

[REDACTED]

Your ref:

My ref: AC-6

Date: 29th January 2025

[REDACTED]
[REDACTED]
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Tel: [REDACTED]
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Ms [REDACTED]
[REDACTED]
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[REDACTED]

Dear [REDACTED],

The Three Proposed Options

- 1 I have now considered letter 11 and the other recent documents from Barnet Council, including those suggesting alternative options for mitigating the supposed hazards.
- 2 As you know, the background for all this is the fire at Moss Hall Grove in which three houses were destroyed as a result of a fire starting in a rear garden. The fourth house in the terrace was damaged as a result of fire-spread at roof level via unstopped gaps above the head of the party wall. The Fire Brigade carried out an investigation but did not prepare a full report: their summary report is uninformative, seemingly deliberately so. Barnet Council instructed Capital PCC to carry out a site investigation. Their surveyor, Sean Kelly, does not seem to have much experience in fire investigation and did not carry out what I would consider to be a competent investigation into the cause of the fire and the factors relating to its growth. However, he specifically stated that his report did not cover the cause of the fire or assess the risk to life.
- 3 I consider that a competent fire investigator would have seen from the pattern of damage that there had been an unusually large external fire, with direct flame impingement on the entire rear elevation of one house and parts of two others. Houses are not designed to withstand this type of fire attack.
- 4 Barnet Council was reportedly told by the tenant of 11 Moss Hall Grove that he had been working on a petrol-fuelled motorbike outside the house but had gone out, leaving “two young ladies” in the house. He further seems to have told them that the “motorbike exploded and sent a fire ball through the house”. Presumably the back door was open at the time. I expect that there is further information regarding the cause and early stages of the fire that has yet to be disclosed.
- 5 Capital PCC made no mention of a motor-bike, explosion, fireball or the involvement of petrol in their Fire Spread Investigation report on the Moss Hall Grove fire. Had they been aware of this information, and taken it into account, they might have come to different conclusions as to why there had been so much damage. Instead, they concluded that fire must have spread rapidly from no. 11 to the houses either side as a result of flame spreading over the uPVC wall cladding, with some fire-spread also occurring via cavities within the boxed eaves. Barnet Council also made no mention of petrol, fireballs, etc, in either their Housing Health

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and Safety Rating System (HHSRS) assessment report on the destroyed Moss Hall Grove terrace, or in any of the HHSRS assessments for the three other house archetypes.

- 6 Neither Capital nor Barnet have presented any clear evidence that fire did actually spread across the surface of the cladding, or via cavities in the rear walls. I think it likely that they concluded that it was self-evident having failed, due to their lack of expertise, to consider the nature and size of the initial external fire. They did not carry out any sort of test on the remaining cladding to get a feel for how it might perform in a fire. Instead, it seems that they assumed that, because uPVC is combustible, it must automatically present a severe hazard as regards the lateral spread of fire.
- 7 In the past, uPVC cladding was considered acceptable by Building Control and building professionals because it does not burn readily and some products achieved a Class 1 rating (the best) when tested to BS 476: Part 7. I am not aware that, before the Moss Hall Grove fire, anyone thought PVC cladding on low-rise housing was a life hazard. Indeed, the notes to Table A8 in versions of Approved Document B as late as 2013 suggest that uPVC might achieve a Class 0 rating though this must be substantiated by tests to BS 476: Parts 6 & 7. I doubt that uPVC cladding could achieve a genuine Class 0 rating but I think its use is acceptable on low-rise housing, in compliance with Building Regulations.
- 8 There was clear evidence of fire-spread to no.15 Moss Hall Grove due to lack of fire-stopping to the head of the party wall, but this aspect was not examined in detail by either Capital or Barnet.
- 9 As a result of the Moss Hall Grove fire, Barnet carried out an HHSRS assessment of four different types of housing with timber frames and combustible cladding. An average two-storey house would be expected to have an overall HHSRS fire hazard score of around 18. By contrast, Mr Lord assessed your type of house (archetype 1) as having a fire hazard rating of 1328. He also assessed the burnt Moss Hall Grove houses (designated as archetype 3) as having an overall hazard rating of 1328 despite not being able to score the hazard of many items such as the electrical system and internal doors. In my view, the high and identical hazard scores illustrate just how subjective Mr Lord's assessment were. Scores of 1000 and over are deemed to represent a hazard that is so great that the Council must compel house owners to carry out remedial measures.
- 10 The reason for these high ratings was mainly due to Mr Lord considering that the presence of combustible wall cladding and timber frames increased the likelihood of a fire starting by more than a factor of 30, and also doubled the risk that any fire would spread and cause greater personal harm. Barnet has not provided any coherent or detailed justification for these views nor have they cited any historical records that show that this tranche of their housing stock has an unusually high frequency of fires, in line with the calculations in their HHSRS assessment. Incidentally, Barnet has stated that there were no casualties in the Moss Hill Grove fire. If so, it would not, under the HHSRS system, be regarded as a fire having caused harm. However, the fire was clearly of great significance and merited detailed investigation and consideration in order to identify any issues that needed attention.
- 11 Common causes of fires in houses include carelessness with cigarettes and candles, cooking accidents and electrical faults. The likelihood of such ignition sources occurring is not related to whether or not the external walls have timber frames and/or combustible cladding. Consequently, I do not consider that there is any justification for an increase in the likelihood

of a fire starting inside the house. A small proportion of house fires start externally. The likelihood of these fires will be increased by the presence of combustible cladding but I doubt that the overall number of fires would be increased substantially.

- 12 Barnet considers that the presence of timber frames and combustible cladding more than doubles the likelihood that a fire will result in severe personal harm. They have not provided any evidence or coherent argument to support this view and I consider it to be unjustified.
- 13 At Moss Hall Grove, large areas of uPVC cladding fell away where they were attacked by flames from the external fire but much remained in place. There is no evidence that fire spread across the surface of the cladding. Some of that which remained in place had been damaged by heat but none showed damage from fire spreading across its surface. The failure of the cladding exposed the timber frame to ignition and undoubtedly lead to greater damage to the walls. Whilst, the burning of the wall frames could have resulted in fire spreading into the interior of the houses, no evidence has been presented to show that fire had spread via this route before it had already entered through windows and doors, or by setting fire to the eaves. There is unconfirmed eye-witness evidence that a fireball entered house no 11, presumably through the back door, early in the fire. In the circumstances, the occurrence of a fireball would indicate the involvement of petrol.
- 14 No evidence has been presented to show that ignition of the wall frames resulted in either a more rapid spread of fire within a house, or the spread of fire from one house to another. There was a potential route of fire-spread between the Moss Hall Grove houses via cavities in their boxed eaves but there is no evidence that this presented a severe risk to life. Indeed, there is no evidence that fire actually spread via this route; the photographs illustrating this potential route show no fire damage within the cavity at the location depicted.
- 15 Fire did spread between Moss Hall Grove houses due to gaps between the top of the party wall and the underside of the roof tiles – a very common defect, in my view probably affecting around half of all semi-detached and terraced houses – but this was not related to the timber frame or wall cladding. Gaps beneath the tiles are common-place, despite being contrary to Building Regulations and good practice. They result in a definite increase in property damage and some increase in life hazard. However, since these defects are so widespread, they are probably already taken into account in the HHSRS rating system and I do not think that their presence alone could justify an increase in the hazard rating, although larger gaps in the party wall would justify an increase.
- 16 Barnet considers that the presence of combustible cladding and cavities increases the likelihood of a fire starting in houses of your type by 6 scale points from 1/6248 to 1/180. Put another way, the statistics presented in the HHSRS guidance document suggest that, for houses of similar age to yours, there would be one fire causing injury each year for every 6248 houses. However, Barnet thinks that the timber wall frame and cladding in your type of house increases the risk to one such fire per year for every 180 houses. (If this were the case, it should have become obvious from local news reports and the Council's own records.) If Barnet were to moderate their judgement as to the degree by which combustible cladding and timber frames cause a fire to start by even just one or two scale points – to 1/320 or 1/560 – the overall hazard score would be well below 1000 and enforcement of remedial measures would not be mandatory. In my view, there is no evidence to warrant any substantial increase in either likelihood of a fire or the extent of harm it might cause. I do not consider that expensive remedial measures are necessary.

- 17 Barnet initially stated in a letter to you dated 1st March 2024 that the fire at Moss Hall Grove “spread very quickly because of the wall cladding”. The letter further stated (wrongly), that your house has the same cladding and that “to ensure the safety of your household and your neighbours the cladding of your property will need to be surveyed and most likely replaced”. There was no mention at this time of the need to fire-stop cavities but this was mentioned in later documents.
- 18 Barnet initially considered that all combustible cladding needed to be replaced with material of limited combustibility such as the Cedral boards. They had hoped to get financial support from central government. This was not forthcoming and Barnet seem to have changed their focus away from timber cladding to, instead, installing fire-stopping to block cavities around the edges of the party walls (option 2). Alternatively, they seem willing to accept leaving the cladding and any cavities unchanged as long as a misting system is fitted in the house. In my opinion, Barnet’s proposals are muddled and inconsistent. It is not clear whether they still consider combustible cladding and/or un-fire-stopped cavities to be a severe life hazard. If they do not, there is no justification for them requiring remedial work. If they still do, they do not explain how a misting system would provide mitigation of these hazards.
- 19 Option 1 is to replace all combustible cladding, eaves soffits and fascias with board material of limited combustibility. Presumably, cavity barriers and firestopping along the lines of party walls, including at roof level, would be installed at the same time. This option will improve life safety to a degree, and lessen potential property damage, but will be expensive.
- 20 Option 2 applies to houses with timber cladding such as yours. It is described on the first page of the letter sent in January 2025 as “a fire break under cladding on the party wall with detectors in the loft space”. The letter states that the Council will be carrying out this option on their own properties. Matters then become confused, to put it mildly! Page 2 of the letter purports to give more detail but, instead, describes a completely different arrangement in which a vertical section of cladding is cut away to allow the installation of a brick column tied into the party wall. The letter then refers the reader to an attached Frequently Asked Questions (FAQ) for a full specification of option 2.
- 21 The FAQ includes a hyperlink to the part of Barnet’s website that gives fuller details of what seems to be option 2 as described on page 1 of the letter. The work detailed includes the temporary removal of timber cladding in the region of the party wall in order to install fire-stopping. The original timber cladding is then replaced. There is no requirement to treat the removed section with fire retardant although this is required if new timber is required. The text refers to a detail drawing that is different to that which can be downloaded (although it may be similar). No cavity barriers are specified for boxed eaves.
- 22 The description of option 2 in the letter does not mention any fire-stopping at roof level but does include the installation of smoke detectors within the roof voids. By contrast, the more detailed description available on the Council’s website makes no mention of smoke detectors but specifies a complex arrangement of fire-stopping at roof level that, in my view, is over and above what is normally regarded as good practice. (See Defect Action Sheet 8 in Appendix 4 to my report dated 16/7/24 or NHBS drawing 7.2.16 as shown in paragraph 1.2 of the Capital PCC Feasibility report.) The drawings that purport to show details of this work are not available for download from the website. No requirement is made of the need to check the party wall within the roof void for holes or other defects, or undertake appropriate repairs.

The possibility that the replacement tiles might be visually different to the rest of the roof is not mentioned.

- 23 At present, it is unclear exactly what is being proposed as option 2, or why. However, I doubt that the provision of a fire-break below eaves level, whether by fire-stopping behind the cladding or by the brick column arrangement, will provide any safety benefit, particularly if there are gaps higher up. Since heat rises, fire tends to spread through the highest gaps first (as happened at 15 Moss Hall Grove). By contrast, fire-stopping at roof level should reduce property damage in the event of a serious fire and lessen the life risk to a small extent. The provision of smoke detectors in the roof void could inform the occupants that their roof, or next-door's house, is on fire but they would probably be aware of that situation in any case, particularly if they had smoke detectors elsewhere in accordance with modern safe practice.
- 24 For reasons that are not explained, option 2 is considered unsuitable for houses of the type at Moss Hall Grove (archetype 3).
- 25 Option 3 involves the installation of a water mist or water fog system. This is similar to a domestic sprinkler system but with a lower water flow. Another difference is that misting systems are often designed to protect a specific item or location and may only be fitted in some of the rooms. Barnet Council does not state whether they require the misting system to be fitted in all rooms or just some downstairs rooms. If the latter, a misting system would be of no benefit if the fire started upstairs or involved the roof void. Even if the system covered all rooms, it would have no effect on a fire burning externally or within constructional cavities.
- 26 Most domestic misting systems rely on a pump to generate the necessary water pressure and will not function if the power supply fails, either because of an electrical fault or because there is a power cut. They also require frequent, regular maintenance in order to provide assurance that they will function correctly when required. Whilst a misting system might be appropriate in some situations, I do not consider that it would mitigate the hazards supposedly resulting from the combination of timber frame and combustible cladding. In my opinion, the outcome of the fire at Moss Hall Grove would have been very similar even if all four houses had been fitted with misting systems.
- 27 In three of Barnet's HHSRS assessment, a scenario was postulated in which a fire starts in the ground-floor electrical cupboard as a result of electrical over-loading or defective wiring. I agree that fires do start in this location although, in my experience of fire investigation, they are often caused by the deterioration of the electricity supplier's cut-out fuse. (This item is located between the supply cable and the meter. It is usually inside a plastic housing kept closed by a tamper-proof wire and lead seal to deter any interference by the consumer. The cut-out fuse is rarely the subject of any routine inspection or maintenance.) A loose cable connection, or a poor contact at the fuse-holder, can cause resistive heating and progressive deterioration, eventually leading to a fire. Because such fires involve damage to the cut-out fuse and supply cable, the electricity supply usually fails at an early stage of the fire. In these circumstances, a misting system that relied on a pump would be rendered inoperative.
- 28 In their recent FAQ document, Barnet endorses two companies that provide misting systems (IMist and Misting Solutions) stating that they are both accredited with the UK Fire Association. This is a trade organisation that members can join by paying an annual fee. It does not certify that its members conform to any specific standards. As far as I am aware, Imist is not a member. Misting Solutions Limited went bust and the company was dissolved.

in March 2021. Its website was taken over by Smartmist Global Residential Limited. This company changed its name to Smartmist Systems Limited in 2022. Smartmist is a member of the UKFA. Both SmartMist and IMist are members of the IWMA (International Water Mist Association, another trade organisation).

- 29 Neither misting system company is “accredited”: this is the wrong term. IMist’s website does allow the user to download copies of test reports and certificates of conformity to Standards (though some seem to have expired). The mistingsolutions website does not provide for the download of Certificates of Conformity and I have been unable to find any for SmartMist.
- 30 Whilst IMist’s website seems measured and comprehensive, I have some concerns about aspects of SmartMist’s, in particular the claim in their residential section: “BS8458 Compliant. SmartMist is fully certified to ensure all building control requirements are ticked”. This statement might lead laymen to believe that the installation of a SmartMist system would solve any Building Regulations compliance issues. Building professionals should know better than to take sales literature at face value. (This was one of the main lessons from the Grenfell Tower Inquiry. Had the building professionals and Building Control checked the manufacturers’ claims in respect of the cladding and insulation, a different system would almost certainly have been used and, even if other dangerous aspects were unchanged, the death toll would probably have been much lower.)
- 31 In conclusion, I do not consider that, in the types of houses under consideration, the presence of combustible cladding or continuous cavities in the walls leads to a significant increase in life hazard. Consequently, I do not consider that expensive remedial works are warranted. As regards defects in the party walls at roof level, any large holes or other gross defects should be repaired but there is probably insufficient benefit from complete fire stopping under the tiles to warrant the cost of such work unless it is carried out at the same time as roof repairs or loft conversion work. Whilst a misting system is a cheaper option than cladding replacement, I do not consider that it provides a worthwhile benefit. Improvements in fire safety can be achieved cheaply by actions such as installing smoke detectors, taking more care to avoid fires and by preparing and then rehearsing a plan of action to be taken by the household in the event of a fire.

Yours sincerely,

