ABSTRACT

Fire safety strategies clearly involve compelling and complex issues, which in-turn, demand the need for relevant experience and common sense. However, critical success factors must be based on the application of well-designed and complementary fire protection measures, both active and passive.

The study examined and discussed the fire safety strategies for a multi-storey warehouse. Deterministic fire modeling methodology is used to study the fire effect within the building. The building is divided into 11 zones and each zone is critically analysed for their fire hazards. Findings from the individual zone are used to conceptualise a comprehensive fire protection system for the building.

It is found that fire protection problem at height in excess of 10m posed unique fire hazards not found in other types of structures. The anticipated fire size in such a building resulted in severe smoke spread effect and caused smokelogging into other non-fire zones. Fire fighters accessibility is greatly reduced and evacuation of lives to safety is made more difficult.

Recommendations on the provisions of fire protection systems in terms of, the selection of sprinkler type, proper detection and alerting system, the available escape time and the required escape time, smoke venting requirement and application of smoke curtains, to address the undesirable effects of fire for building of this nature.