



CASE STUDY

INGENIOUS FARM HOUSE HEATING

NORTH YORKSHIRE | UK

THE EXISTING SITUATION.

The Farmhouse built in 1820s and consisted of solid 1m thick Yorkshire stone walls with no insulation. Heating was from a combination of systems including an oil-fired Aga used for cooking, room heating and hot water. The central heating in the hallway, landing, reception rooms and bedrooms was provided by wall mounted electric storage heaters (installed in 1991) with supplementary room heating through a log burner and open fires. The bathrooms were heated by manually switched electric towel rails and electric bar heaters.

Despite 26 kW of storage heating capacity costing almost £500/month to run (c. £2,950/year), the storage heaters were not effectively heating the house.

THE CHALLENGE.

The old storage heaters were an eye-sore so it was important that the replacement heating system was less conspicuous and more in keeping with existing decoration. As this was a retrofit project disruption from the installation had to be minimal and the need to chase-in new wiring avoided or re-decoration would be needed.

To maximise the energy saving and deliver the optimum level of thermal comfort in the different rooms, it was important to create independently controlled heating zones. However, without the ability to run new separate electrical heating circuits, achieving this would normally present a challenge.

In the bathrooms, the new heating system had to address the issue of condensation and damp whilst improving the level of thermal comfort.

THE SOLUTION.

ETHERMA's LAVA® design infrared panels solved all the main issues and a few extra! In contrast to the storage heaters, the LAVA® infrared heating directly warms thermal mass (ceiling, walls, furniture and people) where the energy is stored and gradually released back into the room as heat. As the infrared directly warms people, like being in the sun, the room air temperature can be reduced by up to 2-3 °C whilst maintaining the same level of thermal comfort resulting in lower running costs (£126/month compared to £500/month for the storage heaters).

These infrared heaters were also the perfect solution for the bathrooms, creating a pleasant spa-like feel. By warming and drying the walls the infrared heaters prevent condensation and damp which was a particular issue in the bathrooms. Drier walls are better insulators which ultimately leads to long term cost savings through a lower heating requirement and reduced maintenance – in this case regular repainting! Within six weeks of the infrared heating being installed, the wooden doors and windows in the bathrooms began to open and close with ease.

LAVA® GLASS MIRROR are used in the bedrooms. To match the wall colour of the other rooms the surface of the LAVA® BASIC-DM infrared panels was painted (using radiator paint).

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THE SOLUTION IN DETAIL

LAVA® LAVA® GLASS MIRROR 500W infrared heating panels were used in the bedrooms and LAVA® BASIC-DM infrared panels (750W & 1000W) in the other rooms. Using the ET-111A wireless receivers on the back of the panels with the ET-14A programmable thermostats made creating different heating zones within the farmhouse a straightforward process. Precise

control of the heating is the key to saving operating costs and not wasting valuable energy.

A significant health benefit to the customer who suffered from morning headaches (for the past 40 years) was that the headaches ceased when the storage heaters in the master bedroom were replaced with the LAVA® infrared panels.

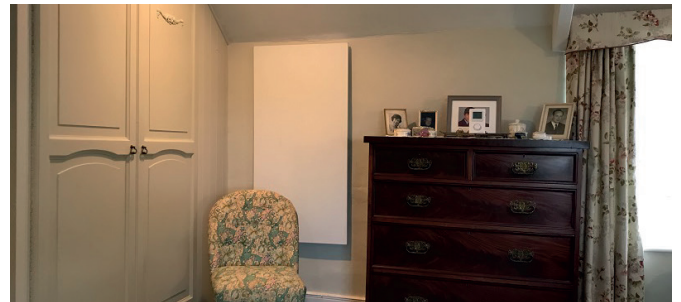
LAVA® INFRARED HEATING - PRODUCT BENEFITS

- + Very high proportion of radiation
- + Large infrared emitting surface
- + Modern infinity design
- + Pleasant room climate thanks to comfortable infrared radiant heat
- + Pure and healthy air - ideal for allergy sufferers
- + Magnetic field & maintenance free
- + Plug & Play connection system for easy individual control
- + High security thanks to 6 mm toughened safety glass
- + Made in Austria - high quality standards



PRODUCT BENEFITS LAVA® BASIC-DM

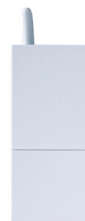
- + Very high proportion of radiation
- + Large infrared emitting surface
- + Lightweight design for easy ceiling mounting
- + Pleasant room climate thanks to comfortable infrared radiant heat
- + Magnetic field & maintenance free



PRODUCT BENEFITS ET-14A



- + Large, illuminated LCD display
- + 5 Operating modes (Comfort, reduction, frost protection, AUTO, OFF)
- + Week and day programming
- + Battery level indicator
- + Open window detection (in combination with ET-14A-FK)
- + Ecodesign guidelines compliant
- + Adaptive start-up control



Receiver ET-111A



Thermostat ET-14A

COMPETANCE AND QUALITY FOR OVER 35 YEARS.



With ETHERMA you have a competent partner for your heating solutions with more than 35 years of experience. ETHERMA relies on constant innovation, highest product quality and modern design. We support you with a comprehensive service to ensure you use the most suitable product solution for your project. ETHERMA is an Austrian company with international reputation, producing high quality electrical heating systems for our clients, custom-made and manufactured right here.