

**ENVIRONMENT, TRANSPORT AND
REGIONAL AFFAIRS COMMITTEE**

First Report

**POTENTIAL RISK OF FIRE SPREAD IN
BUILDINGS VIA EXTERNAL CLADDING
SYSTEMS**

Report and Proceedings of the Committee

*Ordered by The House of Commons to be printed
14 December 1999*

The Environment, Transport and Regional Affairs Committee is appointed to examine on behalf of the House of Commons the expenditure, administration and policy of the Department of the Environment, Transport and the Regions (and any associated public bodies). Its constitution and powers are set out in House of Commons Standing Order No. 152.

The Committee has a maximum of seventeen members, of whom the quorum for any formal proceedings is five. The members of the Committee are appointed by the House and unless discharged remain on the Committee until the next dissolution of Parliament. The present membership of the Committee is as follows¹:

Hilary Benn MP (*Labour, Leeds Central*)⁶
 Andrew F Bennett MP (*Labour, Denton and Reddish*)²
 Thomas Brake MP (*Liberal Democrat, Carshalton and Wallington*)²
 Christine Butler MP (*Labour, Castle Point*)²
 John Cummings MP (*Labour, Easington*)²
 Brian Donohoe MP (*Labour, Cunninghame South*)²
 Gwyneth Dunwoody MP (*Labour, Crewe and Nantwich*)²
 Louise Ellman MP (*Labour/Co-operative, Liverpool Riverside*)²
 Clifford Forsythe MP (*Ulster Unionist, Antrim South*)²
 Teresa Gorman MP (*Conservative, Billericay*)⁴
 James Gray MP (*Conservative, Wiltshire North*)²
 Stephen Ladyman (*Labour, Thanet South*)⁷
 Anne McIntosh MP (*Conservative, Vale of York*)⁵
 Bill O'Brien MP (*Labour, Normanton*)²
 Bill Oler MP (*Labour, Nuneaton*)²
 John Randall MP (*Conservative, Uxbridge*)³
 George Stevenson MP (*Labour, Stoke-on-Trent South*)²

On 15 July 1997, the Committee resolved that *Andrew F Bennett or Gwyneth Dunwoody* would be called to the Chair as it saw fit.

The Committee has the power to appoint Sub-committees, require the submission of written evidence and documents, to examine witnesses, and to make Reports to the House. The Sub-committees have the power to require the submission of written evidence and documents, to examine witnesses, and to make Reports to the Committee.

The Committee and Sub-committees may meet at any time (except when Parliament is prorogued or dissolved) and at any place within the United Kingdom. The Committee and Sub-committees may meet concurrently with other committees or sub-committees established under Standing Order No. 152 and with the House's European Scrutiny Committee (or any of its sub-committees) for the purpose of deliberating, taking evidence or considering draft reports. The Committee may exchange documents and evidence with any of these committees, as well as with the House's Public Accounts, Deregulation and Environmental Audit committees.

The Reports and evidence of the Committee are published by The Stationery Office by Order of the House. All publications of the Committee (including press notices) are on the internet at <http://www.parliament.uk/commons/selcom/etrahome.htm>.

All correspondence should be addressed to The Clerk of the Environment, Transport and Regional Affairs Committee, Committee Office, House of Commons, London SW1A 0AA. The telephone number for general inquiries is: 020 7219 4972; the Committee's e-mail address is: etacom@parliament.uk.

¹Stephen Day MP (*Conservative, Cheadle*), was appointed on 14 July 1997 and discharged on 17 November 1997; Philip Hammond MP (*Conservative, Runnymede and Weybridge*) was appointed on 17 November 1997 and discharged on 22 June 1998; Howard Flight MP (*Conservative, Arundel and South Downs*) was appointed on 14 July 1997 and discharged on 20 July 1998; Eric Pickles MP (*Conservative, Brentwood and Ongar*) was appointed on 14 July 1997 and discharged on 30 November 1998; Eleanor Laing MP (*Conservative, Epping Forest*) was appointed on 22 June 1998 and discharged on 5 July 1999; Alan Whitehead MP (*Labour, Southampton, Test*) was appointed on 14 July 1997 and discharged on 6 December 1999; Graham Stringer MP (*Labour, Manchester Blackley*) was appointed on 14 July 1997 and discharged on 13 December 1999

²Appointed 14 July 1997; ³Appointed 20 July 1998; ⁴Appointed 30 November 1998; ⁵Appointed 5 July 1998; ⁶Appointed 6 December 1999; ⁷Appointed 13 December 1999

TABLE OF CONTENTS

	<i>Page</i>
LIST OF WITNESSES	iv
LIST OF MEMORANDA INCLUDED IN THE MINUTES OF EVIDENCE	v
APPENDICES TO THE MINUTES OF EVIDENCE	v
UNPUBLISHED MEMORANDA	v
 REPORT	 vii
POTENTIAL RISK OF FIRE SPREAD IN BUILDINGS	vii
External Cladding Systems	vii
Regulations pertaining to the fire safety of external cladding systems	viii
The adequacy of the regulations to ensure the safety of external cladding systems in a fire	viii
Conclusions	x
Whether a risk is posed by such cladding	x
The adequacy of the regulations pertaining to their use	x
Further action	xi
Other questions	xi
Fire risk from 'in-fill' systems	xi
Fire safety legislation	xi
 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS	 xii
 ANNEX 1	 xiii
 ANNEX 2	 xiv
PROCEEDINGS OF THE ENVIRONMENT SUB-COMMITTEE RELATING TO THE REPORT	xix
PROCEEDINGS OF THE COMMITTEE RELATING TO THE REPORT	xx
 MINUTES OF EVIDENCE AND APPENDICES HC 741-i (SESSION 1998-99)	

LIST OF WITNESSES

SESSION 1998-99

VOLUME HC 741-i

Tuesday 29 July 1999

	<i>Page</i>
THE FIRE BRIGADES UNION	
Mr Glynton Evans and Mr Jack Ford	08
FIRE SAFETY DEVELOPMENT GROUP	
Mr David Harper and Dr Bob Moore	08
BUILDINGS RESEARCH ESTABLISHMENT FIRE RESEARCH STATION	
Mr Peter Field, Mr Tony Morris and Ms Sarah Colwell	15
ETERNIT UK LTD	
Mr Martyn Rich	15
EGLINGTON WEBER & BROUTIN (UK) LTD	
Mr Chris Buntain	20
CENTRE FOR WINDOW AND CLADDING TECHNOLOGY	
Dr Stephen Ledbetter	20
DEPARTMENT OF THE ENVIRONMENT, TRANSPORT AND THE REGIONS	
Mr Nick Raynsford, MP, Mr Paul Everall, Mr Tony Edwards and Mr Anthony Burd	28

LIST OF MEMORANDA INCLUDED IN THE MINUTES OF EVIDENCE

Page

1.	The Fire Brigades Union (ROF 28)	01
2.	Fire Safety Development Group (ROF 26)	05
3.	Eternit UK Ltd (ROF 03)	13
4.	Stephen Ledbetter, Centre for Window and Cladding Technology (ROF 45)	19
5.	Department of the Environment, Transport and the Regions (ROF 31)	25

APPENDICES TO THE MINUTES OF EVIDENCE

6.	Knowsley Metropolitan Borough (ROF 02)	35
7.	Mark Heywood, Mark Heywood Associates (ROF 05)	35
8.	Oldham Metropolitan Borough (ROF 06)	36
9.	Leeds City Council (ROF 08)	37
10.	Trafford Metropolitan Borough Council (ROF 13)	37
11.	Sefton Council (ROF 17)	37
12.	St Helens Metropolitan Borough Council (ROF 20)	38
13.	Manchester Housing (ROF 22)	38
14.	Sheffield City Council (ROF 24)	39
15.	Rochdale Metropolitan Borough Council (ROF 25)	40
16.	South Tyneside Metropolitan Borough Council (ROF 27)	41
17.	Matthew Smyth, Chartered Engineer, Smyth Plastics Ltd (ROF 29)	42
18.	Loss Prevention Council (ROF 35)	43
19.	Gateshead Metropolitan Borough Council (ROF 36)	46
20.	International Fire Consultants Ltd (ROF 38)	46
21.	Kirklees Metropolitan Council (ROF 39)	46
22.	City of Wakefield Metropolitan District Council (ROF 42)	47

UNPUBLISHED MEMORANDA

Additional memoranda has been received from the following organisations and has been reported to the House, copies have been placed in the House of Commons Library where they may be inspected by Members. Other copies are in the Record Office, House of Lords, and are available to the public for inspection. Requests for inspection should be addressed to the Record Office, House of Lords, London SW1 (telephone 0171 219 3074). Hours of inspection are from 9.30 a.m. to 5.00 p.m. on Monday to Fridays:

Wolverhampton Metropolitan Borough Council
 North Tyneside Council
 Rotherham Metropolitan Borough Council
 Liverpool Housing Action Trust
 Metropolitan Borough of Wirral
 Solihull Metropolitan Borough Council
 Dudley Metropolitan Borough
 City of Salford
 Wigan Metropolitan Borough Council
 City of Coventry
 Sandwell Metropolitan Borough Council
 Newcastle City Council
 Metropolitan Borough of Calderdale
 Bolton Metro
 City of Sunderland

FIRST REPORT

The Environment, Transport and Regional Affairs Committee has agreed to the following Report:—

POTENTIAL RISK OF FIRE SPREAD IN BUILDINGS VIA EXTERNAL CLADDING SYSTEMS

1. A fire which occurred in a multi-storey block of flats in Irvine, Ayrshire on 11th June 1999 drew the Committee's attention to the potential risk which could be posed by fire spread involving external cladding systems.

2. The necessity of ensuring that steps be taken to minimise this risk should it prove a serious danger to life and/or property prompted us to undertake a brief inquiry, with the following terms of reference:

- whether a risk is posed by such cladding;
- the extent of the use of external cladding systems;
- the adequacy of the regulations pertaining to their use;
- what action may be necessary to counter any risks posed in existing buildings and to avoid any risks in new buildings or alterations to existing buildings;
- other matters which may arise in the course of questioning.

3. We received 18 written memoranda, and received 28 replies to a letter which we sent to the housing departments of all metropolitan borough councils to try to assess the extent of any risk which might be posed by the use of such systems.¹ We also took oral evidence from seven sets of witnesses. We are grateful to all those who submitted evidence to us at short notice, and we would like to thank Dr Raymond Connolly and his colleagues at International Fire Consultants Ltd, whose advice on the technical aspects of this inquiry was invaluable.

External Cladding Systems

4. There are a number of different product types falling under the broad heading of external cladding systems. Briefly put, the three main product types are

- external wall insulation (render) systems;
- 'rainscreen' (sheet boarding) systems;
- pre-formed 'in-fill' systems.

Such cladding serves a number of functions, including:

- providing weather protection;
- insulation;
- improving building appearance.

A note from the Committee's advisers gives more detail on the main types of cladding.²

5. None of our witnesses was able to give a definitive figure for the extent of the use of external cladding systems. However, it was estimated that there are approximately 3500 residential tower blocks (in excess of 10 storeys) in the UK, and that around 500 of these are fitted with external cladding.³

¹See Annex 1

²See Annex 2

³Ev p.35 (ROF05); Q102

Regulations pertaining to the fire safety of external cladding systems

6. In England and Wales⁴, where new buildings are erected, or existing buildings are materially altered, or (in certain cases) where there is a material change of use, the work is required to comply with the Building Regulations 1991. Schedule 1 of the Regulations contains the functional requirements: the section relevant to cladding systems is Requirement B(4), which states:

'The external walls of the building shall resist the spread of fire over the walls and from one building to another, having regard to the height, use and position of the building.'

7. Guidance on how to comply with the Regulations is given in Approved Document B (fire safety). This document provides guidance only: contractors are not required to follow its requirements provided that they can prove to the satisfaction of the local authority building standards officer that they have met the requirement of the Building Regulations in some other way. The guidance relevant to cladding systems includes the following:

- (a) Any insulation material used in cladding on buildings over 20 metres tall should be of 'limited combustibility'⁵;
- (b) External surfaces (and hence cladding) closer than 1 metre to another building should be of a material classified as 'Class O' for spread of fire⁶, to reduce the risk of fire spread to neighbouring buildings;⁷
- (c) External surfaces (and hence cladding) more than 20 metres from ground level should be 'Class O', to reduce the risk of fire at heights which are difficult to reach from firefighting operations on the ground;⁸
- (d) Where there is a gap between the cladding and the wall of the building, the provisions of (b) and (c) above also apply to the inside face of the cladding;⁹
- (e) Where the building has a floor at more than 20 metres height, and there is a gap between the cladding and the wall of the building, this gap should be fire stopped, to prevent the fire spreading up the inside of the cladding.¹⁰

8. These requirements are aimed only at reducing the risk of fire spread from one building to another and of fire spread at heights which are difficult for firefighters to reach. They are not aimed at minimising damage to property except insofar as minimising damage to property is a by-product of these aims.¹¹

The adequacy of the regulations to ensure the safety of external cladding systems in a fire

9. Witnesses to our inquiry (including the Fire Brigades Union,¹² the Loss Prevention Council (technical advisers to the insurance industry),¹³ manufacturers of external cladding

⁴Scotland has a different set of Building Regulations

⁵Ev p.27 (ROF31); Q132. A product is of 'limited combustibility' if it passes British Standard test BS 476 Part 11.

⁶'Class O' is a classification designed to limit the fire propagation and the spread of flame over the surface of a material. This classification is defined for the purposes of the Building Regulations, and is used for critical situations where a particularly high standard of performance is required. It is measured through a combination of test results from BS476: Part 6: 1989 and BS476: Part 7: 1987. It should be noted that both 'Class O' and 'limited combustibility' are different from the classification 'non-combustible', which is the highest level of material performance on exposure to fire, and is measured by reference to test BS476: Part 4: 1970 or Part 11: 1982. In no circumstances are external cladding systems required to be non-combustible.

⁷Ev p.27 (ROF31)

⁸*ibid*

⁹*ibid*

¹⁰Ev pp.27-28 (ROF31)

¹¹Q132

¹²Ev pp.1-4 (ROF28)

¹³Ev pp.43-44 (ROF35)

systems,¹⁴ and independent fire safety consultants¹⁵) suggested that the guidance given in Approved Document B may not be adequate for the purposes of ensuring the safety of external cladding systems in a fire. We were also told in oral evidence by Peter Field of the Buildings Research Establishment, which has done a great deal of work on these issues, that the existing guidance “is far from being totally adequate”.¹⁶

10. Witnesses’ chief concerns lay with the risk of unexpectedly rapid fire spread involving these systems, which, it was suggested, may have a number of adverse consequences of which the existing guidance does not necessarily take full account. These are:

- shorter period available for escape from the building, thus potentially endangering life;¹⁷
- disproportionate difficulties in firefighting;¹⁸
- disproportionate damage to the building.¹⁹

11. Witnesses also raised a number of other potential problems of which existing tests may not take proper account:

- the fixtures which attach the cladding to the building may not withstand the fire, risking the detachment of the system from the building and endangering persons in and around the building, including firefighters;²⁰
- if plastic materials are used for the cladding, they could melt and form burning droplets which again endanger people below;²¹
- certain materials could degrade over time and become less resistant to flame spread than they were at the time of construction.²²

12. Witnesses’ complaints about the adequacy of the guidance focus on the methods of testing a material for resistance to fire spread. The classifications ‘limited combustibility’ and ‘Class O’ referred to in Approved Document B rely on small-scale tests conducted in laboratory conditions. It was suggested that these tests do not properly evaluate the performance of large, complete, cladding systems in a ‘live’ fire situation.²³

13. Concerns about the fire safety of external cladding systems are not new. A fire which occurred in a tower block in Knowsley in 1991 was started at ground floor level and spread up 11 floors behind ‘rainscreen’ cladding. The inquiry which followed this fire resulted in a change to Approved Document B which provided for the requirements for ‘Class O’ material to be used on both the inside and outside of external cladding, and to include ‘fire stopping’ in the gap between the cladding and the wall of the building (see (d) and (e) in paragraph 7 above).

14. The inquiry also prompted further research at the Fire Research Station of the Buildings Research Establishment (BRE). The conclusions arising from this research, which was carried out in 1994, support the claims of our witnesses that the small-scale tests upon which existing guidance relies are insufficient properly to evaluate the performance of complete cladding systems in fire, and that there is therefore a clear need for full-scale testing.²⁴

¹⁴Ev p.36 (ROF05); pp.42–43 (ROF29); ev not printed (British Plastics Federation)

¹⁵Ev p.46 (ROF38)

¹⁶Q46

¹⁷Ev p.43 (ROF35)

¹⁸Ev p.2 (ROF28); p.43 (ROF35); Q6

¹⁹Ev p.43 (ROF35)

²⁰Ev p.2 (ROF28); p.36 (ROF05)

²¹Ev p.6 (ROF26); Q13

²²Ev p.38 (ROF22); QQ31, 32, 79–80

²³Ev p.3 (ROF28); p.36 (ROF05); p.44 (ROF35); QQ13, 16, 29, 46, 49, 71

²⁴*Investigation of the behaviour of external cladding systems in fire: Report on 10 full-scale fire tests*, Fire Research Station Report CR143/94, April 1994

15. BRE proceeded to develop an appropriate full-scale fire test, known as '*A test for assessing the fire performance of external cladding systems*'.²⁵ This test was submitted to the DETR in 1996.²⁶ Witnesses suggested that this test would be a considerable improvement on the small-scale testing which is currently carried out to ascertain the fire performance of materials used in external cladding systems.²⁷

16. Other witnesses suggested that this test would not be suitable for all external cladding systems, and in particular that it would not be a suitable method of testing the fire performance of 'infill' systems such as that which was involved in the fire at Irvine.²⁸ However, we note the view of Peter Field of BRE, which developed the test, who told us, "We believe the test facility itself could be accommodated to assess the fire performance of systems which are not the same as total cladding systems and may involve windows and decorative panels"²⁹. The advice we have received concurs with this opinion.

17. The DETR told us in written evidence that this test will be referenced in Approved Document B, and that it was intended that it become a British Standard.³⁰ However, such reference does not amount to a requirement that cladding systems pass the test: simply that the test is one way of ensuring that the system meets the requirements of the Building Regulations.

Conclusions

Whether a risk is posed by such cladding

18. **The evidence we have received during this inquiry does not suggest that the majority of the external cladding systems currently in use in the UK poses a serious threat to life or property in the event of fire.** There have been few recorded incidents of serious fire spread involving external cladding, and, although in our view any loss of life in incidents such as these should be prevented if at all possible, neither have there been many deaths (indeed, it is uncertain whether any of the deaths in the fires of which we have been informed can be directly attributed to excessive fire spread via the external cladding).³¹ Furthermore, the responsible attitude taken by the major cladding manufacturers towards minimising the risks of excessive fire spread has been impressed upon us throughout this inquiry.³²

The adequacy of the regulations pertaining to their use

19. **Notwithstanding what we have said in paragraph 18 above, we do not believe that it should take a serious fire in which many people *are* killed before all reasonable steps are taken towards minimising the risks.** The evidence we have received strongly suggests that the small-scale tests which are currently used to determine the fire safety of external cladding systems are not fully effective in evaluating their performance in a 'live' fire situation. As a more appropriate test for external cladding systems now exists, we see no reason why it should not be used.³³

20. We believe that all external cladding systems should be required either to be entirely non-combustible, or to be proven through full-scale testing not to pose an unacceptable level of risk in terms of fire spread. We therefore recommend that compliance with the standards set in the '*Test for assessing the fire performance of external cladding systems*', which has

²⁵Ev p.28 (ROF31)

²⁶Ev p.3 (ROF28)

²⁷Ev p.14 (ROF03); p.36 (ROF05); Q28

²⁸QQ86-95, 99

²⁹Q39. See also QQ52, 68.

³⁰Ev p.28

³¹Four of the MBCs to which we wrote informed us that they had experienced fires involving external cladding systems: each recorded that the fire had been contained locally and had not spread through the cladding system (see ev p.37 (ROF13), pp.39, 40 (ROF24), p.40 (ROF25), p.45 (ROF36)). See also ev p.19 (ROF45) and QQ9, 10, 31, 36, 42-43, 87-88, 102.

³²QQ63, 66, 67, 72-75, 101

³³Ev p.36 (ROF05); Q53

been submitted to the British Standards Institution for adoption as a British Standard,³⁴ be substituted in Approved Document B for previous requirements relating to the fire safety of external cladding systems.

Further action

21. Action taken as above will ensure that external cladding systems integral to new buildings will achieve an appropriate level of fire safety. It should also ensure the appropriate level of fire safety for new cladding systems installed on buildings not previously clad. However, as under current legislation Building Regulations are not retrospective, this will not ensure that the same standards apply to existing cladding, nor to cases where the existing cladding is being refurbished or replaced.³⁵ We note that the DETR has already said that “this is a problem area and one that the Department may need to review.”³⁶

22. As noted above, it appears that no readily available information exists for the number of external cladding systems currently in use. More particularly, there is no indication of how many systems are still in existence which do not meet the standards set following the Knowsley fire (see paragraph 13 above). We recommend that DETR and the Housing Corporation instruct local authorities and Registered Social Landlords³⁷ to undertake a review of their existing building stock with a view to ascertaining how many multi-storey buildings are currently using external cladding systems; and how many cladding systems are in use which, whilst complying with the regulations in force at the time when they were installed, do not comply with current Regulations. Competent fire safety assessors should then be called in to evaluate what work may be necessary to ensure that no undue risk is posed by any of these systems, with particular reference to the lessons learnt from the fires at Knowsley Heights and Garnock Court. Local authorities and Registered Social Landlords should also be instructed to monitor existing cladding systems carefully to ensure that the materials from which they are constructed do not degrade over time and become less resistant to flame spread than they were at the time of construction.³⁸

Other questions

Fire risk from ‘in-fill’ systems

23. There was some disagreement between our witnesses as to whether the pre-formed ‘in-fill’ systems of the type involved in the fire at Garnock Court constituted ‘external cladding’ or not.³⁹ However, whether or not the industry regards these systems as ‘cladding’ is in our view immaterial. Approved Document B should make it clear that any addition to the outside of a building which has the potential to lessen its resistance to external fire spread is subject to the Building Regulations and therefore to the guidance contained within that document.⁴⁰

Fire safety legislation

24. It was also brought to our attention during the course of this inquiry that there may be a need for a review of the body of fire safety legislation, which is currently contained in 69 separate pieces of legislation. We would strongly support any moves to consolidate existing fire safety legislation.⁴¹

³⁴See Q16.

³⁵Ev p.28 (ROF31); QQ148-149

³⁶Ev p.28 (ROF31). See also QQ138, 148-149, 158

³⁷The Housing Corporation regulates, funds and promotes registered social landlords (RSLs), which are the major providers of new subsidised social housing. The majority of RSLs are housing associations and they have, since the Housing Act 1988, become responsible for owning and managing increasing numbers of local authority housing stock, including a number of multi-storey tower blocks.

³⁸See QQ155-156

³⁹Ev p.6 (ROF26); p.35 (ROF05); QQ29, 86, 112-113, 118

⁴⁰See ev p.13 (ROF03). See also Q147

⁴¹QQ145-46

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

- **The evidence we have received during this inquiry does not suggest that the majority of the external cladding systems currently in use in the UK poses a serious threat to life or property in the event of fire (paragraph 18).**
- **Notwithstanding what we have said in paragraph 18 above, we do not believe that it should take a serious fire in which many people *are* killed before all reasonable steps are taken towards minimising the risks (paragraph 19).**
- **We therefore recommend that compliance with the standards set in the ‘*Test for assessing the fire performance of external cladding systems*’, which has been submitted to the British Standards Institution for adoption as a British Standard, be substituted in Approved Document B for previous requirements relating to the fire safety of external cladding systems (paragraph 20).**
- **We recommend that DETR and the Housing Corporation instruct local authorities and Registered Social Landlords to undertake a review of their existing building stock with a view to ascertaining how many multi-storey buildings are currently using external cladding systems; and how many cladding systems are in use which, whilst complying with the regulations in force at the time when they were installed, do not comply with current Regulations. Competent fire safety assessors should then be called in to evaluate what work may be necessary to ensure that no undue risk is posed by any of these systems, with particular reference to the lessons learnt from the fires at Knowsley Heights and Garnock Court. Local authorities and Registered Social Landlords should also be instructed to monitor existing cladding systems carefully to ensure that the materials from which they are constructed do not degrade over time and become less resistant to flame spread than they were at the time of construction (paragraph 22).**
- **Approved Document B should make it clear that any addition to the outside of a building which has the potential to lessen its resistance to external fire spread is subject to the Building Regulations and therefore to the guidance contained within that document (paragraph 23).**
- **We would strongly support any moves to consolidate existing fire safety legislation (paragraph 24).**

ANNEX 1

LETTER TO DIRECTORS OF HOUSING OF METROPOLITAN BOROUGH COUNCILS

28 June 1999

Director of Housing
Metropolitan Borough Council

Dear Director of Housing

Potential Risk of Fire Spread in Buildings via External Cladding Systems

The Environment Sub-committee of the House of Commons Select Committee on the Environment, Transport and Regional Affairs has resolved to conduct a brief inquiry into a matter of concern which has been raised with it, namely the potential risk of fire spread in buildings via external cladding systems. This follows a fire some two weeks ago in Irvine, in which the Sub-committee understands one of these cladding systems may have been implicated.

The Sub-committee would like to receive from you assurances that any cladding systems which may be used on any buildings, particularly multi-storey tower blocks, in your area are not in any way susceptible to the risk of serious fire spread on the face of, or immediately behind the cladding. This should include an assurance that the full implications of redecoration – for example with anti-graffiti paint – have been considered.

As this is a relatively short inquiry, we would be grateful if you would reply as soon as possible, and in any case no later than Tuesday 6th July.

I enclose a copy of the terms of reference of the Sub-committee's inquiry, for your reference. If you have any queries relating to this matter, please do not hesitate to contact me on the above number.

Yours sincerely

Clerk, Environment Sub-committee

ANNEX 2

MAIN TYPES OF EXTERNAL CLADDING SYSTEM

The basic generic methods of cladding construction are set out in Figures 1 to 3. Whilst there are many variations in form and content these demonstrate in lay terms the basic concepts of external cladding.

External cladding serves a number of functions including;

- providing weather protection;
- insulation;
- improving building appearance.

Cladding systems always include the outermost external envelope (the facade) of a building. In residential buildings cladding systems do not usually include the innermost surface of the building envelope. More often cladding systems (as the name suggests) are mounted on a supporting load-bearing structure. Hence, cladding systems are often called 'over-cladding' systems.

There are three main product types within the external cladding family:

- 1) External wall insulation (Render) systems, see Figure 1
- 2) Rainscreen (sheet boarding) systems, see Figure 2
- 3) Pre-formed in-fill systems, see Figure 3

1) External wall insulation (Render) systems.

These systems consist of two components:

- i) insulating material fixed to an external wall;
- ii) external surface membrane (typically rendered) to provide weather protection.

The absence of a cavity within these systems means that thermoplastic insulants may be safely used if correctly designed. Building Research Establishment Report BR135 (1988) gives detailed guidance on appropriate combinations of insulant, fire barrier and fixing.

The fact that these systems may be applied quickly without need for a structural frame as well as their economic attractiveness explains why these systems make up in the region of 50-60% of all over-cladding installed in the UK.

2) Rainscreen (sheet boarding) systems

These systems consist of three components:

- i) structural frame affixed to external wall of building;
- ii) insulating material fixed to external wall of building;
- iii) external surface membrane board to provide weather protection.

There is a wide range of product types within the above generic descriptions, with the external sheeting being the most frequent variable.

The insulating material integral to such systems is open into a cavity alongside the external sheet. It is a well established practice but not mandatory (for tall buildings) that such insulation be of limited combustibility.

This precludes plastic products and hence evidence relating to the merits of polystyrene, polyurethane, polyisocyanurate insulants do not usually relate to this type of cladding product. It is also established following BRE Report BR135 (1988) that in tall buildings such systems should include cavity barriers at regular intervals.

The fire at Knowsley Heights, Liverpool, 1991 involved a rainscreen system. The fire tests commissioned by the Department of the Environment at the Building Research Establishment were predominantly undertaken on rainscreen systems.

Rainscreen systems constitute some 40% of the over-cladding market.

3) Pre-formed in-fill systems

In-fill systems are typically pre-formed remote from the building and fixed in place on-site. They have a wide variety of configurations and differ from render/rainscreen systems in that they may be fitted to only limited areas of the building envelope, eg spandrel panels beneath windows.

In-fill systems are less often used for weather protection or building insulation and more often for improving appearance. Such systems do not cater to the same market as render/rainscreen systems and are considered by some to be outside the "over-cladding" family. However, such systems undoubtedly constitute external cladding and fall within the terms of the Committee's reference. The system at Irvine, Ayrshire is best described as a pre-formed in-fill system.

Figure 1

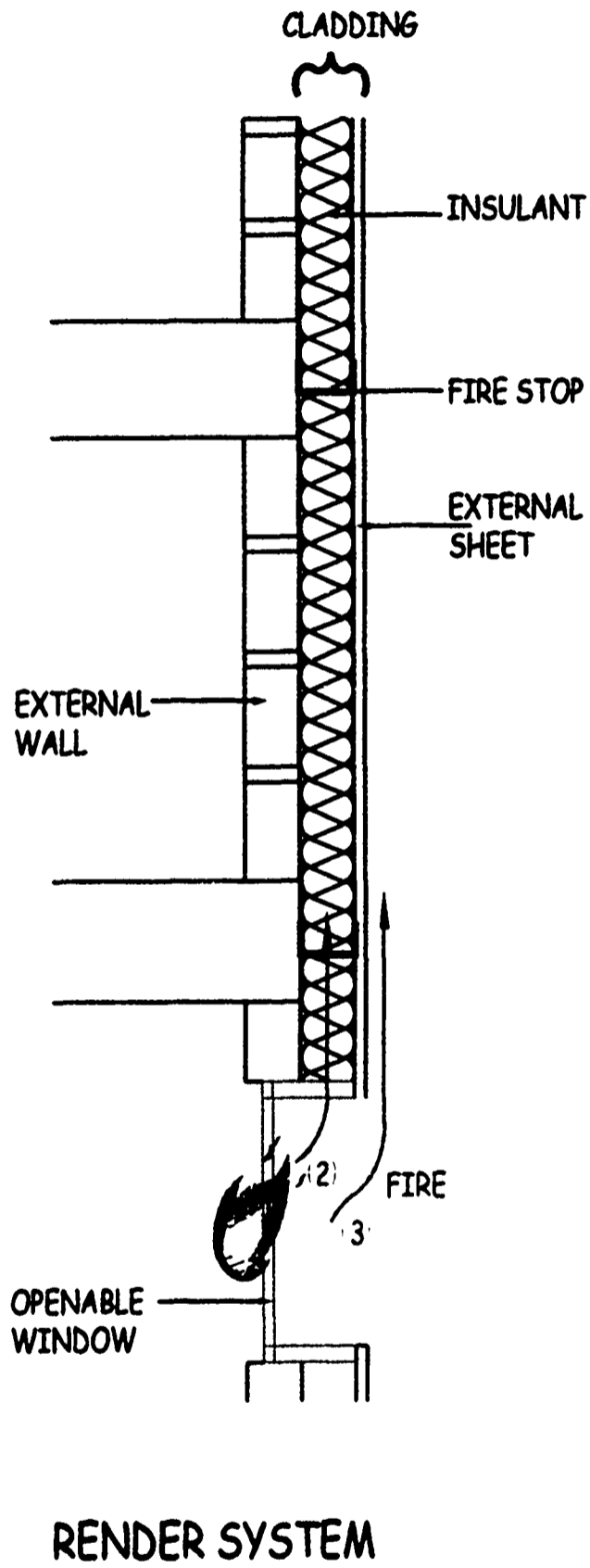
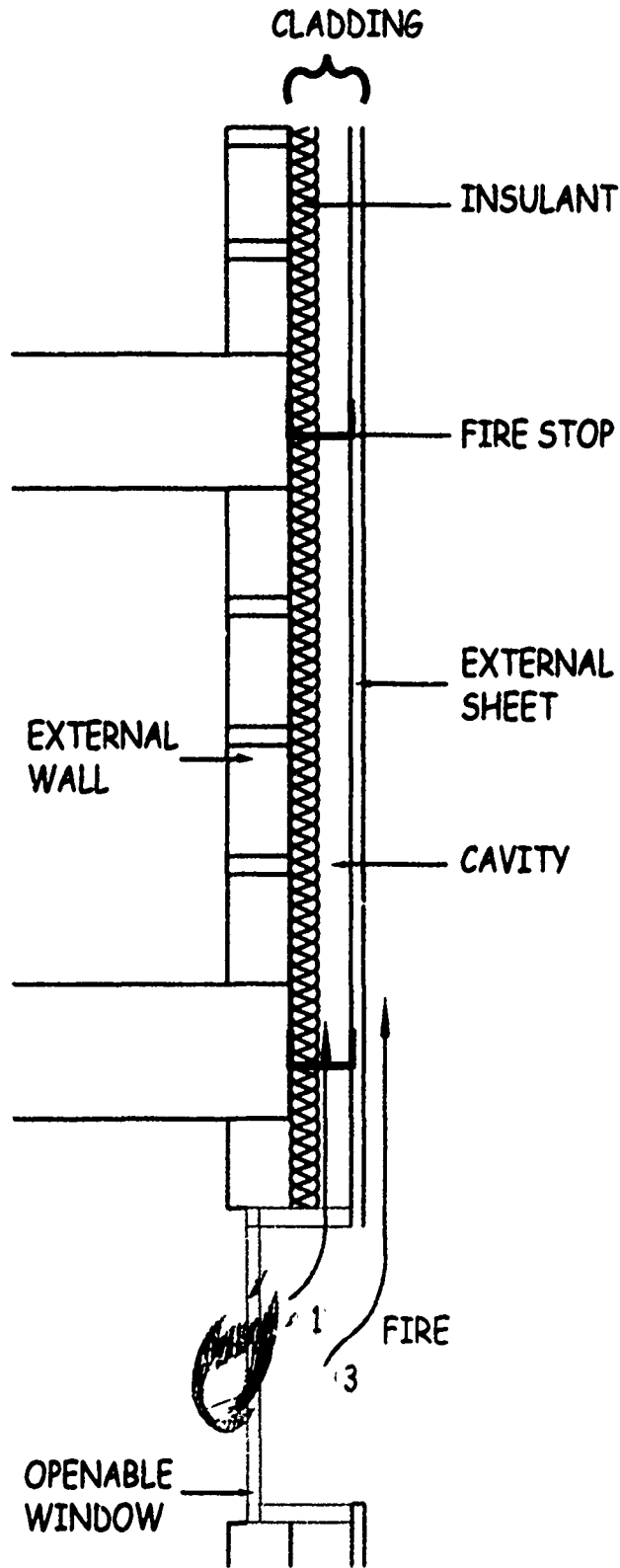
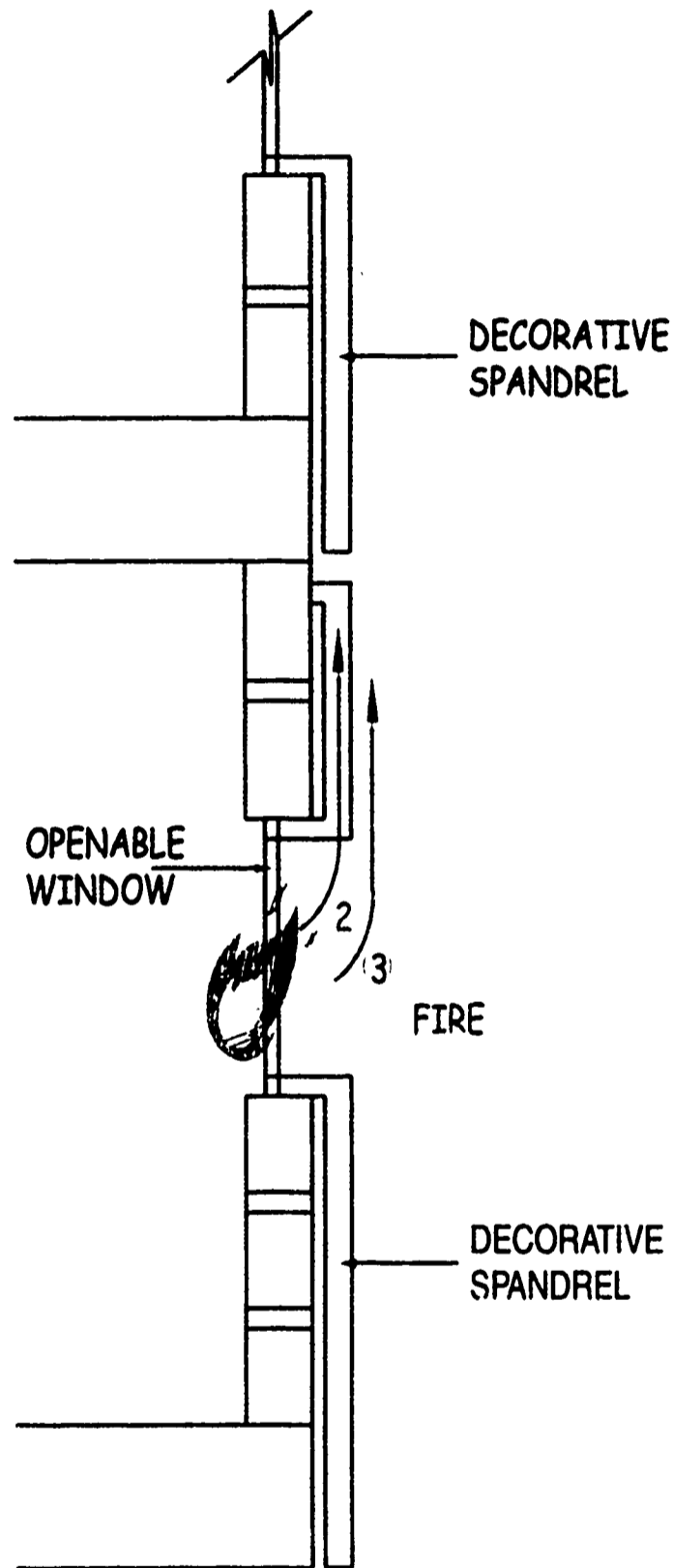


Figure 2



RAINSCREEN SYSTEM

Figure 3



IN-FILL SYSTEM

PROCEEDINGS OF THE ENVIRONMENT SUB-COMMITTEE RELATING TO THE REPORT

TUESDAY 7 DECEMBER 1999

Members present:

Mr Andrew F. Bennett, in the Chair

Mr Tom Brake
Christine Butler
Mr John Cummings
Mr Brian Donohoe

Mrs Gwyneth Dunwoody
Mr James Gray
Mr Bill Olnier
Mr John Randall

The Sub-committee deliberated.

Draft Report [Potential Risk of Fire Spread in Buildings via External Cladding Systems], proposed by the Chairman, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 24 read and agreed to.

Annexes agreed to.

Resolved, That the Report be the First Report of the Sub-committee to the Committee.

Ordered, That the Chairman do make the Report to the Committee.

[Adjourned till Tuesday 14 December at a quarter to Ten o'clock.]

PROCEEDINGS OF THE COMMITTEE RELATING TO THE REPORT

TUESDAY 14 DECEMBER 1999

Members present:

Mr Hilary Benn	Mrs Louise Ellman
Mr Andrew F. Bennett	Mrs Teresa Gorman
Mr Tom Brake	Mr Bill O'Brien
Mr Brian Donohoe	Mr John Randall

Mr Andrew F. Bennett was called to the Chair.

The Committee deliberated.

Report from the Environment Sub-committee [Potential Risk of Fire Spread in Buildings via External Cladding Systems], proposed by the Chairman, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 24 read and agreed to.

Annexes agreed to.

Resolved, That the Report be the First Report of the Committee to the House.

[Adjourned till Wednesday 15 December at Ten o'clock.]