

Complete Smoke Extraction Systems

In a fire emergency, smoke is a potential killer unless it is quickly controlled. It can also hamper the work of emergency services. Whatever the type and function of a building, diligent planning for the fast, effective removal of smoke is an essential provision to ensure personnel safety.

Flakt Woods has the experience to provide complete and precisely tailored solutions for almost any industrial, commercial or residential applications including:

- Warehousing
- Multi-storey shopping malls
- Offices
- Multi-occupancy housing/apartment blocks and special-need environments such as
- Enclosed or underground car parks.

In addition to powered extract fans, we offer a comprehensive range of ventilation components and air terminal devices to cover both daily requirements and emergency situations.

These products are tested to BS EN 12101 specification standards for smoke and heat control systems.

Products for smoke extraction systems

Flakt Woods can design, supply and assemble complete systems for smoke extraction to suit the specific needs of each individual building. Each system may comprise the appropriate combination of:

- Design
- Mechanical or natural ventilation products
- Control systems
- Sensors
- Electrical wiring
- Commissioning

Protective Ventilation for Car Parks

In enclosed or underground car parks, a fire emergency requires fast, intelligent action to contain and control the problem. Flakt Woods technology, application knowledge, expertise and state of the art software combine to provide a unique approach, with tailored solutions.

Traditional car park ventilation techniques are based on air change rates and duct runs with vertical droppers and high/low level grilles. This ducting typically uses up valuable headroom and parking space, and such systems are costly to install and operate. Flakt Woods can provide a modern alternative solution providing benefit to client and user alike, whilst compiling fully with the latest technical requirements and European standards.

Fire Safety Complete Turnkey Solutions



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Fire Safety *Complete Turnkey Solutions*

Operating on demand

Unlike these old-style systems, with Fläkt Woods solutions there is no requirement for the ventilation system to run continuously. Our systems operate only when required, using a series of strategically placed, independently controlled fans.

Under normal operational conditions, sensors detect carbon monoxide (CO) or Liquefied Petroleum Gas (LPG). Selected fans automatically collect the contaminated air and direct it to the main extract point for discharge.

In the event of a fire emergency, Fläkt Woods systems control the direction of smoke travel. Smoke sensors trigger fans to run up to full design speed to direct the smoke, via other fans as necessary, to the nearest extract point. Smoke, heat and toxic fumes are removed swiftly and safely from a fire by the shortest route.

Tailored solutions using CFD

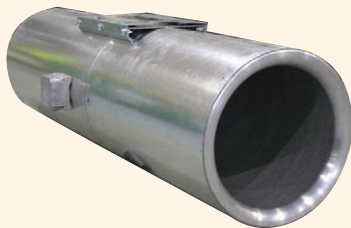
Our car park solutions are individually modelled to suit each building's layout. Computational Fluid Dynamics [CFD] software, combined with Fläkt Woods in-house expertise and own fully-researched input data, is used to plot the ideal number, type and location of fans required for each application.

A computerised 3D model evaluates airflow with only the main extract system in use. This identifies main airflow routes and highlights any stagnant or recirculatory areas. Our fans are then superimposed upon this model and placed in optimum positions to achieve both normal extract and emergency fire/smoke extract.

Main extract fans in these installations can be smaller because there is no ductwork resistance. Installation costs are lower and, because the system operates only when required, running costs are also minimised.

Fan options for car park ventilation

Fläkt Woods fan technologies designed for use as part of these more complete, cost-effective and tailored ventilation solutions for car parks include:



Jet Thrust: in-line axial fans that are reversible, truly symmetrical impellers to provide efficient flow in both directions.



Induction Thrust: shallow-profile centrifugal fans, ideal for car parks with significant height restrictions, especially those requiring a unidirectional system for clearance of air pollution and smoke.

