

A fire risk assessment

Refuse and Waste storage in high-rise buildings

Introduction

Stored refuse and waste materials are often the largest single source of combustible material within a building, and pose a significant fire hazard. They are regularly the place in which malicious fires are started, and should be identified as a potential hazard in any Fire Risk Assessment.

Good housekeeping alone cannot completely prevent these fires, although there are a number of lessons that have been learned.

The risks

Buildings over 3 stories in height, particularly multi-occupancy buildings such as residential high-rise blocks of flats and apartments, hotels, hospitals, shopping centres and offices.

These types of property often have communal bin and refuse stores located within the building, sometimes on the ground floor or in the basement or car parking area. These stores are often connected by internal chutes to several floors within the building.

The refuse areas will have bins, skips or compactors that are used to store the collected waste materials until they are removed from the site. Typically the content will be highly combustible, and will include such items as paper and cardboard, plastics, textiles and other flammables.

Typical fire outputs

Fires that develop in these situations can go unnoticed for some time, particularly if the areas are unmanned. From the table below you can see that a serious fire can quickly become established, and as well as the considerable heat output, there is a significant production of very toxic and obnoxious gases that are released into the building. In a recent Hospital fire of this type in the UK, the combination of fire and smoke caused damage of nearly £2 million...

Refuse container	Contents	Weight kg	Fire output kW
Domestic bin (0.1m ³)	Household	15kg	200kW
Euro bin (1.1m ³)	Loose paper	55kg	930kW
Skip bin (10.0m ³)	Cardboard	500kg	8,500 kW

Stop that fire

There are a number of things that can be done to help avoid these fires causing major damage.

- Ensure that the waste materials are removed regularly
- Secure the area, so that access is only to approved personnel
- Make the area strictly 'no smoking'
- Install a specialist 'early detection' fire suppression system, such as the AQ2000.

Conclusions

You should now have a better understanding of the hazards associated with refuse storage, and be in a position to reduce or remove the risk.

A number of cost effective fire suppression systems have been developed specifically for these critical areas, and are widely installed throughout the UK.