UniJet Car Park Ventilation System.

PACKAGED CAR PARK VENTILATION SYSTEM
DESIGNED TO PROVIDE SMOKE CLEARANCE AND
POLLUTION VENTILATION TO COVERED CAR PARKS

About Group SCS

Smoke control experts with more than 25 years of industry experience

Group SCS is an expert provider of smoke control systems and BEMS, delivering solutions with safety at its core. Our work on thousands of complex UK construction projects and in-depth knowledge of the smoke control industry have paved the way to innovation and given us the expertise required to handle projects of any scope.

What we offer

Smoke Control

Comprehensive packages with innovative open source controls that facilitate integration with our BEMS and fire alarm installations.

BEMS

Cost and energy efficient systems that integrate various environmental controls such as heating, lighting, ventilation and security through one system.

Modular Solutions

A range of standardised modular systems that can be self-selected, specified and purchased through a variety of routes.

Window Technology

A wide range of innovative solutions for the automation of windows, roof & skylights for Natural, Smoke and Environmental ventilation.

Training

Group SCS supports a network of trained Approved Installers, who have expert knowledge of our range and benefit from our ongoing support.

Support & Afercare

Our aftercare, service and maintenance division provides support and ensures that buildings remain safe after handover.

The Modular range

Based on the principle that the lobby, car park and stairwell areas of most higher risk residential buildings (HRRBs) are somewhat similar, we have engineered modular standardised systems that can be self-selected, specified and purchased through a variety of routes including turnkey solution and through a fully trained Approved Installer Network.

UniJet

Overview

UniJet is a packaged car park ventilation system designed to provide smoke clearance and pollution ventilation to covered car parks to comply with current building regulations. As well as that, UniJet meets the standards set out in BS7346 Part 8 (2013) – specifically 'impulse ventilation to achieve smoke clearance'.

System

The UniJet car park ventilation system delivers combined pollution and smoke clearance using jet fans to provide an energy-efficient and safe solution whilst requiring the least possible plant space. The system comprises high temperature extract fans that exhaust smoke and pollution to the atmosphere with strategically positioned jet or impulse fans used to move stale air or smoke to the extract fan positions.

Fully automatic controls monitor carbon monoxide levels and smoke or temperature conditions within the car park and operate the fans at the appropriate level, maintaining safe and comfortable conditions within the car park.

Benefits

Modular design

Packaged main extract plant room including fans, silencers, dampers and control systems. Tested prior to location on-site.

Remote Monitoring

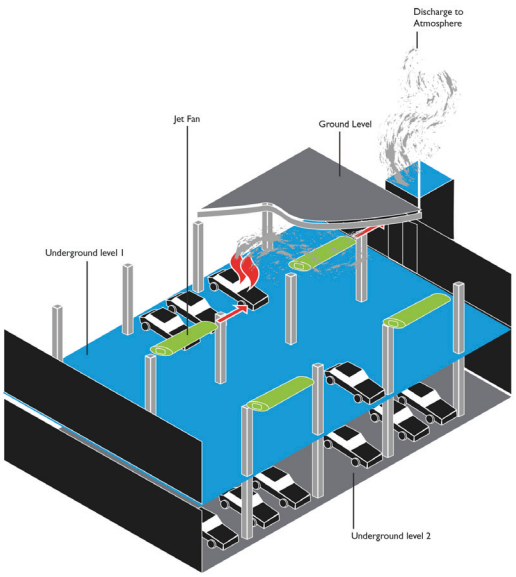
Remote automatic testing, monitoring and reporting is available as standard to ensure the long-term safe operation of the system, reducing maintenance and inspection costs for the lifetime of the building.

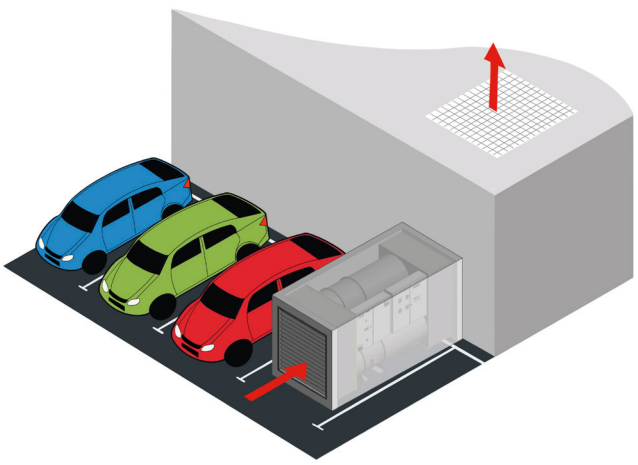
CFD Modelling

Optional CFD models available to support design.

Efficiency

Modular control system incorporating CO sensing for enhanced energy efficiency.





System Components

UNIJET CAR PARK VENTILATION SYSTEM

EXTRACT PLANT ROOM

The Car Park Ventilation Box is a packaged extract plant room suitable for smoke clearance and pollution control systems. It utilises jet and impulse fans for basement car parks and loading bays. The plant room is part of the Group SCS UniJet Car Park ventilation system, which takes a modular approach that utilises a series of matched components together to form a simple, reliable and compliant solution for car parks up to 10,000 cubic metres. The system includes extract fans, control dampers, a fully automatic control system and CO detection.

The box is a complete fire-rated plantroom including extract fans, dampers, silencers, main control panel, automatic transfer switch, inlet grille and outlet connection. The unit is factory assembled, wired and tested for fast and effective installation on-site. The construction is 2-hour fire rated to BSEN13501-2. The Plant Room has been designed to fit in a single car parking space and a range of duties are available to suit the building size.

IMPULSE FANS

High-efficiency axial flow fan with adjustable blades located to achieve the required performance. The fan unit is fitted with inlet and outlet silencers to give minimal operational noise levels. Fans are classified F300 (300C° for 2 hours) to BS EN 12101-3 and inverter-controlled for pollution control.

CONTROL SYSTEM

A tried and tested software programme automates the operation. It is fully customisable and can communicate directly with external systems e.g. BEMS and seamlessly link to other Group SCS modular systems like the UniVent smoke shaft and UniDamp damper control system for a holistic approach to building smoke control. A standard cause and effect is included for pollution control and smoke clearance. The system is fully automatic using CO sensors within the car park to modulate fans so they are only used when needed for energy saving.

ELECTRICAL WIRING

The electrical wiring for the system is in accordance with BS8519 to the following categories.

Fan Cabling	BS8519 - Category 3
Controls Cabling	BS8519 - Category 2
CO Detection Cabling	Non-fire rated CY screened cable

EYEBALL

All Group SCS standard systems have access to the entire set of functionalities of the Eyeball remote monitoring and self-testing system.

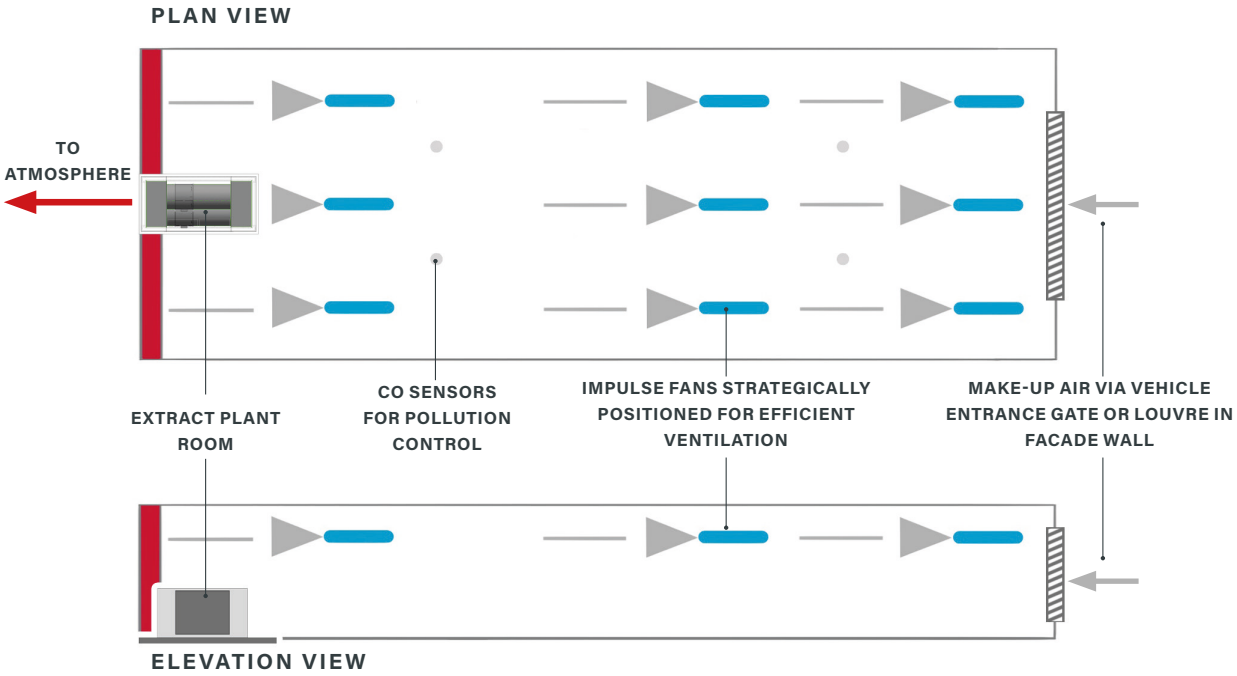
Eyeball can remotely provide you with essential insights to the overall health of your system. Our software offers the ability to schedule a self-test sequence, as well as monitor a system's functionality. This means that the system will cycle through all system components and submit a report detailing whether there are any faults that require further investigation. Eyeball can be set up so that system activations and faults are emailed and/or texted through to a nominated person who can then escalate as necessary.

Group SCS' Support and aftercare team can remotely log into a system set up with Eyeball and view key events displayed on the system HMI (touch screen display). This enables our experts to vet issues and perform basic tests so a decision can be made about whether a callout is necessary.

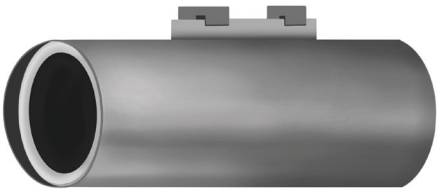
Illustrations

UNIJET CAR PARK VENTILATION SYSTEM

General arrangement



Impulse fans



Extract plant room details

ELEVATION
(WITH ACCESS DOORS REMOVED)

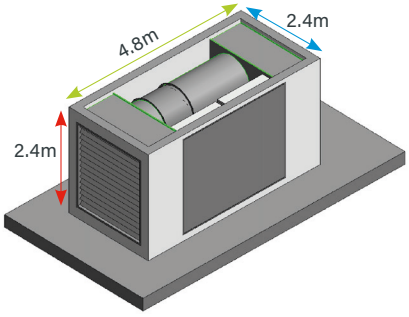


DIAGRAM FOR REFERENCE DIMENSIONS

Selection Guidance

UNIJET CAR PARK VENTILATION SYSTEM

Selection and budget table

Group SCS has developed a range of modular solutions for single level simple car parks for fast selection and specification based on typical arrangements for impulse fans. These can be used for early stage design and budgeting purposes with costs, specifications, builders work and electrical loadings available for instant download. The selection table below can be used to obtain a system code.

System Type	Car Park Volume m³	Plantroom Model	Quantity of Impulse Fans	Electrical Supply 400v	Plantroom Dimensions
CPV/750	2,000	A	2	34A	4.8m X 2.4m X 2.4m
CPV/1000	2,750	A	3	34A	4.8m X 2.4m X 2.4m
CPV/1250	3,400	B	4	60A	4.8m X 2.4m X 2.4m
CPV/1500	4,125	B	4	60A	4.8m X 2.4m X 2.4m
CPV/1750	4,800	B	5	60A	4.8m X 2.4m X 2.4m
CPV/2000	5,500	C	6	90A	4.8m X 2.4m X 2.4m
CPV/2250	6,200	C	7	90A	4.8m X 2.4m X 2.4m
CPV/2500	6,800	C	7	90A	4.8m X 2.4m X 2.4m
CPV/2750	7,500	C	8	90A	4.8m X 2.4m X 2.4m
CPV/3000	8,200	C	9	90A	4.8m X 2.4m X 2.4m
CPV/3250	8,900	D	9	125A	4.8m X 2.4m X 2.4m
CPV/3500	9,600	D	10	125A	4.8m X 2.4m X 2.4m
CPV/3750	10,300	D	10	125A	4.8m X 2.4m X 2.4m

Smoke Control Systems

UNIJET CAR PARK VENTILATION SYSTEM

Overview

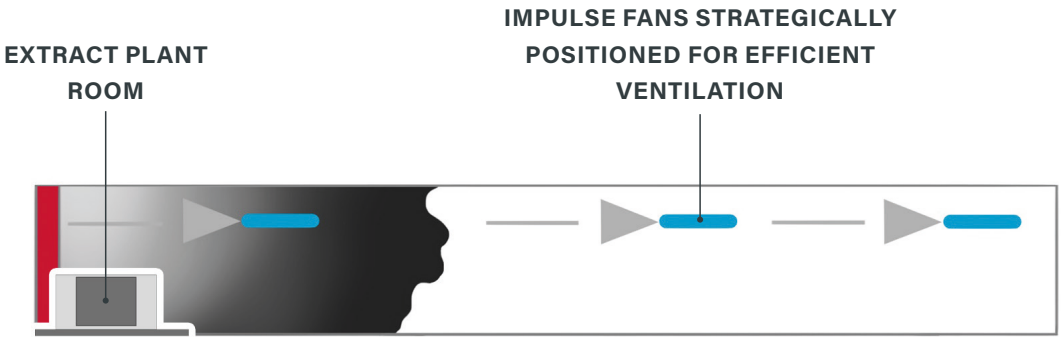
By using jet fans it is possible to provide a more sophisticated system than 'smoke clearance' which is intended to offer safe conditions for occupants escaping the car park, and to assist firefighters in locating and extinguishing the fire.

Design for a fire

The extract rate for a smoke clearance system is relative to the size of the car park, whereas a smoke control system is designed to extract smoke for a given fire (e.g. 4MW for a car park with sprinklers or 8MW if sprinklers are not provided) and is independent of the overall size of the car park.

Develop a control philosophy

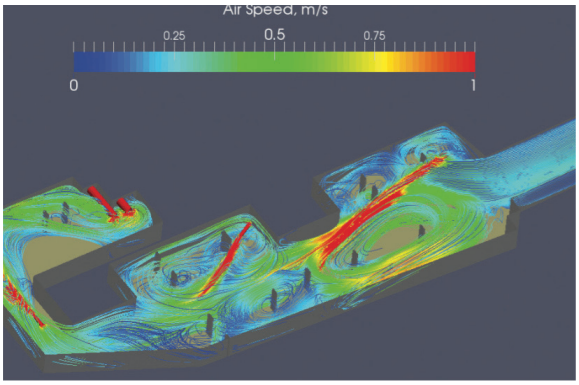
Independent control of fans is required to cater for fires occurring in different zones within the car park. Reversible jet fans are available and can be programmed to drive smoke in opposite directions dependent on the fire location.



ELEVATION VIEW

CFD

Computational Fluid Dynamics (CFD) is often used to help design complex smoke control systems and is a useful tool for predicting their performance in both fire and pollution control modes. CFD models are not usually required for smoke clearance systems.



Installation options

UNIJET CAR PARK VENTILATION SYSTEM

Specialist contracting

BESPOKE SMOKE CONTROL AND BUILDING ENERGY MANAGEMENT SYSTEMS

More than 25 years of operating in the smoke control industry have made us experts at what we do. Group SCS offers a range of specialist solutions for smoke control and Building Energy Management Systems (BEMS) that you can benefit from in your projects. Our team of project managers and technical specialists will work alongside you every step of the way to help you deliver exceptional results.

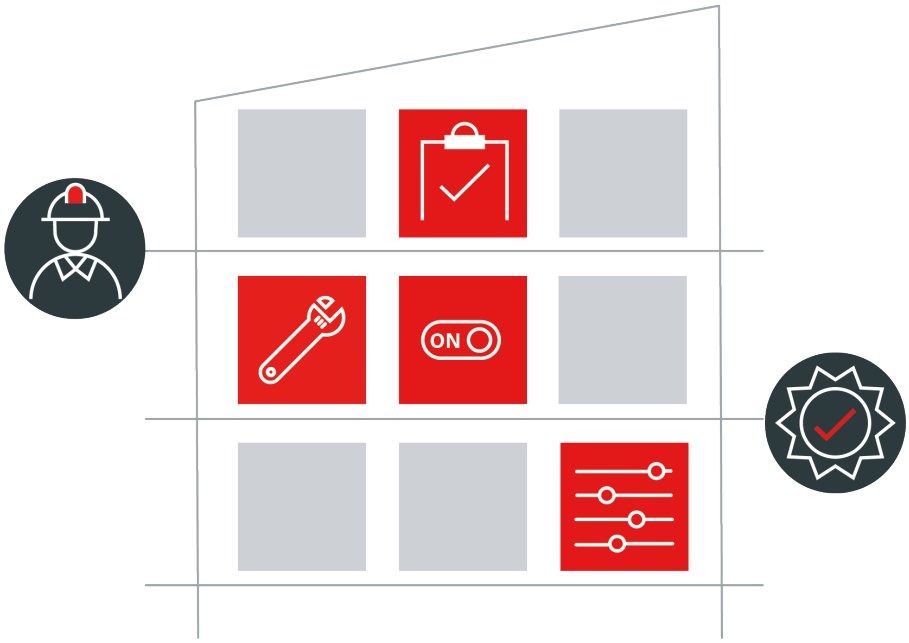
To contact our Specialist Contracting division, please email your query to us at **precon@groupscs.co.uk**.

Approved Installer Network

A NETWORK OF CONTRACTORS TRAINED BY SCS GROUP

We maintain a high standard and this extends to our Approved Installer Network. By choosing to work with a Group SCS Approved Installer, you benefit from their skills and experience, as well as the support and expert knowledge of Group SCS.

To find an Approved Installer in your area, visit **our website**.



The Modular Range

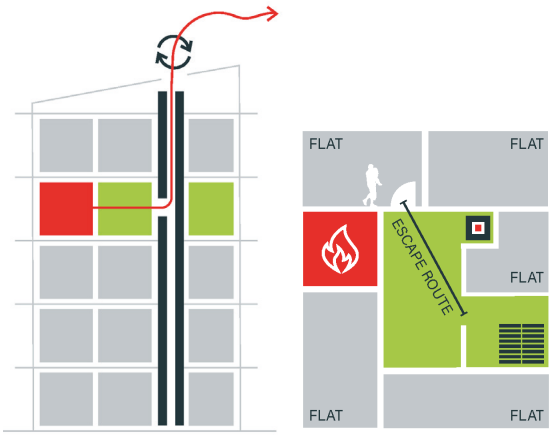
MODULAR SOLUTIONS FOR SMOKE CONTROL

UniForce

MECHANICAL SMOKE EXTRACT SYSTEM FOR LOBBY PROTECTION

OVERVIEW

UniForce is a fire engineered smoke control solution designed to extract smoke from the lobbies while fresh air is drawn in from the staircase to maintain suitable conditions both for means of escape and firefighting.



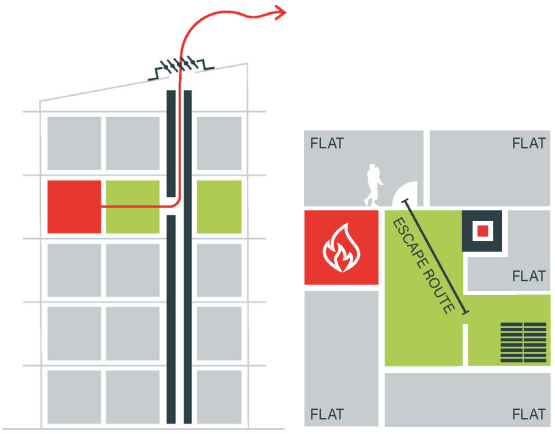
UniVent

NATURAL SMOKE SHAFT (BRE SHAFT)

Compliant with Approved Document B 2013

OVERVIEW

Designed using the fundamentals of lean construction, UniVent requires no bespoke design or on-site programming and is automatically configured to operate to the design control philosophy. The system works straight out of the box and can be used on most higher risk residential buildings.

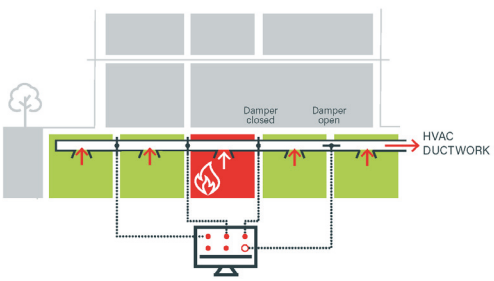


UniDamp

UNIVERSAL, FULLY ADDRESSABLE DAMPER CONTROL SYSTEM

OVERVIEW

A universal, fully addressable damper control system suitable for most fire and smoke dampers that is easy to install, commission, monitor and maintain. UniDamp is the only damper control system you will ever need.



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