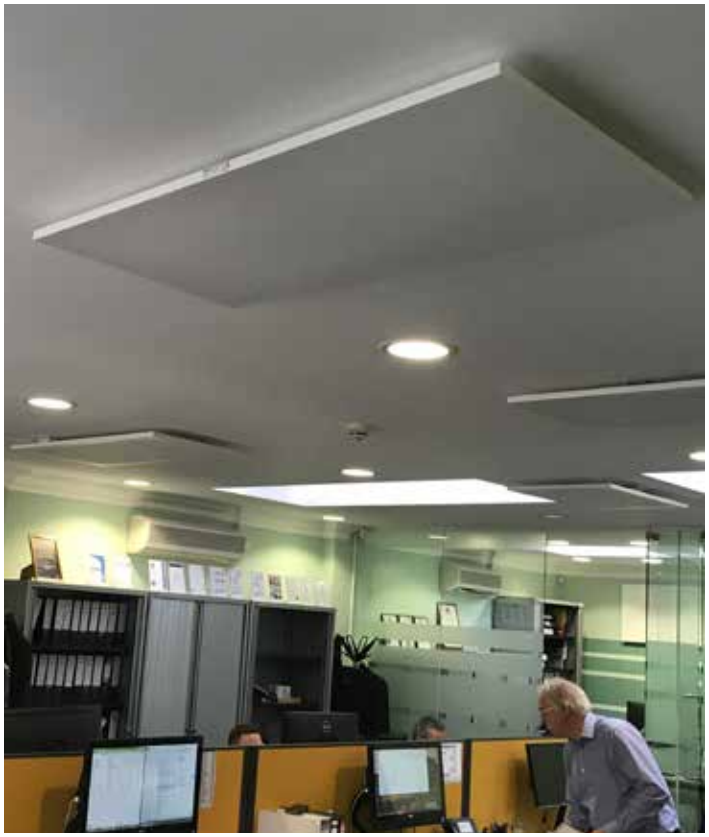

CASE STUDY

INGENIOUS INFRARED OFFICE HEATING

OFFICE HEATING PROJECT | CENTRAL LONDON

THE EXISTING SITUATION.

The office is located in a converted Georgian town house situated in central London. The building is connected to the mains gas supply and heated by a gas boiler and a 'wet' central heating system. The boiler is located in the basement at the front of the building whilst the main office (with two partitioned smaller offices) is situated at the rear. The loss of heat from the hot water as it travels from the boiler to the office, was such that the radiator temperature was not enough to effectively heat the office space.

The business tried to overcome the inefficient heating by installing four wall-mounted 4kW combined heating and air conditioning units. However, these turned out to be noisy and created a very stuffy environment making the occupants feel lethargic after a short time. The electric heaters also created convection currents which sucked-in cold air through the old sash windows at the end of the main office, making the adjacent desks unusable on cold days.

THE CHALLANGE.

The challenge for the business was to find a form of heating which was not going to cause a major upheaval to install, would improve their staff's thermal comfort and allow all desks to be used, did not take up any wall space (as this was needed for tall filing cabinets), was silent and would reduce the heating cost.

THE SOLUTION.

The ETHERMA LAVA® BASIC-DM Infrared heating panels ticked all the boxes. They provide flexible mounting options which allows the infrared heating panels to be installed on the ceiling or high-up on the wall in either landscape or portrait orientation. Mounting the infrared panels on the ceiling keeps the wall space free for filing cabinets and ensures an even distribution of heating throughout the office, eliminating cold spots.

The use of radio-controlled programmable thermostats avoided the need for new cable routes and simplified the installation process. It also meant each office could have its own thermostat, providing more accurate temperature control.

LAVA® Infrared heating works on the principle of solar radiation. The infrared heat is absorbed by thermal mass (the ceiling, walls, floor, furniture and people) where it is stored and gradually released back into the room. This homogeneous heating of the room means there is only a small temperature gradient between floor and ceiling which prevents convection currents and stops the cold draft coming in through the sash window. Infrared panels have no moving parts which gives them a long operational life without any ongoing maintenance requirements. This also means the infrared heating system is completely silent – a major benefit in an office environment.

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Initial feedback from the staff when the infrared heating had been installed was that they were too warm! This was because they set the thermostats at 21 °C as with the previous convection heating. However, with infrared heating, the direct warming effect means the occupants feel warmer at a lower air temperature which in this case was 18 °C. The 3 °C reduction on the thermostat equates to an 18 % energy saving.

Overall a total 16 kW of convection heating was replaced with 5 kW of infrared heating. This 68 % reduction in the heating load along with a reduced room temperature significantly reduced the heating cost and made a healthy reduction in the carbon footprint of the business.

THE SOLUTION IN DETAIL

The infrared heating system used four ceiling mounted LAVA® BASIC-DM 750 W panels and one LAVA® BASIC-DM 500 W in the main office and one wall mounted LAVA® BASIC-DM 750 W panel in each of the two smaller offices. These infrared panels are ideally suited for full heating or zone heating. For ease of installation the LAVA® BASIC-DM infrared panels are fitted with ET-111A wireless receivers and controlled in unison a by wireless ET-14A programmable thermostats.

Each of the three offices are treated as a separate heating zone to ensure accurate control and maximum comfort. The wall mounted infrared panels were positioned at picture height giving an even heat distribution and maximising the amount of floor space available for desks and storage units.

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

LAVA® BASIC-DM

PRODUCT BENEFITS ET-14A

ECODESIGN READY

+ 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.

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