



**Response to Comments on my
Report on the Fire at
9 – 15 Moss Hall Grove, North Finchley, N12 8PE
on the 8th June 2023
by**

[Redacted Name]

Ref: AC-5

6th September 2024

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INTRODUCTION

A fire starting in a back yard caused severe damage to a terrace of four houses. The houses had uPVC cladding, a large area of which was destroyed in the fire. Barnet Homes (part of Barnet Council) commissioned Capital Property & Construction Consultants Ltd (Capital) to carry out a site inspection to investigate the likely causes for the spread of fire.

Capital concluded that combustible wall cladding bridged the lines of the party walls, creating a route for the spread of fire between the individual houses in the terrace, and thus presented a significant risk. They also noted that fire could spread between houses at roof level due to incomplete compartmentation at the eaves and via gaps above the heads of the party walls. They recommended the replacement of all combustible cladding, fascia boards and soffits with non-combustible alternatives, and the installation of fire-stopping at the party walls.

Barnet Council were concerned that there are some 580 semi-detached and terraced houses with combustible cladding in their area, the majority of them freehold. These houses were of four “archetypes”, the most common (type 1) having timber-framed front and back walls with timber cladding. The Council carried out Housing Health and Safety Rating System (HHSRS) assessments and concluded that many of the houses could present a Category 1 hazard, in which case they had a duty under the Housing Act 2004 to enforce remedial measures. The Council estimates that remedial works could cost £23,000 per house, a cost that would be borne by the house owners. The Council has reportedly set aside £3.6M to deal with the 153 Council-owned houses: the total bill for the 427 private owners could be in the region of £10M.

Barnet Council considers that this issue with cladding is wide-spread and has called for a national approach – see <https://www.barnet.gov.uk/news/coordinating-national-approach-flammable-cladding-low-rise-homes>. Given the estimate of £23k per house to carry out the works the Council considers necessary, the national bill would run into £billions. Many residents will consider that there are better ways to spend their money and it could also be argued that public money would be better spent on other projects that are more likely to improve safety and well-being.

In view of the huge sums of money involved, I consider that it is incumbent upon Barnet Council to present clear evidence to show that: (a) the presence of the cladding and other identified issues was a major factor in the destruction of the Moss Hall Grove terrace and (b) that the cladding and other issues represent a severe hazard to the occupants of similar houses. (As regards point (b), the Council advised their tenants “*please rest assured that there is no immediate danger from day-to-day living in your home*” – see paragraph 5 of their letter to tenants dated 1st March 2024. No such reassurance was included in the letter of the same date to private owners.)

In my opinion, the Council's case for expensive remedial measures, mostly at the cost of others, is based on preconceived ideas, flawed supposition and subjective assessments rather than actual evidence.

I prepared a report dated 16th July 2024 in which I presented the sparse information on the fire origin and building construction that was available to me, and gave my opinion as to the likely factors involved in the spread of this fire.

The following two sections deal with the comments on my report by Sean Kelly of Capital PCC Limited and Richard Lord, Environmental Health Officer at Barnet Council. These two sections should be read in conjunction with their responses and my report dated 16th July 2024. The numbers in the following sections refer to paragraphs in my report.

Building Regulations are devolved matters of law. The four nations of the United Kingdom have similar functional requirements in respect of fire safety but the guidance documents are different. The situation is similar in Crown Dependencies such as Jersey. All references in my report to Building Regulations or Approved Documents refer to those applicable to England.

COMMENTS BY SEAN KELLY OF CAPITAL PCC LIMITED

Para 2.2: Mr Kelly argues that determining the material mainly responsible for the development of the fire is of key importance – I agree - and seems to criticise me for failing to investigate more fully. I would point out that it is Mr Kelly who has received professional instructions to investigate the spread of this fire, not me. He could have contacted the Fire Brigade investigators but seems not to have done so. Mr Kelly had the benefit of a site investigation but he has not presented any evidence as to the items that were in the yard where the fire originated: these items provided the fuel for the initial fire that subsequently involved the cladding. Had this initial external fire been large and close to the house, flames from it would have impinged on a large area of the rear wall, destroying the cladding in that area. Mr Kelly appears to have made no attempt to gather information as to the size of the initial fire, or what was burning, from eye-witnesses or fire-fighters.

Mr Kelly could have taken samples of the cladding, both for reference purposes and for formal or ad-hoc tests. Without any significant expenditure of time or money, he could have conducted an ad-hoc test, to get a “feel” for how easily the cladding would ignite, simply by applying a match or blowtorch flame to a sample. Mr Kelly does not report having taken samples or doing any tests. Instead, it seems that, because generic uPVC is classed as a combustible material, he assumed that the cladding on the burnt terrace must have been easy to ignite and would have supported rapid surface spread of flame, thus presenting a severe hazard.

Para 2.3: It is incumbent on Barnet Council and Capital to find evidence to support their case.

Para 2.6: I did not mention that Mr Kelly was a member of the Institute of Fire Engineers because this is not relevant to whether he has any experience of fire investigation.

Para 2.8: See my earlier comments. Mr Kelly's report of 11th July 2023 does not give the date of his site visit but photograph 1 in his report – reproduced as photograph 5 in my report - shows a fire engine in attendance, suggesting that it was within a day or two of the fire. The next photograph in his report (reproduced as photograph 10 in mine) shows some of the debris in the yard where the fire started. This could have provided some evidence as to what was involved in the initial fire but Mr Kelly makes no mention of it. In my opinion, there was a wealth of information that could have been obtained in the period immediately following the fire but Mr Kelly did not obtain it. Had the fire scene still existed at the time of my involvement, I would have made strenuous efforts to arrange an inspection. However, the site had already been cleared and so my report relied on evidence collected by others and on my 50+ years of experience in fire research and fire investigation. As regards carrying out an internal investigation, all badly-burned buildings are hazardous to some extent and should only be entered by persons with appropriate experience and wearing adequate protective clothing. Judging from the photographs, the remains of the Moss Hall Grove terrace would not have represented an extreme hazard. Indeed, house 15 appears only to have suffered slight fire damage to its roof.

Para 2.9: Mr Kelly now presents a photograph similar but not identical to photograph 8 in his report dated 11/7/23. He has not given a location for either photograph but they seem to depict an area at the foot of the rear wall of no 11 close to the party wall separating this house from no 13. The new photograph clearly shows some charred plywood. Even if the charred surface had been the outermost face of the wall – rather than having been overlaid by something now destroyed – the damage to it is not evidence of surface spread of flame: instead, it simply shows that it had been attacked by fire. Mr Kelly makes no mention of the debris visible at the bottom of this photograph and does not discuss whether or not it was from items in the yard that had burning up against the external wall.

Para 2.10: I did not mention Fire Safety Order 2005 in my report. The first sentence of the passage quoted by Mr Kelly is Building Regulation B4 (1) with the word “location” substituted for “position”. The second sentence is not part of Building Regulation B4 and, indeed seems contradictory. Section 10 of Approved Document B, Volume 1, gives guidance on how to comply with Regulation B4 (1). Table 10.1 of ADB lists the fire performance requirements in respect of the external surfaces of walls. There is no such requirement for areas of the external walls of low-rise houses that are one metre or more from the relevant boundary (in this case the line of the party wall). Indeed, foot-note 3 to this table states that timber cladding at least 9 mm thick is acceptable. The guidance in ADB, Volume 1, 2019 was amended in 2020 and 2022. Table 10.1 was changed in the latter amendment, but not in respect of low-rise housing – see Appendix to this present report.

Para 2.11: I stated in paragraph 3.5 of my report dated 16/7/24 that the party walls between houses should provide 60 minutes fire resistance and that any gaps between the walls and the outer envelope of the building should be fire-stopped. I included, as Appendix 4, two documents that illustrated how this should be done. Mr Kelly discussed the potential for fire-spread at roof level in section 4 of his report dated 11/7/23. His paragraph 4.1.2 and photograph 10 (reproduced as photograph 16 in my report) show that, contrary to Building Regulation B3, there was no cavity barrier in the eaves at the front of the terrace between houses 13 and 15 to prevent fire and smoke by-passing the party wall. Whilst Mr Kelly stated in his report that the photograph showed that there was “*an unrestricted route for fire to spread*”, he did not then claim, as he does now, that “*this was a route of fire spread during the fire*”. His photograph clearly shows that the fire did not spread through the eaves at this location: the timbers visible in the eaves have not been burnt. Fire had spread into the roof over house 15 but I consider that this had occurred through un-fire-stopped gaps above the party wall. Mr Kelly does not seem to have investigated the presence or otherwise of fire stopping in these gaps during his site visit.

Paras 2.16 & 2.17: This part of Mr Kelly’s response includes two photographs that were not used in his report and which I have not previously seen. He does not give the locations where they were taken. The first photograph was probably taken at the rear of houses 15 and 13 at the line of the party wall between them. It shows an area where the uPVC cladding has been removed to reveal a board covering the concrete post supporting the wall frames. There is no fire damage in this area.

The second photograph shows the rear wall of houses 13 (on the left) and 11. The cladding at the base of the wall of house 13 seems to have had a facing incorporating a non-combustible fabric. Much of this facing has peeled away, exposing a charred board material, probably plywood, beneath. It is not clear whether there had been a similar facing on the board on house 11. This cladding shows clear evidence of fire attack but this is only to be expected since there had been an external fire immediately adjacent to it. Mr Kelly considers that this damage is evidence of “*surface fire spread via this route*”. Not so. Surface spread of flame refers to the spread of fire, horizontally and/or upwards, beyond the area that is already on fire due to being attacked by flames from the initiating fire.

This second photograph also shows a concrete fence post with what appears to be the burnt remains of some glass-reinforced plastic structure next to it. I do not know what this structure had been but it was within the yard of house 11, up against the rear wall.

Paras 2.18 & 3.1: The aerial photograph now presented by Mr Kelly is identical to photograph 4 in my report apart from a moving car not being shown. (All the parked cars are the same.) It was taken at an unknown date after the cedar tree situated adjacent to Moss Hall Grove had been felled. “Sreetview” images show that the tree was felled sometime between June 2017 and April 2018. The stump of the tree can still be seen, bizarrely labelled as house no 19.

I have never considered that the fire originated in the shed at the bottom of the yard and there is no such conjecture in my report. Mr Kelly states that he thinks it likely that *“it was the houses which ignited and the radiant heat generated from the intensity of the large fire caused the shed, fences and other garden elements to combust and be consumed by the rapidly spreading fire”*. He says there is no evidence of a high fuel load in the yard behind no 11, despite the debris shown in the photographs.

In paragraph 1.4 of his report dated 11/7/23, Mr Kelly said *“it is understood that the fire originated and took hold at the rear of No.11 and rapidly spread to the adjacent buildings either side ...”*. He did not make it clear in his report that the fire had started externally (although this is stated in the executive summary to Capital’s Feasibility Report). The passage in italics might be read as suggesting that the external fire spread rapidly to involve the adjacent houses. I consider that this is what occurred but it is clear from his response that Mr Kelly does not. Instead, he seems to think that a relatively small fire impinged on the rear wall of no 11, igniting the cladding, and that flames then spread extensively away from the area being affected by the initial fire. Neither he, nor Barnet Council, has presented any eyewitness evidence or test results to back up this theory. Instead, it would seem that it is the only explanation that they can conceive to explain the pattern of damage.

I was not previously aware of any suggestion that the fire had originated in a motorbike leaning against the rear wall. No evidence has been presented and, at present, I do not accept that this was the case. However, if a motorbike had been involved, any petrol in its tank would have intensified the fire.

Para 3.2: Some of the photographs in Appendix 2 to my report of 16/7/24 do show firemen directing jets of water but these are aimed at areas that are burning, not the cladding. I maintain that, whilst a large area of cladding had been burnt by direct external fire attack, there had been minimal surface spread of flame beyond this area. I agree with Mr Kelly’s points (a) and (b), namely that the relative lack of damage to the front façade was because the fire attack was internal, rather than external, and that the internal plasterboard had resisted the fire long enough to shield the timber wall frame and the back of the cladding from the fire.

Most house fires start within rooms. Barnet Council has argued that the presence of combustible cladding and timber frames greatly increases the likelihood of fires that cause harm to occupants. The fire at Moss Hall Grove does not support this argument. In respect of the front wall of the terrace, three of the houses suffered internal fires but in no case did the cladding on the front wall, or its timber frame, become involved to increase the severity of the fire or the hazard to house-holders.

Para 3.3: There are degrees of combustibility. Some materials of limited combustibility might not support the horizontal spread of fire but would support vertical spread (due to their heat of combustion rising upwards). Strictly speaking, plasterboard is a combustible material but, unless it has multiple paint layers, it is not a material that would support fire-spread. Similarly, Cedral boards, the

replacement cladding proposed by Barnet Council, is not non-combustible but does have an A2 fire rating showing that it has very limited combustibility and is unlikely to contribute to fire-spread. However, consideration has to be given to possible adverse factors presented by any combustible water-proof membrane, insulation or timber framework used in conjunction with the cladding. Section 7 of the British Board of Agreement Certificate 06/4299 in respect of both Cedral Weatherboard Lap cladding and the similar tongue-and-groove “Click” cladding points out that the use of combustible support systems and substrates may prevent compliance with Building Regulations in respect of areas close to boundaries or in high-rise situations.

Paras 3.4 & 3.6: I have already addressed these points in relation to paragraphs 2.10 and 2.11.

Para 3.7: I do not comprehend why Mr Kelly thinks I missed the content of his paragraphs 4.1.3 and 4.2.2. I agree entirely with paragraph 4.1.3 and its accompanying diagram, as can be discerned from my paragraph 3.5. The two diagrams that I present in Appendix 4 probably predate the NHBC diagram. They were based, at least in part, on information that I brought back from fires that I investigated in the 1970s when I was a scientist at the Fire Research Station (which became a division of the Building Research Establishment). As regards paragraph 4.2.2 of the Capital report, I agree that the lack of cavity barriers in the eaves provided a potential route for fire-spread. However, as I point out in my paragraph 3.6, the photographs used in the Capital report to illustrate the lack of a cavity barrier also show that the fire did not spread via this route, at least at the location that was photographed.

Para 3.8: I would suggest that Mr Kelly’s views as to how this fire developed are based not on facts but on supposition and bias relating to the fire performance of cladding on tower blocks.

Para 4.1: What reports are these?

Para 4.3: The Capital report did not include any time-scale for the spread of the fire. I accept that the points listed in (a), (b) and (c) existed. I also consider that the fire initially developed rapidly but I think that this was due to a fast-growing external fire.

I do not know what Mr Kelly means by “Euroclass guidance”. In paragraph 2.1.4 of his fire spread investigation report, Mr Kelly makes reference to the RICS Guidance note “Cladding for Surveyors” issued in March 2021. (RICS is the Royal Institution of Chartered Surveyors.) The front cover of this publication states that it is a “Supplementary information paper to *Valuation of properties in multi-storey, multi-occupancy residential buildings*, RICS guidance note”. In general, the information within it relates to high-rise buildings. Indeed, the introduction section states that it: “*covers only the main types of external wall systems and balconies found on residential blocks of flats in the UK (so does not include houses/bungalows, commercial and non-domestic buildings, although some of the cladding systems presented may be found on these building types)*”. Its Appendix gives the typical risk

status for different materials found in standard cladding systems for high rise residential properties. (High-rise was then considered as being over 18 metres). Both timber and PVC cladding are shown as presenting a high level of risk. However, it is stated that the “*ratings are provided for guidance only. These materials may have differing risk status in other types of buildings ...*”. I consider that these types of cladding do not present a high level of risk in one- or two-storey housing.

Para 4.5: My theory is consistent with the pattern of damage to the rear wall and the extent of fire damage in the yard of house 11. Regrettably, no eye-witness or photographic evidence has been presented regarding the early stages of the fire. I did find an extremely brief video, a still from which is shown on the front cover, but all that this showed was that there was a large fire, apparently external.

COMMENTS BY RICHARD LORD OF BARNET COUNCIL

Para 1.1: Mr Lord states that the “*theory provided by Barnet Homes is that a motorbike parked against the side of the house was responsible for the ignition*”. This is the first that I have heard of this theory. It is not mentioned in either of the reports by Capital, or in Mr Lord’s HHSRS report dated 10/8/23. There are no obvious remains of a motorbike visible in the photographs that I have – see photographs 8 and 10 in my report. The summary report by the London Fire Brigade investigation team makes no mention of a motorbike and states that the cause was undetermined. Gavin Bass of Barnet Homes informed Andrea Corr in an email dated 22/7/24 that he was with the Fire Brigade at the scene and saw nothing out of the ordinary for a garden. He further stated that the cause of the fire was undetermined.

If there had been a motorbike on fire against the rear wall, any petrol in its tank would have escaped and ignited. The tank capacity depends on the size of the machine but an average capacity would be around 4 gallons (18 litres). Even one gallon of petrol burning against the side of a house would produce a substantial fire. Regardless of whether there was a motorbike, the debris remaining in the yard where the fire started showed that there had been a significant quantity of combustible items there, plus wooden fences which ran either side of the yard up to the rear of the houses. Mr Lord seemingly ignores this fire load, and the substantial fire that it would have produced, instead blaming the cladding and timber frame for the spread of the fire. The timber frame would not have ignited until after the uPVC cladding had started to fall away.

Para 1.3: I was not informed of the option being piloted at Playfield Road.

Para 1.6: Mr Lord’s response is unjustified since my report also considered the lack of fire-stopping. I did not discuss the timber frame in great detail because I did not consider that it was a major factor in

the spread of fire in this particular incident. Indeed, had the wall frames used steel members rather than timber, I consider that the extent of fire-spread would have been substantially the same.

Para 2.2: My opinion, as stated in paragraph 4.1, was that “*the destruction of this terrace occurred because three of the houses were directly exposed to heat and flames from an unusually large external fire*”. The fire in the yard involved timber fences, a quantity of garden furniture, possibly some structure near the house and, if Mr Lord’s motorbike theory is correct, an unknown quantity of petrol. Mr Lord ignores all these fuels, stating that “*the only materials that were available for the rapid development and spread of fire was the UPVC (plastic) cladding and the timber frame*”.

Para 2.4: The smoke shown in the video would have been emanating from both the items on fire in the yard and the UPVC cladding.

Para 2.8: My comments on page 2 are applicable in respect of the failure to take samples.

Para 2.9: I have not seen any evidence as to the time-scale of the fire. I do not know whether or not the houses either side of no 11 were already well alight when the first fire crews arrived. No 15 suffered only minor fire damage to its roof but was subsequently demolished along with the rest of the terrace. Had there been no Fire Brigade attendance, the spread of fire to the roof of no 15 would eventually have destroyed this house as well.

Para 2.12: Mr Lord seems to be suggesting that an inspection would not have been useful because much of the terrace had been destroyed by fire. In fact, an experienced fire investigator would have found a wealth of evidence, though not necessarily enough to answer every question. I have not seen any report on the 20/8/23 investigation.

Para 2.14: I accept that plywood was present in some areas but it seemed to be absent in others.

Para 2.18: I agree that my photograph 4 cannot be taken as showing the items that were present in the yard on the day of the fire. Photograph 1 of this present report provides a clearer version of this view. Another aerial view, on an unknown but different date is shown in photograph 2 of this report. There is what appears to be a gazebo in the garden. I accept that I have no evidence of a gazebo being present during the fire but the various aerial views, together with the quantity of debris that was present in the yard after the fire, do lend support to my view that there might well have been a high fire-load there. Houses in the UK are not required to resist ignition from a large external fire burning in close proximity.

Para 3.1: See my comments in relation to paragraph 2.18. Mr Lord must mean convection, not “conduction”.

Para 3.3: Mr Lord's comments bear little relation to my paragraph 3.3 and are rather confused. He quotes Building Regulation B4, which he implies is from "*Approved Document B 2010, the current building control standards*". Strictly speaking, an Approved Document is not the same as the Building Regulations: it provides guidance on how to comply with the Regulations. Currently, the Building Regulations 2010, as amended, are in force. (None of the amendments applies to Part B, Fire Safety.) The current Approved Document B, Volume 1, was published in 2019 with updates in 2020 and 2022.

The passage quoted is identical to the current Regulation B4. Indeed, this Regulation has changed little over the years. The 1991 version is identical apart from not including the word "adequately" in either sentence. The 1985 version used the term "shall offer adequate resistance to" rather than "shall adequately resist". Before 1985, Building Regulations were prescriptive and included much detail on how buildings were to be constructed and the materials that were to be used. Architects considered that this approach inhibited innovation and so Building Regulations were replaced with succinct statements of functional requirements that were supported by Approved Documents giving guidance on how these requirements could be achieved. The functional requirements – at least in respect of fire – tend to remain unchanged but the Approved Documents are regularly updated in the light of new knowledge and in response to tragedies.

Para 3.4: Mr Lord argues that there "*is no evidence that a burning external structure was the cause of the ignition that spread to the terrace*". However, he gives no opinion on how, or where, the fire started other than belatedly referring to a motorbike leaning against the wall, something for which he has presented no evidence. He states that the fire spread to the neighbouring dwellings "*very quickly, putting householders at risk*" but he has not attempted to put a figure on this rate of spread or present a time-scale for the fire. He presumably means that cladding bridged the party wall, not "breached" it. As discussed on page 4 in relation to para 2.11, whilst the lack of cavity barriers in the eaves provided a potential route for fire-spread, the fire did not spread by this route in the one area for which there is clear photographic evidence.

Para 3.6: See my comments in the preceding sentence.

Para 3.7: Mr Lord does not state whether or not the houses at 38 and 40 Playfield Road are owned by the Council. It is a pity that the two photographs included with his response do not have captions to explain what they are intended to show. The first one shows the lower end of a rafter and part of a ceiling joist at a point close to the eaves. This view would not have been possible without the removal of roof tiles, breather membrane and tiling battens. I presume that the area shown is immediately adjacent to the party wall, in which case there should have been fire-stopping between the battens. The second photograph seems to be looking down onto the top surface of the ceiling, now partly covered by what may be bird nesting material. I do not know what this photograph is intended to show.

Para 3.9: Fires starting in cavities are uncommon compared to fires starting in rooms but they do occur and I have investigated a number of such incidents. Most were started by flame and/or hot gases from plumbers' and painters' blowtorches entering the cavity via gaps and igniting materials such as birds' nesting material, rotted wood or fibre insulation board. Some were started by sparks from angle grinders and flame cutting. In general, sound timber is resistant to ignition by these ignition sources unless there is prolonged exposure. In my experience, fires occurring in cavities due to electrical faults at sockets or in fixed wiring are rare.

I incorrectly stated that Mr Lord's scenario of a fire starting within a wall cavity was in paragraph 7.3 of his HHSRS report. In fact, it is in section 7.2 in his HHSRS report on the type 3 (Moss Hall Grove) archetype and in an unnumbered section in his report on the type 1 archetype. I consider the scenario unrealistic because a fire starting in a cavity usually has a restricted supply of air, for the simple reason that it is within a cavity. This prevents rapid growth of the initial fire. The wall cavity is subdivided by the framing timbers, restricting the spread of fire both horizontally and vertically, and preventing a chimney effect. The heat flux from a fire confined within a cavity would be unlikely to ignite uPVC cladding or breach a plasterboard internal lining. Incidentally, the pre-fabricated wall frames of the Moss Hall Grove houses did not extend across the lines of the party walls.

Mr Lord argues that the presence of a timber wall frame and combustible cladding will increase the likelihood of a fire that causes harm to the occupants. For the largest group of houses, the type 1 archetype, he assessed the likelihood as 1 in 180. (The national average for houses built between 1920 and 1945 is given as 1 in 6248 in the HHSRS Operating Guidance document dated February 2004. Mr Lord repeats this figure in his HHSRS report on type 1 houses, but mis-states the age range.) His assessment implies that, for the 454 type 1 houses, there would be 2.5 such fires each year, on average. I very much doubt that this is the case.

Barnet Council should have records of fires in their own houses, particularly those causing harm to their tenants. If Mr Lord's assessment represents reality and applies to all 153 Council-owned houses that Barnet consider require cladding replacement, the annual likelihood of a fire causing harm in this group would be 0.85 (153 divided by 180). This averages out at about 4 such fires over a five-year period.

The National Fire Statistics record that in 2022/23, there were 26,827 primary fires in dwellings in England. Other Government statistics show that there were about 25M dwellings in England in this period. This suggests the likelihood of a Fire Brigade attendance to an English dwelling is about 1 in 1000. For the entire group of houses that Barnet considers to be at special risk, a Fire Brigade attendance could be expected once every two years. For the sub-group of 153 Council-owned houses, a Fire Brigade attendance would be expected once every six or seven years. Of course, not all fires attended by the Fire Brigade result in harm to occupants.

Mr Lord includes a photograph of a timber-framed wall cavity that has been exposed by removal of the outer cladding. He says that there was “*clear evidence that the internal plasterboard has been breached ...*” but the photograph shows a hole in what looks like fibre insulation board, but might be hardboard. In any case, the hole has been blocked by some material, possibly plasterboard, overlaying the side facing the room. Fibre insulation board was widely used prior to 1950 because it provided a degree of thermal insulation, was cheap and plasterboard was sometimes in short supply. However, it was not durable, was prone to smouldering ignition and could sustain a rapid spread of flame across its surface if there was adequate ventilation. It was recognized some 70 years ago that it was a hazardous material to use as an internal lining and in some cases Councils were given central government grants to replace it or cover it with plasterboard.

Para 4.1: The opinion I expressed in paragraph 4.1 was based on the fact that there had been a large external fire, as shown by the debris and destruction in the back yard and also by the volume of smoke shown in the video referred to in paragraph 2.4 of my report. In my opinion, the flames from this fire impinged on the rear elevation over an area matching the area of destruction to the uPVC cladding.

Para 4.2: I do not agree that the fire initially spread externally across the uPVC cladding before breaking into the houses and their roof spaces. Instead, I consider that a large external fire simultaneously attacked the rear elevation of house 11 and parts of the rear elevations of houses 9 and 13, destroying the wall cladding in the area of fire attack – see my conclusion in paragraph 4.1.

Para 4.4: Subsequent to writing my report, I obtained a photograph that provided a clearer view of the destruction of the roof above the party walls – see photographs 3 & 4 of this present report. No remains of fire-stopping are visible. This new photograph does not change my view on this aspect which, in any case, does not seem to be in dispute. Had the initial fire affected only house 11, once its roof void became involved the fire would almost certainly have quickly spread into the roofs of houses 9 and 13 via gaps above the heads of the party walls.

Para 4.5: I consider that my opinions are consistent with the pattern of fire damage and other available evidence. I do not consider that Mr Lord’s contrary arguments are substantiated.



6th September 2024

Table 10.1 Reaction to fire performance of external surface of walls

Building type	Building height	Less than 1000mm from the relevant boundary	1000mm or more from the relevant boundary
'Relevant buildings' as defined in regulation 7(4) (see paragraph 10.10)		Class A2-s1, d0 ⁽¹⁾ or better	Class A2-s1, d0 ⁽¹⁾ or better
Assembly and recreation	More than 18m	Class B-s3, d2 ⁽²⁾ or better	From ground level to 18m: class C-s3, d2 ⁽³⁾ or better From 18m in height and above: class B-s3, d2 ⁽²⁾ or better
	18m or less	Class B-s3, d2 ⁽²⁾ or better	Up to 10m above ground level: class C-s3, d2 ⁽³⁾ or better Up to 10m above a roof or any part of the building to which the public have access: class C-s3, d2 ⁽³⁾ or better ⁽⁴⁾ From 10m in height and above: no minimum performance
Any other building	More than 18m	Class B-s3, d2 ⁽²⁾ or better	From ground level to 18m: class C-s3, d2 ⁽³⁾ or better From 18m in height and above: class B-s3, d2 ⁽²⁾ or better
	18m or less	Class B-s3, d2 ⁽²⁾ or better	No provisions

NOTES:

In addition to the requirements within this table, buildings with a top occupied storey above 18m should also meet the provisions of paragraph 10.6.

In all cases, the advice in paragraph 10.4 should be followed.

1. The restrictions for these buildings apply to all the materials used in the external wall and specified attachments (see paragraphs 10.9 to 10.12 for further guidance).
2. Profiled or flat steel sheet at least 0.5 mm thick with an organic coating of no more than 0.2mm thickness is also acceptable.
3. Timber cladding at least 9mm thick is also acceptable.
4. 10m is measured from the top surface of the roof.

Table 10.1 copied from ADB, Volume 1, 2019, before amendments

The term “Relevant buildings” refers to high-rise buildings.

Low-rise housing is included in “Any other building: 18m or less”

See next page for the version of this Table as amended in 2022

APPENDIX

External surfaces

10.5 The external surfaces (i.e. outermost external material) of external walls should comply with the provisions in Table 10.1. The provisions in Table 10.1 apply to each wall individually in relation to its proximity to the relevant boundary.

Table 10.1 Reaction to fire performance of external surface of walls

Building type	Building height	Less than 1000mm from the relevant boundary	1000mm or more from the relevant boundary
'Relevant buildings' as defined in regulation 7(4) (see paragraph 10.14)		Class A2-s1, d0 ³ or better	Class A2-s1, d0 ³ or better
All 'residential' purpose groups (purpose groups 1 and 2)	More than 11m	Class A2-s1, d0 ³ or better	Class A2-s1, d0 ³ or better
	11m or less	Class B-s3, d2 ² or better	No provisions
Assembly and recreation	More than 18m	Class B-s3, d2 ² or better	From ground level to 18m: class C-s3, d2 ² or better From 18m in height and above: class B-s3, d2 ² or better
	18m or less	Class B-s3, d2 ² or better	Up to 10m above ground level: class C-s3, d2 ² or better Up to 10m above a roof or any part of the building to which the public have access: class C-s3, d2 ² or better ⁴ From 10m in height and above: no minimum performance
Any other building	More than 18m	Class B-s3, d2 ² or better	From ground level to 18m: class C-s3, d2 ² or better From 18m in height and above: class B-s3, d2 ² or better
	18m or less	Class B-s3, d2 ² or better	No provisions

NOTES:

In all cases all the following provisions apply.

- Regulation 7(1A) prohibits the use of relevant metal composite materials in the external walls, and specified attachments, of all buildings of any height (see paragraphs 10.11 and 10.12).
- The advice in paragraph 10.4 should always be followed.

In addition to the provisions within this table, buildings with a storey 18m or more above ground level should also meet the provisions of paragraph 10.6.

In addition to the provisions within this table, buildings with a storey 11m or more above ground level should also meet the provisions of paragraph 10.7.

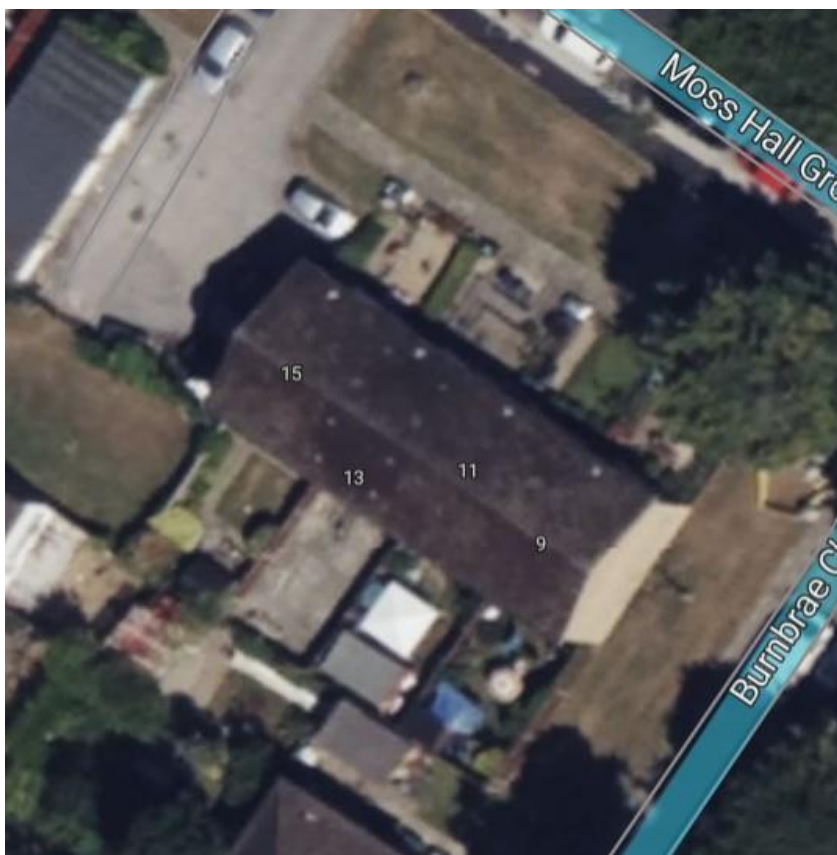
1. The restrictions for these buildings apply to all the materials used in the external wall and specified attachments (see paragraphs 10.13 to 10.16 for further guidance).
2. Profiled or flat steel sheet at least 0.5mm thick with an organic coating of no more than 0.2mm thickness is also acceptable.
3. Timber cladding at least 9mm thick is also acceptable.
4. 10m is measured from the top surface of the roof.

Table 10.1 copied from ADB, Volume 1, 2019, as amended in 2022

APPENDIX



1. A clearer version of photograph 4 in my report dated 16/7/24. The cedar tree at the front of the terrace has already been felled so this view must be after June 2017. The yard of no 11 is relatively uncluttered. I do not know why the roof of no 13 is different.



2. An image from Bing Maps, taken on an unknown date after June 2017. The yard of no 11 contained what appears to be a gazebo at this time. The yellow shrub visible in the previous photograph seems to have been removed.



3. This photograph, from social media, was taken during the final stages of fire-fighting. It gives a better view of the head of the party walls than photograph 6 in my report of 16/7/24. Charred pieces of tiling battens remain in place where they pass over the party walls. There should have been fire-stopping between the battens where they pass over the party wall but none is visible, suggesting that it was never present.



4. A closer view of the head of the party wall between houses 11 and 9.