Gas protection

PAGeoTechnical

Clean Air Blanket

Active gas protection for development on contaminated land

- Ventilation with Active Pressurisation
- Modular
- Guaranteed performance
- Compliant with BS8485
- BRE approved
- Minimal impact on construction programme
- Full efficacy indemnity

Clean Air Blanket building protection

The re-use of previously used sites for development, as well as building on or near previously filled sites, is now quite normal in the UK. The Government's "Brownfield First" policy, encouraging the use of such sites, coupled with their desirability due to location, makes these sites sought after. Historically, the more complex sites and large footprint buildings required very complex gas and vapour protection systems, but over the past few years, active ventilation systems have developed to such an extent that they too can be considered "mainstream". Clean Air Blanket (CAB) has been at the forefront of managing risk in industrial / commercial buildings for over 30 years and today offers cost effective gas protection for a myriad of building types.

A CAB system maintains a zone of positive air pressure beneath a building that dilutes and disperses any gas emerging from the ground. To do this, air from outside the building is introduced beneath the building via a system of pipes and diffuser heads. The air pressure is then equalised at the perimeter of the building.

CAB provides complete peace of mind for both specifiers and owners of buildings. The fitness for purpose of each CAB installation is underwritten by product liability insurers. The system is also approved by BRE.

Furthermore, all installations include sampling probes which enables checking of the gas regime under the building at any time. Real time provability of CAB offers unparalleled confidence.

CAB's credentials

Accreditation

CAB is approved by the BRE.

Provability

All CAB systems include sub-slab sampling probes enabling post-construction validation.

Surety

CAB systems carry full efficacy indemnity insurance demonstrating 'Fitness For Purpose' and can be demonstrated by calculation.

Compliance

CAB systems meet current guidance as detailed in CIRIA C665 and BS 8485 code of practice.

Integrity testing / Validation

In accordance with guidance under BS8485: 2015, Table 7 the installed gas membrane where required as part of the design is independently validated in accordance with CIRIA 735.

CAB's track record

PAGeoTechnical is pleased to work in partnership with Prestige Air Technology Ltd., the experts in air pressure technology.

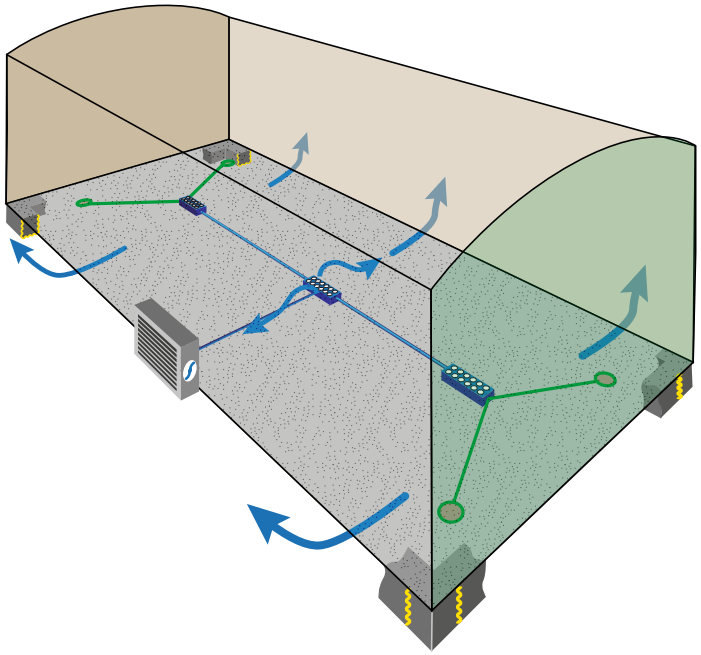
Clean Air Blanket was developed over 20 years ago by Prestige Air Technology, in conjunction with the Environment Agency and specialist consultants. It has been successfully used to protect many hundreds of buildings on some of the most contaminated sites.

CAB is protecting the premises of some of the biggest names in the UK, including ProLogis, Sun Alliance, ASDA, B&Q, Tesco and many more.

PRESTIGE AIR TECHNOLOGY

CAB systems in detail

Positive Pressurisation



Key

Fresh air

Ground gas

Slab

Subfloor

Delivery manifold & diffuser

Probe tube & probe

Positive Pressurisation Unit (PPU)

PAG gas resistant membrane

Damp Proof Membrane

PAG6 wrapped geocomposite

Low Energy CAB

For low-moderate gas regimes (CS2/CS3)

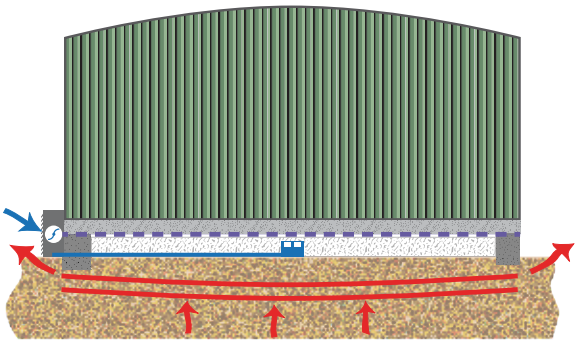
In the *Low Energy CAB* system Positive Pressurisation Units (PPU) introduce air beneath the building via a manifold of pipes and diffuser units. This creates a zone of positive pressure which is at its greatest at the underside of the slab, dropping away to atmospheric pressure lower in the ground. This air mass is constantly dispersing around the perimeter, together with any gasses from the sub-strata, whilst being continuously supplied with fresh air from the PPU. Remote status indicators are installed to warn of a power down event. Telemetric monitoring via GSM is also available.

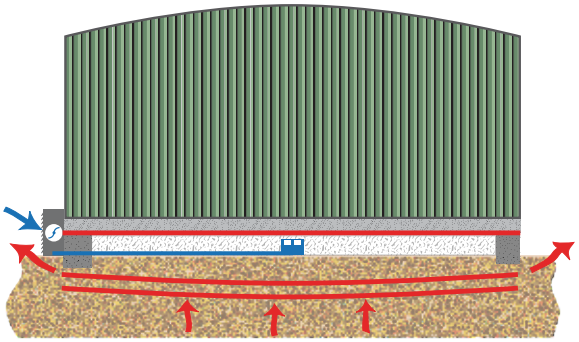
The system is commissioned and balanced using the sub-slab probe monitors. It then only requires a simple annual service to maintain performance.

CAB with gas membrane

For moderate – high gas regimes (CS4/CS5)

CAB with gas membrane is the ultimate Clean Air Blanket system and is designed for sites where extra safety margin is needed. It uses the same system of positive pressurisation that is used in Low Energy CAB, but is capable of handling a greater volume by utilising more PPUs. An integrity tested gas membrane provides a further layer of security.





Components of a CAB system

PPU

Designed specially for CAB applications, the Positive Pressurisation Unit (PPU) is patented and is the only unit of its kind designed solely for gas control. The number of units is carefully matched to the site and building type and forms part of the design process. It comprises an air delivery system protected by two filters, and a control system, pressure sensor, safety valve and speed controller. A Remote Status Indicator system allows notification of power down and this is compatible with telemetry systems, if required, to alert the 24hr call out service. The PPU is enclosed in a weatherproof external enclosure, and the design of this can easily accommodate architects' or designers' requirements.

PPU

Manifold

Gas barrier

Manifold / diffuser

The manifold comprises 100mm plastic pipework connected to diffuser units.

PAG Gas Barrier

The gas barrier can either be a gas resistant membrane or a combination of concrete floor and damp-proof membrane. PAGeoTechnical is always careful to choose good quality proven products and offers its own range of approved gas membranes. Installation services meet the highest quality standards in accordance with latest guidance.

Retro-Fit

A problem that is often faced by property owners is that buildings may have been constructed on or near contaminated sites before contaminants were identified, or previously installed systems have proved inadequate.

By using techniques such as thrust boring and horizontal moling, a Clean Air Blanket can be introduced under an existing building. It is also possible to break into the sub-floor void of a suspended building, or into an existing passive system which has failed. The installation is typically non-disruptive to the normal occupation or the fabric of the building and operates in the same way as a new-build system. It is commissioned and balanced in the same way.

Retrofit systems must be of sufficient strength to both purge accumulated gas and prevent any further accumulation by reversing the localised pressure gradient. Because of the uncertainty that may exist about the condition of ground below an existing site, it is also important that a retro-fit installation has in-built flexibility.

PAGeoTechnical is the marketplace leader in the design and supply of gas protection solutions for contaminated land and brownfield sites for housing, commercial use or industry. Our other services include containment, landfill and bioremediation. With its associated companies, PAGeoContracting and PAGeoConsulting, PAG can act as consultant, supplier or installer – according to clients' requirements.

PAGeoTechnical

PAGeoTechnical Ltd, Darwin House, Corby Gate Business Park
Priors Haw Road, Corby, Northants NN17 5JG

Telephone: 01536 740040
Fax: 01536 740044
Email: office@pageo.co.uk

www.pageo.co.uk