



Response

Because underfloor heating entails a time lag of several hours between injecting heat energy into the floorslab, and releasing heat to the environment, this is usually out of step with our rapidly changing climate patterns. Solo instantly generates what's required when required.

Control

Underfloor heating is in fact a storage heater (which is degraded when carpeted or floored with wood). A wall stat located in static air cannot control comfort conditions throughout an area when used with underfloor heating. Remember a stat indicates the "now temperature", whereas a floor radiates "historic" heat input injected several hours previously which may have no bearing on the "now temperature" requirement.

Solo is a zero inertia fast response system.

Energy cost

With underfloor, a decision is made by a timeclock or wall stat to run the system for a period. By the time the heat is emitted, there may be no need for heat which cannot be stopped. This is extremely wasteful.

Upstairs operation

This is always problematic with underfloor systems, and usually results in radiators being used.

Zoning

Whereas underfloor heating requires complex manifolding and valving, Solo simply requires only a single flow and return in plastic or copper with no valves whatever in the system regardless of how complex the zoning plan is. This leads to much more reliability and simpler piping.

Water temperature

Boilers are inappropriate to the requirements of underfloor systems as the water temperature is too high. Reducing the temperature will destroy many boilers. Other methods are used to reduce the impact of the elevated water temperatures, but only heat pumps ideally match the requirements of underfloor heating.

Boilers produce water only at much higher temperatures to prevent corrosion, and this requires the use of mixing valves. These

devices contribute to boiler short cycling which destroys efficiency.

Solo however operates at any water temperature from 35-85°C.

Running cost

Solo based systems can operate at 50-70% or less, of the running cost of an underfloor system.

Health

Dust mites thrive in heated carpet and rugs,- particularly at high relative humidity levels now found regularly in modern poorly ventilated homes. The warmest part of an underfloor installation is the carpet where these irritants thrive. Solo in contrast, only heats the air, and gently filters the dust and lint while in operation.

Summary

People require to have control of their environment. The demise of electric storage heating was caused by lack of control and perceived high running cost.

Underfloor heating is also storage heating by a different name, and suffers from many of the shortcomings of it's electrical ancestors.

Underfloor in summary, represents a considerable improvement over radiators, but suffers from lack of any real control and excessive complexity.

International view

The efficiency review of energy use states that only where sustained low outdoor temperatures are the norm, will underfloor provide the efficiency and comfort levels required.

In our climate, we can get the four seasons during a typical winter morning, and this renders the use of underfloor inappropriate, though it is still superior to radiators in some instances.

Indeed as water temperatures are reduced by legislation, radiators will become even larger with even greater Thermal Mass.