C. The CO monitoring system must be integrated with audible alarm devices which should be triggered when CO concentration reaches or exceeds 75 ppm in at least 5% of the monitored locations and notify the proper personnel to take corrective actions.

D. Where a Building Management System (BMS) or Central Control and Monitoring System (CCMS) is available, all CO sensors need to be integrated with it in order to monitor real time concentration level and management of air quality.

E. CO monitoring equipment required to be checked and re-calibrated every 6 months or according to manufacturer specification by a specialised calibration company, certified by Dubai Municipality. Test results and calibration certificates must be kept on-site and be readily available for inspection by DM staff.

Case Study

A 1000 m² (40m x 25m) of enclosed parking with a floor to ceiling height of 5m is being designed for a supermarket. Project team is planning to select dual speed extract fan which shall extract 9,000 l/s at low speed in case of normal operation and 14,000 l/s at high speed in case of fire condition. The makeup fan is also proposed of same capacity. There are louvre openings of size (5m x 5m) on the opposite side of the perimeter walls available for natural ventilation. Let us check whether this design complies with this regulation.

Step 1: Eligibility Check

Perimeter wall area of parking = 2 x ((length x height) + (width x height))

= 2 x ((40m x 5m) + (25m x 5m)) = 650 m²

Total opening area of parking = 2 x (5m x 5m) = 50 m²

Percentage of opening area = 50/650 = 7.6%

The total opening area must be at least 20% of the total perimeter area to identify as a "Open Parking Area". In this case, it is 7.6% hence this regulation is applicable and must be complied.

Step 2: Compliance Check

Air flow (l/s) = (Area (m²) X Height (m) X ACH) / 3.6 (*3.6 is a conversion factor*)

Air flow = (1,000 X 5 X 6) / 3.6 (*ACH = 6 In normal operation*)

Air flow = 8,333 l/s (*Minimum extract air flow required at low speed in order to achieve 6 ACH*)

Air flow = (1,000 X 5 X 10) / 3.6 (*ACH=10 In fire operation*)

Air flow = 13,888 l/s (*Minimum extract air flow required at high speed in order to achieve 10 ACH*)

The minimum required fan air flow capacity is 8,333 l/s to attain 6ACH and 13,888 l/s for 10ACH. Considering the selected fan capacity is 9,000 l/s at low speed and 14,000 l/s at high speed, the project complies with the regulation.