

Itho makes the
residential environment
climate neutral



Climate for life.

Innovations

that open new doors



The name Itho used to be synonymous only with ventilation systems. By now, we have come a long way and Itho has become the specialist in ventilation, domestic hot water and sustainable climate systems. Innovations have always been part of Itho throughout its nine decades of existence. These innovations have always opened complete new doors. As a specialist in the three disciplines, Itho was the first to integrate the different systems into solution concepts. This makes Itho unique in the Netherlands and in the world: a partner with real added value for buyers and consumers.

Facts for life

2000

Itho was granted a European patent on the HR cooker hood.

2001

Itho started its own production site and was the first to develop a heat pump with integrated cooling.

2002

The Itho HR cooker hood won the VSK Award.

2003

Itho was the first to introduce a shower water heat recovery unit.

2004

Itho's direct current CVE (Central Extractor Unit) and Energy House were nominated for the VSK Award.

2005

Itho's new solar thermal tank won the Materials Design Prize and Itho introduced a number of 'plug and play' hot water systems, such as the OLB (load tank) and GGBB (direct-fired hot water tank).

2006

The Energy House won the VSK Award and Itho was granted a European patent on the DemandFlow CO₂ controlled ventilation.

2007

Itho appointed distributors in France, Germany, England and Spain.

2008

Itho won the VSK Award with DemandFlow and opened its first subsidiary abroad, in the UK.

2009

Itho introduced a new generation of energy-efficient heat pumps, the Aqua-Max high-efficient condensing boiler, shower-water heat recovery, A-label hot water systems and a unique system that monitors the comfort and energy performance of all the advanced equipment throughout its entire life cycle.

2010

Itho takes new steps towards a climate neutral living environment.



Challenges for life

We want to live healthier, more comfortable lives and we need to reduce our energy consumption. The ultimate challenge in climate management is the realisation of a comfortable, healthy indoor climate that does not use energy. This seems to be a contradiction, yet we at Itho are rather fascinated by the challenge to solve this contradiction.

Itho Mission Statement

To make the residential environment climate neutral.

The Itho Low Energy House

Concept

Reduction of the CO₂ emission is a strategic target for governments and our living space is an important area to realise these reductions. Yet people still want a comfortable and healthy indoor climate,

combined with an efficient and generous domestic hot water supply. Itho developed a concept that meets all these wishes. All our knowledge in ventilation, heating and sustainability is implemented and integrated into this concept: The Itho Low Energy House Concept.



This concept integrates all the individual components and technologies to provide minimum energy consumption and maximum user comfort.

The concept combines:

- Water and water heat pump
- Vertical ground source heat exchanger
- Underfloor heating
- Whole house ventilation with heat recovery
- Storage of domestic hot water
- Shower water heat recovery unit
- Solar thermal system
- HR system cooker hood.

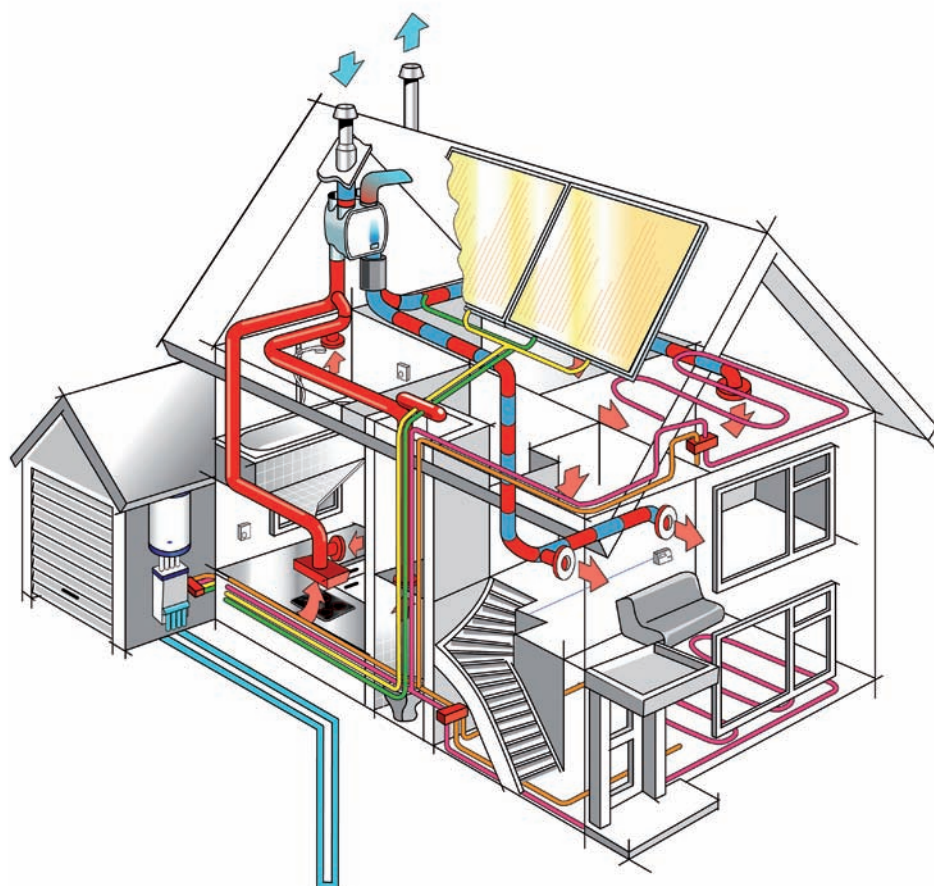
Implementing this concept results in a house that is 50% more energy efficient than houses based on most current European standards.

Add sustainably produced electrical power supply and the concept is CO₂ neutral. All the individual products and systems that Itho combines in the concept are also available separately.

Modern houses are constructed air tight and well insulated to save energy.

Controlled ventilation is necessary

to provide a healthy indoor climate. Itho provides several solutions for the most energy efficient ventilation systems.



Ventilation

Whole house ventilation with heat recovery (MVHR)

The principle of MVHR (Mechanical Ventilation with Heat Recovery) is very simple. Using a supply and discharge ventilator, the unit supplies an indoor setting with fresh air from outside and discharges the 'polluted' air to the outside. Both airflows are fed through a heat



exchange. This allows around 90% of the heat from the discharged air to transfer to the fresh airflow, which is blown into the inside space. This ensures that the temperature of the air blown in is nearly the same as the temperature of the room. The enormously low energy DC motors reduce electricity consumption by around 75% compared to AC motors.

It also provides MVHR units for both compact houses (the Advance up to 140 m³/h) and more spacious homes (the Heat Recovery Unit [HRU] up to 325 m³/h).

MEV units CVE ECO 2

The CVE ECO 2 is one of the most versatile and efficient MEV products on the market and it can be adapted to any situation. Continuously extracting the



contaminated damp air from all wet rooms, this compact unit ensures regular, controlled, energy-efficient ventilation for:

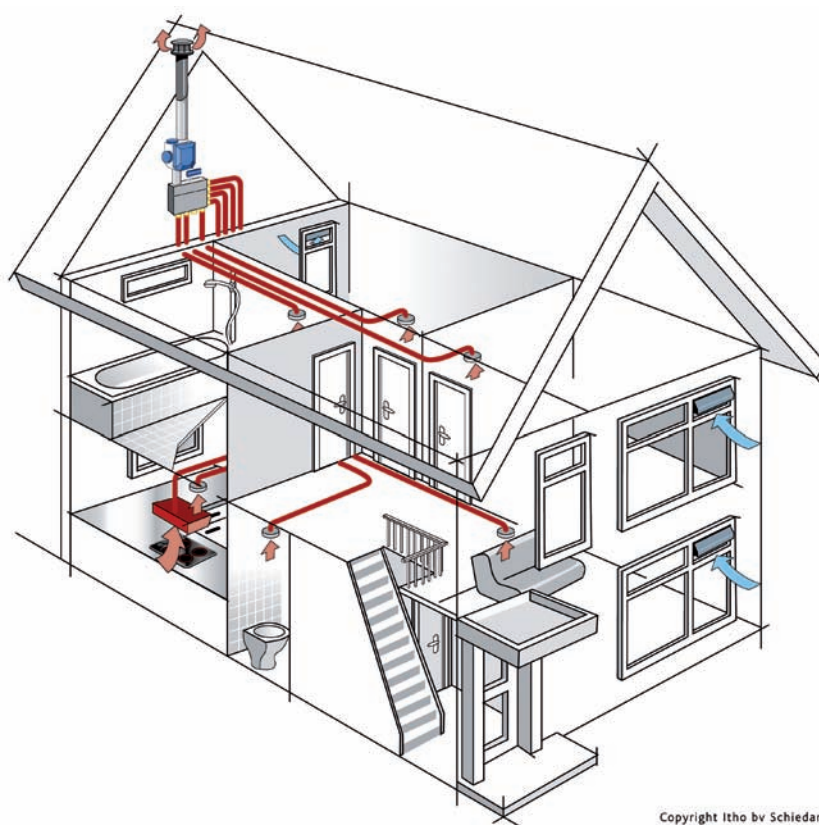
- Residential buildings
- New buildings
- High and low-rise buildings
- Renovations.

The CVE ECO 2 is equipped with low consumption DC motors, which ensure that the unit functions with a much higher efficiency than conventional MEV models. This helps lower CO₂ emissions. Hidden away in the loft or in a cupboard, this individually adjustable system comes with a three-speed RF remote control switch, but is also available with a two-speed hard-wired version.

DemandFlow

Maximum comfort through automatic ventilation based on CO₂ measurements. Itho's DemandFlow is a fully automatic, demand-controlled ventilation system. Without the slightest effort, you can have perfect ventilation in each room of the house.

The system extracts air not only in the wet rooms such as kitchens, utilities, bathrooms and toilets, but also in all the other rooms such as living rooms, dining rooms and bedrooms. The rate of ventilation in the dwelling is controlled



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based on CO₂ measurements in each room. If you have a party until late at night, the ventilation system continues to run at maximum power until the early hours. When you go on vacation, the system adjusts automatically and operates at the lowest level.

DemandFlow also suitable for renovation

The Itho DemandFlow system has been developed in such a way that it can be installed in

virtually all types of houses and apartments and in both new constructions and large-scale renovations. It is also very flexible, enabling easy design changes even near the end of a construction project. Routing the ducts through a plenum box makes it possible to add additional extract points or move them to a different location within a room.

HR System Cooker Hoods

Offering the ideal solution for homes with a central mechanical ventilation system, high efficiency HR system cooker hoods ensure the efficient extraction of cooking odours and excess moisture for a healthier indoor environment.

The kitchen is one of the most central rooms in a house where many daily activities take place. Without adequate extraction of contaminants that build up from these daily activities, indoor air quality can reduce dramatically. Not quite classed as a motor-less hood nor as a recirculation hood, the HR cooker hood is a unique



design that offers unbeatable extraction: Provided with a unique supplementary fan that creates an air curtain around the hob, the vapours remain under the extractor hood allowing the central ventilation system to work to its full potential. Extracting more than 80% of the cooking vapours directly via the central ventilation system before

they have a chance to build up and become a nuisance in your home, the HR cooker hoods offer a vast improvement over the general extraction rate achieved by most motor-less hoods, which is just 35%. The quiet HR series is available in a choice of stylish designs making the kitchen environment a much more welcoming space.



Heating



Aqua-Max is the new standard for energy-low and user friendly high efficiency condensing boilers

“Unbelievable”, is what you will exclaim when you use the newest Aqua-Max high efficiency condensing boiler in your home; each room will always get the required heat. More than enough water at any time you need. No complicated connections for filling the boiler, low energy consumption and therefore, lower energy bills. This is the new Aqua-Max, a wonder of a high efficiency combination boiler:

- Gas-adaptive control
- Integrated expansion tank
- Remote monitoring
- Striking appearance.

Itho heat pump

Itho heat pumps utilise the heat under your house in a sustainable and smart manner. During the cold months, the system retrieves the heat from the ground for heating your home. During the warm months, the process works exactly the other way around: the heat exchanger,

in the heat exchanger also supplies the coldness from the ground via the heat pump to cool down the house.

The Itho heat pump provides you up to 80% of the energy needed to heat your house by retrieving heat from the ground. This is sustainable and efficient!



a closed plastic pipe dug into a depth of 90 to 150 meters, transports the ground heat to the heat pump. In the heat pump, the ground heat goes to a compressor which raises the temperature higher and makes it suitable for heating your house or the tap water. Cooling the house in the summer, the water

Shower water heat recovery unit

This unit uses the heat from the discharged shower water to heat the supply of water. This provides energy saving of around 50%. A thermostatic mixing tap is applied to the heat recovery unit. Less hot water is needed from the water storage tank with each shower, allowing you to use the same amount of warm water for a longer period.



Solar energy



The sun is a never ending source of energy that can be deployed in many ways.

Itho's area of specialisation is thermal solar energy derived from solar heating systems.

The solar heating system is based on solar collectors that heat cold water in a water tank by using energy generated by sunlight. A solar heating system can reduce the amount of energy normally needed to heat up water by 60%.

For the average family this means a substantial saving on energy bills, but it is also means considerable reduction of CO₂ emission. Itho also supplies pre-heaters for solar heating

systems that can save even more energy.

Drain back systems

The Itho pre heater is the solution for saving energy. Consisting of a 90 litre or

150 litre solar boiler, drain-back cylinder and one or more solar collectors, the Itho pre-heaters offer a complete package for vast saving on heating tap water. This system uses vertical or horizontal collectors, which makes it suitable for either slanted or flat roofs.



The Solior integrated solar heating system

The Itho Solior solar heating system is completely new. It is slim, compact and developed especially for flat roofs.

The Itho Solior boasts of an innovative design, low maintenance and a very long life span. Furthermore, the price of

the Itho Solior is very attractive and the system is easier and faster to install and maintain than the usual solar heating systems.

... and ideal for combining with the powerful Aqua-Max!

The Itho pre-heater is an energy saver in itself. Combine it with the Itho Aqua-Max high efficiency boiler and you get top performance and maximum comfort. The 90 litre pre-heater with one collector and the Itho Aqua-Max guarantees that you get eight litres of 60°C water per minute in every season of the year.



Living Blue

In the coming years, Itho plans to create a more distinct profile for itself based on sustainable solutions. As one of the market leaders, we feel that it is our commitment to do so. Sustainability and energy saving will literally be the signature of our solutions in the field of the indoor climate. This will be in the form of the Living Blue label that unites comfort and energy saving. This label will provide buyers and consumers with the certainty that the systems they choose meet the requirements that we have set down for a sustainable world.

Climate for life

Itho strives at all times to offer people an enjoyable living and working environment with its innovative solutions in climate systems. These are solutions for temperature, clean air and hot water in the domestic environment in which people and environment go

harmoniously together. We want a more comfortable and healthier living environment but at the same time, we aim for lower energy consumption. With sustainable technologies and innovations, Itho proves that seemingly opposite objectives can be combined

with very little effort. You can recognise these solutions by the Itho Living Blue label. Our aim is to develop climate systems that respect the world around us. Your wishes become our inspiration and Itho works constantly to achieve this: Climate for life.

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