

REFERENCES

PKOM⁴



PICHLER

Systematic ventilation.

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OBJECT OF THE MONTH



BIOBASED HOUSE, NETHERLANDS

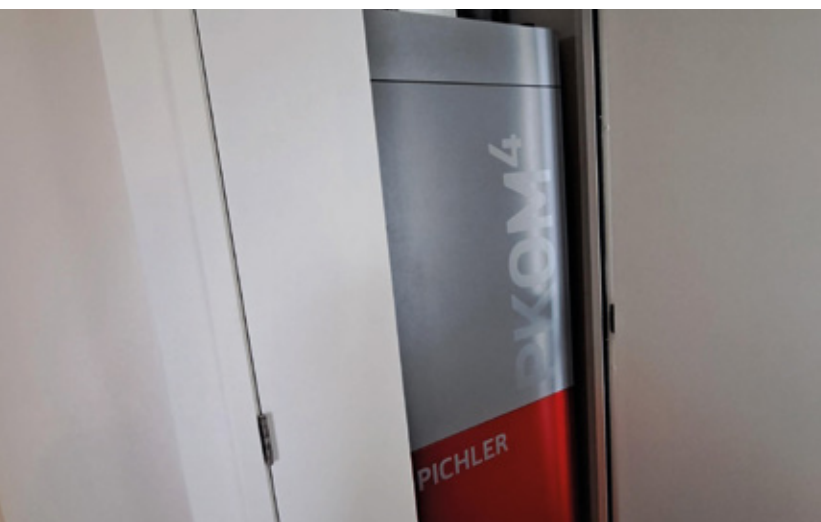
Residential living will always be changing and developing with the times. Apart from architectural considerations, the total energy balance is of increasing importance. Legislators, ongoing development of building materials and the quality of construction are consistently raising the standard of residential construction, thereby reducing energy consumption.

As an example of this, a modular bio-based house was built in the Netherlands. The house stores more CO₂ than it emits! A central element in such a sustainable object is of course the ventilation system. That's why the heat pump combi unit PKOM⁴ was used. The building technology is compactly packaged in a combi unit that is also responsible for ventilating, heating, cooling and hot water preparation. The PKOM⁴ heat pump combi unit with patented two-circuit heat pump system unites these four functions on a footprint of less than 0.75 m². It achieves the best efficiency values thanks to its innovative and patented heat pump technology (air heat pump) and its sophisticated heat recovery. The system is easily set and controlled at the push of a button.

DATA & FACTS

Location:	Netherlands
Completion:	2023
Type of building:	Modular biobased house
Building technology:	Climavent bvba
Products:	Heat pump combi unit PKOM ⁴ , Air distribution system

Product groups:



OBJECT OF THE MONTH



SUNNY ALLEY, CZECH REPUBLIC

The aim of the „Sunny Alley” project from BUBA VISION was to build family houses that are energy efficient in terms of operating costs and also user friendly in terms of the environment, control and management of technologies in the house. PICHLER PKOM⁴ units were involved in the houses by Evora CZ.

Each unit provides the houses with heat recovery ventilation, space heating and cooling together with domestic hot water. A central air humidifier allows for regulation of humidity in the houses to achieve the optimum level based on users needs. This option is particularly appreciated by allergy sufferers and all fresh air lovers.

The family houses are located on the very edge of the village of Chýně, with a convenient location both to the center of the capital city of Prague and to Václav Havel Airport. The drive to the Prague ring road, as well as to the Pilsen exit, is less than ten minutes by car from the houses, which allows a comfortable drive to both the center of Prague on the motorway network.

DATA & FACTS

Location:	Czech Republic
Completion:	2020
Type of building:	family houses
Architect:	Ing. Petr Mareček
Building technology:	Evora CZ, s.r.o.
Products:	Heat pump combi units PKOM ⁴
Product groups:	

COMFORT
VENTILATION



OBJECT OF THE MONTH



LOW-ENERGY HOUSE, CARINTHIA

In 2018 the first phase of the innovative construction project was completed, the centrepiece of the low-energy house being the compact heat pump combi unit PKOM⁴ from Austrian research and production. It unites all four functions (heating-cooling-ventilation-hot water) on a footprint of less than 0.75 m². The controlled ventilation permanently supplies the rooms of the single-family house with fresh and filtered air from the outside and ensures the hygienic exchange of air. With its smart functions the PKOM⁴ can furthermore be easily combined with renewable energy like that of a photovoltaic system and a storage battery.

The next expansion level of the construction project towards an even more energy-efficient overall system is therefore already being planned. It's about retrofitting the energy management system designed by Pichler with the objective of making the low-energy house independent and secure. Therefore the housing technology system with the PKOM⁴ constitutes an innovative system solution that makes a substantial contribution to climate and environmental protection.

DATA & FACTS

Location:	Carinthia
Completion:	2020
Type of building:	Low-energy house
Heating demand (for heating, cooling, hot water, ventilation):	11,9 kWh/(m ² a)
Energy reference area:	122 m ²
Overall power consumption:	6.221 kWh/year
Energy demand (for heating, cooling, hot water, ventilation):	11,9 kWh/m ²
Power generation:	7.495 kWh/year
Products:	Heat pump combi unit PKOM ⁴

Product groups:



OBJECT OF THE MONTH



PASSIVE HOUSE, CZECH REPUBLIC

Although it doesn't look like it, this single-family house is a new building. It is a typical example showing that a passive house can take many forms. The passive house of aerated concrete seems to have been standing in this region for a hundred years, and yet this newly constructed classical building is the core element of modern spirit, and, due to its compactness, it does not need any greater technological achievements really. The heat pump combination unit PKOM⁴, however, is essential for the passive house and is used as the main source of ventilation, heating, cooling and hot water preparation – it provides for a perfect room climate in a sustainable and highly efficient fashion.

This model example won the „Passive House 2018” price, which shows that a traditional country house including its traditional facade construction can also be implemented in the passive house standard.

DATA & FACTS

Location:	Czech Republic
Completion:	2018
Type of building:	Single family house
Architect:	ATELIÉR ELAM – Ing. arch. Mojmír Hudec
Building technology:	Evora CZ s.r.o.
Products:	Heat pump combi unit PKOM ⁴
Product groups:	

COMFORT
VENTILATION





SINGLE FAMILY HOUSE, SLOVAKIA

Residential living will always be changing and developing with the times. Apart from architectural considerations, the total energy balance is of increasing importance. Legislators, ongoing development of building materials and the quality of construction are consistently raising the standard, thereby reducing energy consumption.

Whether Passive House, EnerPHit or Near Zero Energy Building – ventilation of the living quarters is deemed essential and at the core of single family house design. Extension of the functionalities of a ventilation unit to include heating, cooling and hot water supply is a natural consequence!

Ventilating – heating – cooling – hot water

The PKOM⁴ heat pump combi unit unites these four functions on a footprint of less than 0.75 m² in the modern single family home.

DATA & FACTS

Location:	Slovakia
Completion:	2019
Type of building:	Single family home
Architect:	Creatererra s.r.o.
Products:	Heat pump combi unit PKOM ⁴
Product groups:	





POPUP DORMS ASPERN, VIENNA

Mobile hall of residence for students: The "PopUp – Green-FlexStudios" hall of residence for 40 students in the Aspern "lakeside town" was built within a construction period of only one week - so short that it was likely to break world records. Its high degree of pre-fabrication is a mark of how quickly and economically construction can be done, at the same time maintaining a high passive house energy standard. Furthermore this flexible pioneer project serves to save a considerable part of the expensive property costs.

The highly energy-efficient passive house guarantees that the residents benefit from the low operating costs from the first day onwards - while at the same time providing high living comfort and excellent air quality thanks to the comfort ventilation from PICHLER. Ventilating – heating – cooling – hot water. The PKOM⁴ heat pump combi unit combines all four functions on a floor space of less than 0.75 m². Compact and efficient. 10 PKOM⁴ heat pump combi units permanently supply the rooms with fresh and filtered air from the outside and ensure the hygienic exchange of air.

DATA & FACTS

Location: Vienna

Completion: 2015

Type of building: passive house

Architecture: F2 Architekten ZT GmbH

Building technology: Obermayr Holzkonstruktionen GmbH

Products: heat pump combi units PKOM⁴,
sound absorbers, spiral ducts,
fittings, valves, fire protection

Product groups:

AIR
CONDUCTION

AIR
DISTRIBUTION

COMFORT
VENTILATION

FIRE
PROTECTION
SMOKE AND
HEAT
CONTROL





© Jiri Cech

Single family house Czechia

Classical single family house built in pleasant cooperation of investor, designer (Jiri Cech) and craftsmen (Pro-mart and Evora CZ, s.r.o.).

It combines a classical saddle roof with a modern look and integrates a building automation system to improve the comfort of living and decrease energy requirements.

Ventilating, heating, cooling and hot water in such a well insulated and PHI-certified building were a central point of concern. The PKOM⁴ heat pump combi unit unites these four functions on a footprint of less than 0.75 m². Controlled ventilation of living rooms constantly ensures fresh and filtered outside air in the rooms of the single family house and ensures hygienic exchange of air.



DATA & FACTS

Location: Czechia

Completion: 2017

Type of building: Detached single family house

Architecture: Jiri Cech

Building technology: Pro-mart and Evora CZ, s.r.o.

Products: PKOM⁴ classic heat pump combi unit with highly efficient heat recovery

Product groups:

COMFORT
VENTILATION



© Jiri Cech

OBJECT OF THE MONTH



Austria's first certified passive house

The demands on Austria's first certified passive house were: no more costs than a standard house, due consideration of ecological criteria, minimum technical apparatus and maximum economy.

The single storey passive house without basement was built on a level piece of ground. The 140 m² single family house has an outside diameter of 15 m. The highly compact building deliberately dispenses with unnecessary structures and weight. Minimum common areas allow full utilisation of the basic area for living space.

LOW TECH CONZEPT:

Excellent thermal insulation of building shell and windows, no thermal bridges, airtight. All building services including comfort ventilation, heating, cooling and hot water generation in a single heat pump combi unit in a 0.75 m² area in the toilet.

The passive house received the „House of the Future“ award in 2000, later followed by several other awards.

DATA & FACTS

Location 4661 Roitham, Upper Austria

Completion: 2000

Type of building: Detached single family house

Architecture: Arch. Dipl. Ing. Hermann Kaufmann +
LANG Consulting

Builder: Christine und Ing. Günter Lang

Products: Controlled comfort ventilation system:
PKOM⁴ classic heat pump combi unit with
highly efficient heat recovery

Product groups:

COMFORT
VENTILATION





PASSIVE HOUSE, GERMANY

The older part of the passive house in solid construction was built in 1997 and certified as the first passive house. First, two window elements and glasses in the existing building were replaced. The necessary extension in lightweight timber construction in 2019/20 raised the issue of further energy supply. Heating energy is hardly required in a passive house. The hot water supply and the residual current as well as the electric car should be supplied by PV as far as possible.

The compact heat pump combi unit PKOM⁴ provides for ventilation, heating and cooling as well as warm water treatment. By its innovative heat pump technology (air-heating pump) and its intelligent heat recovery system it achieves optimum efficiency values. In combination with an intelligent energy management system and photovoltaics the operating costs are reduced. The passive house certified super combination presents itself in a compact, efficient, cost-effective, low-maintenance, and environmentally friendly fashion. Completely in step with the times.

In summary, the idea from initial planning of the existing building from 1996 has been clearly visualized and expanded here. Saving energy when it comes to housing construction is easy and simple – it merely requires consistent implementation by the persons involved in the construction process. This refurbishment including the expansion makes it possible to control the energy costs of the coming decades.

DATA & FACTS

Location:	Germany
Completion:	2020
Type of building:	Single family house
Heating demand:	12.1 kWh/(m ² a)
Heat transition coefficients:	0.09 0.1 W/(m ² K)
PV system:	8.4 kWp
Storage battery:	9 kWh
Products:	PKOM ⁴ System solution
Product groups:	

COMFORT
VENTILATION





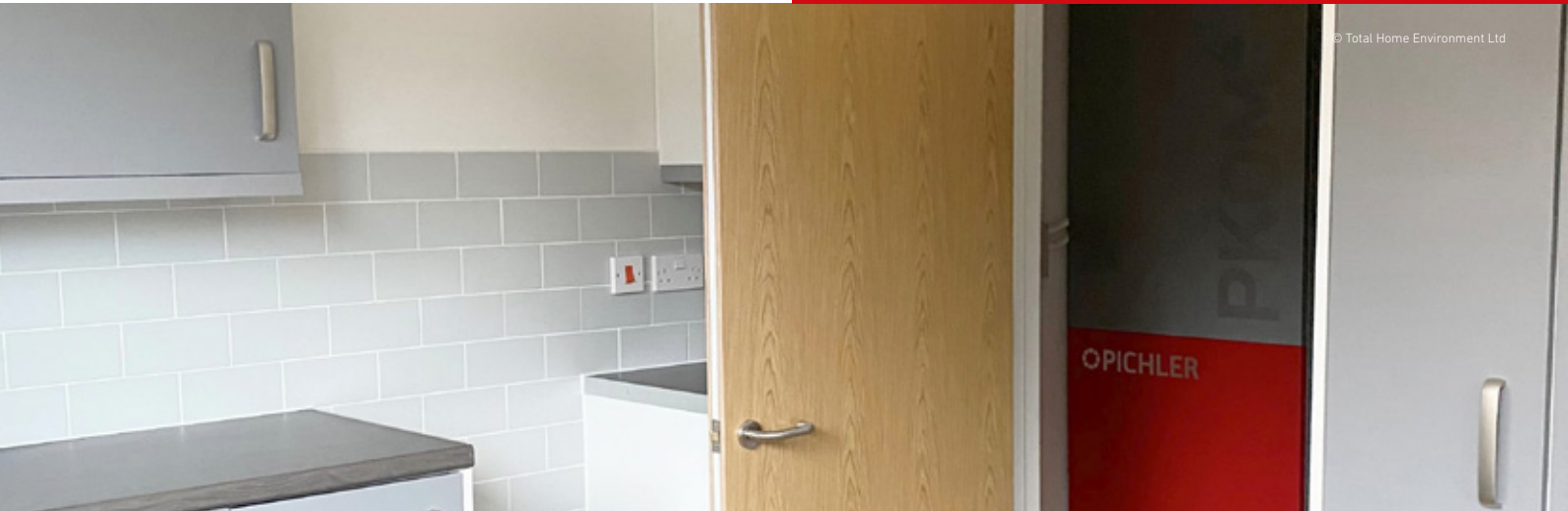
RESIDENTIAL BUILDING, UK

The residential complex includes four one-bedroom flats, eight two-bedroom semi-detached homes and two four-bed homes, all built to be energy positive, where more energy is put back into the National Grid than is used. The aim was to ensure low running costs for their residents and to provide a comfortable, healthy environment.

The heating and ventilation system included in the whole house approach had to be at a reasonable cost whilst not taking up too much space. Ventilating, heating, cooling and hot water in such well insulated buildings were a central point of concern. The PKOM⁴ heat pump combi unit unites these four functions on a footprint of less than 0.75 m². The PKOM⁴ that has separate heat pumps for heating and hot water means residents do not have to compromise on the warmth of their home, whilst water is being heated.

DATA & FACTS

Location:	Bridgend, Wales, United Kingdom
Completion:	2020
Type of building:	Energy-positive social housing development
Building technology:	Total Home Environment Ltd
Products:	Heat pump combi unit PKOM ⁴
Produkt groups:	



OBJECT OF THE MONTH



SINGLE FAMILY HOUSE, BELGIUM

Cohousing: a new form of housing or a passing trend? Cohousing offers many advantages: It is sustainable, affordable, safe and a perfect solution to loneliness. Our partner Climavent assumes that this form of housing will become increasingly established on the Belgian housing market in the coming years and will become a permanent form of housing. This is because building land is becoming scarce and owner-occupied homes are often unaffordable for young people.

This young couple from Landegem decided to start a cohousing project with one of their single parents. They built a small house of just 80 m² living space onto the existing house. On the first floor there is an open kitchen, a living area, a toilet and upstairs a bedroom with a bathroom. Due to the small living space, the extensive insulation and the airtightness, only a low heating output is required.

Room optimization with PKOM⁴

The compact PKOM⁴ all-in-one unit was therefore chosen. The heat pump combi unit forms the heart of the ventilation system, but also provides heating, cooling and domestic hot water. Losing valuable space with 2 or 3 separate units was out of the question. Now the entire system only takes up an area of 75 x 75 cm.

DATA & FACTS

Location:	Landegem
Completion:	2024
Type of building:	Single family house
Architect:	Ypsilon architects
Building technology:	Climavent & Deko Technics
Products:	Heat pump combi unit PKOM ⁴ classic

Product groups:



OBJECT OF THE MONTH



WIFI CENTER OF EXCELLENCE, STYRIA

The Center of Excellence marks the start of a new era in education. As digitization and Industry 4.0 advance, companies are increasingly faced with the challenges of an acute labor and skilled labor shortage.

In order to do justice to these developments, new qualifications as well as contemporary and modern infrastructure are required. For this reason, the Styrian Chamber of Commerce has launched the "Center of Excellence", which is the largest educational infrastructure project in the history of the chamber. This groundbreaking project replaces the outdated WIFI workshops and will make a significant contribution to upgrading the entire north of Graz.

In addition, in the "Center of Excellence" areas for laboratories and workshops are used by WIFI Steiermark for additional apprenticeship training, master schools and academic courses. In the ventilation technology area, a training room was equipped with a PKOM⁴ heat pump combi unit including Spiro piping. The system is used with various test options for training for the master installer school.

DATA & FACTS

Location: Styria

Completion: 2024

Type of building: educational institution

Building technology: Hübl Haustechnik GmbH

Products: Heat pump combi unit PKOM⁴, spiro & fittings

Product groups:

COMFORT
VENTILATION

AIR
CONDUCTION



OBJECT OF THE MONTH



SINGLE FAMILY HOUSE, PRAGUE

Modern systems for comfortable and ecological living

During the planning phase of this passive house, the focus was on ensuring that the building services met high efficiency standards with a variety of modern technologies, while at the same time meeting the requirements of a single family house.

PKOM⁴ heat pump combi unit

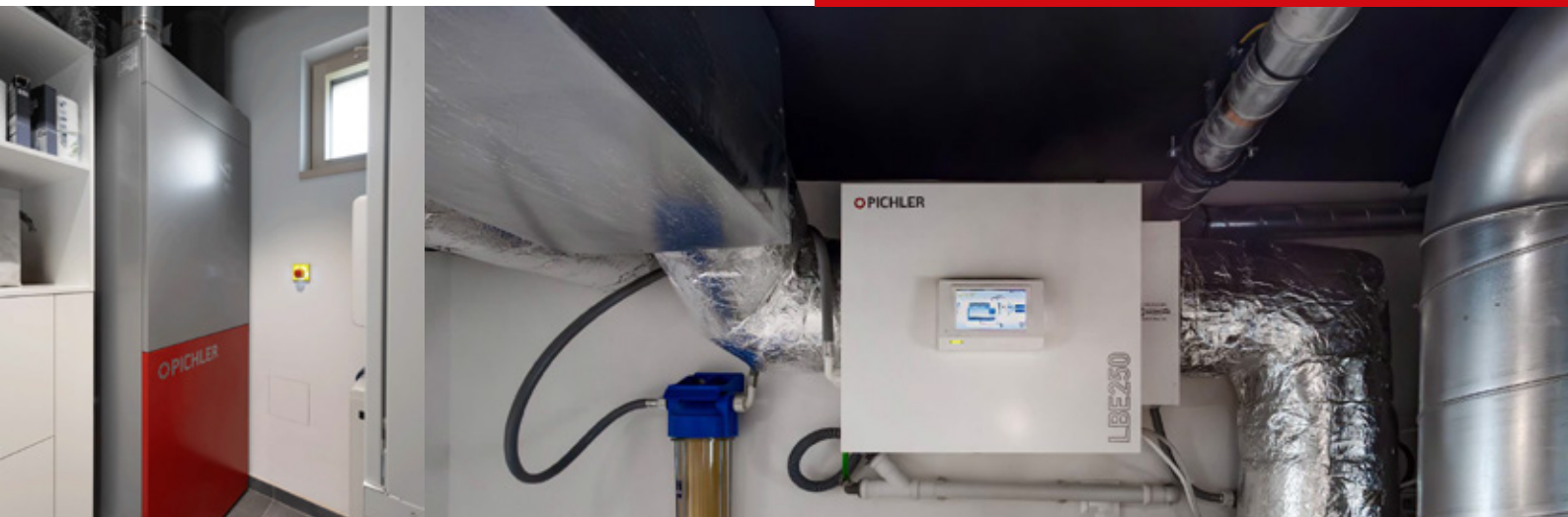
One of the key elements of this project was the installation of the PKOM⁴ heat pump combi unit. The combi unit is an excellent choice for modern family homes, as it not only provides high-quality ventilation, but also cooling, heating and hot water. The multifunctionality of this unit combines reduced operating costs and higher energy efficiency, which translates into occupant satisfaction and long-term savings.

Air humidification unit LBE 250

In the winter months, when the heating is on, the room air can be very dry. A relative humidity of less than 40 % can lead to the mucous membranes drying out and thus to an increased susceptibility to colds. To ensure optimum humidity, the ventilation system was equipped with the LBE 250.

DATA & FACTS

Location:	Prague
Completion:	2024
Type of building:	Passive house
Architect:	Ing. arch. Pavel Jura
Building technology:	Evora CZ s.r.o.
Products:	Heat pump combi unit PKOM ⁴ Air humidification unit LBE 250
Product groups:	



OBJECT OF THE MONTH



SINGLE FAMILY HOUSE, CZECH REPUBLIC

Minimalism meets comfort

This single family house impresses with its understated, minimalist design, which creates a fresh and calm living atmosphere. During the planning phase, a customised heating and ventilation concept was developed that not only meets the latest standards, but also ensures a high level of living comfort, energy savings and a healthy indoor climate – so that the residents can enjoy their new home to the full.

Healthy air with cutting-edge technology

Modern ventilation ducts and the compact PKOM⁴ heat pump combi unit were installed for the realisation. This highly efficient solution combines controlled ventilation, heating, cooling and hot water supply in a single unit. Thanks to innovative heat recovery, the energy from the exhaust air is utilised to heat the fresh air. This significantly reduces heat loss and cuts heating costs in the long term. Another highlight is the integrated hot water preparation – ideal for households that want to optimise energy costs and reduce their dependence on conventional heat sources.

Intelligent, quiet and efficient

The PKOM⁴ also impresses with its intelligent control system, which allows the settings to be flexibly adapted to individual requirements. Its extremely low noise level ensures undisturbed living comfort, while its high energy efficiency guarantees sustainable operation.

DATA & FACTS

Location: Czech Republic

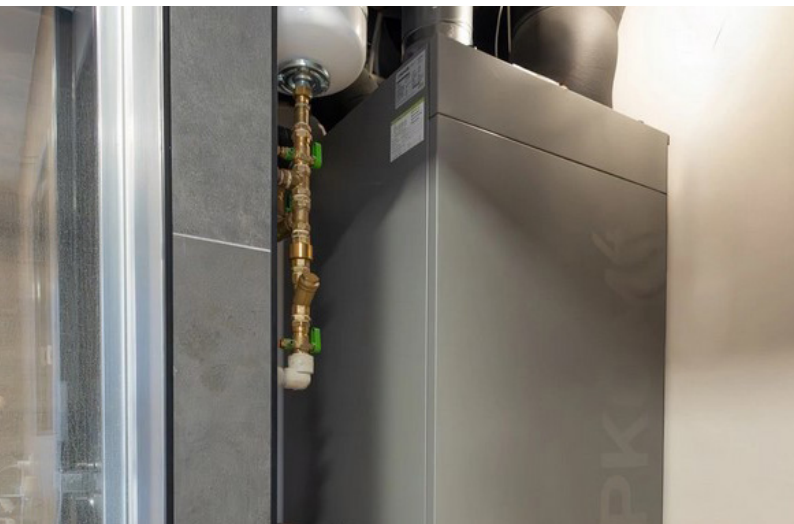
Completion: 2024

Type of building: Passive house

Building technology: Evora CZ s.r.o.

Products: Heat pump combi unit PKOM⁴, ducts and fittings

Product groups:





J. Pichler Gesellschaft m.b.H.

Karlweg 5, 9021 Klagenfurt am Wörthersee, Österreich

T +43 (0)463 32769, **F** +43 (0)463 37548

office@pichlerluft.at, www.pichlerluft.at