TROX® TECHNIK
The art of handling air

CRITICAL AREAS IN THE HOSPITAL

In hospitals, treatment, laboratory and operation areas place the highest demands on hygiene and indoor air standards. This applies not only to the purity or particle-free nature of the air: the entire air management system must operate at the best level. Targeted control of the room pressures in negative or positive pressure separates the various areas from each other or from their surroundings in terms of air distribution technology. By continuously monitoring the parameters, you always have an overview of the current conditions of your rooms.

TROX clean room technology continuously meets the highest protection and safety standards and is therefore found in many highly sensitive areas such as: We are aware of the need for comprehensive solutions, as well as the interaction of diverse factors relevant to purity and safety. Therefore, we always develop our concepts and systems under consideration of the following:

AIR TREATMENT, TRANSPORT, FILTRATION AND SUPPLY:

High air cleanliness and comfortable indoor air quality

AIR MANAGEMENT:

Protection of products, processes, people and the environment from contaminated air

FIRE PROTECTION:

Preventing the spread of contaminated air, fire and smoke, as well as the safeguarding of smoke-free rescue routes, through ducting in the event of a fire

EFFICIENCY:

Attention to energy and cost efficiency in the area of air conditioning and ventilation

YOU CAN COUNT ON US

HYGIENE AND SAFETY

Always new innovations in ventilation technology for critical and highly sensitive areas

ENERGY EFFICIENCY

Benefit from the enormous further development of ventilation and air-conditioning systems
!

SAFETY IN THE EVENT OF A FIRE

Our expertise in fire and smoke protection technology

YOUR ROOMS - OUR SOLUTIONS

OPERATING THEATRE WING

The top priority in operating rooms is the prevention of post-operative infections (POI). Indoor air technology provides significant assistance in this regard.

Due to the necessary low level of germs, an operating theatre unit is to be classified as room class 1a or 1b according to DIN 1946-4. Contamination of the indoor air by bacteria, viruses and spores must be reduced to a minimum. The removal of anaesthetic vapours, dust and odorous substances also plays an important role here.

A wide variety of aspects are therefore central to the indoor air technology in the operating theatre wing:

- Compliance with the positive air balance (positive pressure) to prevent the penetration of possible contamination from adjacent rooms
- Maximum relative room humidity below 50 % r.h.
- Fresh air flow rate between 800 - 1200 m³/h to limit the danger posed by anaesthetic gases
- Freely selectable temperatures between 18 and 24°C (possibly up to 27°C in paediatric surgery)

In order to guarantee these points, indoor air conditioning systems must offer at least 2 filter stages that constantly draw in, humidify and dehumidify, filter and temper the indoor air according to the requirements

Standard in the classic operating theatre are tissue ceilings that ensure a so-called low-turbulence displacement flow (TAV). In terms of air technology, operating theatre units are similar to **Clean rooms.**

Let our industry experts advise you on your individual options.

ICU/ISOLATION WARD

When highly infectious patients need to be cared for or persons with severe immunosuppression need to be protected, nursing rooms and intensive care units also belong to the room category of **critical areas.**

As a result, the requirements for infection control and hygiene are also increasing. The ventilation and air-conditioning system contributes to the protection of patients and staff by cleaning the room and supply air.

What is important in critical ICU patient care rooms includes, among other things:

- Mechanical ventilation with particle-filtered supply air and/or extract air
- The use of passive or active airlocks
- Static pressure maintenance in positive or negative pressure (aseptic/septic)

If these important factors have been taken into consideration, the staff is optimally protected from the point of view of ventilation and air conditioning and there are good conditions for an ideal recovery process for the patients.

We will be happy to advise you on designing, equipping or modernising your premises with our innovative and flexible solutions.

►Everything you need to know about air technology in clean rooms►►

► You can find more on the subject of room pressure control here ►►

LABS

Everyday laboratory work involves working with substances that are hazardous to health or dangerous in order to produce or research new medicines.

This requires special measures to protect employees, the environment and products. In addition, a comfortable working environment with high indoor air quality and a pleasant climate must be created.

Here, the ventilation system plays a decisive role by regulating both the supply air and the removal of contaminants.

To achieve the legal protection goals, the following factors must be taken into consideration in the air management system:

- Balancing the volume flow rates of room supply and extract air, as well as technical extract air
- Dissipation of thermal loads
- Regulation of the required room pressures
- Reduction of airborne particles, if applicable

If all these aspects are fulfilled under the relevant requirements, the protection of employees is also guaranteed.

With bespoke solutions, TROX develops new systems in all areas related to research facilities and laboratories. Profit from our extensive know-how.

► Ventilation solutions for your laboratory ►►

CENTRAL STERILISATION

Special care and hygiene are required within the sterilisation processes. Proper cleaning of surgical instruments has a direct influence on the postoperative infection rate and therefore contributes to the patient's rapid recovery in the ideal case.

In this area, ventilation and air-conditioning systems must meet the highest requirements to protect people and technology. Unlike in unclean areas, there must be a positive pressure here.

The following points are decisive for the control of the external volume flow:

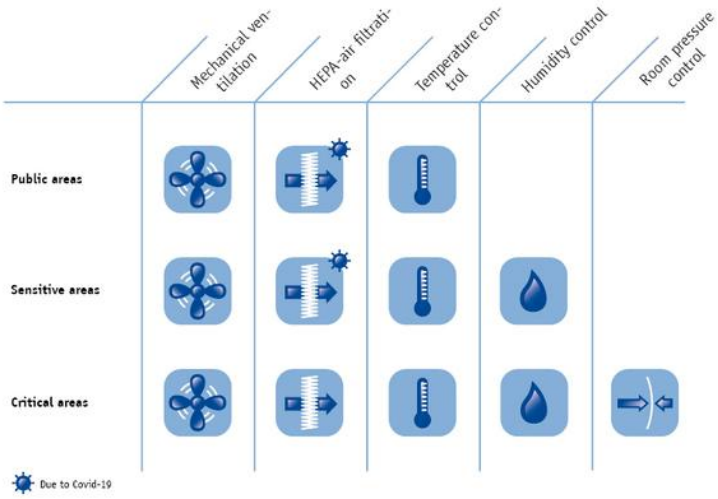
- Thermal loads
- Humidity
- Hazardous substance exposure
- No. of people

Our flexible and bespoke solutions are used wherever the highest demands are placed on air hygiene and indoor air conditions:

You too can find the right solution together with us.

► Find out more about air filtration in sterile areas ►►

ZONE-DEPENDENT VENTILATION MEASURES IN HOSPITALS



Would you like to find out about important factors in sensitive and public areas in addition to critical areas?

You can already make a rough distinction on the basis of the adjacent table.

Of course, you will also find detailed information on public areas and sensitive areas here on our website.

For individual advice, please contact us at any stage of your project.

YOUR PERSONAL ADVISOR

I AM HAPPY TO ADVISE YOU.

Whether new construction, design, optimisation, system expansion, refurbishment or maintenance – TROX is at your side. Describe your specific needs to us or arrange a non-binding consultation.

Patric Unterdorfer

Global Key Client Manager Pharma & Food

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