NAFFCO
PASSION TO PROTECT

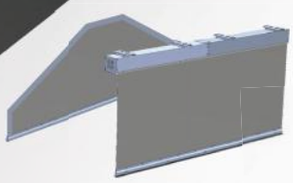
SMOKE MANAGEMENT

Smart **Engineering Solution**

Starter Panel & Smoke Control Station

Smoke Vents

One Unit Responsibility



Fixed & Automatic Fire/Smoke Curtain

Fire Rated & G.I. Duct

Fire/Smoke Damper

Smoke Detectors & Sensors

SMOKE MANAGEMENT SYSTEM

CONTENTS

A Robust Smoke Management System for ***Hospitals, Malls, Educational, Residential, Commercial, Road/Train Tunnels & Industrial Projects***

Corporate Profile

01

CORPORATE PROFILE

NAFFCO
PASSION TO PROTECT

A Complete Solution Provider

SMOKE MANAGEMENT SYSTEM FOR RESIDENTIAL/ COMMERCIAL/ INDUSTRIAL BUILDINGS & ROAD/ TUNNELS

COMPLETE VENTILATION SOLUTION

COMMERCIAL KITCHEN WITH ECOLOGY UNIT & SMOKE CONTROL SOLUTION

NAFFCO provides a complete solution for construction projects, along with the customised system design and supply for unique projects.

Since its inception, NAFFCO has been continuously striving through its research and development to find out the ever-changing needs of the market and cater to the same, with the help of our own manufacturing units. The product portfolio offers a wide, unique & exclusive range of innovative, efficient and eco-friendly products.

“What’s measured improves!”

CORPORATE PROFILE

COMMITMENT | **QUALITY** | **REACH**

We are committed to provide the highest quality products and solutions, therefore, we only supply globally recognised and approved products having UL, Kitemark, ITB, CE, AMCA, Fires, Applus certifications and more.

The product portfolio ranges from Fire Fighting Systems to robust solutions for industrial ventilation and smoke management.

We always strive to better serve customers' needs by staying up-to-date with the latest approved product range. Our strength relies on our quality products, services and delivery of the right solutions to address your project requirements.

We supply Innovative, Efficient and Eco-friendly products in compliance with Local Civil Defence, NFPA, British and European standards.

With representation in the Middle East and North Africa (MENA) region, we are capable to deliver our products and services in a short period of time. We simultaneously work on opportunities to explore new markets.

We believe in total customer satisfaction hence providing a qualified and well-experienced support team.

*Supplying **State-of-the-Art Products** to Ensure **High Efficiency***

As a member of NAFFCO Group, our success is driven by our "Passion to Protect"; our vision is to become the world's number one provider of innovative solutions in protecting life, environment and property.

Smoke Management System

02

SMOKE **MANAGEMENT**

What We Do!

INTRODUCTION

Smoke management systems are mainly required to channel the smoke and create a path to be exhausted from the building. By maintaining a smoke-free clear layer, a safe escape route is created for occupants to exit from the affected building.

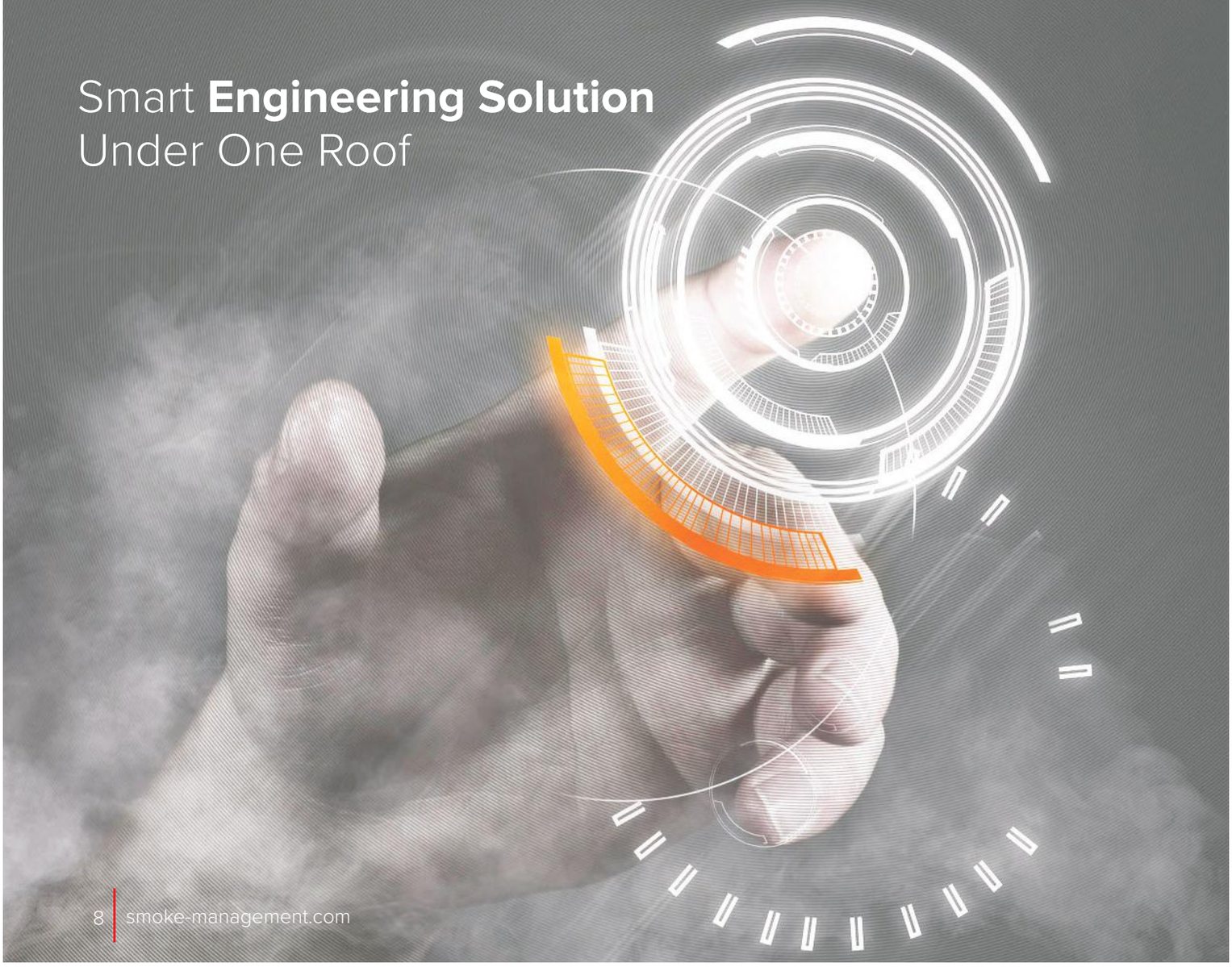
Smoke management systems are required for high-rise buildings, shopping malls, hospitals, education buildings, atriums, warehouses, factories, and other unique occupancies by many building codes.

NAFFCO has broad involvement in designing, planning and providing turnkey solutions for smoke management systems. Thereby, helping our customers in meeting their requirements and safety goals.

Full unit responsibility will be taken starting from design, supply, installation, testing, commissioning and maintenance.

A full smart engineering design solution based on local & international codes with the services of CFD & real-time smoke test.

Smart **Engineering Solution**
Under One Roof



THE PROCESS

1. Professional Team

NAFFCO invests in employing a professional team of engineers for Smoke Management in order to keep customer satisfaction as high as possible.

2. Quality

We constantly work to enhance our quality of services and products to provide the best results to our customers.

3. Design & Estimation

Smoke Management designs are made in compliance with Civil Defense, NFPA, BS, EN and ASHRAE, as per local authority, having jurisdictions manufacturer specs and guidelines and other renowned international codes of practice.

4. CFD Analysis

We perform CFD analysis to verify and optimize the design for complex projects.

Evacuation Modelling

Evacuation modelling is a method of simulating a real-life fire event to predict evacuation times for areas and buildings, based on how people will react under the pressure of a fire, when emotion, possible crowding and the response of the materials and systems within the building come into play

5. Site Installation

Here at Smoke Management, we provide complete site installation solutions with the best site & commissioning engineers, who make the control of the system in a more versatile and proper manner

6. Results

Our Smoke Management Team works together as one unit to deliver the best quality result-oriented solutions to our customers.

7. Trainings

For management and labour staff, trainings are arranged regularly to stay up-to-date and ahead in the market.

8. Troubleshooting & Maintenance

Preventative Maintenance Contracts

–NAFFCO performs quarterly inspections as required by NFPA and the local governing authority.

Emergency Service Maintenance – 24/7

03

NAFFCO System

NAFFCO **SYSTEM**

What We Offer

SMOKE MANAGEMENT SYSTEM FOR RESIDENTIAL/ COMMERCIAL/ INDUSTRIAL BUILDING & ROAD / TRAIN TUNNELS

- ✓ Smoke Purging System
- ✓ Pressurisation System of Staircase, Lobby Pressurisation System & Elevators Walls
- ✓ Smoke Barriers (Fixed Curtain, Automated Curtain)
- ✓ Atrium & Large Volume Smoke Control System
- ✓ Electrical Panels & Automation
- ✓ Sensors / Other Detectors

COMPLETE VENTILATION SOLUTIONS

- ✓ Natural Ventilation System
- ✓ Powered / Mechanical Ventilation
- ✓ Natural Ventilation (Smoke Ventilation + Wind Driven)
- ✓ Polluted Air Treatment
- ✓ Kitchen Extract Systems
- ✓ Domestic Ventilation

COMMERCIAL KITCHEN WITH ECOLOGY UNIT & SMOKE CONTROL SOLUTION

- ✓ Application Specific Extract System
- ✓ Removal of Grease & Oil Mist Particles
- ✓ Smell / Odor Neutralization

CFD / Evacuation Analysis

04

CFD/EVACUATION ANALYSIS

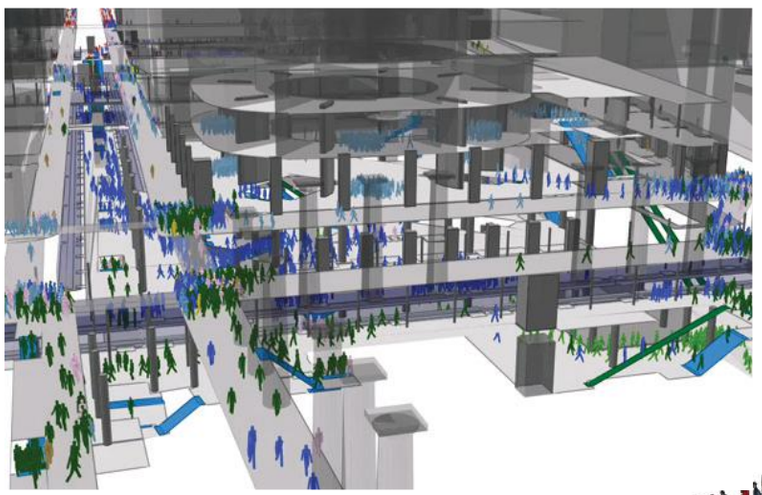
System design, selection & implementation for smoke control

EVACUATION MODELING

Evacuation modeling is often undertaken when there is a shortfall in the means of escape provisions or if the proposals deviate from the recommendations of the standard guidance. For complex designs, the use of evacuation modeling can identify that people can escape within an acceptable period of time or prior to untenable conditions

Our evacuation modeling can be completed in accordance with any national or international standard, for example, NFPA, BS, SFPE and IBC.

- Review and development of evacuation procedures
- Evacuation procedures for persons requiring assistance to evacuate
- Fire safety training – review and evaluation of existing training programs and their technical content
- Crowd Evacuation, Agent-based Model
- Disaster Evacuation Modeling
- Emergency Management



We can analyze your evacuation procedures

Human evacuation of buildings and public spaces can be simulated with great accuracy using sophisticated software. This makes it possible to determine how people move during an incident such as a fire, as well as the time required to access safe areas.

Our analysis of complex evacuation procedures includes:

- Stadiums and arenas.
- Residential, commercial and industrial buildings.
- Road / Rail Tunnels.
- Outdoor festival venues, parks and other public spaces.

COMPUTATIONAL FLUID DYNAMICS (CFD) ANALYSIS

In complicated structures, where it is difficult to meet prescriptive codes, we are permitted to devise a fire-engineered solution. We do this by using advanced computer modelling techniques, known as Computational Fluid Dynamics (CFD), often referred to as smoke modelling.

Smoke Management has a team of CFD specialists who work with clients and building officials to demonstrate compliance using engineering analysis, validation studies, and CFD studies. Our team of building codes and fire safety engineering professionals has extensive knowledge in the use of fire engineering principles, smoke control and management principles, and life and fire safety principles. In addition, our team is well versed in the use of various cutting-edge fire and smoke simulation software to provide alternative solutions to the prescribed acceptable solutions in the Building Codes.

- ✓ 3D and 2D fire and smoke CFD modelling
- ✓ Fire and smoke spread analysis
- ✓ Smoke control
- ✓ Gas Dispersion Analysis And Consequence Modelling
- ✓ Computational Fluid Dynamics (CFD) - Natural Ventilation System
- ✓ Tenability analysis
- ✓ Sensitivity Analysis
- ✓ Validation of fire safety designs
- ✓ Third Party Reviewer
- ✓ Codes Consulting

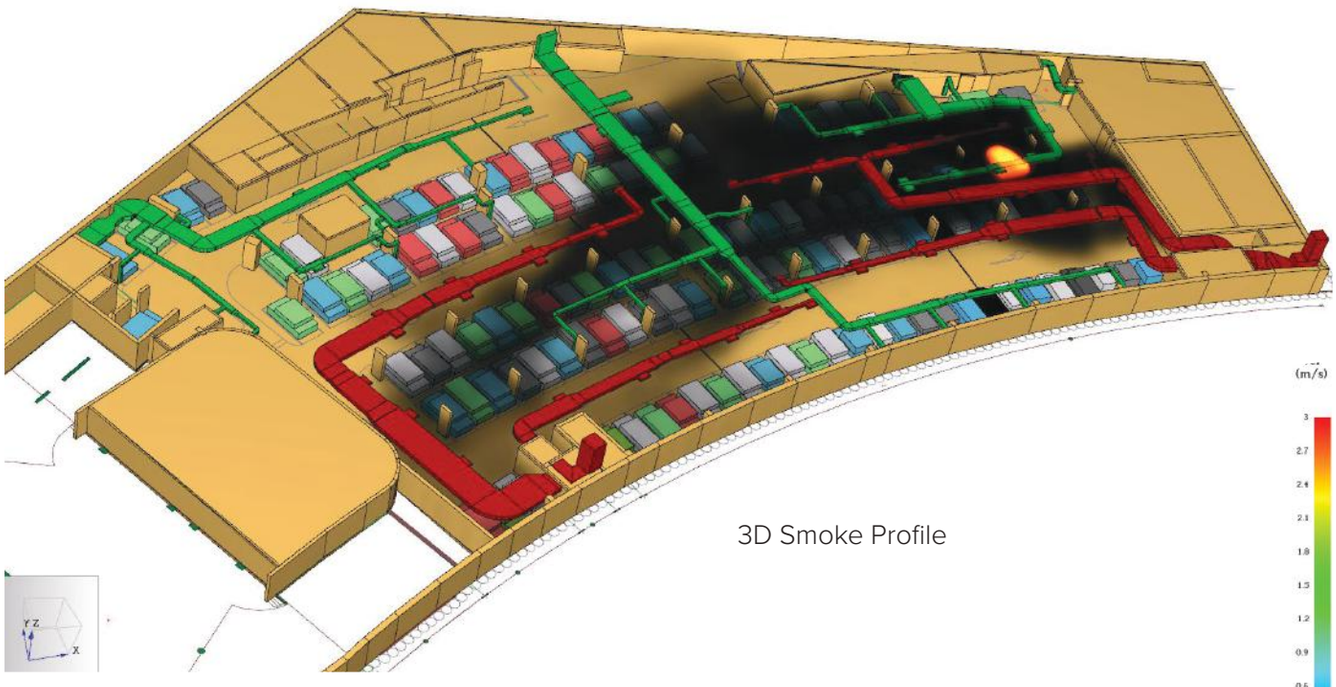
CFD provides a numerical approximation to the equations that govern fluid motion.

CFD fire & smoke analysis is performed using:

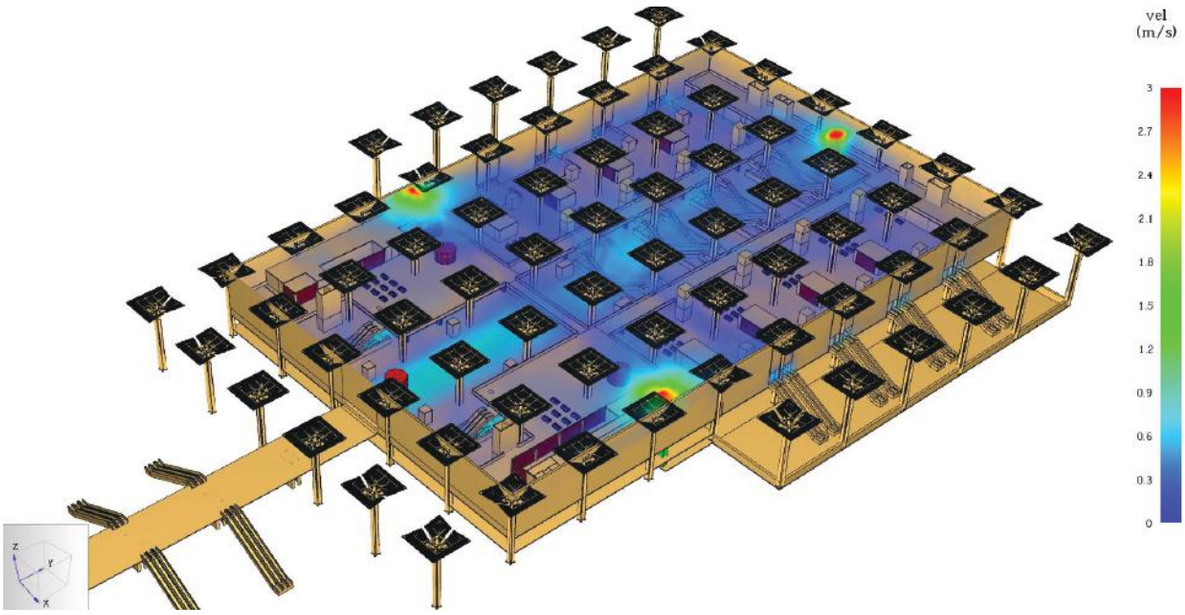
- ✓ NIST FDS (Fire Dynamics Simulator)
- ✓ Fire FOAM
- ✓ ANSYS Fluent ®
- ✓ Fire Sim
- ✓ CONTAM

CFD results shall be verified based on:

- ✓ NFPA 88, 92 & 101
- ✓ PD 7974-6
- ✓ IBC, British Standards
- ✓ Other International Codes
- ✓ Local Authorities



3D Smoke Profile



3D Velocity Profile

TUNNEL VENTILATION ENGINEERING

Defining the operation of ventilation systems (algorithms)

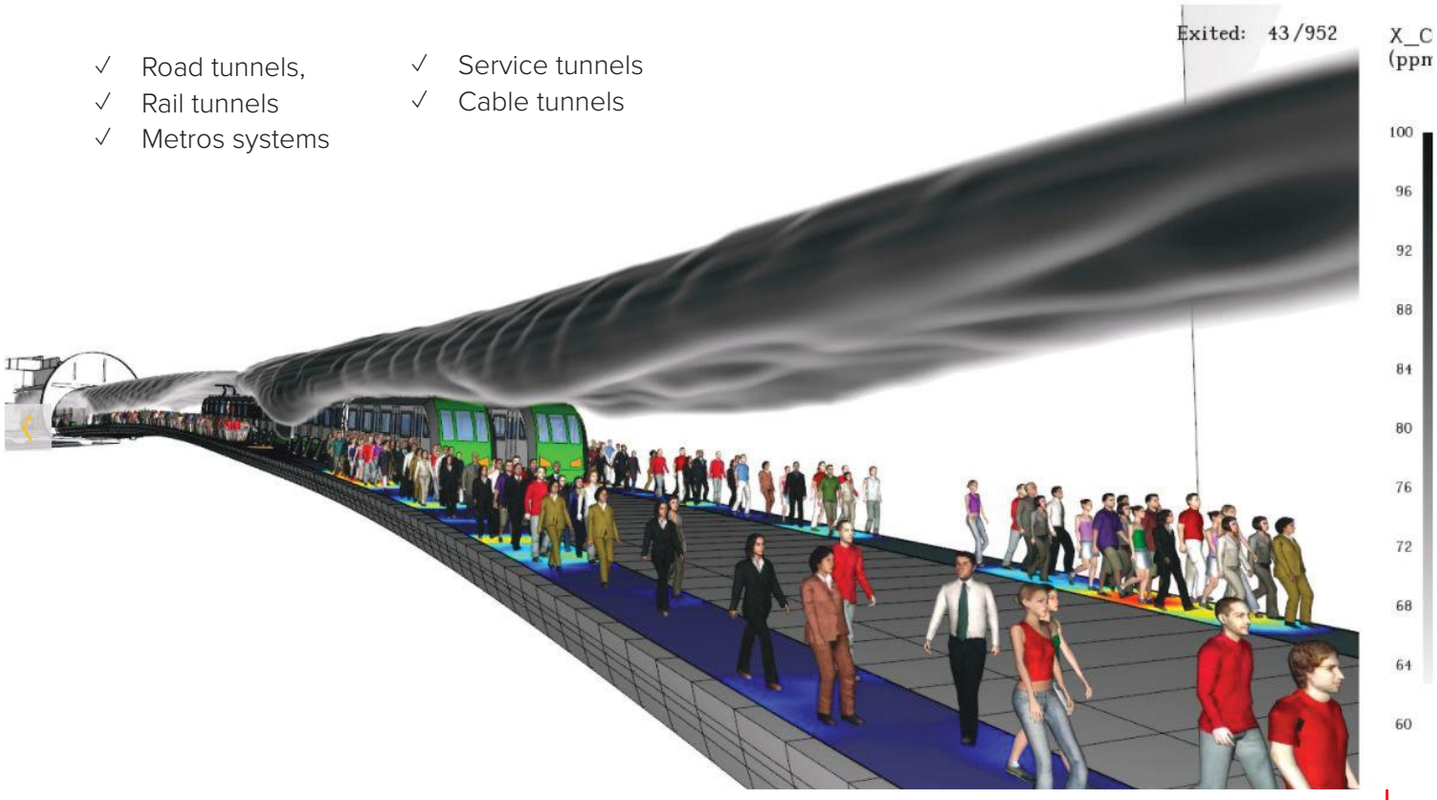
CFD (Computational Fluid Dynamics) studies simulating fire scenarios and its evolution.

Pedestrian egress studies in case of emergency in both tunnels and train stations, using CFD simulations results as an input.

Tunnels and underground station flow analysis

Our team provides general ventilation and high temperature smoke extract solutions for

- ✓ Road tunnels,
- ✓ Rail tunnels
- ✓ Metros systems
- ✓ Service tunnels
- ✓ Cable tunnels



05

Smoke Extraction System

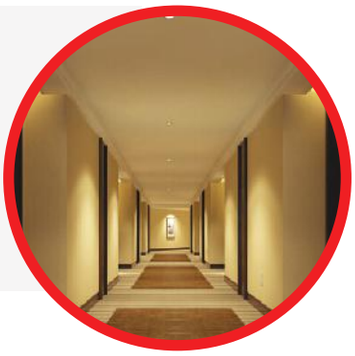
SMOKE EXTRACTION SYSTEM

How We Control

Smoke extraction systems are designed to the following codes: NFPA 88, NFPA 92, NFPA 204, NFPA 409, ASHRAE, BS 7346 Part 4, IBC, PIARC and other international codes of practice, and local authority regulations.

Corridor Smoke Purging System

Corridors are provided with a mechanical smoke purge system. The intent of a smoke purge system is for the clearance/removal of smoke during evacuation and fire-fighting operations. Make up air shall be adequately supplemented based on the total smoke extract capacity.



Static Smoke Extraction System

A smoke extraction system utilising smoke reservoirs; localised ducting; and permanent openings and / or automatic opening of windows, panels or external louvres actuated by smoke detectors; to remove, on the principles of natural ventilation.

Dynamic Smoke Extraction System

A mechanical ventilating system capable of removing smoke and products of combustion from a designated fire compartment, and also supplying fresh air in such a manner as to maintain a specified smoke free zone below the smoke layer.

Smoke Containment & Management

- ✓ Smoke extract system for atriums, large warehouses & factories are to be carefully designed.
- ✓ Fixed/Automatic smoke curtains will be required to create the necessary zoning in coordination with other fire rated services such as Fire Sprinkler/Fire Alarm.
- ✓ Automatic Fire Curtains/Fire Shutters are required to be provided for larger compartments to segregate from the remaining part of the building.
- ✓ Smoke Extraction can be naturally through smoke vents or mechanically by Fire Rated Fans.
- ✓ Make up air shall be supplied adequately below the smoke layer at a minimum velocity by means of mechanical fans or naturally by means of louvres or entrance doors interfaced to fire alarm control panel.

06

Pressurisation System

PRESSURISATION SYSTEM

How We Control

A pressurisation system consists of three main components:

- ✓ Supply Air (where air is injected into the area that is to be protected),
- ✓ Pressure Relief sensors with PLC Controllers (to avoid overpressure when doors are closed)
- ✓ Air Release (air and smoke is released from the adjoining fire area).

Combining these elements creates a positive pressure difference that prevents lobbies and staircases from filling up with smoke.

A pressurisation system for smoke and fire ventilation should meet the recommendations of:

- ✓ BS EN 12101-6 “Specification for Pressure Differential Systems” or BS 5588-4 - “Code of practice for smoke control using pressure differentials”
- ✓ NFPA guidelines
- ✓ Other International codes of practice
- ✓ and Local authority regulations.

1. Lift-Shaft/Lift-Well Pressurisation

Elevator shaft pressurization is required to protect the shafts from ingress of smoke. Thereby, it restricts smoke spread to elevators & other floors connected to the shaft.

2. Staircase Pressurisation

The stairwell pressurization serves several purposes:
Inhibit migration of smoke to stairwells, areas of refuge, elevator shafts, or similar areas.

Maintain a tenable environment in areas of refuge and means of egress during the time required for evacuation.

Facilitate the fire and rescue operation by improving visibility in the building for the fire-fighting crew.

Facilities egress evaluation.

Smoke Restrictions

07

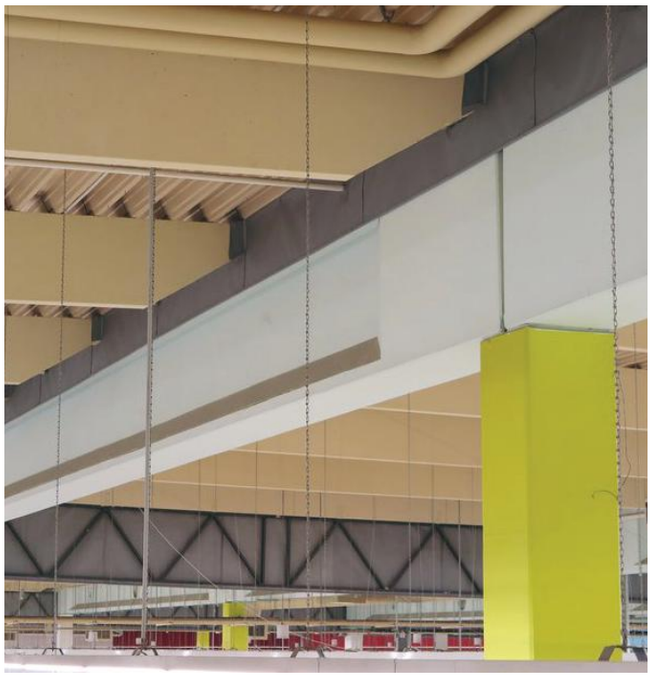
SMOKE RESTRICTIONS

How We Control

Smoke Barrier

A smoke barrier is a continuous membrane that is designed and constructed to restrict the passage of smoke. They can be either vertical, like a wall or horizontal, like a floor or ceiling. Smoke barriers will have a minimum of a 2-hour fire-resistance rating.

Overall, each system compartmentalizes a building into sections that can be closed off from the rest of the building during a fire emergency. Compartmentalizing a building with firewalls, fire partitions, smoke barriers, along with fire and smoke dampers, and fire doors will help guarantee the building will be prepared during the event of a fire. Therefore, the maintenance of each wall, partition, and barrier with the proper fire stopping materials will seal off any holes and gaps and help minimize the spread of smoke.



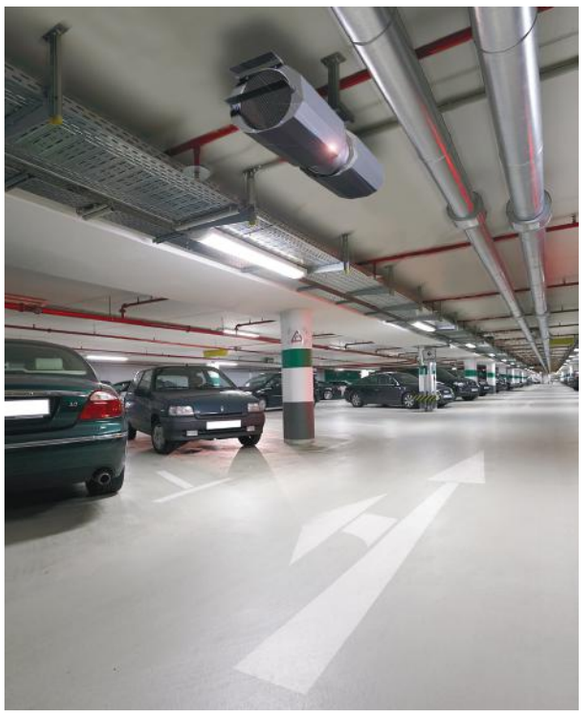
Smoke and Fire Curtains

Simple, efficient and cost effective smoke and fire curtains from NAFFCO are invaluable for protecting the occupants within large open buildings from the threat of fire, smoke and hot gasses. Active smoke barriers provide an unobtrusive and aesthetically neutral solution to compartmentation issues throughout the most complex of buildings. Using the latest CAD and manufacturing technology, we are able to create bespoke smoke barriers for the most complex smoke control system, regardless of the type of building protected and location. Active fire barriers are discreet in design and are suitable for use in a range of fire scenarios. Control systems require minimal maintenance and are designed to be robust and simple, whilst also providing advanced features such as emergency retract, obstruction sensors and audio / visual warnings.

08

Car Park Ventilation

CAR PARK VENTILATION
& SMOKE CONTROL SYSTEM



The ventilation of enclosed or underground car parks, loading bays and service areas fulfils two key requirements: remove the pollutants emitted by cars and, in the event of a fire, control the hot fumes and gases produced by the fire, protecting the escape routes and easing access for the emergency teams.

Car park ventilation systems are designed as per the following codes of practice:

- ✓ BS 7346 Part 7
- ✓ NFPA 88
- ✓ NFPA 92
- ✓ EN 60034
- ✓ Other International Codes of practice
- ✓ Local Authority Regulations

Smoke ventilation systems may be designed in addition to provide clear smoke-free access for fire fighters to tackle the seat of the fire or to protect means of escape from the car park.

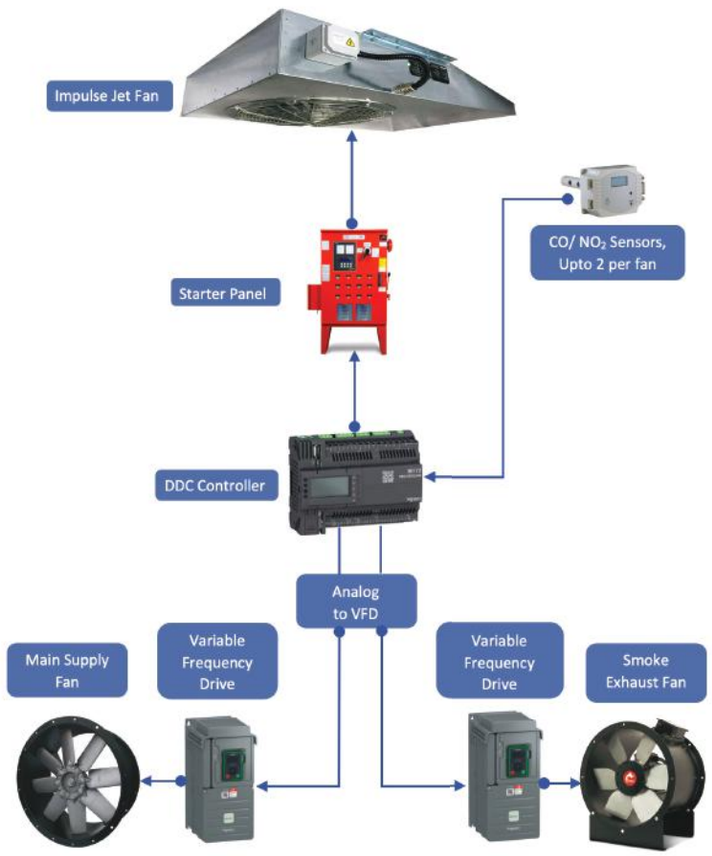
Special Technology

In recent years, the technology used for jet (or impulse) fans has been established as the new standard for normal ventilation and smoke extraction in case of fire in open and semi enclosed car parks. In fact, this technology represents the most innovative and cost-effective alternative to traditional ducted mechanical extraction systems.

System Description

The fully integrated JET FAN includes 6 elements:

- ✓ Main Smoke Exhaust Fans
- ✓ Fresh Air Fans
- ✓ Smoke Extraction Ducts
- ✓ Jet Fans
- ✓ CO Sensors
- ✓ Smoke Control Station
- ✓ Starter Panels
- ✓ DDC Panels



CAR PARK VENTILATION
FOR OPEN AND ENCLOSED CAR PARKING

What We Offer

These are the essential requirements to design the most suitable Smoke Management/ventilation system for a specific car park.

Smoke extraction ducts are used to remove smoke from car park, to enable emergency evacuation of the occupants as well as to improve firefighting and flash-over prevention. This is also called as conventional ventilation system. Our ducted system has been successfully tested and certified by UL in accordance with British Standard “BS476 part 24:1987 (ISO 6944-1985)” for 2 hours fire and smoke rating.

The system is based on placing a set of axial impulse fans (JET FANS) all along the parking area, which Operates in a similar way to a ducted system: when installed on the ceiling, they move the air from the top layers to the bottom layers towards the exhaust areas; by effectively creating a continuous air flow, the JET FANS are able to thoroughly push the air at the bottom and the top layers of the car park, avoiding the creation of areas where air gets trapped.

Compared to a ducted ventilation system, the innovative JET FAN system ensures multiple benefits in terms of low cost and efficiency associated with its design, installation, operation and usage.

Installation

- ✓ It removes the need for costly and complex ducted and grilled systems.
- ✓ The fans are easy to install, ensuring time saving in terms of hours of work.

Benefits

Ventilation can be fully or partly operated: the CO (carbon monoxide) detectors and the smoke sensors ensure that the ventilation located in the parking zones control the pollution levels or signals in the event of fire.

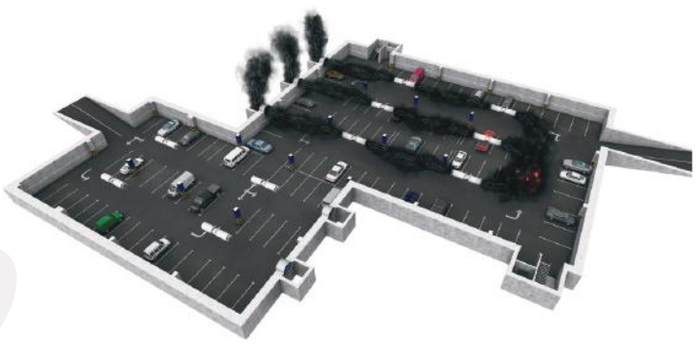
Enclosed or underground car parks normally require ventilation systems to assist fire fighting operations. These systems generally also prevent the build-up of carbon monoxide during normal day-to-day use of the car park.

Design

- ✓ It saves design time as it does not require a complex ducted system to be designed and implemented.
- ✓ The system effectiveness can be measured with CFD (Computational Fluid Dynamics) modelling.

Use

- ✓ Optimized safety in the event of a fire: fast and effective toxic fume extraction, leading to safer escape routes, easier access for the emergency teams, promoting people safety and minimizing the effects of fire on the building structures.

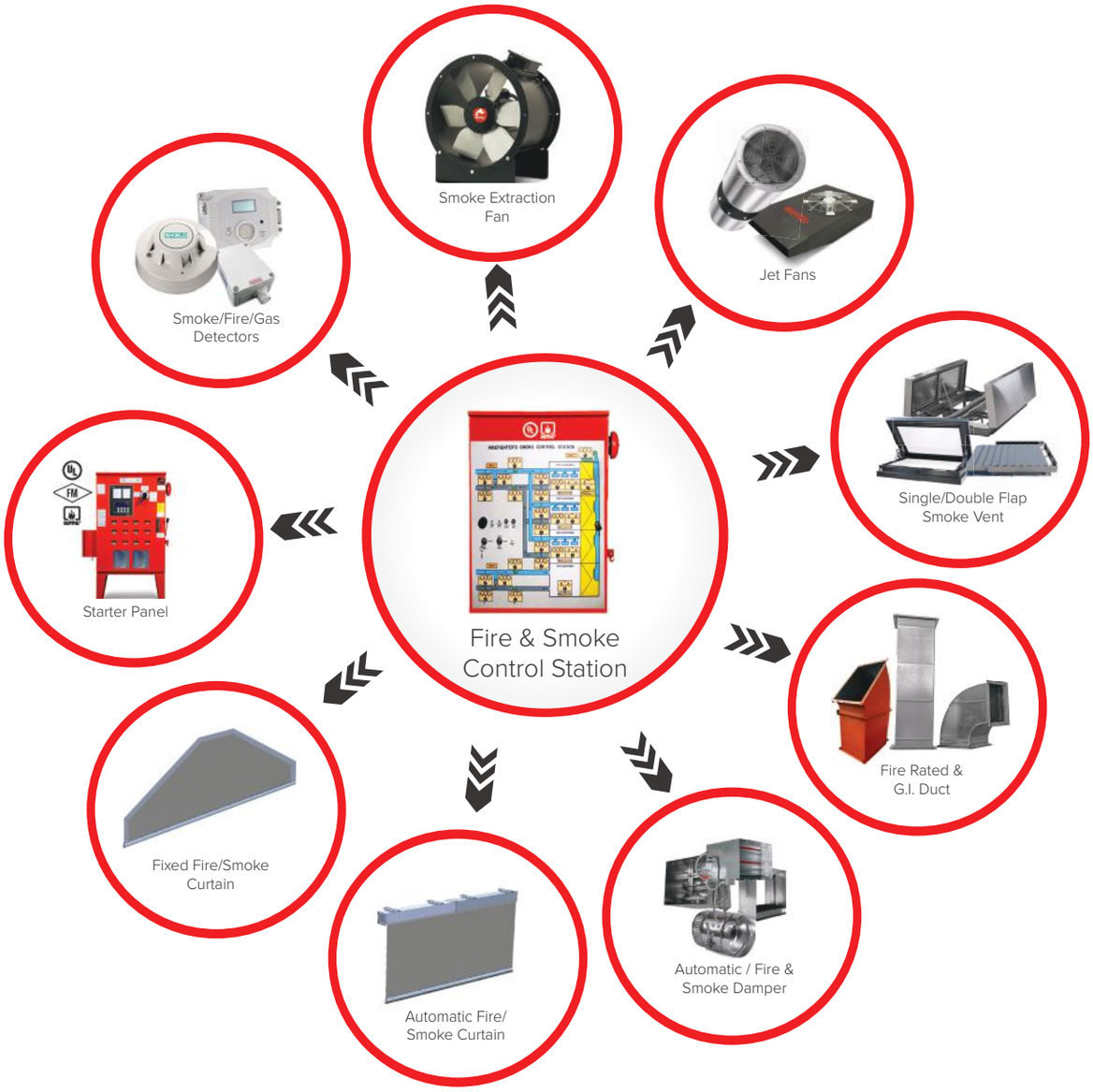


What We Offer

Detection Accessories which ensure Smooth Operation of Ventilation System:

1. Fire/Smoke Detection System

Thanks to fire/smoke detection systems, it is possible to immediately detect fire or a smoke source in car parks and put fire safety systems into use. Sensors are distributed and addressed in car park according to the codes & standards.



2. CO Detection Systems

By means of CO detection systems, air pollution inside car park can be measured at any time. In line with these measurements, ventilation system works at various capacity levels as per the need.

09

Smoke Control Solutions & Products

OUR **PRODUCTS**

What We Have

1. SMOKE EXTRACTION, FRESH AIR SUPPLY & PRESSURISATION FANS

NAFFCO Fans provides state-of-the-art smoke extraction & pressurisation fans.
Which ranges from...

- ✓ High-temperature fans for smoke extraction certified for working at 300°C/2Hrs- 400°C/2Hrs etc. according to EN 12101-3.
- ✓ Explosion proof fans for installation in hazardous areas according to the European ATEX directive 94/9/CE (II 2G or II 3G).
- ✓ Roof fans to extract or intake large volumes of air/smoke with low noise level.
- ✓ Plate mounted axial fans with speed adjustable compact motors or with traditional UNELMEC/IEC electric motors.
- ✓ Ducted/ Wall Mounted Axial Fans , with high efficiency aluminum airfoil impeller, diameter from 300 mm upto 1600 mm and over.
- ✓ Caters for industrial environments including manual and automatic regulators.
- ✓ A series of components as impellers and conveyors, manufactured with materials suitable for different situations (aluminium, technopolymer, stainless steel, painted steel, etc.).
- ✓ Centrifugal fans, cabinet fans speed regulators and accessories.

OUR **PRODUCTS**

What We Have

1. Axial / Ducted Fan
(For exhaust and/or fresh air requirement)

Main duty of the axial fans is the extraction of polluted air and/ or fire smoke from the car park and supply of fresh air from outside the car park. Capacities and power values of axial fans are calculated according to the exhaust and fresh air flow rates specified by guidelines and NFPA codes.

a. Vertical Discharge Centrifugal Roof Fan

b. Roof Mounted Horizontal Discharge Axial Fan

c. Roof Mounted Horizontal Discharge Centrifugal Fan

2. Roof Mounted Fan

Roof mounted fans are designed to extract large volumes of air in roof installations, also in case of fire emergency where it is prescribed the necessity to guarantee the smoke extraction in environments such as car parks, commercial centers, hospitals, theatres, museums, buildings etc.
These fans are suitable to work continuously at the temperature of 50°C and in case of emergency (fire) at the temperature of 400°C for 120 minutes (F400).

Range

a. This line consists of 8 sizes with impeller diameter from 400 up to 800 mm, and 4, 6, 8 pole motors.
b. Roof Mounted Horizontal Discharge Axial Fan - 16 models with diameter from 400 - 1120mm
c. Roof Mounted Horizontal Discharge Centrifugal Fan with Motor of Air 7 models with diameter 190 - 560 mm
d. This line consists of 6 sizes with impeller diameter from 560 up to 1000mm

3. Smoke Vents

Smoke and hot gases are naturally vented with the help of Smoke Vents.

- ✓ Louvred type Smoke Vent
- ✓ Flap type Smoke Vents
- ✓ Complying & tested to requirements of EN 12101-2
- ✓ Available with options:
  - Solid Aluminium Sheet insulated with Mineral Wool/XPS
  - Polycarbonate (opal or transparent)
  - Non-insulated aluminium profile
- ✓ Tested to B300 / 30 min.as per EN12101-2 (Vent resistance to high temperature 300˚C

*Note: As per project requirement Customized Sizes will provide with Cover both Single flap and Double flap.

4. Fire Rated / GI Ducts / Coated Ducts

NAFFCO UL Listed Fire rated GI ducts are used for smoke extraction, ventilation, staircase pressurisation and basement car park which are fire tested to BS 476-Part 24 standard and manufactured with state-of-the-art machines and equipments.

5. Volume Control / Motorised Smoke Dampers

VCD are installed in branches of air distribution duct. The opposed blade dampers are used to carry out a rough air system balance with closer control being carried out at the individual grilles or diffuser. Motorised smoke dampers are installed in duct work to achieve desired sequence of opening in an event of a fire. Normally it is in the closed condition, in case of fire it shall be open up on signal from FACP for the fire zone.

- MSD are designed to install in Smoke Management System ductwork at locations that are designated as smoke barrier for non affected zones.
- It is suitable for vertical installation in walls/partitions and horizontal installation in floors having a fire resistance rating of less than 3 hours (as per NFPA 90A).
- It prevents the spread of smoke inside residential, commercial and industrial buildings.
- Wide ranges are available and approved by international laboratories.

6. Fixed Smoke Curtain

A Smoke Curtain in a building will guide the smoke which consists of gas and small particles sent into the air by burning materials to an extraction system within the building and effectively protect people from exposure to dangerous smoke as well as limits the damage and further spread of fire.

A fixed Smoke Curtain or an automatic Smoke Curtain separates an area and keeps the smoke from spreading from one area to another. Silicone or PU-coated woven glass fabric is used as a standard material to withstand a fire resistance temperature of 600˚C for 120 minutes of exposure to fire.

OUR **PRODUCTS**

What We Have

7. Automatic Smoke/Fire Curtain

A Fire Curtain in a building creates a fire-resistant barrier which protects and separates a part or a section of the building from fire or smoke damage in the event of a fire mishap. The Fire Curtain is a part of the fire safety measure, it is either fixed or it automatically drops and separates the area when activated by fire.

Compared to a Smoke Curtain, it includes a coated glass fabric with stainless steel wire insert as an additional safety measure to offer protection from sudden impacts and to withstand a fire resistance temperature of 1100˚C for 120 minutes or more of fire exposure.

8. Domestic Ventilation Fan

Domestic ventilation fan is ideal to intake or exhaust air through circular ducting in: public locals, offices, shops, bars, pools, laboratories, kitchens, toilets, workshops, restaurants etc.

Range

a. Silent Bathroom Fan - 2 models with diameter from 100 & 125mm
b. Wall Mounted Axial Fan - 4 models with diameter from 200-350mm
c. Bathroom Fan - 3 models with diameter from 100-150mm

9. Starter Panel & Fire/Smoke Control Station

Designed and manufactured to the highest standards in a quality controlled environment and with UL & FM approvals, the NAFFCO/SHIELD panel offers outstanding value and performance for all Smoke Management installations.

The Control Panels are manufactured to the requirements of UL 864.

OUR **PRODUCTS**

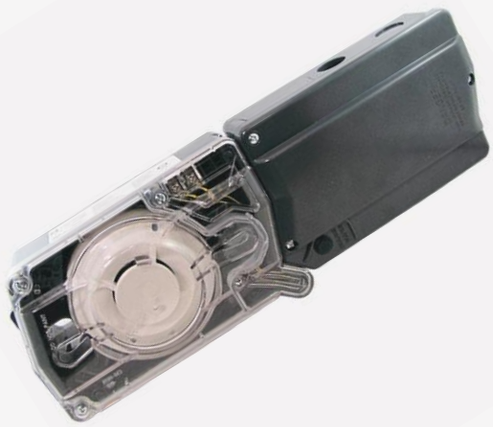
What We Have

10. Carbon Monoxide Detector

The CMD series carbon monoxide detector uses an electrochemical sensor to monitor the carbon monoxide level and Outputs a field-selectable 4-20 mA or voltage signal. The voltage signal may also be set to 0-5 or 0-10 Vdc. The sensing range and output may be scaled to either 100, 150, 300, 400 or 500 ppm via the on-board menu. A front panel LCD is standard to ensure easy setup and operation. It is available in either space or duct mount configurations.

PRODUCT HIGHLIGHTS

- ✓ 0-500PPM range.
- ✓ Analog outputs, 4-20mA or 0-5/0-10Vdc selectable
- ✓ Modbus RTU or BACnet communication
- ✓ Coverage area of 700m2
- ✓ Optional one or two Form C relay with selectable alarm point.
- ✓ Backzlit LCD
- ✓ Front Panel test switch
- ✓ Remote test switch available



11. Duct Smoke Detector

Duct smoke detectors combine an impressive collection of innovations to greatly simplify HVAC system monitoring.

- ✓ 4-Wire Photoelectric, integrated low-flow technology
- ✓ Low flow air velocity rating from 100 to 4000 FPM
- ✓ Plug-in sensor offers superb false alarm immunity and the latest sensor technology
- ✓ 24 VAC/DC or 120/240 VAC operation
- ✓ Two SPDT Form-C relay contacts
- ✓ Easy and quick mounting to round or rectangular ducts
- ✓ One easy-access Test/Reset button and improved LED status
- ✓ Patented sampling tube installs with no tools required
- ✓ cULus and FM Approved

Projects

10

OUR **PROJECTS**

What We Did

With an enduring passion for safety and quality, the company has built a reputation for protecting some of the most iconic and desirable properties in the UAE.


Dubai International Airport, Dubai

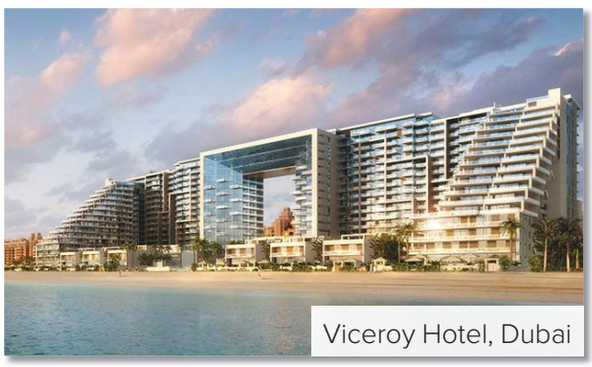

Hamad International Airport, Qatar


Landmark Omega DC, Dubai


Presidential Flight Hanger, Abu Dhabi


Traditional Souq, Abu Dhabi


IKEA Warehouse, Dubai


Viceroy Hotel, Dubai

BRF, Abu Dhabi

OUR **PROJECTS**

What We Did

Emirates Hangar, Dubai


Expo Pavilion


Etihad Rail


The One Jumeraih

Hilton Garden Inn, Dubai


Pad Tower, Dubai


Kempinski Hotel, Dubai


Town Square, Dubai

OUR **PROJECTS**

What We Did


Deira City Centre, Dubai

Al Zahia City Centre, Sharjah

Sharjah City Centre

Lulu Samnan, Sharjah


Warehouse City, Umm Al Quwain


DWTC, Dubai


Al Rayyan Complex, Sharjah


Khorfakkan Tunnel, Sharjah

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