

introducing Ambion

Sustainable, cost-effective
heating and hot water for
social housing

ambion



Electrical, Mechanical & Environmental
Services Ltd

housing associations need low cost, sustainable heating

Decarbonising Britain's social housing stock is an essential part of tackling climate change, which means the pressure is on for social housing providers to become more sustainable. They are currently obliged to maintain an EPC score of E and to improve the EPC scores of all of their properties to C or above by 2030, and when the Future Homes Standard comes into effect in 2025, any new homes they build will not be connected to the gas grid. This means that they must find a low-carbon heating solution sooner rather than later.

By decarbonising their properties, housing associations can not only reduce their impact on the environment, but also help to combat fuel poverty by providing their residents with a more efficient, lower-cost source of heat. Studies have also shown that higher EPC ratings lead to a reduction in the number of void days, lower rent arrears and reduced spend on repairs¹.




As a result, many housing associations are keen to switch to low-carbon heating – but with limited budgets, they need a solution that's cost-effective and sustainable. That's where Ambion comes in.

Ambion's computer-controlled infrared (CCIR) space heating and KERS water heating system work together to provide the perfect solution for social landlords looking to keep costs low for both their organisation and their tenants.

Powered by electricity, the CCIR and KERS system can be easily retrofitted into any property. It is cheaper to install than many other low carbon heating systems - for example air source heat pumps.

Both CCIR and KERS are highly effective and energy efficient. CCIR uses up to 60% less energy than a traditional electric convection heating system; and KERS uses up to 70% less energy social landlords can reduce their impact on the environment.

So, for social landlords that are looking for a low cost, sustainable solution to heat their existing and future properties, Ambion is the ideal solution.



why choose Ambion?

As a social landlord you may choose to install Ambion to:



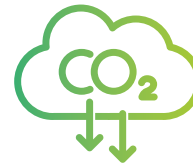
Reduce fuel poverty. As CCIR uses 60% less energy than standard convection systems and KERS uses 70% less energy than standard water heating systems, Ambion can bring your residents' heating bills down.



Boost your properties' Energy Performance Certificates (EPCs). Installing CCIR and KERS can help you to improve your properties' EPC ratings to C or above, in line with the Government's 2030 target.



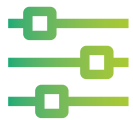
Keep your costs low. As electric systems, our CCIR and KERS heating and hot water systems are simply wired into the mains, which means they're cheaper and easier to install than many other low-carbon heating and hot water systems.



Prepare for the Future Homes Standard. Ambion's CCIR and KERS solutions are a sustainable alternative to fossil-fuelled heating systems like gas and oil boilers, as infrared is a low-carbon source of heat and KERS uses renewable, recycled heat.



Provide more comfortable homes. CCIR provides a more comfortable source of heat and can reduce circulating dust because it heats the materials in a room, rather than the air. CCIR and KERS work together to reduce condensation and humidity.



Give residents total control over their heating. The Ambion Control Panel enables you to control each heater individually, giving you full control over your whole heating system – all from one device.



How we're different

OUT

- ✗ Old-technology thermostats
- ✗ Stuffy hot air from convection heat
- ✗ Noisy and unsightly external heat pump
- ✗ High utility bills and CO₂ emissions

IN

- ✓ Total system control by computers and algorithms
- ✓ Clean, comfortable infrared heat
- ✓ Quiet indoor heat pump that fits into a standard airing cupboard
- ✓ Lower utility bills and CO₂ emissions



how it works

Our solutions use cutting-edge technology to deliver market leading results for our customers.

Our CCIR space heating system

Conventional heating systems using convection heat and thermostats are yesterday's technology. Instead, CCIR uses infrared and algorithms to provide a simple-to-use and highly efficient system.

This results in average **60% energy savings** compared with conventional systems.



Here's how it works:

- Residents use a single, user-friendly Control Panel to set target temperatures across the system, room-by-room and in individual time slots.
- Infrared panels heat the walls and furniture within a room (rather than the air as in conventional heating systems). This uses less energy as conventional systems waste energy on escaping hot air.
- Ambion's technology uses computers and algorithms to control the system, rather than thermostats as in conventional systems. CCIR uses sensors on the heating panels to monitor the constantly-changing home environment on a second-by-second basis, and adjusts its energy phasing routine accordingly to maintain the target temperature with minimum energy use.
- The system is at its most efficient when it runs 24 hours a day, so it's always on.

Our KERS water heating system

Conventional heat pumps sit outside and use relatively cold external air. Instead, the KERS hot water system is a simple and highly efficient ready-to-use indoor heat pump with integrated Mechanical Extract Ventilation (MEV).

- Residents pre-set desired temperatures using the simple digital display.
- The KERS heat pump is located indoors, and uses the warm air from the interior of the house, particularly the kitchen and bathroom.
- Using electrical energy, the heat pump sucks in the warm interior air and recycles its energy to produce hot water.
- This enables the KERS system to achieve temperatures of up to 65°C, higher than standard ASHPs, without using an electric immersion heater.



This results in **70% energy savings** compared with conventional systems.



the Ambion system

No matter how big or small your properties are, Ambion can ensure your residents are comfortable throughout by providing you with:

Infrared heaters

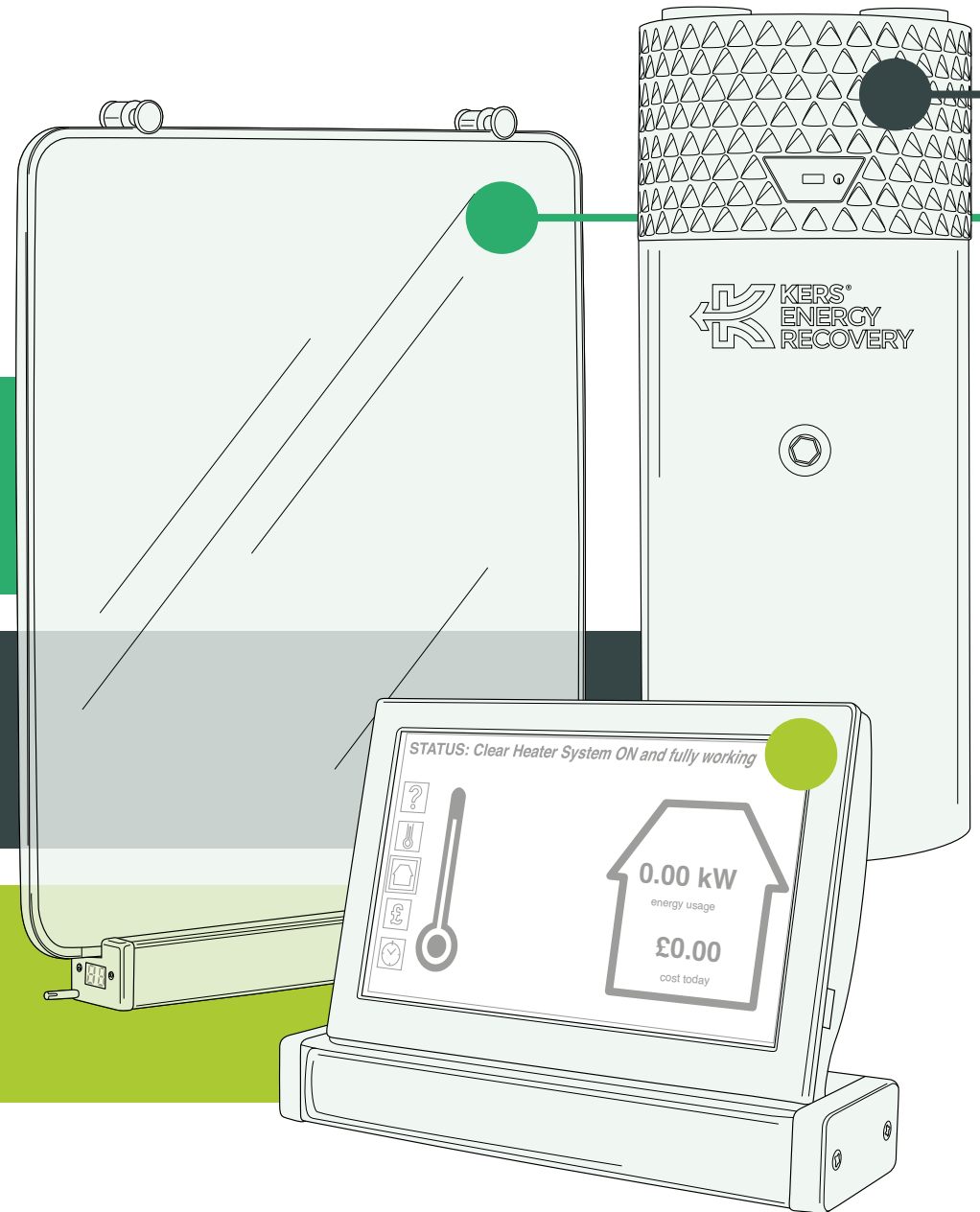
As many as you need to keep your properties warm

A hot water system

Giving your residents renewable hot water on demand

A control panel

Giving you centralised control of all your heaters at the touch of a button



Infrared heaters

- Available in 820W or 430W
- Fully programmable control panel – temperature and timing by individual heater or zone
- Sensor and micro-processor in every heating panel
- Works with solar and PV
- Clothes-dryer functionality
- Compact design
- No moving parts, so no servicing or maintenance
- Low energy – CCIR limits the amount of power used in any one ring main to 3.2kW
- Collects all operational data for use by housing provider and occupants

Hot water system

- High output 2010W
- Available in 160, 230 and 300L
- High efficiency ECQ fan motor and rotary compressor
- Provides both hot water and ventilation
- Heaterless design – achieves 65°C without the need for immersion
- No external condenser
- Compact design
- Easily serviceable with bespoke design, no requirements for removal of ductwork
- Weekly legionella program
- Low energy only 462W
- Optional PV & solar coil



With the Future Homes Standard just a few years away, many housing providers are currently seeking the optimum low-carbon solution.

Ambion's CCIR and KERS systems are the optimum solution, as they outperform many other low-carbon heating and hot water alternatives. Here's how they compare to traditional air source heat pumps:

the optimum low-carbon solution

CCIR SPACE HEATING

- ▲ Maintains a target temperature whatever the weather.
- ▲ Fully flexible, centralised control panel with no separate thermostats.
- ▲ No water-based radiators – just infrared panels.
- ▲ Simple installation. Just wire in and go.
- ▲ No maintenance required.
- ▲ No external condenser means no planning issues.

KERS WATER HEATING

- ▲ Recycles waste heat, constant 20°C improves COP.
- ▲ High temperature water output 65°C.
- ▲ Heaterless design requires no immersions.
- ▲ Simple installation – just plug in and connect to the cylinder.
- ▲ MEV function options
- ▲ No external condenser means no planning issues.

TRADITIONAL AIR SOURCE HEAT PUMPS

- ▼ Reliant on the weather – the lower the temperature falls, the less efficient heat pumps are.
- ▼ Thermostat-controlled.
- ▼ Uses water-based radiators and underfloor heating.
- ▼ Complicated and expensive installation.
- ▼ Annual maintenance required.
- ▼ External condensing unit can create planning issues.

TRADITIONAL AIR SOURCE HEAT PUMPS

- ▼ Reliant on the weather; the colder the temperature, the less efficient they are.
- ▼ Only operates to 55°C with immersion top up.
- ▼ Uses immersions.
- ▼ Complicated and expensive installation.
- ▼ No MEV functionality.
- ▼ External condensing unit can create planning issues.

a perfect fit for social housing

Ambion is working with C80 Solutions, the environmental consultancy, in order to give social housing providers a one-stop solution, including an EPC calculation based on CCIR and KERS, to assist in decision making.

Jonathan Hill, Energy and Sustainability Consultant at C80 Solutions, commented:

“We work with many social housing providers to help them achieve their required SAP and EPC ratings, and help them to identify ways to improve their scores. The combination of CCIR and KERS is a great solution for social housing providers looking to significantly reduce energy consumption and improve the rating of their properties. Not only is it an efficient way of heating the home but also a C can easily be achieved on an EPC”



technical specifications

CCIR SPACE HEATING



Model No.	GH-518R	GH-518P	GH-518B
Description	Large landscape	Large portrait	Small
Power rating	820W	820W	430W
Heating area	12M ²	12M ²	6M ²
Max. effective range	8M	8M	8M
Performance Ratio (~COP)	2.6	2.6	2.6
Working Voltage	230V	230V	230V
Voltage type	AC	AC	AC
Frequency	50Hz	50Hz	50Hz
Weight	19kg	19kg	10kg
Dimensions H* x W x D (mm)	655 x 1110 x 11	1100 x 600 x 11	645 x 555 x 11
Construction	White glass with a steel frame		

Note: *plus 20mm wall brackets at top



KERS WATER HEATING



Model No.	MVHR-W160	MVHR-W200	MVHR-W300
Tank Volume	160l	230l	300l
Heating Capacity	2010W	2010W	2010W
Max Power Input	462W	462W	462W
COP (EN255/3)	4,5	4,5	4,5
COP (EN16147)	3.1	3.1	3.1
Electrical Connection	230v / 50Hz / 1Ph	230v / 50Hz / 1Ph	230v / 50Hz / 1Ph
Amp	10	10	10
Working Pressure	8 Bar	8 Bar	8 Bar
Max Water Temp (without Immersion)	65°C	65°C	65°C
Refrigerant	R134A	R134A	R134A
Electrical Heater Optional	2000W	2000W	2000W
Duct Diameter (mm)	125	125	125
Pressure	80Pa	80Pa	80Pa
MEV sfp	0.5w/l/s	0.5w/l/s	0.5w/l/s
MEV Flow Rate	13-125l/s	13-125l/s	13-125l/s
Corrosion Protection	Vacuum Enameled	Vacuum Enameled	Vacuum Enameled
Weight	140kg	140kg	160kg
Dimensions H x W x D (mm)	1494x 654 x 654	1638 x 654 x 654	1888 x 654 x 654

* Approved by the Building Research Establishment, TUV and SAP registered. Compliant with part L & F of building regulations.



ready to feel the benefits of Ambion?

To find out more about how Ambion is the ideal sustainable solution for social housing associations, call us on **07407 216869** or **07857 475315** or visit **www.rgemes.co.uk**

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