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To all Chief Fire Officers

No 13/1981



24 July 1981

Dear Chief Officer

CURRENT PAPER 10/80 - A STUDY OF A LARGE FIRE IN A COVERED SHOPPING COMPLEX:  
ST JOHN'S CENTRE 1977

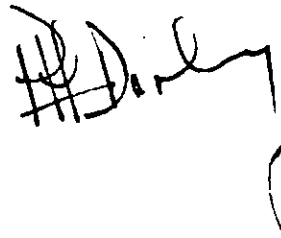
1. You should already have received a copy of the above Current Paper which sets out the findings of a team from the Fire Research Station which went to study the implications of the serious fire at the St John's Centre, Liverpool, on 25 September 1977. These findings are of special interest to fire brigades, and it may be helpful if I set out some of the main points and indicate the action to be taken as a result of the study.
2. The St John's Centre was designed in 1964 in accordance with the Liverpool Building Byelaws 1955 and was constructed before the Fire Prevention Guide on Fire Precautions in Town Centre Redevelopment was published in 1972. Only the basement was sprinklered as the Liverpool Fire Brigade's recommendation to sprinkler the whole complex had not been accepted at design stage. Certain parts, but not the shops or malls, were equipped with smoke detectors. No smoke reservoirs with means of extraction were included in the original design, but two electrically controlled retractable rooflights were installed above a large square in the middle of the complex. It was thought at the time that these would provide sufficient ventilation to cope with smoke-logging should one of the shops catch fire. In the event, they did not operate during the main fire.
3. Calculations suggest that at its peak the fire was much larger than the 5MW usually assumed for current design purposes. The study suggests that this was possibly partly due to the nature of the fuel but would mainly have been due to the absence of sprinklers in the shop units. Further calculations suggest that the upper and middle levels of the complex became smoke-logged in a few minutes (the uppermost level in about one minute or less), since the smoke ventilation system was not operated until very late in the fire. Even if this system had operated immediately, it is believed that the upper storeys of the malls would still have become seriously affected by smoke, and more rapidly than shoppers could be expected to evacuate, if there were a similar fire (or even a 5MW fire) while the complex was full of people.
4. In general, the study concludes that the outcome of the fire confirms the need for shopping complexes to be built with a combination of smoke control and sprinkler measures currently recommended by the Fire Research Station.
5. In the light of earlier FRS research into smoke ventilation and control in shopping complexes and of the findings of the study of the St John's Centre fire, consideration is now being given within the Home Office to amendment of

Fire Prevention Guide No 1 on Fire Precautions in Town Centre Redevelopment. In the meantime, brigades may find the information in Current Paper 10/80 useful in support of any recommendations they may make in respect of the design of multi-level shopping developments in their area. Further advice in any particular case may be sought from the Fire Research Station.

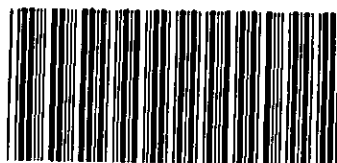
6. Brigades may also wish to refer, in this connection, to BRE Current Paper 19/78 - Smoke hazards in covered, multi-level shopping malls: a method of extracting smoke from each level separately. This was drawn to the attention of Chief Fire Officers in Dear Chief Officer letter No 49/1978, dated 23 August 1978.

7. There are no cost of manpower implications arising from this letter.

Yours sincerely

A handwritten signature in black ink, appearing to be 'D. D. D.', written over a grid of small squares. The signature is slanted and includes a large flourish at the end.

**The Fire Service  
College**



**00128895**