PRICE TWA

Natural Ventilation Systems

10.2010

Engineered Solutions

Introduction

One of the UK's leading manufacturers and distributors of heating and ventilation equipment, Price TWA works with architects, M&E consultants, building and heating contractors and facilities managers, to design, develop, supply and install high quality solutions to meet the specific needs of individual projects.

With over a decade's experience, our products and systems are proven in projects across a wide range of applications and sectors in both the public and private sector. From health to retail and education to commercial offices, our systems feature in both new-build and refurbishment projects throughout the UK.

We manufacture a wide range of systems under the Price TWA brand, supplemented by products drawn from some of Europe's leading manufacturers allowing us to provide high quality yet cost-effective solutions for a host of applications.

For more details about any of these products **call your local distributor.**

Natural Ventilation

Natural Ventilation is a proven technique which uses a building's structure, layout and openings – in combination with naturally occurring elements, such as wind and air flows – to manage the supply, movement and removal of air through a building, efficiently and cost-effectively.

This process of natural ventilation is managed either by 'wind-driven' or 'stack ventilation' systems – or a combination of both.

Wind driven systems are often roof mounted and provide cost-effective ventilation to building occupants. Utilising key elements of the design of a building, these systems essentially take advantage of the naturally occurring passage of air.

Stack ventilation systems rely on the temperature variation between the inside of buildings and external conditions. When there is a temperature difference between these two pockets of air, warmer air will rise above the cold air, creating an upward air stream and so providing flow through a building.

In our experience, along with good thermal mass, the most efficient and effective naturally ventilated buildings invariably incorporate a combination of both systems.

As well as products and systems to meet Natural Ventilation requirements, our range also includes:

- **Radiant panels**
- **Fabric ducts**
- **Kitchen ventilation**
- **Fans**
- **Displacement systems**
- **CAV and VAV systems**
- **Grilles and diffusers**

Designing Natural Ventilation Schemes

Typically the design of an effective Natural Ventilation scheme requires a number of key factors to be taken into consideration, including:

- **The location and orientation of the building**
- **The structure and size of the building and the position of all its openings (including flues and chimneys)**
- **The building's construction method and structural format**
- **The internal layout of the building and the configuration of partitioning**
- **The position and size of any external influences – for example neighbouring buildings, walls and screens**

With a wealth of experience in the design and development of Natural Ventilation systems, Price TWA can take any project from initial design right through to installation on site.

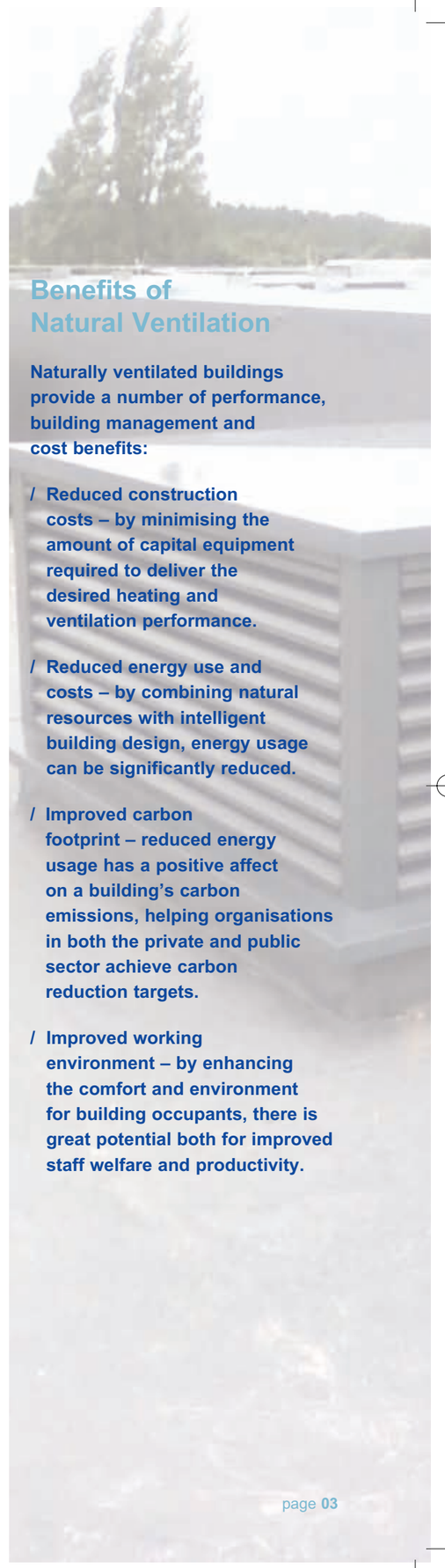
Working in close partnership with design and construction project teams, our technical support team is able to offer guidance and design support for projects of all scope and type – whether new build or refurbishment.

We have developed a range of product solutions that are appropriate for the majority of new build projects. These systems are proven in applications throughout the UK, in projects of widely varying scale and complexity.

However, we are equally able to develop bespoke system configurations to suit the specific requirements of individual projects – including the development of computer-based control systems.

We are also able to undertake analysis to develop detailed design proposals or, undertake a full thermal modelling analysis, to ensure that any proposed design solution will deliver the required levels of heating and ventilation performance.

If required once the Natural Ventilation design has been agreed, our own team of experienced engineers can carry out full installation work. This allows us to offer a seamless service, from initial design ideas right through to installation and ongoing maintenance.



Benefits of Natural Ventilation

Naturally ventilated buildings provide a number of performance, building management and cost benefits:

- **Reduced construction costs – by minimising the amount of capital equipment required to deliver the desired heating and ventilation performance.**
- **Reduced energy use and costs – by combining natural resources with intelligent building design, energy usage can be significantly reduced.**
- **Improved carbon footprint – reduced energy usage has a positive affect on a building's carbon emissions, helping organisations in both the private and public sector achieve carbon reduction targets.**
- **Improved working environment – by enhancing the comfort and environment for building occupants, there is great potential both for improved staff welfare and productivity.**

Natural Ventilation Systems

Our extensive range of products has been developed to meet construction, design, performance, cost and aesthetic requirements, with a number of generic unit types and mounting options:

/ **Low level, wall mounted**

/ **High level, wall mounted**

/ **High level, roof mounted**

/ **External – low level intakes**

System Components

We draw together different elements from our range of system components to meet individual project needs; the range includes Louvers, Dampers and Heater Batteries.

Louvres

Louvres are available in a wide range of options – including size, material, blade configuration and mullion type. Finish options include powder coating to any RAL or Syntha Pulvin colour specification.

Standard single bank systems – manufactured from high quality, roll-formed aluminium, these systems are particularly suitable for applications requiring high volume ventilation (such as air conditioning or plant rooms). A wide range of blade profiles is available, depending on location, and banks of virtually any size and shape can be constructed to suit specific performance and design needs.

High performance single bank systems – for areas that require improved weather protection, this extruded aluminium system delivers a high air flow rate, whilst providing enhanced levels of weather protection.

Triple bank systems (for extreme weather protection) – for applications that require the maximum degree of weather protection, without compromising airflow, triple bank systems are the ideal solution. This range performs to Class A of the HEVAC weather test standard – test certificates may be obtained from our technical support team if required.

Benefits of Wind Driven Ventilation

Wind driven ventilation affords a number of benefits:

/ **Utilising a naturally occurring, readily available and free resource**

/ **Cost-effective installation**

/ **User-friendly systems which are easy to operate and control systems**

/ **Environmentally friendly, sustainable systems help reduce carbon emissions**

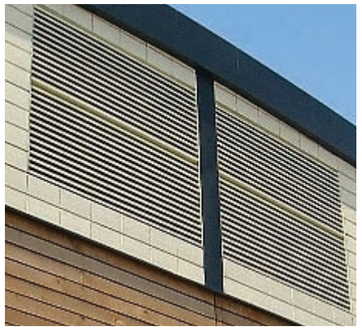
/ **Reduced energy, running and maintenance costs**

Chevron and double blade systems – with two sets of louvre blades inclined at 45 degrees, these systems are particularly appropriate where it is necessary to provide a visual barrier, or for additional weather protection on exposed sites.

Security louvers – where security or vandalism concerns exist, security louvre are available in high grade steel, suitable for even the most demanding applications.

Penthouse and turret systems – used to screen roof-mounted air intakes from view, these four-sided louver systems are supplied with an integral pitched or sloping roof and are available in a variety of blade configurations to suit particular design and performance needs.

Sand trap/water elimination units – these units effectively separate, trap and remove sand or water in particularly harsh environments, whilst continuing to provide an uninterrupted flow of filtered air.



Benefits of Stack Driven Ventilation

Stack driven systems offer several key advantages

/ **Functions effectively even on still summer days – without the need for wind**

/ **Utilises a naturally occurring thermal force (rising hot air)**

/ **Air flow is more stable and predictable than wind driven systems**

/ **More options are available in the design of air intake areas**

/ **Delivers an environmentally friendly, sustainable solutio**

/ **Low installation, energy and maintenance costs**

Dampers

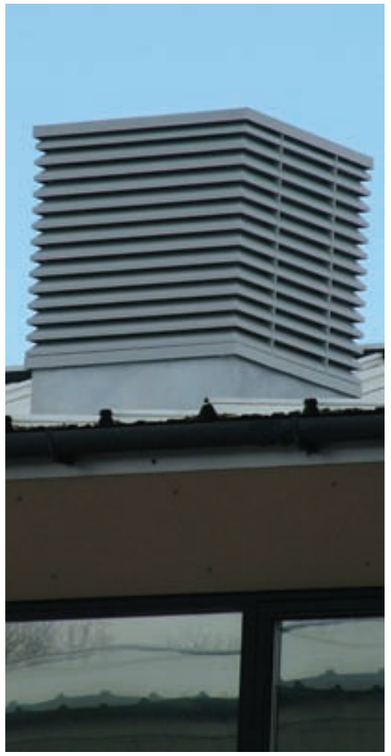
Our range of dampers are available in a number of options to suit different design needs, including models with stainless steel and insulated casing and with either manual adjustment or actuator operation.

Tight shut off (to EN1751 Class 4) and thermally insulated – this unit is used to shut off airflow in ductwork where tightness, thermal insulation and reliability are important.

Interlocking blade (tight shut off – suitable for smoke control) – for applications where smoke control is also required these units' interlocking blades provide tight shut off.

Slim profile damper – for applications with smaller openings.

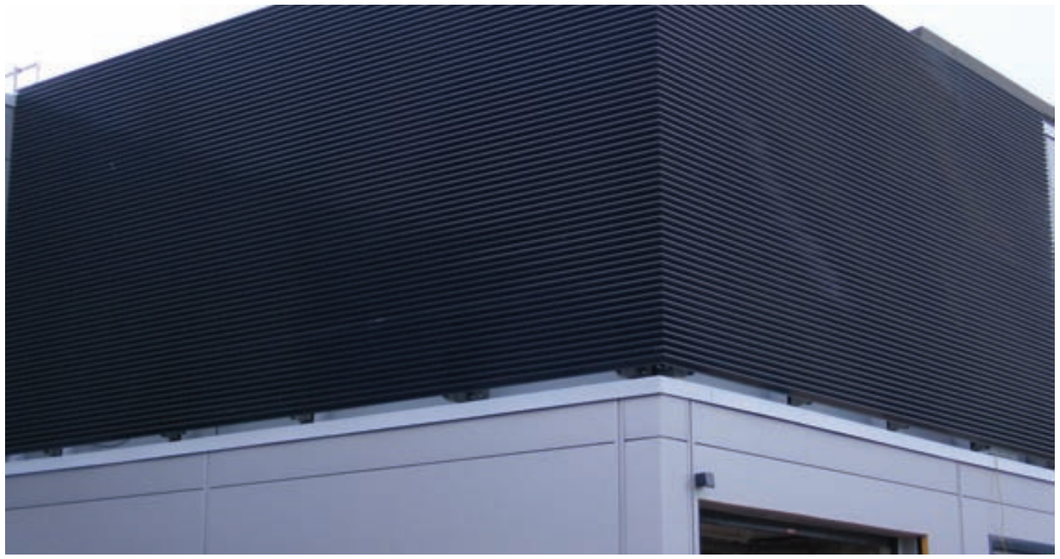
Combined louvre/damper arrangement – where space is at a premium or there is insufficient room to install a damper behind a louvre, a number of combination options are available.



Heater Batteries

Our heater batteries and controllers have been developed to suit a wide range of applications. If required, products may be incorporated to temper air inlet for low level systems.

For more information on our range of natural ventilation systems **please contact your local distributor.**



Services

Our dedicated technical and product support teams offer a comprehensive range of services – from application analysis, product advice and design, through to scheduling supply. If required we also offer a complete installation and maintenance service through our national network of specialist engineers, enabling us to take responsibility for the whole life of our products.

With an extensive product range we are able to offer standard solutions for the vast majority of applications. However, we are also able to draw on our design and development capability to develop bespoke solutions, including control systems to meet particular application requirements.

For more information on our Natural Ventilation systems, or to discuss specific project requirements, **please contact your local distributor.**

Testing

For copies of relevant test certificates **please contact our technical support team or visit our website www.pricetwa.co.uk.**

Local Distributor

For more information on our range of products and systems or our technical design and support services, please contact us.

Price TWA

Unit 1 Smiths Forge Industrial Estate
North End Road Yatton
Bristol BS49 4AU

Telephone **+44 (0)1934 835 900**
Email **sales@pricetwa.co.uk**
Visit **www.pricetwa.co.uk**

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