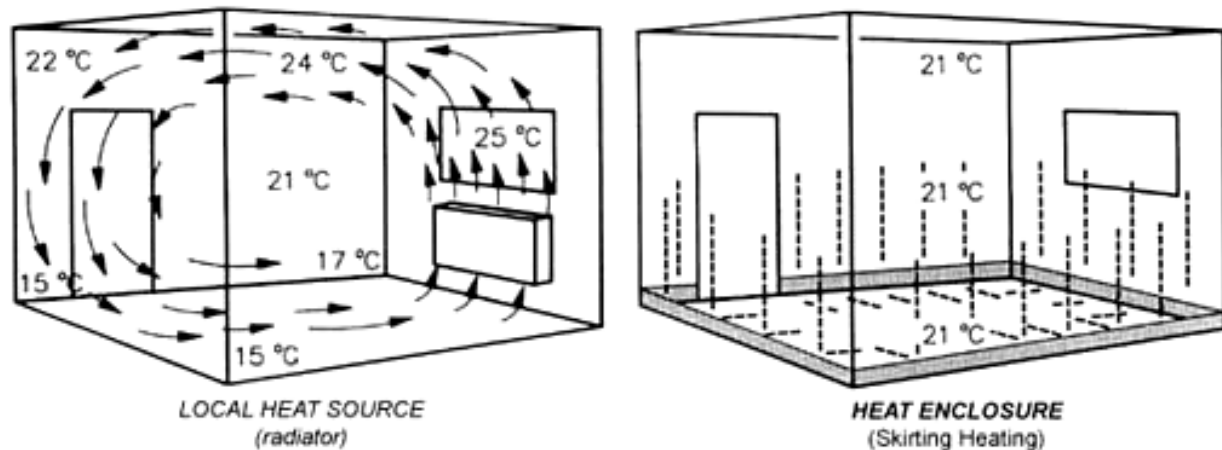


THE HEAT ENCLOSURE PRINCIPLE

This principle describes an effect and benefit achieved when using a low level heat distribution system to surround the occupants of a room. Heat applied in this way provides an even temperature condition to give greater comfort levels whilst conserving energy.

EFFECT AND BENEFIT EXPLAINED

By comparing the sketch details below it can be understood that any type of local heat source, e.g. radiator or fan-assisted heater, has to produce a large volume of surplus heat by convection or forced air effect to reach all areas and corners of the room. This results in uneven temperature extremes, excessive heat close to the heat source and at "high-out-of-reach" levels close to the ceiling, but with "cold spots" in the corners and at the floor level.



ELPAN and **WANPAN** skirting heating systems have been developed in parallel with laboratory test results and the practical application in the use of Heat Enclosure. Both skirting systems provide radiant heat emission balanced with the lightest of convection currents that permeate across the floor upwards and away from the walls to create a desired even temperature condition throughout the room from floor to ceiling and corner to corner to eliminate over-heated areas and cold spots.

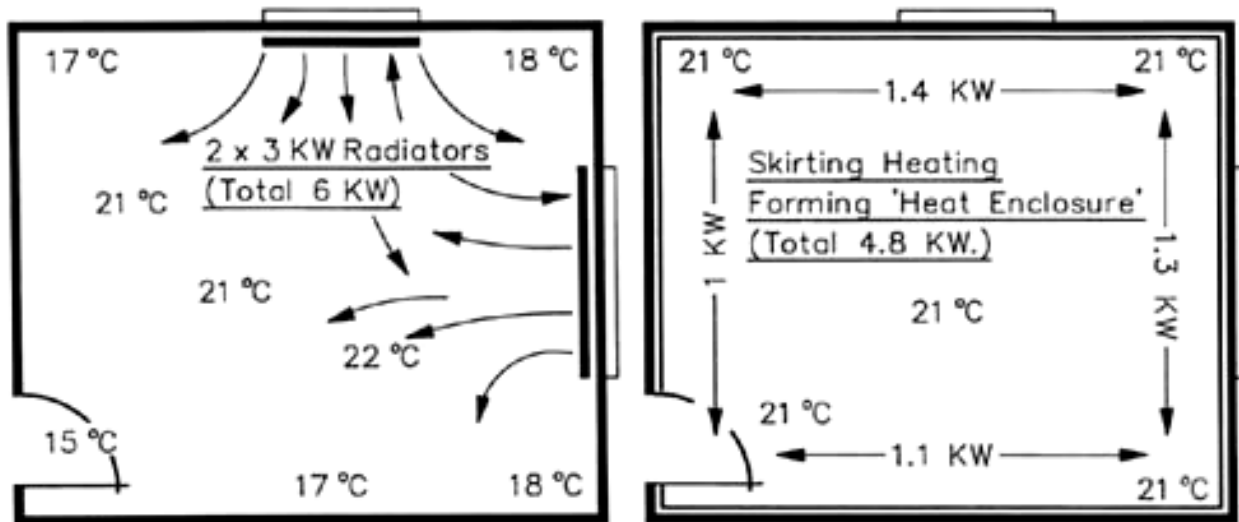
The skirting heating modules allow heat to be released in a uniform and controlled manner around the perimeter of the room literally "stretching" the available energy-heat to provide maximum operational efficiency and an even temperature condition.

ELPAN and **WANPAN** have the advantage of minimizing air turbulence to effectively reduce dust circulation whilst the air humidity content is protected to provide a cleaner and healthier living environment. The building fabric and furniture content are also less prone to deterioration as a result of excessively dried air conditions, house plants as well as people benefit from a more natural internal climate.

By use of Heat Enclosure, the expensive and wasted heat "blanket" that accumulates at ceiling level is eliminated and the "dried-out stuffy" air associated with radiator and forced air systems is greatly reduced affording an altogether higher comfort level with improved energy conservation.

ENERGY SAVINGS REALIZED

The example below indicates a direct comparison of energy consumption between a local heat source appliance and ELPAN/WANPAN when used to provide for total Heat Enclosure.



COMPARISON OF ENERGY CONSUMPTION - LOCAL HEAT SOURCE AND HEAT ENCLOSURE

From laboratory and practical test experience, if either the ELPAN or WANPAN skirting heating systems are installed in the way indicated above the energy consumption required may be reduced by a factor of 0,8 against that considered necessary for local heat appliances (radiators etc).

- **Local heat source** rated at 6 kW (effect: poor uneven heat distribution)
- **Heat Enclosure** rated at 4.8 kW (effect: uniform heat distribution)
- **Energy saving** with Heat Enclosure 1.2 kW = 20% (0.8 factor)

Further energy cost savings are obtainable by using the special electronic thermostats developed for use with ELPAN and WANPAN skirting heating systems.

ELPAN and WANPAN may also be used for specific requirements other than full heat enclosure, the efficiency/energy savings are dependent and proportional to the arrangement specified and the controls used.

ELPAN and WANPAN - Heat Enclosure systems are now in use in 27 countries, mainly in Scandinavia. Following their introduction by Internal Control Ltd. to the United Kingdom during 1985 the systems are now in use in a wide variety of buildings ranging from three hundred year old thatched cottages to the latest design in hi-tech commercial buildings.

SPACE - FREEDOM - COMFORT - ECONOMY