Thermal Design Solutions

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Air-To-Water Heat Pump Systems

An air-to-water heat pump extract energy from the outside air and transferring it into water, which can then be used for underfloor heating, radiators, or domestic hot water. The system is designed to deliver efficient, reliable comfort while reducing energy use and environmental impact compared to traditional heating methods."

Key Features

- Very energy efficient (300-500%).
- Works well in mild to cool climates.
- Low running costs compared to gas or electric heating.
- Can provide both heating and cooling.
- Ideal for low-temperature hydronic systems (e.g., in-slab floor heating).
- Hydronic heating & domestic hot-water in one system.

Consideration

- Higher upfront cost than gas heaters.
- Best efficiency at low water operating temperatures (35–45°C).
- May require larger radiators to deliver enough heat.
- Professional design and installation is essential for best performance.

Applications

- Energy efficient homes.
- New & existing whole home heating, radiators and floor heating.
- Whole home heating in existing homes.
- Properties using solar PV for electricity.
- Buildings aiming for low carbon emission.
- High temperature heat pumps (90°C) for commercial applications.