

WAFE 1000

SOLUTIONS FOR SCHOOLS



BENEFITS | PRINCIPLE OF HEAT RECOVERY | WHY CHOOSE HEAT RECOVERY | MYTHS ABOUT HEAT RECOVERY
360° INSTALLATION | ADVANTAGES OF WAFE | COMPREHENSIVE SYSTEM



SPECIALISTS IN HEAT RECOVERY

BENEFITS OF WAFE 1000

THE CONTROL AND MONITORING

OF THE CONNECTION OVER WI-FI OR THE ETHERNET IS STANDARD, BUT NOW IT IS POSSIBLE TO CONNECT OVER THE SIGFOX IOT NETWORK. THE MY.WAFE.EU APPLICATION ENSURES THE EASY CONTROL OF YOUR UNIT.



THE VERSATILITY OF THE PLACEMENT

OF THE UNIT MAKES IT POSSIBLE TO INSTALL IT ON THE WALL AND ON THE CEILING, WHICH IS PRIMARILY SUITABLE FOR RECONSTRUCTIONS.



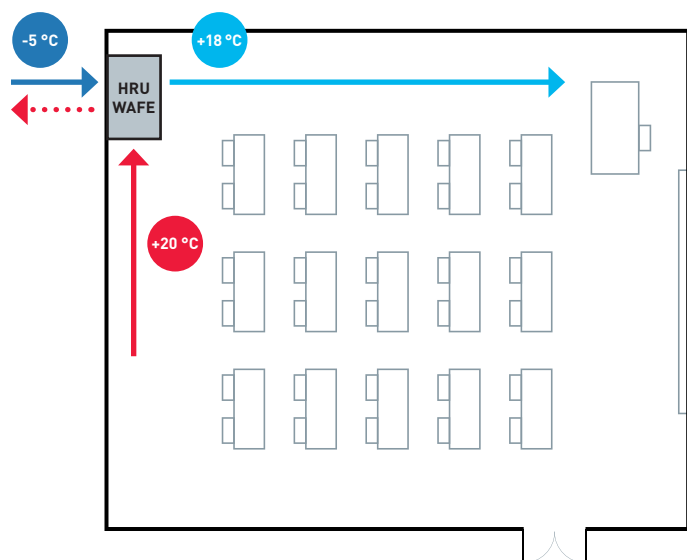
THE LOW WEIGHT

OF THE FIRST UNIT IN ITS CLASS FROM EXPANDABLE POLYPROPYLENE. THE VERY LOW WEIGHT OF 75 KG MAKES HANDLING AND INSTALLATION EASIER.



PRINCIPLE OF HEAT RECOVERY

Heat recovery is an efficient ventilation system where heat from exhaust air is used to heat the air that we bring into a building. In the summer, on the contrary, it pleasantly cools the air flowing into the building. Apart from the temperature, it is also possible to regulate the humidity in the building and to filter out dust, smog elements and allergens. Heat recovery brings savings for heat, but it primarily creates a healthy environment and is becoming the standard during the construction and reconstruction of commercial and public buildings and light industry.



HRU Heat recovery unit

- Fresh cool outdoor air enters the HRU from the outside
- The exhaust warm internal air is conducted from the building to the HRU
- The exchange of heat inside the HRU (in the exchanger) between fresh cool air and stale warm air
- ... Waste cool air leaves the HRU and the building
- Fresh warm air enters the building from the HRU

WHY CHOOSE HEAT RECOVERY

Legislative reasons

European and subsequently local legal and technical standards have long followed the line of lowering energy consumption, which is why buildings are already being built, and from 2020 will have to be built, in low-energy mode. Essentially the only way to effectively achieve this is to use ventilation with heat recovery.

Health reasons

Almost all buildings today are insulated and airtight. This gives rise to problems with humidity, radon, formaldehyde, benzopyrene, mould and CO₂, the concentration of which exceeds hygienic norms in unventilated buildings. If we ventilate using windows, we lower the concentration of CO₂, but in cold days we lose heat and let in dust, smog and allergens from the exterior environment. Another problem with open windows is noise from the streets.

Economic reasons

A well-ventilated classroom loses most of its heat through ventilation, with lesser heat dissipation through the outer construction. With the use of heat recovery, we lower heat expenses by at least 35% a year. The installation of heat recovery is usually supported by subsidies of up to 70%.

Environmental reasons

WAFE 1000 is designed with a maximum emphasis on ecology. Not only does the unit itself have low consumption, but using it lowers the building's overall energy intensity. We concentrate on the environment during production, as well; the individual components are recyclable to the maximum extent.



Dry vs. humid air

Modern man spends up to 87% of his time inside buildings. A frequent problem is dry interior air. That is a source of fatigue and headaches and can even cause more serious problems with breathing, asthma, conjunctivitis and an overall deterioration of immunity.

WAFE 1000 maintains natural humidity in the rooms. That relieves the respiratory system.

THE ENTHALPY SYSTEM

MAINTAINS NATURAL HUMIDITY IN THE ROOM AND IT IS NOT NECESSARY TO BUILD CONDENSATION DRAINAGE.



INVISIBLE, INAUDIBLE

THE DESIGNER PROPOSES THE INDIVIDUAL PLACEMENT AND CASING OF THE UNIT SO THAT IT IS NOT VISIBLY INTRUSIVE OR LOUD.



MYTHS OF HEAT RECOVERY

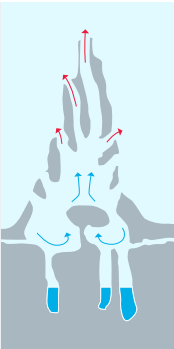
1 Claim: “Ventilation using windows is enough.”

	What we perceive	What is really happening
Closed window without heat recovery	The windows are usually closed due to the safety of the children. Street noise does not infiltrate the room, and the air gradually becomes stale. We can feel lethargy, a lack of activity and sleepiness.	The CO ₂ level rises, which decreases the ability to concentrate. The concentration of harmful radon, benzopyrene, formaldehyde, etc. can increase in the room.
Open window without heat recovery	Street noise reaches the room. Our mind connects a draught with fresh air, and so we open the window to “ventilate”. We most likely sense that we are also losing precious heat.	We also let dust, fumes and allergens in from outside. The air circulates only 1–2 m around the windows and the draught stirs up dust accumulated inside.
Closed window with heat recovery	First we miss the draught from the open window. We soon start to see that even though there are people here, the air has remained fresh and we feel good.	We are breathing naturally humid air free of harmful substances. The CO ₂ level is below 1000 ppm – our brain is fully concentrated. We save 15–20% a year on heating



WAFE copies nature

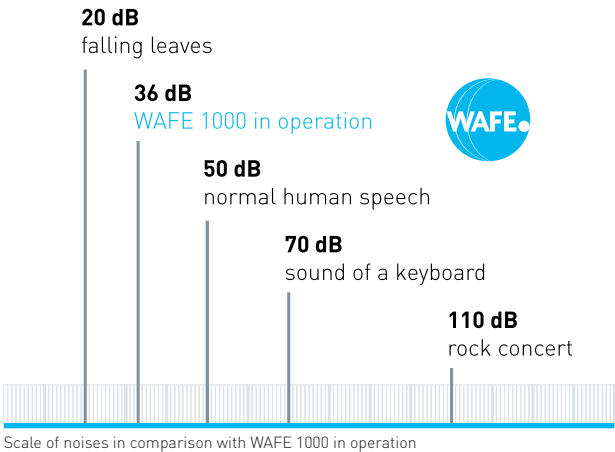
Nature is full of ingenious ventilation systems. The authors of the most complex of these are termites, especially the genus *Macrotermes bellicosus*. A strong wind bears down on the walls of their gigantic colonies and pumps fresh air into the mound through a porous layer; hot air is pushed out waste channels on the other side.
European Union standard on air quality.



Termite mound with inlet and waste channels

2 Claim: “Heat recovery is loud.”

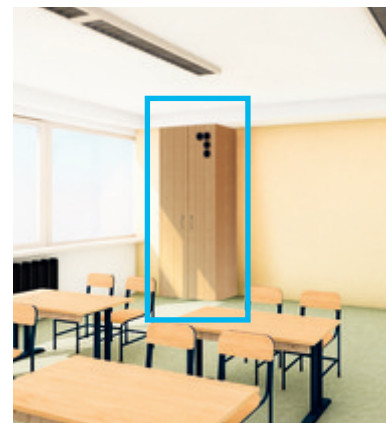
Partly true. Heat recovery units can be extraordinarily disruptive and noise from their ventilators can spread around the unit and further on through the pipes.
With WAFE 1000, however, this will not happen. Our unit is equipped with an integrated silencing system. And all is quiet.



3 Claim: “Breathing in filtered air is not natural.”

Filtered air is not sterile or dead air and it does not lower your immunity. On the contrary, it is fresh, naturally humid and free of impurities from exhaust and industry. Modern filters are small technological wonders – they literally capture unwanted particles in the air in their fine fibres.

360° INSTALLATION AND CASING POSSIBILITIES



The illustration depicts the variability of the placement of the heat recovery unit for decentralised use: air is distributed into the room by directional outlets. The WAFE 1000 unit can also be placed in ceilings or connected to remote air distribution.

You can freely choose the colour and materials for the tailor-made cover with an acoustic dampening effect.

BENEFITS OF WAFE 1000 COMPARED TO REGULAR HEAT RECOVERY UNITS

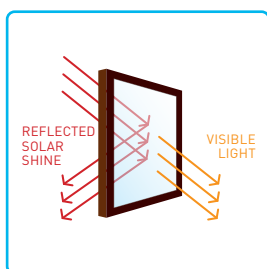
Compared to other heat recovery units, which only have one position due to the flow of condensation, WAFE 1000 can be assembled **vertically on a wall or horizontally under the ceiling**. The ventilators and filters are accessible from both sides of the unit for servicing or replacement. **The autonomous capacity control system**, based on the level of CO₂, ensures the maximum comfort and quality of the ventilated environment: WAFE 1000 units ventilate more when the space is occupied. If the room is empty, the ventilation automatically decreases to the minimum level.

A combination of counterflow exchangers and an enthalpy system guarantee **low operating expenses**, even below the freezing point. We do not need preheating. We do not need condensation drainage. Our exchangers do not lose efficiency over time like those with membranes. WAFE 1000 is one of the few units in its size to regulate the humidity of the environment, thereby avoiding the sick building syndrome and the respiratory problems of its inhabitants.

COMPREHENSIVE SYSTEM FOR SUPPORT OF QUALITY OF INTERIOR ENVIRONMENT



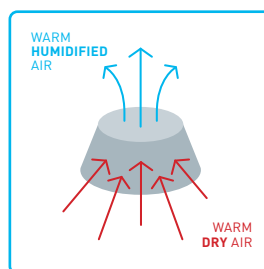
WAFE 1000 brings warmed and fresh air inside without having to open the windows. The incoming air is free of smog, dust and allergens.



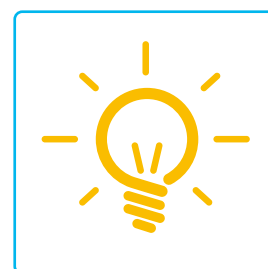
Film on the windows lowers the temperature in the interior in the summer months and prevents the building from overheating. It blocks 98% of harmful UV rays.



Suspended ceilings and panel walls limit the creation of echoes and minimise low-frequency noise, thereby improving the comprehensibility of speech.



The humidifier helps achieve ideal humidity, thanks to which people will breathe better and the teachers will find it easier to speak. It also lowers the sickness of the children.



Energy-efficient lighting with an even distribution of light contributes to the creation of visual comfort for people.