

FIRE CODES REVIEW ON AN AMENITIES BUILDING IN A UNIVERSITY CAMPUS

Kenny S.M. Kong

Department of Building Services Engineering, The Hong Kong Polytechnic University, Hong Kong, China

ABSTRACT

There might be some arguments on the fire safety provisions for an amenities building in a university campus. That is, whether to take it as a shopping mall, or as a campus. In this talk, arguments are presented.

1. INTRODUCTION

An amenities building in a university campus was used as the first target as a real-case analysis for a comparative study on fire safety requirements between pure education use and composite commercial use. The building is a four-storey reinforced concrete structure which mainly comprises a student canteen, a staff canteen, a book shop, a convenience store, a bank, student activities rooms, a sport complex, a stationery shop, an exhibition area, and an atrium. The building was designed and built as an ancillary structure for non-academic uses of the university.

By the time the design of the building was approved by SAR government Buildings Department and Fire Services Department, it was still treated as a non-commercial building. Furthermore, the existing layout and structure contain all different uses in one single compartment. As a result, there is not much difference in the fire safety design and fire services provisions between other education blocks in the campus and the amenities building. The fact that the composite usage of the amenities building renders it being a commercial complex.

Although, according to hazard classification of British Standard (BS 5306:Part 2: 1990) [1], the amenities building was classified as "light hazard" level in terms of fire safety design as a normal lecture building, it is interesting to know that a building of mixed occupancies shall comply with all fire safety requirements of any particular use within the building according to the NFPA-Life Safety Code [2] which was published by National Fire Protection Association (NFPA). Furthermore, supermarkets, banks and shops operating in a commercial building in Hong Kong also come under the control by Fire Safety (Commercial Premises) Ordinance [3]. In other words, if the amenities building is treated as a commercial building, at least segregation by means of compartmentation with material not less than two-hours fire resistance period between different usage

shall be installed. Moreover, automatic and fixed fire services installation such as sprinkler system shall cover the whole premise including staircases. On the other hand, apart from the Fire Safety (Commercial Premises) Ordinance [3], the amenities building complies with all the requirements in all other current prescriptive fire codes in Hong Kong.

However, it should be noted that the non-compliance with the Fire Safety (Commercial Premises) Ordinance does not imply the amenities building is unsafe in terms of fire risk. Computer models, such as evacuation model, can be used to assess whether the present layout can achieve all the minimum fire safety requirements as stipulated in the local fire codes. In this connection, whether the amenities building should be equipped with all those requirements as stipulated in the regulations and codes of practice still remains arguable.

2. WORKS TO CARRY OUT

Further studies on simulating fire event for different scenarios will be carried out.

ACKNOWLEDGEMENT

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REFERENCES

1. BS5306: Part 2: 1990, Fire extinguishing installations and equipment on premises, Specification for sprinkler systems, British Standards Institution (1990).
2. NFPA-101: Life Safety Code, National Fire Protection Association, Quincy, Massachusetts, USA (1994).
3. Fire Safety (Commercial Premises) Ordinance, Cap 502, Hong Kong, 7 June (2002).

Q & A

Q1: How to define 'safe' and 'unsafe' in performance-based design?

Kong: We can put the design into a computer model, say an evacuation model to see the maximum time for total evacuation in case of fire. When we have the design, we can look at the evacuation time and the height of the smoke layer and compare it to the local regulations. We should note that even if the design complies with the Codes of Practices or American standards, it does not mean that we have a safe building. The fire codes in US are different from the local codes. If there are commercial elements in the US universities or colleges, it is clearly specified that it should follow the design guidelines for business uses.