TEDDINGTON AIR CURTAIN SYSTEMS

SHOP & BUSINESS DESIGN INDUSTRIES

The Reference in Air Curtain Technology.

TEDDINGTON

It's definitely more than only hot air.

Air curtains, castles in the air, hot air ... What are air curtain systems used for?

We all know the physical effects of hot air: “Hot air rises” – a law of nature which is effectively used primarily by balloonists or glider pilots.

However, this effect is not only beneficial. It causes a loss of warmth when doors are left open. These unpleasant consequences of thermal currents as well as the cold air inlet are countered by our air curtain systems.
The benefits for you: Distinctly lower energy costs and higher comfort.

The first air curtain systems used warm rising air at the permanently open doors of department stores in the 1960s. In this respect you may be reminded of the famous picture of Marilyn Monroe standing over an air shaft of Manhattan’s underground.

The aim of the new technology at the time was to protect the sales area against cold air. Air curtain systems are still used for the same purpose today – among other things. Only the air guide system as such has been adapted to the technical progress. Today, the curtain is operated more comfortably from top to bottom.

We are in the vanguard of progress with respect to the air curtain principle. Or rather, we have taken the lead, and have opened up many new applications.

Almost everywhere, where differently conditioned air meets, the systems produced by Teddington offer economical and aesthetically attractive solutions for more comfort – and that in well-nigh innumerable fields of applications.

Warm air rises. Balloonists use this principle of thermal currents to rise into the skies.

We act against the laws of thermal currents in order to reduce your costs of energy.

It's no trick, it's only physics.

The functional principle of air curtain systems:

In each highly frequented building, physics takes upon itself to ensure a proper compensation of air masses.

What has been expensive to heat up, now disappears through doors and gates.

It is the task of the air curtain system to counter the unpleasant entry of cold air **K** in the entrance area with a counter current **H**.

In the process volume flow, velocity, temperature and impulse have to correspond to the value of the entry of cold air.

The air curtain jet stream **R** consists of the horizontal and vertical components required.

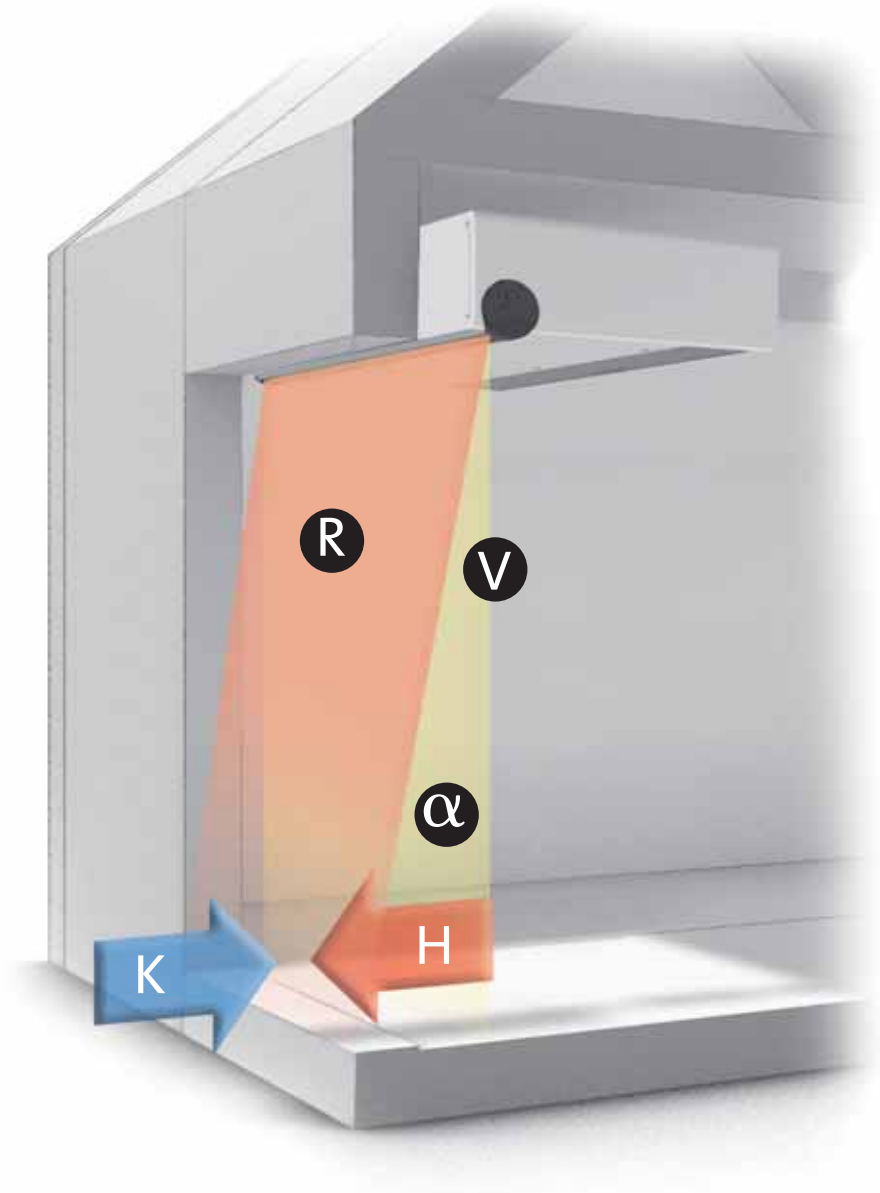
We have taken the principle of the air curtain technology one step further. Quite some astonishing things have cropped up:

Integrated energy saving.
Air curtain systems contribute considerable to saving energy costs. Even up to 80% with our patented EVOLVENT® system.

Integrated sales psychology.
In a shop with just the right temperature without unpleasant draught, the customers are distinctly more willing to stay and the inclination to buy something increases.

Integrated environmental protection.
The energy savings of the operator also result in a lower production of energy required in the end, which is good for the environment.

Integrated good climate.
Unpleasant smells or dust developments, for example, can be shielded in industry. Moreover, the sick list of the staff members is significantly reduced, if an air curtain system is installed, because the systems ensure a permanently good climate.



The EVOLVENT® air curtain system produced by Teddington controls exactly the blow-out angle α, the volume current R and the velocity V, thus producing counter force **H** as a counter impulse to the cold air inlet **K**.

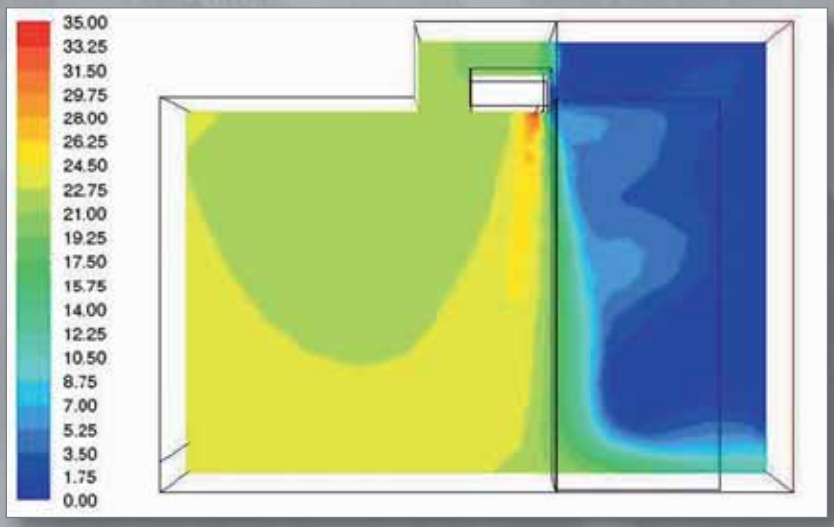
An air curtain system from a scientific point of view.

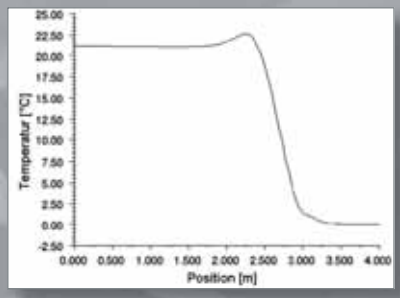
Within the framework of a diploma thesis written at the Department of Technical Building Equipment, Plants, Energy and Machine Systems of the University of Applied Science of Cologne, the mechanisms of an air curtain system was scientifically examined in a testing chamber in 2007.

The drawings show the cross section of the testing chamber. The course of temperature as well as the course of the air velocity are shown when the system is in operation.

The graphics of the temperature differences in particular render clear the precise screening of the plant.

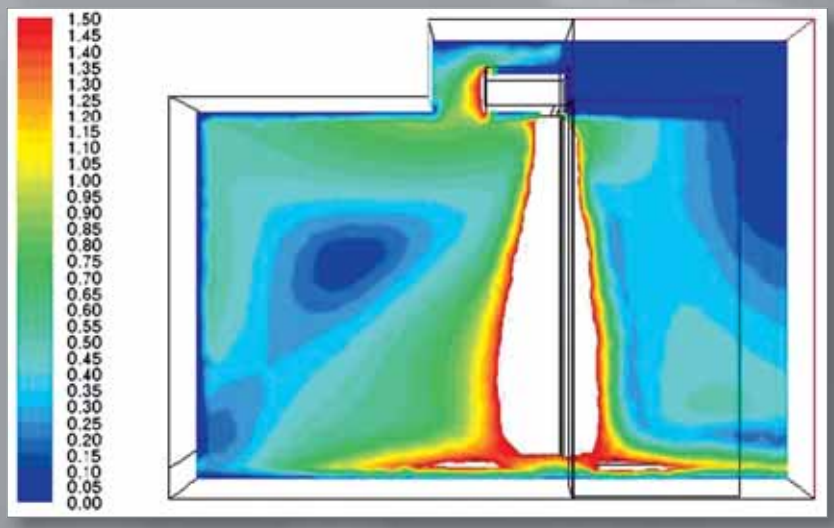
By means of a company testing chamber (right), the systems newly developed by Teddington are tested thoroughly and important experience is gathered for the layout of air curtain systems.

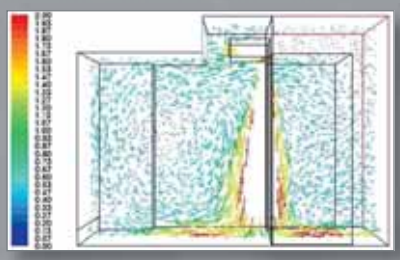




Left: The thermographic chart of the testing chamber reveals clearly the effective screening of the cold air (blue).

The temperature curves (top) also substantiate the effectiveness of the air curtain system.





Left: Chart of the course of air velocity in metres per second.

Top: Diagram of the air velocity vectors.

The nozzle makes the difference.

EVOLVENT®

Pressure-chamber nozzle system

Patent No. DE4415079C2

In the 18th century, Giovanni Battista Venturi discovered that the velocity of flow in a pipe is highest where the pipe is narrowest. Presumably, he did not even suspect at the time which benefit this observation would have some time later.

Today, we find this so-called "Venturi principle" in many technical fields – from vacuum technology and vehicle carburettors to comfortable wine decanters.

In 1994, we adapted this principle to the air curtain technology and made it usable for you.

Something genius will always be state of the art.

Our patented pressure-chamber nozzle system EVOLVENT® utilises the Venturi principle and is far superior to conventional systems with air guide ducting by means of lamella.

In the EVOLVENT® system, the air current is compressed in the pressure chamber and is equally spread across the entire blow-out width by the nozzle. By means of the concave nozzle cheeks, the air current is accelerated to such an extent that a concentrated low-eddy air curtain is produced with a high penetration depth.

By turning the nozzle, the blow-out direction can be set precisely. Compared with a conventional system, distinctly less air is required and thus less energy.

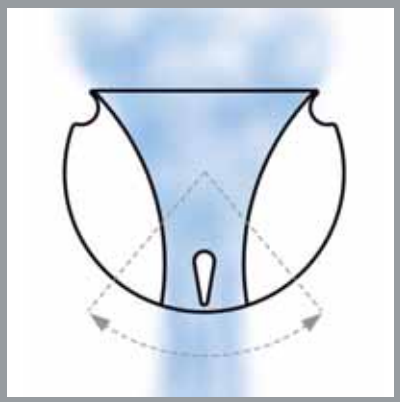
Given the same screening performance, EVOLVENT® saves up to 40% of energy compared to conventional air curtain systems.

Given today's energy prices and their foreseeable increases, this is a decisive advantage.

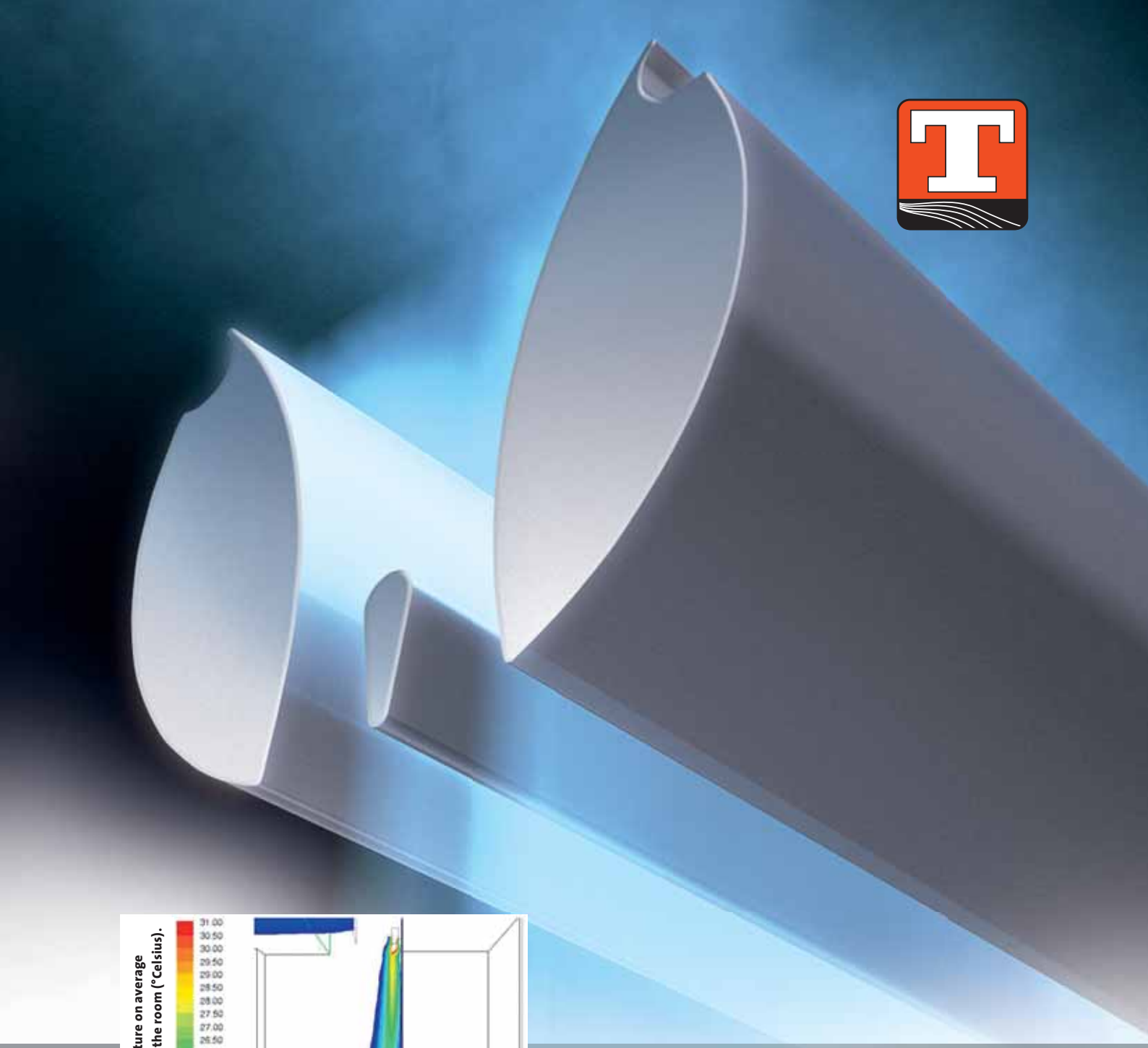
The energy-saving pressure-chamber nozzle system is available only in the air curtain systems manufactured by Teddington.

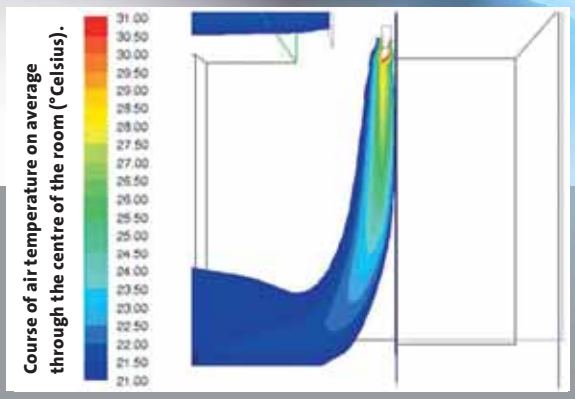
Grazie, Signore Venturi.

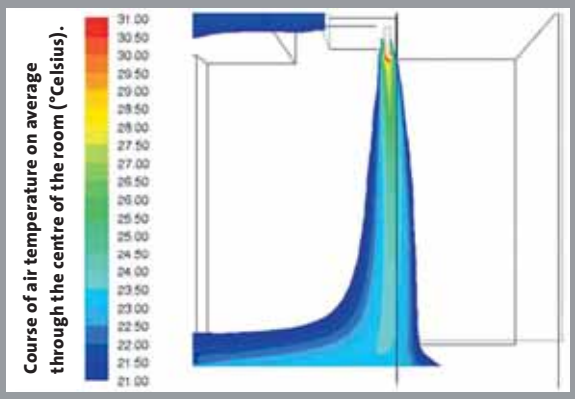
EVOLVENT® nozzle has been fitted in the Teddington systems in such a way that they can be adjusted very precisely. The blow-out angle can be aligned exactly to achieve a perfect screening effect.



The secret of EVOLVENT®. The air current is compressed which is then bundled and accelerated by the nozzle. A turbulence-free uniform air curtain is produced with a high screening effect.







In the diploma thesis quoted beforehand, a direct comparison was carried out in the testing chamber between a conventional unit with lamella systems and a unit with EVOLVENT® nozzle.

The respective temperature comparison shows clearly that the air barrel of the lamella system is pushed from outside to inside by the air current in the lower section (top illustration). The air barrel of the nozzle system remains stable right to the bottom (bottom illustration). In order to stabilise the air barrel of the lamella system in such a way that the same screening effect as with the EVOLVENT® nozzle is achieved, the system had to be operated at a distinctly higher energy.

From pioneer to reference.

Teddington recognised the potential of air curtains early on, and thus belongs to the pioneers of this technology. In 1965 our company was established by Teddington Controls England as a German sales subsidiary. So we are the eldest German manufacturer on the market.

In 1974, we were the first company to present an air curtain system developed in Germany. With a lot of success.

The development of the EVOLVENT® system in 1994 was a milestone in the history of air curtain systems, which is unique selling proposition and guarantee for success still today.

Since 2001, Teddington Luftschleieranlagen GmbH has been using a new spacious manufacturing building in Buchholz-Mendt, Germany.

Today, our programme comprises energy-saving air curtain systems, especially low-noise versions, air curtain systems for automatic sliding doors in straight or bent shape, for revolving doors and for space-saving doors ... Perhaps it would be easier to list those doors or gates, for which we have not found a solution yet.

Our company is synonymous with air curtain systems.

The comprehensive programme of devices and controls, know-how of decades, the consulting and planning service – all of that has made us a reference in air curtain technology.

Directly or indirectly we are selling our products in over thirty countries. Among others, our customers are industrial enterprises, chains of stores, banking institutions, airports, stations, shopping centres, sports facilities and fair companies.

Even small retail stores rely on the well-tried systems produced by Teddington.

Pioneering in air curtain technology.
Teddington Luftschleieranlagen GmbH
located in Buchholz (Mendt), Germany.

Trust needs safety.

- Teddington uses well-tried reliable components only.
- Modern production with CNC systems ensures a constant high-quality level.
- And, we are continuously developing new technologies which minimise your operating costs and optimise the effectiveness of our units.

Irrespective of which Teddington-made system you decide in favour of – you have the guarantee of having chosen a high-quality branded product built in keeping with the latest state of technology.

A good piece of safety.

Foresighted planning is decisive for every project; a lot of know-how and experience are required in order to take into consideration all relevant factors when planning the setup of an air curtain system.

But, which planner or which builder has the time to intensively deal with the complex subject of air curtain technology?

The only thing important to the customer is that everything operates reliably.

For this reason, we assist our customers ...

- with well-founded consultation during the planning phase already,
- with decades of experience in designing and producing air curtain systems,
- with reliable service whenever and wherever you need assistance.

With the best recommendations.
Teddington air curtain systems are being used in many fields – from small shops, representative bank and office buildings to spacious shopping centres, fair halls, airports and industrial plants.

The best air curtain system is one that integrates harmoniously into its surroundings.
Minimum noise level, intelligent controls, minimised maintenance required, reliable technology and demanding design ensure that Teddington's air curtain systems fit into every surroundings in an ideal way.

Innovative techniques, high-quality workmanship and reliable service have made Teddington a reference in air curtain technology.

Trust a good name.

The better the consultation,
the more effective the result is.

We help you with your planning work and assist in the selection of the perfect unit for your needs. We also provide comprehensive service after the initial operation as well.

It depends on the situation.

Depending on the situation or the request of the customer, air curtain systems are produced in various designs, such as visible wall or ceiling installation (S), installation in false ceiling with visible lower side (U) with an air barrel turning to the inside or outside, integration in a false ceiling (Z) and many other possibilities.

Frequently, a system from our standard programme is absolutely the right solution – simple and effective, inexpensive and continuously functional.

But, in many cases the *"one-size-fits-all"* principle does not work at all, because physics is rarely willing to compromise.

Many individual factors of the respective installation situation have to be taken into consideration to permit an ideal operation of the air curtain system, thus achieving the requested energy saving effect.

Which thermal currents prevail in the building?

Which wind force acts on the entrance area?

How big is the door or gate area to be screened?

Which shape is requested?

These are only four of many factors which have an influence on the design of a device.

It is good, if you can trust an experienced partner in this decision. We analyse your situation with all our know-how. And, we offer you the perfect solution for your needs.

And, if the situation requires, we produce an individual system – precisely harmonised to your needs.

Thrust and thermal current as found in various building situations:

Situation A

The door surfaces are on one side of the building.

There is hardly any air discharge worth mentioning caused by thermal currents or chimney effect.

Situation B

The door surfaces are on one side of the building.

Air is removed by the thermal currents in the upper storeys or by the chimney effects.

Situation C

Unscreened door surfaces are present at other sides of the building as well, such as at the side or opposite.

The volume of potential air removal is identical with the volume of the door surface to be screened or larger.

You have the choice.

We have divided our programme into three categories, with which we create a clear differentiation of the fundamental characteristics, helping our customers to find the right unit faster. Within the category, the user can choose between various types of systems, installation possibilities, sizes, performance classes and colours suited perfectly to his needs.

Shop & Business

This range comprises a large number of types, which have been designed specifically for operation in buildings with a high demand for comfort – extremely low-noise, unobtrusive, but effective in action and appealing in design.

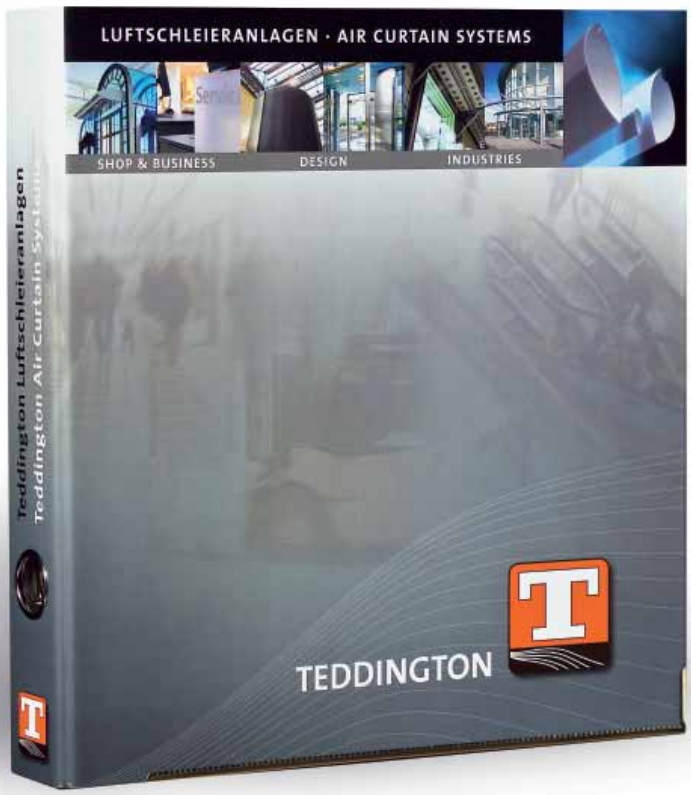
Design

Special situations require special solutions, wherever an air curtain system has to meet top optical demands – this is where Teddington offers exclusive design, fine surfaces, high-quality materials and the best of workmanship.

And, if your requests are beyond all standards? We will develop your individual solution – Teddington Manufacture.

Industries

Maximum performance is needed in this field. These systems are extremely robust and offer a very high performance potential at an ideal energy balance.



Everything at a glance.
In our extensive catalogue, all product information are divided up into three categoris.

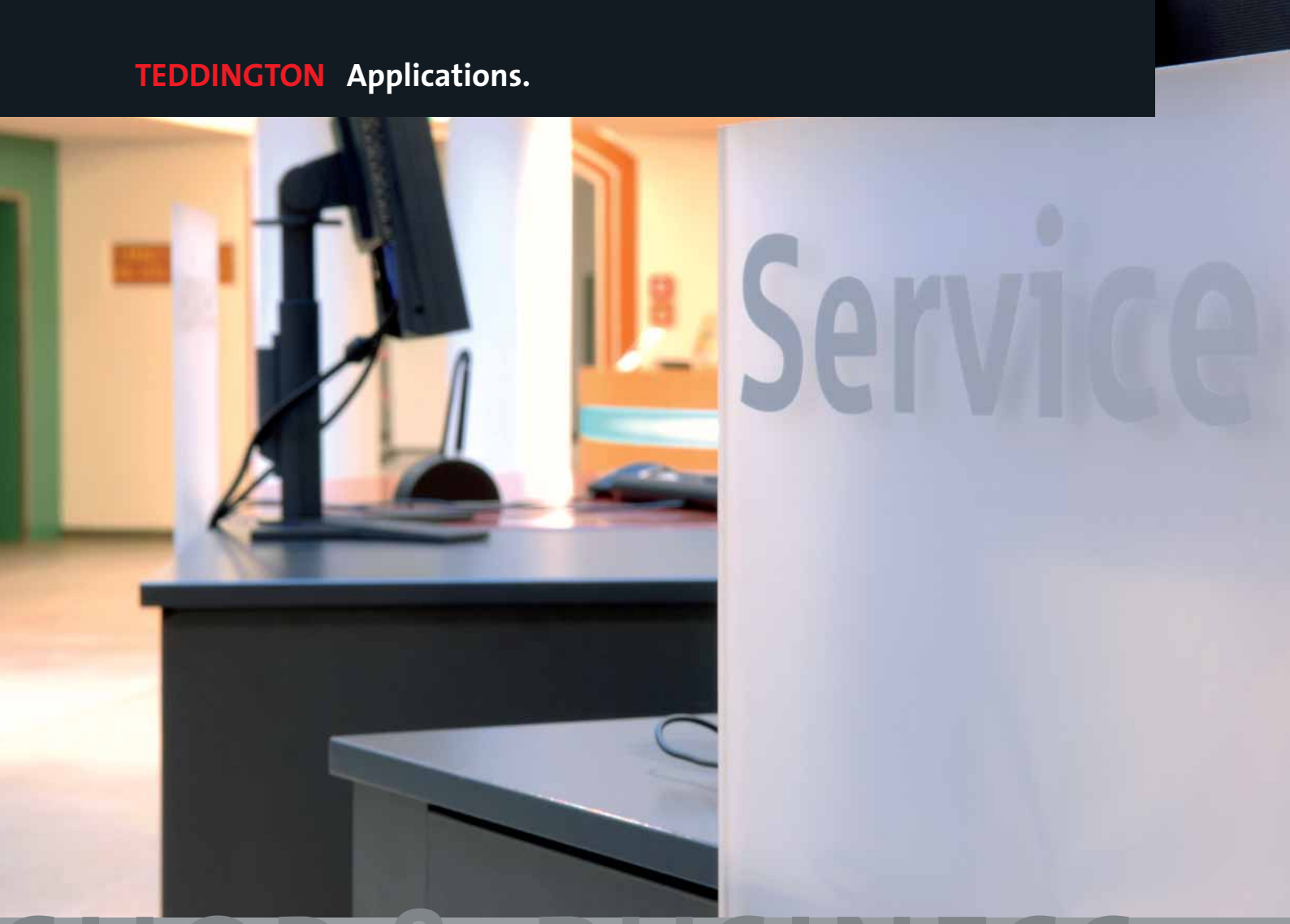
In addition, you will find all information required on the controls, the technical accessories as well as planning aids, such as texts for invitations for tender.

Use our entire know-how.

SHOP & BUSINESS

Pleasure whilst shopping.

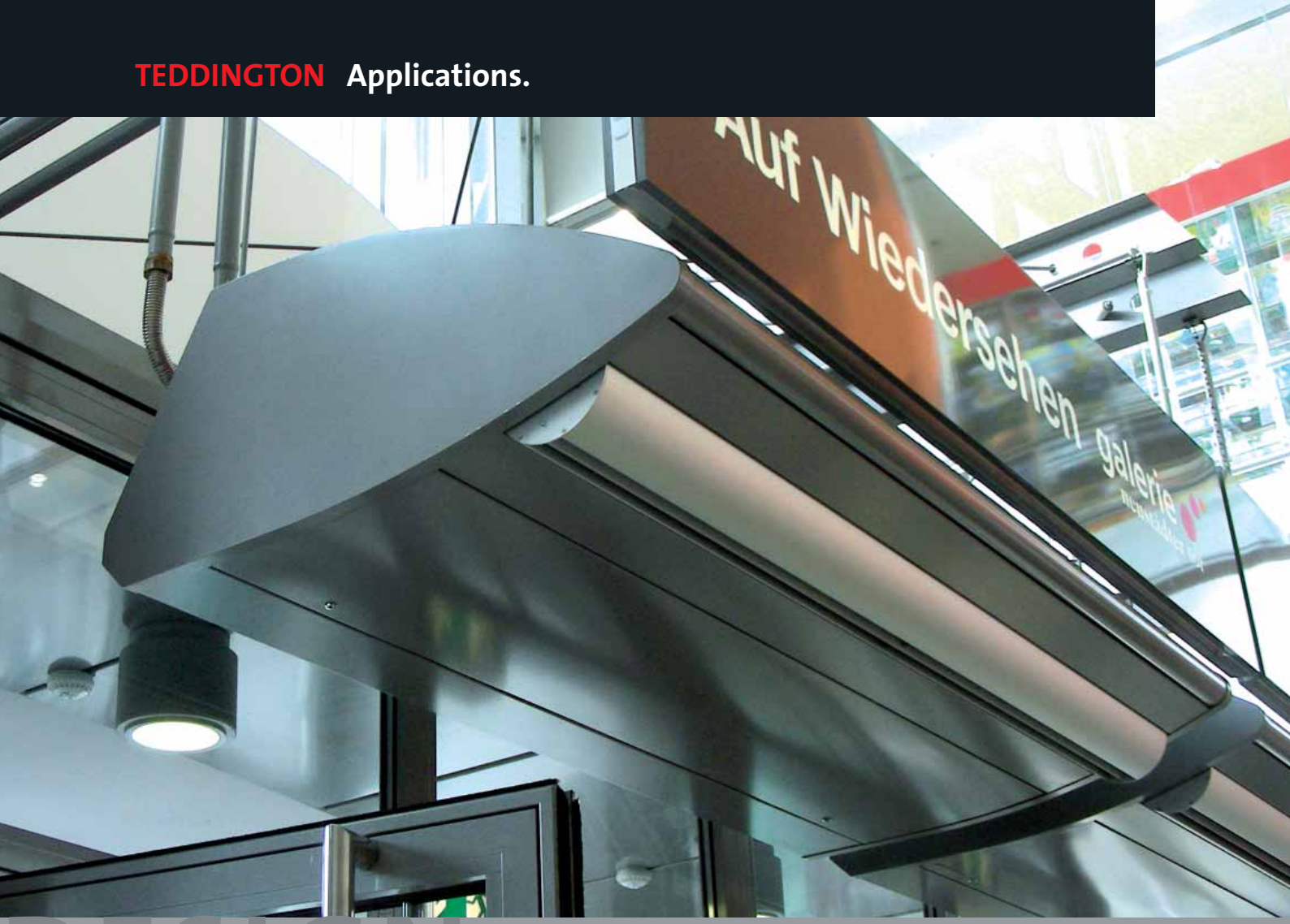
There are areas, in which a low noise load is important despite a high performance of the air curtain system, such as in foyers of banking institutions, insurance and administrative buildings as well as in exclusive shops and shopping centres, in which the customer expects a pleasant atmosphere.



SHOP & BUSINESS

Simply comfort.

Integrated in or suspended from the ceiling in a hardly perceived way, the systems offer unobtrusive comfort at perfect performance in shop and business areas.



DESIGN

Superior technology in a fine housing.

In a high-quality ambience nothing may disturb the fine appearance.

In this case air curtain systems have to meet the highest of design demands.

DESIGN

Individually matched.

We adapt the air curtain systems to your individual surroundings so that your designed system fits exactly into the high-quality ambience.

INDUSTRIES

We love the extreme.

Highly frequented factory halls with metre-high gates cause enormous draught with high energy losses. Energy-saving solutions are required here for low-draft climate conditions.

Our industrial systems for vertical or horizontal installation have been designed for extreme conditions.

We offer special systems for every industrial application, including cold warehouses, where warm air has to be screened.

Friendly and intelligent.

Easy, but not simple; comfortable, but not complicated – this is the way the control of an air curtain system should be. It is a significant factor for the economic performance, the effectiveness and the comfort of a system.

In order to meet every individual situation, we have various controls in our programme.

The variants comprise simple three-step devices for standard applications to versions which can be integrated into complex computer-control domestic engineering systems.

Don't worry.
The owner of a small shop will hardly be interested to know which technology is working for him. The framework conditions are almost the same every day and the adjustment options cover the few functions. A simple three-step switching unit is completely adequate in this case to achieve a comfortable performance of the air curtain system.

We rack our brains for you.
In other applications, the control has to master a large number of highly complex, continuously changing parameters, such as in industrial facilities where gigantic gate systems cause enormous air movements. Here it is important that you can rely on the control which uses numerous measuring functions to analyse the system and to intelligently adapt the performance of the air curtain device by means of freely programmable settings.

Wherever you employ a Teddington air curtain system – the suitable control offers maximum comfort with a minimum of worrying.

Our best unit.

With the TCU control, you can adapt your Teddington air curtain system precisely to various requirements.

On the LCD display all functions and parameters are shown clearly at a glance. Thus, it is the easiest thing in the world to program the versatile functions and options.

By means of an integrated BUS system, up to nine air curtain systems can be operated by means of one operating panel only, which facilitates the administration of complex systems enormously.

Robust intelligence for industrial applications.

The TSDM5 / TEsM5 controls offer all possibilities you need for your industrial air curtain system. The robust workmanship ensures high reliability in daily operation.

- VDE 06660, part 500; DIN EN 60439-1
- Insulation class E
- IP 23 (optional IP 54)
- Operation and failure report
- Integrated repair switch
- Outgoing protection
- 5-step system
- Summer / winter switchover, control by magnetic valve or pump (optional)
- Manual / automatic operation switchover, control by external contact
- Potential-free operation and failure report (optional)
- Frost protection operation (optional)

TEDDINGTON. The Pioneers of Air Curtain Technology.

Innovative Technology

Highest Economy

Trendsetting Design

Top Quality

Perfect Service

...that's Teddington.

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