



SKAWEN



Skawen Residential

➔ A New
Standard in
Residential
Energy
Efficiency

The Skawen Residential is a complete solution that literally gives older apartment buildings a new breath of life. It's not just technology – it's a new standard in energy efficiency that makes your building smarter, more sustainable, and more independent.

Phone
+46 702 263 293

Email
info@skawen.com

www.skawen.com

Elegance in Simplicity[➤]

Skawen Residential combines advanced heat recovery with integrated heat pump and heat accumulation technology, bringing the comfort and efficiency of the future into older buildings – with minimal structural changes and no heavy construction required.

Residential is ideal for

- Apartment buildings constructed between the 1950s and 1970s lacking modern ventilation.
- Housing associations and property owners seeking a smart energy-efficiency investment.
- Projects requiring quick installation and minimal construction work but demanding modern results.
- Full solution/single elements relevant irrespective of where you are in your building

Why Skawen Residential?

- **Recovers lost heat** – up to 80% of ventilation-related energy loss is returned to the building, cutting heating costs significantly.
- **Boosts energy** with a heat pump – integration with a new or existing heat pump can deliver up to 6× higher energy yield.
- **No major construction required** – lightweight and modular, Skawen Residential is quick to install without tearing down walls or reconstructing the roof.
- **Fast ROI** – energy savings enable a return on investment in 3–5 years, making it a smart decision for forward-thinking owners.
- **Option to exit district heating** – Skawen Residential gives you the ability to reduce or completely cut reliance on district heating, putting you in control of your energy bills.
- **Smart control** – IoT-based built-in controller allows remote system monitoring and management via smartphone, offering full transparency and comfort.
- **Future-ready** – already compliant with EU 2030 energy directives, boosting building energy class and property value.



Skawen Residential Product Suite – Heat Recovery unit, Heat Pump unit and Accumulator tanks



Engineered and designed in Sweden, Skawen Residential is built to perform reliably in the harsh Nordic climate. It's a compact and lightweight unit, suitable both for newer buildings and for smaller apartment buildings built in the 1950s–1970s that lack modern energy recovery systems.

Skawen Residential is designed to be compact, quiet, and durable, with ultra-easy installation even in tight spaces where conventional units won't fit. Delivered in parts and assembled on site, Skawen Residential adapts easily to densely built roofs or small technical rooms.

Skawen Residential, can be ordered as a standalone ventilation and heat recovery unit or as a complete energy solution including a heat pump and domestic hot water accumulator tanks. In the full setup, the system connects to the building's heating circuit – significantly reducing heating costs and increasing energy independence.

Its standardized design enables fast and efficient installation.

Skawen Residential, Heat Pump and Accumulator Tanks are delivered in pre-assembled modules and assembled on-site. Installation takes just one day and requires minimal construction work. The unit is relatively light (up to 275 kg) and doesn't require additional structural support. Thanks to its compact dimensions, the Skawen Residential HP is barely noticeable on the rooftop.

The Skawen Residential product suite is designed to improve the energy efficiency of different types of buildings and boost the overall energy performance of residential properties. It's a reliable choice that delivers real energy savings, long-term value, and dependable performance.

“One decision today
means **decades of savings**”

Choosing **Skawen Residential** today means locking in long-term energy savings, lower costs, and greater independence from volatile energy prices.

What makes the product different?

Skawen Skawen Residential is designed for practical use in real buildings – especially where low weight is required, space is limited, disruptions must be minimal, and long-term reliability is essential. Skawen Residential is built to be easy to install, safe, and scalable across similar housing types.

Composite casing – Exceptionally lightweight, between 120kg to 275kg, C5 corrosion-resistant, noise-absorbing, and fireproof for high durability without excessive weight.

Modular design – Delivered in compact modules that can be quickly assembled on-site like LEGO bricks; perfect for tight or awkward (e.g. handling on roof) locations.

Compact weight and rooftop profile - Discreet low weight design, can be installed directly on top of roof without reinforcements, barely visible from street level.

Proprietary R290-based rooftop heat pump – Integrated with Skawen Residential heat recovery unit. High temperature output. Safe installation in open air. Simple piping and low installation cost compared to indoor alternatives.

Skawen Cube is designed in Sweden, built for the Nordic climate



↑
Boost Property Value

Bypass recovery function – smart automation switches from heat recovery to passive mode when extra heat isn't needed, avoiding overheating and saving energy.

Bypass fire/smoke extraction function by-pass is used in case of fire to extract air from the building or to evacuate the smoke after the fire. Selectable in controls, depending on the local normative.

Built for harsh conditions – Skawen Residential is designed to operate reliably in Scandinavian weather extremes – from freezing temperatures and high humidity to year-round heavy loads.

Skawen Controller & IoT solution – 24/7 control and management of all functions of the solution.

20-year expected lifetime - Long-term performance with low maintenance cost.

Proprietary Accumulator tank solution – Nimble and easy to install accumulator tanks for hot water and heating system. Remote software and control to flexibly manage integration with existing heating systems. Low or High back flow temperature control with 3 Way valve.

Skawen Residential (SR)	Type	SR 2.2	SR 3.2	SR 4.3	SR HP2.2	SR HP2.2	SR HP4.3
Flow rate max	l/s	444	770	1667	444	770	1667
Flow rate max	lm3/h	1600	2772	6000	1600	2772	6000
Cross speed	m/s		1,33	1,59		1,33	1,59
Coil cross speed	m/s	1,72	2,02	1,99	1,72	2,02	2,02
SFP	w/(m3/s)	559	653	729	536	653	729
ETA/ODA External duct available pressure	PA	<200	<200	<200	<200	<200	<200
Exhaust air Fan nominal/absorber power	kW	0,5/0,25	3,0/0,56	2,1/1,26	0,5/0,25	3,0/0,56	2,1/1,26
Exhaust filter ePm10 65%/M5 Clean/Dirty	PA	17/51	58/158	18/54	18/54	58/158	18/54
Heatoutput from exhaust	kW	7,98	16,37	40,2	9	16,37	40,2
Flow temperature to the heatpump	C	-1,3/12,3	-2,5/13,5	-1,1/12,3	-1,3/12,3	-2,5/13,5	-1,1/12,3
Temperature efficiency (EN 13053 / EN 308)	%	46	54,4	60,9	46	54,4	60,9
Heatpump R290	Name	-	-	-	YES	YES	YES
Heatpump power absorbed	kW	-	-	-	2,52	4,38	8,11
Heating power 45/35	kW	-	-	-	11,31	20,68	39,9
Heatpump COP		-	-	-	4,49	4,38	4,91
Heatpump power absorbed	kW	-	-	-	5,02	8,22	11,01
Heating power 65/55	kW	-	-	-	13,52	22,0	30,8
Heatpump COP		-	-	-	2,61	2,61	2,8
Flow rate	l/s	0,15	0,27	0,79	0,33	0,55	0,79
Water connections	Inch	3/4	3/4	3/4	3/4	3/4	3/4
Sound level at a distance of 2m from the device ETA	dB(A)	44,7	42,1	51,7	44,7	42,1	51,7
Sound level at a distance of 2m from the device EHA	dB(A)	58,6	61,4	67,8	58,6	61,4	67,8
Sound level at a distance of 2m from the device Casing	dB(A)	33,1	35,2	42,2	33,1	35,2	42,2
Length	mm	1,180	1,342	1,732	1,480	1,742	1,732
Width	mm	1,030	1,305	1,597	1,030	1,305	1,597
Height (including Base frame 100mm)	mm	910	964	1,264	910	964	1,264
Duct connections L x W (ETA)	mm	free to cut	free to cut	free to cut	free to cut	free to cut	free to cut
Weight	kg	130	150	190	190	230	275



Options: Cooling coil, Roof, Weather hood, Noise silencers SUP/ETA 1000mm, Noise silencers ODA/EHA 500mm
Duct pressure control, Display, CO2 control, VOC control

CASE 1

Skawen Residential with Integrated HP in combination of district heating

Instantaneous Hot Water Supply:

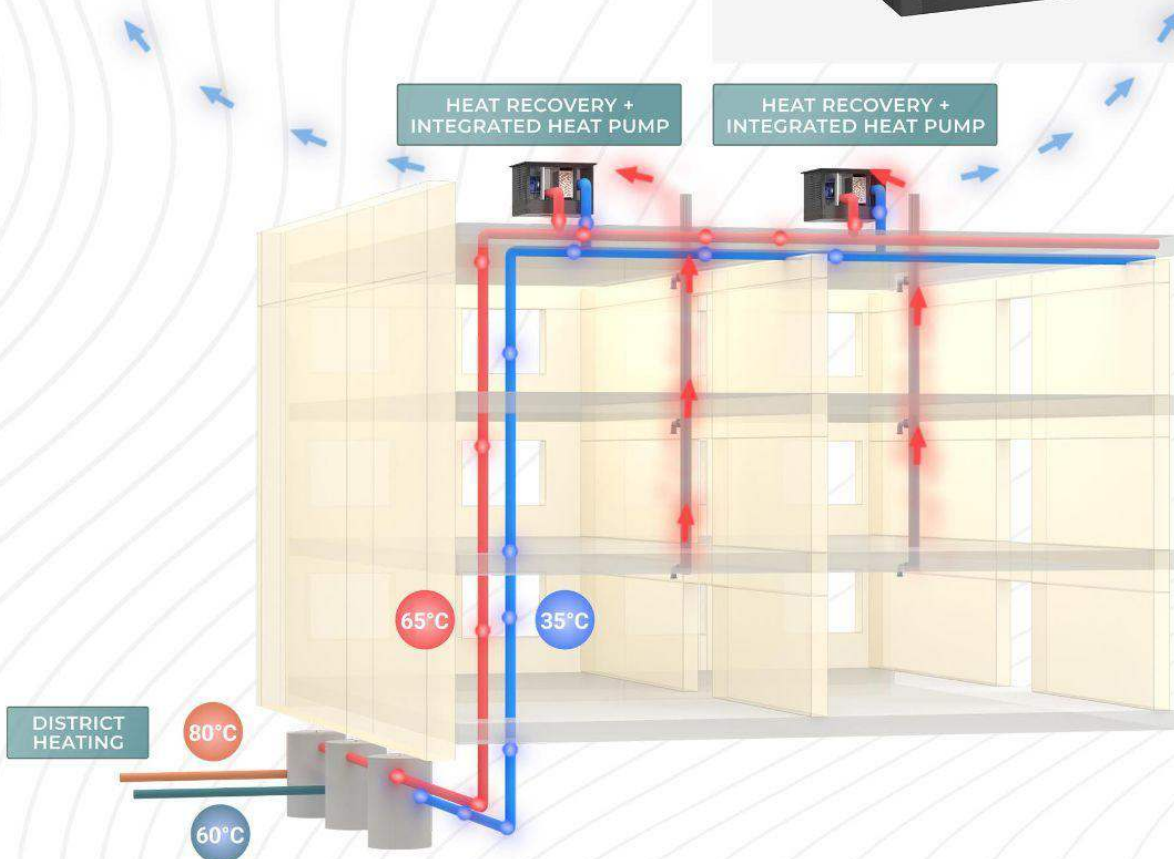
The Skawen Residential incorporates a highly efficient, integrated Heat Pump system that utilizes R290, a natural refrigerant with exceptional thermodynamic properties. This advanced heat pump technology ensures an immediate and consistent supply of hot water to the strategically placed basement storage tanks. This design guarantees that hot water is readily available on demand, contributing to the overall comfort and convenience within the building.

Primary Heating Source: Exhaust Air Heat Recovery:

A cornerstone of the Skawen Residential's energy-efficient design is the utilization of heat recovery from the Exhaust Air Heat Pump. This intelligent system captures and reuses thermal energy that would otherwise be expelled. This method forms the predominant source of heating for the building, responsible for satisfying a substantial 60-80% of the annual heating demand. This significant contribution is primarily realized during periods of moderate ambient temperatures and minimal building heat loss. By leveraging waste heat, the system considerably reduces the reliance on external energy sources, leading to substantial operational cost savings and a minimized environmental footprint.

Supplemental Heating During Extreme Conditions:

While the heat recovery system effectively addresses the majority of the building's heating requirements, supplementary heat is necessary during periods of extreme winter conditions. In these instances, characterized by significantly low ambient temperatures, the demand for heating exceeds the capacity of the heat recovery system alone. To ensure consistent and uninterrupted building heating throughout the year, regardless of weather extremes, the Skawen Residential seamlessly integrates with existing district heating infrastructure. The basement storage tanks are specifically designed to accommodate this supplementary heat input, allowing for a smooth and efficient transition between heat sources as needed. This hybrid approach ensures optimal thermal comfort under all conditions, providing a resilient and reliable heating solution.



CASE 2

Skawen Residential with in combination of Geothermal energy and House HP

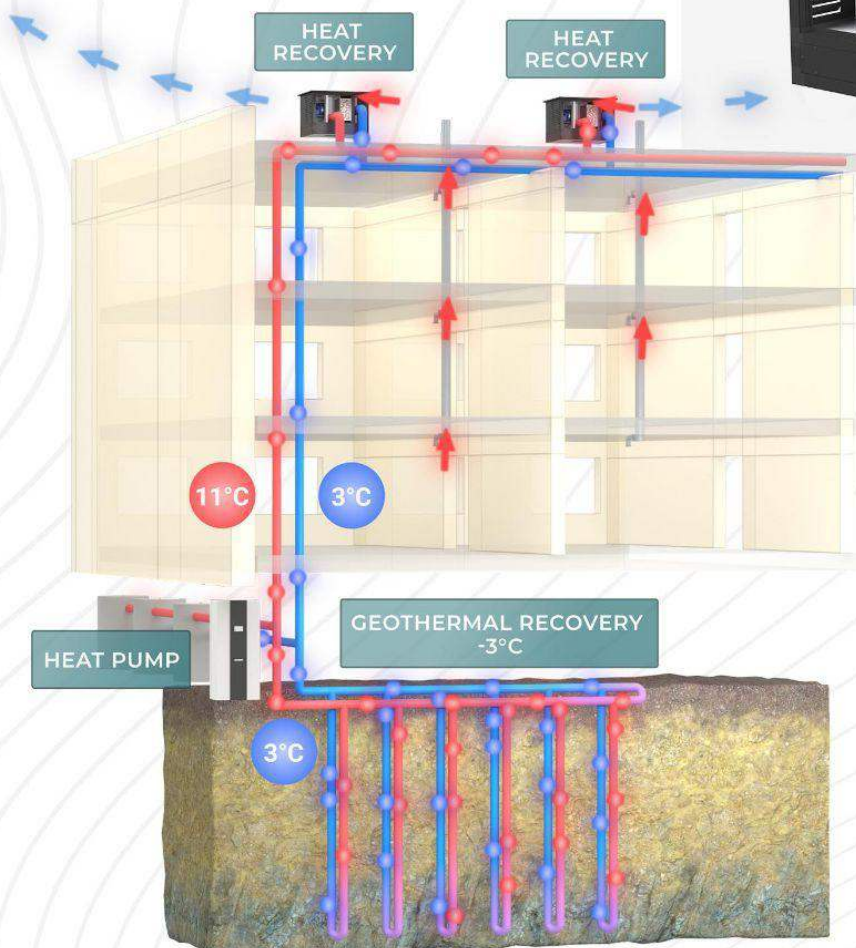
Enhanced Skawen Residential System Overview

The Skawen Residential system operates on a principle of self-sufficiency, functioning within a building without requiring external energy inputs for its core warm water supply operations (excluding the use of R290 refrigerant). This system is engineered to deliver a baseline of warm water, ranging between 8 and 12 degrees Celsius, directly to the basement level of the building.

Within the basement, this pre-warmed water from the Skawen Residential system undergoes a crucial blending process with geothermal energy, which is typically sourced at a colder temperature range of 0 to 3 degrees Celsius. This strategic mixing of water sources results in a combined water temperature of approximately 5 to 6 degrees Celsius, which is then optimally prepared for use by the central heat pump system. The pre-warming of water through the Skawen Residential system significantly alleviates the workload of the central heat pump, thereby substantially increasing its overall efficiency.

In warmer seasons, specifically during the summer and transitional periods when heating demand is low, the system intelligently prioritizes exhaust air heat recovery as the primary energy source. This adaptive approach prevents the excessive cooling of the geothermal soil, which could negatively impact the system's efficiency in colder months.

Further, during the summer period when the central heat pump is effectively dormant, the system redirects the energy harvested from the exhaust air. This redirected heat is utilized to warm the surrounding ground, effectively charging and preparing the geothermal soil for the subsequent winter heating season. This proactive management of ground temperature ensures that the system operates at peak efficiency when heating demands are highest.



CASE 3

Skawen Residential with in combination House HP and additional heat well

Foundation of Efficient Heating

The Skawen Residential system operates on a principle of self-sufficiency, functioning within a building without requiring external energy inputs for its core warm water supply operations (excluding the use of R290 refrigerant). This system is engineered to deliver a baseline of warm water, ranging between 8 and 12 degrees Celsius, directly to the basement level of the building. Central Heat Pump serves as the primary source for immediate hot water, which is directly supplied to a series of strategically located storage tanks in the basement. This setup ensures a readily available supply of heated water for the building's various heating needs.

Primary Heat Recovery Mechanism: Exhaust Air Heat Pump

The system is designed to prioritize energy efficiency. Therefore, the primary method of heat generation involves heat recovery from the Exhaust Air and Central Heat Pump. This ingenious approach captures and repurposes heat that would otherwise be expelled from the building. This heat recovery system is remarkably effective for a significant portion of the year, specifically during periods characterized by mild ambient temperatures. These conditions, typically representing 60-80% of the annual cycle, coincide with minimal heat loss through the building's envelope, making the exhaust air heat recovery sufficient to meet the heating demands.

Maintaining Comfort in Extreme Winter Conditions: Auxiliary Heating

While the exhaust air heat recovery system excels in moderate climates, maintaining a consistent and comfortable building temperature throughout the year necessitates provisions for extreme winter conditions. When outdoor temperatures plummet significantly below freezing, auxiliary heating becomes essential. To address this need, the storage tanks are equipped with reliable electric heating elements. These elements are designed to activate and provide supplemental heat during periods of intense cold, ensuring a consistent and comfortable indoor environment regardless of the severity of the external weather conditions. This dual-system approach guarantees uninterrupted heating and maximizes energy efficiency by minimizing the use of electric heating when primary heat recovery is sufficient.

