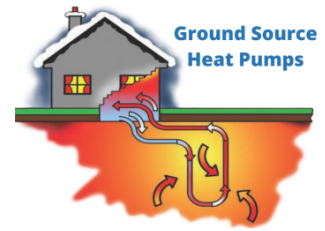


# Alternative Heating & Cooling Ltd.



***Heat* Pumps & *Underfloor* Heating**

# Alternative Heating & Cooling Ltd.



Alternative Heating & Cooling Ltd has been offering renewable energy systems since 2001. We provide high quality heat pump installations that are carefully selected to provide heating, cooling or hot water solutions tailored to each individual project.

## Product Knowledge and Technical Excellence

At AHAC, our thorough system design and after-sales service ensure that all projects will be designed, installed, and maintained to the highest standards possible.

We aim to find the most suitable and cost-effective renewable energy solution for our clients. The projects we work on are turned around quickly yet accurately and on budget while providing an exceptional level of product knowledge, technical excellence, and installation support.

Our reputation has grown for installing well designed and efficient renewable heating systems that are supported by a experienced customer service team.

## System Design

We provide a specific design for every project whether it be any residential, commercial, or an industrial development.

## Contact Details

Email : [info@ahac.ie](mailto:info@ahac.ie)  
Phone : +353 (028) 23 701  
Web : [www.ahac.ie](http://www.ahac.ie)  
SEAI Contractor ID : 10349

Unit 3, IDA Industrial Estate  
Baltimore Road, Skibbereen  
Co Cork, Ireland  
P81 WY96

## Open Hours

Monday - Friday	9am - 5pm
Saturday - Sunday	Closed



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# WHO WE ARE

Alternative Heating & Cooling Ltd. was founded by Mike Cotter and Brendan Harte in 2001. Since then, our team has grown in numbers, whose qualifications include:

- Marine Engineer (*steam and motor*)
- Qualified plumbers through **FAS** training
- Computer Engineering
- Sustainable Energy Engineering
- All relevant safety courses to comply with Irish Building Regulations.
- Electrofusion Welding Certification
- **F-GAS** Refrigeration Certificate
- Heat Pump Association of Ireland member
- Geo-Exchange Designer Course - certified by the *International Ground Source Heat Pump Association* (IGSHPA): *The Association of Energy Engineers* (AEE) and *Geothermal Heat Pump Consortium*

AHAC provides a wide variety of top quality heat pumps for the domestic and commercial markets, catering for all varieties of heating and cooling applications with over **3500** heat pump installations nationwide. The majority of these were geothermal heat pumps prior to 2011. After which, Air Source systems have become very popular due to the major advance in the air source technology. Geothermal Heat Pumps are still popular due to their all year round efficiency and for high solar gain dwellings where cooling is required. A very strong after sales service has boosted our reputation as an industry leader.



## Our Aim

To keep AHAC on the map as the leading supplier & installer of renewable energy heating and cooling solutions while continuing to sustain quality and perfection.

Here at AHAC, we concentrate on:

- Providing excellence to our customers from the early stage of the project through to after sales service
- Ensuring quality is maintained
- Employing, training, and retaining the best people in the industry
- Being flexible and responsible in meeting our customers expectations
- Being a leader in innovation and new renewable energy technologies
- Possessing in-depth product knowledge

## Customers Vs Product

With a vast amount of renewable solutions of various complexity available (*plus online information overload*), it is very difficult to know which the best solution is for you as a customer. AHAC can advise you on the best and most suitable technology to meet your needs. We work with you, the customer, to provide a system that will achieve the highest efficiency within your budget, whilst also providing comfort 365 days of the year to suit your lifestyle. With over 20 years of experience, we have the knowledge to maintain and integrate into older systems whilst staying up-to-date of the ever-changing new and modern requirements of a dwelling.

## Protecting the Environment

Renewable energy and sustainable development have moved to become a constant factor in every person's lifestyle, and in this way we can help protect the environment that we live in. The use of precious non – renewable resources is becoming a challenge for us all, and any investment towards sustainable development will help in protecting the environment while in turn saving you money on energy bills.





# WHAT WE DO

## *Heat Pumps*

A heat pump installed correctly can reduce energy by as much as 30%-60% compared to oil. All the below heat pumps will cover 100% of your hot water and heating needs.

### **Ground Source**

Ground Source / Geothermal Heat Pumps extract heat from the ground via a closed vertical / horizontal heat collector. Ground Source Heat Pumps allow home owners to heat their homes utilising the unlimited heat stored in the ground. They operate on the principle that the earth beneath the surface remains at a constant temperature throughout the year, acting as a heat source in winter and a heat sink in summer. Passive cooling (*using minimal electricity pumping cost only*) in modern houses accounts for a swing back to WaterFurnace Heat Pumps.



### **Air Source**



Air Source Heat Pumps absorb energy from the outside air in the same way that a fridge extracts heat from the inside. It can absorb heat from the air when the temperature is as low as -20°C. These systems require no civil works and are therefore an ideal solution for most existing houses. One disadvantage of Air Source Heat Pumps is that they are susceptible to salt air corrosion, special coatings are used to prevent this, and so installations that are closer to shorelines continue, but with caution to the homeowner.

### **Water Source**

Water Source Heat Pumps extract heat from water via an open loop / lake / pond heat collector. They use well water or water from a stream / river as its heat source, which is pumped through the heat exchanger and is discharged back after the heat is extracted. Due to the high temperature of underground water the efficiency of a water source heat pump typically exceeds 500%. This can also be used in conjunction with a domestic well water supply, which then provides two solutions in one.



**Suppliers for:**

**Panasonic**

**WaterFurnace**   
Smarter from the Ground Up™

## Underfloor Heating & Controllers

Underfloor Heating Systems are heated by warm water circulating in continuous pipe loops that are clipped to tracking, which is embedded in concrete. There are no joints in the pipe which ensures 100% reliability. The pipes in the floors can reach a temperature of 30°C if necessary, but normally 22°C to 24°C surface temperature which leaves a comfortable room temperature of 21°C which can be adjusted to the user's own desire, and bedrooms can run cooler.

---

## Heat Pump Servicing & Maintenance

AHAC carries out its own service/maintenance on most makes and models of heat pumps, including models that are no longer in production. Even older Geothermal systems are worth maintaining due to their longer lifespan & less maintenance than Air to Water systems.

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## Site Surveys / System Specifications

Any person considering building or retrofitting and is thinking of replacing or upgrading their existing heating system can send in their plans or ideas to us, and it will be dealt with in a quick and professional manner. We can visit you on site to get a better understanding of what you want and sit down with you and discuss what the best solution is for you. An example of a benefit of site surveys is to assess if salt corrosion is a problem, which is detrimental to all Air Source systems.

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## Bespoke Systems

We create customised energy-saving solutions. If your building or application requires heating below 50°C, typically met by oil or gas, heat pumps should be considered as an alternative.

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## Dehumidification Systems

We provide dehumidification units for various applications, e.g. drying rooms in fire stations (*removes moisture from wet gear*), seaweed drying, swimming pools, etc. Conventional dehumidifiers (*such as those available in tool hires*) run at temperatures up to 25/30°C. HiDew dehumidifiers can run up to 45°C ambient air temperature under control conditions (*high airflow & specific refrigerant charge levels*) and modified gas.

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## Pool & Spa Heating

Due to a desired 30°C water temperature, heat pumps are an ideal solution for swimming pool heating, providing an economic and energy efficient means of delivering constant pool water temperature throughout the year. Air Source heat pumps are suitable due to their low installation cost and efficiency at high temperatures during the summer although Geothermal should be considered for more effective all year round operation.

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# WHY USE HEAT PUMPS?

A heat pump is one of the most effective ways to heat or cool a building using renewable energy. Unlike many other forms of renewable energy that depend on the sun shining or the wind blowing, the energy for the heat pump is always available. Heat is widely available in the ground, air, and water around your house. These natural sources of heat are constantly replenished by the sun, wind, and rain. A heat pump will harness these free and renewable energy sources for heating your house and supplying hot water at a very low cost.

## Annual Costs

Independent studies have proven that heat pumps are cheaper and more efficient than fuel oil, gas, and wood pellet heating. However, attention to detail on the installation is crucial to keeping running costs down. Correct commissioning by your installers is important, altering the controls will have an impact on your annual cost.

***Search "SEAI Domestic Fuel Cost Comparison" for an accurate & updated chart.***

## Benefits of Using Heat Pumps

- **Limitless kW** - Unlimited energy available in the ground and air
- **Economical** - Provides operating cost savings of 30% to 60% over conventional oil / gas
- **Comfortable** - Maintains an even temperature and humidity level when used in conjunction with underfloor heating
- **Safe** - No open flames, fumes, or exhausts
- **Environmentally Friendly** - Our systems emit no carbon dioxide, carbon monoxide, or other greenhouse gases
- **Flexible** - A single Heat Pump can handle heating, cooling, and hot water up to 60°C (Some up to 70°C with R290 Propane gas)
- **Lifespan** - Air-Source can last up to approx. 15 years and Geothermal up to approx. 20 years
- **Efficiency** - As much as 5 times as efficient as conventional systems
- **Low Running Costs** - e.g. to heat a 2500 sq ft house for as little as €600 per year (BER rating of B1)
- **Range** - Units available for all sizes of dwellings, new and existing
- **Value** - Increases the value of your home and lowers energy bills
- **BER** - Improves your Building Energy Rating (BER)



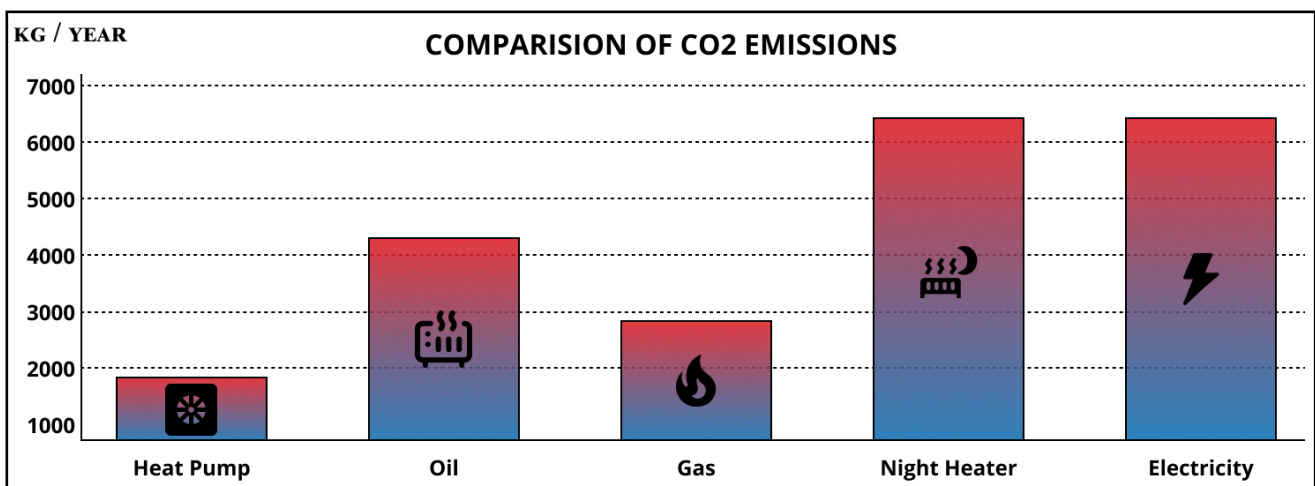
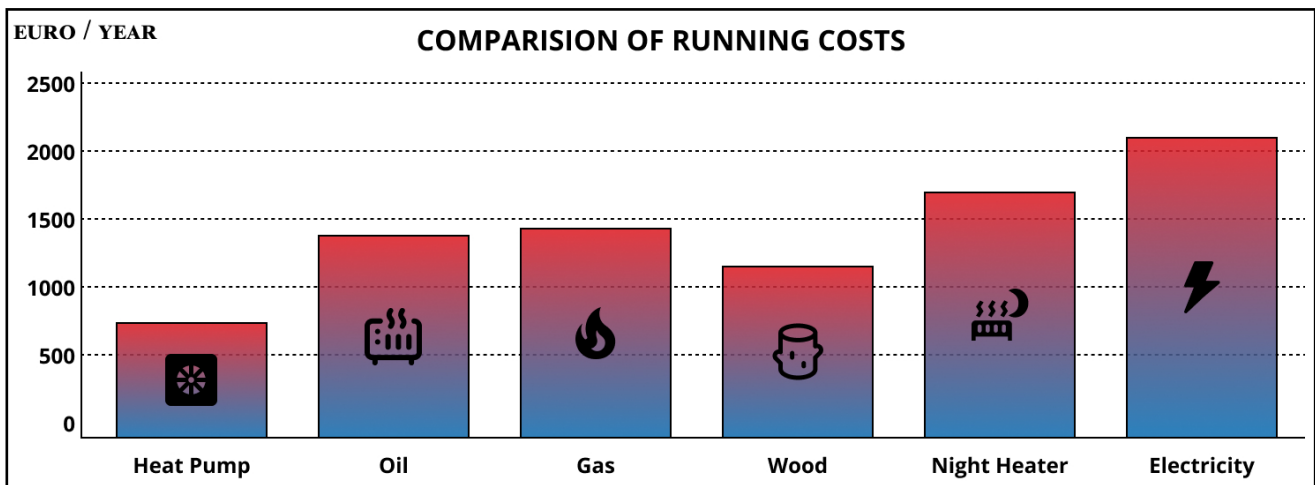
## Heat Pump Efficiency

Heat pump efficiency / Coefficient of Performance (COP) is obtained by comparing how much energy it consumes in order to complete the heating and cooling cycle. COP is defined as: "The ratio of heat delivered by the heat pump and the electricity supplied to the compressor."

**Electricity is needed to power the heat pump, but for every unit of electricity used, it will generate 3-6 units of useful heat, largely dependent on outdoor temperatures and delivery temperature. A COP of 4.2 or above is considered average.**

$$\text{COP} = \frac{\text{Kilowatts Delivered}}{\text{Kilowatt Input}}$$
  
Output ÷ input

**e.g - WaterFurnace 8kW,  
 $8\text{kW} \div 1.8\text{kW} = \text{COP of } 4.45$**



**FIGURES FOR A 180 m<sup>2</sup> HOUSE, PANASONIC AIR SOURCE HEAT PUMP, HOT WATER FOR 4 PEOPLE AND UNDERFLOOR HEATING THROUGHOUT.**

# HOW HEAT PUMPS WORK

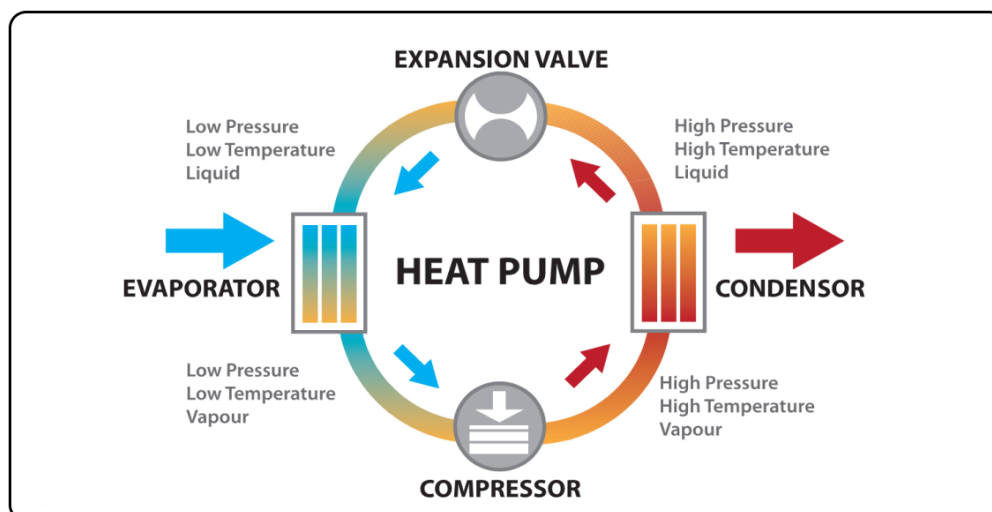
**The heat pump has the ability to extract heat from one source (i.e. ground or air) and discharge it into another (i.e. underfloor or radiators).**

The heat pump works on the same characteristics as a standard domestic fridge, but instead of cooling, it heats. Heating and cooling are achieved by moving refrigerant through various indoor and outdoor coils and components.

A compressor, condenser, expansion valve, and evaporator are used to change the state of refrigerant from a liquid to a hot gas and from a gas to a cold liquid.

## *Main Stages*

- 1. Evaporation (Source)** - The refrigerant (*liquid state*) passes through the outdoor evaporator at a low temperature. The water/antifreeze from the ground loop or air enters the unit, and heat is transferred from this water / antifreeze / air to the refrigerant. The refrigerant begins to boil and changes to a vapour.
- 2. Compression** - The vapour is pressurised by the compressor where the increased gas pressure results in a much higher temperature than the original source temperature.
- 3. Condensation** - The vapour then enters the condenser heat exchanger, and the heat is given up. At this point, the heat is transferred to the buildings heating, and hot water systems. As it passes through the condenser / heat exchanger, it cools and turns back into a liquid.
- 4. Expansion** - The refrigerant, which is now cooled liquid at high pressure passes through an expansion valve, which reduces the pressure so that the liquid can re-enter the evaporator and begin the cycle again.



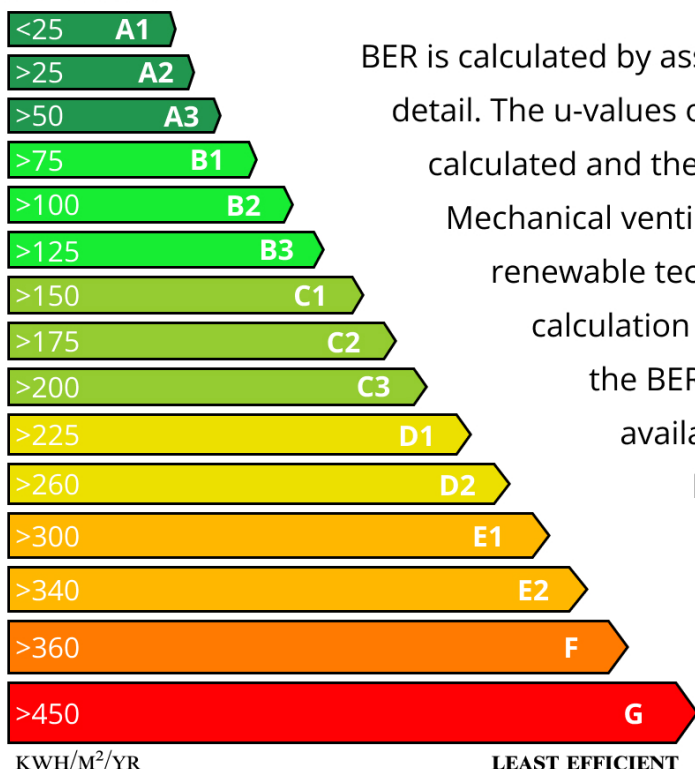
**DUE TO EU REGULATIONS, HFC (HYDROFLUOROCARBONS) REFRIGERANTS ARE BEING PHASED OUT. THIS INCLUDES R32 & R410A. GASES SUCH AS R290 & R454B WILL BE THE REPLACEMENT GASES.**

# WHAT IS A BER?

**A Building Energy Rating (BER) Certificate calculates the energy performance of a building on a scale from A to G. A-rated houses are the most efficient and G the least efficient. All new dwellings and houses offered for sale or lease require a BER.**

There are two types of BER, a provisional and a final BER. A provisional BER is based on plans and specifications of a new building and is valid for 2 years. A final BER is issued on completion of a new building and is valid for 10 years once there is no material change to that building. Existing buildings can also have a BER assessment carried out to determine their efficiency, and that certificate is also valid for 10 years.

**MOST EFFICIENT**



BER is calculated by assessing the major components of the building in detail. The u-values of walls, roofs, floors, windows, and doors are all calculated and the efficiency of the heating and hot water systems. Mechanical ventilation, air tightness, energy-efficient lighting, and renewable technologies are all assessed and combined in the calculation to determine the building's energy rating. Once the BER is calculated, a large amount of info becomes available, including annual energy use for fans, water heating, heat pumps, space heating, lighting, etc.

*e.g. 200 m<sup>2</sup> house with a B1 rating should require 15,000kWh of energy per year for space heating (200 x 75kWh). 17,000kWh including hot water usage.*

## Grants

**Grants for heat pumps in Ireland are provided by the Sustainable Energy Authority of Ireland (SEAI) to encourage Irish homeowners to switch to sustainable heating. To qualify for a heat pump system grant, your home must have sufficiently low heat loss and must be a first time heat pump system.**

Homes built before 2007 require a Technical Assessment (from an SEAI registered Technical Assessor) and for homes built from 2007 onwards, either a Self-Declaration form or a Technical Assessment. There is a grant towards the assessment. Individual Heat Pump Grants are available (Not linked to One-Stop Shops). Our SEAI Contractor ID is **10349**.

**FOR ACCURATE INFORMATION & TO APPLY FOR A GRANT, VISIT [SEALIE](#) OR SCAN THE QR CODE**





# HEAT SOURCES

As we are at the forefront of heat pump installation, we can undertake all aspects of ground source preparation for our clients. We offer the full range of collectors and will design a system that fits best with the land, available water source, local geology, and your heating needs. Since the early days, we've installed collectors in hundreds of different soil conditions and rock formations. This experience, combined with close cooperation with the best drilling operators in the country, gives us local knowledge from Malin head to Mizen head.



**CLOSED VERTICAL BOREHOLE LOOP**



**POND/LAKE LOOP**



**CLOSED HORIZONTAL LOOP**



**AIR SOURCE HEAT PUMP**



## *Main types of Heat Sources*

### **Closed Horizontal Loops**

Horizontal loops are often considered when adequate land surface is available. Pipes are placed in trenches in lengths that range from 30m to 70m and at a min depth of 1m.



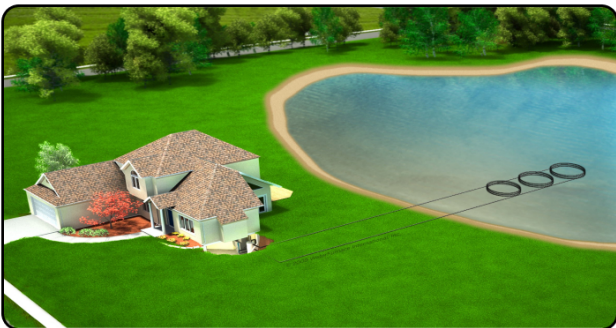
### **Closed Vertical Loops**

Vertical loops are an option when land surface availability is limited. Well drilling equipment is used to bore 150mm diameter holes from depths of 60m to 120m.



### **Pond / Lake Loops**

Pond/Lake Loops are economical to install when a body of water is available because excavation costs are eliminated. Coils of pipe are placed at the bottom of a lake.



### **Air**

The heat is extracted from the outside air, facilitated by a refrigerant circulating in the system. This heat is then transferred using sophisticated heat exchangers.



### **Open Loop System**

Open Loop systems utilise ground water as a direct energy source. In ideal conditions, an open loop application is the most economical type of geothermal system. Although predominantly used for commercial or farm applications, these can be economically used where the water table is high.



# GEO THERMAL HEAT PUMP



We have been using **WaterFurnace** heat pumps since the company started in 2001 and have over 2000 machines installed nationwide. These machines are very efficient, reliable, and straight-forward. We here at AHAC know the machines inside and out. Available for both single and three phase power supplies in various sizes ranging from 6kW to 150kW.

## Features of WaterFurnace Ground Source Heat Pump

- Economical
- Reliable with a 20 year lifespan (*approx.*)
- Low Maintenance co-axial heat exchangers (non-fouling)
- Water Heating to 55°C & processing chilled water down to -12°C
- Stackable for space conservation
- Latest F-GAS R454B replacing R410A
- Designed to operate with entering source water temperatures of -15°C to 43°C
- Heated or chilled water (*process liquids*) from the same machine
- Modularised design for optimum capacity matching and staging
- COP's are between 3 and 6 , delivery temperature dependant
- Long-life *Copeland* scroll compressor runs 35,000 hours (*on average*)



RESIDENTIAL, 12KW COOLING, X3 UNDERFLOOR ZONES & HOT WATER



RESIDENTIAL, 8KW COOLING, X3 UNDERFLOOR ZONES & HOT WATER





**LARGE DOMESTIC (CASTLE), 50kW HEATING & 12kW HOT WATER**

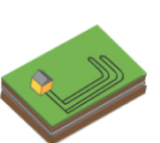
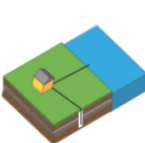
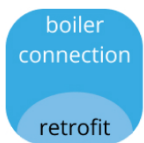


**LARGE DOMESTIC, 17kW (ON HEAT ONLY) & 8kW ON HOT WATER + HEAT**

Model	NSKW06		NSKW08		NSKW12		NSKW17	
Weight	102kg		132kg		147kg		157kg	
Dimensions (mm)	D597 x H663 x W495		D787 x H665 x W559		D787 x H665 x W559		D787 x H665 x W559	
Operating Range	W10/W35	B0/W35	W10/W35	B0/W35	W10/W35	B0/W35	W10/W35	B0/W35
Heating Output	7.3	5.8	10.6	8.3	14.4	11.6	21.4	16.6
Input Power (kW)	1.52	1.53	2	1.98	2.72	2.8	4.55	4.49
COP	4.8	3.8	5.3	4.2	5.3	4.2	4.7	3.7
Harp Database	425%	367%	470%	407%	470%	407%	420%	363%

(OPEN LOOP) W10/W35 = WATER IN AT 10°C/WATER OUT AT 35°C

(CLOSED LOOP) B0/W35 = BRINE IN AT 0°C/WATER OUT AT 35°C



## Large Commercial/Industrial Units

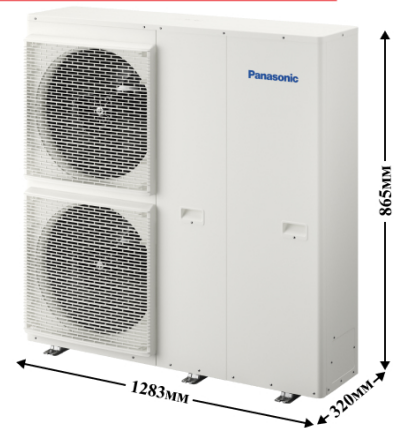
WaterFurnace offers a range of heat pump solutions tailored for commercial use. Industrial Geothermal Heat Pumps ranging from 30kW to 450kW that ensure efficient heating solutions.

Controlled with HydroLink Aurora systems and using eco-friendly refrigerant, these units combine high performance with environmental responsibility. Over 150kW, bespoke individual twin screw compressors are built with outputs up to 950kW.



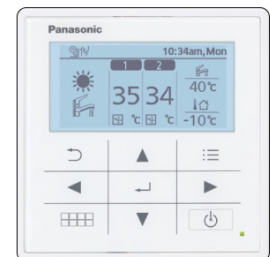
# AIR SOURCE HEAT PUMP

**Panasonic Aquarea** Air to Water Heat Pumps for domestic and commercial applications offer capacities from 5kw to 16kw. The Aquarea Heat Pump domestic range is the widest on the market, ensuring a system is available for whatever your heating and cooling needs. Suitable for new build and refurbishment projects, the solutions are cost effective with low building / construction costs!



## Features of Air Source Heat Pump

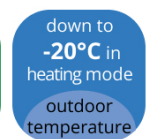
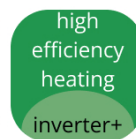
- High Efficiency & Market Leader
- Very Flexible, can connect to an existing heating system
- Reduces energy consumption and CO2 emissions
- Reduces energy costs with its COP of 4.8 @ 7/35
- Wide range from 5kW to 16kW, single and three phase
- Operating range from -20° to +35°C
- Monobloc i.e. externally located
- R32 gas being phased out in favour of R290, models may vary



RESIDENTIAL, 9KW SPACE HEATING & HOT WATER



RESIDENTIAL, 12KW SPACE HEATING & HOT WATER



## 2 Versions of Panasonic Aquarea Air Source Heat Pumps

### T-CAP ( J Series )

This is our most popular unit, this heat pump will deliver the same kW at all times, even when the outside temperature is as low as -20°C. Proven to be most suitable for Irish climate due to rapid changing weather / temperatures and its ability to respond quickly, e.g a 12kW T-CAP delivers 12kW at 7°C and 12kW at -7°C.

### High Performance ( H / J Series )

For a more cost effective solution on low energy houses, the high connectivity Aquarea High Performance heat pump is a perfect solution, working as a stand alone unit or can be combined with a gas or oil boiler depending on requirements. This solution has the best ratio for heating capacity and efficiency.

**Min / Max Water Temp : -20°C / 55°C**

Panasonic Heat Pump Model	WH-MDC05- J	WH-MDC07 - J	WH-MDC09 - J	WH-MXC09 - J	WH-MXC12 - J	WH-MDC16 - H
<b>kW Output</b>	5kW	7kW	9kW	9kW	12kW	16kW
<b>Weight</b>	99kg	104kg	104kg	140kg	140kg	140kg
<b>Dimensions (HxWxD - mm)</b>	865x1283x320	865x1283x320	865x1283x320	1410x1283x320	1410x1283x320	1410x1283x320
<b>Input Power (kW)</b>	Divide Heating Capacity by COP to get the Input Power e.g. 12kW / COP of 4.80 = 2.50kW					
<b>Heating Capacity/COP [A+7°W35°]</b>	5.00/5.08	7.00/4.76	9.00/4.48	9.00/5.08	12.00/4.80	16.00/4.28
<b>Heating Capacity/COP [A+7°W55°]</b>	5.00/3.01	7.00/2.82	8.95/2.78	9.00/3.08	12.00/3.05	14.50/2.72
<b>Heating Capacity/COP [A+2°W35°]</b>	5.00/3.57	7.00/3.40	7.45/3.13	9.00/3.81	12.00/3.53	13.00/3.28
<b>Heating Capacity/COP [A+2°W55°]</b>	5.00/2.27	6.30/2.16	7.00/2.12	9.00/2.54	12.00/2.42	9.80/2.21
<b>Heating Capacity/COP [A-7°W35°]</b>	5.00/2.78	6.80/2.81	7.50/2.63	9.00/3.08	12.00/2.82	11.40/2.57
<b>Heating Capacity/COP [A-7°W55°]</b>	5.00/1.85	6.30/1.86	7.00/1.80	9.00/2.12	12.00/2.00	9.00/1.84

### Large Commercial/Industrial Units

The **ECOi-W Series** offers a customisable and reliable solution for commercial clients, with efficient fan coils, and a capacity range from 20kW to 210kW, ensuring enhanced comfort and support.



**Min / Max Water Temp : -20°C / 60°C**

### Future of Panasonic Heat Pumps

All New **M Series** of Panasonic Heat Pumps that are on its way in 2025. 3 main changes :

- **Anthracite Grey (outdoor unit)**
- **R290 / Propane Gas**
- **10°C Higher Water Output Temperature**



**Min / Max Water Temp : -20°C / 65°C**



# UNDERFLOOR HEATING

Underfloor heating, popular for its luxurious warmth, is exceptionally efficient when paired with a heat pump, thanks to its low water temperature requirement.

This makes it an ideal choice not only for residential settings but also for various commercial spaces like schools, hospitals, and gyms, offering consistent comfort and energy savings across diverse environments.

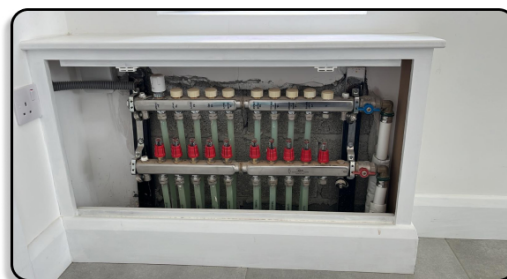
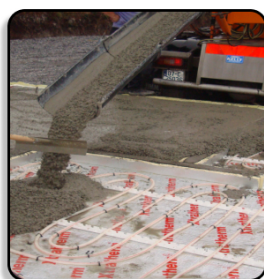
## Benefits of Underfloor Heating

- **Comfort** – The radiant heat from underfloor heating creates a cosy atmosphere, with no cold spots or drafts typically associated with traditional heating systems.
- **Energy saving** – When paired with a heat pump, underfloor heating operates at lower water temperatures, reducing energy consumption and lowering utility bills.
- **Invisibility** – Place furniture anywhere that suits the room without the worry of affecting the radiator's efficiency.
- **Ease of Maintenance** – Underfloor heating requires minimal maintenance, reducing long-term upkeep costs.
- **Long Lasting** - 25 year warranty from **Roth** due to their complete trust in their product.
- **Zero Noise** - Runs silently, without the noise of fans or radiators expanding and contracting.
- **Enhanced Property Value** - Adds a desirable feature to homes and commercial properties, potentially increasing resale or rental value.
- **Older Buildings / Renovation** - High thermal mass floors combined with old stone walls equals the best combination.
- **Passive Cooling** - Modern south facing houses are tending to overheat with solar gains. We can address this.



## Design

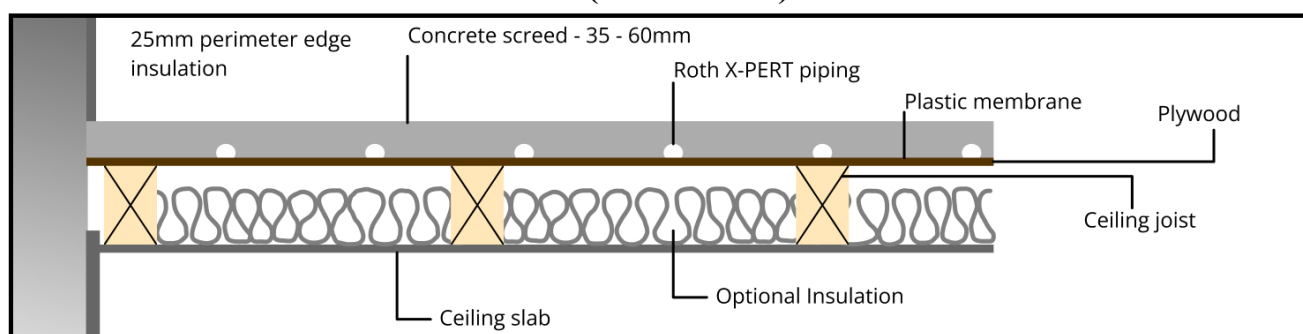
In Ireland, standard pipe spacing is typically 200mm (8"), but we narrow it to 150mm (6") in standard rooms and 100mm (4") in high-heat-loss areas like bathrooms and sunrooms. We carefully plan pipe lengths, room zoning, manifold placements, and thermostat locations for precise control. Informing us in advance about floor coverings such as tiles, carpet, or timber is crucial for optimising heat transfer efficiency. The depth of concrete / liquid screed is also taken into consideration for performance and running costs.



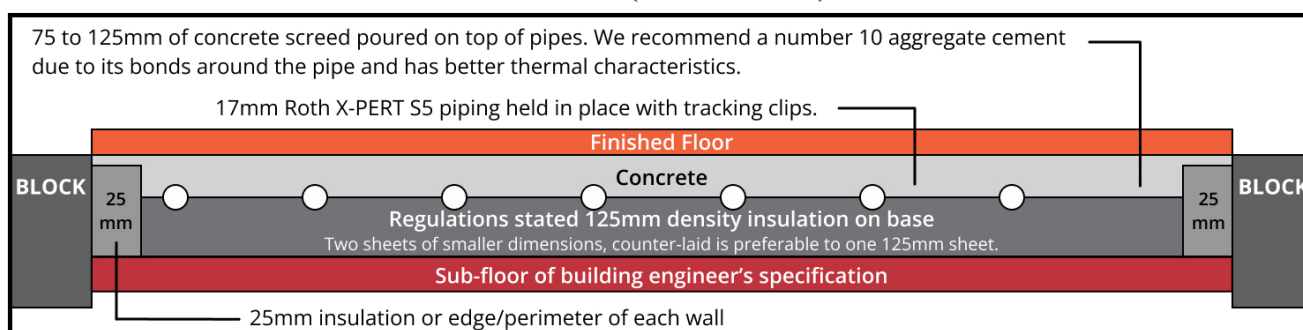
## Installation Method

Installation typically occurs at foundation level, taking a day to complete on domestic sized properties. High-density insulation sheets, upwards of 125mm thick, are laid atop the subfloor (*by builders*), with Roth X-PERT pipe loops spaced approximately 150mm apart across the entire floor area. All rooms are piped back to the underfloor manifold and undergo an air pressure test up to five times the working pressure, followed by pouring concrete over the pipes and insulation. This serves as the finished floor under your chosen floor covering. The warm water circulating through the pipes heats the concrete slab to approx. 24°C, naturally radiating heat into the room for a temperature of 21°C.

### UNDERFLOOR HEATING FIRST FLOOR LAYOUT (NOT TO SCALE)



### UNDERFLOOR HEATING GROUND FLOOR LAYOUT (NOT TO SCALE)



# ROTH UNDERFLOOR

We are the sole supplier in Ireland for Roth products. Roth are one of the largest suppliers of Underfloor Heating Systems in Germany and distribute throughout Europe. Being an OEM, they operate a fully automated production line, manufacture and distribute high quality products & services. For more information on products, go to - [www.roth-uk.com](http://www.roth-uk.com)

## Products Available

### Roth System Pipes X-PERT S5

Five layer safety pipe in accordance with DIN 16833/16834 & 4726 & 4721, protected from increased mechanical demands by a PEX coating. The special yellowish surface layer signifies the highest degree of resistance against external influences during storage, transport, and installation.

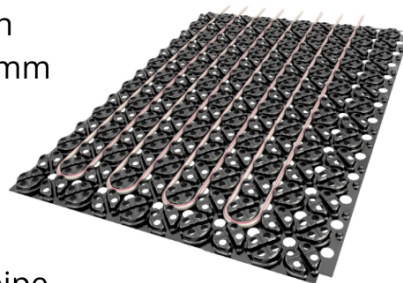
- The X-PERT+ material, which is resistant to stress cracking and thermal ageing
- The pipes can withstand up to 70°C (with short-term peaks up to 95°C) and pressures up to 6 bar, ensuring reliability under various conditions
- The pipes are flexible and easy to handle, even in cold temperatures, facilitating quick and efficient installation
- Available in multiple sizes: 11mm to 20mm, standard sizing is 17mm with a 2mm wall
- Warranty : 25 years



### Roth ClimaComfort Compact System Panel

The Roth ClimaComfort Compact System Panel provides an advanced underfloor heating solution with its panel structure and pipe fixation. Specially designed undercutting ensures standardised placement of pipes, arranged in coiled or meandering patterns. The panels interconnect through overlapping edges, and the adhesive backing ensures comprehensive adhesion to the surface. Designed as an alternative to radiators in houses that don't have a concrete floor. Typically laid on plywood / OSB.

- Dimensions: 1072 x 772 x 17mm per panel section
- High strength transparent system panel with a 17mm installation height, of semicrystalline material
- Installation height of 17 mm, ideal for projects needing minimal floor build-up
- Great option for renovations
- Total installation height of 17mm, using 10.5mm pipe



CLIMACOMFORT  
YOUTUBE LINK



TOTAL SCREED COVERAGE 17-50MM CAN BE ACHIEVED USING MANY AVAILABLE GROUTS, MARKETING LEADER IS *LARSEN SLC 1550*



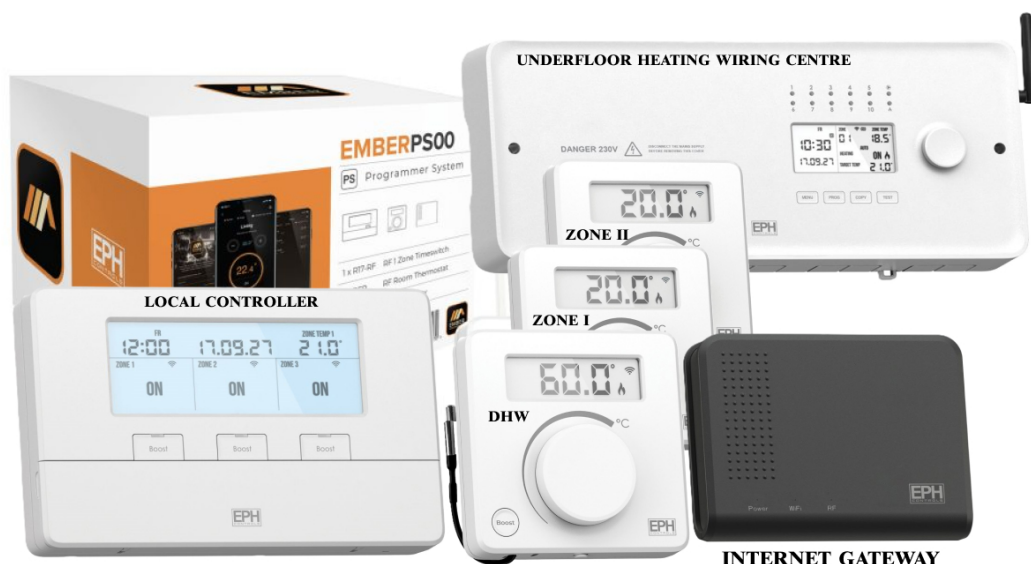
# EPH CONTROLLERS

For optimal efficiency in our underfloor heating system, we employ an advanced thermostat controller designed by **EPH Controls** manufactured locally in Cork, Ireland, that is capable of regulating air temperature with precision down to 0.5°C, ensuring consistent comfort even on the sunniest days. Additionally, their range includes actuators for sub-zoning, room thermostats, and motorised valves.

Take control of your heating system anytime, anywhere with **EMBER** by EPH Controls. Their system features WiFi-ready RF thermostats and programmers that seamlessly connect to your router via their WiFi gateway (*additional charges may apply*).

## Features of EPH EMBER Pack Controller

- **Smart Device Integration** - Control your heating through the EMBER app on smartphones and tablets, allowing adjustments from anywhere, especially when paired with a gateway like the GW04.
- **Ease of Use** - The system is designed for easy setup and intuitive control, making it user-friendly even for those who are not tech-savvy. The app provides functionalities like schedule adjustments, temperature boosts, and holiday modes.
- **Energy Efficiency** - Precise control over heating schedules and temperatures helps reduce energy consumption and lower heating bills.
- **Multi-Home and User Management** - The app supports multiple homes and users, making it ideal for families or property managers.
- **Wireless and Hardwired Options** - Offers both RF and hardwired models, with RF models simplifying installation through wireless communication.
- **Advanced Features** - Includes setback functionality, anti-seize protection, and pump delay for optimised performance and reliability.



EPH EMBER HEATING  
YOUTUBE LINK



# DEHUMIDIFIERS

**HiDew** presents a full range of dehumidification devices for several applications, from small domestic to large industrial projects, private and public swimming pools, all with very high efficiency heat recovery systems, combined with a complete range of accessories for the air distribution.



INISH BEG POOL HOUSE WITH DDS DEHUMIDIFIER



FIRE STATION DRYING ROOM WITH DDS DEHUMIDIFIER

## Small Commercial / Residential Units / Fire Stations

### DDS Range

We use this model dehumidifier in applications such as fire stations and swimming pool halls. It draws moisture out of the air, and any water collected is piped through a duct into a drain. Easily installed in any area that requires dehumidification.



HIDEW DDS YOUTUBE  
LINK

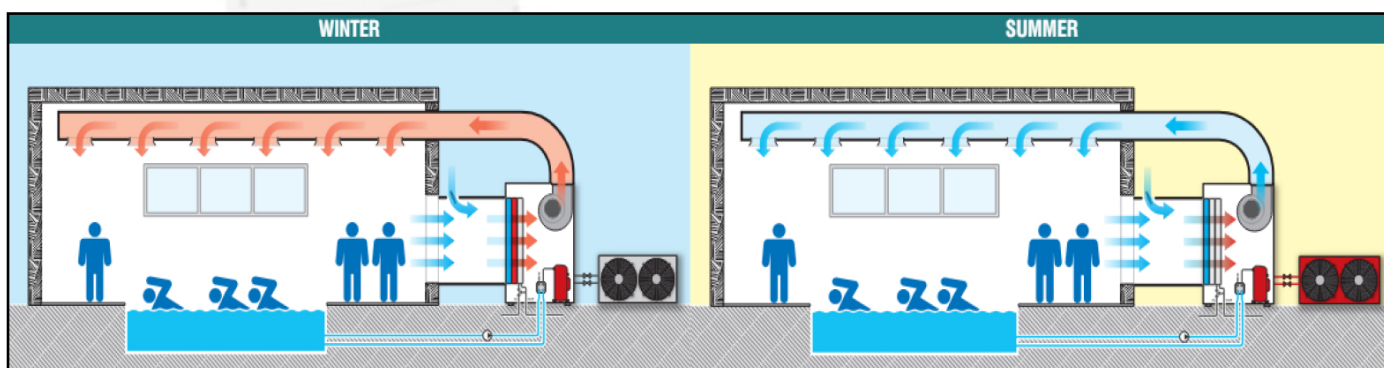
HiDew Technical Sheet	DDS										
	040	050	060	070	090	100	160	190	210	230	300
Dehumidifying Capacity (L/Day)	46	52	62	68	89	98	165	358	211	581	290
Air Flow Rate (m2/h)	350	450	500	600	800	800	1000	3800	1500		2000
Hot Water Coil Capacity (kW)	3,7	4,5	4,8	6,1	8,9	7,5	10,1	26,5	14,5	14,5	17
Electrical Heaters Capacity (kW)	1		1,5	2	3,2		4		7,2		
Sound Level (dB(A))	43	45	46	47	48	49	51	53	54	55	57
Weight (kg)	46			55			88		100		102
Electric Power Supply (V/ph/Hz)	230 / 1 + N / 50								400 / 3 + N / 50		
Dimensions (LxPxH) (mm)	850 x 280 x 780			1050 x 280 x 780			1350 x 330 x 850		1550 x 330 x 850		
Available Static Pressure (Pa)	40										



## Large Commercial/Industrial Units

### ID / SP Range

The ID and SP range dehumidifiers are designed for use in high humidity load environments requiring 24hrs / day operation. They are typically installed in environments such as public and private swimming pools, dairies, basements, curing cellars, warehouses, and wherever a lack of humidity control can damage the structure or the product. We have used these in numerous swimming pool applications and modified units for seaweed drying.



HiDew Technical Sheet	ID - SP									
	0100	0130	0160	0190	0210	0260	0300	0350	0450	0580
Dehumidifying Capacity (L/Day)	100	128	157	190	210	268	302	358	452	581
Air Flow Rate (m <sup>2</sup> /h)	900	1200	1600	1600	2000	2800	2800	3800	4000	4800
Hot Water Coil Capacity (kW)	5,5	9,8	9,8	9,8	16,5	17	17	26,5	26,5	27
Weight (kg)	100	100	105	110	120	130	140	220	230	240
Electric Power Supply (V/ph/Hz)	230 / 1 + N / 50					400 / 3 + N / 50				
Dimensions (LxPxH) (mm)	550 x 700 x 900				850 x 700 x 900			850 x 830 x 1350		



HiDew Technical Sheet	ID - SP									
	0750	0950	1100	1400	1500	1700	1900	2200	3000	4500
Dehumidifying Capacity (L/Day)	760	955	1120	1380	1480	1710	1870	2180	2960	4650
Air Flow Rate (m <sup>2</sup> /h)	7000	8200	11000	12500	13000	15000	15000	17000	25000	35000
Hot Water Coil Capacity (kW)	48	55	76	83	98	107	107	118	168	235
Weight (kg)	410	430	650	720	780	840	900	950	1259	1550
Electric Power Supply (V/ph/Hz)	400 / 3 + N / 50									
Dimensions (LxPxH) (mm)	1400 x 1000 x 1350		1950 x 1000 x 1640		2500 x 1000 x 1640			3390 x 1000 x 1640	4430 x 1000 x 1640	





# POOL & SPA HEATING

We specialise in providing top-of-the-line Geothermal and Air Source heat pumps designed for efficient pool and spa heating. Our heat pumps are the perfect solution for maintaining a desired 30°C water temperature, offering an economical and energy-efficient method to keep your pool or spa at a constant, comfortable temperature throughout the year.



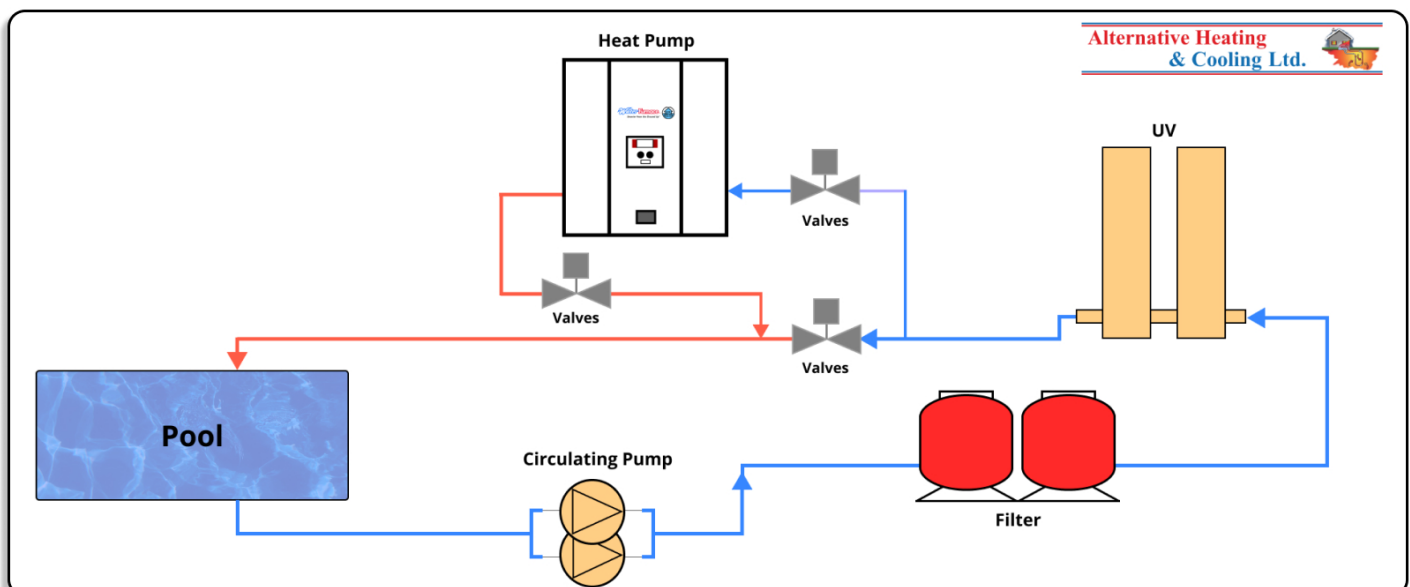
THE WATER SCHOOL, KEALKILL



8KW SWIMMING POOL HEATING

Air Source Heat Pumps are particularly advantageous due to their low installation cost and high efficiency, especially during the summer months when pool usage peaks. For those seeking year-round operation, Geothermal heat pumps are an excellent choice, ensuring consistent performance regardless of the season. Whether you are looking to equip a new pool or upgrade an existing one, we have a range of systems tailored to meet your specific needs.

## Pool Heating Schematic (*Not to Scale*)



**To Schedule a Free Site Survey & Quotation, Email us at [info@ahac.ie](mailto:info@ahac.ie) or Call 028 23701.**

# SERVICING & MAINTENANCE

Our heating systems are generally maintenance free, however, we would recommend a service / system health check every year to 2 years (*varies on manufacturer specifications*). Our fully trained staff provides technical diagnostics, repair services, and maintenance capability. We work closely with our clients to develop a fast solution in case of breakdowns.

Our experienced team has worked with a large variety of manufacturers and heat pumps over the years, including many models that may no longer be in production. Our store is well stocked with spare parts for all the heat pumps we supply. Many components are interchangeable, and controls can be adopted from one manufacturer to another. Some products have a long lead time, so frequent servicing helps prevent long downtimes.

## Systems We Service

Geothermal Heat Pumps	Air Source Heat Pumps	Water Source Heat Pumps
Underfloor Heating Systems	Dehumidifiers	Solar Panels ( <i>Water Only</i> )

## Heat Pumps/Manufacturers We Service

Panasonic	WaterFurnace	Nordic
Weider	Euronom	ArgoClima
Dunstar	Nibe	Danfoss Geothermal
IVT Geothermal	GeoStar	HiDew

## Warranties

At AHAC, we aim for excellent customer service and clear warranty communication. While we fully support our products, we're here to assist you within the terms of each component's warranty. Some warranties require validation, and machines may need servicing as per the manufacturer's instructions. Product warranties are manufacturer warranties that are not tied to AHAC e.g. a Panasonic warranty is valid **for** Panasonic once the product is registered **with** Panasonic.

**To Log a Service Call, Call us on *028 23701* or Email *[info@ahac.ie](mailto:info@ahac.ie)* with your Eircode and Contact Details.**

# BESPOKE SYSTEMS

With a commitment to excellence, we offer bespoke heating systems that are tailored to the specifications of each project and the specific needs of our customers. Understanding that no two projects are alike, we focus on personalisation and precision. Our team works closely with clients to understand their requirements, preferences, and property layout.

From consultation to installation, we prioritise communication and planning. We start with a property assessment, considering architectural details, insulation, and comfort preferences. This helps us create energy-efficient and effective heating or cooling solutions that reduce costs to the customer.

## *Examples of Heat Sources*

Ground & Air

Milk Straight from Cow / Milk Tank

Rivers / Streams / Ponds / Lakes

Cooling plants

Rain Water Harvesting

Central Refrigeration Unit

IT Rooms

Plastic Moulding

Thermal Springs

## *Examples of Heat Delivery*

Underfloor Heating

Cheese / Dairy Production

Chilled Air

Radiators

Swimming Pools

Timber Frame / Block Houses

Passive / Near Passive Cooling

Seaweed Drying

Fan Coils

**ON FARMS, THE DISCHARGE WATER FROM WATER SOURCE HEAT PUMPS (ALTHOUGH COOLER) IS USED FOR MANY PURPOSES, E.G. MILK COOLING OR DRINKING WATER FOR FARM STOCK.**

Whether you're upgrading your home or outfitting a commercial space, we bring dedication and attention to detail to every project. We strive to exceed expectations with reliable, efficient heating systems that integrate seamlessly into your home or business. With Alternative Heating & Cooling, you can trust our expertise to create a customised heating solution that enhances your comfort.

**No Matter How Unusual your Project is, Email us at [info@ahac.ie](mailto:info@ahac.ie) or Call 028 23701.**



# COMMERCIAL CLIENTS



**CRONINS COMMERCIAL & REPAIR, DUNMANWAY**  
GROUND SOURCE (34kW) & UNDERFLOOR HEATING



**SWANTONS NURSERY, SKIBBEREEN**  
AIR SOURCE (80kW) & UNDERFLOOR HEATING  
(ACCELERATES THE GROWTH PROCESS)



**GLENGARRIFF CASTLE**  
BRINE TO WATER (62kW) & UNDERFLOOR HEATING,  
CLOSED HORIZONTAL HEAT COLLECTOR



**GAA SPORTS COMPLEX, MALLOW**  
WATER TO WATER (68kW) CLOSED HORIZONTAL  
HEAT COLLECTOR



**FOTA WILDLIFE PARK, CARRIGTWOHILL**  
WATER TO WATER (40kW) & UNDERFLOOR HEATING

HEATING OF MANY BUILDINGS IN THE PARK, LIONS, RHINOS, MONKEYS, STAFF & TROPICAL HOUSE  
(WHICH TAKES HEAT OUT OF WATER SUPPLY TO PENGUIN ENCLOSURE)

# EQUIPMENT & ACCESSORIES

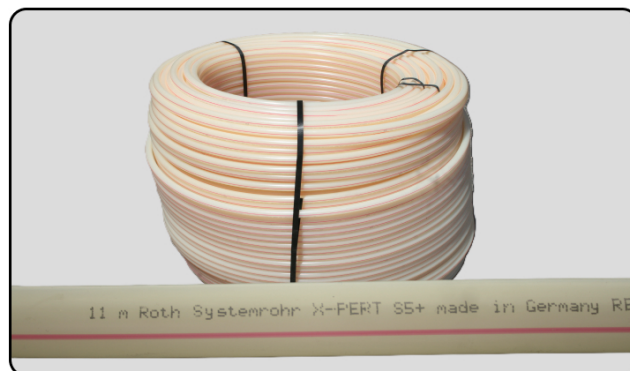
## Geothermal Collector Pipe

Size	Length
40mm	100-150m
32mm	75-150m



## Roth Underfloor Heating Pipe

Size	Length
17mm	200 + 600m coils
10.5mm	240m coils



## Electrofusion Fittings



## Winkler Underfloor Heating Tracking Gun & Staples



## Underfloor Heating Accessories



## Underfloor Heating Manifold





## Depala Motorised Valves



## Heat Exchangers



## Heating Controls



## Hot Water Cylinders & Buffer Tanks

Ranging from 150L -  
1000L

Sizes ranging from  
12L - 50L



## Lowara Ecocirc 25/60 Circulating Pump



## Wilo Yonos 25/60 Circulating Pump




## Wilo Yonos 25/70 + 30/10 Circulating Pump



**TRADE PRICING AVAILABLE ON REQUEST**

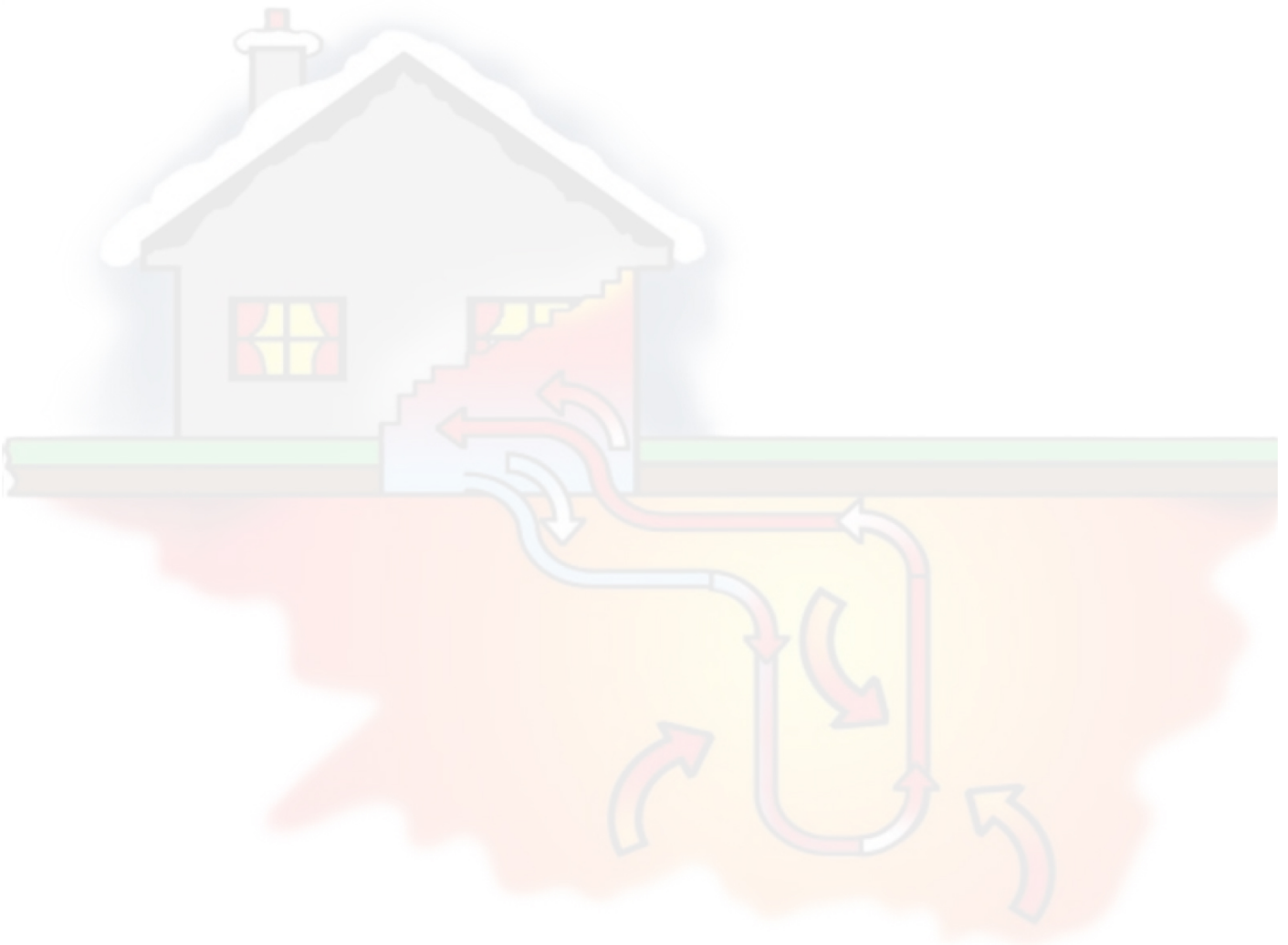


## OTHER INFO

<i>Useful Info</i>	
<b>Our Website</b> - <a href="http://www.ahac.ie">www.ahac.ie</a>	<b>Our Email</b> - <a href="mailto:info@ahac.ie">info@ahac.ie</a>
<b>Our Phone Number</b> - (028) 23701	<b>Our SEAI Contractor ID</b> - 10349
<b>Heat Pump Grants Link</b> - <a href="http://www.seai.ie/grants/home-energy-grants/heat-pump-systems/">www.seai.ie/grants/home-energy-grants/heat-pump-systems/</a>	<b>Heat Pump Grants QR Code</b> - 

<i>Our Main Suppliers</i>	
<b>Panasonic</b>	- <a href="http://www.aircon.panasonic.eu/IE_en/">www.aircon.panasonic.eu/IE_en/</a>
 <small>Smarter from the Ground Up™</small>	- <a href="http://www.waterfurnace.com">www.waterfurnace.com</a>
<b>Roth</b>	- <a href="http://www.roth-uk.com">www.roth-uk.com</a>
<b>EPH</b> CONTROLS	- <a href="http://www.ephcontrols.com">www.ephcontrols.com</a>
<b>HiDew</b>	- <a href="http://www.hidew.it/en">www.hidew.it/en</a>

# NOTES



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**Alternative Heating & Cooling Ltd.**  
Unit 3, IDA Industrial Estate, Baltimore Road, Skibbereen  
Co. Cork, Ireland, P81 WY96

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