday, 6 April 2009 at 15:00.	LFB00001529
C3	Management Board. 25 April 2010. Corporate Health & Safety Annual Report 2009/2010. Brief Summary of Achievements.	RBK00052559
C4	Minutes of progress meeting, dated 5 December 2011, between Carl Stokes, Janice Wray and Roger Keane (of RBKC) regarding FRAs in low risk blocks.	CST00003539
C5	Email, dated 25 August 2009, from Janice Wray to Andrew Furness regarding FRAs for high risk blocks.	TMO00865098
C6	Minutes of Introductory Meeting between Salvus and LFB. 16 September 2009.	SAL00000039
C7	Email, dated 5 July 2009, from Laura Johnson, Chief Housing Officer, RBKC, to Councillor Judith Blakeman of RBKC and Robert Black of the TMO, with copy to Councillor Julie Mills of RBKC.	RBK00052571
C8	Minutes of introductory meeting between Salvus and LFB (See C6). Paragraph 2.2.	SAL00000039
C9	Consultants' Brief. Fire Risk Assessments. Version 01. July 2009. Technical Services Group, RBKC TMO.	TMO00865175
C10	Consultants' Brief (see C9). Part 1: General Information and Requirements. Paragraph 1.5.	TMO00865175
C11	Consultants' Brief (see C9). Part 2: Specification of Services. Paragraph 2.1.	TMO00865175
C12	Consultants' Brief (see C9). Part 4: Quotation Instructions. Paragraph 2.6.	TMO00865175
C13	Letter dated 4 August 2009, from RBKC Department of Building Control to Janet Rhymes, Consultancy Services Manager, TMO, declining invitation to quote for high risk FRAs.	TMO00865157
C14	Consultant interviews on 14 August 2009. Questions for all consultants and individual questions for each of four tenderers.	TMO10037438

Reference	Document	Relativity Reference
C15	Bona fide quotation submitted by “Company A”, dated 7 August 2009.	TMO00865082
C16	Letter, dated 27 August 2009, from TMO to “Company B”, sent by Janet Rhymes, Consultancy Services Manager, informing the company that their tender was unsuccessful.	TMO00865081
C17	Bona fide quotation submitted by “Company B”, dated 6 August 2009.	TMO00865078
C18	Letter, dated 27 August 2009, from TMO to “Company C”, sent by Janet Rhymes, Consultancy Services Manager, informing the company that their tender was unsuccessful.	TMO00865154
C19	Bona fide quotation submitted by “Company C”, dated 4 August 2009.	TMO00865096
C20	Introduction to Fire Safety Management: A handbook for students on NEBOSH and other fire safety courses. Andrew Furness and Martin Muckett. 2007 Butterworth Heinemann. ISBN 978-0-7506-8060-4.	
C21	FRAs: Fee quotations. Cost comparisons of all tenderers in relation to all high risk blocks.	TMO00865112
C22	Letter, dated 26 July 2009, informing Salvus of intention to appoint Salvus to carry out high risk block FRAs.	TMO00865146
C23	Submission by Salvus to the Inquiry. Background re. Carl Stokes employment with Salvus Consulting Limited. August 2019.	SAL00000002
C24	Email, dated 3 March 2010, from Andrew Furness of Salvus to Janice Wray, copied to others including the TMO Senior Lift Engineer, Robin Cahalarn.	CST00003102
C25	Fire Risk Assessments in high-rise blocks. Minutes of progress meeting. 23 February 2010.	SAL00000042
C26	Email, dated 8 July 2010, from Janice Wray to various parties, including officers of LFB, and John Calvert and Brian Deans of LFB, with copies to various others, including the TMO’s senior lift engineer, Robin Cahalarn, attaching spreadsheets for locations of “Fire-fighting lifts”. This schedule included Grenfell Tower.	CST00002922 CST00002923
C27	Letter, dated 18 March 2014, from Carl Stokes to Claire Williams of the TMO.	CST00003100
C28	Personnel information provided by Salvus for Carl Stokes, comprising a CV for 2009.	SAL00000009
C29	FRA for Grenfell Tower. Salvus Consulting Ltd 30 September 2009.	CST00003128



Reference	Document	Relativity Reference
C30	FRA for Grenfell Tower carried out by Carl Stokes in December 2010.	CST00003181 CST00003165
C31	FRA for Grenfell Tower carried out by Carl Stokes in November 2012.	CST00003084 CST00003083
C32	FRA for Grenfell Tower carried out by Carl Stokes in October 2014.	CST00003157 CST00003177
C33	FRA for Grenfell Tower carried out by Carl Stokes in April 2016.	CST00003161 CST00003098
C34	FRA for Grenfell Tower carried out by Carl Stokes in June 2016.	CST00003145 CST00003069
C35	Letter, dated 28 February 2011, attached to an email dated 1 March 2011, sent to a dedicated email address set up to receive comments relating to the future guidance on fire safety in purpose-built blocks of flats. The salutation in the email referred to "Naomi/Colin". (Naomi Davies, Personal Assistant to Colin Todd, and Colin Todd). The salutation in the letter was "Dear Colin".	Email CST00013995; Letter: CST00013996
C36	Draft Fire Safety Guidance for purpose built blocks of flats. Respondent information form, completed by Carl Stokes.	CTA00000010
C37	Email, dated 12 October 2011, from Carl Stokes to Naomi Davies, Personal Assistant to Colin Todd, attaching information on a fire in a tower block in Lambeth	CTA00000006 CTA00000007
C38	Email, dated 12 March 2014, from Carl Stokes to Claire Williams of the TMO regarding the lifts at Grenfell Tower.	CST00001426
C39	Email, dated 26 May 2016, from Carl Stokes to Andy Jack of LFB regarding the absence of heat detectors in the kitchens of some new flats at Grenfell Tower.	CST00003103
C40	Email chain comprising email, dated 28 February 2011, from Robin Cahalarn to Janice Wray, email, dated 28 February 2011, from Janice Wray to Carl Stokes, email, dated 28 February 2011 from Carl Stokes to Janice Wray, and email, dated 28 February 2011 from Janice Wray to Carl Stokes.	CST00001781
C41	Record of significant findings and action plan dated 17 October 2015 annotated with handwritten notes, and annotated plans and an undated handwritten note, headed Grenfell Tower, containing 18 points in relation to various fire safety issues.	CST00000002
C42	Completion Certificate in relation to Building Control Application No. FP/14/03563, describing renovation and	CST00003156

Reference	Document	Relativity Reference
	improvement works, including new overcladding, with a final inspection date of 7 July 2016 and bearing the signature of John Allen, Building Control Manager.	
C43	Email, dated 25 May 2016, from Carl Stokes to Janice Wray regarding the absence of any requirement by the Building Control Officer to require heat detectors in the kitchens of certain new flats on the mezzanine level.	CST00001099
C44	Letter, dated 27 September 2010, from Carl Stokes to Janice Wray, setting out management procedures, etc, to which there would be reference in FRAs.	CST00003061
C45	Submission to the Secretary of State on behalf of RBKC in respect of fire enforcement responsibilities in respect of demised leasehold doors. John Cooper and Harry Vann, Crown Office Chambers, 20 February 2013.	HOM00047812
C46	Grenfell Tower Inquiry. RBKC flat entrance door chronology. Provided to the Grenfell Tower Inquiry on 28 September 2018.	RBK00029883
C47	Minutes of meeting between LFB, the TMO and RBKC to discuss leaseholders' front entrance doors. 29 February 2012.	LFB00032138
C48	Email, dated 16 August 2013, from Andy Jack, LFB to Carl Stokes, representatives of RBKC, TMO and LFB.	LFB00027376
C49	Email, dated 14 July 2015, from Carl Stokes to Janice Wray, copied to Cynthia Vachino.	CST00024616
C50	Email, dated 7 July 2009, from Pam Sedgwick of RBC to various parties in RBKC and the TMO, including Robert Black and Janice Wray.	RBK00053547
C51	Email, dated 10 November 2015, from Janice Wray to Carl Stokes regarding flat entrance doors.	TMO00840410
C52	Letter from Cynthia Vachino to residents regarding letter before action for fire safety dated 20 December 2013	CST00005599
C53	Housing and Property Scrutiny Committee November 2013. Cabinet Member for Housing and Property. Report on Current Issues. Update on fire risk assessment of TMO leaseholder doors.	RBK00033687
C54	Email, dated 19 April 2017, from Carl Stokes to Janice Wray regarding LFB letter on the subject of external fire spread.	CST00001100
C55	Email, dated 18 August 2009, from Ann Muchmore of RBKC to Laura Johnson of RBKC and Pam Sedgwick of RBKC, regarding a discussion in respect of companies to conduct FRAs.	RBK00018533

Reference	Document	Relativity Reference
C56	Programme for CS Todd & Associates Ltd 3.5-day fire risk assessment courses around 2007.	CTA00000005
C57	First witness statement of Carl Spencer Stokes, dated 28 September 2018.	CST00003063
C58	Letter dated 7 March 2011 (with addendum following a meeting on 10 March 2011) from Carl Stokes to Janice Wray.	CST00013074
C59	Letter, dated 24 October 2012, from Carl Stokes to “Anju” (surname and further identification not shown), requesting that Mr Stokes be permitted to accompany “Anju” and the RBKC Housing team to meetings with LFB.	CST00016046
C60	Witness statement of Michele McHugh, dated 8 February 2019.	LFB00032761
C61	Witness statement of Janice Wray, dated 7 February 2019.	TMO00000890
C62	Letter from the TMO, dated 6 August 2010 and signed by Janice Wray, inviting C S Stokes and Associates Ltd to tender for fire risk assessments.	TMO00842333
C63	Fire Risk Assessment medium risk programme Tender Evaluation Report, dated 27 September 2010 and signed by Janice Wray.	TMO00842327
C64	Email, dated 26 August 2016, from Janice Wray to Majaluna Jorgensen of LFB.	RBK00000377
C65	Paper 5 for KCTMO Health & Safety Committee 16 March 2017. Review of Fire Strategy update on self-closers.	TMO10016192
C66	Copy of certificate, held by C.S. Todd & Associates Ltd, verifying that Carl Stokes successfully completed an examinable fire risk assessment course, held on 10-12 December 2007.	CTA00000004
C67	Letter from B. Parsons of C.S. Todd & Associates Ltd to A. Gibson, Omagh District Council (representing the Northern Ireland Fire Safety Panel), listing delegates of Oxfordshire Fire and Rescue Service who passed the fire risk assessment course test taken on 13 December 2007.	CTA00000009
C68	Second witness statement of Carl Spencer Stokes on behalf of CS Stokes & Associates Limited, dated 13 March 2020.	CST00030186
C69	Exhibit CSS2-4 to Carl Stokes’ second witness statement. Certificate of admission of Carl Stokes as an Associate of the Chartered Institute of Arbitrators, dated 25 September	CST00030150

Reference	Document	Relativity Reference
	2009.	
C70	Exhibit CSS2-5 to Carl Stokes' second witness statement. Diploma No. 367, dated 14 November 2006, awarded to Carl Stokes of Oxfordshire Fire & Rescue Service by the Fire Protection Association in recognition of satisfying the requirements of the CFPA Europe Examination in Fire Prevention.	CST00030188
C71	Exhibit CSS2-14 to Carl Stokes' second witness statement. Certificate awarded to Carl Stokes by the Institution of Occupational Safety & Health (IOSH) on successfully completing the "Managing Safely" course approved and validated by IOSH.	CST00030167
C72	Exhibit CSS2-13 to Carl Stokes' second witness statement. Level 3 Certificate in Occupational Health and Safety (NEBOSH National General Certificate) No. C93734 awarded to Carl Stokes by NEBOSH on 15 June 2005 (with credit).	CST00030176
C73	Exhibit CSS2-15 to Carl Stokes' second witness statement. Certificate No. 26213 issued by the Fire Industry Association (FIA) certifying that Carl Stokes attended and passed the FIA training course "BS 5839 Part 1 - 2002 Unit 1 - Fire Detection Design" on 19 May 2009, providing six hours of CPD.	CST00030172
C74	Exhibit CSS2-16 to Carl Stokes' second witness statement. Certificate No. 00001797 issued by the Fire Industry Association (FIA) certifying that Carl Stokes attended and passed the "BS 5839 Part 6 – 2004 Unit 11 – Domestic Dwellings" on 11 September 2012, providing six hours of CPD.	CST00030159
C75	Exhibit CSS2-17 to Carl Stokes' second witness statement. Certificate No. 21011 issued by the Fire Industry Association (FIA) certifying that Carl Stokes attended and passed the "BS 5266 Parts 1 (2005), 7 (1999) and 8 (2004). ICES Competent Engineer Course" on 28 April 2010, providing six hours of CPD.	CST00030184
C76	Exhibit CSS2-3 to Carl Stokes' second witness statement. Certificate issued by C.S. Todd & Associates Ltd in conjunction with the Northern Ireland Fire Safety Panel to Carl Stokes, verifying completion of an examinable fire risk assessment course held on 10-12 December 2007.	CST00030166

Reference	Document	Relativity Reference
C77	Exhibit CSS2-21 to Carl Stokes' second witness statement. Email, dated 21 January 2008, from Richard Tacagni of LACoRS to participants in the development of the LACoRS guidance on fire safety in various types of housing, including Carl Stokes.	CST00030190
C78	Exhibit CSS2-18 to Carl Stokes' second witness statement. Receipt for £258, dated 7 January 2020, for Carl Stokes' subscription for membership of the Chartered Institute of Arbitrators.	CST00030185
C79	Exhibit CSS2-8 to Carl Stokes' second witness statement. Certificate No. FPA/2593 issued by the Fire Protection Association certifying that Carl Stokes successfully completed the FPA's programme of training in NOS-2: Underpinning knowledge & risk assessment of simple premises on 14-18 November 2005.	CST00030165
C80	Exhibit CSS2-9 to Carl Stokes' second witness statement. Certificate No. FPA/2640 issued by the Fire Protection Association certifying that Carl Stokes successfully completed the FPA's programme of training in NOS-3: Evaluate design submissions against Approved Document B on 20-24 March 2006.	CST00030145
C81	Exhibit CSS2-7 to Carl Stokes' second witness statement. Certificate issued by the Fire Protection Association certifying that Carl Stokes successfully completed the FPA's programme of training in NOS-4: Fire-fighting lifts, atrium buildings & means of escape for the disabled on 27 June 2005.	CST00030155
C82	Exhibit CSS2-12 to Carl Stokes' second witness statement. Certificate No. FPA8441 issued by the Fire Protection Association certifying that Carl Stokes successfully completed the FPA's programme of training in NOS-4.2: Fire safety and hazardous material sites on 7 April 2009.	CST00030143
C83	Exhibit CSS2-10 to Carl Stokes' second witness statement. Certificate No. FPA/2645 issued by the Fire Protection Association certifying that Carl Stokes successfully completed the FPA's programme of training in NOS-5: Underpinning knowledge & risk assessment of high risk premises on 24-28 April 2006.	CST00030163
C84	Exhibit CSS2-11 to Carl Stokes' second witness statement. Certificate No. FPA/4176 issued by the Fire Protection Association certifying that Carl Stokes successfully completed the FPA's programme of training in NOS-8: Fire safety during building works on 12 September 2006.	CST00030140



Reference	Document	Relativity Reference
C85	Exhibit CSS2-6 to Carl Stokes' second witness statement. Certificate issued by the Fire Protection Association certifying that Carl Stokes passed the FPA's programme of training in NOS-10: Life safety fire safety engineering on 20-24 June 2005.	CST00030154
C86	Exhibit CSS2-19 to Carl Stokes' second witness statement. Certificate issued by the Worshipful Company of Firefighters, in partnership with Rockwool, certifying attendance at The Fire Lecture 2014 "High Rise – Not High Risk" on 28 May 2014.	CST00030142
C87	Exhibit CSS2-20 to Carl Stokes' second witness statement. Course notes for C. S. Todd & Associates Ltd one-day course "Fire Safety in Purpose-Built Blocks of Flats".	CST00030160
C88	Exhibit CSS2-22 to Carl Stokes' second witness statement. Response by Carl Stokes, on behalf of the TMO, to the draft LGA guidance on fire safety in purpose-built blocks of flats.	CST00030187
C89	Exhibit CSS2-37 to Carl Stokes' second witness statement. Level 7 BTEC Advanced Professional Certificate in Investigative Practice awarded to Carl Stokes by Bond Solon in December 2008.	CST00030164
C90	Exhibit CSS2-42 to Carl Stokes' second witness statement. Certificate of CPD to certify attendance by Carl Stokes at the FIA/ABE diploma course in fire detection and alarm systems, held at Northampton on 19-21 May 2009.	CST00030175
C91	Exhibit CSS2-46 to Carl Stokes' second witness statement. Certificate issued by the Fire Industry Association to Carl Stokes certifying attendance at an FIA CPD day "Fire Risk Assessor Update" on 7 October 2011.	CST00030173
C92	Exhibit CSS2-47 to Carl Stokes' second witness statement. Certificate issued by the Fire Industry Association to Carl Stokes certifying attendance at an FIA CPD day "PEEPs" on 29 November 2011.	CST00030169
C93	Exhibit CSS2-48 to Carl Stokes' second witness statement. Certificate issued by the Fire Industry Association to Carl Stokes certifying attendance at an FIA CPD day "The Law" on 12 July 2012.	CST00030170
C94	Email from Andy Jack of LFB to Steve Turek of LFB and others, dated 22 November 2012.	LFB00004623

Reference	Document	Relativity Reference
C95	Appendix 1 of TMO fire safety strategy. November 2013.	TMO00830598

**ANNEX D**

**REFERENCES**

## REFERENCES

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D7	Raising the Bar Interim Report. Improving Competence Building a Safer Future. Steering Group on Competence. 2019.	<a href="http://cic.org.uk/admin/resources/raising-the-barinterimfinal-1.pdf">http://cic.org.uk/admin/resources/raising-the-barinterimfinal-1.pdf</a>
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D10	Fire Detection and Alarm Systems. An introduction to the design and commissioning of fire detection and alarm systems to BS 5839-1:2002+A2:2008. Written by the Fire and Security Association and distributed by the Fire Brigade's Union.	BSI00001734

D11	Fire Safety Risk Assessment – Sleeping Accommodation. CLG. 2006.	<a href="https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/422192/9281_Sleeping_Accommodation_v2.pdf">https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/422192/9281_Sleeping_Accommodation_v2.pdf</a>
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D13	BS EN 81-72. Safety rules for the construction and installation of lifts. Particular applications for passenger and goods passenger lifts. Firefighters lifts. British Standards Institution. 2003 and 2015.	2003 [BSI00000827] 2015 [BSI00000824]
D14	BS 5839-6. Fire detection and fire alarm systems for buildings. Code of practice for the design, installation, commissioning and maintenance of fire detection and fire alarm systems in domestic premises. British Standards Institution. 2013.	2013 [BSI00000831]
D15	Advice for Building Owners of Multi-storey, Multi-occupied Residential Buildings. MHCLG. January 2020.	<a href="https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/869532/Building_safety_advice_for_building_owners_including_fire_doors_January_2020.pdf">https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/869532/Building_safety_advice_for_building_owners_including_fire_doors_January_2020.pdf</a>
D16	BS 8899. Improvement of fire-fighting and evacuation provisions in existing lifts. Code of practice. British Standards Institution. 2016.	BSI00001727
D17	Guidance on the Issue of Cladding and External Wall Construction in Fire Risk Assessments for Multi-Occupied Residential Premises. Version 1. Fire Industry Association. May 2020.	<a href="https://www.fia.uk.com/static/1af956eb-7630-4ae7-b04d0a82d475438b/FIA-Guidance-on-the-Issue-of-Cladding-and-External-Wall-Construction-in-Fire-Risk-Assessments-for-Multi-Occupied-Residential-Premises.pdf">https://www.fia.uk.com/static/1af956eb-7630-4ae7-b04d0a82d475438b/FIA-Guidance-on-the-Issue-of-Cladding-and-External-Wall-Construction-in-Fire-Risk-Assessments-for-Multi-Occupied-Residential-Premises.pdf</a>
D18	Management of Health and Safety at Work. Management of Health and Safety at Work Regulations 1999. Approved code of practice and guidance. Second edition. Health and Safety Commission. HSE Books. 2000.	



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## **ANNEX E**

### **RELEVANT QUALIFICATIONS AND EXPERIENCE OF THE AUTHOR**

## **Academic Qualifications**

BSc (Hons) Physics. Edinburgh University. 1974.

MSc Fire Safety Engineering. Edinburgh University. 1975.

## **Professional Body Qualifications**

Fellow of the Institution of Fire Engineers.

Fellow of the Institute of Physics.

Chartered Physicist.

Fellow of the Chartered Association of Building Engineers.

Fellow of the Institution of Engineering and Technology (formerly Institution of Electrical Engineers).

Chartered Building Engineer

Chartered Engineer.

Member of the Institute of Risk Management.

Member of the Society of Fire Protection Engineers.

## **Expert Witness Experience**

Colin Todd has substantial experience, over many years, as an expert witness in both civil litigation cases and in criminal prosecutions under fire safety legislation, in which he has experience in acting as an expert witness for the Defence or the Prosecution. He has prepared expert reports for over 100 cases involving prosecution, determinations by the Secretary of State or appeals against Notices, many of these within the last 13 years, following the reform of fire safety legislation in 2006. He has also prepared expert reports for numerous civil cases.

He was an expert witness for the Defence in the high profile prosecutions of Shell UK and New Look. He was a Prosecution expert witness in the landmark prosecution of Alan Foster, who received the then longest custodial sentence in the history of current fire safety legislation, following a fire at a block of flats in North Yorkshire, in which two people died. Colin also provided advice to Cornwall Fire and Rescue Service for the purpose of their prosecution case, following a fire at the Penhallow Hotel at Newquay, in which three people died, in 2007.

Following a fire at Rosepark Care Home in Lanarkshire in 2004, which resulted in the largest number of fatalities (14) in any fire between the Kings Cross fire in 1987 and the Grenfell Tower tragedy in 2017, Colin was appointed as a Prosecution expert witness in the prosecution of the owners of the home. Subsequently, in 2011, Colin was a Crown expert witness in the Fatal Accident Inquiry into the 14 deaths. The Sheriff Principal commended his recommendations, prepared for the Inquiry, to Scottish Ministers for careful consideration. The recommendations led to changes in building regulations and certain enforcement issues in Scotland, as well as changes to the British Standard on fire alarm systems.

## **Textbooks**

- A Comprehensive Guide to Fire Safety. British Standards Institution. January 2008 (Previously Fire Precautions. A Guide for Management. Gower Publishing. Prior to that, Croner's Guide to Fire Safety.)
- The Design, Installation, Commissioning and Maintenance of Fire Detection and Fire Alarm Systems. A Guide to BS Code 5839-1. Current edition published by British Standards Institution in 2013. (Previous editions published in 2008, 2006 and 2003.)
- The Design of Fire Detection Installations for Dwellings. A Guide to BS 5839-6: 2013. Published by British Standards Institution in 2013. (Previous editions published in 2004 and 1996.)
- Publicly Available Specification (PAS) 79. Fire Risk Assessment. Guidance and a recommended methodology. British Standards Institution. 2012. (Previous editions published in 2007 and 2005.)
- Co-author Fire Protection Measures in Scottish Historic Buildings.

## **Professional Body Activities**

- Standards Associate of the British Standards Society.
- Previous President of the UK Chapter of the Society of Fire Protection Engineers, and of the Institute of Fire Safety. (These organizations were subsequently incorporated within the Institution of Fire Engineers as the Engineering Council Division of the Institution.)
- Previous Chairman of the Membership Committee of the Engineering Council Division of the Institution of Fire Engineers, and Board Member of the Division.
- Previous Board Member of Institution of Fire Engineers (Director responsible for technical matters).
- Current member of the Technical Strategy and Advisory Group of the Institution of Fire Engineers.
- Board Member of the Fire Industry Association.
- Current Chairman of the Fire Risk Assessment Council of the Fire Industry Association.
- Fire Industry Association representative on profession-wide working group that is responsible for the competence standard for fire risk assessors.
- Current Chairman of the Institution of Fire Engineers Register of Fire Risk Assessors and Auditors Panel.

## **Committee Work**

- Institution of Fire Engineers' representative on BSI committees FSH/12, FSH/12/1 and FSH/12/3, which are concerned with fire detection matters, and EL/1/1, which is concerned with emergency lighting standards.
- Co-opted independent expert on BSI committee FSH/12/4.

- Fire Industry Association representative on Scottish Business Engagement Forum.
- Fire Industry Association representative or co-opted expert on various working groups concerned with research or standards development in fire safety matters.

### External Body Activities

- For fifteen years, until 2017, Industry Sector Expert for United Kingdom Accreditation Service (UKAS), which involves providing sector expertise to UKAS in their accreditation of certification bodies (such as British Standards Institution and National Security Inspectorate) that operate third party certification schemes for fire detection and fire extinguishing products and services for design, installation, commissioning and maintenance of fire detection and fire extinguishing equipment and systems.
- Following the fire at Grenfell Tower in June 2017, Colin was co-opted onto an expert group tasked with advising Government on immediate actions in relation to the fire.
- Member of Building Standards (Fire Safety) Review Panel, tasked with advising the Scottish Minister for Local Government, Housing and Planning on changes to the Building (Scotland) Regulations and supporting Technical Handbooks following the Grenfell Tower Fire in June 2017. This work led to significant changes to the Technical Handbooks including proposals by Colin for evacuation alert systems and floor/flat numbering signs in high-rise blocks of flats. Colin was also contracted by Scottish Government to draft a new standard on evacuation alert systems, which Scottish Government tabled to BSI for the purpose of producing BS 8629:2019.

### Awards

- National Association of Hospital Fire Officers' Certificate of Merit. Awarded on 9<sup>th</sup> May 1995 in recognition of service to the Association by promoting and encouraging the furtherance of the highest standards of fire safety in Health Service Premises.
- Association of Building Engineers. Fire Safety Award 1998. Presented in recognition of significant and valuable contribution to the fire engineering profession through education, training and standards development.
- British Standards Institution Distinguished Service Certificate. Awarded in 2014 for valuable contributions to the development of British, European and International Standards.
- IFSEC Global. Voted as one of the top 50 most influential people in security and fire for 2015 and 2016.
- IFSEC Global. In 2018 and 2019, judged by a panel of experts as one of the top 10 most influential people in fire safety.
- IFSEC Global. In 2017, judged by a panel of experts as number one in the top ten influential people in fire safety. Those who nominated Colin for the Award are quoted by IFSEC Global as providing the following bases for their nominations:

*"Worked on recent standards and commercially on a new sheltered housing guide. His expert witness work does help with setting of industry-accepted norms"*

*"Found him to be the most knowledgeable, approachable and – most importantly – jargon-free specialist who I have ever worked with"*

*"Knowledge spans every corner of fire safety regulation and has undoubtedly improved the safety of the British workplace"*

*"Massively influential with the BSI and codes of practice over a number of years."*

- In December 2019, Colin was awarded an MBE in the New Year Honours List 2020 for his contribution to fire safety in the UK.

### Training work



Presents the following training courses:

- 1 day training course on fire safety in purpose built blocks of flats.
- IFE-approved 4.5-day examinable course on fire risk assessment (now delivered on over 200 occasions, including to representatives of around 50% of fire and rescue services in the UK and all fire and rescue services in Scotland).
- 3.5-day foundation course on fire safety.
- 1 day course on fire risk assessment.
- 1 day training course on fire safety in specialized housing.
- 1 and 2 day courses on fire safety for facilities managers.
- 1 day course on fire safety legislation.
- 1 and 2 day courses on BS 9999, the code of practice for fire safety in the design, management and use of buildings.
- 1 day course on means of escape and other fire safety requirements of legislation.
- 1 and 2 day courses on fire detection and alarm system codes.
- ½ day course on BS 7273-4.
- 1 day course on the Regulatory Reform (Fire Safety) Order and the Fire (Scotland) Act

In addition, for eleven years, C.S. Todd and Associates has been contracted by Scottish Government (and, subsequently, directly by the Scottish Fire and Rescue Service) to carry out the training of fire and rescue services inspecting officers of the Scottish Fire and Rescue Service. Colin is project manager for this training and delivers part of the training.

## **Standards Development**

Responsible for drafting the following British Standards:

- BS 5839-1: 2002
- BS 5839-6: 1995
- BS 5839-6: 2004
- BS 7273-4: 2007
- BS 8629: 2019

Led the team within C.S. Todd & Associates that drafted national guidance in 2011 on fire safety in purpose-built blocks of flats under contract to the Local Government Association, with funding from the Government's Department for Communities and Local Government. Led the team that drafted national guidance, published in 2017 by the National Fire Chiefs Council, on fire safety in specialised housing, comprising sheltered housing, extra care housing and supported housing for vulnerable people.

## Professional Profile

Colin Todd graduated from Edinburgh University with an honours degree in Physics. He then undertook a one year Masters degree in Fire Safety Engineering, developing a specific interest in quantitative assessment of risk, mathematical modelling and systems engineering.

In 1975, he joined the captive insurance company of Unilever Ltd. As a member of the risk management section, he carried out regular fire surveys of Unilever premises and was responsible for providing in-house advice on loss prevention matters. He later joined the technical department of the Fire Offices' Committee (FOC), which dealt with the preparation of codes and standards on fire protection and approvals of fire protection equipment. With the FOC, he specialized in electrical matters, and was responsible for assessing the suitability of fire alarm equipment for FOC approval. During this time, he represented the FOC on national committees including those of the BSI. (The FOC was later incorporated into the Loss Prevention Council.)

Subsequently, he joined Bowring Risk Management Ltd as an engineering consultant specialising in risk management and fire prevention surveys, and fire protection engineering projects. He left them early in 1982 to establish the independent consulting practice, C.S. Todd & Associates. This specialist practice provides consultancy services in all aspects of fire prevention fire protection and fire safety engineering.

He has undertaken project work for a number of major organisations. Examples of projects include:

- Drafting the BSI publication PAS 79 (Fire risk assessment - Guidance and a recommended methodology), which is now virtually an industry standard for those carrying out fire risk assessments.
- Drafting guidance and detailed documentation for the Ministry of Defence Fire and Rescue Service to enable the MoD to carry out and document fire risk assessments in compliance with current legislation.
- Drafting various British Standards under consultancy drafting contracts let by the British Standards Institution.
- Detailed review of fire safety measures in major computer installations and preparation of a worldwide company standard.
- Preparation of detailed proposals for means of escape in one of the largest department stores in London.

Colin has served continuously on a number of British Standards Committees, including those concerned with fire detection and alarm systems, since 1976, other than for a short period between 1978 and 1982. For over two years, the practice was sub-contracted by the Loss Prevention Certification Board to carry out assessments of applicants for approval under the LPCB certification scheme for fire alarm contractors and also surveillance of existing certificated firms; this work involved inspection of contractors' installations, and Colin was one of two consultants in the practice who undertook this work.

Colin served for two years as a member of the Board of the Institution of Fire Engineers (IFE), and he was the Director responsible for technical matters. During this time, he instituted the Technical Strategy and Advisory Group (TSAG) of the Institution, which is responsible for the Institution's policies and input to national guidance, codes of practice and fire safety legislation. Colin continues to serve on TSAG. Until 2006, Colin was also Chairman of the relevant IFE Membership Committee responsible for registering qualified engineers with the Engineering Council, having held that position since the licensing of the IFE by the Engineering Council in 1997.

Colin is greatly involved in setting standards for fire risk assessment and those who carry out such assessments. As well as drafting PAS 79, the BSI publication on this subject, he is Chairman of the IFE Panel that registers both assessors and auditors (officers of enforcing authorities, such as fire and rescue authorities), the competence of whom has been objectively assessed by the Panel. Colin is also Chairman of the Fire Risk Assessment Council of the Fire Industry Association (FIA).

C.S. Todd & Associates are well established in the training of the officers of enforcing authorities, particularly those of fire and rescue services. The practice is responsible for training all fire safety inspecting officers of the Scottish Fire and Rescue Service.

Colin also is responsible for the delivery of a highly acclaimed IFE-approved 4½ day course on fire risk assessment. Many of these courses have been delivered as in-house courses for fire and rescue authorities throughout the UK. Colin has also lectured to fire service communications officers at the Fire Service College at Moreton-in-Marsh.

Colin is the author of a number of text books on fire safety, several of which are published by the British Standards Institution. He has also written numerous articles for publication in fire safety technical journals.

Published material includes the following:

**The use of Radio Signals to Connect Detectors to Control Equipment.**

*Fire Surveyor*, October 1982.

**Risk Management and Insurance. Theory vs. Practice.**

*Fire Surveyor*, August 1983.

**Fire Protection Equipment.**

*Architects' Journal*: Supplement Oct 1983.

**Intelligent Fire Alarm Systems.**

*Fire Surveyor*, April 1985.

**Fire Safety: Reconciling Hardware & People.**

*Facilities*, May 1985 (D. Tong, co-author).

**Fire Precautions Legislation.**

*Facilities*, December 1985 (D. Tong, co-author).

**The Use and Selection of an Intelligent Fire Alarm System.**

Published paper presented at the 1986 Ifsec International Fire Conference.

**The Need for a Fire Engineering Inspectorate.**

*Fire Surveyor*, June 1986.

**New Generation Fire Alarm Systems: 1.**

*Facilities*, June 1986 (D. Tong, co-author).

**New Generation Fire Alarm Systems: 2.**

*Facilities*, July 1986 (D. Tong, co-author).

**Automatic Fire Extinguishing Systems for Computer Protection.**

*Facilities*, September 1986.

**Fire & The Bus Operator Part 1.**

*Fire Surveyor*, October 1986.

**Fire & The Bus Operator Part 2: The Loss Experience.**

*Fire Surveyor*, December 1986.

**What the Intelligent System Can Offer.**

Published Paper presented at the 1987 Firex Midlands Conference.

**Fire Detection Systems: The State of the Art.**

Published Paper presented at 2-day course on recent developments in fire detection and suppression held under the auspices of Edinburgh University at Imperial College, London, in July 1987.

**Remote Monitoring of Alarm Signals: an Overview.**

*Fire Surveyor*, October 1987.

**The Role of Sprinklers in the Fire Protection of Office Buildings.**

*Facilities*, November 1987.

**Methods of Transmitting Signals to Fire Controls.**

*Fire Surveyor*, December 1987.

**Remote Monitoring of Alarm Signals by Central Stations.**

*Fire Surveyor*, February 1988.

**Central Station Operations and Communications with Fire Controls.**

*Fire Surveyor*, April 1988.

**Fire Risk.**

Paper presented at conference on Risk & Buildings: The Public Sector at Barbican Conference Centre in April 1988.

**Communicating Fire.**

Paper presented to AGM of National Association of Hospital Fire Officers on 13th May 1988.

**Remote Monitoring of Fire Signals: The Future.**

*Fire Surveyor*, June 1988.

**In-House Central Stations: The NHS Experience.**

Paper presented at FIREX South '88 in October 1988.

**Raising the Fire Alarm: The case against telephones.**

*Fire Surveyor*, October 1988.

**Fire Safety in Health Care Premises – Pushing back the frontiers.**

*Fire Surveyor*, February 1989.

**Aesthetic Fire Protection: Active Fire Protection – It can be achieved.**

Published paper presented at FIREX North in June 1989.

**The Meaning of Passive.**

*Fire*, February 1991.

**Managing the Leisure Risk.**

*Fire Prevention* 241, 1991.

**Protecting Historic Buildings.**

*Fire Prevention* 246, 1992.

**Safeguarding Computer Installations from Fire.**

*Fire Prevention* 256, 1993.

**Croner's Guide to Fire Safety.**

Croner Publications. (ISBN 1-85524-088-2).

**Detecting Fires in Dwellings.**

*Fire Safety Engineering*, June 1994.

**Voice Alarms and Evacuation.**

*Fire Prevention* 274, 1994.

**Alarm Bells Ringing.**

*BSI News*, September 1995.

**Automatic Fire Detection in the Home.**

*Building Control*, Issue No. 74, November 1995.

**Domestic Fire Detection: The New Code BS 5839 : Part 6.**

*Fire Safety Engineering*, December 1995.

**Commissioning and Certification of Systems.**

*Fire Safety Engineering*, August 1997.

**Fire Protection Measures in Scottish Historic Buildings.**

Published by Historic Scotland (Allwinkle, Bell, Franklin, Hibbard, McQue, Marchant, Marshall, Newsom and Wren, co-authors). (ISBN 1 900168 41 3).

**The New British Standard for Voice Alarm Systems.**

*Fire Safety Engineering*, April 1998.

**Fire Detection – Overcoming the False Alarm Problem.**

*International Fire and Security Product News*, June 1998.

**The Design and Installation of Voice Alarm Systems.**

CMP Information Limited. D. Mason, co-author. (ISBN 086213 1685).

**Fire Precautions. A Guide for Management.**

Gower Publishing. (ISBN 0 566 08182 2).

**Probable Cause - How to logically review the hazards and risks of fire in the workplace.**

*Premises and Facilities Management*, April 2000.

**Fire Detection Codes and Standards - Current Status and the Future.**

*Fire Safety Engineering*, July 2001.

**Fire Detection and Fire Alarm Systems: The New BS Code.**

*Fire Safety Engineering*, November 2002.

**Cables for Fire Detection and Alarm Systems.**

*NICEIC Journal*, Issue 148, Winter 2003/2004.



**IFE Register of Fire Risk Assessors.**

*Fire Prevention* 249, 2004.

**The Design of Fire Detection Installations for Dwellings. A Guide to BS 5839-6: 2004.**

BSI. (ISBN 0 580 44016 8).

**Out of Your Depth - A question of competency.**

*Fire Safety Engineering*, May 2006.

**The Design, Installation, Commissioning and Maintenance of Fire Detection and Fire Alarm Systems. A Guide to BS Code 5839-1.**

BSI. (ISBN 0 580 47626 X).

**Tough Ordeal - Requirements for Competence of Fire Risk Assessors.**

*Fire Safety Engineering*, November 2006.

**PAS 79: 2007 - The Latest Guidance for Fire Risk Assessors.** *Fire Safety Professional*, Summer 2007.

**Risk Update.**

*Fire Prevention and Fire Engineers Journal*, November 2007.

**A Comprehensive Guide to Fire Safety.**

BSI. (ISBN 978 0 580 50943 8), January 2008.

**Portable Position. The provision of portable fire extinguishers in residential premises.**

*Fire Risk Management*, October 2008

**BS 5839-1-An Update.**

*Fire Safety Engineering*, November 2008

**Profession on track for risk assessor registration**

*Fire Safety Professional*, Summer 2010

**The UK Approach to Fire Safety using Risk Assessment**

*Paper delivered at Annual Conference of European Society for Automatic Alarm Systems*, May 2013

**The Benefits and Pitfalls of Fire Risk Assessment.** Published in *Means of Escape. Journal in November 2015.*

**Interflam 2019**

Plenary presentation on changes in Scotland to the Technical Handbooks that support the Building (Scotland) Regulations following the Grenfell Tower fire.

**Response In Scotland To The Grenfell Tower Fire**

Keynote paper at opening of European Fire Safety Week in Brussels. Presented in conjunction with C. Hird, Scottish Government. November 2019.