

WHY VENTILATION...

GEALAN – YOUR PARTNER FOR VENTILATION

GEALAN is one of the leading European manufacturers of PVC profiles for windows and doors. The topics of windows and ventilation are linked by an inner logic: Windows are the interface between inside and outside – the ideal point to implement ventilation. GEALAN has rethought the classic ventilation function of windows and improved it technically: The result is ventilation systems that give windows new, intelligent functions. GEALAN ventilation systems ventilate without opening the window. In contrast to classic window ventilation, they ventilate much more efficiently, comfortably and safely. And they are easy to plan, because GEALAN has developed intelligent tools and services for ventilation planning.

Discover the GEALAN-CAIRE® product family: From basic ventilation to Smart Home-enabled comfort ventilation, it offers the right ventilation solution for the window. Ventilate better with GEALAN-CAIRE® windows.

There is a partner who thinks and offers windows and ventilation as one unit: GEALAN. Our ventilation products are your opportunities. Get to know them!

- + CAIRE stands for **CONTROLLED AIR REGULATION**: controlled living space ventilation with the window closed, which is far superior to classic window ventilation.
- + Discover how GEALAN combines ventilation with extreme sound insulation: The GEALAN Hafen-City-Fenster® brings fresh air into the building and keeps noise out – a comfortable and secure solution for urban spaces that require special sound insulation.
- + Discover how easy ventilation planning is with GEALAN. Benefit from intelligent GEALAN software that supports you in ventilation design, product selection and BIM-based planning.





WINDOWS + VENTILATION = NEW ROOM QUALITY

Ventilating increasingly dense buildings sufficiently and intelligently is a mega topic of modern construction. GEALAN offers ventilation solutions for almost all dimensions of residential ventilation. Flanked by software and service solutions, a comprehensive ventilation package is created – it serves architects, planners and building owners to realise their vision of new room quality.

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BETTER VENTILATION WITH GEALAN

The big goal of climate protection demands resource conservation demands emission reduction demands building tightness demands ventilation: The denser we build buildings, the more we have to think through their subsequent ventilation. The legislator requires suitable ventilation measures for both new buildings and renovations.



The basic goal is humidity protection: Rooms must be ventilated so that moisture escapes and fresh air enters. Only an optimally dimensioned air exchange ensures building protection and living quality in the long term – with clean air in which mould does not stand a chance. User independence is important: Residential buildings must be adequately ventilated regardless of the ventilation awareness and behaviour of their occupants in order to avoid health risks, structural damage and depreciation.

Modern ventilation goes far beyond basal humidity protection: Active systems measure room parameters such as temperature, humidity, CO₂ and VOC contents of the room air (VOC = volatile organic compounds, e.g. from furniture, carpets, cleaning agents), initiate user-controlled or fully automatic air exchange, achieve ventilator-supported high and maximum air exchange volumes, work with effective filter technology, communicate with building technology such as heating, etc. and conserve resources because they realise heat recovery with high efficiency.



Fresh air, free from insects, pollen, fine dust and germs, improves the quality of living and life. Allergy sufferers breathe a sigh of relief.



Sensor-supported, automated, smart-home-capable ventilation systems increase living comfort.



Ventilating without opening a window means noise protection.



Heat recovery saves heating energy and is subsidised by the state: Ventilation pays off financially.



ADVICE AND SUPPORT

Architects, planners, window manufacturers, fitters, builders, investors: They all have an interest in smart ventilation planning and efficient implementation. GEALAN provides the ventilation expertise you need and supports you in choosing the right ventilation products.

CENTRAL FACTOR LEGAL CERTAINTY

Anyone entrusted with ventilation planning bears responsibility. He must be able to rely on the fact that he plans according to applicable law and fulfils all minimum technical requirements – not least in order to comply with funding guidelines and ward off warranty claims. GEALAN advises you on professional ventilation planning, so that you are on the safe side.

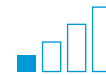


Ventilating with the window closed or only partially open increases burglary protection and creates security.

VENTILATION IN DIFFERENT DIMENSIONS*

Windows open – air in? Classic window ventilation is a necessary and important basis of ventilation, which serves in particular for shock ventilation. However, it alone is no longer sufficient to meet modern demands for building protection and living comfort.

Passive (air pressure-driven) ventilation systems from GEALAN realise ventilation for humidity protection and, depending on the design, achieve the level of reduced ventilation. Active (ventilator-driven) ventilation systems from GEALAN can do even more: Depending on the dimensioning, they fulfil the requirements of nominal ventilation and intensive ventilation.



VENTILATION FOR HUMIDITY PROTECTION

Minimum air exchange to protect against condensation and mould growth. The initial situation is the flat without occupants – as soon as they are in the utilisation unit, they must also actively contribute to ventilation.



REDUCED VENTILATION

Slightly increased air exchange, which e.g. also removes air humidity from laundry drying processes. The initial situation is temporary residents.



NOMINAL VENTILATION

Higher air exchange that removes the humidity of an occupied unit when occupants are present, but not the dampness from peak loads such as cooking and showering.



INTENSIVE VENTILATION

Maximum air exchange, which not only removes average humidity when occupants are present, but also temporary load peaks from cooking and showering.

Passive and active systems from the GEALAN-CAIRE® product family can be combined to suit the use of the room – for a sensible overall concept.

The GEALAN Hafen-City-Fenster® realises natural ventilation where it would otherwise not be comfortably possible: in urban spaces where increased noise protection is necessary. Special soundproofing devices dampen even strong ambient noise when ventilating.

*In relation to Germany. In other markets, ventilation levels may be defined differently.



ADVANTAGES OF DECENTRALISED VENTILATION



Controlled living space ventilation can be designed centrally, i.e. via central building ventilation ducts, or decentrally, i.e. via several room-related ventilation systems. The share of decentralised systems is increasing year by year – they offer important advantages compared to centralised systems:

- + There is no need for ventilation ducts: The planning and design freedom is greater.
- + The acquisition costs are low.
- + Installation is not only possible in new buildings, but also in renovation projects.
- + Assembly is simple.
- + The number of ventilation systems can be flexibly adapted to the desired ventilation performance.
- + There are no fixed pressure differences and air flows in the building; overflow air can move in different directions.
- + The ventilation can be controlled not only area by area, but flexibly room by room.
- + Maintenance (filter replacement) and cleaning are simple, costs are low.
- + High-grade heat recovery and government subsidies also apply to decentralised systems.

ADVANTAGES OF PERMANENT FANS



Permanent and pendulum ventilators are possible solutions for decentralised ventilation, but they differ fundamentally in their characteristics. Permanent ventilators offer considerable advantages compared to pendulum ventilators:

- + Permanent ventilators require only one structural unit (pendulum ventilators at least two to reduce undesirable negative pressure effects).
- + Permanent ventilators have a clean separation of the air flow of fresh air and exhaust air, in other words fresh air is not contaminated.
- + Permanent ventilators filter particles from the room air and do not blow them back inside – a decisive hygiene advantage, especially for allergy sufferers.

GEALAN-CAIRE® FLEX

THE PASSIVE VENTILATION SOLUTION FOR HUMIDITY PROTECTION

GEALAN-CAIRE® flex is a passive ventilation system for existing and new buildings that sits almost invisibly directly in the window rebate. The system realises an air exchange with the window closed in the event of a pressure difference and is used in particular for basic ventilation for humidity protection. The fresh air flows into the window rebate on the right and left on the outside and into the room on the inside of the window. Even with small differences in air pressure between inside and outside, GEALAN-CAIRE® flex reliably brings fresh air into the house. The driving rain tightness of the window is not affected.



GEALAN-CAIRE® flex can be used in PVC-U window systems with rebate and centre seals of different installation depths. The window rebate ventilator is placed between the sash and frame instead of the sash rebate seal. The colour design in black or grey integrates the system homogeneously into the window seal.



USER INDEPENDENCE

GEALAN-CAIRE® flex ensures the air exchange necessary to maintain the value of the building fabric and prevent mould, regardless of the behaviour of the occupants.



FLEXIBILITY

Depending on the required air exchange, one, two or three ventilation units can be installed per window element.



PERFORMANCE

GEALAN-CAIRE® flex achieves an air passage of 2 to 13 m³ per hour, depending on the number of ventilators and air pressure difference.



DRAUGHT PROTECTION

In strong winds, the system automatically creates the desired tightness of the window and prevents draughts.



RETROFIT FRIENDLINESS

GEALAN-CAIRE® flex can be retrofitted at any time.



SIMPLICITY

GEALAN-CAIRE® flex is easy to install and requires little maintenance.



SOUND INSULATION

GEALAN-CAIRE® flex hardly affects the sound insulation of the window. In the optional acoustic version, GEALAN-CAIRE® flex achieves particularly high sound insulation values.



GEALAN-CAIRE® AERECO

THE PASSIVE, HUMIDITY-CONTROLLED VENTILATION SOLUTION

GEALAN-CAIRE® AERECO is a passive ventilation system for existing and new buildings that is integrated into the window element as an external component air diffuser (humidity-sensitive air inlet). GEALAN recommends installation in the frame widening or the high fixed frame or use in the sash (exclusively for rebate seal systems). The system realises an air exchange with closed window in case of pressure difference between inside and outside and serves basic ventilation for humidity protection, but also achieves the requirements of reduced ventilation. The fresh air flows into the diffuser on the outside and into the room on the inside of the window. The inflow angle is designed in such a way that no draught effects occur inside. If the built-in humidity sensor measures a relative humidity of 35 to 65%, GEALAN-CAIRE® AERECO reacts automatically by successively opening the system – for permanent humidity optimisation of the room air. Air is supplied where it is needed, e.g. where people are in the room. The system only acts when fresh air is needed – a plus in energy efficiency. GEALAN-CAIRE® AERECO is available in six different performance variants.



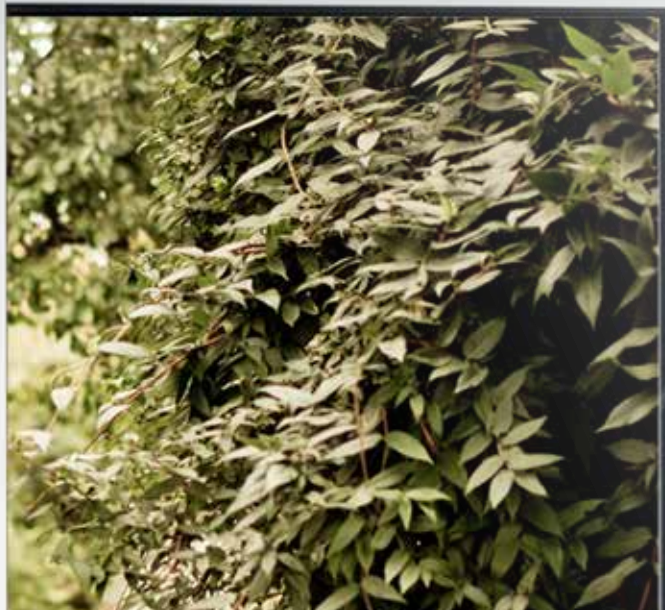
The system ensures the air exchange that is necessary to maintain the value of the building fabric and to prevent mould – regardless of the behaviour of the occupants.



GEALAN-CAIRE® AERECO achieves an air passage of 3 to 32 m³ per hour, depending on the air pressure difference, room humidity and product type.



The system is available with an opening and closing device that allows three settings: **closed** (basic ventilation), **automatic** (hygrometric control) and **maximum airflow**.



GEALAN-CAIRE® AERECO achieves an acoustic attenuation of up to 47 dB ($D_{n,e,w}$) with acoustic accessories (acoustic base plate, acoustic weather protection canopy).



The system reacts to increased humidity levels by opening automatically and allowing air exchange.



GEALAN-CAIRE® AERECO is easy to install and requires little maintenance.



GEALAN-CAIRE® AERECO can be integrated into any profile system.



The installation variant through the window rebate achieves visually particularly narrow face widths.



The installation solution in the frame offers elegantly narrow views without interfering with the sealing area of the window.

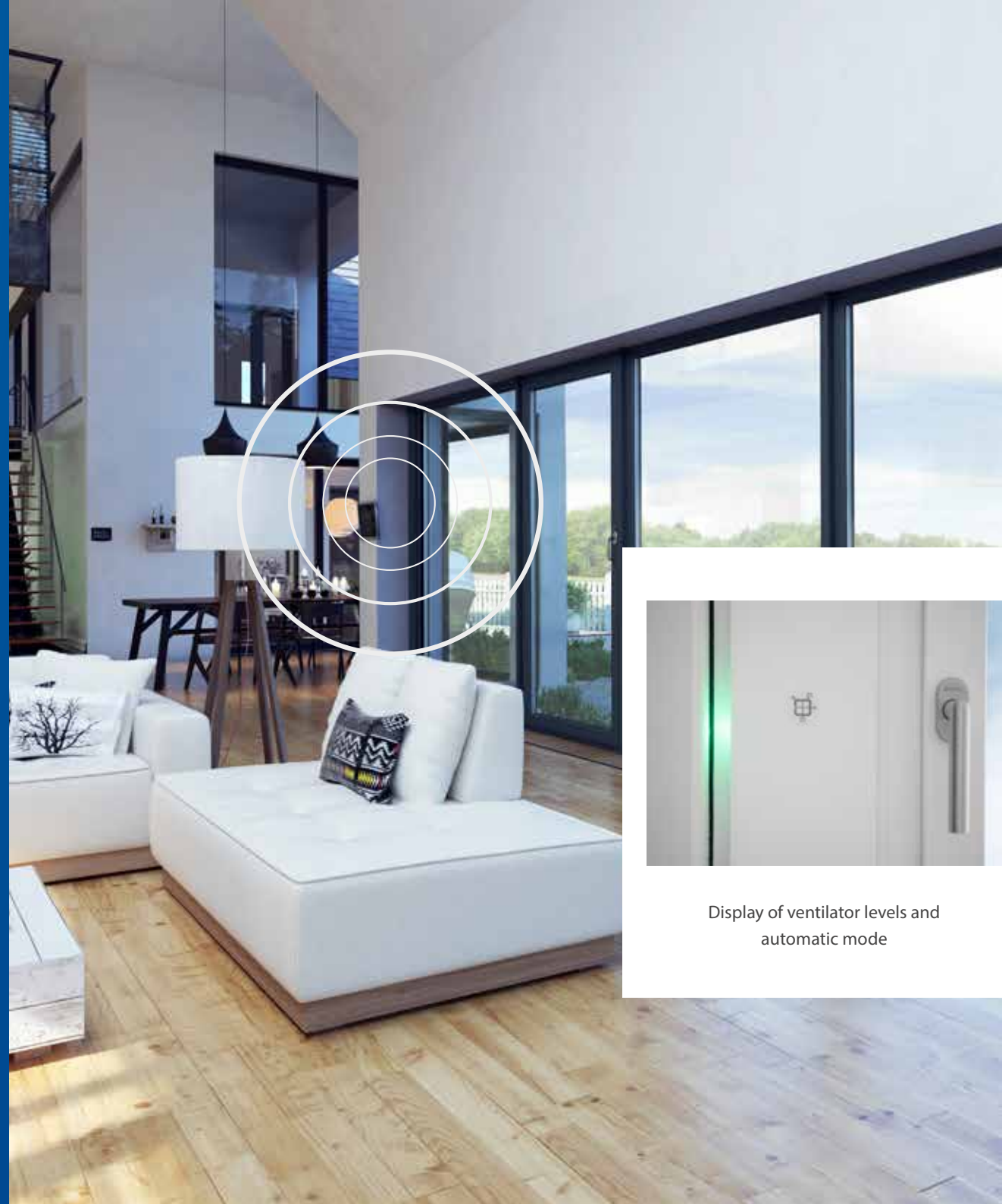


The flexible installation solution in the frame extension; it also leaves the sealing performance of the window untouched.

GEALAN-CAIRE® SMART

THE SMART, ACTIVE VENTILATION SYSTEM FOR THE HIGHEST DEMANDS

GEALAN-CAIRE® smart is an active ventilation system with highly efficient heat recovery for existing and new buildings. It meets the highest demands in terms of ventilation, energy efficiency and comfort and is smart-home compatible. GEALAN-CAIRE® smart can be integrated into a wide range of profile systems and installed insulated or plastered over; only the narrow air inlet and outlet grilles then remain visible. With visible installation, GEALAN-CAIRE® smart ideally adapts to the window element on the outside and inside: The surface technology GEALAN-acrylcolor® with its colour variations is available as well as numerous decorative foils.



Display of ventilator levels and
automatic mode

OPERATING VARIANTS

Operation is via an easy-to-understand one-button control. A 3-second press activates the automatic mode: Here, the ventilator speed can be adjusted depending on the humidity. A 5-second press activates the service menu: Here, the WLAN connection of the ventilation system is switched on and off or reset; in addition, a diagnosis of the unit can be made.

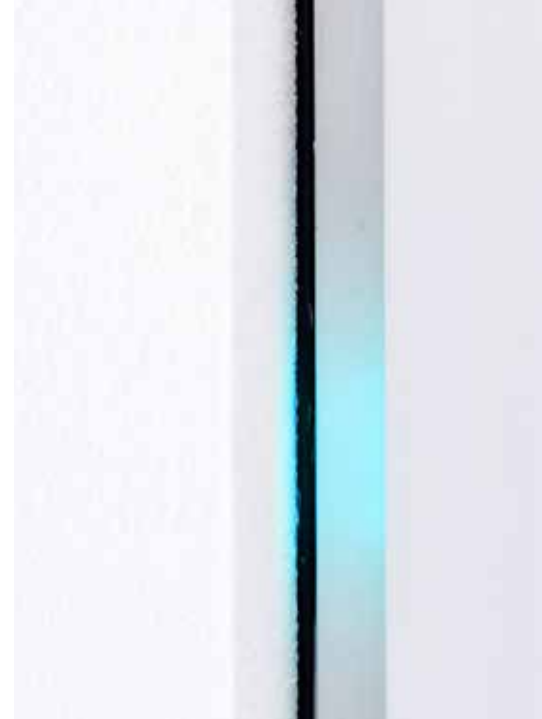
LEDs indicate the current status of the respective GEALAN-CAIRE® smart ventilation system. The automatic extinguishing of the LEDs after 2 minutes avoids glare effects.



Diagnosis and display for filter change



Ventilation system identification and frost protection mode display



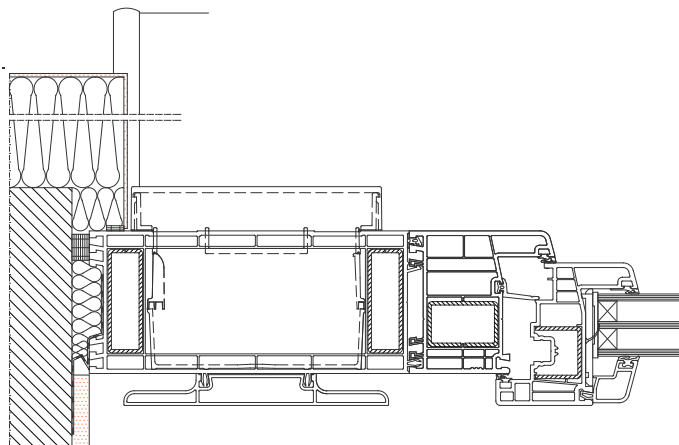
Easy to operate via:

- + Button directly on the unit
- + External flush-mounted button, e.g. on the side next to the window
- + Sensor in the sash or frame
- + Mobile end device

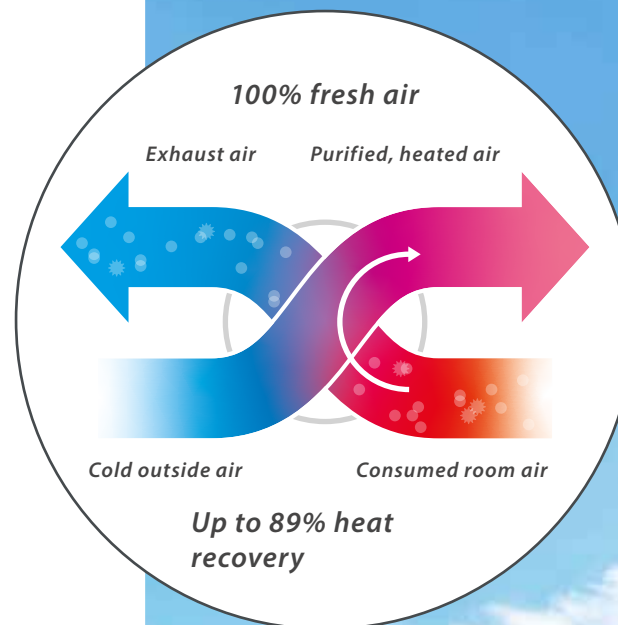
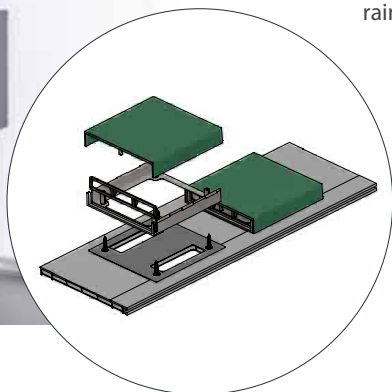


GEALAN-CAIRE® SMART

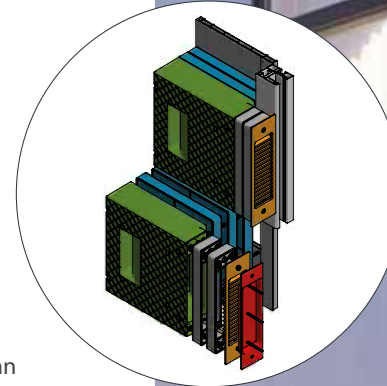
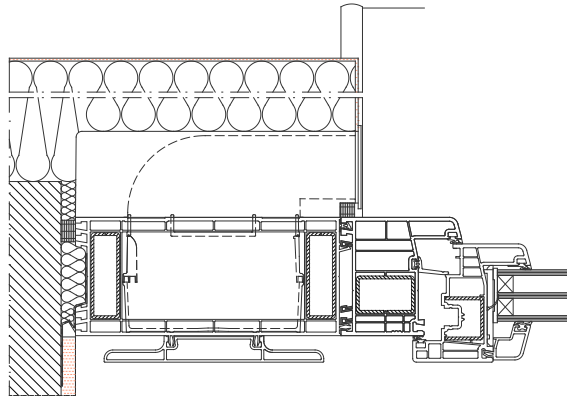
VISIBLE INSTALLATION



- + GEALAN-CAIRE® smart is mounted on top or on the side next to the window element.
- + GEALAN-CAIRE® smart perfectly matches the design of the window element: The surface is available in white, in foil or in GEALAN-acrylcolor®.
- + Cover caps protect the ventilation openings from environmental influences such as rain and snow.
- + A replaceable insect net prevents insects from entering.



CONCEALED INSTALLATION



- + Only two narrow ventilation openings in the window reveal are visible.
- + The over-insulated installation can contribute to an even higher degree of heat recovery.
- + Adapters realise different installation depths. This allows the position to be coordinated with roller shutter guide rails – for a perfectly fitting combination of ventilation and privacy protection.
- + All adapters have integrated sealing elements and can be used modularly in 20 mm increments.
- + A plaster cover facilitates the plastering of the window reveal: The cover is inserted into the ventilation openings and simply removed again after plastering with the help of the handle.





APPEARANCE

GEALAN-CAIRE® smart blends in perfectly with the colour of the window element, both inside and out.



SOUND INSULATION

The sound insulation value of GEALAN-CAIRE® smart is up to 49 dB (Dn,e,w) depending on the installation situation.



AUTONOMY

The system is independent of an air pressure difference between inside and outside and can ventilate independently of the user.



COMFORT

Precise sensor technology continuously measures air temperature and humidity and controls the fresh air supply fully automatically or individually. There is a choice of five ventilation levels and automatic mode.

GEALAN-CAIRE® smart measures room air parameters (temperature, humidity) and adjusts its ventilation performance so that they remain at the optimum at all times. Driven by modern ventilator technology, fresh air flows in on the side of the window and exhaust air flows out on the side of the window reveal – the two channels are neatly separated from each other. Operation takes place directly on the unit, via remote buttons in the wall or casement or conveniently via app.



AIR PURIFICATION

Two ISO Coarse 50% class filters filter dust, pollen and other harmful particles. Optional filters of class ISO ePM25 70% are available, which filter fine dust: GEALAN-CAIRE® smart is therefore recommended as a ventilation system for inner-city buildings. LEDs signal when a filter change is necessary.



EXPANDABILITY

In addition to air temperature and humidity, GEALAN-CAIRE® smart can be connected via radio link to other sensors (e.g. CO₂, VOC) and react to their input.



ENERGY EFFICIENCY

A cross heat exchanger achieves a heat recovery of up to 89%. This minimises heat loss.



PERFORMANCE

GEALAN-CAIRE® smart achieves an air flow of 4 to 40 m³ per hour, depending on the selected ventilation level.



SMART HOME

GEALAN-CAIRE® smart can be integrated into a building network and conveniently controlled via GEALAN HOME, smartphone or tablet. The free GEALAN HOME app is available for iOS and Android systems. Via the Mediola platform, GEALAN-CAIRE® smart is compatible with smart home systems and devices from different manufacturers.





UPDATE CAPABILITY

GEALAN-CAIRE® smart can be adapted to individual customer requirements at any time after installation with the help of function updates. No additional Smart Home components are necessary for this.

The technology menu of the GEALAN-CAIRE® smart ventilation system offers technicians a simple configuration option. No app is required for this. Access is directly via internet browser.

NIGHT COOLING



As a function update, for example, a programme for night cooling on summer nights is available. For this purpose, the heat exchange function is switched off and two GEALAN-CAIRE® smart ventilation systems are coupled with each other in such a way that during the cooler night hours one exclusively exhausts warm air and the other exclusively supplies cool fresh air. At a fixed time or when the desired temperature is reached, the ventilation systems automatically switch back to normal operation. The systems are connected via the in-house WLAN router. The result is energy-efficient night cooling of the building and a pleasant indoor climate, e.g. in bedrooms, living rooms or offices.

OBJECT ADJUSTMENT



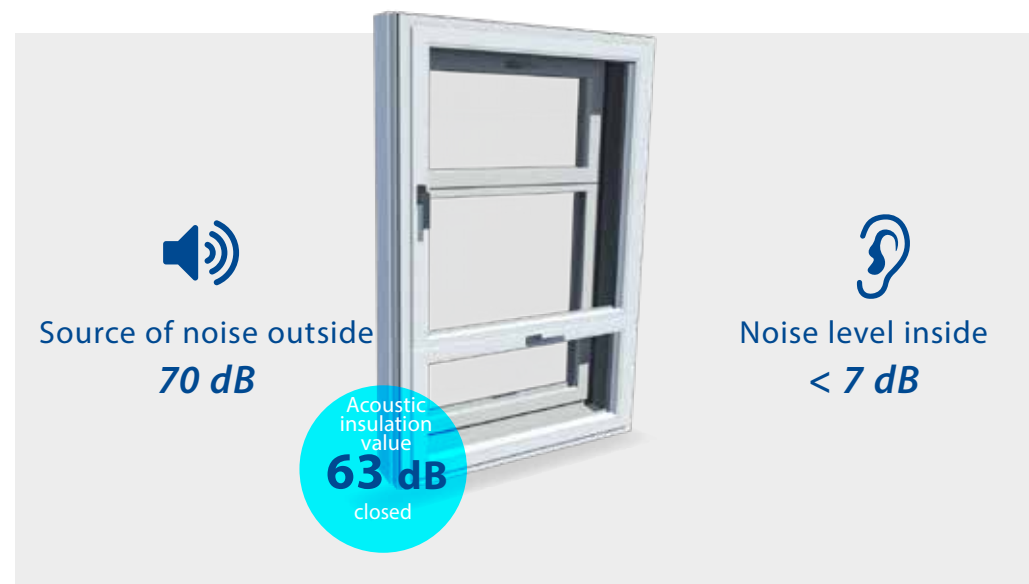
GEALAN-CAIRE® smart ventilation systems can be individually programmed. With the help of this individualised customer programming, several ventilation units can be centrally controlled and updates can be carried out centrally, for example in the commercial sector. The operating options can also be adapted, e.g. no operation directly on the unit in facilities such as schools or retirement homes.

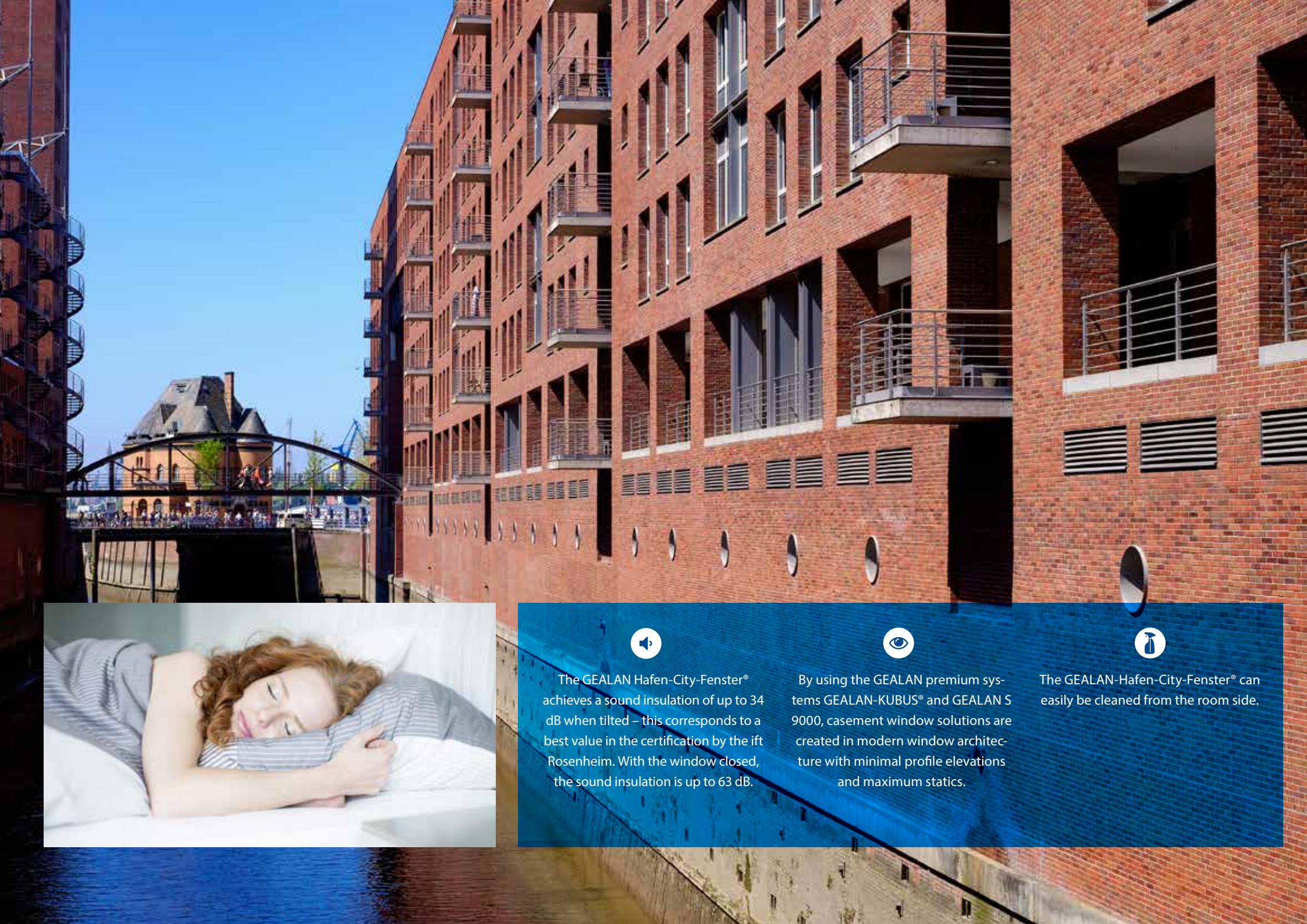
GEALAN HAFEN-CITY-FENSTER®

NATURAL VENTILATION WITH MAXIMUM SOUND INSULATION

Opening up new urban spaces with increased noise immission for residential development succeeds with the GEALAN Hafen-City-Fenster®: It combines natural window ventilation with strong sound insulation.

The GEALAN Hafen-City-Fenster® consists of an outer window element with turn and tilt fitting and an integrated skylight, as well as an inner window element with turn and tilt fitting and integrated skylight. Ventilation is via an air duct created by tilting the skylight and the skylight below. The sound is conducted through this corridor, absorbed by absorbing components and reduced.





The GEALAN Hafen-City-Fenster® achieves a sound insulation of up to 34 dB when tilted – this corresponds to a best value in the certification by the ift Rosenheim. With the window closed, the sound insulation is up to 63 dB.



By using the GEALAN premium systems GEALAN-KUBUS® and GEALAN S 9000, casement window solutions are created in modern window architecture with minimal profile elevations and maximum statics.



The GEALAN-Hafen-City-Fenster® can easily be cleaned from the room side.



Ventilation type	Passive	Passive / moisture-guided	Active	Natural/free ventilation
Flow behaviour	Supply or exhaust air	Supply or exhaust air	Supply and exhaust air	Supply and exhaust air
Air volume per hour	2 - 13 m ³	3 - 32 m ³	4 - 40 m ³	Depending on the window size
Heat recovery	-	-	✓	-
Supply air filtration	-	-	✓	-
Insect screen	✓	✓	✓	-
Sound insulation	R _w to 43 dB	D _{n,e,w} to 47 dB	D _{n,e,w} to 49 dB	R _w partially open to 34 dB R _w closed to 63 dB
Intrinsic noise*	Silent	Silent	22-53 dB	Silent
Flexibility during installation	● ● ●	● ● ●	● ● ●	● ● ●
Independent of window system	✓	✓	✓	✓
Setting options (in operation)	● ● ●	● ● ●	● ● ●	● ● ●
Suitable for conveying supply air for exhaust air systems	✓	✓	✓	-

*Standard sound pressure level according to VDI 4100:2012-10, L_{Afmax,T} in dB(A) at 62.5 m³ room volume

GEALAN-CAIRE® flex	GEALAN-CAIRE® AERECO	GEALAN-CAIRE® smart	GEALAN Hafen-City-Fenster®
			

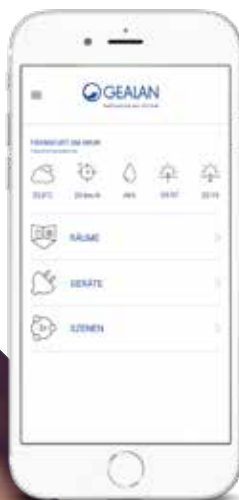
Price	€€€	€€€	€€€	€€€
Efficiency	● ● ●	● ● ●	● ● ●	● ● ●
Intended use (type of building)	Social housing	Rental housing	High-quality rental housing, condominiums and houses	Areas with increased noise immission, high-quality rented housing, owner-occupied flats and houses
Use of ventilation stage	Mainly ventilation for humidity protection	Mainly reduced ventilation	Nominal and intensive ventilation	-
Optimal rooms for use	Technical room, pantry, storage room, cellar room	Study, dressing room, guest WC, sauna room, guest room	Living room, dining room, kitchen, bedroom, children's room, bathroom, office and meeting rooms	Living room, dining room, kitchen, bedroom, children's room, bathroom, office and meeting rooms
Power supply	Not required	Not required	Required	Depending on equipment
Smart home compatible	-	-	✓	Depending on equipment
Maintaining the value of the building fabric	✓	✓	✓	-
Increasing the comfort of living	● ● ●	● ● ●	● ● ●	● ● ●
Increasing energy efficiency / CO ₂ savings	● ● ●	● ● ●	● ● ●	● ● ●
Maintenance	Not required	Not required	Filter change every 13 months	Not required

SMARTE VENTILATION SOLUTIONS

THE KEY TO INTELLIGENT VENTILATION

GEALAN-CAIRE® smart opens up smart home worlds. The ventilation system can be controlled directly from mobile devices such as smartphones and tablets via the GEALAN Home app (Android or iOS). This makes ventilation control particularly convenient.

- + Weather data, rooms, status display of the ventilation system, temperature and humidity at a glance
- + Control from anywhere in the house; via Mediola also remote access, e.g. control of ventilation while residents are on holiday
- + User-friendly, intuitive operation
- + Convenient selection of operating modes, e.g. sleep mode, night cooling, maximum ventilation
- + Creation of smart room scenes





Philips Hue, Amazon Alexa...
GEALAN-CAIRE® smart
Sonos®, Google Home...

GEALAN-CAIRE® smart can be integrated into a higher-level building automation system – for example, to implement user-independent and centrally controllable ventilation within the building management system.

The GEALAN Hafen-City-Fenster® can also be integrated into a building automation system. Coupled with commercially available window motors and status sensors, the natural, sound-insulated ventilation can be optionally automated and connected to smart home systems. That means – in combination with GEALAN-CAIRE® smart – sensible combinations of ventilator-assisted and natural ventilation can be realised.

GEALAN-CAIRE® smart is a WORKSWITH partner of Mediola, one of the largest cross-brand smart home platforms. GEALAN-CAIRE® smart can be integrated into a smart home landscape via Mediola. Ventilation can thus be linked to other functional levels such as security, heating, lighting, audio and video technology. Complete operation via app means maximum convenience. The result is individually designed room scenes.



Mediola IQCONTROL



Coupled with CO₂ and/or VOC radio sensors, GEALAN-CAIRE® smart specifically initiates the ventilation process before limits are exceeded. Result: Rapid and energy-efficient reduction of CCO₂ or VOC concentrations, continuous optimisation of indoor air quality in classrooms, meeting rooms, living rooms, etc.



After moisture-intensive showering or cooking, GEALAN-CAIRE® smart automatically removes the humidity at maximum power. Result: effective humidity protection in the bathroom and kitchen.



In combination with CO₂ sensor and time programming, GEALAN-CAIRE® smart creates a pleasant sleeping climate. The fresh air supply can be limited to the quietest ventilator levels during the night hours – for restful sleep in fresh air and quiet.



Communication between windows, ventilation and heating: during shock ventilation, heating and ventilation switch off to prevent heat loss, e.g. in living rooms and classrooms.

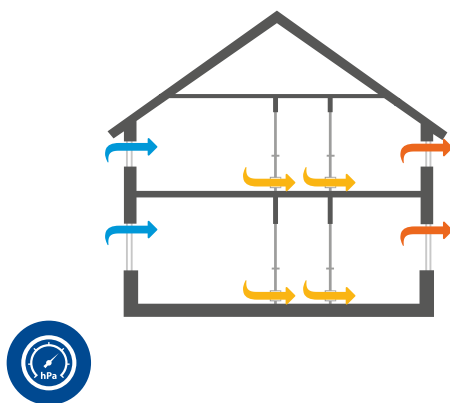


In combination with pure extract air systems (e.g. windowless bathrooms), GEALAN-CAIRE® smart ensures a sufficiently strong air wake. The system interrupts its own extract air function and only delivers supply air as long as the extract air system in the bathroom is running. Result: optimal automated air balance, humidity protection in hotels, student and senior flats, etc.



Update capability

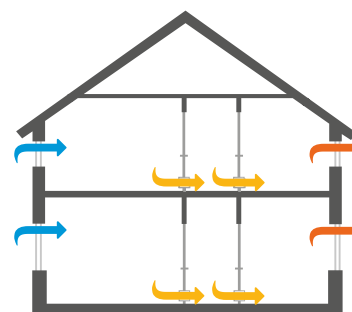
GEALAN-CAIRE® smart is updated online via the integrated WLAN interface and an OTA (Over the Air) function. The system receives security and function updates and always remains up-to-date with the latest software.



CROSS VENTILATION WITH GEALAN-CAIRE® FLEX

The ventilators are positioned in the building envelope in opposing window elements so that natural ventilation of the building begins even with small differences in air pressure between inside and outside. Fresh air enters, flows across the building, escapes.

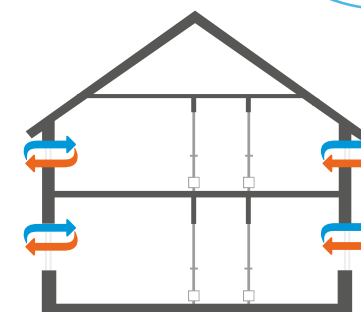
The benefit: Cross-ventilation with GEALAN-CAIRE® flex is a particularly cost-effective solution for basic ventilation for humidity protection.



CROSS VENTILATION WITH GEALAN-CAIRE® AERECO

GEALAN-CAIRE® AERECO combines cross-ventilation with moisture management. The system opens in the range between 35 and 65% relative humidity – and the higher the humidity value, the further it opens. GEALAN-CAIRE® AERECO removes moisture and supplies fresh air.

The benefit: In addition to basic ventilation, the humidity of the room air is continuously controlled – for optimised humidity protection and high efficiency.



ROOM-BY-ROOM SUPPLY AND EXTRACT AIR CONTROL REALISED GEALAN-CAIRE® SMART

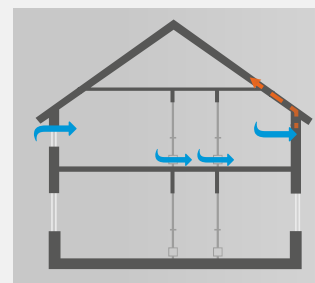
Independent of air pressure differences, GEALAN-CAIRE® smart ventilates each individual room fully automatically, sensor-based or according to individually created room scenes.

The benefit: The system offers all the possibilities of smart home-based comfort ventilation. It is powerful and energy-efficient.

Consideration of windowless bathrooms:

When air is actively extracted from windowless bathrooms, GEALAN-CAIRE® flex / GEALAN-CAIRE® AERECO implements the necessary airflow of fresh air into the building.

The benefit: GEALAN-CAIRE® flex / GEALAN-CAIRE® AERECO can be easily combined with an exhaust air system in bathrooms.



Consideration of windowless bathrooms:

If air is actively extracted from windowless bathrooms, GEALAN-CAIRE® smart provides the necessary fresh air flow into the building.

GEALAN-CAIRE®

VENTILATION MADE TO MEASURE

The GEALAN-CAIRE® product family offers a wide range of ventilation solutions. Architects, planners and ventilation experts design the appropriate ventilation layout on the basis of the ventilation requirement calculation and on the basis of the individual requirements for ventilation performance (going beyond humidity protection: reduced ventilation, nominal ventilation, intensive ventilation).

Example calculation of energy savings for a single-family house through the use of GEALAN-CAIRE®:

	Window ventilation	GEALAN-CAIRE®
Final energy demand q_e	21.00 kWh/(m²a)	20.41 kWh/(m²a)
Energy losses via windows	3,903 kWh	4,094 kWh
Energy losses via ventilation	11,032 kWh	9,709 kWh
Effective saving		1,132 kWh
Ventilation losses	133.20 W/K (n=0.6 h ⁻¹)	66.60 W/K (n=0.3 h ⁻¹)
Annual heating requirement	9,411 kWh/a	5,724 kWh/a
Number of heating days	184.9 d/a	165.1 d/a
Final energy $Q_{E,0}$	5,009 kWh/a	3,831 kWh/a

- **Living space:**
approx. 225 m² basement (75 m²), ground floor (74.5 m²) + first floor (75 m²)
- **Building floor area:** 274.93 m²
- **Heated air volume:** 652.96 m³
- Use of GEALAN-CAIRE® smart in the living rooms in combination with GEALAN-CAIRE® AERECO in adjoining rooms such as guest toilets and cellar rooms

COMBINED VENTILATION



Ventilation requirements and cost efficiency are at the heart of proper ventilation planning. A well thought-out combination of different GEALAN-CAIRE® products fulfils both factors.

Example: GEALAN-CAIRE® flex ensures basic ventilation in utility areas, GEALAN-CAIRE® AERECO removes moisture from wet areas, GEALAN-CAIRE® smart offers full ventilation comfort in living areas. The possible combinations are numerous and depend entirely on the use of the building.



Example: GEALAN-CAIRE® products can be used to support other ventilation technology and supplement natural window ventilation in heavily used rooms such as classrooms, offices and meeting rooms. The benefit: The systems can be retrofitted in the window element (GEALAN-CAIRE® flex) or are installed in the window element when the window is replaced – no further conversion measures are necessary.



ADVICE FROM GEALAN EXPERTS

As an alternative to ventilation planning software, GEALAN offers you ventilation planning as an engineering service. This includes the creation of a ventilation concept based on a room-related air volume planning for all ventilation stages. In addition, you will receive individual product recommendations from our experts, taking into account, for example, sound insulation and air volume requirements. All that is needed in the first step are the floor plan drawings and a short telephone call.



IMPLEMENTATION WITH GEALAN

Our GEALAN ventilation experts advise you on planning, check the feasibility of ventilation concepts and support you during implementation. Architects, planners, builders and investors receive individual and detailed product presentations on request. In addition, GEALAN supports you in finding reliable suppliers for your individual construction project.



TRAINING FROM GEALAN

Take advantage of the GEALAN ACADEMY seminars on ventilation. Our training managers will give you a thorough introduction to the requirements of DIN 1946-6, the design and planning of ventilation projects, and the world of GEALAN ventilation solutions. Also use our online training courses for a good insight into our solutions, from the comfort of your home or office.





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