



CASE STUDY

INFRARED HEATING SOLUTION FOR HISTORIC BUILDINGS

The Grange | Hampshire, UK

THE EXISTING SITUATION.

The Grange is a 19th-century country house-mansion in Hampshire. It is owned by the Baring family and English Heritage has a guardianship deed on the scheduled monument and Grade I listed building. After 1965 the building fell into disrepair and it was not until the 1980s that the roof was extensively restored and the external structure of the building stabilized. The romantically distressed interiors create an exciting event space, but the lack of insulation, missing floors and drafty doors make heating the ground floor reception rooms a challenge.

The building was not used as a venue during the winter months and for spring and autumn events, temporary heating in the form of two noisy 65kW indirect oil-fired hot air blowers were used. These heaters consumed 13ltrs oil/hour and needed to run continually to make a noticeable difference.

THE CHALLENGE.

The client was looking for an effective and energy-efficient heating solution which would enable events to be held during the colder months. A fast warm-up time was important as the building is only heated when in use. As far as English Heritage was concerned, any new heating system had to blend with the architectural detail of the building to be approved Scheduled Monument Consent. From an ecological perspective, the new heating must not impact upon the resident bats.

To be more effective the heating needed to directly warm the occupants thereby avoiding the need to increase the air temperature. The latter would be a costly and pointless exercise as the warm air would only rise to the top of the building.

THE SOLUTION.

SOLAMAGIC S2 short-wave infrared heaters were ideal because their wavelength penetrates the air particularly efficiently overcoming any drafts. The short-wave infrared directly warms the occupants providing immediate benefit as soon as it is turned on - like the sun.

The SOLAMAGIC S2 infrared heaters are controlled by wireless handheld transmitters giving the user full control of all the heaters in a room at the press of a single button. With a variable heat output, the heating can be regulated to ensure optimum comfort is achieved. The wireless controls also enable a more straight forward and quicker electrical installation.

By using different coloured SOLAMAGIC heaters, it was possible to blend them with the architectural detail of each room. For example, against the light coloured plaster walls titanium coloured heaters worked well; whilst under the dark oak beams the nano-anthracite was a more appropriate colour; and white heaters suspended under the ceiling net provided a good match.

Compared to the 65kW oil-fired heaters, over an eight hour event, the infrared heating reduced the carbon footprint by over 400kg and saved £740. Significantly improving the energy efficiency enabled the project to obtain a low carbon grant (33% of total cost) from the European Regional Development Fund.

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THE SOLUTION IN DETAIL

SOLAMAGIC S2 short-wave infrared heaters were used throughout the ground floor reception rooms, with each room being treated as a separate heating zone. Depending on the room size the infrared heaters were either wall-mounted or suspended from the beams or tension wires at approx. 3.2m above the floor.

PRODUCT BENEFITS SOLAMAGIC S2

The new SOLAMAGIC S2 is the powerful 2500W premium infrared heater. In the SOLAMAGIC S2 Bluetooth version, this premium infrared heater can be conveniently controlled and dimmed via a smartphone or hand-held transmitter. In the SOLAMAGIC S2 ARC (radio control) version, this is done with the hand-held transmitter.

The device is manufactured in high-quality aluminium and is fitted with a Solastar-G2 heating tube which combines low light emission and a pleasant light colour with improved heat retention.

- + Very high proportion of infrared radiation
- + With Bluetooth 4.1 control also via app on tablet or smartphone / with radio control via hand-held transmitter
- + Dimmable in 3 steps (33% / 66% / 100%)
- + Lightweight design for easy ceiling mounting
- + Pleasant room climate thanks to comfortable infrared radiant heat

At this height the heating zone of each heater is around 16m². The infrared heaters were attached to the suspension wires using quick-release hooks and to the power supply cables using push-pull connection plugs. This system allows the heaters to be easily removed to allow the ceiling netting to be removed and cleaned.



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