

IN CONFIDENCE

OFFICE OF THE DEPUTY PRIME MINISTER

BUILDING REGULATIONS ADVISORY COMMITTEE
PART B WORKING PARTY

ACCESS FOR THE FIRE AND RESCUE SERVICE - BDAG

Purpose of Paper

1. This paper seeks Members' views on the proposed amendments to the guidance in Approved Document B on provisions for Fire and Rescue Service access.

Background

2. Members will recall Paper PTBWP(04)P20 - Access and Facilities for the Fire Service and Paper PTBWP(04)P09 - BDAG Research. These two papers set out a range of proposals for changes to the guidance in AD B some of which were in response to the findings of the Building Disaster Assessment Group (BDAG).

3. The proposals that were subsequently put forward in the consultation draft were.

*2. Make the draft words along lines
This needs to be considered
for buildings over 18m*

- Discounting stairs in means of escape calculations to account for the potential interaction between the occupants of a building trying to make their escape downwards and operational firefighters ascending to the fire floor.
- Changing the guidance to make it clear that where means of escape is not designed in accordance with AD B, then Fire and Rescue Service access should be considered separately.
- The provision of private hydrants for buildings for a building, which has a compartment of 280m² or more and is being erected more than 100m from an existing fire-hydrant.
- Remove the provision for firefighting shafts in buildings over 7.5m high but less than 18m from Purpose Group 7(a) – Storage buildings but introduce it to Purpose Group 5 – Assembly and Recreation buildings. (minded to)
- Changing the guidance on the number and position of firefighting shafts from a floor area and hose distance criterion to a performance based travel/hose distance approach such that no part of a building would be more than 45m from a rising main outlet. This was an attempt to take account of the findings of BDAG in relation to penetration distances for fire-fighting and provided that some rising mains may be provided in escape stairs.
- Introducing new guidance on perimeter access to avoid situations where very large buildings had extensive perimeter walls with no facility for entry.

- Amending the guidance on hose distance in apartment buildings such that the 45m hose distance should be measured to any point within the apartment.
4. The consultation paper also made reference to the research carried out by BDAG in relation to smoke ventilation for basements and asked respondents if more research was justified.
 5. Members will also recall Paper PTBWP(06)P02 which informed them of a number of research projects. One such project was "Economic impact of the inclusion of BDAG proposals for the provision of firefighting equipment and facilities in the revised Part B of the Building Regulations". The purpose of this project was to examine the impact of two key proposals on the design of a series of hypothetical buildings namely the discounting of stairs and the provision of firefighting shafts using a 45m hose distance. A **draft** final report is attached to this paper for consideration.

Consultation

6. Respondents were asked to comment in the questionnaire on the proposals for providing fire and rescue service access in both Dwellings and Non-Dwellings.

Question	Para/ Subject	YES	NO	Comments
Vol 2 Non Dwellings				
14.16	(3.21) Discounting stairs	119	25	77
18.1	(B5.iib) M of E not following B1	110	16	41

7. Whilst most respondents welcomed the proposal to discount stairs in tall, phased evacuation buildings others felt that it was unreasonably onerous and that the provision of firefighting lifts meant that this would be unnecessary.
8. Respondents were asked to comment on the additional guidance for buildings where the means of escape has not been designed in accordance with the Approved Document. Most respondents acknowledged that an engineered solution should address all the relevant requirements of Part B. Some respondents asked for guidance on what measures may be appropriate.

Question	Para/ Subject	YES	NO	Comments
Vol 1 Dwellings				
8.1	(14.7) Private hydrants	104	25	61
Vol 2 Non Dwellings				
18.2	(14.7) Private hydrants	105	21	62

9. Whilst most respondents supported the proposals for private hydrants there was some doubt over who would be responsible for ongoing maintenance of the hydrants. Some respondents felt that the provision could go further and some suggested that there was an inconsistency with the guidance for fire mains.

Question	Para/ Subject	YES	NO	Comments
Vol 1 Dwellings				
8.2	(15.2-15.3) Vehicle access - buildings not fitted with fire mains	88	38	66
Vol 2 Non Dwellings				
18.3	(15.2-15.3) Vehicle access - buildings not fitted with fire mains	104	21	47

10. Some respondents felt that the supporting note, which suggested that a fire main could be provided where access in accordance with paragraphs 15.2 & 15.3 (perimeter access/45m hose distance) was not possible, allowed for unlimited distance between a fire appliance and the building. Other respondents suggested that some definition of perimeter access was required.

Question	Para/ Subject	YES	NO	Comments
Vol 1 Dwellings				
8.3	(16.5-16.6) No & location of Firefighting shafts	109	20	60
Vol 2 Non Dwellings				
18.4	(16.7 -16.8) No & location of firefighting shafts	94	27	60

11. Some respondents were concerned that the proposals for number and location of firefighting shafts only required landing valves at floors above 18m rather than at all floors in an 18m tall building. Other respondents asked why 45m had been adopted rather than 34m as recommended by BDAG. Some respondents were also concerned that fire-fighters using fire mains in protected stairs may not have the same protection as would be offered in a firefighting shaft.

Question	Para/ Subject	YES	NO	Comments
Vol 1 Dwellings				
8.4	(16.7-16.9) Design & construction of firefighting shafts	97	21	42
8.5	(16.7-16.9) BS 5588: Part 5 2004	N/A	N/A	60
Vol 2 Non Dwellings				
18.5	(16.9-16.11) Design & construction of firefighting shafts	101	16	43
18.6	(16.9-16.11) BS 5588: Part 5 2005	N/A	N/A	63

12. Some respondents felt that a simple reference to BS 5588 part 5 was all that was necessary to provide guidance on the design of firefighting shafts. Other respondents raised concerns about the quality of this standard and about conflicting guidance between it and ADB. Some respondents also raised concerns about the European standard for firefighting lifts.

Question	Para/ Subject	YES	NO	Comments
Vol 1 Dwellings				
8.6	(17.1) Basement venting	96	10	54
Vol 2 Non Dwellings				
18.7	(Sect 17) Basement ventilation	99	7	54

- Doing future work.*
13. Most respondents suggested that further research was required in respect of smoke ventilation in basements.

14. Research Findings

15. The purpose of this project was to examine the impact of two key proposals namely the discounting of stairs and the provision of firefighting mains/shafts using a 45m hose distance. The proposed new guidance was applied to the design of a series of hypothetical buildings.
16. The increase in construction cost for **discounting of stairs** in the cases considered ranged from £23k to £27k per storey from the proposed amendment to Part B. Construction costs are four times the annual loss in rental but the loss in rental value will be incurred throughout the life of the building.
17. For the purposes of the RIA, analysis of planning applications suggests that the proposal could potentially affect about 21 buildings per annum. However, it is not clear what proportion of these affected buildings would use phased evacuation as opposed to simultaneous evacuation. Overall, it is suggested that the maximum cost impact nationally will be:
- £2.8m to £3.4m in terms of increased construction costs per year (which will be incurred as a one-off for buildings constructed in that year), or,
 - £690k to £860k per year in lost rental (which will be incurred throughout the life of buildings).
18. With respect to the **number and location of fire mains/shafts** the change in construction costs using the, 45m hose distance rule, in the cases considered ranges from an increase of £5.3K to a reduction of £52K. In the majority of cases there is a cost saving arising from the proposed amendment.
19. However, there were no architectural constraints on the location of the shafts for this exercise. In practice there will be aesthetic and functional constraints which would restrict where shafts and mains could be located and as such the actual provision in real buildings would probably be greater.
20. Work on the RIA is still ongoing and Members will note that in both cases there is a considerable reduction in estimated costs as a result of more detailed information coming to light. It is hoped that the savings accrued from the changes to the guidance on the provision of firefighting shafts will equate to the increased costs of the provision of shafts in assembly buildings.

21. **Members' views are sought on the proposed guidance on fire and rescue service access, particularly in relation to the discounting of stairs and the provision of firefighting shafts.**
22. **Members' views are also sought as to the need in the future, funds permitting, for all of the compartment values set out in AD B to be reviewed with a view to their being fully transparent and justified. Such a review would need to take account of the increasing scope of the regulations in relation to sustainable construction.**

BRAC Part B Working Party Secretariat

7 April 2006