

Beautifully
Efficient Heating
and Cooling
Systems

Invisible induction technology is the perfect heating and air conditioning solution in family home renovation.

The total renovation and extension of a mid-century family home in South West London gave the owners the opportunity to dispense with their gas fired boiler and radiator central heating system. The decision was made to replace it with the latest heating and air conditioning technology using renewables as the energy source. After researching the possible solutions, the Invisible.AC Small Duct Induction Air Conditioning, Heating and Ventilation System (sdHVAC) was selected as a versatile all year round solution. The installation is a great example of how the technology can be retrofitted into an existing traditional constructed residential property.

The renovated home now has accommodation spread over three storeys including a large open space kitchen and living area on the ground floor, family bedrooms on the first floor and a master en-suite bedroom on the top level. The owners are committed to environmentally friendly living and it had always been the intention to replace fossil fuel based heating with a green sustainable solution. In addition there was the practical consideration that any leakage from a hot water radiator might cause significant disruption and damage

discreet

Having learned about the all round benefits of Invisible.AC's sdHVAC heating capabilities – a technology that had been unfamiliar to the owners - it came as an additional bonus to discover that the system could be used for air conditioning too. “That turned the investment into a bit of a no brainer for us. A single system that we could use for our original intention – heating the home in the cooler months – but with the versatility to switch to air conditioning in the summer. And after our recent hot summers, that was a major attraction,” says owner AL.

Different rooms of the property have different heating requirements, depending on their orientation and how much sun they get. Some of the bedrooms can get colder more quickly than others, whilst the top floor master bedroom suite is understandably that much warmer. The vast open plan kitchen/dining/living area required some form of heating that would suit the space and not be subject to hot or colder corners.



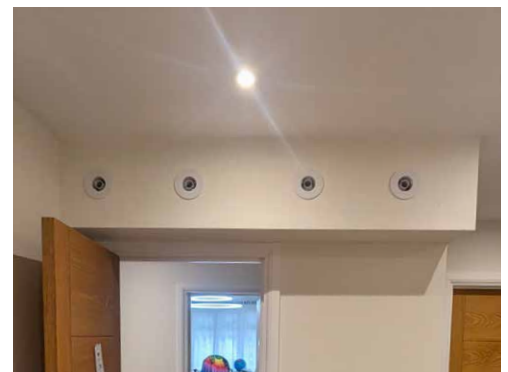
During initial site visits, Invisible.AC engineers had to assess the practicalities of retrofitting a system to a home where renovation work was already well underway and changes to the already agreed construction, including room layouts and the positioning of walls or partitions, could not really be altered. It proved a real system design challenge to work out how all the Invisible.AC supply ducting could be logically and successfully routed above ceilings, below floors and behind walls. However, the inherent flexibility and durability of the product, coupled with the ability to twist, turned and route it through these tight spaces, made the installation that much easier.

Having carried out heat loss calculations and carefully calculated the property's required demand for heating and cooling, Invisible.AC designed and proposed the specification of a Panasonic heat pump to provide the renewable energy source for two 10kW Invisible.AC jet fan coil air handlers. Their compact design would allow them to be conveniently located in the ground floor utility room with the other unit out of sight, but easily accessible, higher up the central stairwell that runs from the top to the bottom of the property.

quiet

In total 16 flexible mini-ducts lead from main ductwork, which is linked to the air handlers, into the different rooms of the property. The mini-ducts culminate in predominantly highly discreet round room outlets that have been specified throughout the home, but with some linear versions installed for practicality and design effect. They have all been carefully positioned to provide complete and even coverage with no cold or hot areas. They deliver forced air into the rooms using the aspiration principle resulting in equal temperatures throughout the spaces. Rooms also have their own Heatmiser room controller, so that although the system has been set up to provide precise levels of heating and cooling, there is the option for individual preferences to be set. “It’s a constant feeling of warm comfort wherever you are in the house,” says AL, “Not only that, but you can hardly hear the Invisible.AC system at all when it’s working.”

Indeed, when you walk around the house it’s hard to spot any evidence that a heating and cooling system has even been installed. The different styles of outlet just merge – almost invisibly - into the interior decor of the renovated home. The days of wall radiators are long gone, giving the owners much more flexibility into room layouts and the positioning of furniture.



In operation for over a year, the Invisible.AC system has clearly demonstrated its high levels of performance when it comes to heating the home and has worked faultlessly, meeting all the family’s requirements. “Summers are going to get longer and warmer according to the experts and that’s when our investment in this multi-purpose system will clearly come into its own thanks to the air conditioning mode. We are delighted both with performance of the Invisible.AC system and the care that was taken during the installation phase, cooperation with our other contractors and the minimal disruption caused,” says AL.

Compliance

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