



sensible heat case study

sensible heat
ADVANCED
HEATING
CONTROLS 

North London home

Honeywell



case study

Sensible Heat provides the complete wireless hvac control solution

With more and more modern new-build homes featuring not just underfloor heating but also air-conditioning for summer-time cooling, how can these sub-systems be easily and effectively controlled and integrated into a whole-home custom installation? This Sensible Heat project in North London has the answer.

Traditionally, in the UK, we tend to focus pretty much exclusively on the whys and wherefores of heating and ventilating our homes when we want to create the perfect indoor climate. Heating is what's needed to keep us warm and comfortable, and it's ventilation that deals with moisture, helping to avoid problems with condensation and damp. Or so history tells us.

But times are changing. New homes can now be built which are much more air-tight than ever before and, thanks to this design plus better insulation and modern construction materials, they are much better at retaining warmth than they ever used to be. It's true too that



the UK climate is getting warmer. Add to this the fact that the custom-installed home is likely to feature its fair proportion of heat-generating consumer electronics within it, then the question of dealing with uncomfortably warm conditions needs to be addressed.

For these reasons, it's now increasingly common for new smart-homes to incorporate some kind of mechanical cooling or air-conditioning as well as a heating system.

The challenge is to bring such equipment under effective control to maximise ease of use whilst minimising the prospect of the heating 'fighting' with the cooling which would waste unnecessary energy for the homeowner.

Sensible Heat has helped provide the



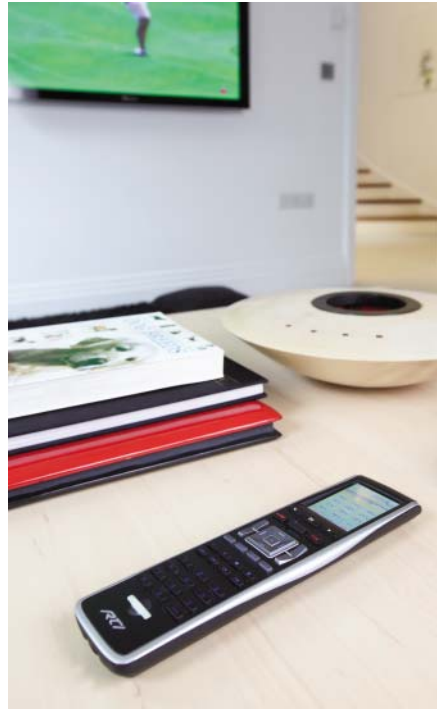
A Crestron in-wall touchscreen in the hall allows the user to control heating and cooling across the whole house.



perfect solution to these issues for self-builder Barry Maisel on his new, modern family home in North London.

"An easy-to-use centralised control system for as much of the technology in the home as possible was one of my main ambitions for this project" says Barry. "We were also looking for HVAC control which could offer us remote web access for convenience and the flexibility to locate stand-alone room thermostats where we wanted, so that we could preserve the look and feel of the interior, and have local control when we needed it".

Working with custom installer Libra Solutions and Hertfordshire-based HVAC contractor AFR Ltd, Sensible Heat has provided a versatile system built around



Temperature control from the RTI hand-held remote



A Crestron APAD in-wall display in each room controls heating, cooling, lighting, audio/visual.

its proven Hometronic wireless control technology.

For the heating, Sensible Heat has supplied its Hometronic control system to manage the wet underfloor heating from Nu-Heat which extends to 19 zones across all three floors of the property. This technology also controls the hot water services in the home, comprising three large hot water cylinders, the hot water circulation pump and the towel rail circuit. At the same time, Sensible Heat's Hometronic system is able to control the operation of the 14 Daikin air-conditioning heat pump units in the property which provide cooling in summer and boost heating in winter, especially when rooms



Wall mounted sensor/adjuster



Alternative thimble sensor
(not used on this project).

have been left unoccupied and need a burst of heating to warm up quickly.

Energy efficiency is a key benefit of the Hometronic system. It offers very precise time setting and temperature control throughout every zone in the house to optimise comfort levels and boost fuel efficiency, with a special eco mode able to maximise energy efficiency still further.

The Hometronic system is interfaced to the main Crestron control system using Sensible Heat Web Interfaces whilst wall-mounted wireless temperature sensors / adjusters are installed in every zone for local control, as and when required. This provides Barry with the greatest user flexibility. With these Sensible Heat devices (which

look like "conventional thermostats"), anyone can feel comfortable adjusting temperatures locally using the knobs on the sensor/adjusters. Alternatively, they can use the Crestron or RTI hand-held interfaces to make changes, whichever they find easiest to use.

Not everyone chooses the wall-mounting sensor/adjusters for their home. Sensible Heat also offers a more discrete sensing option, the "thimble" sensor, so-call because they resemble a thimble used for sewing. Whilst thimble sensors can be made to match a particular range of wall switches (e.g. stainless steel) or rendered virtually invisible by painting them in the same wall-colour, they don't offer any local adjustment. Barry was happy with the

aesthetics of the Sensible Heat sensor/adjusters, so these products were used on this project.

The operation of the heating and air-conditioning system is inter-locked to ensure that the heating never conflicts with the cooling operation, so maximising energy efficiency.

The Hometronic Web Interfaces enable Barry and his family to access and control the system from any PC via the internet, wherever they are in the world. So, they can switch the system on if they are returning home because of a change in schedule, or make adjustments to protect the fabric of the home if temperatures change dramatically when they are away.

The house also features a large





basement pool area where temperature and humidity is controlled by the Hometronic system. This area is also home to a critical sewage sump pump which if it fails would flood the basement and pool with sewage. The Hometronic system is managing the operation of this pump – in the event of a malfunction, a klaxon automatically sounds, and an alert appears on all the Crestron screens in the home.

Libra Solutions installed the whole-house Crestron system which includes an Adagio processor and APAD wall displays for integrated control of all the AV equipment and lighting in the property. The APAD and Adagio form a system by Crestron designed as an

‘out of the box’ multiroom audio system without the necessity for the usual programming. Libra Solutions re-programmed the equipment to produce an intuitive and easy to use system for the control of heating and ventilation, and also lighting, blinds and audio. RTI hand-held remotes can also be used to control any or all of these sub-systems, including the Sensible Heat Hometronic system.

“Sensible Heat’s system is exactly what I was looking for” sums up Barry. “It does precisely what we wanted it too – and, as far as I’m concerned, is the last word in convenience, simplicity, efficiency and versatility for heating and air-conditioning control. The whole family is delighted with it”.

Martin Noar of Libra Systems adds *“This integration has demonstrated the flexibility of Sensible Heat’s control protocol allowing integration with 3rd party products. Sensible Heat were extremely helpful and supportive in advising the best way to interface to their systems. After a couple of minor iterations, the system was up and running. They were very professional in their approach, with a high level of expertise and were a pleasure to work with”.*



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Sensible Heat are sole distributors of
Honeywell Hometronic in UK and Ireland

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A Sensible Heat Hometronic system is capable of controlling a wide variety of HVAC equipment including radiators, underfloor heating, boilers, hot water and air-conditioning systems. The Hometronic system is proven to bring dramatic improvements in comfort levels for the homeowner as well as energy savings in the region of 30%. As well as Crestron and RTI, a Hometronic System can be easily integrated as part of a whole house automation system run by AMX, Netstreams or Pronto. The Hometronic Manager can also be accessed remotely using wireless technology via the WebManager or a mobile phone. Based in Lewes, East Sussex, Sensible Heat operates nationwide across the UK and Ireland, providing a comprehensive design advice, supply, commissioning and after sales/technical support service.

For more information and further details, visit www.sensibleheat.co.uk or telephone +44 (0)1273 475834.

Note:

Since this project was completed, Libra Solutions has since merged with Marine Entertainment Systems Ltd (www.mesl.co.uk) who supply high specification entertainment, communication and security systems for land and marine based installations.

