



HEATING. VENTILATION. COOLING.
IN ONE SYSTEM.

BUILDING

WHEN IT COMES TO HEATING, KEEP A CLEAR HEAD AND WARM FEET.

Every builder, whether developer or self-builder, should build with the latest technology. In our modern world, the **environment and climate protection** are important issues. Equally important are healthy living and working. Statutory requirements such as **Building Regulations** and **EU directives** must also be taken into account.

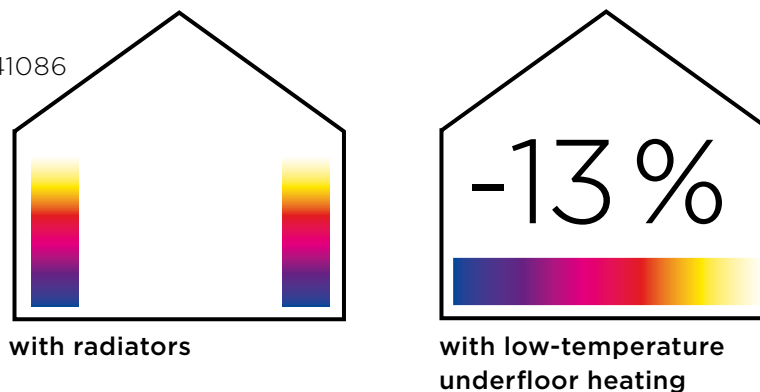
The installation of modern low-temperature systems and renewable heating systems such as heat pumps, condensing boilers or biomass boilers can **reduce heating costs significantly**. Increased thermal insulation creates an air-tight building envelope that also minimises heat losses. This saves money and valuable natural resources.

The installation of underfloor heating also offers advantages. The **gentle radiant heat and pleasant floor surface temperature** guarantee a unique **feeling of comfort**. This emphasises how well underfloor heating combines with alternative energy heating and modern heating controls

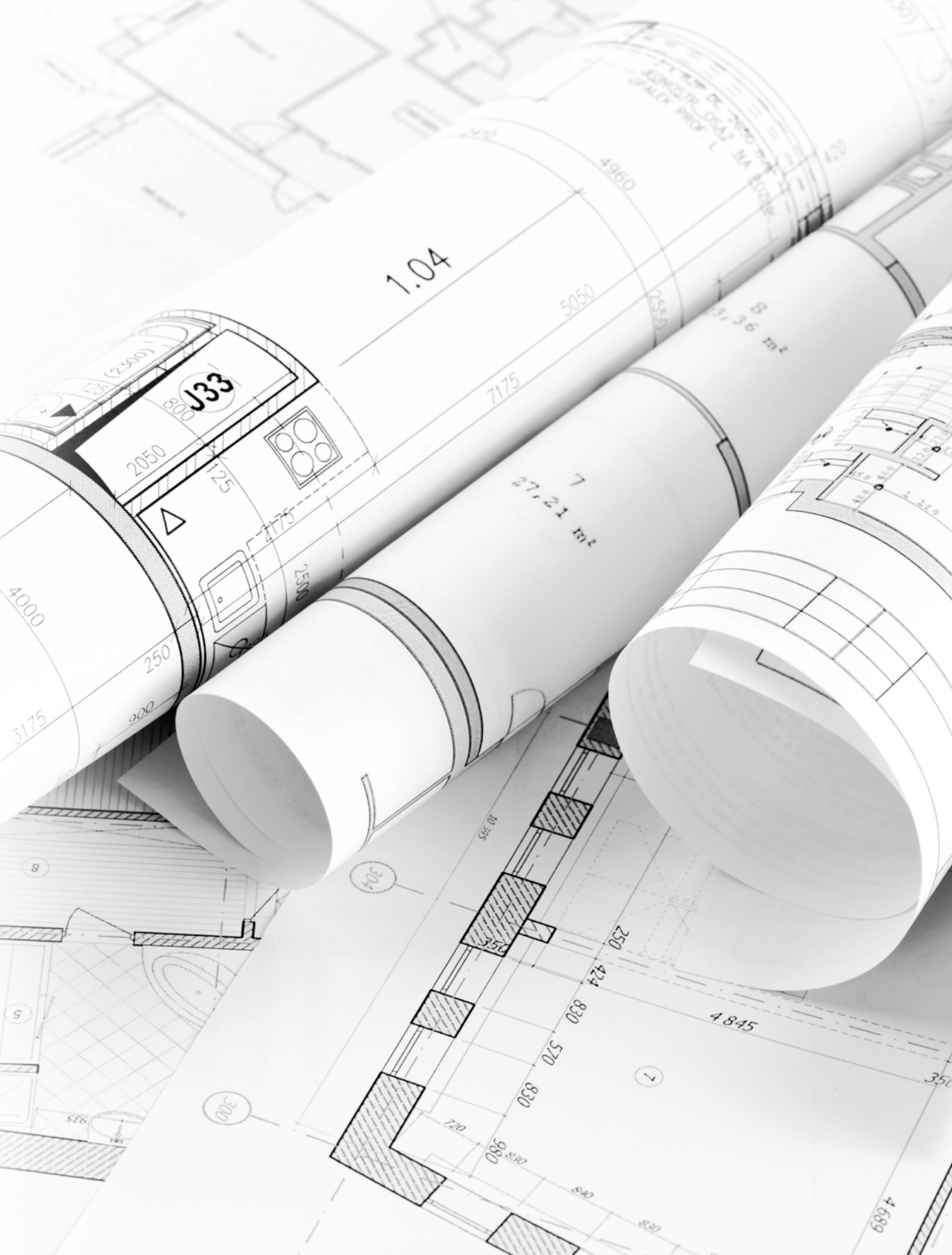
And best of all, the low flow temperatures save up to 13% in energy costs!

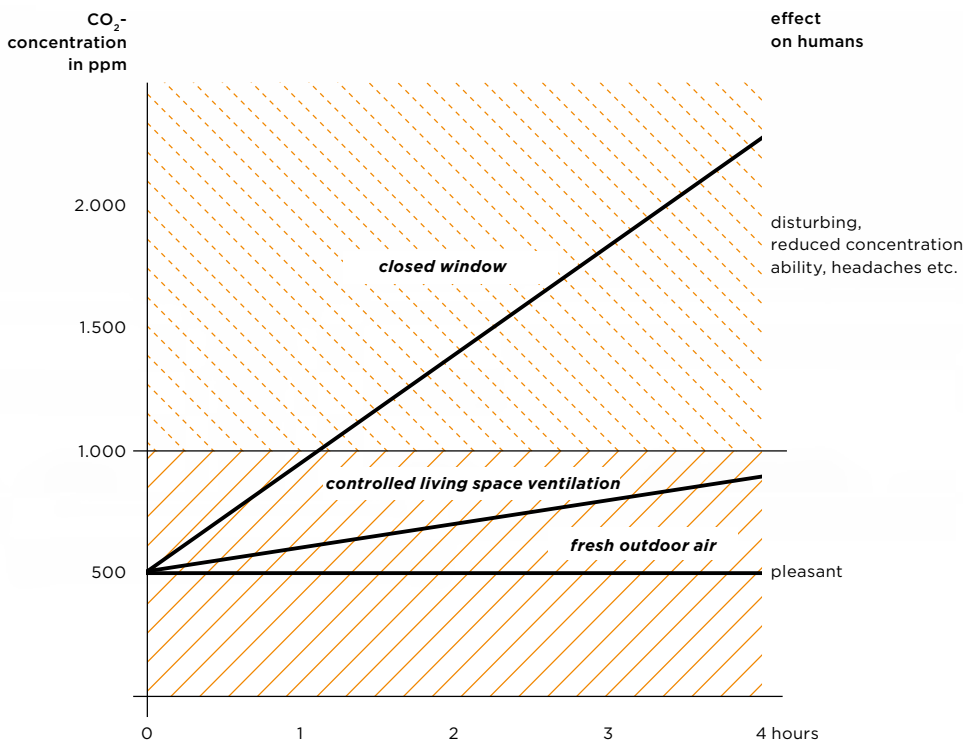
Primary energy use

Calculation according to DIN 41086 and DIN 4701-10/12



All these facts lead to one conclusion:
modern underfloor heating is an advantage in every house.





Air-tight building envelope

Buildings that are constructed to the high standards of the current Building Regulations result in an airtight building envelope. This prevents natural air exchange and therefore the minimum required air changes to achieve hygiene standards. Normal ventilation by opening a window is insufficient, and allows pollutants and noise to enter the room.

CO₂ Concentration

A lack of sufficient fresh air is often noticeable when a room is entered. Stale, oxygen-poor air signals an increase in CO₂ concentration, which will affect well-being and result in adverse effects such as headaches and nausea.

Only a **controlled home ventilation system** can satisfy the constant need for filtered, fresh air in an innovative and efficient way. This **optimises the long-term quality of the indoor air.**

THE DEMAND

HEATING AND VENTILATION HAVE A DIRECT EFFECT ON WELL-BEING.

Humidity and the formation of mildew

Inadequate air exchange leads to an increase in humidity levels within the building. This can easily lead to the formation of mildew on walls, constituting a health risk and resulting in damage to the building fabric.

Ventilation heat loss

A high rate of air exchange can be created by opening windows fully. However this will also lead to higher energy loss. A regulated home ventilation system with heat recovery avoids heat loss and saves energy.

Pollen allergies

Unfiltered air contains large amounts of tiny, almost invisible suspended particles. Those with allergies tend to suffer when millions of pollen particles flood into buildings in spring and summer.



THE SYSTEM

THE IDEAL SOLUTION FOR EVERYONE.

An improvement in comfort at home or at work.

Heating, ventilation, cooling - with AIRCONOMY®. This ideal combination allows you to breathe easily in all seasons.

Feel comfortable at home and at work: through the intelligent combination of the three functions, AIRCONOMY® satisfies the highest demands at home and work. **Odour and pollutant-filled interior air is constantly replaced.** Filtered fresh air prevents damage to the building by damp and mildew growth.



AIRCONOMY® HEATS

Comfortable warmth in a home and work environment through the proven system of underfloor heating: AIRCONOMY® provides a pleasant, gentle radiant heat over the entire floor surface-always at an optimal temperature.



AIRCONOMY® VENTILATES

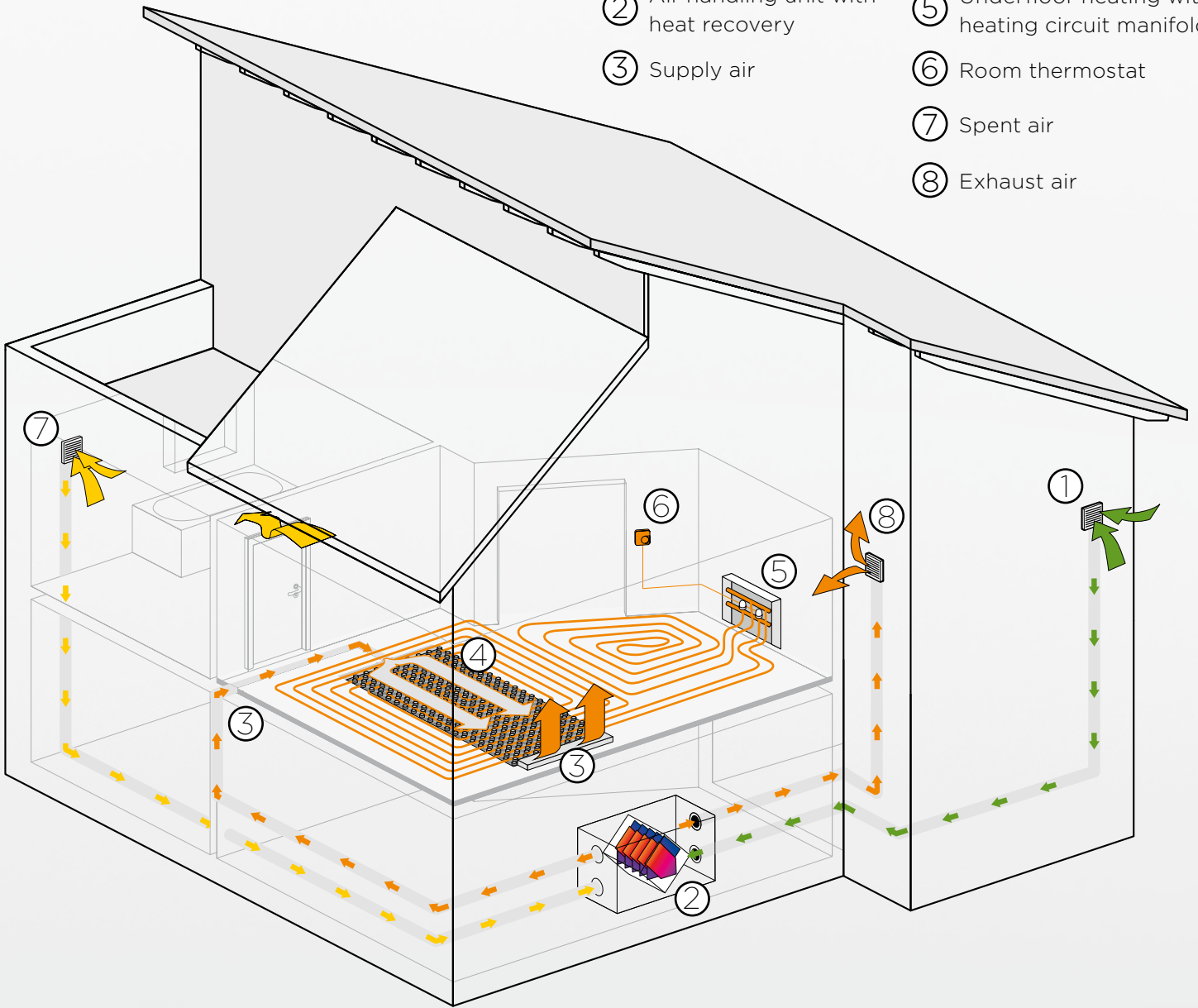
AIRCONOMY® supplies fresh, temperature-regulated air to all rooms. The AIRCONOMY® system components ensure optimal distribution in the living space. Inconspicuous air outlets set into the floor under the window allow an aesthetically-pleasing and draught-free flow of warm or cool air into the room. An extraction system ducts spent air through a heat-recovery system to warm incoming external air.

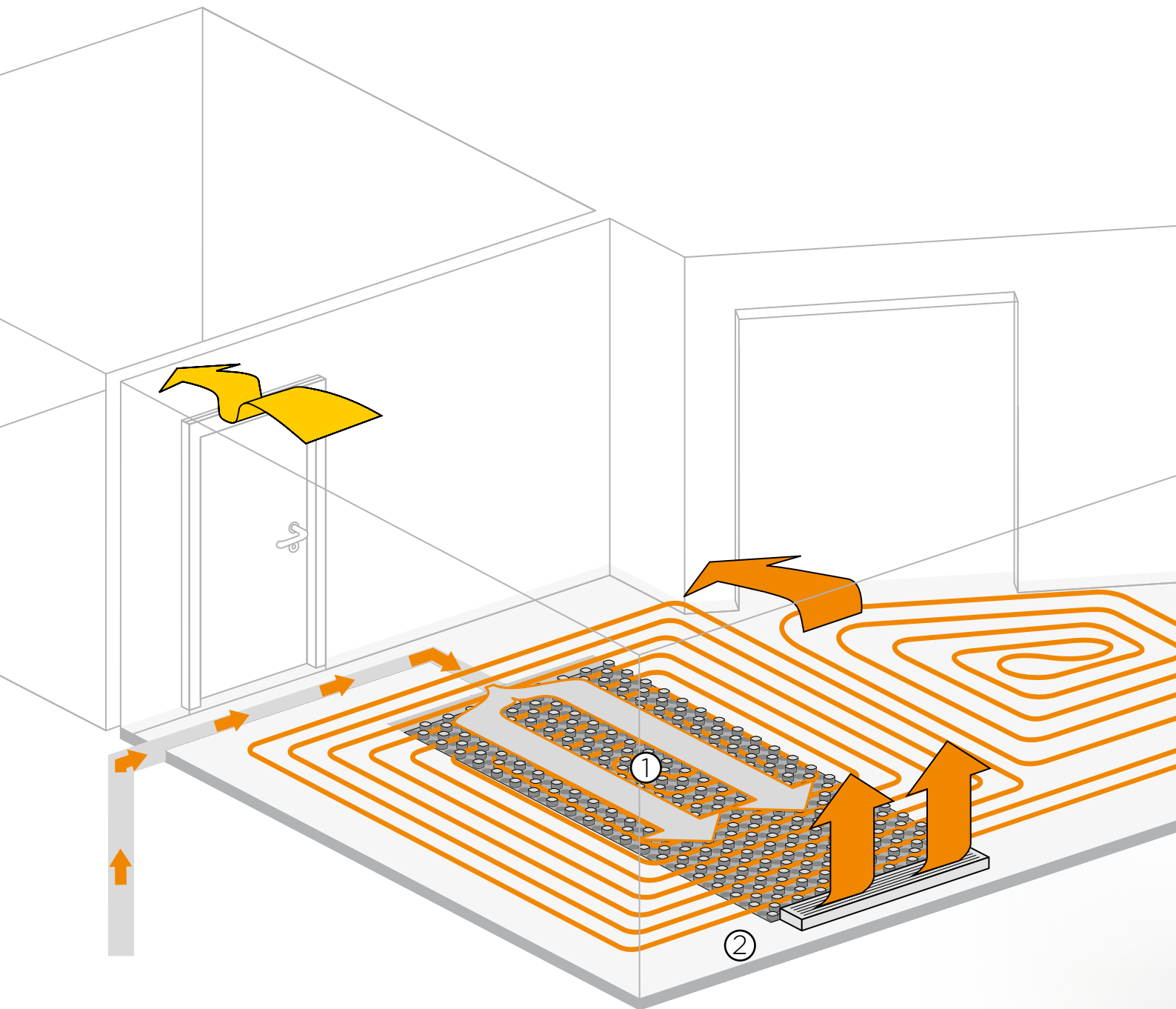


AIRCONOMY® COOLS

Cooling during high summer temperatures: when required AIRCONOMY® can circulate cool water through the underfloor pipes. Using the principle of passive cooling, heat is extracted through the floor. Both the chilled floor surface and the cooled air contribute to the cooling load. The cooled supply air is drier and therefore also contributes to the comfort.

- ① Outside air
- ② Air handling unit with heat recovery
- ③ Supply air
- ④ AIRCONOMY® system component
- ⑤ Underfloor heating with heating circuit manifold
- ⑥ Room thermostat
- ⑦ Spent air
- ⑧ Exhaust air





AIRCONOMY® - the pinnacle of comfort. The combination of both systems ensures a climate of absolute comfort.

① **AIRCONOMY® system module**

Unobtrusively integrated into the floor, the module serves as a heat exchanger to modulate the incoming air to the desired room temperature. Due to the large cross section of the AIRCONOMY® system module, the air flow velocity is reduced, ensuring a silent and draught-free displacement ventilation system. Due to the special geometry of the system module, it serves not only as a heat exchanger, but also as an efficient noise damper.

② **Ventilation outlets**

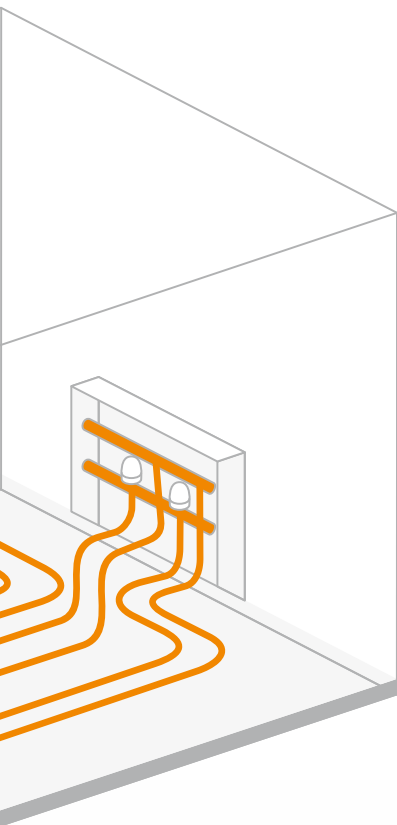
By placing the supply air outlet in the floor below the window, natural air convection ensures optimal air distribution in the room. At the same time it combats the cold temperatures emanating from the window. The fresh filtered supply air flows through the entire room, and the spent air is extracted from the building.

HOW IT WORKS

THE MULTIFUNCTIONAL SYSTEM FOR INNOVATIVE BUILDING SERVICES

AIRCONOMY® combines hot water underfloor heating with controlled ventilation and heat recovery. Thanks to the floor construction the heating demand is satisfied by the underfloor heating on the floor surface and by the supply of warm air.

As a result of the large heat exchanger surface very low heating flow temperatures can be achieved. AIRCONOMY® has been created for the connection of low temperature heat sources like condensing boilers, heat pumps and other renewable energy systems.



THE BENEFITS

INTELLIGENT COMBINATION: UNDERFLOOR HEATING AND CONTROLLED LIVING SPACE VENTILATION

Combining stand-alone solutions from different manufacturers is costly in terms of time and expense. **The optimal combination of heating and ventilation in a single system** offers a multitude of advantages. To create the **ideal room temperature** requires careful planning whilst at the same time focussing on comfort.

1. Draught-free ventilation

AIRCONOMY® delivers a continuous supply of optimally tempered fresh air without creating draughts, which results in a comfortable room climate. The thermal comfort of the system has been confirmed by the Technical University of Dresden.

2. Absolutely quiet

The whisper-quiet operation of a home ventilation system increases the feeling of well-being, whether it is used in a living room or a work room. The sound-damping effect of the AIRCONOMY® system module has been confirmed by the Fraunhofer Institute in Stuttgart.

3. Flexible interior design

AIRCONOMY® is integrated into the floor and is almost invisible, allowing free and flexible interior design.

4. Ideal fresh air distribution

AIRCONOMY® supplies fresh, temperature-regulated air to all rooms. The AIRCONOMY® system components ensure an optimal distribution to the living areas. Inconspicuous air outlets set into the floor under the window space allow a visually-appealing and draught-free flow of warm or cool air into the room. An extraction system ducts spent air through a heat-recovery system to warm incoming external air.

5. Cooling in summer

Cooling during high summer temperatures: when required AIRCONOMY® can circulate water through the underfloor pipes. Using the principle of passive cooling, heating is extracted through the floor. The cooled supply air is drier and therefore also contributes to the comfort.

6. Absolutely hygienic

AIRCONOMY® is easy to clean. Hygiene standards are observed right from initial planning. The system has been certified by the Hygiene Institute in Gelsenkirchen.

7. User-friendly

Ease of operation and user-friendliness characterise AIRCONOMY®. Whether it is a thermostat or a remote control, the ideal temperature is just a click away. If required, the system can be integrated into a home automation system.

8. 10 Year guarantee

AIRCONOMY® is a mature and proven technology that has demonstrated quality and reliability in building services over decades. We offer a 10 year guarantee on AIRCONOMY® systems.

19°C



24°C



9. Energy efficient

Energy consumption is far less when compared with a conventional underfloor heating system, thanks to the heat recovery module and low flow temperatures. Energy intensive and wasteful ventilation by opening windows is also a thing of the past. In comparison with conventional products i.e. stand-alone solutions, AIRCONOMY® uses less energy due to the high efficiency of the heat recovery unit (97%). And in summer there is the added bonus of simple building cooling.

20°C



10. Demand based Room controls

With AIRCONOMY® you control the comfort level for the whole building according to your requirements. The temperature in every room is set individually.

22°C





Office building, Design Center Deventrade, Deventer (NL)

Established in 1987 by John Pothoven. Deventrade, based in the Netherlands city of Deventer, specialises in sport clothing. The new Design Center, where the collections are designed, was completely fitted with AIRCONOMY®.

The intention was to create a generous 3000 m² showroom complete with flexible display areas, open plan offices that encourage communication as well as individual offices for project leaders. AIRCONOMY® was ideal for this brief. The underfloor heating system gives pleasant radiant heat to the room, while the discreet ventilation operates efficiently, giving whisper-quiet air to the environment. The same surface offers cooling in summer, without additional investment in equipment.



Karwendel Museum (DE)

Germany's highest nature information centre is situated at the mountain station of the Karwendelbahn gondola at 1300 m above sea level



POSSIBILITIES

AIRCONOMY® – NOT ONLY FOR HOMES.

AIRCONOMY® is not only ideal for new build, but also for renovations. The system can be customised to suit the demands of unusual building techniques, and as a result the system can be found in the widest architectural variety of buildings across Europe.

Notwithstanding the distinctive features of each building, they have something in common: **Heating. Ventilation. Cooling. In one system.**



Single-family home
Huf Haus Surrey (GB)



Multiple-family dwelling
Bad Godesberg (DE)

In this architecturally-challenging and modern multi-family building AIRCONOMY® was installed in 6 residential units varying in size from 83 m² to 355 m².

THE QUALITY

THE QUALIFIED HVAC SECTOR WILL SUPPORT YOU.

The AIRCONOMY® system reduces complexity from the planning phase.

The qualified HVAC sector will prepare your personal design and cost saving possibilities based on a detailed analysis.



The Dresden University of Technology certified AIRCONOMY® in a comprehensive study of the “optimal comfort”.



Monitoring is Service. Quality is compulsory.

With AIRCONOMY® you are investing in a mature system that has proved its quality and reliability in building services over many years. No matter what building type or building method, AIRCONOMY® delivers a reliable and future-proof underfloor heating system with a controlled building ventilation and cooling system.

Everything in a single system - customised for your building.

Hygiene-Institut des Ruhrgebiets

Institut für Umwelthygiene und Toxikologie
Direktor: Prof. Dr. rer. nat. L. Dunemann



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Gelsenkirchen, den 08.01.2012

ZERTIFIKAT

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Prüfkörper: Material „Muster Schütz Heating Systems“ (für Prüfung gem. DIN EN ISO 846 und in Anlehnung an DIN EN ISO 2812-4 „Beschichtungsstoffe – Bestimmung der Beständigkeit gegen Flüssigkeiten“, Teil 4: Tropf- / Fleckverfahren (Verfahren A) (05/07)) in Verbindung mit:
air conomy® Systemmodul (Gutachten Reinigbarkeit)

Das Material, aus welchem das air conomy® Systemmodul hergestellt wird, dient gemäß DIN EN ISO 846 Tabelle 2 nicht als Nährstoff für Mikroorganismen und ist in soweit gemäß VDI 6022, Blatt 1 für den Einsatz in RLT-Geräten geeignet (siehe Prüfbericht W-210571-11-Ho vom 08.12.2011). Des Weiteren erweist sich das o.g. Material gegenüber den im Prüfbericht genannten Desinfektionsmitteln als desinfektionsmittelbeständig (siehe Prüfbericht W-212233-12-Ho vom 11.01.2012).

Das air conomy® Systemmodul ist mit entsprechenden Reinigungsgeräten reinigbar (Gutachten W-212161-12-Ho vom 11.01.2012) und entspricht in den im o.g. Gutachten geprüften Punkten den Anforderungen der VDI 6022, Blatt 1 (07/2011).

Details zum genauen Ablauf der Prüfungen und die Einzelergebnisse sind den Prüfberichten bzw. Gutachten zu entnehmen.

Der Direktor des Instituts
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(Priv.-Doz. Dr. G.-J. Tuschewitzki)
Leiter der Abteilung Wasserhygiene
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(Dipl.-Ing. (FH) S. Horn)
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Die Ergebnisse unserer Prüfungen und die Bewertungen gelten für die untersuchten Prüfgegenstände und die zum Zeitpunkt der Prüfung geltenden gesetzlichen Regelungen. Dieses Dokument darf ohne unsere ausdrückliche schriftliche Genehmigung nur in vollständiger und unveränderter Form veröffentlicht oder vervielfältigt werden.

Träger des Instituts: Verein zur Bekämpfung der Volkskrankheiten im Ruhrkohlengebiet e.V., Gelsenkirchen, Vereinsregister: VR 519 Amtsgericht Gelsenkirchen
USt-ID: DE125018358, Vorstand: Henriette Reker (Vorsitzende), Prof. Dr. Jürgen Kretschmann, Dr. Emanuel Grün, Volker Vohmann, Prof. Dr. Lothar Dunemann



Certificate of environmental
hygiene assessment of a house
with a controlled ventilation
system (AIRCONOMY® system)



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