



Cool can be hotter than cold

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FIRE safety has been able to draw some attention over the past few years; its reputation primarily ill gotten from fatalities in mainly the garment industry. Concerned persons have to some extent awakened to the fact that the threat from fire is real, although the approach in most cases is hardly professional. Awkwardly, in some cases, ancient models are being practised in the guise of fire precautions and prevention.

Shopping centres, because of the amount of combustible materials and gathering of a large number of people, many of who are unfamiliar with the environment, are high on the list of dangerous places in terms of fire. The position of air-conditioned shopping centres is of greater concern because, other conditions remaining same, fire develops faster in an enclosed space.

It may be pertinent to mention here that all air-conditioned buildings residential, commercial, health, industrial, educational, recreational not necessarily in that order, are more hazardous for fire accidents than their ventilated counterpart.

In today's feature architecture graduate Farhana Ferdous picks up only one building type. Her study, albeit basic, on the safety and security of air-conditioned shopping centres of Dhaka City finds extinguishers, escalators and alternate staircase, signs and symbols, hidden security camera, generated power supply, and such other fire-safety related matters in her survey, but many of these aspects are not applied by design and some are under-provided. This apparent defence mecha-

nism can be more harmful than effective in a fire situation because of the complacency factor that protection was provided, when actually, it was not.

As an example, it may be said, shoppers may not be able to escape in time, as there may not be enough doorways, the doorway may be too far from a person's location, the doorway may be inaccessible due to the route being unclear, the door may be difficult to find...

Presently the problem in a/c shopping centres may not be that acute unless someone deliberately spills kerosene and lights a fire, because the buildings, its electrification, and electro-mechanical systems are in pristine condition. Such markets are more like new kids on the block. With age and lack of maintenance, which is the unfortunately the norm and practice in this country, the hazard shall multiply.

Ferdous appeals for increased awareness among architects and engineers, users and owners. The least we can do is join her.

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Most shopping centres do not have any smoke detector, fire alarm and use combustible ceiling material.



Most shopping centres don't have any security camera but security guard for safety.

Safety and security of air-conditioned shopping centres of Dhaka city

FARHANA FERDOUS

TODAY no shopping centre in the developed world could be responsibly designed or executed without any special regard to design for safety and security in all its aspects. On the other hand, shopping centres of Bangladesh have failed to incorporate the factor of fire safety in the overall design process. Moreover, the recent trend in Dhaka attempts to accommodate an intermix of functions such as, factories, offices, hotels, restaurant, sports centre etc. along with the shopping facilities within the same structure. This has increased the potential danger of different types of hazard in these multi-storey and usually introvert building type.

INTRODUCTION

Day by day, the need for organized shopping centre is gaining importance in our expanding society. Now shopping centres, along with the shopping facilities, simultaneously serve the civic, cultural and social community needs; thus making significant contributions to the enrichment of the expanding society.

The comparative advantages of central location, administrative, economic and other functional factors of Dhaka city have contributed towards substantial increase in shopping activities. As a result, in recent years, shopping centres, and ribbon like retail developments in Dhaka city have boomed often in a most unplanned and indiscreet manner along most of the roads of the city. Although adequate safety and security including fire measures are prerequisites for enjoying a hazard free shopping environment; collectively they remain the most neglected issue in the context of total urban development in Dhaka city.

However, in the absence of any safety awareness among users and measures adopted by the concerning authority, a number of shopping centres have now been constructed without ensuring a minimum of safety to the public and the users of the building. Today the subject of fire safety precaution, prevention, and control aspects have occupied a prominent position in the literature of planning and design of shopping centres. This study examines some selected shopping centres in Dhaka city to get an overview.

HISTORICAL BACKGROUND

Shopping is an important and essential part of our daily urban life. The enclosed retail environment of the private shopping mall is the most popular and successful new building type of the second half of the twentieth century. There is no doubt, that because of pressing needs, more congested shopping complexes will be constructed in future. There are

many dimensions to this success but safety is a primary one.

Shopping centre in Bangladesh has experienced an unprecedented growth over the last decade and half. Before a decade, the concept of air-conditioned shopping centre is totally new in our country. People are used to shopping on New market, Green super market, Gausia market etc. The recent trend in Dhaka is developing air-conditioned shopping complexes along with escalator and elevator facilities and attempts to accommodate other functions, such as sports centre, offices, hotels, restaurant, and even university on the upper floors of these multistoried structures but without any consideration for separation of service facilities and safety measures. Consequently, Dhaka is growing congested and ugly from its former spacious outlook. Very unfortunately, over the years a massive destruction of green covers has taken place in this city by creation of unplanned concrete jungle of commercial and residential nature.

GENERAL CONDITION: (cause and effect)
Most of the accidents have been caused due to lack of foresight of market owners who have faded to invest in safe working conditions. Unfortunately, Shopping centre owners are generally not adequately aware about general accident and safety measures, fire hazard and its potential dangers mid consequences, preventive and control measures that need to be adopted. It appears that in their haste to establish a footprint in the very competitive market, safety and security seems to have missed out as a priority.

Problem Statement and general condition:

The present situation in most of shopping centres (excluding very few) are very poor because of the following reason:

1. The circulation is congested
2. The working space none ventilated
3. Poor natural and artificial lighting system
4. Lack of safety sign and symbol
5. Escape routes are dumped with haphazardly kept combustible material.
6. Improper wiring and electrical design, illegal connections
7. Careless smoking and heating practices
8. Narrow and insufficient number of staircases
9. Lack of security measures like guard, security camera etc
10. Exit points at ground level are locked, go to basement or made very narrow for security.

Causes of accident in Shopping Centres:

In order to fight any danger effectively it is essential to know the causes of hazard. Most fires in occupied build-

ings other than dwellings are caused by electrical equipment of some kind, including wiring faults. Narrow staircases, lack of regular fire drills and security measures, improper storage facilities, lack of sign and symbol, improper security system etc. are some of the major causes of the recurring tragedy. Other causes of fire and other accidents are;

1. Smoking materials and matches
2. Defective and improperly operated heating equipment
3. Careless disposal of ash and waste products
4. Increased use of electrical and mechanical equipment in multi-storey shopping centres
5. Defective or improperly installed and operated electrical equipment and services
6. Friction and static sparks
7. Lack of knowledge about the use of equipments.
8. Exposure from other buildings on fire
9. Increased use of combustible materials for decorations in modern shops
10. Fire develops easily in enclosed air-conditioned areas, etc.

Effects of FIRE HAZARD:

Fire hazard in market and shopping centre that affects; the national economy, the victim's family, worker's health safety and the physical environment summarised as follows:

1. Fatality
2. Short and long term injury
3. In case of both 1 and 2, affects the victim who may have been the sole bread earner
4. Loss of goods and earning
5. Loss of market competitors
6. Damage to building and equipment
7. Effect on health and environment

FUNCTIONAL ANALYSIS; (Survey Findings):

1. FIRE SAFETY:
Almost all shopping centres are well equipped with a good number of Fire extinguisher systems. Smoke detector and fire alarm provided almost 60% shopping centre most of them are ceiling mounted. Fire extinguishers kept in front of elevator, escalator, stair, toilet, and other public gathering space.

In case of 90% shopping centre alternative staircase or escape route are leads to basement, which also locked most of the time. So these stair will not working as an escape route in the event of fire.

Combustible gypsum boards used as a suspended ceiling material in each shopping mall. However, on an average, Plaza A.R. and Rifles Square are providing satisfactory fire safety measure on the other hand Prince Plaza and Metro Shopping Mall are very poor in terms of fire safety.

2. SAFETY SIGNS AND SYMBOLS:
In 95% of the centres, surveyed the "No Smoking" sign is displayed; only 5% have not displayed the sign.

However, the sign casually observed and ignored. The attitude of the management and the public, specially the window shoppers, in almost all the shopping centres to the no smoking sign, which by law should be displayed, suggested that awareness of the dangers of fire is lacking. Where as, in a country like Bangladesh, where 80% of the population is illiterate, special consideration should be given to provide pictorial safety signs and warnings in this public building type.

Fire safety signs, notices and graphic symbols, Specification for fire safety signs, should meet the regulations. In some buildings, additional signs may be needed to meet requirements under other legislation.

Besides these no smoking sign; emergency exit, location of stair, toilet, and danger sign are also observed some surveyed shopping centre.

3. SECURITY SYSTEM:
Almost all modern air-conditioned shopping centres are well equipped with security and hidden camera, with the provision of security guard. This security camera connected with the central office for the sake of overall security of shopping centre. However, some small shopping mall like A.R.A. Centre and Sunrise Plaza do not equipped with these sort of security camera, they only provide security guard.

4. EMERGENCY LIGHTING:
For the lack of proper electricity supply, stand by generator needed in all modern air-conditioned shopping centre. In case of power failure for any kind of hazardous situation this alternate power supply system act as an emergency lighting for the total market.

RECOMMENDATION:
Like other developing countries, the need for fire precaution and fire warning in shopping centers of Dhaka city is paramount, because the recent trend of development observed in shopping centers are multi-storied, congested and voluminous building masses with enclosed air-conditioned facilities.

1. ESCAPE ROUTES:
a. Means of warning and escape
The building shall be designed and constructed so that there are appropriate provisions for the early warning of fire, and appropriate means of escape in case of fire. This escape route should be designed from the building to a place of safety that will be capable of being safely and effectively used at the times of fire.

The parts of the means of escape may consist of any of the following exit components:

- A doorway, corridor or passage leading to an exterior or interior staircase, smoke proof and fireproof enclosure, ramp, fire escape, etc. having direct access to the street, the roof of a building or any designed refuge area which affords safety from fire or smoke from the area of incidence;
 - Lifts, escalators and moving walks shall not be regarded as components of means of escape.
 - There are routes of sufficient number and capacity, which are suitably located to enable persons to escape to a place of safety in the event of fire
 - The routes are sufficiently protected from the effects of fire by enclosure where necessary
 - The routes are adequately lit and the exits are suitably signed
- Source: html document, building regulation 2000, fire safety; 10th may 2005.

b. Stair and Escalator:
Very recently Escalator and Elevator is using as the main means of vertical circulation. All modern shopping centres are providing escalator for beauty but these escalator and elevator are not working in hazardous situation. They do not have notices or signs placed near the entrance, advising passengers on the use of Escalator and Elevator to avoid accidents in case of any danger.

In most of the shopping centre surveyed lack? adequate number of



Only few shopping centres have safety sign and symbol