

LEADING THE WAY IN
AIR TECHNOLOGY



EXCELLENCE
IN SOLUTIONS

TABLE OF CONTENTS

ABOUT FLÄKTGROUP

Vision	5
About us	6
Application areas	10
Air Functions	12
Energy efficiency & sustainability	14
Innovations & research	13
Collaborating with FläktGroup	18
FläktGroup Academy	19
Service	20

PRODUCT OVERVIEW

Air Treatment	22
Air Diffusion	23
Air Movement	24
Air Management & ATD's	25
Air Distribution	26
Air Filtration	26
Air Conditioning & Heating	27
Controls	28

APPLICATION AREAS

Data Centres & Industrial	30
Offices & Meeting Rooms	38
Schools & Education	52
Hotels & Restaurants	64
Residential & Multi-dwelling	74
Hospital & Clean Rooms	86
Sports Facilities & Entertainment	98
Retail, Travel & Logistics	108
Car Parks, Tunnels & Metro, Marine, Oil & Gas	114

WE ARE > *FläktGroup*



A decorative graphic element consisting of a light gray grid pattern. A white, angular shape is cut out from the top-left corner of the grid. A thin, gold-colored line traces the boundary of this white shape, extending from the top edge, down the left edge, and across the top edge.

OUR VISION

“We aim to be the leading strategic partner for energy efficient Indoor Air Solutions and be recognised by our customers as the technology leader providing the highest quality standards for improved Air Comfort and well being.

We want to be a place where people are proud to work!”

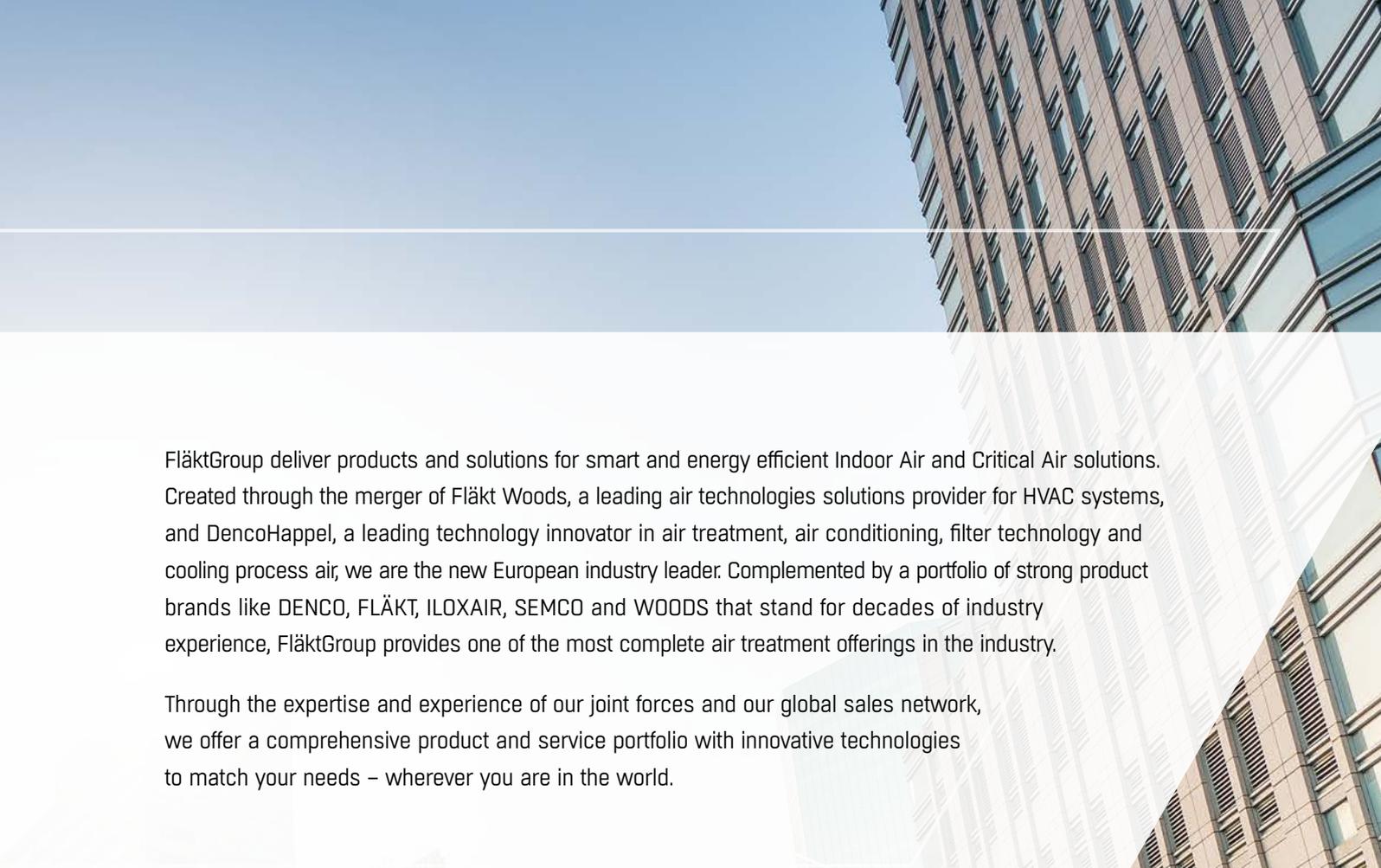
The European market leader

BMS

m³/h

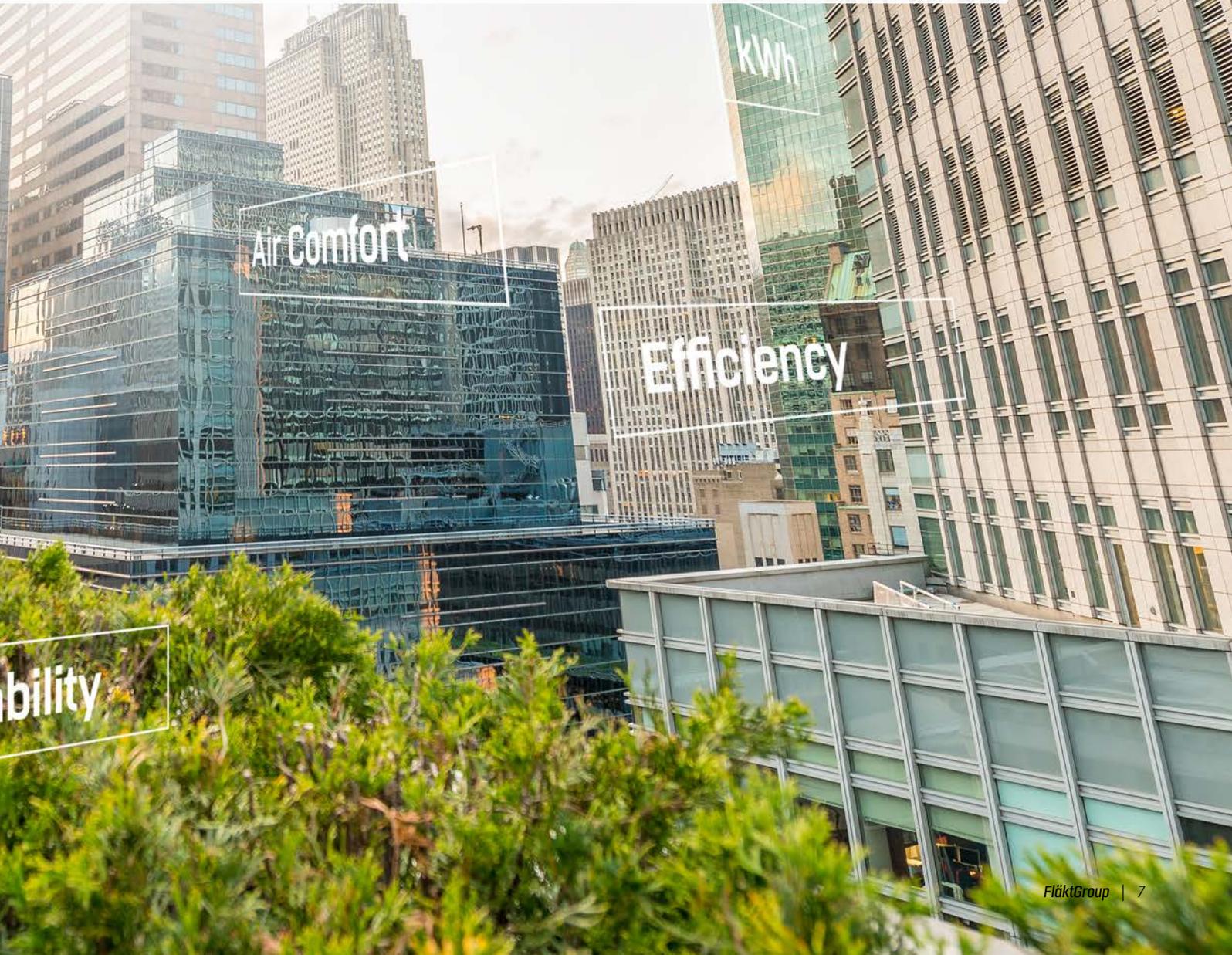
Life Cycle Cost

Sustaina



FläktGroup deliver products and solutions for smart and energy efficient Indoor Air and Critical Air solutions. Created through the merger of Fläkt Woods, a leading air technologies solutions provider for HVAC systems, and DencoHappel, a leading technology innovator in air treatment, air conditioning, filter technology and cooling process air, we are the new European industry leader. Complemented by a portfolio of strong product brands like DENCO, FLÄKT, ILOXAIR, SEMCO and WOODS that stand for decades of industry experience, FläktGroup provides one of the most complete air treatment offerings in the industry.

Through the expertise and experience of our joint forces and our global sales network, we offer a comprehensive product and service portfolio with innovative technologies to match your needs – wherever you are in the world.



A LOCAL PARTNER WITH GLOBAL REACH



*3600 talented
employees*



*170 dedicated
R&D Experts*



*65 countries
worldwide*



*14 manu-
facturing sites*

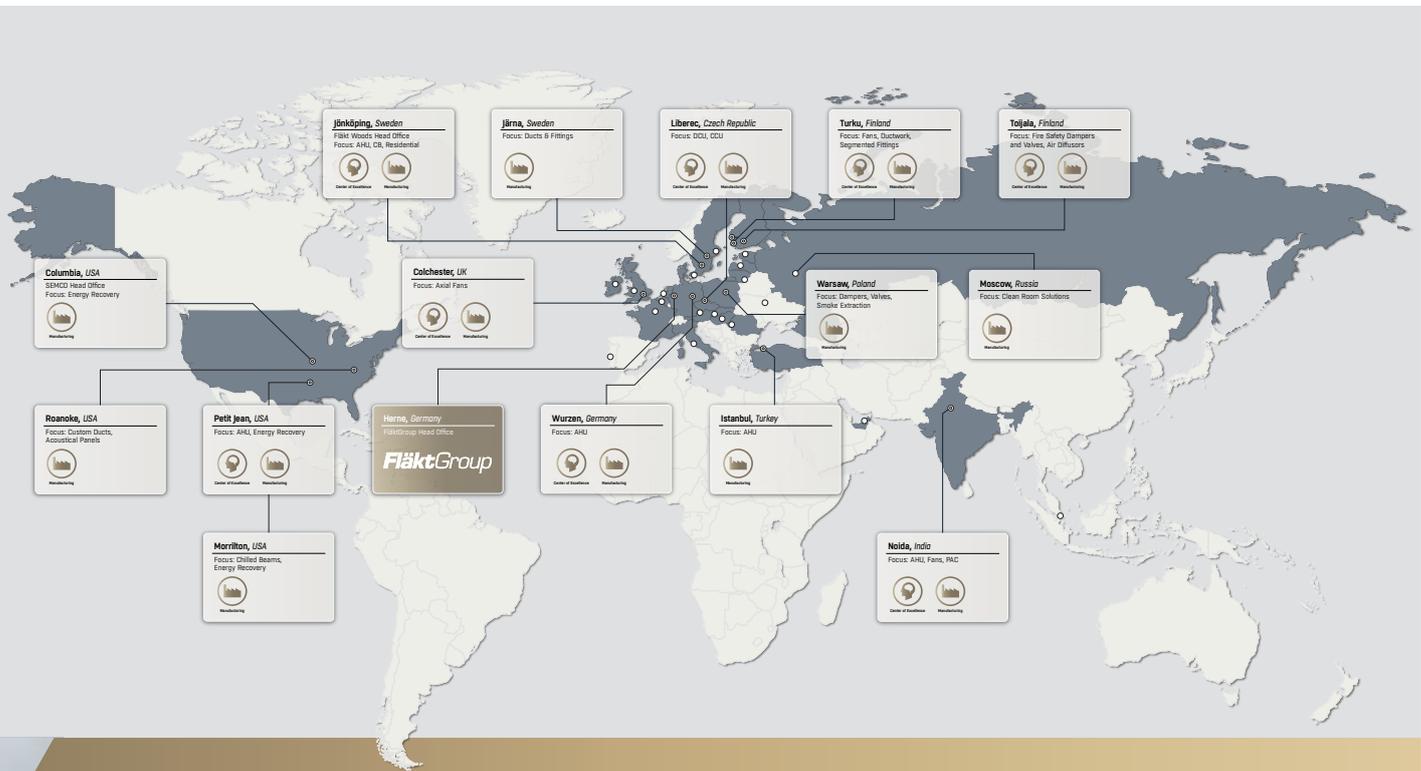


*9 Centres
of Excellence*



All our research, development and testing activities, at our nine Centres of Excellence, are singularly focused to provide our customers with the best possible solution to their ventilation and indoor climate challenges. From new and innovative concepts, material choices and manufacturing processes to minimised running cost, easy commissioning and low maintenance we always strive to deliver the best for your application.





WORLD-CLASS INNOVATIONS AND AIR TECHNOLOGY PRODUCTS RESEARCH



We are always right beside you in all types of environments

COMMERCIAL

- Offices
- Education
- Travel & Logistics *(e.g. Warehousing)*
- Retail *(e.g. Shopping Centres, Supermarkets)*
- Hotels, Restaurants
- Public Buildings & Entertainment *(e.g. Museums, Theaters, Cinemas, Casinos)*
- Sports Facilities *(e.g. Swimming Pools, Stadiums, Ice-rinks, Fitness Centers)*

INDUSTRIAL

- Manufacturing & Automotive
- Food & Agriculture *(e.g. Food Processing & Packaging, Dairy, Farms)*

We eat about 1 kg of food, we drink approximately 2 liters of water but we inhale 20,000 liters of air every day. With up to 90% of our time spent indoors, the air we breathe makes a huge difference for our health, comfort and productivity. Also, typically 85% of the Life Cycle Cost of a ventilation system is generated by the energy cost which puts focus on smart and energy efficient solutions. **This is where FläktGroup comes into picture.**



RESIDENTIAL

- Housing
- Multi-dwelling

SPECIAL APPLICATIONS

- Data Centres *(e.g. IT, Telecom, Broadcasting)*
- MOGP *(Marine, Oil and Gas, Power Plants)*
- Life Science & Clean Room *(e.g. Pharma, Hospital, Electronics)*
- Car Parks
- Tunnels & Metro

8 product families that cover your project's every need

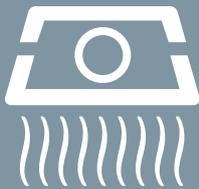
AIR TREATMENT



- Modular Air Handling Units
- Compact Air Handling Units
- Low Airflow Compact Units
- Top Connected Air Handling Units
- Residential Air Handling Units
- Energy Recovery Solutions
- Integrated Heating & Cooling
- Swimming Pool Dehumidification



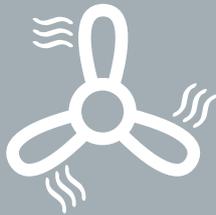
AIR DIFFUSION



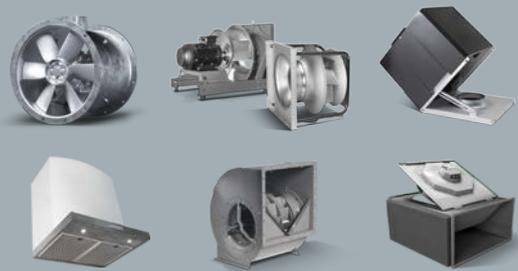
- Chilled Beams
- Fan Coils
- Air Curtains
- Air Heaters



AIR MOVEMENT



- Ventilation Fans
- Fire Safety Fans
- Cooker Hoods



AIR MANAGEMENT & ATD's

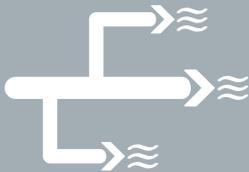


- Air Valves
- Diffusers
- Grilles
- External Louvres & Cowls
- Air Distribution Systems
- Dampers
- Air Volume Dampers
- Fire Dampers
- Smoke Dampers & Ducts



We have more than 3000 products to ensure that there is always a perfect fit in our customer's projects. Having the largest product range in the market, our offering covers five critical air functions of the HVAC system for providing the best Indoor Air Comfort & Critical Air solutions.

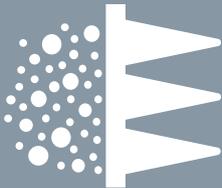
AIR DISTRIBUTION



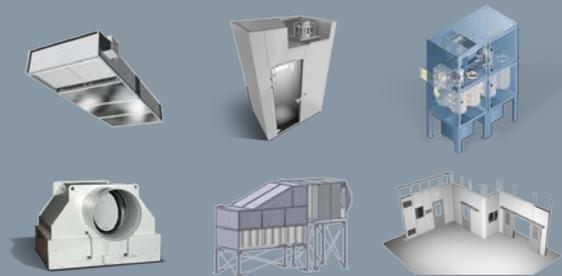
- Fittings
- Ducts
- Silencers



AIR FILTRATION



- Filter Media
- Air Intake Systems
- Clean Room Technology



AIR CONDITIONING & HEATING



- Chillers and Heat Pumps
- Data Centre & IT Cooling
- Air Conditioning



CONTROLS



- ISYteq Controls for AHU and FCU
- ISYteq FICO Fire Safety Control System
- Ipsum Optimisation System



A STRONG FOCUS ON ENERGY EFFICIENCY AND SUSTAINABLE BUILDINGS

As people spend most of their time inside, energy efficient and intelligent ventilation systems become more and more important. Natural ventilation could be argued to be the best solution, however the paradox is that outdoor air might not always be clean and the building structures may not allow for natural ventilation solutions.

Property owners often see environmental certification programs such as LEED, BREEAM and Green Buildings as a way to future proof their investments, to create more attractive space with increased rental income, and to be a trusted corporate citizen.

Energy efficiency is at the core for FläktGroup and we have proved to deliver products and solutions ensuring that our customers can live up to and surpass their environmental targets. We constantly look for ways to reduce our environmental footprint and to prepare for the future already today.



ErP
compliant



» *Energy efficiency and sustainability – your benefits*

When you choose a FläktGroup product you can always do so safe in the knowledge that it has been developed to provide the best possible functionality combined with the least possible environmental impact. It will also have been tested according to all the relevant international standards and will be fully supported by our sales and technical teams.



WORLD-CLASS INNOVATIONS AND **AIR TECHNOLOGY PRODUCTS RESEARCH**

FläktGroup is the industry leader when it comes to developing products that are in the industry forefront. At our 14 manufacturing sites and our Centres of Excellence we have among the most advanced industry development and lab facilities in the world. We grow our company by investing in research and development in our Centres of Excellence, research centres, and state of the art laboratories to demonstrate and prove the performance of our products and controls.

Specific dynamic testing capabilities and Factory Acceptance Tests (FAT's) include measurement and study of comfort levels, cooling & heating outputs, velocity profiles, noise criteria etc.

Geographically, our centres are located across the globe with facilities located in Germany, Czech Republic, Finland, India, Poland, Russia, Sweden, Turkey, United Kingdom and USA. The knowledge we gather is continuously fed back into every project and every product we deliver to our customers.



» *Research and innovations – for your benefits*



All our research, development and testing activities are singularly focused to provide our customers with the best possible solution to their ventilation and indoor climate challenges. From new and innovative concepts, material choices and manufacturing processes to minimised running cost, easy commissioning and low maintenance we always strive to deliver the best for your application.



A COLLABORATION WITH FLÄKTGROUP IS **BOTH** **EASY AND PROFITABLE**



When you enter a partnership with FläktGroup, we want you to feel part of our family of product experts, sales and support people and R&D staff. Our aim is to create a business relation based on knowledge, trust and mutual profitability. Our very wide range make it easy to find product solutions that are developed to fit together and deliver the best possible results in terms of efficiency, comfort and safety – regardless of which application area that you operate in.

With our geographic reach you are never far from a FläktGroup specialist ready to support on all product and solution related subjects.





*A purpose-built
Academy for
product training and
live demonstrations*

The FläktGroup Academy, located in Wurzen, Germany, is one of our key initiatives to share knowledge and expertise of our products and applications to colleagues, partners and customers. All training staff are highly experienced in the HVAC industry and has in-depth knowledge about our products and applications.

The brand new purpose-built FläktGroup Academy building is equipped with a large range of FläktGroup products which makes it easy to arrange hands-on testing sessions. It is located next door to one of our factories, Centres of Excellence and laboratories which enables a wide range of training and demonstration possibilities.

- **Located in Wurzen, Germany, and neighbouring one of our highly efficient factories.**
- **Ventilation system equipped with a large range of products for live demonstration and testing.**
- **Training activities can also take place at our various production sites in Sweden, Finland, Poland and the UK.**

WE CARE FOR YOUR AIR



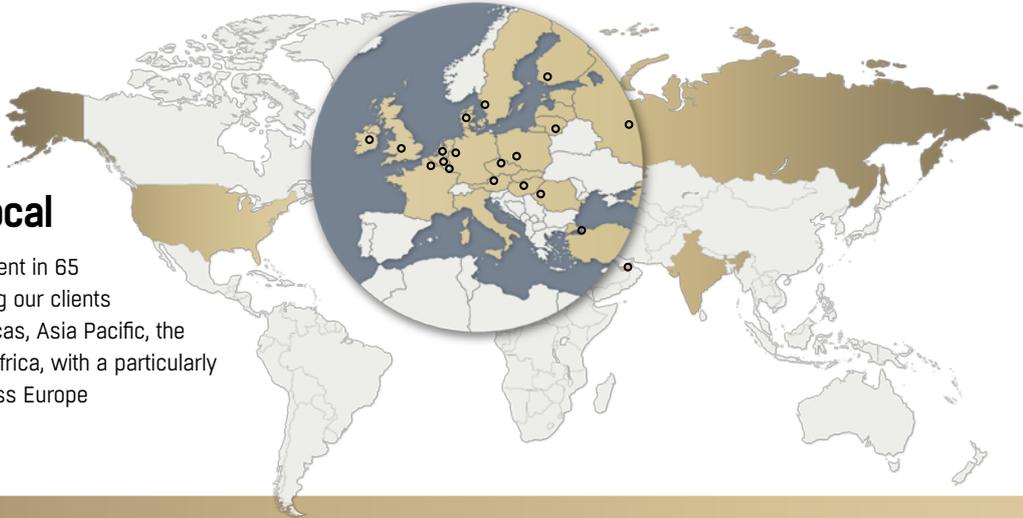
With a comprehensive selection of service offerings combined with an extensive in-house expertise and competence we ensure the most reliable and cost-effective system performance through the entire life cycle.

Around 85 % of the life cycle costs of a ventilation system are generated by the energy costs. Operation and maintenance are therefore major parts of the overall building budget. Decisions on how the ventilation system is installed, serviced and maintained are strategically important. Even small improvements in efficiency, can add up to significant savings over time.

- **Experienced and trained service engineers, will work in close partnership to select the right actions that correspond to your business needs.**
- **Efficient and fast logistics.**
- **Most reliable and cost-effective system performance through the entire life cycle.**
- **From initial start, through routine operation, maintenance, to system improvement or monitoring – we are always by your side.**
- **A commitment to the highest safety and environmental standards – includes adhering to global and regional regulations on energy use and carbon emissions.**

Globally local

We have are present in 65 countries servicing our clients across the Americas, Asia Pacific, the Middle East and Africa, with a particularly strong focus across Europe



Our service portfolio span every step in the ventilation system’s lifecycle

FläktGroup Service and Support capabilities cover every cycle in the system’s life. From the initial start, through routine operation, maintenance, to system improvement or monitoring. Whatever you need – our Service solutions ensure reliable operation and the highest performance of any system.

> Commissioning	> Maintenance	> Spare parts	> Retrofit	> Consultancy/ concepts
> Monitoring	> Repairs	> Health check	> Rental	



The benefits »



OPERATIONAL EFFICIENCY



REDUCED LIFE CYCLE COSTS



SAFETY



RELIABILITY



SYSTEM PERSISTENCE



24/7 SUPPORT



FLEXIBILITY



AIR TREATMENT

MODULAR AIR HANDLING UNITS



eQ Master



CAIRplus



eQL

COMPACT AIR HANDLING UNITS



eQ Prime/eQ Top



COM4mini/COM4Top

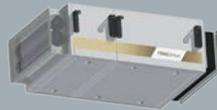


COM4plus



eCO SIDE/eCO TOP

LOW AIRFLOW COMPACT UNITS



ATpicco



eCO Premium



VEKA

RESIDENTIAL AIR HANDLING UNITS



Mini-/House-/VillaMaster



ILOX



Fläkt Connect

ENERGY RECOVERY SOLUTIONS



Ecorot



Econet



Recuterm



Ecoflow

INTEGRATED HEATING & COOLING



ReCooler HP

SWIMMING POOL DEHUMIDIFICATION



CAIRpool



CAIRfricostar



F800



CHILLED BEAMS



Wega II



Lyra II



Nova II



Silencia

FAN COILS



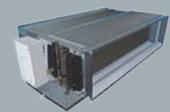
Flex-Geko



HyCassette-Geko



HyFlex-Geko



HyPower-Geko

AIR CURTAINS



AC-Linea



AC-Comfort



AC-Industrial



AC-Axiplus

AIR HEATERS



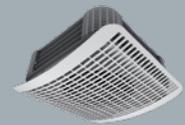
MultiMAXX HD



MultiMAXX HN



MultiMAXX



Multi Flair



AIR MOVEMENT

AXIAL FANS



JMv Aerofoil



JM Aerofoil



JM Bifurcated



EC Climafan

CENTRIFUGAL FANS



GT-1 centrifugal fans



GT-3 centrifugal fans

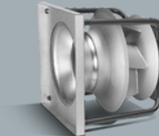


GX-5 centrifugal fans

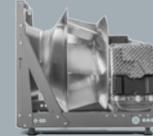
PLUG FANS



CentriFlow 3D plug fan

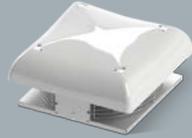


CentriFlow 3D plug fan



CentriFlow 3D plug fan

ROOF FANS



STOF roof extraction unit



RoofMaster STEC exhaust fan



Roofjett exhaust fan

FIRE SAFETY FANS



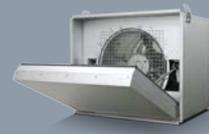
HT axial fans



HT roof fans



HT pressurisation fans



Hatch and wall hatch

CAR PARK FANS



JTv Slim-Line



JTv Low Profile



JT Slim-Line



Induction thrust fans

COOKER HOODS



CPD cooker hood



Streamline CPT



DIFFUSERS



Active diffusers



Ceiling diffusers



Swirl diffusers



Plenum boxes

AIR VALVES



Exhaust air valves



Supply air valves



Fresh air valves

GRILLES, EXTERNAL LOUVRES & COWLS



Grilles



Intake & Exhaust louvres



Cowls



Snow screens

AIR DISTRIBUTION SYSTEMS



Activent



Uno

DAMPERS & AIR VOLUME DAMPERS



IRIS damper



Balancing dampers



VAV dampers



Pressure control

FIRE DAMPERS



Circular fire dampers



Rectangular fire dampers

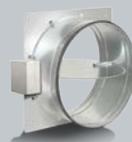


Fire safety valves



Control & Monitoring systems

SMOKE DAMPERS & DUCTS



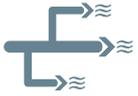
Circular smoke dampers



Rectangular smoke dampers



Circular smoke ducts



AIR DISTRIBUTION

FITTINGS

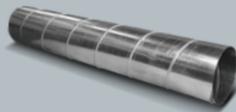


Veloduct

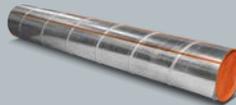


Miniduct

DUCTS



Spiral ducts

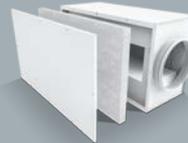


Fire ducts

SILENCERS



Circular silencers



Rectangular silencers



AIR FILTRATION

FILTER MEDIA



Compact & panel filters



Bag filters



Hepa filters



Activated carbon filters

CLEAN ROOM TECHNOLOGY



Building elements



Filtration units



Hepa filter diffusers



CHILLERS & HEAT PUMPS



Air-cooled chillers and air-water heat pumps (outdoor installation)



Split-chillers without condenser (indoor installation)



Water-Cooled chillers and water-water heat pumps (indoor installation)

DATA CENTRE & IT COOLING



Multi-DENCO



Ultra-DENCO



Row-DENCO



Adia-DENCO

AIR CONDITIONING



DENCO OfficeCool



CONTROLS

FOR MODULAR AIR HANDLING UNITS



ISYteq



IP65

FOR COMPACT AIR HANDLING UNITS



ISYteq



IP65



ISYteq Touch 3.5

FOR RESIDENTIAL AIR HANDLING UNITS



ISYteq Touch 3.5



FläktConnect

ROOM CONTROLLERS



STRA



ISYteq Touch 4.0



ISYteq LCD



CET.ACEC

INDUSTRIAL CONTROLLERS



ISYteq Touch 4.0



ISYteq LCD



CET.ACEC

FIRE SAFETY CONTROLS



ISYteq FICO Pro



ISYteq FICO Mini





DATA CENTRES & INDUSTRIAL

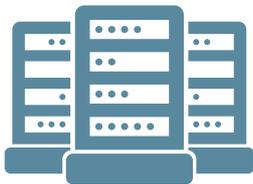
Data Centres

You are looking for the best technology available to give consistent indoor conditions. You want maximum efficiency and demand good redundancy features combined with the ability to adapt to your fast-paced and everchanging industry.

Precision climate control for 24 by forever operations

With innovation as our DNA we offer a complete portfolio for cooling that permit higher power density, dynamic operating states, and synchronous growth processes.

With our high quality and varied portfolio, we are able to provide for any operating conditions you require, whilst minimising operating costs and providing a wide choice of options and designs:



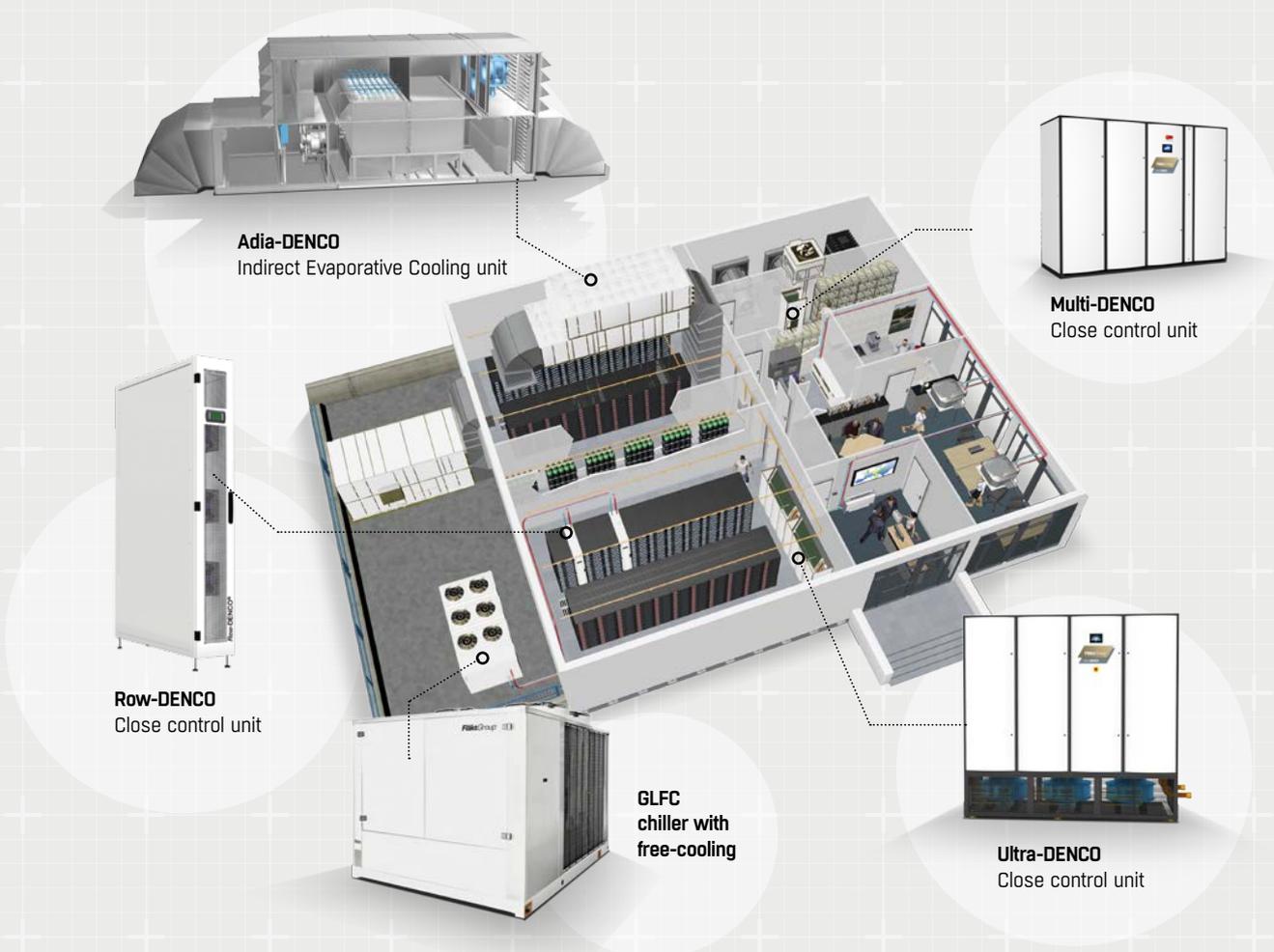
- Indirect Evaporative Cooling (IEC)
- Indirect free cooling with Direct Expansion
- Direct free cooling air handling units
- Chilled water fan wall air handling units
- Direct Expansion CRAC with indirect free cooling
- Chilled Water CRAH and outdoor chillers
- In row direct expansion and chilled water systems

DESIGN CHALLENGES FOR DATA CENTRES:

- Excellent Power Usage Effectiveness PUE
- Outstanding Water Usage Effectiveness WUE
- Conform to all requirements of Green IT
- 24/7 operation



Proposed design functions
Adia-DENCO, Multi-DENCO close control unit, GLFC chiller



Multi-DENCO



Multi-DENCO – the flexible solution to precision cooling

Multi-DENCO is one of the most precision cooling solutions from FläktGroup. Whilst predominantly designed to address the needs of IT cooling, it is not limited to being used in workshops, computer rooms, telecom rooms, laboratories, libraries and even archives and museums. Its key is its superior ability to control both the temperature and humidity enabling you to have confidence that your operations are in the ideal climate.

Multi-DENCO units can provide up to 150 kW of cooling within 7 different casing sizes, which can also be in upflow or downflow air configuration. This innovative solution offers inverter compressors and EC fans for accurate control with minimum consumption, advanced C5-12 controls to allow for

smart functionality such as running redundancy, interface integration and sensor averaging, along with the ability to record up to 28 days of events and alarm history.

Multi-DENCO also has various options and features available such as automatic pressurised system (APS), pressure independent control valves (PICV), energy monitoring, airflow monitoring and power redundancy options too.

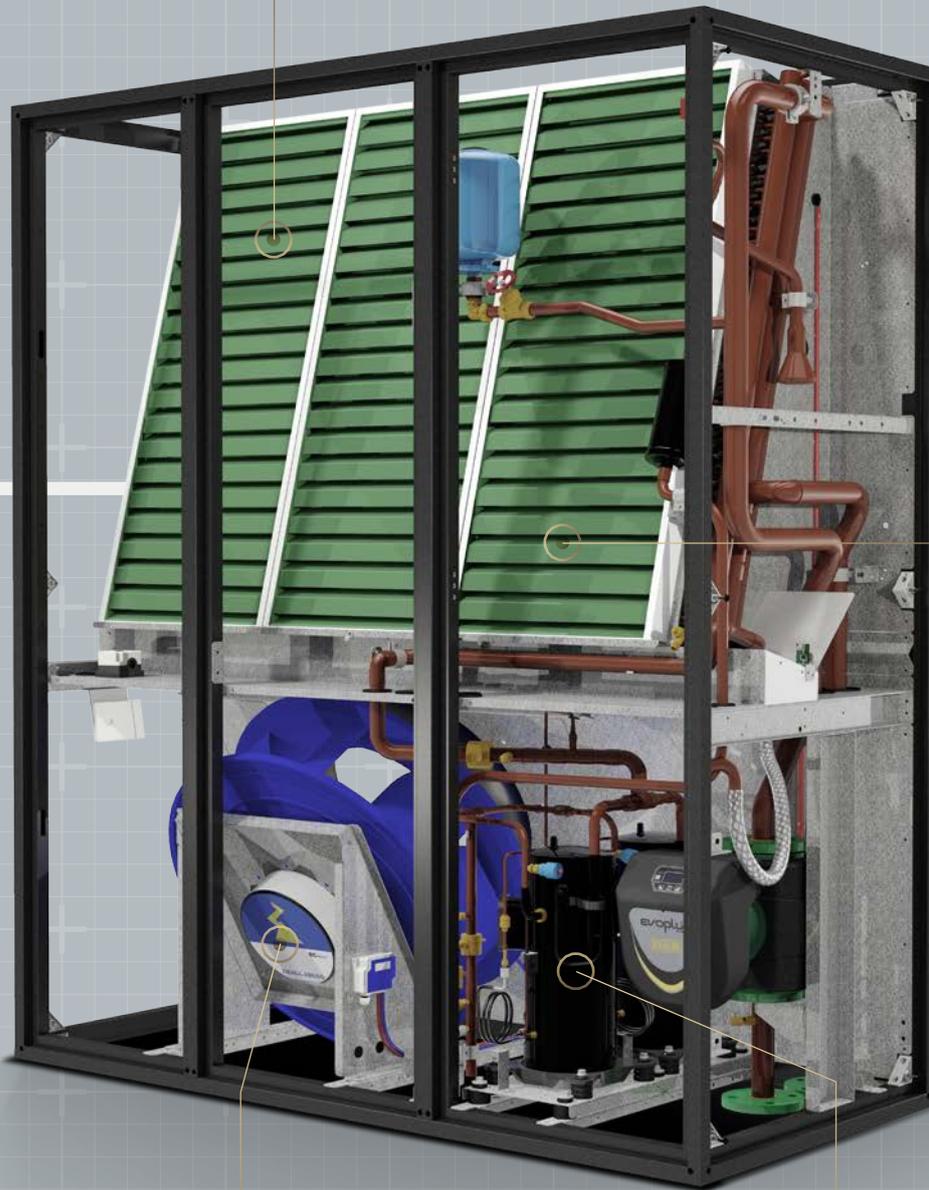


HEAT EXCHANGER

- Copper/aluminum highperformance heat exchanger with corrugated fins
- CombiCool and FreeCool versions available

ADVANCED CONTROL SYSTEM

- Bespoke software for controller and touchscreen display
- Can be intergrated with various Building Management Systems (BMS)
- Uninterrupted Power Supply (UPS) for controls equipment available for some models



HEATING

- Electric heating elements with stainless steel fins
- Low surface temperature to avoid glowing and sparking
- Alternative options available for thyristor control or hot water heating

FANS

- Plug fan with backward curved, three-dimensional, profiled blades made from high-performance composite material
- High efficiency EC motor

COMPRESSORS

- Variable control inverter compressors to match cooling to requirements
- R410A for efficient operation
- Single or tandem compressors (5kw–130kW)
- Permanent magnet brushless DC motor

INDUSTRIAL APPLICATIONS

Clean and safe results in processes and quality



Industrial production processes and the health of employees allow no compromises in air treatment. Strict safety standards must be observed in many operational processes of industry – including the chemical, pharmaceutical, and food industries.

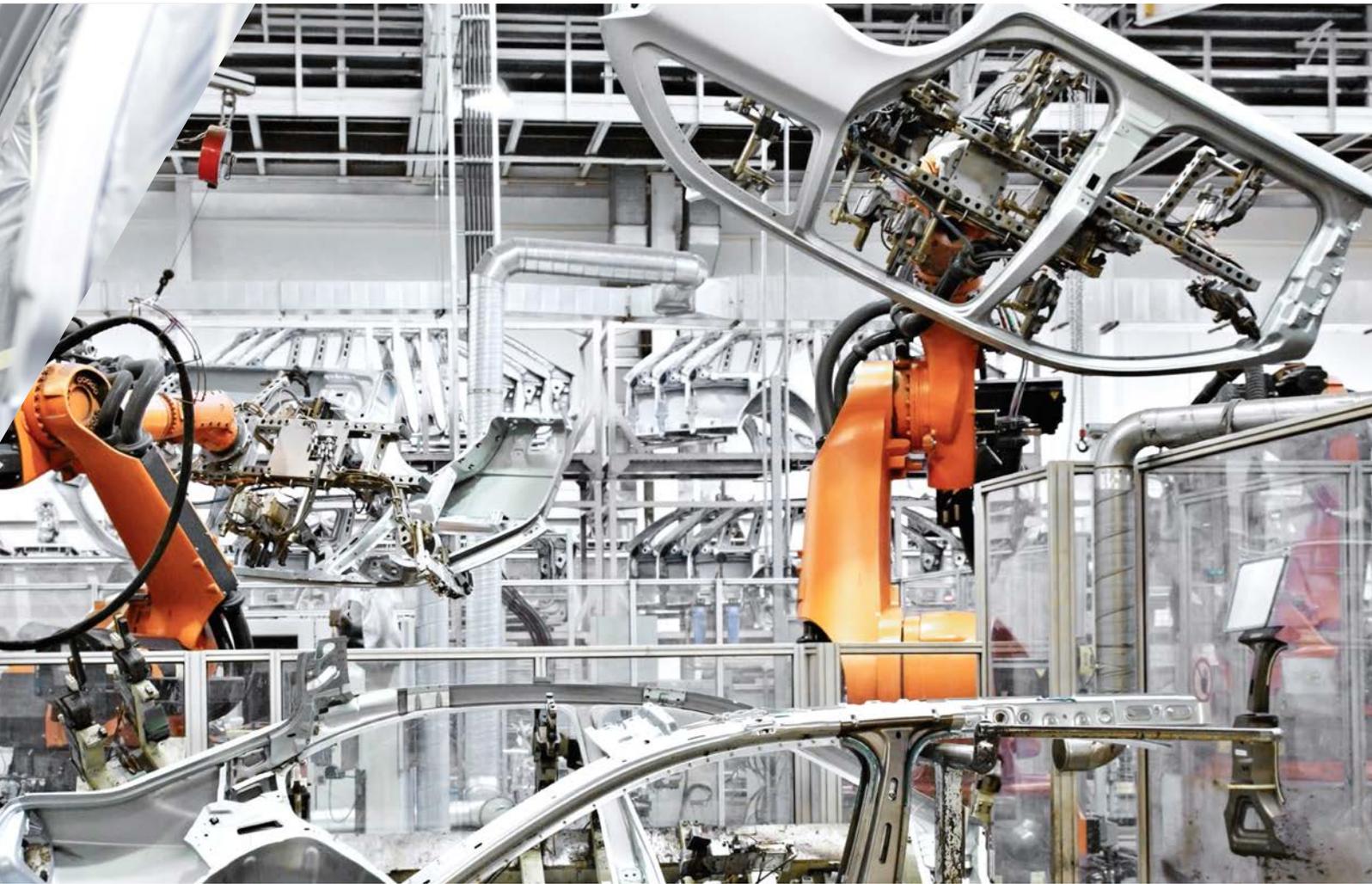
In industry and commerce, we create healthy working conditions. That these conditions save energy and costs as well is part of our essential obligation in a value-added partnership.

For example, we safeguard thermal processes and painting facilities with high-grade filter solutions. In the automotive industry, we provide complex systems for the equipment of assembly lines for many car manufacturers. Especially in surface treatment technology, our systems guarantee brilliant results together with extremely high air purity in painting booths and drying areas. We have the necessary experience and the specialised knowledge to ensure optimal air conditions for people, machines, and materials.



Flexible and high efficiency energy recovery system eQL

The eQL is part of our range of flexible modular air handling units for large airflow rates. The eQ Master has energy saving components such as PM motors, RegAsorp sorption rotor and Econet. It offers a comprehensive range of heat recovery systems, filters, fans and other components packed in a very robust casing designed for demanding environments.



Core product
range for
industrial
buildings
– ***your benefits*** >>

- Operational safety
- Clean working environment
- Reliable solution
- Long life cycle



Air Movement
Fire Safety and Ventilation fans



Air Distribution
Ducts



Air Treatment
CAIRplus, eQL



Air Diffusion
Air heaters



Air Filtration
Deduster



Air Management
Dampers





OFFICES & MEETING ROOMS

Offices

FläktGroup products and solutions for a comfortable indoor climate give productive people, lower the running costs and create attractive office spaces which can generate higher rental income.



Indoor air comfort for the work place

Offices are built for people and the quality of ventilation in the indoor environment will affect their health, comfort and productivity.

You will find offices in a variety of different building types such as business premises, schools, factories, shops. In fact, most commercial buildings will accommodate employees working in an office. It is therefore hugely important that the air we breathe is clean to maintain our health and remains comfortable for our well-being and productivity – this is the basis for the widest offering for office ventilation in the market, from FläktGroup.



OFFICE APPLICATIONS SUPPORTED BY FLÄKTGROUP:

- Open plan offices
- Cellular offices
- Conference rooms
- Break rooms
- Reception areas

DESIGN CHALLENGES FOR OFFICE APPLICATIONS:

- Comfort
- Occupational load
- Green buildings
- Comfort aspects
- Flexibility
- Profitability
- District or local cooling
- DCV/VAV system



Proposed design functions

ReCooler HP, Wega II Chilled Beams and Flex-Geko Fan Coil Units



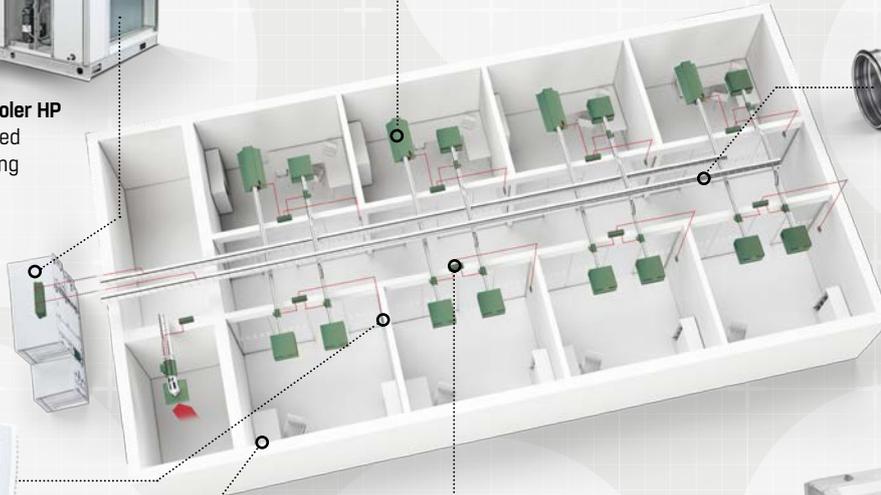
eQ Prime w. ReCooler HP
AHU with integrated heating and Cooling



Wega II
Active Chilled Beam
with Pi function



ULSA Ultrasound
Flow variator



**Room
Controller**



CO₂ sensor



**Occupancy
sensor**



**IPSUM System Optimizer
and Management software**



Flex-Geko Fan Coil Unit

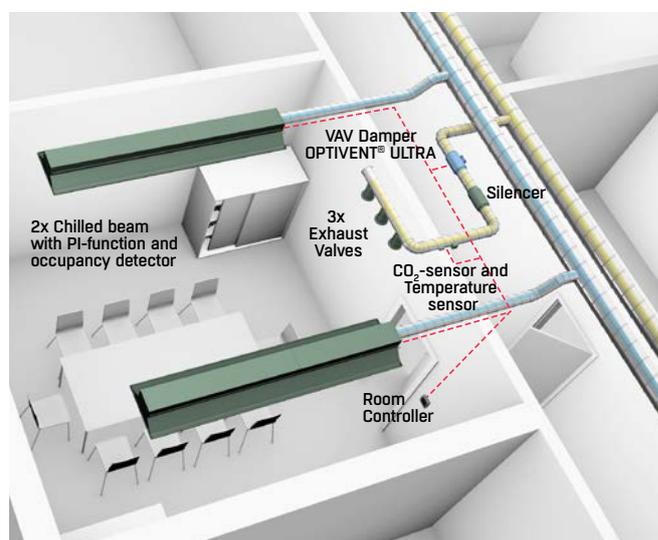
Office/ meeting room

Office environments place high demands on the ventilation and air quality. Sedentary working conditions, with both tedious and stressful challenges, requires fresh air and good comfort to be able to perform. In meeting rooms, situations are even more demanding with loads varying between empty periods and crowded, intense long meetings.



PLANNING TIPS / CHECKLIST:

- ✓ Min air flow in the room: 12,5 l/s (floor area 25 m²)
- ✓ Max air flow in the room: 100 l/s (loads=965 W and $\Delta T=8^{\circ}\text{C}$)
- ✓ Exhaust air duct: \varnothing 200mm (0,65 Pa/m)
- ✓ OPTIVENT® ULTRA: ULDA-5-200-1 for exhaust (same size as duct)
- ✓ Silencer: BDER-44-020-090 for exhaust (33 dB(A) right before silencer with $q=100$ l/s and $\Delta P=80$ Pa)



CASE STUDY
OFFICE/MEETING ROOM

MASS LIST: OFFICE/MEETING ROOM

Air management

- Optivent Ultra VAV-damper ULDA-5-200-1
- Silencer, length 900mm, BDER-44-020-090

Air diffusion

- Chilled beam WEGA II (2 pcs) IQII-240-11-07-2-1 and IQAZ-35-01-1-1-1
- Water valve (2 pcs) heat and cooling STRZ-70

- Exhaust valve (3 pcs) with CleanVent® coating KSO-125-C

Automation systems

- Room Controller (Modbus connection) STRA-24
- Transformer STRZ-24-1
- CO₂-sensor STRZ-18-1-2
- External temperature sensor STRZ-05-04
- Occupancy detector STRZ-09-03



PROPOSED DESIGN FUNCTIONS

- CO₂, temperature and occupancy sensors are observing room's indoor air climate
- Room controller receives messages from the different room sensors and controls the VAV damper (exhaust duct) and chilled beam's PI actuator movements
- Room's ventilation system is constantly driven by demand controlled ventilation

OPTIVENT® ULTRA BENEFITS

- Needs no safety distance in the tight duct installation in the corridor
- Wide air flow range is needed in meeting room
- Silent ventilation system guarantees good meeting conditions
- Reduced need for maintenance work that create disturbances for the daily activities

OFFICE / MEETING ROOM
 area 25 m²
 Air volume +/- 100 l/s
 (10 persons)



WEGA II chilled beam with PI-function



Exhaust valves with CleanVent® coating



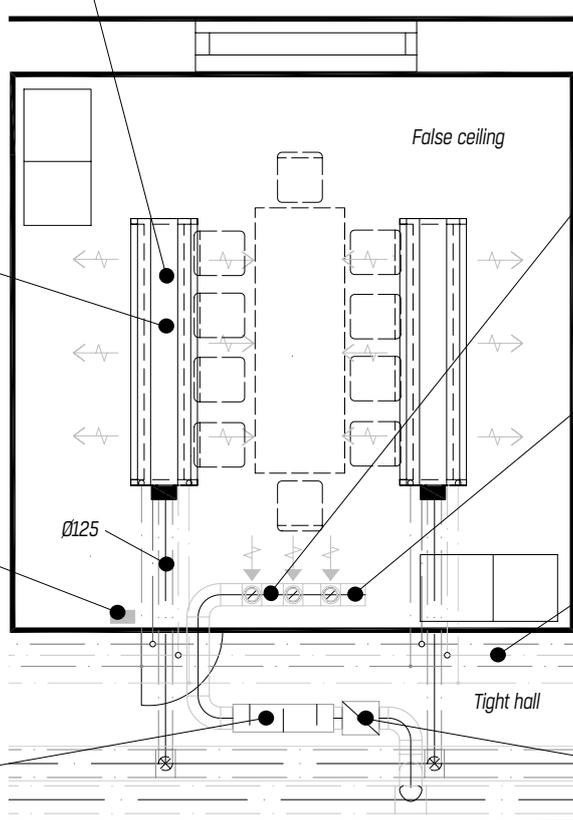
Occupancy detector integr. in the beam



Room Controller Modbus connection



Silencer BDER



CO₂-sensor and External temperature sensor installed inside exhaust duct

Heating and cooling pipes



OPTIVENT® ULTRA VAV-damper

0–60 l/s in 2.4 m*

WITH THE PI FUNCTIONALITY WE
DELIVER **TRUE DEMAND CONTROL**
VENTILATION FOR ALL DUCTWORKS



*Close to 0 to 60 l/s in same chilled beam with a length of 240 cm.

FläktGroup innovative Pi function is available on our Wega II, Nova II and Lyra II chilled beams



Wega II / Nova II / Lyra II has been developed for the high demands of the modern dynamic office where the ability to adapt the room comfort system to layout change is equally as important as adopting the latest energy saving solution.

The enhanced design features variable geometry nozzles, to offer the widest choice of airflow settings. Nozzle change can be actuated to automatically adjust ventilation flow rates to occupancy levels regardless of pressure changes in the ductwork system. With the Pi function, variable air volume with chilled beams need no longer be restricted to larger Pressure Regain ductwork systems. Energy efficiencies and high comfort levels of chilled beams operating in Demand control, is now available to refurbishment projects where space is often restricted.

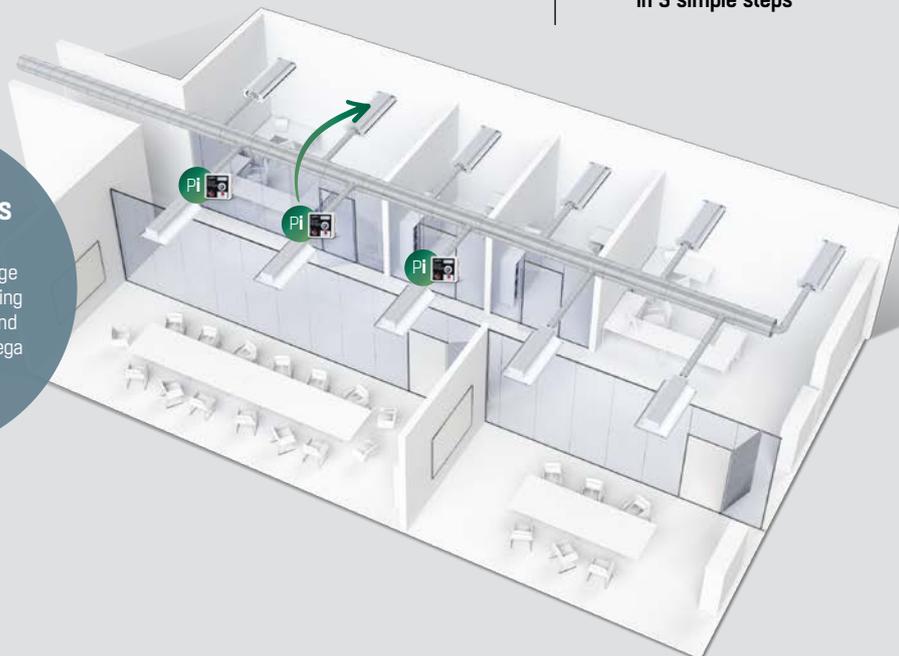
The benefits of Pi

Thanks to the clever Pressure Independant Pi functionality, Wega II, Nova II and Lyra II are the only chilled beams that you need. The Pi functionality means that you can get the comfort and energy saving benefits of demand control ventilation irrespective of what ductwork system your building has.

- Demand Control Ventilation for all ductwork systems
- Consistant Coanda effect and good cooling, even at low airflows
- Large airflow range with stepless adjustment down to close to 0 l/s
- Very low noise levels
- Retrofit option
- Easy installation and commissioning in 3 simple steps

RetroFIT Pi – MOVES WITH THE ROOM

Ultimate flexibility. Change the location of your meeting room, just disconnect and fit Pi Airflow control to Wega units in new location





HYGIENE VERSION

Wega II is also available in a Hygiene version, ideally suited to hospitals and other sensitive applications. The coils are coated for a very smooth finish, which help avoid dust buildup. The Hygiene version also has a clever quick-release system that makes it possible to drop down the coil pack from either side to allow easy access for cleaning.

ENERGY CONTROL *(patent pending)*

Rail mounted variable geometry nozzles with 36 position airflow setting for more flexibility. Easily adjustable to provide the widest choice of air flow settings for symmetrical or asymmetrical throw.



INNOVATIVE FEATURES FOR SUPERIOR COMFORT AND EASY INSTALLATION

All FläktGroup Chilled Beams have been developed with the aim of providing a comfortable and healthy indoor climate, in a flexible and efficient way. **Wega II, Nova II and Lyra II** with the unique Pi function are especially suited to simplify the introduction of Demand Controlled Ventilation and improve its adaptability to change. The energy saving and high indoor air quality benefits of chilled beams are ensured with the Pressure Independent functionality where airflow is matched to demand regardless of changes in other rooms. The easy-to-install Pi actuator can be retro-fitted to move with requirements when change happens, or to enable Demand Controlled Ventilation to be gradually phased in.



EASY TO INSTALL AND COMMISSION

- Clip-in brackets that make installation quick, safe and easy. Install the rods and brackets and then clip in the beam at second fix stage – when the room is clean.
- Exact location of the pressure tap-off point provided for commissioning – no guess work required.



Pi AIRFLOW CONTROL WITH AIRFLOW OUTPUT – FITS ALL DUCTWORK

For added energy saving, nozzle change can be actuated to match airflow to occupancy level and kept at set values regardless of pressure changes in ductwork. Simply link to presence or CO₂ detection devices. Airflow information is directly available for exhaust damper.

Linear airflow control provides optimal coanda control preventing dumping through the widest airflow range and thus maintaining comfort. Actual flow output is easily linked to exhaust for balancing ventilation.

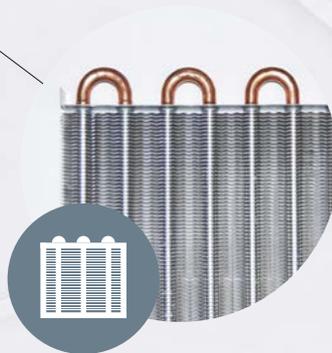
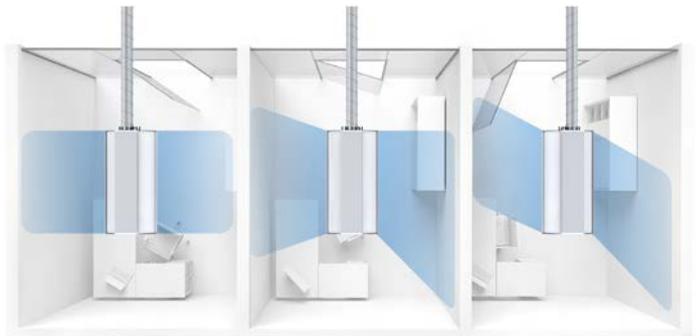
The Pi-function is available as an option and can be retro fitted.



FPC – FLOW PATTERN CONTROL

The adjustable plastic vanes enable optimized air diffusion. By a combination of different angles on each side, it is possible to adapt the flow pattern to always maintain optimal comfort in the room with the following benefits:

- Vary throw direction
- No tools required
- Accessible from room



COIL VARIATIONS

Available for cooling only or cooling and heating in 2 size options:

- 8 tube for normal capacity
- 10 tube for higher capacity

ReCooler HP



Integrated cooling/heating in the eQ Air Handling Unit with impressive installation simplicity

An integrated part of the eQ family of air handling units, the innovative ReCooler Heat Pump from FläktGroup is **the combination of a reversible heatpump unit and an energy recovery wheel** in one unit – bringing true benefits from design to operations. eQ with ReCooler Heat Pump is a complete plug-and-play air handling unit for ventilation, heating and cooling. Everything is included and factory tested for a simple and reliable installation. A traditional installation would include a condensing unit or a chiller, both of those solutions require many hours of preparation and construction work on site (piping, concrete slab, etc). Often, a refrigeration specialist would be required and with multiple suppliers with differing responsibilities more sources of failure are introduced. With ReCooler Heat Pump this will be avoided!



Easy



EASY TO SELECT
AND DIMENSION



EASY TO POSITION
AND INSTALL



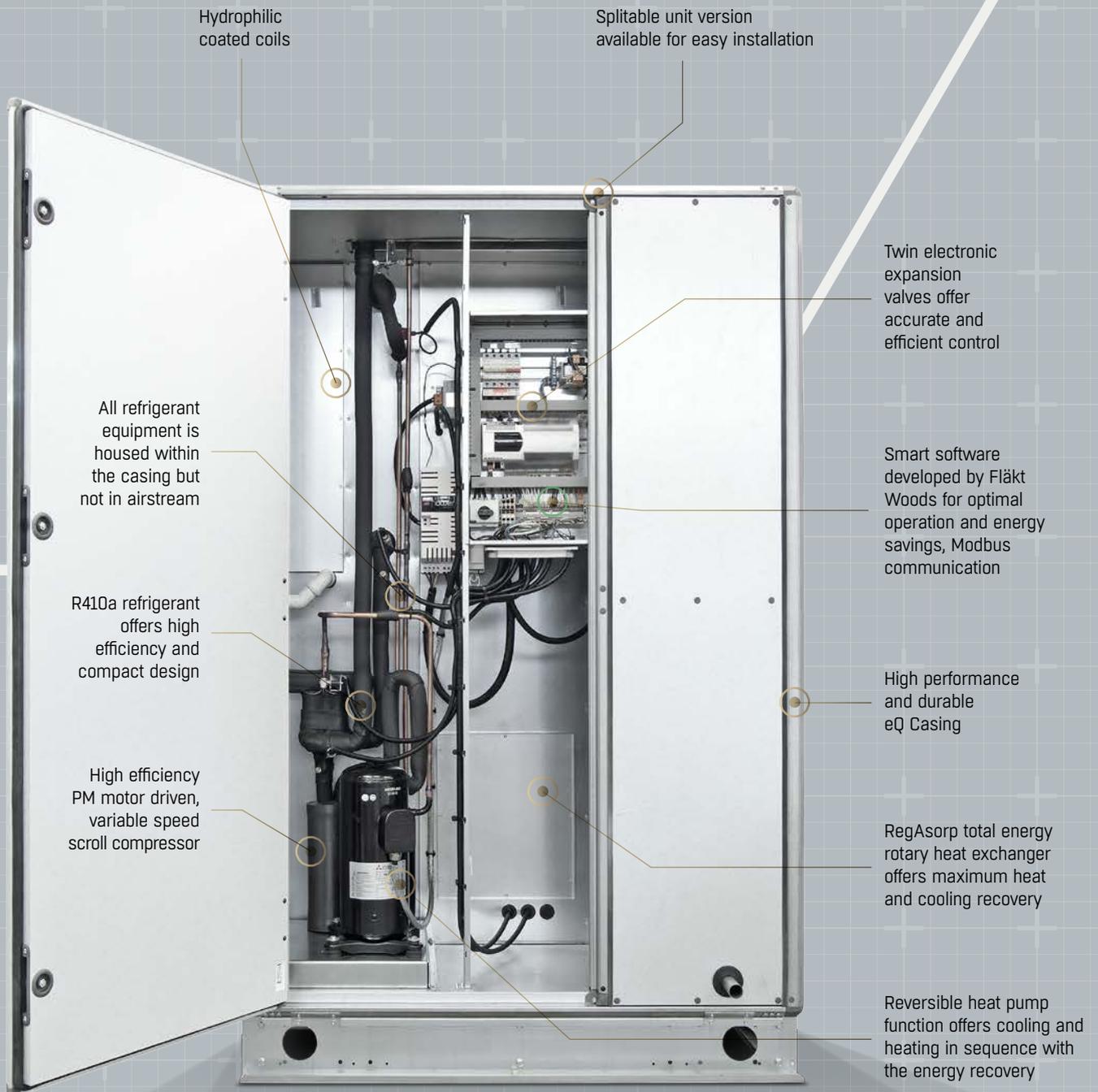
EASY TO ACHIEVE
LOW ENERGY COSTS



EASY TO MANAGE
ENVIRONMENTAL
REGULATIONS



EASY TO OWN
AND MAINTAIN



This product contains fluorinated greenhouse gas, R410A, with a GWP-factor of 2088. Refrigerant quantity: 3,8–11,8 kg, corresponding to 7,9–24,6 tonnes of CO₂ equivalent

SIZE CHART

Unit size	8	11	18	23	32	41	50	72
Air flow, m³/s	0,8	1,3	1,9	2,5	3,0	4,3	5,1	6,5

> ISYteq FICO OFFICE APPLICATION



EASY INSTALLATION

- 2-wire bus connection, twisted pair for the RS485 Modbus RTU communication
- The ISYteq FICO Pro or Mini Main controller & Multiboxes FCCB make up the system.
- Monitor and control up to 256 fire damper actuators with FICO Pro* (12 with FICO Mini)
- This means shorter installation time and lower installation costs.

**Available from Q2 2019*

EASY TO CONFIGURE

- Automatic addressing saves time
- Support serial connected smoke detector
- Serial Modbus connection to other devices
- Connect smoke detectors to the Multiboxes
- LED status indication
- Individual fire damper status indication
- Fire alarm input signal can be connected to control unit
- Set day & time for testing motorised fire dampers
- Failsafe system for motorised fire dampers



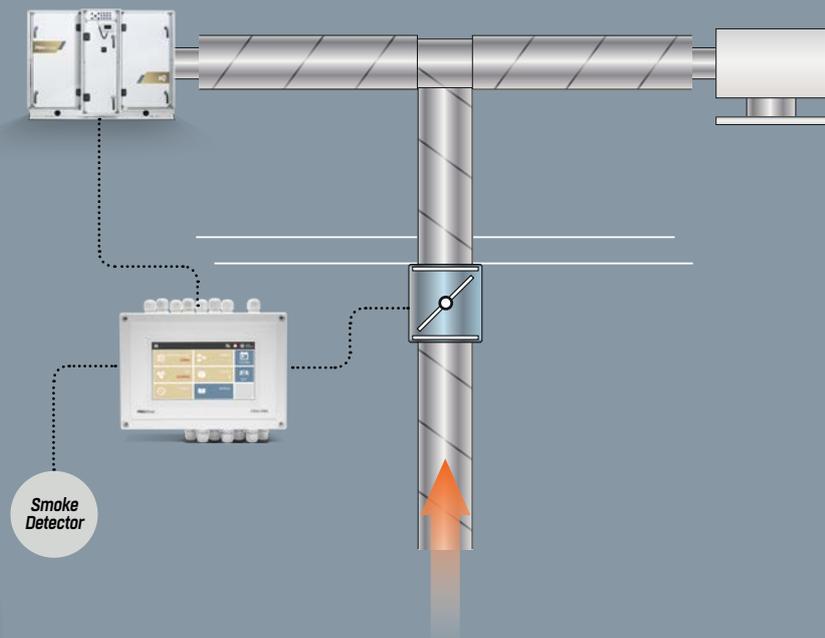
BUILDING SAFETY

- Fire dampers are installed as part of building fire safety firstly to protect occupants, then the fire service and as much of the building as possible.
- The ISYteq FICO Pro or Mini main controller & Multiboxes FCCB make a system connecting the actuators of the fire dampers to the multi-boxes and then multi-boxes to the main controller.
- Fire safety standards require a 6 monthly test of the fire dampers
- Offices, hospitals, education facilities, anywhere there are multiple rooms and a requirement to maintain the fire cell

Whilst mechanical fire dampers still make up the majority of sales the opportunity is to switch these to motorised dampers which offers a reduction in whole life costs even after adding in the cost of the control system.



Next generation of the Fire Safety Control system: FICO PRO & FICO MINI



The fire dampers are positioned at points intersecting with rooms, floors, stairwells and corridors where fire cells have to be maintained.





SCHOOLS & EDUCATION

Education

The ventilation system in schools require care, attention and optimised solutions to achieve the best Air Comfort conditions for learning and developing.

Creating the best environment for learning

Educational facilities provide a variety of differing indoor spaces that all come with their own challenges.

When considering this application we must consider the reduction of noisy distractions that would affect a young persons concentration. We also consider air temperature, draughts, odour control and in some cases where a building is large enough fire safety solutions for safe exit of a building. At FläktGroup we take these needs into consideration and have created solutions that manage the needs of small and large capacity schools and colleges, focusing on class room learning, gymnasiums and even comfort in corridors between class time.



EDUCATION APPLICATIONS SUPPORTED BY FLÄKTGROUP:

- Universities
- Training centers
- Kinder garden
- Conference centers

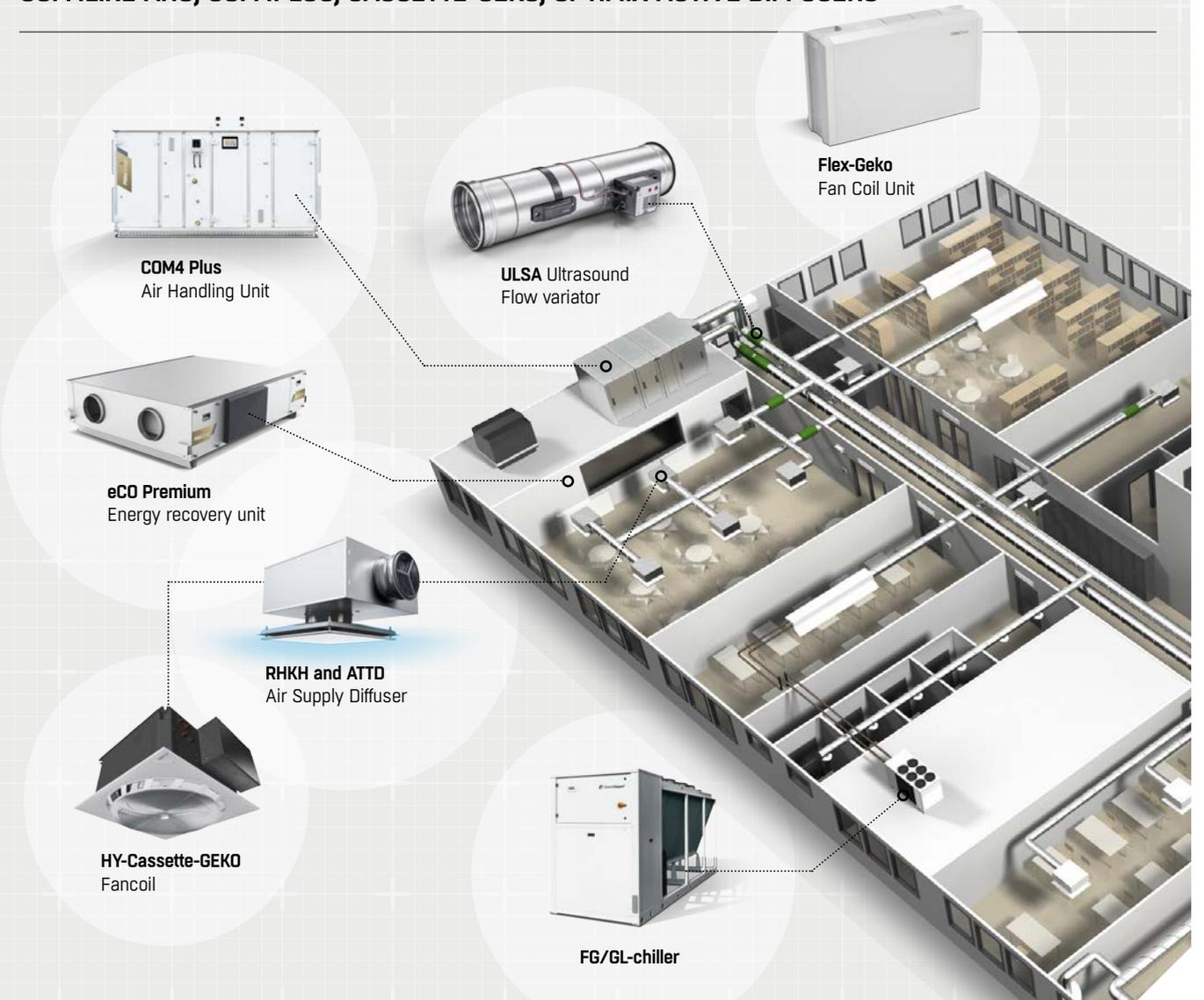
DESIGN CHALLENGES FOR SCHOOL APPLICATIONS:

- Large room volumes to ventilate
- Fresh air to be productive
- Flexibility
- Cost efficient
- Low sound levels



Proposed design functions

COM4LINE AHU, COM4PLUS, CASSETTE-GEKO, OPTIMIX ACTIVE DIFFUSERS



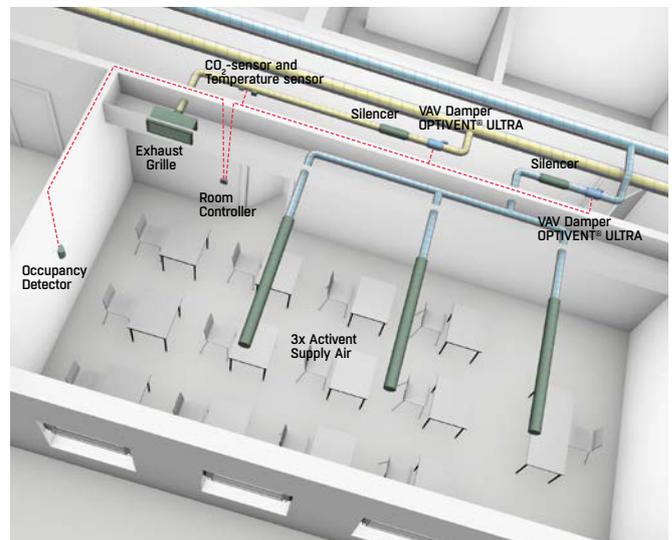
School/ Class room

Children need the best possible working environment to learn and excel. Good air quality and low noise is crucial to stay focused and alert. Dust and varying presence place further technical demands on the ventilation system. As does tight operating budgets on optimised energy consumption and economy.



PLANNING TIPS / CHECKLIST:

- ☑ Min air flow in the room: 25 l/s (floor area 50 m²)
- ☑ Max air flow in the room: 150 l/s (loads = 1450 W and $\Delta T=8^{\circ}\text{C}$)
- ☑ Supply air duct: \varnothing 250mm ($v=3,1$ m/s with max air flow)
- ☑ Exhaust air duct: \varnothing 250mm (0,4 Pa/m)
- ☑ OPTIVENT® ULTRA: ULDA-5-250-1 for supply and exhaust (same size as duct)
- ☑ Silencer: BDER-44-025-090 for supply and exhaust (34 dB(A) right after silencer with $q=150$ l/s and $\Delta P=80\text{Pa}$)
- ☑ Air pattern (Activent-020): max air velocity < 0,15 m/s in the occupational zone with minimum air flow and 0,2 m/s with maximum air flow



CASE STUDY
SCHOOL/CLASS ROOM

MASS LIST: SCHOOL/CLASS ROOM

Air management

- Optivent Ultra VAV-damper ULDA-5-250-1 (2 pcs)
- Silencer, length 900mm, BDER-44-025-090 (2 pcs)

Air diffusion

- Activent supply air distribution (3 pcs) systems ACTA-020-1-180-2-2

- Exhaust grille with CleanVent® coating SVI-550-200 + TGE-550-200-B

Automation systems

- Room Controller (Modbus connection) STRA-04
- Transformer STRZ-24-1
- CO₂-sensor STRZ-18-1-2
- External temperature sensor STRZ-05-04
- PIR Occupancy detector STRZ-09-1



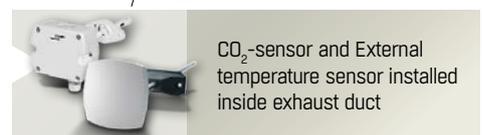
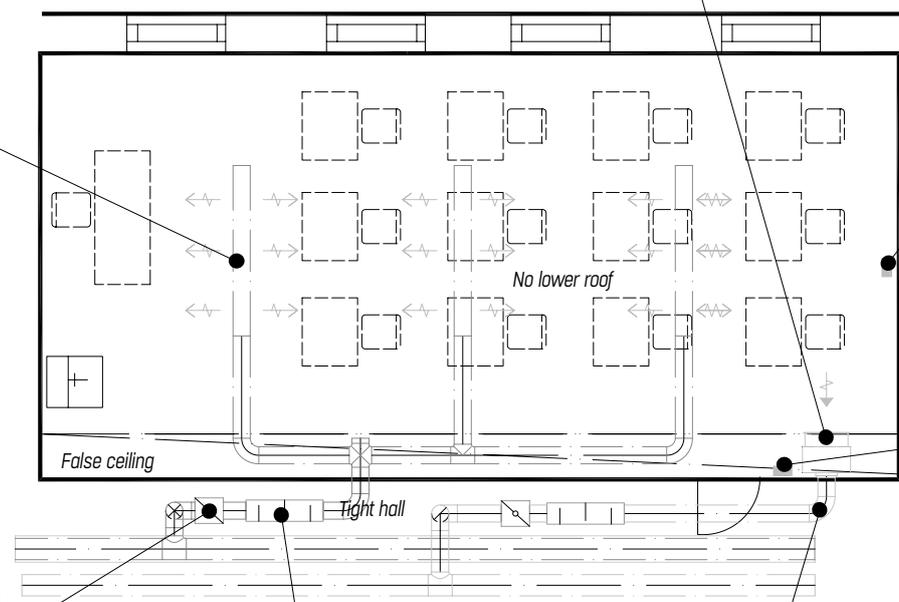
PROPOSED DESIGN FUNCTIONS

- CO₂, temperature and occupancy sensors are observing room's indoor air climate
- Room controller receives messages from the different room sensors and controls the VAV function
- Room's ventilation system is constantly driven by demand controlled ventilation

OPTIVENT® ULTRA BENEFITS

- Needs no safety distance in the tight duct installation in the corridor
- Dust resilient VAV damper is splendid for class rooms where are crowded people
- Wide air flow range is needed in class room
- Silent ventilation system to create optimal environment for learning
- Reduced need for maintenance work that create disturbances for the daily activities

SCHOOL / CLASS ROOM
 area 50 m²
 Air volume +/- 150 l/s



► GUIDE TO PLANNING/
DIMENSIONING/CONFIGURATION

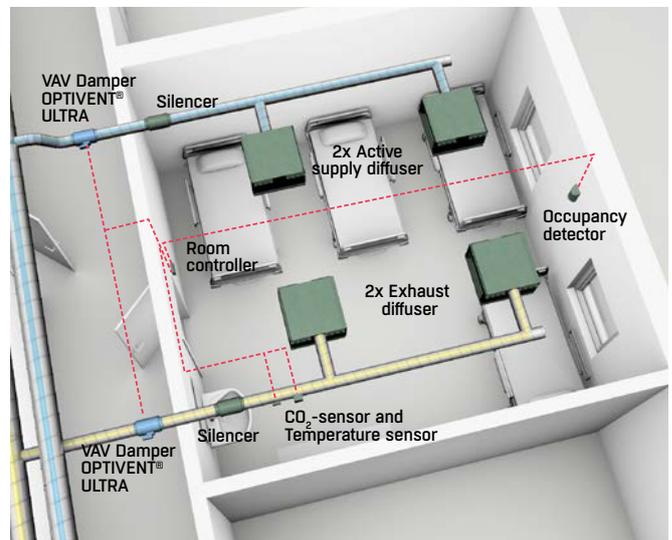
Nursery, Play/ Resting room

Childrens activities in nurseries varies from intense play to after-lunch rest. A flexible solution is required to adapt to the varying demands. Nurseries also put tough demands on the health aspect due to childrens sensitivity and frequent dust, bacteria and virus contamination. Financial resources should rather be spent on staff and toys than on unnecessary operating costs for the ventilation system.



PLANNING TIPS / CHECKLIST:

- ✓ Min air flow in the room: 18 l/s (floor area 36 m²)
- ✓ Max air flow in the room: 100 l/s (loads=965 W and $\Delta T=8^{\circ}C$)
- ✓ Supply air duct: \varnothing 200mm ($v=3,2$ m/s with max air flow)
- ✓ Exhaust air duct: diameter 200 mm (0,65 Pa/m)
- ✓ OPTIVENT[®] ULTRA: ULDA-5-200-1 for supply and exhaust (same size as duct)
- ✓ Silencer: BDER-44-020-090 for supply and exhaust (33 dB(A) right after silencer with $q=100$ l/s and $\Delta P=80$ Pa)
- ✓ Air pattern (diffuser RAOB-125): max air velocity 0,19 m/s in the occupational zone with minimum air flow and 0,19 m/s with maximum air flow. Set up of air throw length constant 1,5 m



CASE STUDY
NURSERY, PLAY/RESTING ROOM

MASS LIST: NURSERY/PLAYROOM

Air management

- Optivent Ultra VAV-damper ULDA-5-200-1 (2 pcs)
- Silencer, length 900mm, BDER-44-020-090 (2 pcs)

Air diffusion

- Active supply diffuser (2 pcs) with CleanVent[®] coating RAOH-315-3-5 and ATTD-125-315-1
- Exhaust diffuser (2 pcs) with CleanVent[®] coating HPKH-160-6-C and ATTD-125-160-1

Automation systems

- Room Controller (Modbus connection) STRA-04
- Transformer STRZ-24-1
- CO₂-sensor STRZ-18-1-2
- External temperature sensor STRZ-05-04
- PIR Occupancy detector STRZ-09-1



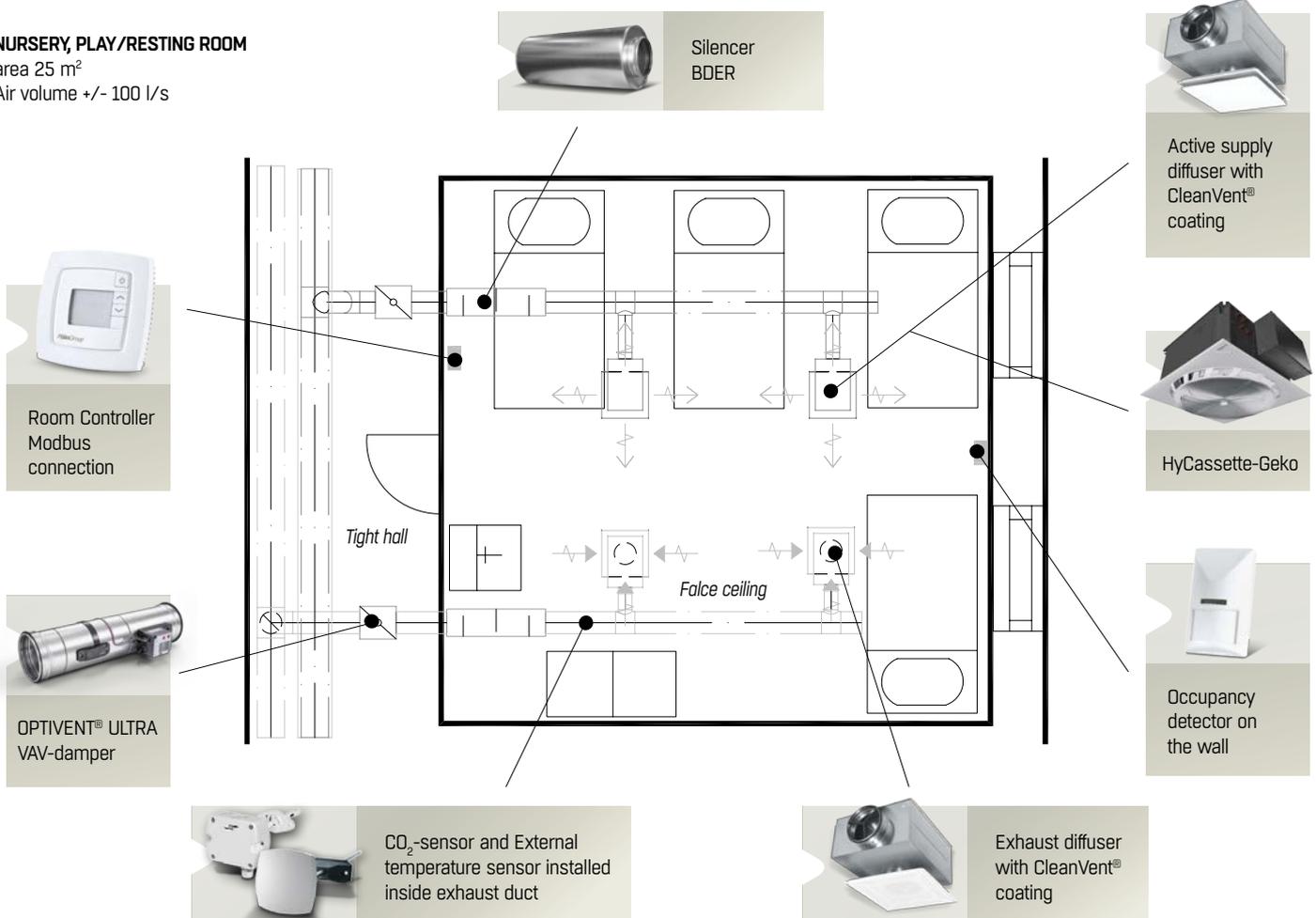
PROPOSED DESIGN FUNCTIONS

- CO₂, temperature and occupancy sensors are observing room's indoor air climate
- Room controller receives messages from the different room sensors and controls the VAV function
- Room's ventilation system is constantly driven by demand controlled ventilation (from min. air flow to max. air flow)
- Active supply air diffuser OPTIMIX keeps precise throw length by using actuator

OPTIVENT® ULTRA BENEFITS

- Needs no safety distance in the tight duct installation in the corridor
- Dust resilient and is splendid for rooms that contains lots of textile dust
- Reduced risk for draught close to the supply air device OPTIMIX (bunk bed)
- Silent ventilation system (OPTIVENT® ULTRA + OPTIMIX) provides good sleeping conditions
- Reduced need for maintenance work that create disturbances for the daily activities

NURSERY, PLAY/RESTING ROOM
 area 25 m²
 Air volume +/- 100 l/s



OPTIVENT® ULTRA



Game-changing VAV with UltraSound technology

FläktGroup OPTIVENT® is a trusted line of Variable Volume Ventilation (VAV) dampers that have been optimised with the latest cutting-edge innovation. With advanced airflow analysis based on ultrasound technology we now present a new dawn for Demand Controlled Ventilation. A landmark innovation setting aside traditional challenges for VAV dampers; Noise, turbulence and pressure drops in the airflow. Dust buildup affecting measuring precision, contaminating the air and requiring maintenance.

OPTIVENT® ULTRA also offers unique benefits for builders, property owners and construction companies in more aspects. It avoids traditional risks and disadvantages in VAV systems and leads to simplified design, installation and commissioning, bringing lowered life cycle costs and an unprecedented level of air comfort as well.



UltraSound
Technology
by FläktGroup



LOW NOISE



GOOD INDOOR
AIR QUALITY



FLEXIBILITY



ACCURATE
& VERSATILE



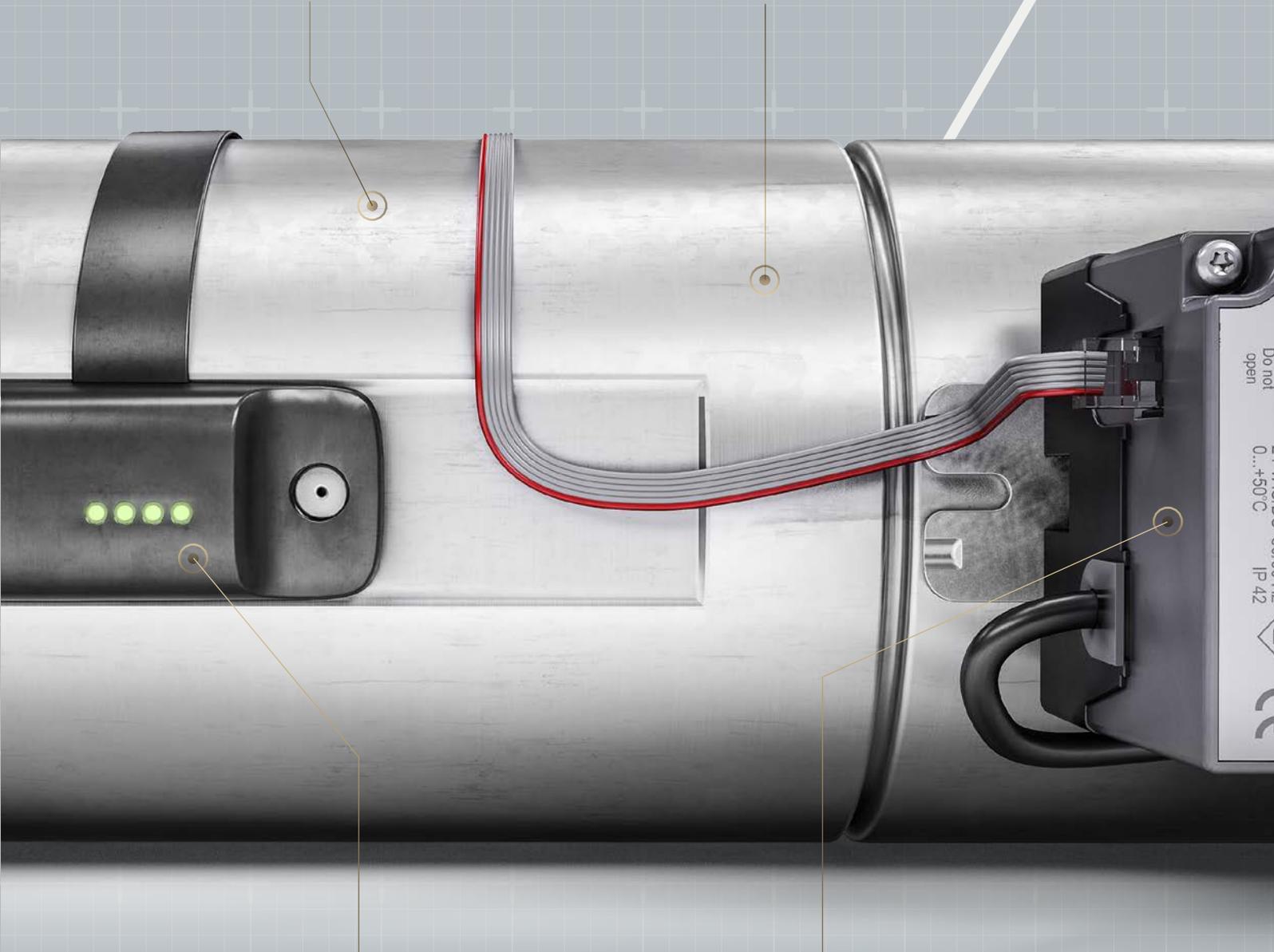
ENERGY
EFFICIENT



MAINTENANCE
FREE

No physical sensor inside the airstream that collects dust, induces noise or affects the airflow.

Ultrasound technology means much more compact installations, requiring no extra safety distances around the Damper.



Ultrasound technology components transmit and receive ultrasound. The entire airstream is analysed with high accuracy in both low and high air speeds.

Intelligent Controls sense temperature and analyse average air speed with carefully developed ultrasound algorithms, resulting in high precision data with long-term reliability.

> COMPACT AHU SCHOOL APPLICATION WITH CONTROLS



ISYteq CONTROLLER

- Direct service configuration access with the touch display
- Integrated webserver on the unit
- Standard BACnet and Modbus
- Standard alarm & trend history
- Intuitive touch panel operation which is very easy to operate
- Unit can be fully operated using the integrated webserver and order without a large touch panel

ISYteq TOUCH 4.0

- Direct service configuration access with the touch display
- Can be used as a simple room device to operate the COM4mini
- Integrated room temperature and humidity sensor
- On wall & in wall mounted with special wall boxes



COM4mini

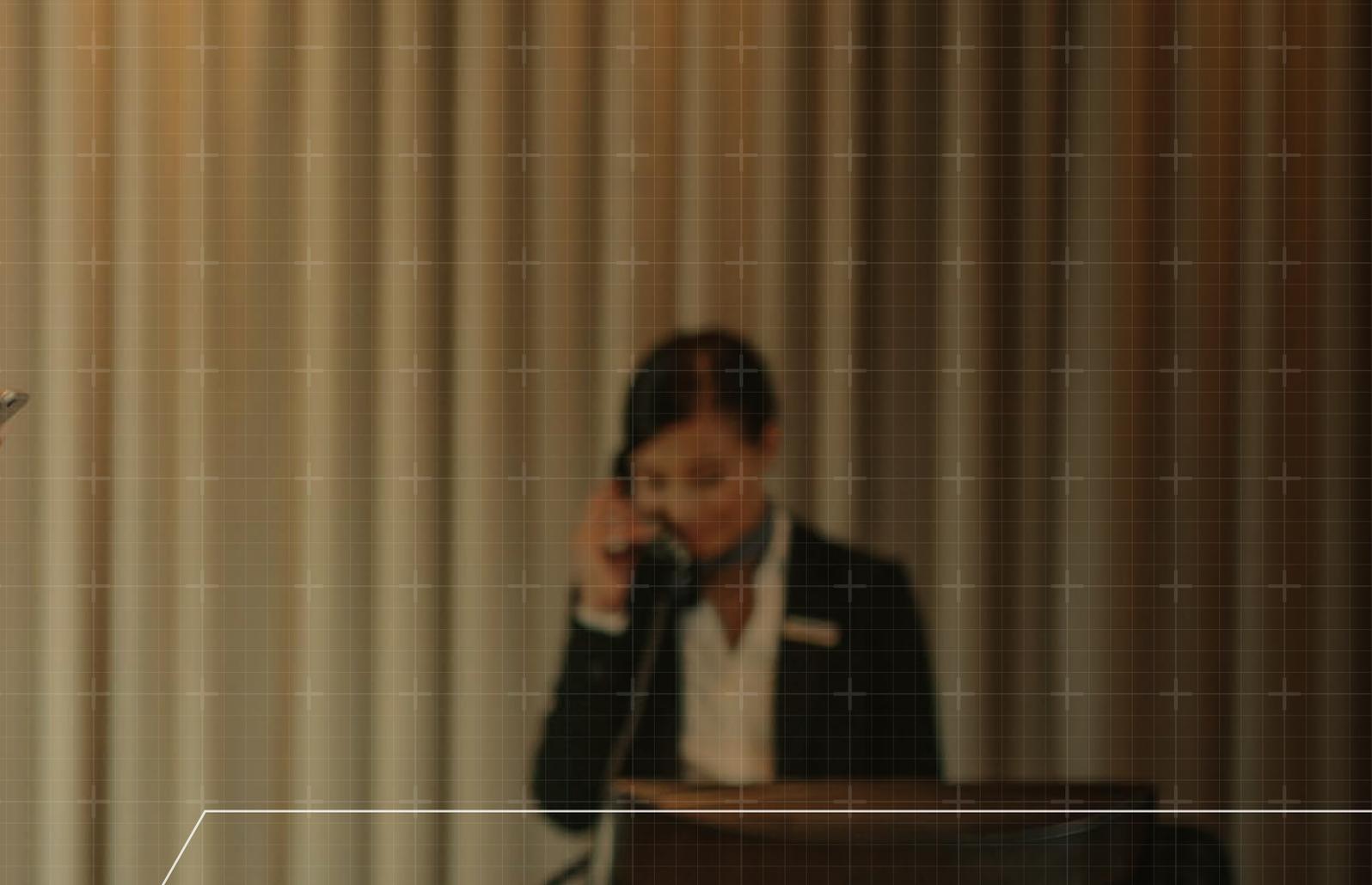
- COM4mini has a low sound level (can be mounted directly in the room)
- Preconfigured & tested unit can be connected and the unit is ready to go
- Vertical and horizontal installations



ISYteq TOUCH 7.0

- High quality 7" touch panel
 - also suitable for outdoor operation
- Same view as directly on the webserver
- Can be mounted on the unit or remote wall mounting





HOTELS & RESTAURANTS

Hotels & Restaurants

A comfortable indoor air is perhaps more important in a hotel than in any other building type. With FläktGroup as a partner, our customers can create the attractive indoor climate that the guests expect!

One building, a whole variety of demands

On the one hand, lobbies, restaurants, bars, restaurants and congress facilities are open to the general public and must offer room climate that satisfies many wishes. On the other hand, rooms and suites are individual feel-good zones in which the guest determines his or her own desired climate. Everyone is looking for HVAC solutions that are simple to control, quiet, and yet energy-efficient.



Other areas, however – such as garages, wine cellars, and kitchen facilities – require solutions closely oriented to their respective functions.

In wine cellars, constant temperature is essential to preserve the goodness of their valuable contents. In garages, the oxygen content of the air has priority, and in hotel kitchens the ventilation system must assure effective exhaust of food vapours and odours.

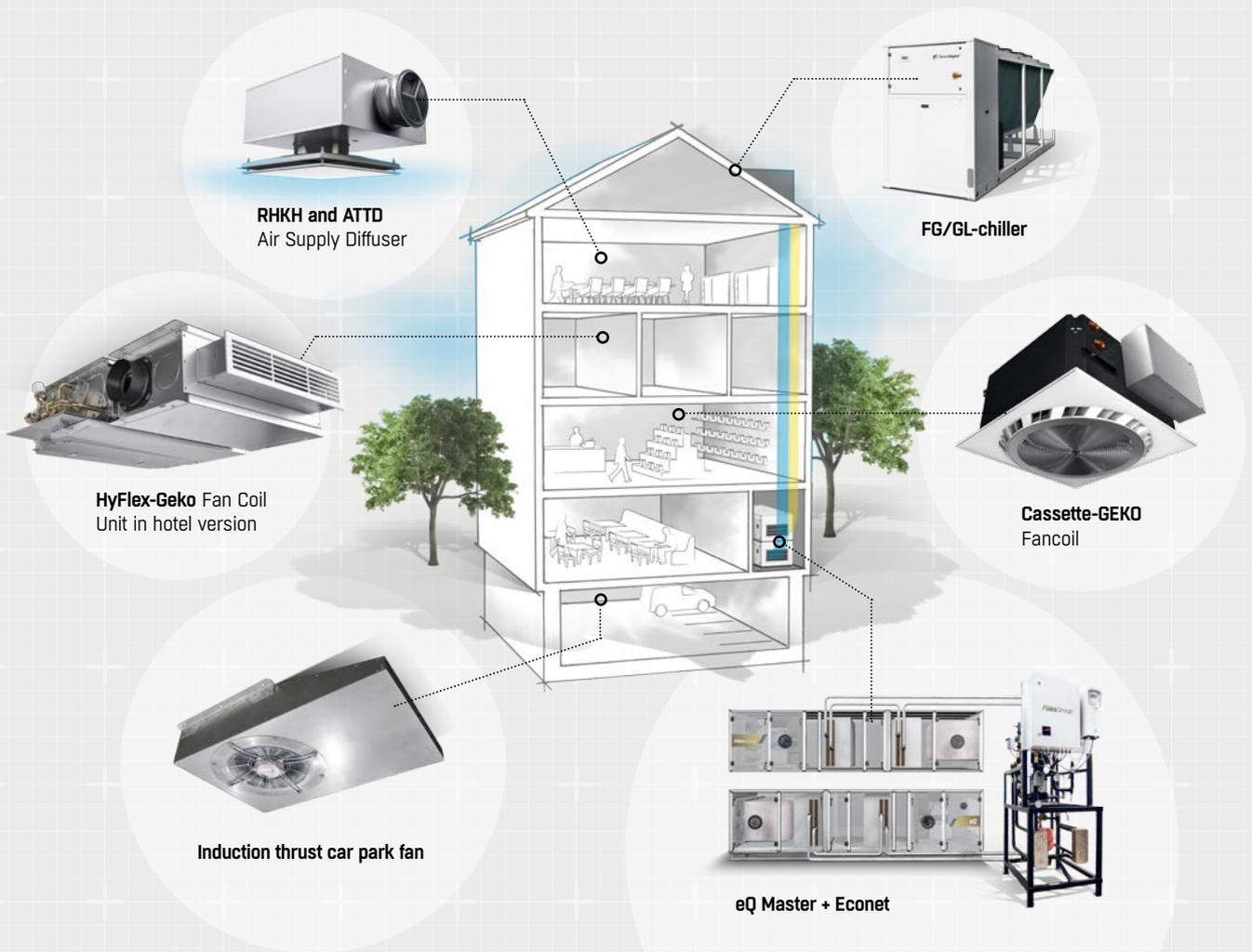
In such areas of application, successful operations will depend on demand-driven and flawless interaction of sensor systems, closed-loop control, and the HVAC technology itself.

DESIGN CHALLENGE HOTELS:

- Demand controlled ventilation
- Cooling needs
- Odour transfer
- Many activities in same building
- Energy efficient
- Future proof
- Energy recovery from all areas



Proposed design functions
eQ MASTER WITH ECONET, FAN COIL UNITS AND CAR PARK FAN



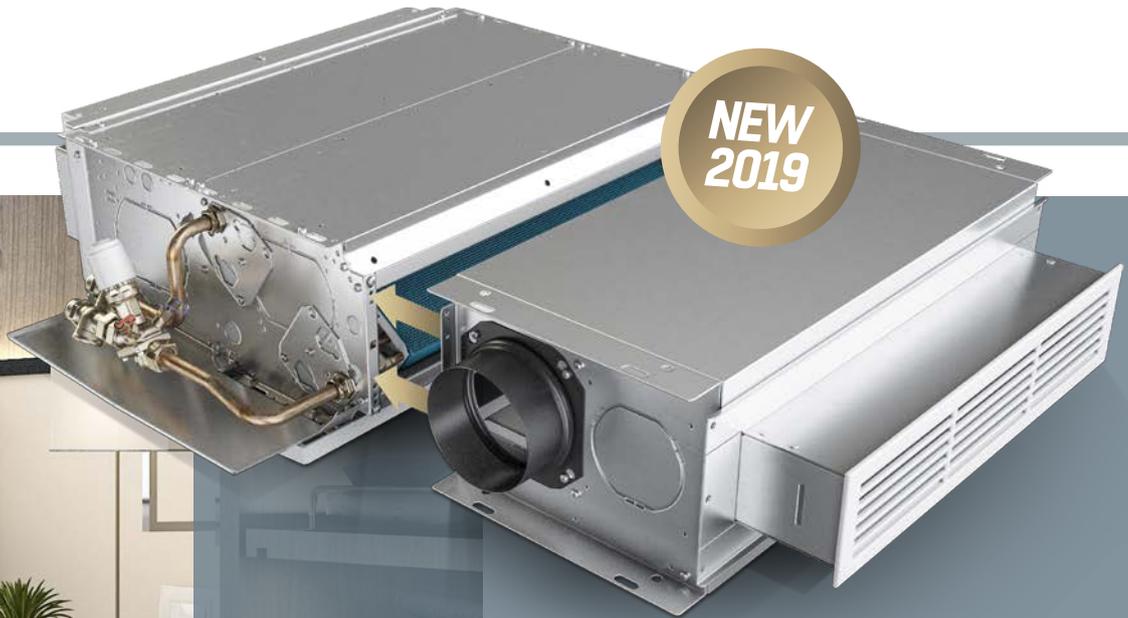
> FAN COIL HOTEL APPLICATION WITH CONTROLS



CET.ACEC

- Simple analog controller for a cost effective entry-level solution, including AC and EC-fan control
- Sound level together with EC fan can be exactly limited during the selection in DesignA!R or later on in the project
- Standard window & eco contact
- Standard Modbus RTU on board

**NEW
2019**



HyFlex-Geko

- HyFlex-Geko is a flexible solution and easy to install in the bulkhead
- Preconfigured controllers can be connected and the unit is ready to go
- Special key features, like factory mounted valves, toolless removable condensate tray and individual position of control box



ISYTEQ TOUCH 4.0

- Easy to operate touch panel with a modern user experience
- Sound level together with EC-fan can be exactly limited during the selection in DesignAIR or later on in the project
- Sleep button (will shut down the screen and turn down or off the fan after a time delay to get in bed)
- Direct service configuration access with the touch display
- Integrated webserver on the unit
- Standard BACnet & Modbus
- Standard alarm & trend history



CLEANVENT®

Dirt repellent coating that improves both aesthetics and hygiene on valves

Our unique CleanVent® technology keeps your valves clean. It both reduces the need for maintenance, ensures good performance and looks nice.

Dirty supply and exhaust air valves have become a common and unsightly view in many buildings. The result is an unattractive appearance, a decrease in the indoor air quality as well as an increased energy consumption. With the unique Avalon® coating – which makes the surfaces of air terminal devices dirt repellent – these factors are greatly improved. FläktGroup is the only company in the world to offer this coating on its air valves.

CLEANVENT® KEY BENEFITS

- Aesthetic looks for longer
- Less need for cleaning
- Better indoor air quality
- Economical life cycle
- Constant technical performance
- Long life span
- Safe and environmentally friendly solution
- Suitable for all buildings

Traditional
air valve



CleanVent®
valve





This is what makes CleanVent® ATDs stay clean:



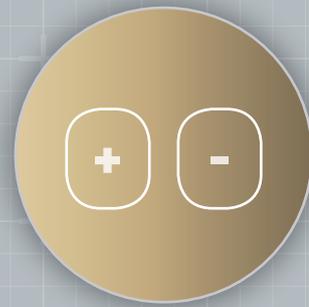
LOW SURFACE ENERGY

Due to high contact angle and low surface energy, water and grease drops hold their shape and do not spread out on the valve surface or leave a trail when rolling off.



THE SURFACE TOPOGRAPHY

The coating prevents the dirt from sticking to the surface irregularities of a traditional paint finish by forming an even film, which protects the valve.



ELECTRICAL SURFACE PROPERTIES

The CleanVent® surface is electrically inert, meaning that it doesn't contain any electrical charge that could attract and bind dirt to the surface.

CLEANVENT® - THE RIGHT CHOICE FOR ALL APPLICATIONS

CleanVent® coated air terminal devices are a good selection wherever clean looks, a hygienic function and reliable performance are appreciated. Thus a good choice in homes, offices or schools, or almost anywhere. But even more so where hygiene is imperative, like in hospitals, laboratories or sensitive industry.

TESTED AND PROVEN

The CleanVent® concept has been tested by VTT (Finnish Technical Research Centre). According to the test results, CleanVent® coated air terminal devices remain visibly cleaner, which indicate preserved performance and thereby good energy usage.



eCO TOP & eCO SIDE

Sleek and flexible design with low running costs

With eCO Top and eCO Side it is easy to find the optimum AHU for air flows up to 2880 m³/h – simply choose between Top or Side connected ducts and exits and three sizes. As part of our Compact AHU Range the eCO Top and eCO Side have been designed to suit installations in light commercial buildings such as restaurants, offices, schools. With this in mind we have focused on three main criteria:

- 1 To make the unit flexible for installations and retrofits in public rooms and tight spaces**
- 2 To make commissioning as easy as possible for the installers**
- 3 To lower running energy costs in the property through optimised energy efficiency.**

Easy all the way – from product selection to commissioning



EASY TO TRANSPORT

- Fits through 900 mm opening
- Tracks for forklifts



EASY TO POSITION

- Compact
- Low sound level
- Attractive design
- VDI 6022



EASY TO INSTALL

- Preconfigured controls
- Integrated silencers & battery
- Pre-assembled sensors



EASY TO CONFIGURE

- Touch screen display unit – ISYteq Touch 3.5
- Commissioning wizard

A more **flexible installation** with eCO TOP or eCO SIDE in buildings **without dedicated plant rooms**



FLEXIBLE LOCATION

Top or side connections offer a small unit footprint which ensures optimum use of the floor space. Thanks to a white-painted exterior and optional cover plates the unit offers many placement options in both new-build and retrofit applications. In addition both eCO Top and eCO Side are certified according to hygiene standard VDI 6022 as well as T2/T2B L1(M) D1(M).

TOP ENERGY PERFORMANCE

For FläktGroup, optimising the energy efficiency of our products is in our DNA. eCO Top and eCO Side have been designed from the outset to feature the most modern and efficient fans and energy recovery rotors on the market.

VERY LOW NOISE LEVELS

Thanks to the unique and excellent sound performance of eCO Top and eCO Side, the units are suitable for installations in public and semi-public spaces where normally AHU's can not be installed. Maximum flexibility delivered by FläktGroup.





RESIDENTIAL & MULTI-DWELLING

Residential buildings

In our homes we don't always experience carefully designed ventilation systems and good air quality – despite this being the place where we spend more time than anywhere else. FläktGroup wants to change this by providing a complete range of products for Air Comfort and Safety.

Delivering low energy use and year round comfort at home

Our everyday domestic activities are varying in their demands on the indoor climate. Moisture in the bathroom, heat and odours in the kitchen, dust from textiles in the laundry room, not to speak of the silence required in the bedroom to sleep well.



FläktGroup's product portfolio contains everything you need to design a ventilation system that lives up to the requirements of a comfortable, healthy and profitable modern residential building.

With a number of choices for Air Handling Units and energy recovery systems we can always supply a solution that is optimised, regardless of dwelling size. We are also experts in finding new and clever ways of maximising the leasable space, including in mixed-use commercial/residential buildings.

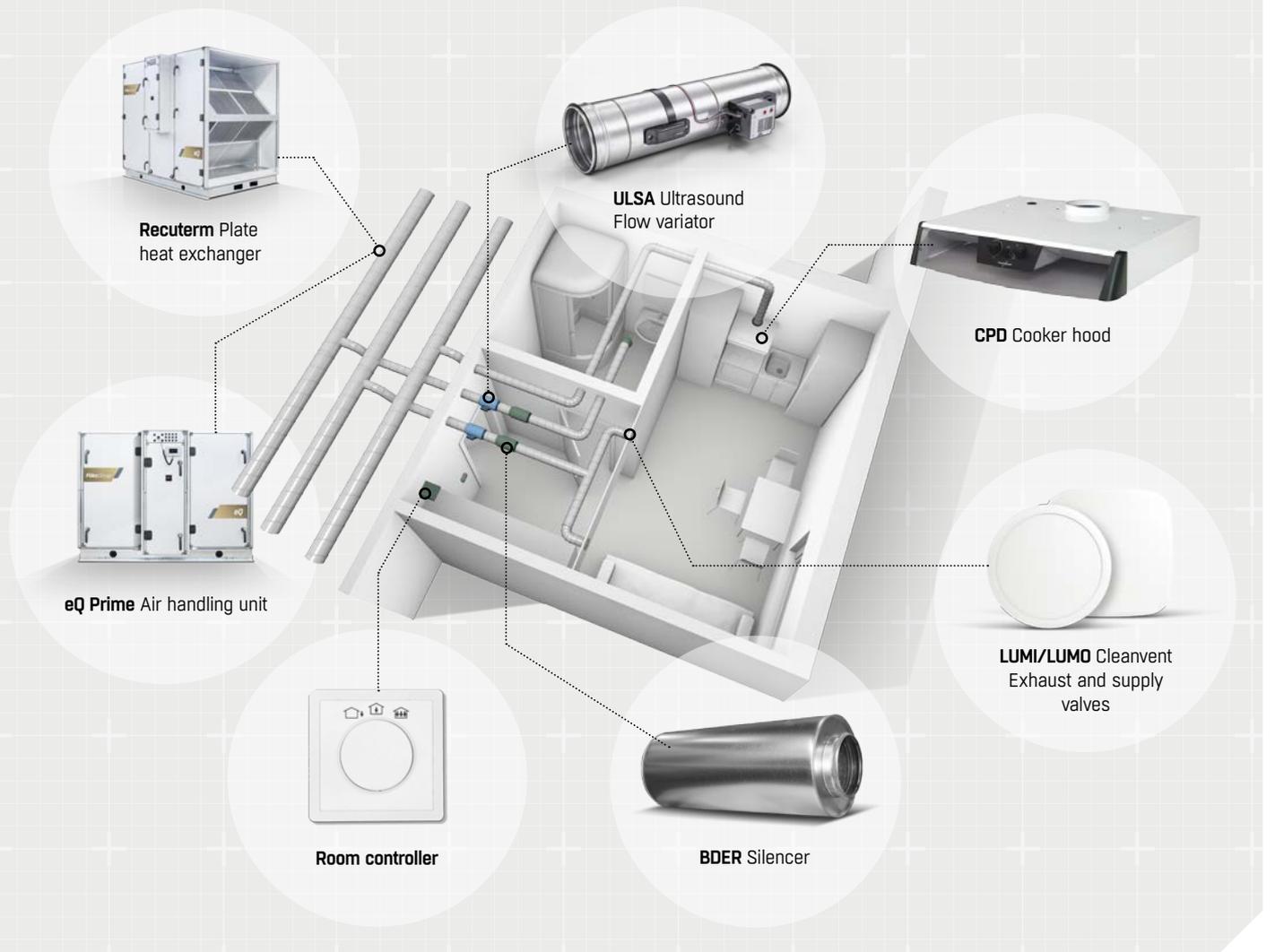
DESIGN CHALLENGE RESIDENTIAL BUILDINGS:

- Energy efficient
- No odour transfer
- Low noise
- Easy to use and maintain
- Future proof
- Energy recovery



Proposed design functions

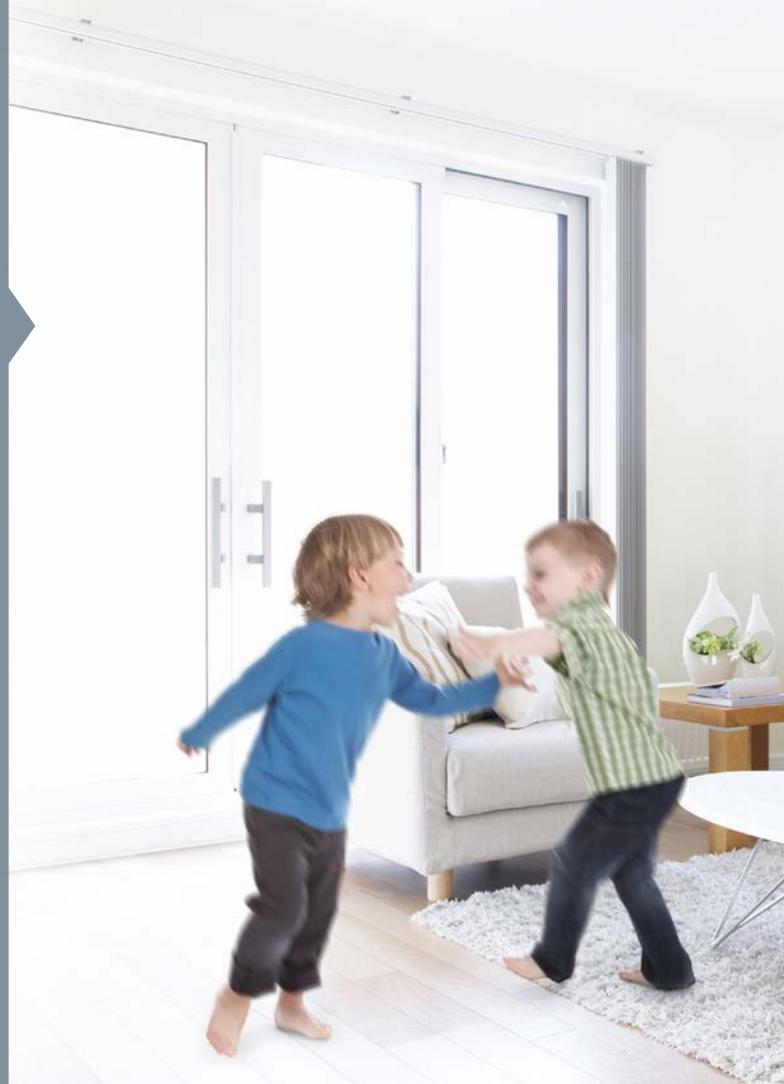
eQ PRIME AND RECUTERM, ULTRASOUND FLOW VARIATOR, CLEANVENT VALVES



► GUIDE TO PLANNING/
DIMENSIONING/CONFIGURATION

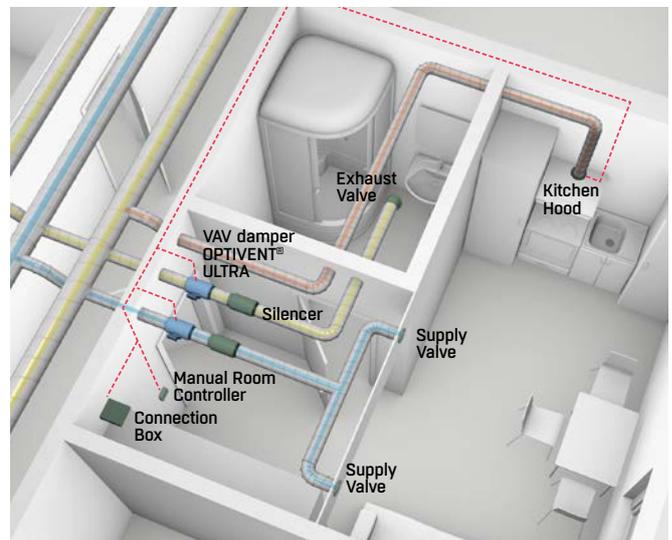
Residential/ Apartment

In our homes we don't always experience carefully designed ventilation systems and good air quality – despite this being the place where we spend more time than anywhere else. The domestic activities are varying in their demands. Moisture in the bathroom, heat and smells in the kitchen, dust from textiles in the laundry room, not to speak of the silence required in the bedroom to sleep well.



PLANNING TIPS / CHECKLIST:

- Min air flow in the room:
7 l/s (apartment: -60% vs
designed air flow, 18 l/s)
- Max air flow in the room:
23 l/s (apartment: +30% vs
designed air flow 18 l/s)
- Supply air duct:
ø 100 mm 2,9 m/s with
max air flow)
- Exhaust air duct:
ø 100 mm (1,1 Pa/m with
max air flow)
- OPTIVENT® ULTRA:
ULSA-5-100-1 for supply and
exhaust (same size as duct)
- Silencer: BDER-71-010-
060 for supply and exhaust
(37 dB(A) right after silencer
with q=23 l/s and ΔP=80 Pa
- Air pattern (diffuser
STQA-100-C): max air velocity
0,12 m/s in the occupational
zone with minimum air flow
and < 0,15 m/s with
maximum air flow.



CASE STUDY
RESIDENTIAL / APARTMENT

MASS LIST: RESIDENTIAL / APARTMENT

Air management

- Optivent Ultra VAV-damper
ULSA-5-100-1 (2 pcs)
- Silencer, length 600mm,
BDER-71-010-060 (2 pcs)

- Mounting clamps (4 pcs)
HVSZ-03-100

Air diffusion

- Exhaust valve with Clean-
Vent® coating KSO-100-C

- Supply valve (2 pcs)
with CleanVent® coating
STQA-100-C
- Kitchen Hood (ILOXAIR)
with stove guard
ROSALA-600-7-7-1-1

Automation systems

- Connection box with
transformer and cooker
hood control equipment
HVLZ-02

- Manual room controller
HVSZ-01



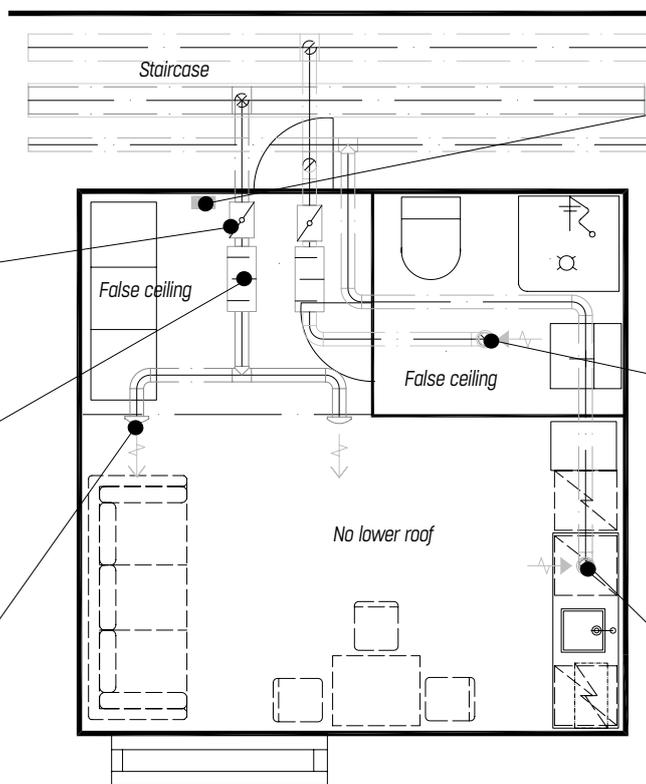
PROPOSED DESIGN FUNCTIONS

- Manual room controller with 3 positions (non-occupancy, normal air flow and max air flow)
- Room controller is also connected to the kitchen hood (equipped with microswitch)
- When kitchen hood operates at maximum, OPTIVENT® ULTRA increases supply air and also decreases exhaust air to retain balance
- OPTIVENT® ULTRA is pressure independent for duct pressure fluctuations

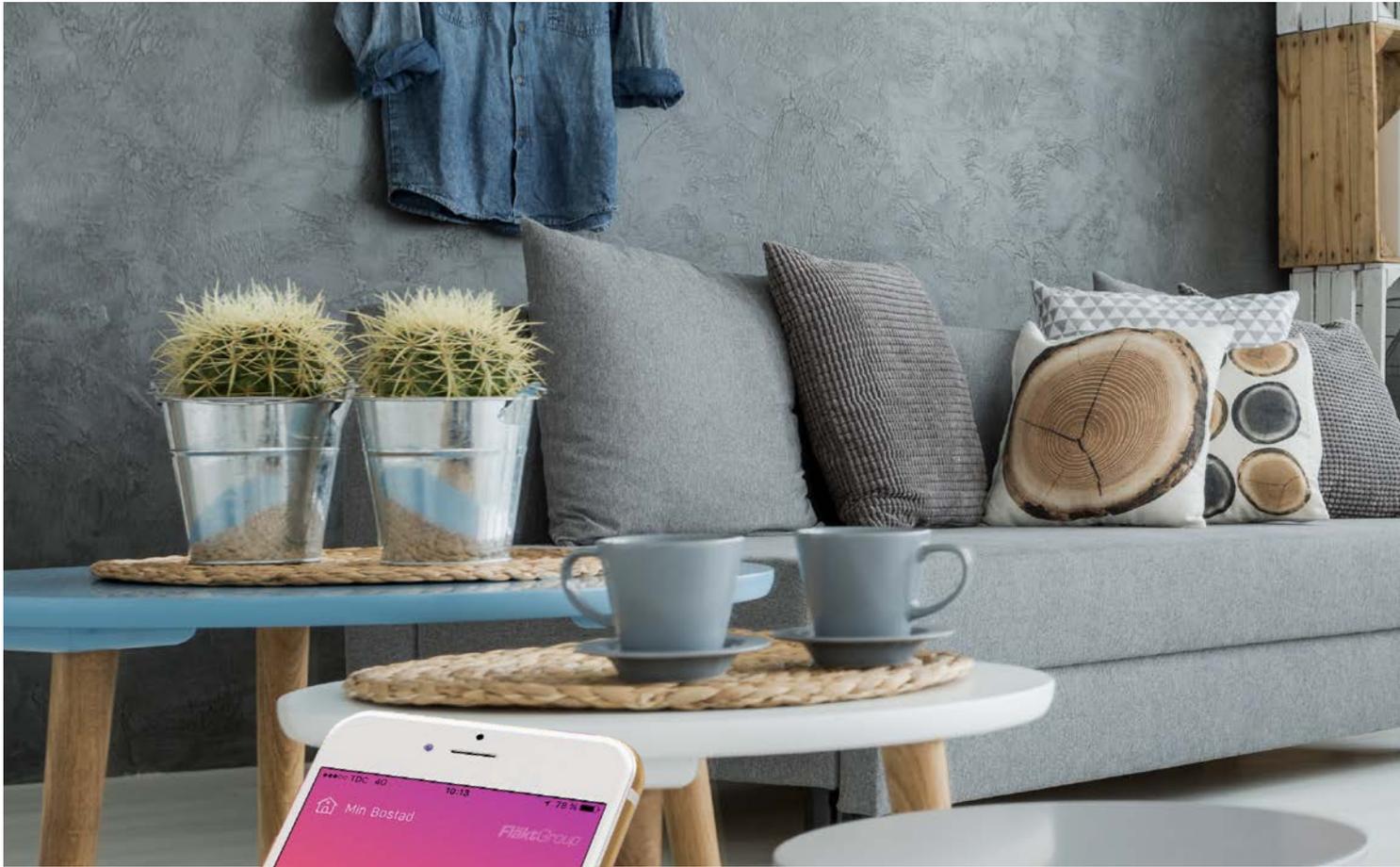
OPTIVENT® ULTRA BENEFITS

- Needs no safety distance in the tight duct installation in the corridor
- Extremely accurate air flow measurement guarantees the right pressure balance in the apartment
- A silent ventilation system guarantees good sleeping conditions in the bedroom
- Reduced need for maintenance work that create disturbances for the daily activities
- Dust resilient construction is splendid for laundry room/ bath room, that contains lots of fabric dust

RESIDENTIAL / APARTMENT
 area 25 m²
 Air volume +/-18 l/s



> MINIMASTER RESIDENTIAL APPLICATION WITH CONTROLS



HEAT RECOVERY & FLÄKT CONNECT

- Easy to configure
- High-efficiency EC motors
- Up to 83% efficiency can be achieved
- Does not require draining
- Easy to install & easy servicing
- ISYteq Touch 3.5 panel option can be connected to the ISYteq app available from the AppStore or Google Play
- Modbus communication is available
- Built-in webserver
- Alarm indicator to change the filter
- Up to F7 filter can be fitted to the unit
- Built in defrosting mode



VARIABLE SPEED ROTARY HEAT RECOVERY UNITS

- The unit is primarily intended for houses but can be utilised in smaller commercial premises
- High heat recovery or cooling
- ISYteq Touch 3.5 graphical touch control panel fan control
- Higher accuracy of the desired supply temperature due to the step less speed control
- Typical location in warm areas such as the kitchen
- For summer, if the exhaust air is cooler than the outdoor air, the rotary heat exchanger starts to recover cooling from the cooler exhaust air



ISYteq
TOUCH 3.5
by FLÄKTGROUP



> MULTI DWELLING APPLICATION WITH eQ PRIME & CONTROLS



HIGH COMFORT

- Many of the control functions contribute to an increased indoor comfort
- Flexibility for different indoor conditions, matching occupancy demands
- Maintains a comfortable indoor environment even as outdoor temperature and humidity changes

ENERGY SAVING

- Maximised recovery through the AHU, minimal added heating/cooling
- Energy saving whilst also providing high comfort
- Maximises the performance for FläktGroup AHU

EASY TO SPECIFY IN ACON

- Easy-to-specify energy efficient solutions
- Extensive range of nice control functions
- Complete documentation included



APPLICATION & OFFERING

- Integrated standard controls with many options: temperature control, fan control, coil control, filter monitoring
- **Accessories:** valves, valve actuators, room temperature sensor, facade temperature sensor, heating coil freeze protection, HEX frost protections, timer, push button, PIR, CO₂ switch, zone controls, controls for associated fans, smoke detectors, smoke controller, fire damper controllers

COMMON SELECTIONS FOR MULTI DWELLINGS

- Supply temperature control
- Frost and freeze protection
- Duct pressure control
- Filter monitoring (required by EU legislation)
- Damper actuators, valve with actuator



EASY INSTALLATION AND MAINTENANCE

- Easy installation: factory fitted components, less installation on site, quick connectors, simplified logistics - loose supplied accessories delivered in units, wiring diagram
- Easy commissioning, unit configured according to ACON and factory tested

LOW INVESTMENT COSTS

- Save 2/3 of total installation cost for controls
- Complete package of controls for your unit including external fans, coils, heaters and valves. No extra ordinary cost for control system
- Maximised recovery, minimal added heating/cooling, less investment of heating and cooling capacity
- Quick installation time means less installation cost

> LUMO & LUMI DESIGN VALVES



Designed to blend in – **engineered to stand out**

The design of the new air valves, LUMI and LUMO, are based on our long experience of demands in a wide range of applications. Requirements from installers and commissioners, as well as consultants, architects and users have been thoroughly investigated.

The result is a valve range that brings both fine tuned enhancements and innovative new features to the market. LUMI and LUMO are designed to fit modern interiors – or even blend into the surroundings like a chameleon, with the personalisation option. Low noise level is also an appreciated, if not visible, feature.

The installation is simple and commissioning requires less time, with measuring, adjustment and locking being possible without the need to remove the valve from the frame. Measuring results are accurate and consistent, both between readings and regardless of who performs the task. Dirt repellent CleanVent® surface keeps valves clean for longer.



PERSONALISATION MADE EASY

Valves with our clever decoration frame allow users to add wallpaper, textile or their favorite picture to the front plate. No glue or tools are necessary, making it easy to change the front when redecorating. Decoration frame comes as standard with valves size 100 and 125 mm.



ADAPTABLE
LOOK



LOW NOISE
LEVELS



COMPACT
DIMENSIONS



DIRT-RESISTANT
CLEANVENT™



IN-VALVE
MEASURING



QUICK IN-PLACE
ADJUST/LOCK

Quick and simple to install and adjust

Air flow measuring, adjustment and locking can be done directly from the valve front, without removing the valve from the frame. Measurement hose attaches to spindle end for reliable and consistent readings. Threaded center spindle with wing nut provides precise adjustment and safe locking.







HOSPITALS & CLEAN ROOMS

Competence
where **reliance in
hygiene and trust**
is essential



In areas in where, apart from the climate comfort, high hygiene is required such as in the medicine, nursing, pharma and life science applications, building climate control has a crucial role. The ventilation system must ensure that patients, visitors and staff feel comfortable while at the same time the strict hygiene requirements must be equally satisfied. Investors, planners and facility managers ultimately demand the highest possible energy efficiency in order to minimize operating costs.

A high measure of competence and specialised experience is a prerequisite for highly dependable room-air and process-air technology in the healthcare and pharmaceutical industry. All around the globe, consumers demand high-quality medications for prevention, diagnosis, and treatment of diseases. With a long history and thousands of reference installations we have established ourselves as a competent value-adding partner. The recipe for success is especially conceived filter technologies and ventilation systems as well as room elements and components.



Satisfying various requirements with HyCassette-Geko

The HyCassette fan coil unit is the excellent solution for hospitals, medical practices and medical office areas. Apart from the economical, energy-efficient and hygienic working procedure, it is also quiet and can be easily incorporated in a suspended ceiling. The Swirl air outlet technology enables room climate control on a completely new level.



Core product range for special applications
 - **your benefits** >>

- Hygienic environment
- Comfortable room climate
- Easy installation
- Easy maintenance



Air Treatment
 eQ Master, Econet



Air Condition & Heating
 Chillers and Heat-Pumps



Air Management
 VAV, Dampers



Air Diffusion
 HyFlex-Geko Fan coil,
 Air Terminal Devices



Air Filtration
 Clean room components
 Fresh Heaven, MultiSafe



Air Diffusion
 HyCassette-Geko

Clean Rooms

Precise production and research need an absolute clean space. With Clean Room systems from FläktGroup, we can meet all customer needs and provide a complete turn-key for any production facility.

Clean room conditions for safe environments

Numerous international manufacturers work with FläktGroup's system solutions thanks to our expertise in developing reliable and effective contamination control methods for clean rooms.

Clean room solutions from FläktGroup permit users to coordinate all critical parameters precisely with the requirements of respective production processes and to systematically control decontamination of room air. These solutions control air pressure, temperature, and moisture – especially the contamination with fine dust, skin particles and bacteria – and keep these contaminants away from products and processes.



CLEAN ROOM APPLICATIONS SUPPORTED BY FLÄKTGROUP:

- Microelectronics
- Medical Device Manufacturing
- Laboratories
- Pharmaceutical production
- Operating theatres

DESIGN CHALLENGES FOR OPERATING THEATRE:

- Contamination control
- Anaesthetic gas removal
- Thermal comfort
- Humidity and noise control
- Minimal running costs
- Differential pressure
- Quick readjustment and clean-up between surgeries



Proposed design functions
CAIR-PLUS AND FRESH HAVEN MAXX



Life Science

The constant increase of requirements and regulations to meet hygiene and safety standards that protect and safeguard human life put high demands on ventilation systems. We have a proven track record of supporting our customer to fulfill the needs worldwide.

A dependable partner

Proven competence and specialised experience is a prerequisite for highly dependable room-air and process-air technology in the life science industry. For this reason, numerous international manufacturers trust FläktGroup's system solutions.

All around the globe, consumers demand high-quality medications for prevention, diagnosis, and treatment of disease. The health and life-sciences sector is growing dynamically at an above-average rate. We offer solutions for safe heat and cooling recovery, safe air filtration, reduced air pollution, cleaning and air distribution supporting low life cycle costs and high hygiene requirements.

For decades, FläktGroup has established itself as a competent value-added partner for the life science industries.



LIFE SCIENCE APPLICATIONS SUPPORTED BY FLÄKTGROUP:

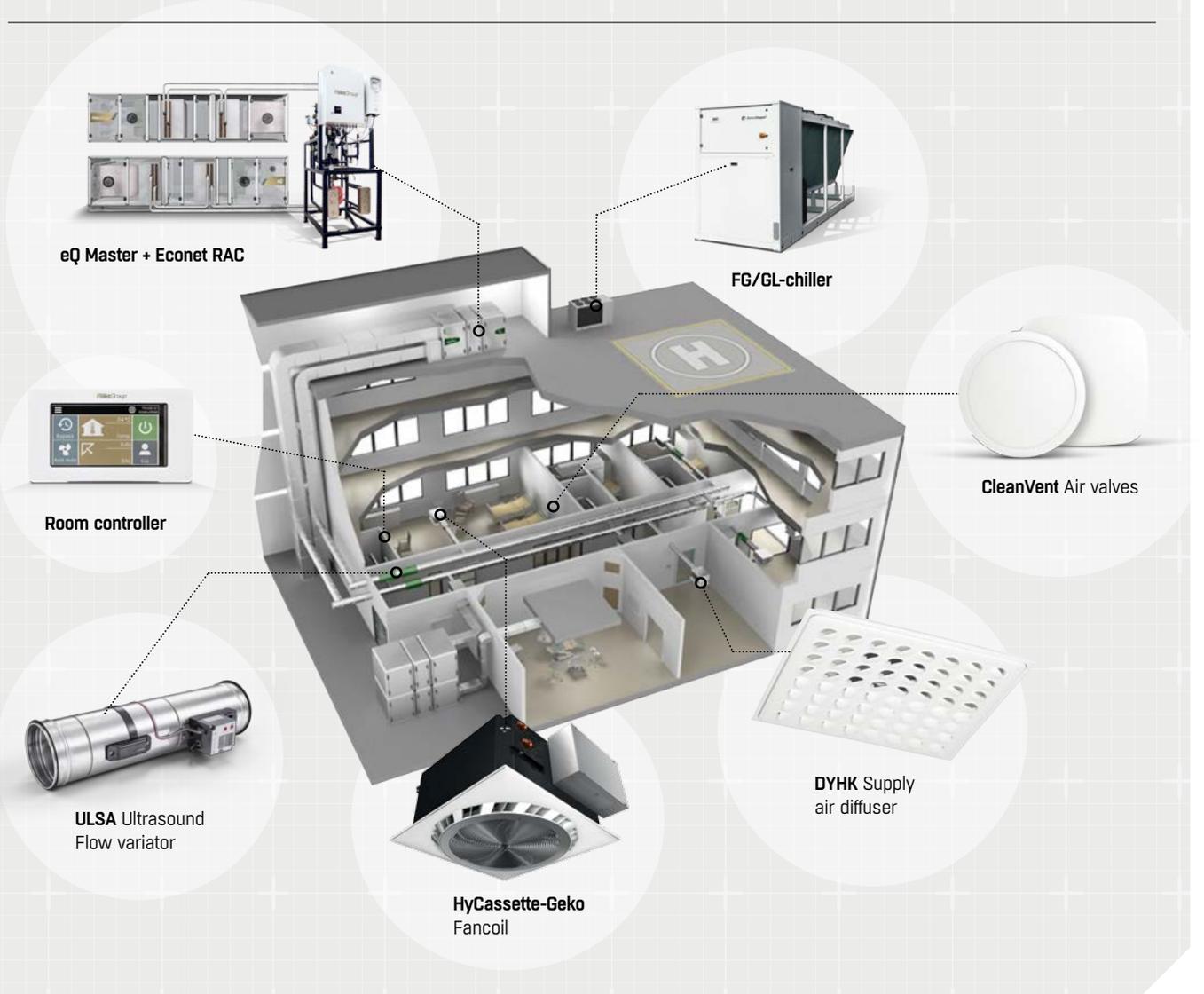
- Hospitals
- Medical Device Manufacturing
- Laboratories
- Pharmaceutical production

DESIGN CHALLENGES FOR HOSPITALS:

- Legal requirements and industry compliance
- Great room type variance
- Energy recovery with zero contamination
- Future proofing hygienic demands
- Comfort for speedy recovery
- Humidity and noise control
- Minimal running costs
- Easy to clean and maintain



Proposed design functions
eQ MASTER WITH ECONET AND HYCASSETTE FANCOILS



► GUIDE TO PLANNING/
DIMENSIONING/CONFIGURATION

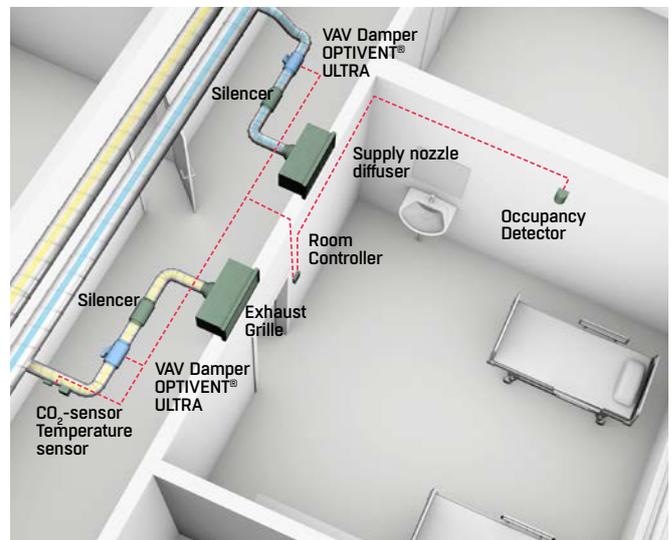
Hospital/ Patient room

Medical facilities have high requirements. Also in patient wards demands are high. Weak and sick patients should be given good recovery conditions and need no extra strain from bad air quality or comfort. A special demand is put on the ventilation system to be easy to maintain without affecting the daily operations, when premises are occupied 24/7.



PLANNING TIPS / CHECKLIST:

- ✓ Min air flow in the room: 12,5 l/s (floor area 25 m²)
- ✓ Max air flow in the room: 38 l/s (loads = 370 W and ΔT=8°C)
- ✓ Supply air duct: ø 125mm (v=3,1 m/s with max air flow)
- ✓ Exhaust air duct: ø 125mm (0,4 Pa/m)
- ✓ OPTIVENT® ULTRA: ULDA-5-125-1 for supply and exhaust (same size as duct)
- ✓ Silencer: BDER-44-012-060 for supply and exhaust (36 dB(A) right after silencer with q=38 l/s and ΔP=80 Pa)
- ✓ Air pattern (diffuser DYVB-125): max air velocity < 0,15 m/s in the occupational zone with minimum air flow and 0,16 m/s with maximum air flow



CASE STUDY
HOSPITAL / PATIENT ROOM

MASS LIST: HOSPITAL / PATIENT ROOM

Air management

- Optivent Ultra VAV-damper ULDA-5-125-1 (2 pcs)
- Silencer, length 600mm, BDER-44-012-060 (2 pcs)

Air diffusion

- Wall nozzle diffuser (2 pcs) with CleanVent® coating DYVZ-125 and ATVA-125-1

- Exhaust grille with CleanVent® coating SV1-550-200 and TGE-550-200-B

Automation systems

- Room Controller (Modbus connection) STRA-04
- Transformer STRZ-24-1
- CO₂-sensor STRZ-18-1-2
- External temperature sensor STRZ-05-04
- PIR Occupancy detector STRZ-09-1



PROPOSED DESIGN FUNCTIONS

- CO₂, temperature and occupancy sensors are observing room's indoor air climate
- Room controller receives messages from the different room sensors and controls the VAV dampers
- The room ventilation is supplied by Demand Controlled Ventilation

OPTIVENT® ULTRA BENEFITS

- Needs no safety distance in the tight duct installation in the corridor
- Dust resilient construction is needed for the patient room because of fabric dust.
- Silent ventilation guarantees good recovery conditions for the patient
- Reduced need for maintenance work that create disturbances for the daily activities

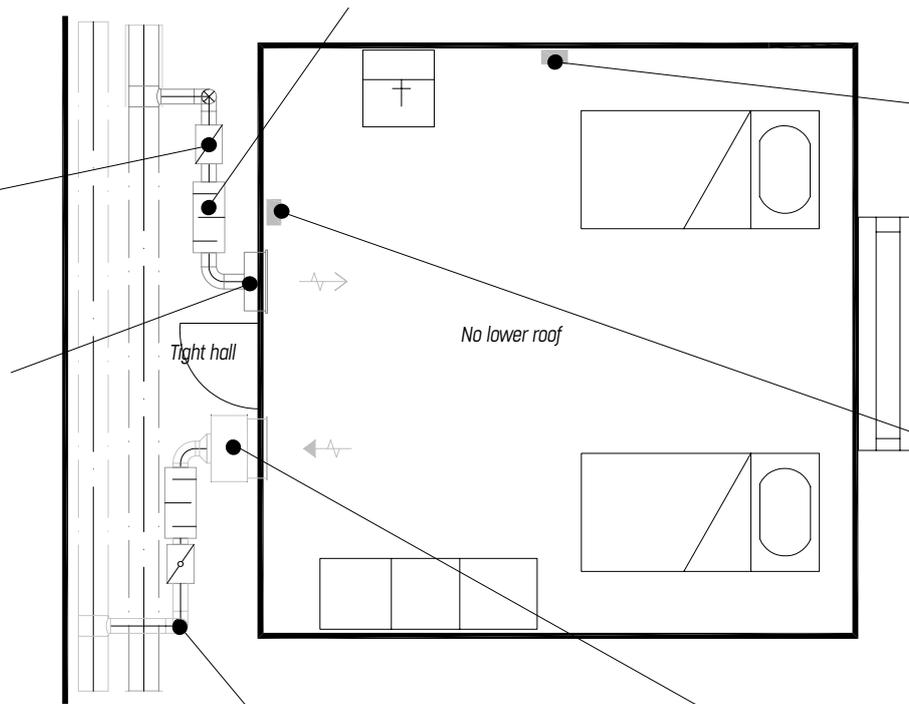
HOSPITAL / PATIENT ROOM
 area 25 m²
 Air volume +/- 38 l/s



OPTIVENT® ULTRA
 VAV-damper



Wall nozzle
 diffuser with
 CleanVent®
 coating



Occupancy
 detector on
 the wall



Room Controller
 Modbus
 connection

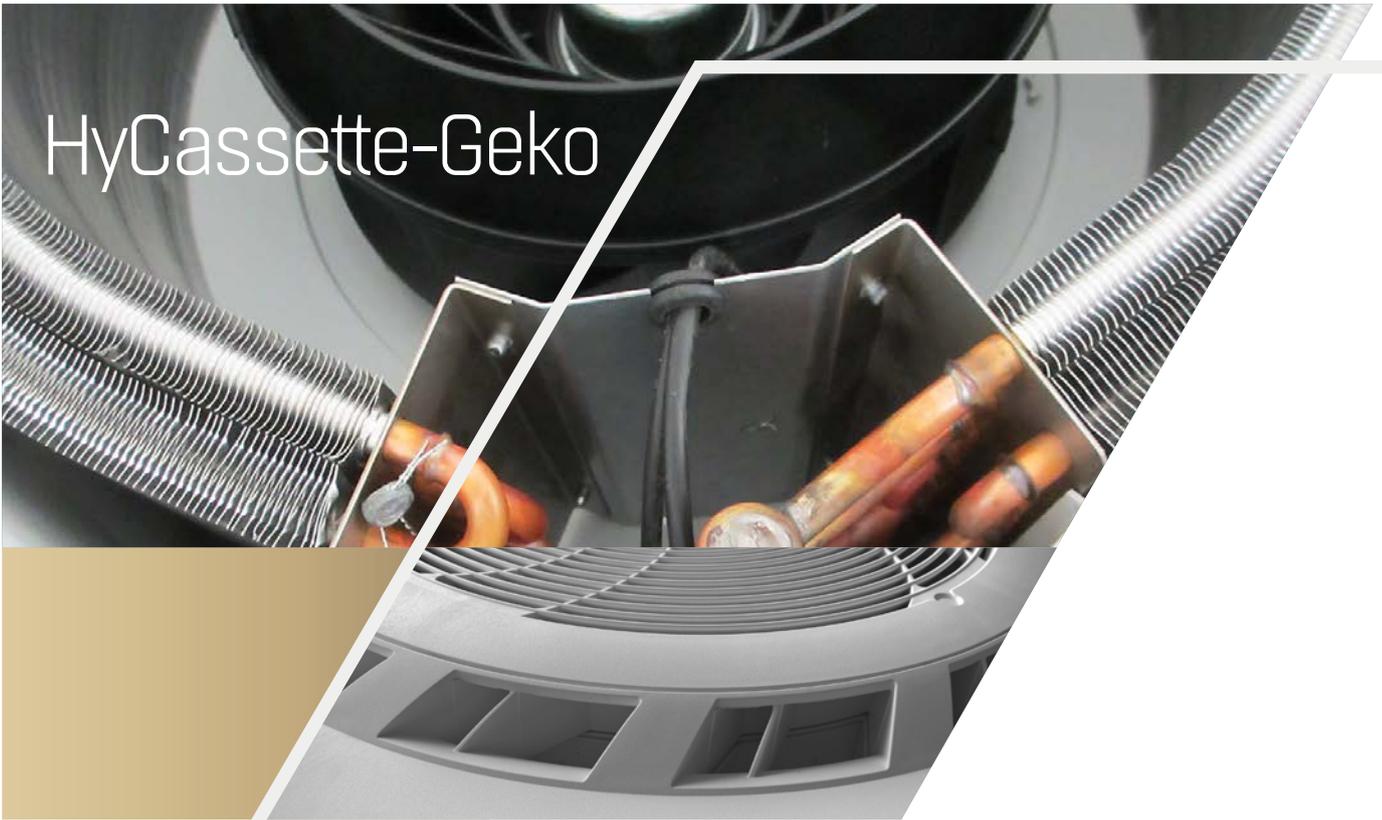


CO₂-sensor and External
 temperature sensor installed
 inside exhaust duct



Exhaust grille with
 CleanVent® coating

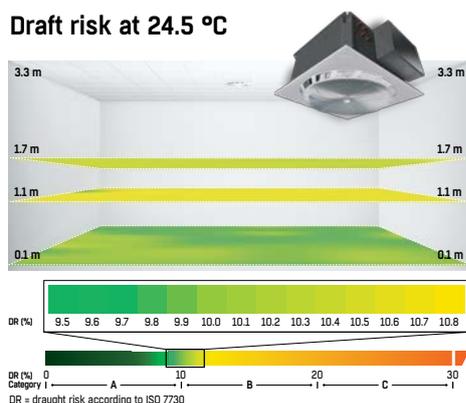
HyCassette-Geko



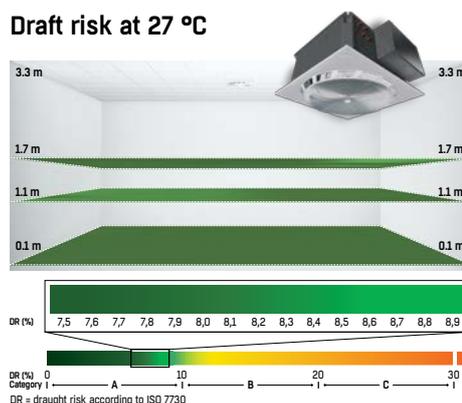
Where hygiene decides.
Special work environments
need versatile solutions.

Thrifty, hygienic and nonetheless comfortable air handling and air conditioning in the medical and nursing field as well as in office buildings, enable fan-coil units for the recessed mounting in ceilings – so-called cassette units. The HyCassette-Geko fan-coil unit from FläktGroup satisfies all requirements in a unit: apart from the economical, energy-efficient and hygienic working procedure, it is also quiet and can be easily incorporated in a suspended ceiling. The Swirl air outlet technology enables room climate control on a completely new level.

Draft risk at 24.5 °C



Draft risk at 27 °C



Visualisation of the risk of air draft according to DIN EN ISO 7730 at 308 m³/h. The HyCassette-Geko with Swirl outlet clearly delivers a very low risk of draft due to great temperature homogeneity at low air speeds.



EASY TO INSTALL
"Plug and Play" units
easy to install

INNOVATIVE TECHNOLOGY
Low operating costs and ideal
draft-free conditions

**OPTIMAL ROOM
TEMPERATURE
CONTROL SYSTEM**
Demand-driven
heating and cooling
- cutting-edge
connectivity

RELIABLE DATA
Comprehensive documenta-
tion and design details

EXTERNAL CERTIFICATION
Confirmed competence and
hygiene conformity

**SIMPLE OPERATOR
HANDLING**
Automatic mode sets
target temperature

**EASY TO CLEAN
AND DISINFECT**
Smooth surfaces,
rounded geometries,
good accessibility,
no metabolizable
surfaces

HIGH QUALITY
High-quality
components -
excellence by
FläktGroup



EC FANS

In our units, continuously variable and reliable EC fans are deployed. With up to 85 percent reduced power consumption compared to conventional AC fans, the components are especially energy-efficient. This energy-saving potential pays off not only in full load operation but especially in partial load operation. The speed is then adapted by demand to the current temperature requirements. GreenTech EC motors clearly run more efficiently than asynchronous motors with the same power.



The background is a blurred photograph of a modern interior, possibly a gym or lounge, with a grid pattern overlaid. A semi-transparent dark brown shape is on the left, and a white line forms a geometric shape on the right. The text is centered in the middle.

SPORTS FACILITIES & ENTERTAINMENT

Sports Facilities

Sportcenters such as gyms, swimmingpools and spas put high demand on ventilation systems. An excellent indoor environment is part of the experience where occupancy levels vary during the day.

Indoor air climate that will let you perform

There can be a lot of humidity and unwanted odours that should be ventilated, but to lower the ventilation costs the energy should be recovered to the furthest extent. FläktGroup have long experience with creating solutions that fit these demanding applications.

The ventilation of swimming pools and spas is one of the most challenging tasks of any air treatment systems. They should produce an appropriate air temperature and ensure that the air humidity is kept at a level that is both comfortable for the visitors and protects the building and installations.



SPORTS FACILITIES APPLICATIONS SUPPORTED BY FLÄKTGROUP:

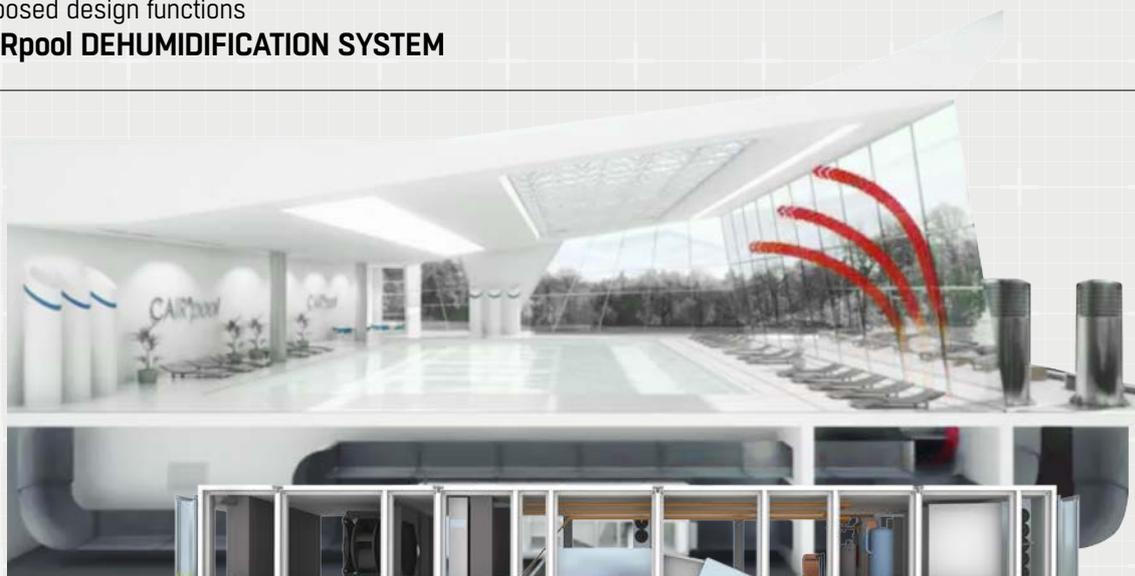
- Indoor swimming pool
- Spas
- Gyms
- Sport halls
- Locker rooms
- Wellness areas

DESIGN CHALLENGE SWIMMING POOLS:

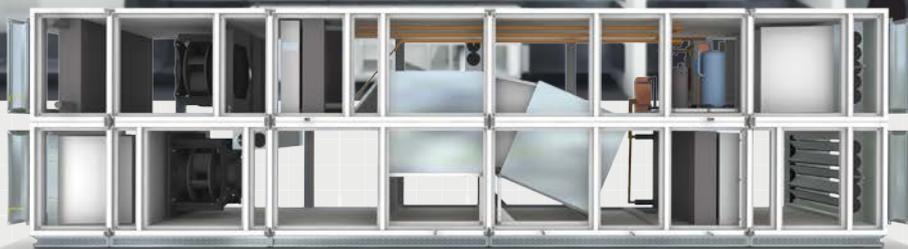
- Legislative design requirements
- Comfortable environment
- Demanding architecture
- Complex building structures
- Corrosive environments
- High technical requirements
- Hazardous pollutants



Proposed design functions
CAIRpool DEHUMIDIFICATION SYSTEM



CAIRpool
Dehumidification
unit



CAIRfricostar
Humidifier



CAIRfricostar Micro
Humidifier



F800 Humidifier

Entertainment

Free time is precious, HVAC systems should manage our indoor air comfort from start to finish when we enter a public building. Clean & fresh air solutions from FläktGroup meet the specific needs of applications within the entertainment industry.

Better air, better fun!

We might not all share the same preferences for entertainment but we do all share one similar requirement – to breathe fresh clean air no matter where we go. At FläktGroup we have worked all around the world creating air conditioning solutions for a huge variety of public buildings intended for entertainment.

Public buildings often share the same demands as office buildings and hotels but more importantly these are often landmarks or dedicated spaces of leisure intended for the public. This puts high demands on optimal ventilation, particularly that solution should meet new energy efficiency requirements and environmental thinking is taken into consideration. Suppliers must live up to these demands within the parameters specified in their bids whilst also providing delivery assurance.



ENTERTAINMENT APPLICATIONS SUPPORTED BY FLÄKTGROUP:

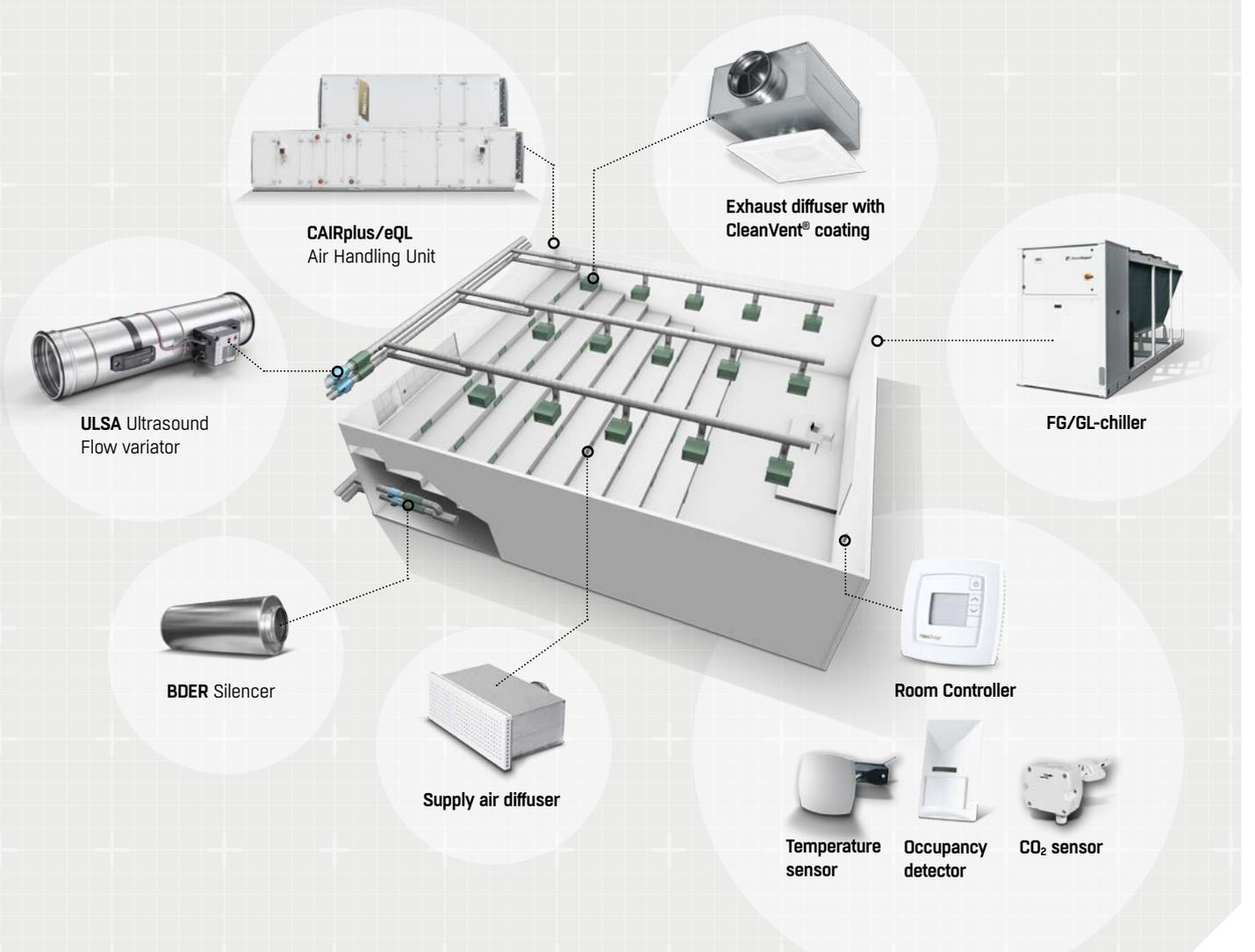
- Galleries
- Cinemas
- Sports Stadiums
- Public landmarks
- Concert halls/theatres

DESIGN CHALLENGES FOR AUDITORIUM APPLICATIONS:

- Large room volumes to ventilate
- Fresh air part of the experience
- Large amounts of dust creation
- Capacity dimensioned for peak loads
- Low sound levels



Proposed design functions
eQL AIR HANDLING UNIT AND ULTRASOUND FLOW VARIATOR



► GUIDE TO PLANNING/
DIMENSIONING/CONFIGURATION

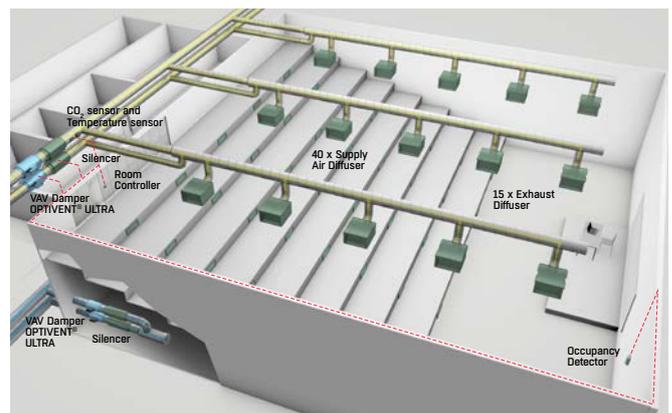
Business center/ Auditorium

Large and big volume rooms pose specific challenges on the ventilation system. Large crowds, sometimes bringing outerwear, produce large amounts of dust. Capacity must also be dimensioned to deliver enough fresh air to ensure comfort with a crowded house. Still delicate moments in a concert or monologue can require almost complete silence to come through.



PLANNING TIPS / CHECKLIST:

- ✓ Min air flow in the room: 150 l/s (floor area 300 m²)
- ✓ Max air flow in the room: 800 l/s (80 people) vs general rules
- ✓ Supply air duct: 2x ø 315 mm (v=5,13 m/s with max air flow)
- ✓ Exhaust air duct: 2x ø 315 mm (0,85 Pa/m)
- ✓ OPTIVENT® ULTRA: ULDA-5-315-1 for supply and exhaust (same size as duct)
- ✓ Silencer: BDER-44-031-090 for supply and exhaust (53 dB(A) right after silencer with q=100 l/s and ΔP=80Pa)
- ✓ Air pattern (diffuser DASH-100): max air velocity 0,1 m/s in the occupational zone with maximum air flow



CASE STUDY
BUSINESS CENTER/AUDITORIUM

MASS LIST: BUSINESS CENTER/AUDITORIUM

Air management

- Optivent Ultra VAV-damper ULDA-5-315-1 (4 pcs)
- Silencer, length 900mm, BDER-44-031-090 (4 pcs)

Air diffusion

- Supply diffuser (80 pcs) integrated behind steps DASH-100-0

- Exhaust diffuser (16 pcs) with CleanVent® coating HPKH-160-6-C and ATTD-125-160-1

Automation systems

- Room Controller (Modbus connection) STRA-04
- Transformer STRZ-24-1
- CO₂-sensor STRZ-18-1-2

External temperature sensor STRZ-05-04

- PIR Occupancy detector STRZ-09-1



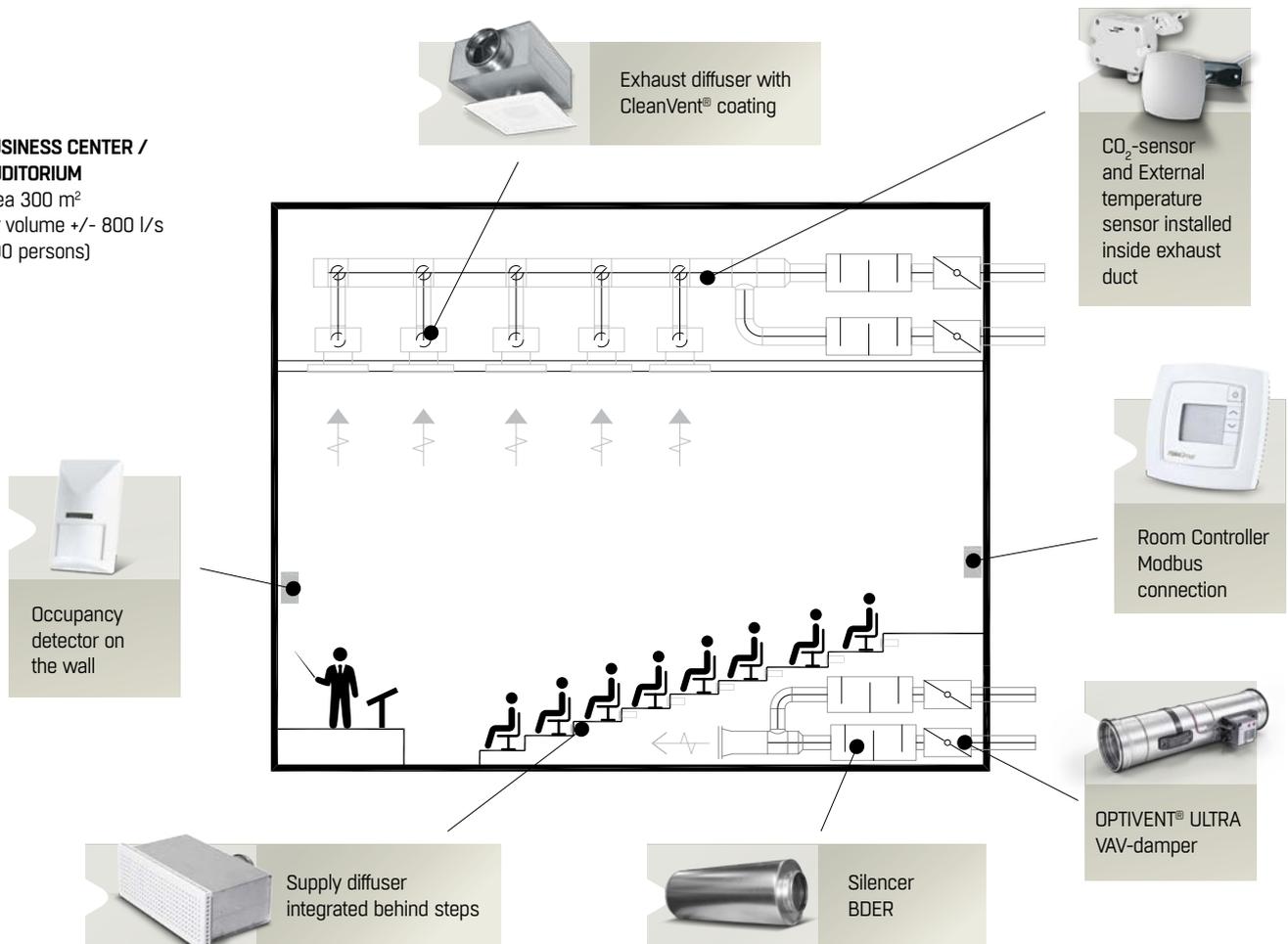
PROPOSED DESIGN FUNCTIONS

- CO₂, temperature and occupancy sensors are observing room's indoor air climate
- Room controller receives messages from the different room sensors and controls the VAV dampers
- Room's ventilation system is constantly driven by demand controlled ventilation

OPTIVENT® ULTRA BENEFITS

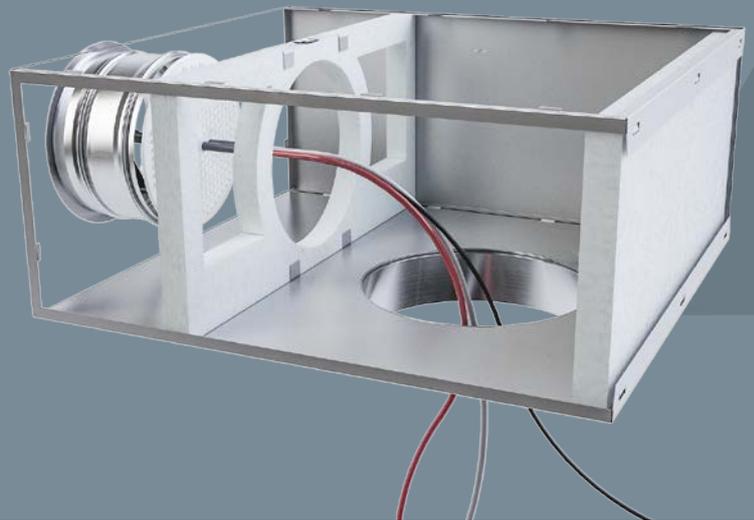
- Dust resilient construction is needed for auditorium that contains a lot of fabric dust from people's clothes
- Accurate air flow measuring and wide air flow range
- Silent ventilation is necessary during shows and recordings
- Reduced need for maintenance work that create disturbances for the daily activities

BUSINESS CENTER / AUDITORIUM
 area 300 m²
 Air volume +/- 800 l/s
 (100 persons)



FASTER, SMALLER, QUIETER & BETTER IN MOST WAYS

For our new generation of plenum boxes, we set out to improve on everything. To consider every aspect of design, installation and use to make it better, quicker and easier for everyone involved. The new lineup is easier to select, install, adjust and maintain. Users can enjoy improved noise and comfort performance. An appropriate range of models and sizes come well documented and prepared for in different design and selection software including, of course, our own product selection tool SELECT.



ATTS

When space is limited and you need to keep the installation as small as possible, ATTS is the right choice. This compact plenum box model requires a minimum of installation space while delivering good air flow and limited noise levels.

ATTD

The ATTD model is a full-grown, premium model with focus on comfort issues. Dual plates of sound attenuating fiber material provide low noise levels in combination with optimal air flow patterns.

ATTD or ATTS?

If low noise is priority, choose ATTD. If space is at a premium choose ATTS instead.





Quick to commission, adjust and maintain

Setting air flow is easy and accurate. A small handle controls the regulation plate (can even be accessed through a diffuser nozzle). Level 0-1 is fine tuned with a screwing action and 1-5 is quick to set, sliding the dial. Lock the setting with a twist. The whole damper can be removed, with settings intact, to provide access for duct cleaning.



CONVENTIONAL PLENUM BOX

Turbulence in the box can cause uneven air distribution through the diffuser.



NEW ATTD PLENUM BOX

Improved geometry and sound absorbing materials leads to symmetric air flow and reduced noise levels, without requiring a duct buffer distance before the box.





RETAIL, TRAVEL
& LOGISTICS

Retail

Within the retail industry, excellent indoor climate is part of the shopping experience for the visitors and creates a competitive advantage for shops and property owners in the increased competition over the customer.



A good indoor climate is part of the shopping pleasure

As unique as each building is in its proportions and architecture, the room ventilation system must be custom-designed accordingly.

Shopping malls illustrate this in exemplary manner since they require diverse solutions all under one roof. Customers should feel at ease and to browse the shop in a relaxed atmosphere. Goods must not get dusty or damp. Odours from restaurants must also be controlled.



RETAIL APPLICATIONS SUPPORTED BY FLÄKTGROUP:

- Large shopping malls
- Small shop buildings
- Individual shops
- Salons (cars, furniture etc)

DESIGN CHALLENGE RETAIL – CAR SALON:

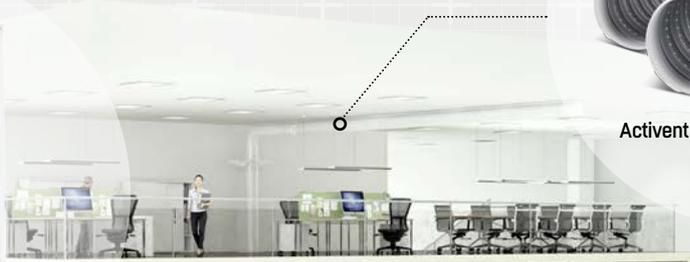
- Large volumes
- Heat generation
- Large windows
- Flexibility today and for the future
- Cooling needs
- District or local cooling



Proposed design functions
eCO TOP AHU, ACTIVENT AND CASSETTE-GEKO FANCOILS



CONDENSING UNIT



Activent Air Distribution System



**eCO TOP/eCO SIDE
 Air Handling Unit**



**Cassette-GEKO
 Fancoil**



**RHKH and ATTD
 Air Supply Diffuser**

Travel & Logistics

In travel centers such as airports, train stations or logistics centers and warehouses, safety for people and material is of most importance.

Optimal safety and comfort solutions – on a grand scale

In case of emergency people need to be evacuated safely and damage to property minimised. FläktGroup have a long and well proven track record to support these demanding challenges.

Locations such as airports have a responsibility for all people using and working within the facility and the fire service in the event of an incident. It is important to minimise the spread of the fire and toxic fumes. FläktGroup have many years of expertise in controlling these incidents to allow for safe evacuation of the building.



TRAVEL & LOGISTICS APPLICATIONS SUPPORTED BY FLÄKTGROUP:

- Airports
- Train stations
- Warehouses

DESIGN CHALLENGE AIRPORTS:

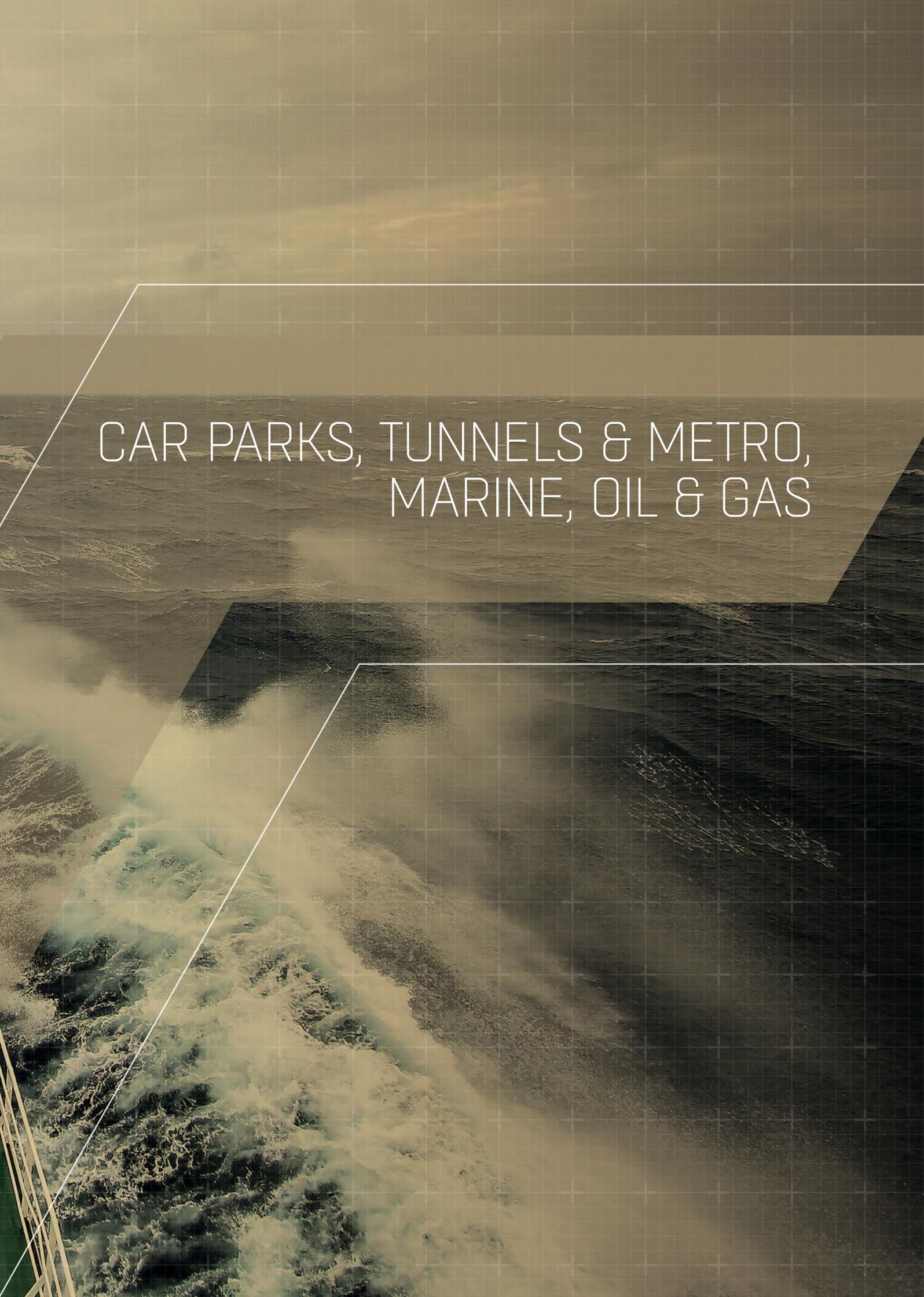
- Large volume of people
- High occupational loads
- Demanding architecture
- Heat generation
- Large windows
- Flexibility today and for the future
- Fire Safety



Proposed design functions
FIRE SAFETY AND SMOKE EXTRACTION SYSTEM





An aerial photograph of a large body of water, possibly a reservoir or a wide river, with a grid overlay. The image is framed by a dark, semi-transparent overlay with white geometric lines forming a large, irregular shape. The text is centered within this shape.

CAR PARKS, TUNNELS & METRO,
MARINE, OIL & GAS

Energy efficiency and safety for industry and public infra- structure



Ventilation is required for safety and to maintain acceptable temperatures and comfort. Pollution emitted by trains and road vehicles must be removed to provide an acceptable and safe environment. The heat from a train may need to be removed by forced ventilation in order to ensure that the temperature is acceptable to both people and equipment. In the case of a fire, smoke must be removed in order to enable safe escape and to assist access to fight the fire. The normal ventilation principles are to dilute pollution and to increase visibility by removal of particles. In an emergency the smoke is controlled by creating sufficient air velocity to drive it away from the fire. Depending on the control strategy, the smoke can then be extracted.

We have enhanced our position as the foremost provider of specialist products for emergency high temperature smoke control by becoming the first fan manufacturer in the world to be able to apply CE marking to these safety critical products, ensuring that we can offer one of the most comprehensive range of products available in the world.



Car park fans

Fans intended to ventilate underground space have a critical role to play in the event of a fire. The escape routes must be kept clear long enough for those trapped to escape, and consequently ventilation equipment must be able to clear hot gas and smoke for up to two hours in the event of a fire.



Core product range for special applications
 - ***your benefits*** >>

- Conforms to the highest safety standards
- Low life cycle cost
- Easy installation
- Easy maintenance



Air Movement
 Jet fans



Air Movement
 Axial fans



Air Movement
 Axial fans



Air Movement
 Jet fans

Meeting the highest demands – even in the harshest environments

In the oil and gas industries, challenges arise on a routine basis.

One absolute prerequisite to meet safety, engineering as well as cost-effectiveness demands is optimal HVAC systems for buildings on offshore facilities. And it's precisely when the requirements are demanding and the working conditions are difficult – which is often the case with onshore and offshore operations – that powerful and reliable technology is critical.

The products must reliably provide the highest degree of indoor climate regardless of climate zone where the vessels are operating. We ensure excellent quality and performance to optimize the products to build complete HVAC solutions. In many areas of the oil and gas industry, atmospheres are potentially explosive owing to the presence of mixtures of air and combustible gas, mist, fumes, or dust. We deliver units for such designated use in areas subject to explosion hazards according to the Directive 94/9/EC (ATEX 95).



Unlimited possibilities with CAIRplus

The air handling units CAIRplus satisfy every requirement for climate and air handling technology with individually designed product lines. Our modular units permit the free selection of components and functions, and all details can be adapted to the precise application. Our compact units are suitable for all areas of application in the oil and gas industry.

” *It's when the requirements are demanding and the working conditions are difficult that powerful and reliable technology is critical.*



Core product range for special applications
- *your benefits* »

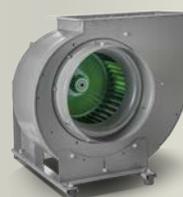
- Operational Safety
- Low life cycle cost
- Easy installation
- Low maintenance



Air Treatment
Air handling units



Air Diffusion
Air supply units



Air Movement
Centrifugal fans



Air Diffusion
Valves



Air Distribution
MiniDuct



Air Management
Fire dampers

EXCELLENCE IN SOLUTIONS

FläktGroup is the European market leader for smart and energy efficient Indoor Air and Critical Air solutions to support every application area. We offer our customers innovative technologies, high quality and outstanding performance supported by more than a century of accumulated industry experience. The widest product range in the market, and strong market presence in 65 countries worldwide, guarantee that we are always by your side, ready to deliver Excellence in Solutions.

PRODUCT FUNCTIONS BY FLÄKTGROUP

Air Treatment | Air Movement | Air Diffusion
Air Distribution | Air Filtration | Air Management & ATD's
Air Conditioning & Heating | Controls | Service