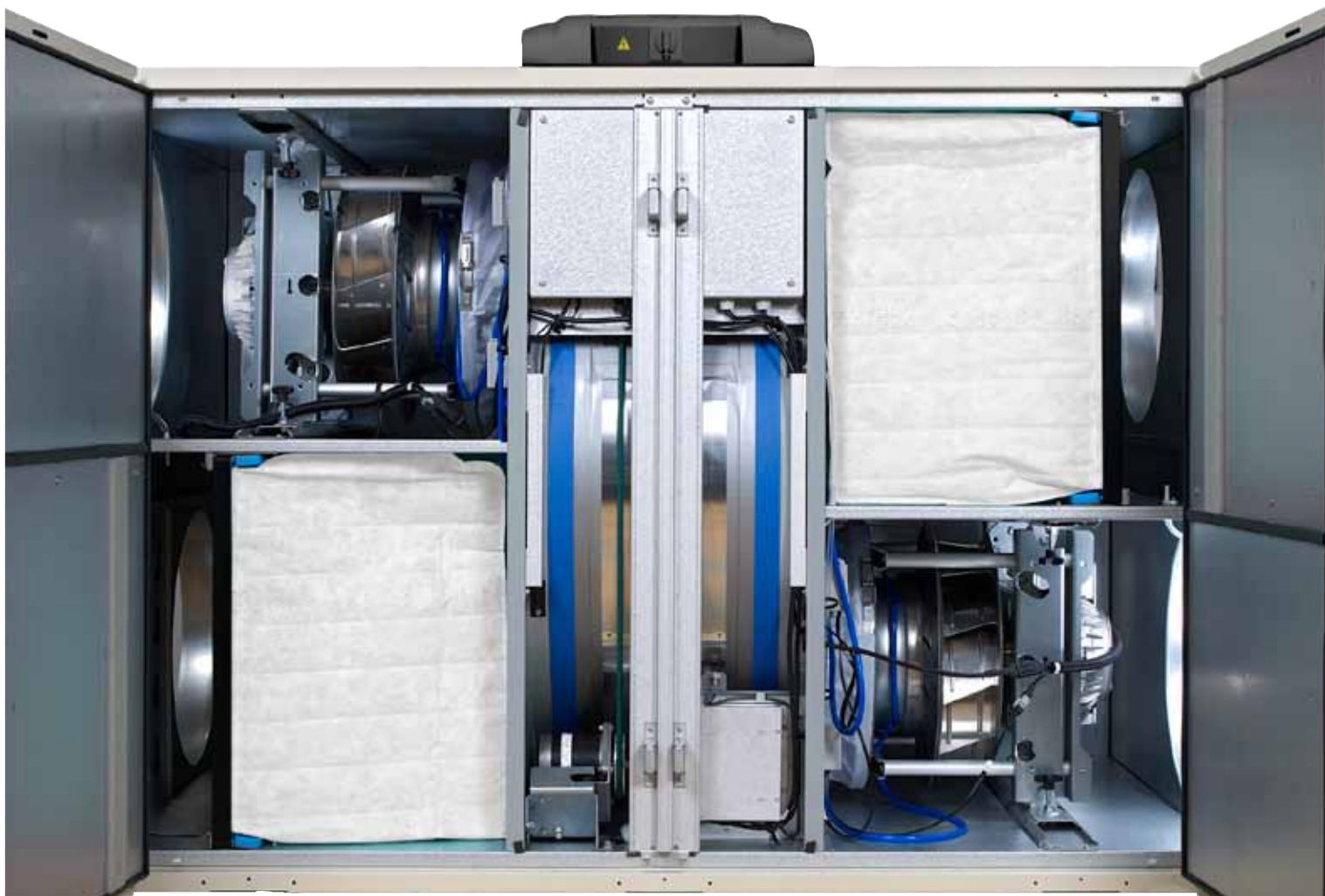


# Exceptional energy efficiency!



GOLD RX meets the exacting demands made on Passive houses!



# Energy efficient GOLD RX certified for Passive Houses

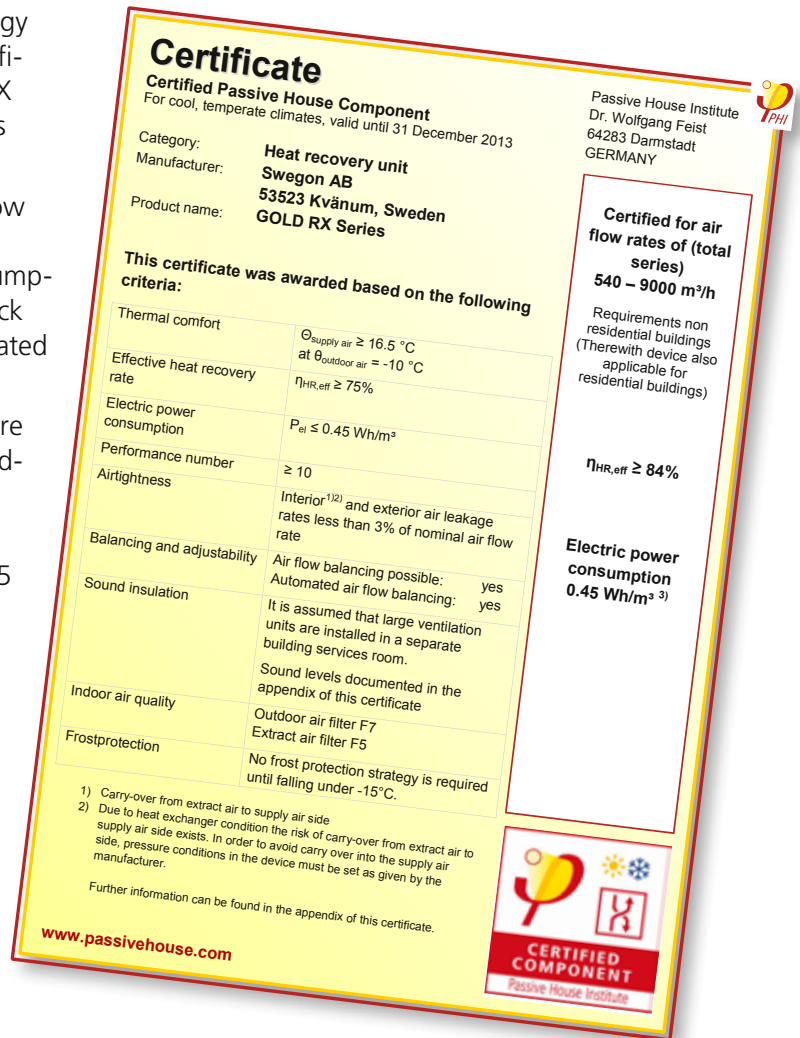
GOLD RX has unique energy efficient fans, unique energy efficient heat recovery and unique integrated energy efficient control functions. This is also reflected in GOLD RX being the first air handling unit for commercial premises certified as a component for Passive houses.

Passive houses are typified as a house with extremely low power consumption and a good indoor climate. Passive house is a definition of buildings, in which power consumption is reduced as far as possible by employing extra thick insulation, an airtight and compact structure, well-insulated windows and heat recovery from the ventilation air.

In order to be a certified component special demands are made on the performance of the air handling unit including: power consumption, heat recovery, airtightness, sound level and flow control.

GOLD RX meets the requirement of an airflow up to 2.5 m<sup>3</sup>/s (9000 m<sup>3</sup>/h). Up to this flow, GOLD RX produces an SFP<sub>v</sub> value (Specific Fan Power, ventilation) which is lower than 1.6. The normal requirement for buildings that are not Passive houses is usually 2.0.

The energy efficiency of GOLD RX is further improved through its rotary heat exchanger with an efficiency level of 84-85%, which is significantly more than the Passive House requirement of 75%. This means the heating load of the building will be lower. Numerous economic control functions also contribute to low operating costs, including the total control over operation of the unit via a variety of communication options.



## Fans of international calibre!

Swegon's fans are of the new generation of energy-efficient fans. The motors are of the EC type and feature motor control developed solely for GOLD to produce high energy efficiency. Swegon's EC motors can achieve a peak efficiency of more than 90%. This is more than 10 percentage units better than traditional AC motors with frequency inverters and the difference becomes greater the more the speed of rotation is regulated to decelerate. The impeller is also designed for maximum efficiency.

Each improvement in efficiency can be directly translated into lower power consumption – and lower operating costs!





# Certified GOLD RX units are installed here



Nursery school Trädgårdsstaden in Skövde is a certified Passive House with two GOLD RX units.  
Photo: IG Passive House



Swedish logotype for  
"True Passive House"

Trädgårdsstaden in Skövde is Sweden's second nursery school certified as a Passive House. Certification is performed by the Passive House Institute (PHI) and follows the directives set out in the Passive House Planning Package (PHPP).

The building is on two levels and is very compact. The design is made up of a steel structure and a light, timber batten system with cellulose insulation. The nursery can accommodate 110 children and was completed in May 2012.

Heating is by means of hydronic radiators from a district heating station. Other more energy efficient methods could have been chosen, but a political decision on district heating was made as it was also to be used in the nearby residential area.

Ventilation is provided for by two GOLD RX units, Swegon's air handling unit with rotary heat exchanger. One unit solely serves the kitchen, where extract air is recycled to the water circuit used in the preheating coils in both GOLD units.

The second GOLD unit serves the remainder of the premises.

Outdoor air to both units first passes four drill holes in the ground, where it is pre-heated in winter and cooled in summer.

Initially the building was ventilated around the clock and at full air flow to remove emissions from the new materials and new furniture. Now the ventilation is demand controlled using timers and sensors for occupancy, temperature and air quality. Monitoring shows that the estimated energy values also reflect reality.

Swegon's GOLD units have also been installed in the world's first Passive House tennis hall in Växjö and in Sweden's first Passive House school in Knivsta.

## Nursery School Trädgårdsstaden

Year of Construction 2012

Developer: Skövde municipality

Architect: Glantz Arkitektstudio/VBK, Gothenburg

Real Estate Planning: Bengt Dahlgren, Skövde.

Energy Coordinator: IG Passivhus, Växjö.

Air Handling Units: GOLD RX from Swegon



Technician Björn Adler inspecting a GOLD air handling unit.  
Photo: Swegon

# Facts about the GOLD RX certification

GOLD RX	Air flow range				Max. external pressure Pa	Electric power consumption Wh/m <sup>3</sup>	Heat recovery temperature efficiency %
	Min.		Max.				
	m <sup>3</sup> /s	m <sup>3</sup> /h	m <sup>3</sup> /s	m <sup>3</sup> /h			
04	0,15	540	0,28	1000	222	0,45	85
05	0,15	540	0,28	1000	222	0,45	85
07	0,15	540	0,51	1820	265	0,45	86
08	0,30	1080	0,49	1780	259	0,45	84
11	0,30	1080	0,68	2465	281	0,45	85
12	0,50	1800	0,72	2600	281	0,45	84
14	0,50	1800	1,19	4285	316	0,45	84
20	0,70	2520	1,11	4000	308	0,44	84
25	0,70	2520	1,53	5500	328	0,45	84
30	1,00	3600	1,11	4000	308	0,44	84
35	1,00	3600	2,08	7500	347	0,45	85
50	1,50	5400	2,50	9000	359	0,45	85

### Max. external pressure

Required value differs depending of unit size. Required value is also included filter pressure as external pressure.

### Electric power consumption

Required value must not exceed 0,45 Wh/m<sup>3</sup> and cover total power consumption for the unit (fans, rotary heat exchanger, control equipment).

### Heat recovery temperature efficiency

Required value is at least 75%.



The Swegon selections software ProUnit has a new developed function for Passive House dimensioning. The function shall always be used in order to ensure requested demands.

### Facts about GOLD RX

GOLD RX is the name of a series of complete air handling units for comfort ventilation in several sizes for airflows up to approximately 14 m<sup>3</sup>/s (50 400 m<sup>3</sup>/h).

The unit has energy efficient fans that can cope with the increased demands on energy savings. The GOLD has built-in IQlogic control equipment with a large number of functions, including communication.

A complete range of accessories is available, such as dampers, sound attenuators, air heaters, air coolers, recirculation sections, chillers and heat pumps.

GOLD is also available with crossflow plate heat exchanger and coil heat exchanger. The GOLD series are certified by Eurovent, No.: AHU-06-06-319.

