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Our Ref:

Dear Resident,

**Re: Housing Act 2004 -
HHSRS assessments for timber framed houses. London Borough of Barnet**

Thank you for the email requesting further clarification to the HHSRS assessment for timber framed houses across the Watling Estate. I hope this response helps you to understand the justification reasoning further.

Do the observations actually apply to houses or apartment blocks?

The Housing Health and Safety Rating System (HHSRS) is the method that Local Authority Housing Officers use to judge the risks presented by housing related hazards including fire, across all types of housing and tenures including owner occupied, privately rented and socially rented houses and flats in blocks of differing heights.

The Government issued an Operating Guidance document to help inspectors follow the system consistently. I have included some statements from the Operating Guidance document to help you to understand the decisions. The hazard of fire is a specific hazard that must be assessed in accordance with the Operating guidance hazard profile.

The principle underlying the HHSRS is that any residential premises should provide a safe and healthy environment for any potential occupier or visitor. To satisfy this principle, a dwelling should be designed, constructed, and maintained with non-hazardous materials and should be free from both unnecessary and avoidable hazards.

The original Operating Guidance for the hazard of fire is silent on the risk of external spread of flames across a building. It has been amended by *Housing Health and Safety Rating System Operating Guidance- Addendum for the profile for the hazard of fire and in relation to cladding systems on high rise residential buildings*. While the addendum is mainly concerned with high-rise residential buildings (those 18 metres high and over), some aspects will be relevant for other issues relating to the exterior of a building. The addendum provides additional information to the HHSRS Hazard profile for fire including the mental health impact on the possibility of fire spread.

The Operating Guidance for the hazard of fire directs assessors to further information including Building Regulation Approved Document B. The houses assessed across the Watling Estate were not constructed to meet modern standards of compartmentation, external and internal fire spread. These are deficiencies as houses do not meet the ideal.

Inspectors must have due regard to the Operating Guidance and follow it closely.

Building Regulations

Building Regulations 2010 Approved Document B. Volume 1 dwellings (ADB V1) is dated after the original Operating Guidance was published. The generic assessment considers the risk of external spread of flames across the exterior of the dwelling, missing cavity barriers and poor or nil compartmentation between dwellings. The following comments are relevant to the assessment.

Compartmentation

Barnet Council Building Control advises the following for a two-storey timber framed house with a party wall.

- Where no space separation is achieved the guidance would suggest fire resistant construction (from both sides) of the wall.
- Typically, the fire resistance would achieve 60 minutes (by which time the property where the fire originated would be evacuated and the adjoining property would benefit from the intervention of the fire service).

Cavity barriers

Cavity barriers are required along party walls to prevent fire and smoke having a direct line of spread. Building regulations require where cavity barriers are to be located including in the loft space above and below the sarking felt.

Structural fire cavity barriers are of fundamental importance, and they must be able to perform as intended. Without a properly designed barrier, cavities act much like a chimney and can allow fire and smoke to quickly travel unseen through what can be often an extensive network of connected spaces in a building.

Barnet Council Building Control advises the following acceptable cavity detail.

- Barriers are required to divide cavities or to close the edge of cavities. If the barrier is not a proprietary system, then it may come in the form of wall insulation which fully fills the cavity that is non-combustible (i.e. class A).
- Timber frame will typically have a ventilated (open) cavity to allow moisture to escape (and not attack the frame etc.) – this will require fire stopping at the party wall junction to close the compartment.

External fire spread.

The intention is that the external envelope of a building should not contribute to undue fire spread from one part of a building to another part, and the external envelope of a building should not provide a medium for undue fire spread to adjacent buildings or be readily ignited by fires in adjacent buildings.

To meet the current Building Regulations, timber framed two storey buildings must meet Euroclass B limiting the external of spread of flames. Timber cladding panels are nominally class D which do not meet the current Building Regulations. Originally the timber cladding would have been treated with creosote. This can be considered as a deficiency which would increase the likelihood and spread of harms.

A 1995 BRE report states *that between 1926 and 1928 about 700 timber frame dwellings were erected by the London County Council at Watling (Barnet), using timber components prefabricated in Sweden built by London County Council.*

The report identifies the cladding boards and bottom rail are brush-coated with creosote and the panels are overlaid with a bituminous felt breather membrane. This combination will be highly flammable and acts as an accelerant, which is the opposite of what the Building Regulations seeks to achieve in retarding the spread of flames.

HHSRS ideal

All hazard profiles have a list of preventative measures and the ideal to help guide assessors judge deficiencies and therefore the likelihood. The perceived optimum standard, at the time of the assessment, intended to prevent, avoid, or minimise the hazard.

The construction of the houses does not meet the HHSRS ideal with the subsequent increasing of the likelihood away from the national averages. There are no cavity barriers, a direct line of internal spread and a significant likelihood of external fire spread from a neighbour's house.

A risk at 1/320 would take a significant number of homes out of class 1 fire hazard, and the need for replacing cladding would in that case not be considered compulsory.

The Housing Act 2004 requires that where an officer identifies a category 1 hazard (a score of 1000 or more) they have a duty to take enforcement action. Where officers identify a category 2 hazard (999 or below) there is a power, but not a duty to act. Where a category 2 hazard has been identified with a score between 500-999 Barnet Council consider the circumstances of the risk carefully. On occasions enforcement action is taken to reduce a category 2 hazard further. The existence of a category 2 hazard does not necessarily mean that enforcement action will not be taken.

There are no similar examples to help officers judge the likelihood of fire referring to a timber framed 1930s house such as those on the Watling Estate. We consider all the deficiencies away from the ideal to help judge a likelihood. The only figures we have to base the likelihood on is from the HHSRS tall buildings addendum. The attached likelihood table is used in HHSRS training sessions to help guide assessors on how far to move the likelihood. It has no legal standing; however, it provides a helpful rule of thumb. A 1 in 180 judgement still guides us to assessing a fire will be unlikely. The HHSRS assessments are based on an inspection of some similar houses and the reports from Capital, who opened up the houses to allow for internal assessment.

I accept that the wider HHSRS assessment is generic for the timber framed houses across the Watling Estate. It is based on certain assumptions resulting from inspections in a small number of similar houses where the external cladding was opened up, and the house assessed internally. Whilst the timber framed houses were built at the same time there are likely to be internal and external differences between many houses. Before any enforcement decision is made that will impact on a householder the individual houses must be separately inspected, assessed, and judged. It may well be that some houses are judged to have a lower likelihood of fire risk. For example.

- Extensive interlinked fire alarms to all internal rooms.
- Internal self-closing fire-resistant doors.
- Fire resistant metal electrical installation consumer units.
- Intumescent barriers on electrical downlighters

There is a possibility that some of the houses will have a lower likelihood and be a lower overall risk. There may be justification in some houses to move the likelihood to 1 in 320 or even 1 in 560.

As detailed in previous communications from the Council we need to undertake an individual inspection of each house to assess if a category 1 hazard is present.

Ultimately is it a professional subjective judgement as all HHSRS assessments are, with justifications to the likelihood and spread of harms.

Vulnerable persons

HHSRS assessments are based on persons in the most vulnerable group of people based on age, living in a dwelling for whom the risk of a hazard is greater than for most people, even if people in these age groups may not actually be living in the property at the time. In the case for Fire, the vulnerable group is people aged 60 and over. This means a vacant dwelling can be assessed and that if the dwelling is rated

as safe for those considered to be most vulnerable it will be safe for anyone. For the HHSRS it does not include those registered disabled.

Causes of accidental fires in houses

The HHSRS Operating Guidance states that occupier behaviour is a major factor in relation to fires starting. Over 80% of accidental fires in dwellings result from occupier carelessness or misuse of equipment or appliances. These can include smoking materials, carelessness using portable fan or convection heaters, overloading electrical appliances. There is clear evidence that increased use of e-scooters and e-bikes and charging these inside houses increases the likelihood of accidental fires starting in houses.

The Operating Guidance states that the main sources of ignition attributable to the dwelling, rather than occupiers, are cooking appliances, space heaters, and electrical distribution equipment.

Likelihood.

The likelihood of an occurrence is judged over the next twelve months which could result in harm to a member of the relevant vulnerable group. The judgement is limited to the likelihood of an occurrence resulting in outcomes which would or should require some medical attention – a visit to a doctor or a hospital.

The judgement of the likelihood involves taking account of any deficiencies identified during the inspection, whether those conditions will increase or reduce the average likelihood of an occurrence.

The judgement of likelihood must consider-

- (a) the average likelihood given for the type and age of dwelling.
- (b) the dwelling characteristics and conditions identified during the inspection, which are the responsibility of the landlord, which:
 - i. may increase the likelihood of an occurrence; and
 - ii. those which may reduce the likelihood of such an occurrence.

Spread of harms justification.

The severity of harm suffered will depend on how quickly a fire can spread, and how soon it is detected, and occupiers made aware of it. If a fire is undetected, and spreads quickly, then the severity of harm will be worse. There is a possibility that the flames could spread quickly across the PVC cladding to an adjacent house and break into their roof space.

Mental health

There is an increased risk of occupiers becoming trapped on the first floor.

In the event of a fire with rapid spread of flames across the external wall the occupiers could very quickly be overcome by smoke, hot gasses, and flames. The products of combustion may include harmful toxic smoke, especially from chemicals released by materials contained in the creosote and breather membrane, these can spread internally and externally. With the possibility of a fire spreading rapidly internally and possibly breaking back into adjacent houses through windows and into the roof void there is an increased potential for Class 1 harms due to an increased risk of death, especially from inhalation of smoke and toxic gases and significant burns.

The additional mental health and wellbeing harms highlighted by the Grenfell Tower fire and the increased potential for non-fatal injuries and exposure to fumes similarly justify increases in Class 2 and 3 harms.

Increased class 2 harms will include serious burns and possible loss of consciousness and serious stress from the fear of a fire.

Increased class 3 harms may arise due to sleep disturbance (including stress related mental health sleep disturbances), chronic severe stress and severe burns to hands.

Assessment

The assessment should include both the likelihood of a fire starting, and once started, how likely it is the fire will go undetected and spread. The justification has taken a broad view of the likelihood of ignition in any of the houses based on a series of assumptions.

Examples of unexpected internal ignition may include occupiers' behaviour for example smoking materials, burning candles, charging e-bikes and e-scooters using incorrect replacement chargers, overloaded sockets etc.

Examples of unexpected external ignition including grass fires, barbeques close to the external wall and carelessly discarded cigarettes may be considered as possible.

If the cladding system ignites due to an external ignition, with rapid spread across the cavity and timber façade, fire may spread to the neighbouring properties along the wooden cavity lining and possibly through the roof.

The inside of the void ignites with rapid spread across the cavity and facade and into the roof void. The lack of cavity barriers, and lightweight timber frame may cause a chimney type effect with the fire becoming well-formed and intense, rapidly fuelled by the timber cladding and timber frame. The fire eventually breaches the internal timber frame or windows.

If the fire starts at night any smoke and heat alarms may not respond quickly enough to alert the occupiers. There is clear evidence that young children do not respond to smoke alarms in the way adults do. The increased possibility of fatalities has to be considered as part of the spread of harms outcome.

The fire could enter the property of fire origin or neighbouring spread if it blows back through first floor at first floor level. Fire alarms would not respond quickly enough to alert the occupiers as the fire is external due to a lack of smoke alarms in the first floor bedrooms.

By the time a smoke or heat alarm sounds in the house of fire origin, alerting the occupiers, and depending upon the intensity of the fire could have broken into adjacent houses.

Next steps

As detailed, we need to undertake an individual inspection of each house to assess if a category 1 hazard is present.

I hope this helps clarify and explain the calculations associated with the HHSRS. If you would like to discuss this matter further, please do not hesitate to contact me.

Your sincerely



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