First in Australia with chilled / heated ceiling technology.
Replaces the need for traditional air conditioning.
Underfloor heating / cooling.

AVID

RDZ by CALEFFI

Company Introduction

The RDZ company was established in 1978 as a thermo hydraulic wholesaler. Straight away the founder realized that under floor heating systems would represent the biggest opportunity for growth of RDZ company. The RDZ founder realized that market trends were changing and they wanted to distinguish RDZ quality from other companies. In 1997 after years of quality engineering and workmanship, RDZ became the first company to receive management system quality certification. (today UNI EN ISO 9001:2008). This is thanks to its quality oriented organization, its innovative and advanced solutions and excellent customer service

In December 2004 there was a corporate change at RDZ. The founder retired from the business and Caleffi entered the partnership. Caleffi is the leading valve manufacturer in Italy and one of the biggest valve manufacturers in the world. In 2009 Mr Marco Caleffi became the sole director. Today RDZ is the leading hydronic heating and cooling company in Italy.

No expense is spared by the RDZ company when it comes to research and development activities. RDZ wants to ensure they remain market leaders, this is why they are constantly coming out with new ideas that save energy and increase comfort.

Italians pay one of the highest prices for electricity in Europe, which is what makes them leaders in designing and manufacturing of energy saving products.

What is hydronic heating and cooling?

Radiant heating and cooling is widely used as underfloor system. It is applied predominantly in houses for winter heating because of its excellent features, yet nowadays it is more and more used also for summer cooling.

Over the last few years, besides the underfloor systems, RDZ has developed other kinds of solutions exploiting the radiation as heat exchange mode in rooms: that is the wall and ceiling system. This kind of installation is spreading rapidly thanks to its remarkable features which make it possible to apply this radiant solution in those modern buildings where underfloor systems cannot be used. In particular, the ceiling surface is almost completely available; furthermore it guarantees very low thermal inertia and excellent performance in summer running.

RDZ low-temperature underfloor systems circulate water through a network of pipes concealed below the floor. RDZ uses PE-X piping. The purpose of this piping is to improve the product's mechanical properties and make it more resistant to thermal ageing.

Heat diffusion into the room is primarily a result of radiation and makes it possible to obtain uniform temperature distribution. This special feature not only ensures a sensation of physical wellbeing, but also allows the system to function at low temperatures, thus implying lower energy consumption than traditional systems. Underfloor heating systems can be also covered in any type of flooring: ceramic, parquet, marble, hard brick, etc. Since it is an invisible installation, the system also guarantees full use of the available space with a wide range of furnishing options.

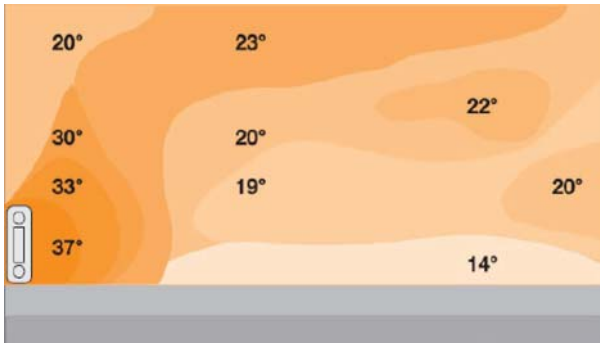
Advantages of Underfloor Heating / Cooling

01. High comfort
02. Low temperature even heat distribution system
03. Reduced energy consumption low running costs compared to A/C
04. Better hygiene and health.
05. No movement of dust
06. No radiators or units to clean
07. Floor is dry so no bacteria can grow
08. Silence
09. Summer Cooling
10. Full use of available space - furniture can be placed anywhere in a room
11. Zero maintenance costs
12. Environmentally friendly - alternative energy source options

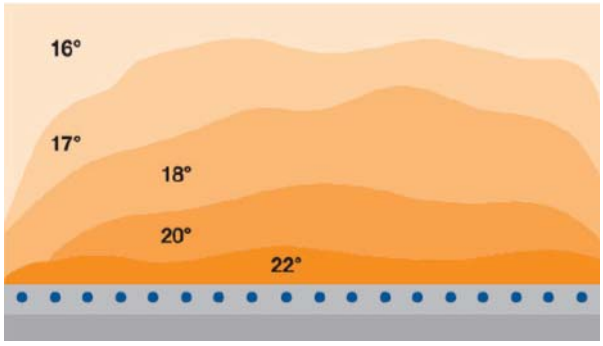
For a quick understanding of how the system is installed you can watch a 3 minute video at http://www.rdz.it/video.php. Go to the top right hand part of the page and select English. There are several videos on this page, please select the video titled “laying of the floor system”

High Comfort

Uniform temperature distribution for optimal comfort



Temperatures in a room heated by radiators.

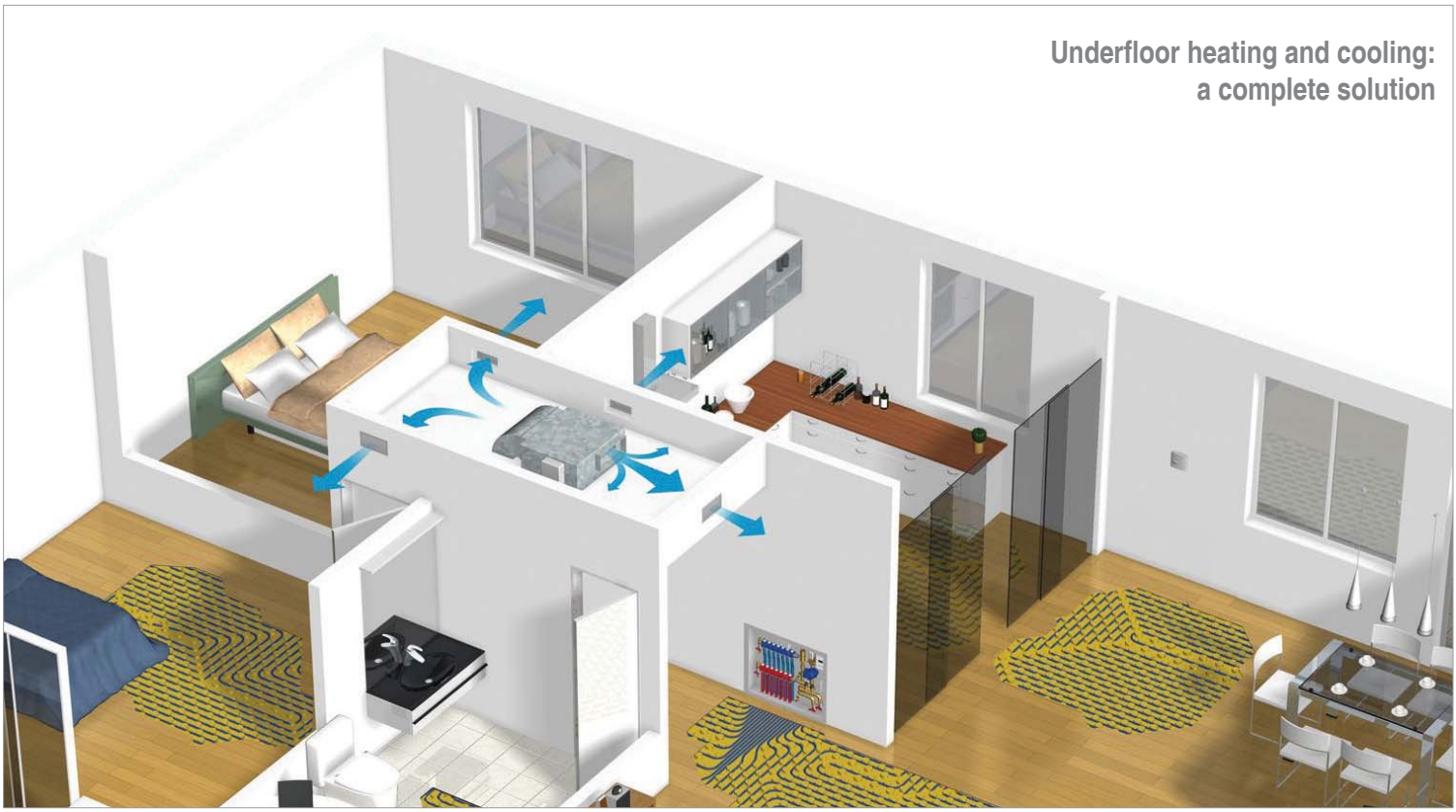


Temperatures in a room with underfloor heating.

Underfloor heating distributes room temperatures evenly and ensures the ideal condition for human comfort. Since the floor is the heated surface, cleaning and maintaining hygiene standards are also easy to perform. Furthermore, the absence of convective air flows generally created by the difference in temperature between the heating body and the surroundings limits any potential movement of dust or impurities in the air (which usually cause allergies). This not only improves the sanitary conditions of the premises, but also eliminates any problems regarding the blackening of walls and curtains.

RDZ underfloor heating systems are available in a wide range of solutions and can be applied to very different settings: new or renovated buildings, houses, shops, offices, factories, etc.

Underfloor heating and cooling: a complete solution

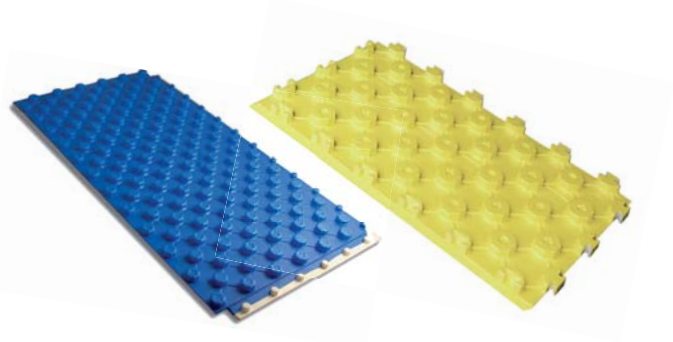


Underfloor Heating

In the last ten years RDZ has sold more than 90,000km of polyethylene pipe. That is more than twice the length of the equator.

The high quality pipe offers:

- Flexibility.
- Excellent strength.
- Excellent resistance to thermal ageing.
- Excellent resistance to low temperatures.
- Thermal memory.
- Excellent corrosion-resistance.



RDZ has numerous solutions, only some of which will be covered by this booklet.

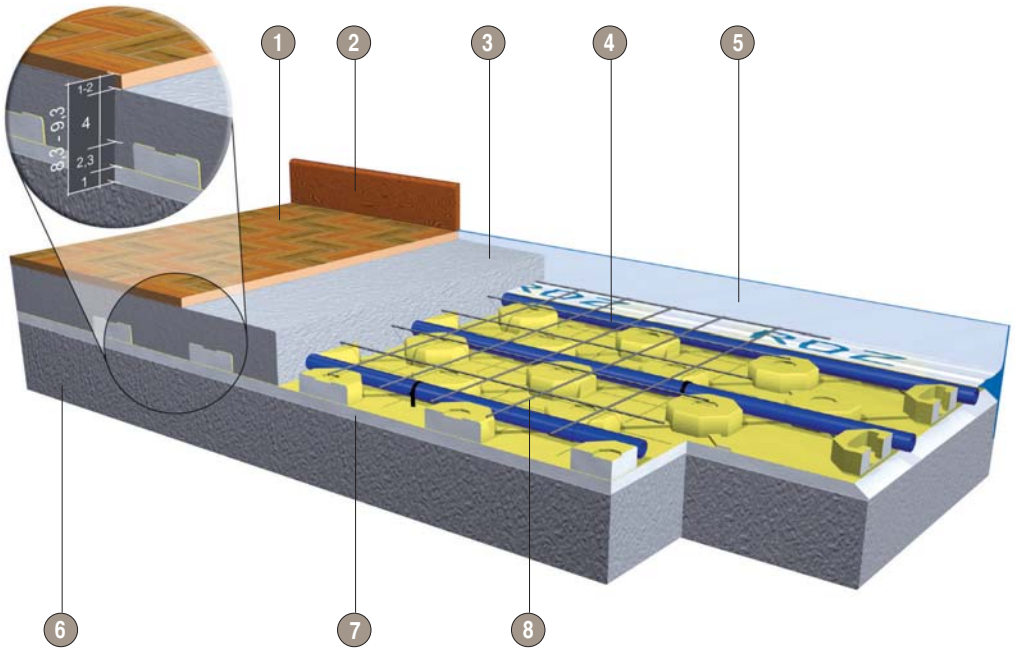
RDZ offers a wide range of underfloor heating solutions to suit almost any situation. All RDZ products are manufactured and installed in accordance with the European standards. On the following page you will find a section of the standard New Plus system. Because of its slim design it is suitable for renovated buildings in the residential market where there is limited ceiling height.

Currently, there are no Australian Standards for underfloor heating, however, all RDZ products are designed to meet and exceed the European Standards UNI EN 1264/1-2-3-4.

Unlike most Australian underfloor heating systems, all RDZ systems utilise insulation to ensure minimal downward heat loss and maximum energy efficiency, which complies with European Standards.

For a quick understanding of how the system is installed you can watch a 3 minute video at http://www.rdz.it/video.php. Go to the top right hand part of the page and select English. There are several videos on this page, please select the video titled “laying of the floor system”.

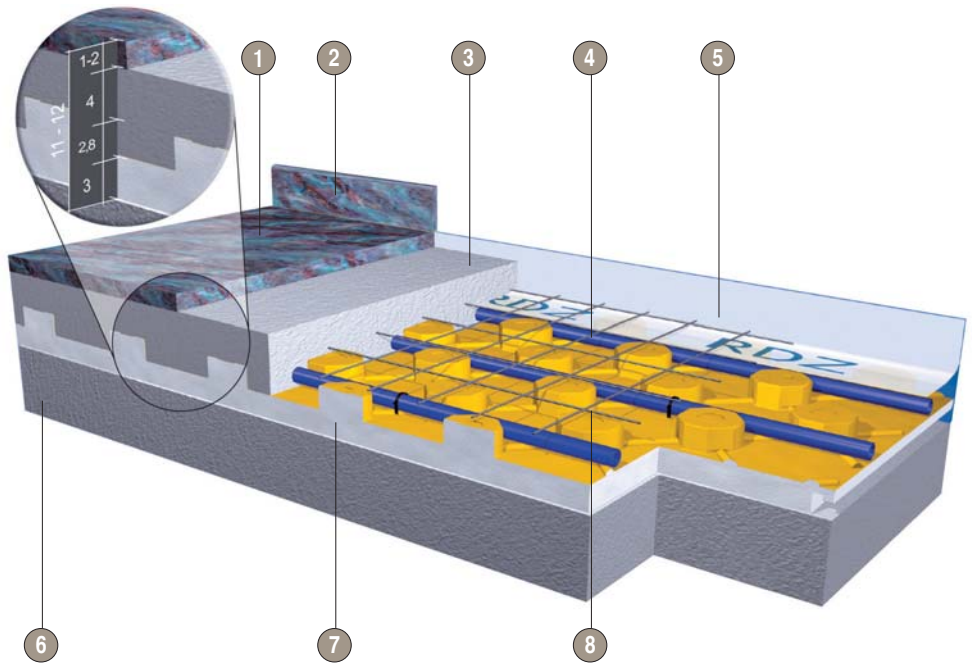
Section for New Plus System



1. Flooring
2. Skirting board
3. Concrete
4. PE-Xc pipe Ø 17-13
5. Perimeter belt
6. Floor + casting
7. New Plus panel
8. Anti-shrinkage mesh

NEW PLUS system is only 10mm thick and is suitable for renovated residential buildings in rooms where it is necessary to reduce the overall thickness of the radiant system. This is often the case where ceiling heights may be an issue (2.4m Australian Standard). It can be used for both floor heating and cooling.

Section for Cover System



1. Flooring
2. Skirting board
3. Concrete
4. PE-Xc pipe Ø 17-13
5. Perimeter belt
6. Floor + casting
7. Cover 30 panel
8. Anti-shrinkage mesh

COVER system can be applied to a range of applications such as houses, offices, shops, etc. and is suitale for both floor heating and cooling. This product ranges from 20mm to 60mm, depending on your insulation requirements.

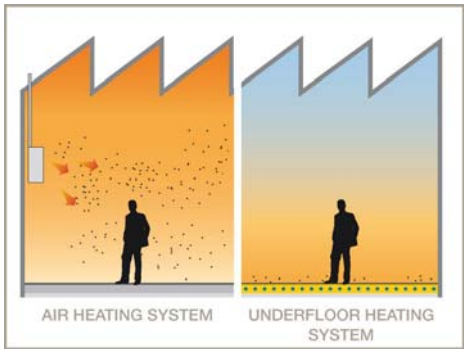
Commercial Underfloor Heating

RDZ also offers a range of energy saving commercial heating and cooling solutions.

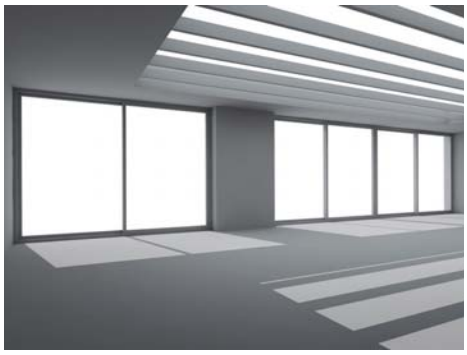
Reasons for choosing underfloor heating for your commercial premises.

High comfort

Use of alternative energies



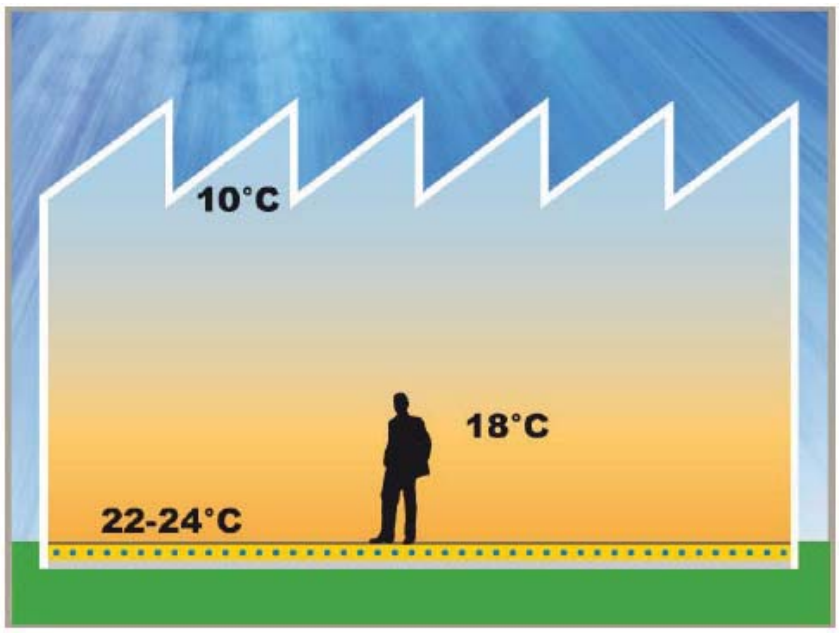
Reduced air currents and movement of dust



Optimizing space

Fireproof

Zero maintenance costs

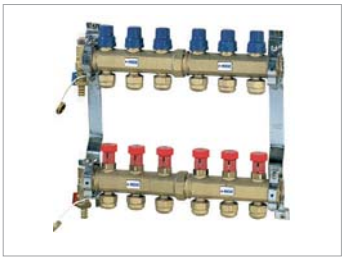


Fuel consumption savings in industrial premises with underfloor heating can be as much as 50% compared to a traditional air system.

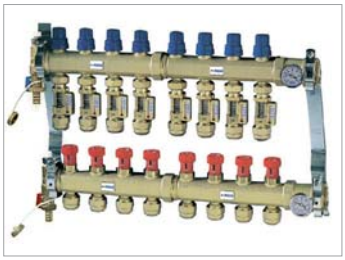
Example of underfloor heating system
in a warehouse

Manifolds

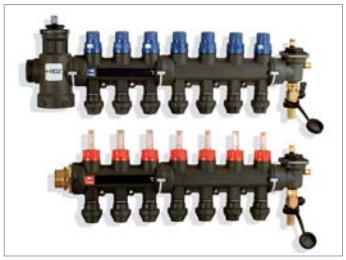
RDZ manifolds are specially designed and manufactured for underfloor heating applications. They are preassembled in the production plant for simple installation. Their specific features make it possible to control the difference in temperature of the system, the individual circuits and their flow rate. RDZ manifolds can be made from brass or technopolymer (thermoplastic). The manifold cabinets have a slim design of 80mm and can be positioned almost anywhere.



Control Manifold



Top Control Manifold



Top Composit Manifold

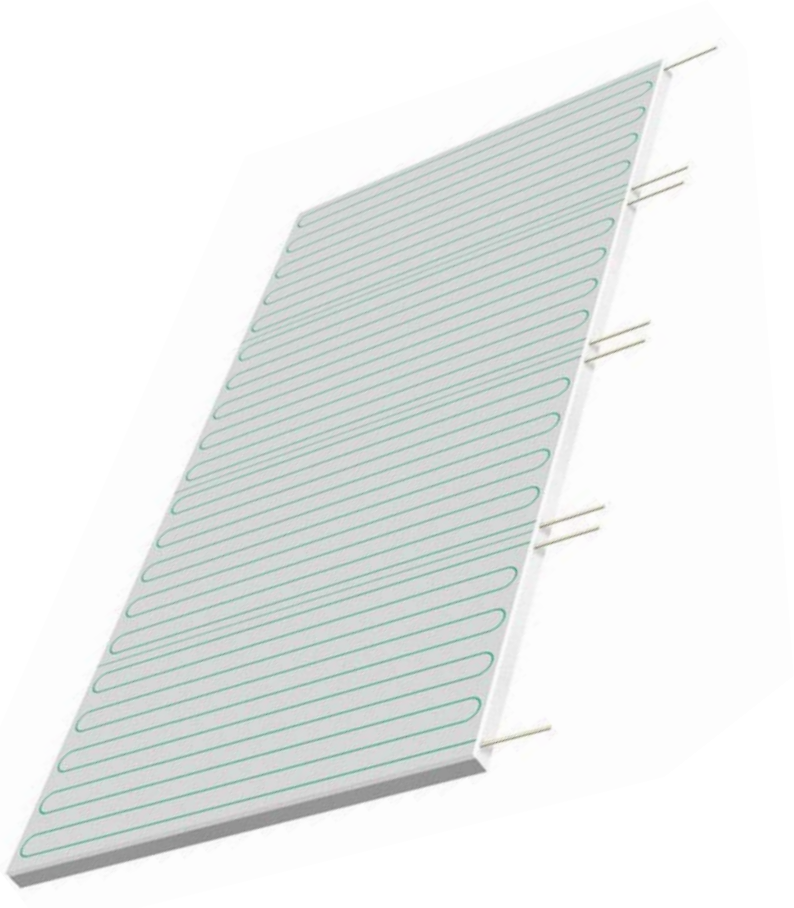
Industry Manifold

b!klimax Ceiling System - Residential

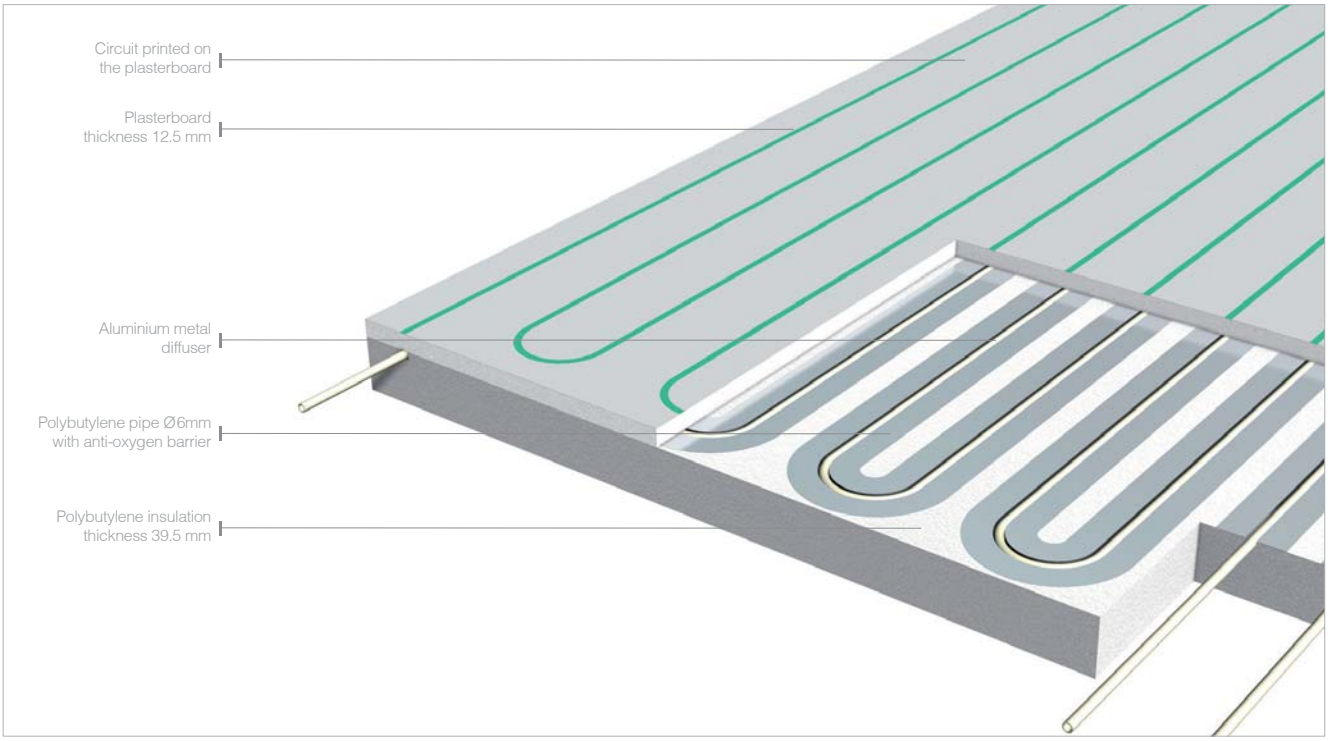
b!klimax by RDZ uses large surfaces (walls and ceiling) to exchange heat by irradiation with people and surroundings. This system enables the human body to balance heat exchange perfectly, thus improving the level of comfort.

Innovative and versatile, b!klimax is a radiant heating and cooling system for ceiling installation. It is the ideal solution in rooms where it is important to maintain comfortable conditions all year round. Its very low thermal inertia and high efficiency make b!klimax the ideal system for houses, renovated buildings, and commercial applications. b!klimax, which perfectly functions in both summer and winter, guarantees the highest performance when it is combined with specific thermoregulation devices and suitable units to control humidity.

Thanks to the uniform distribution of heat and cold, b!klimax avoids air currents: the absence of convective movements, deriving from the difference in temperature between heating element and environment, also solves the problem of dust movements and air impurities.



Section of b!klimax radiant panel with polystyrene insulation and plasterboard covering



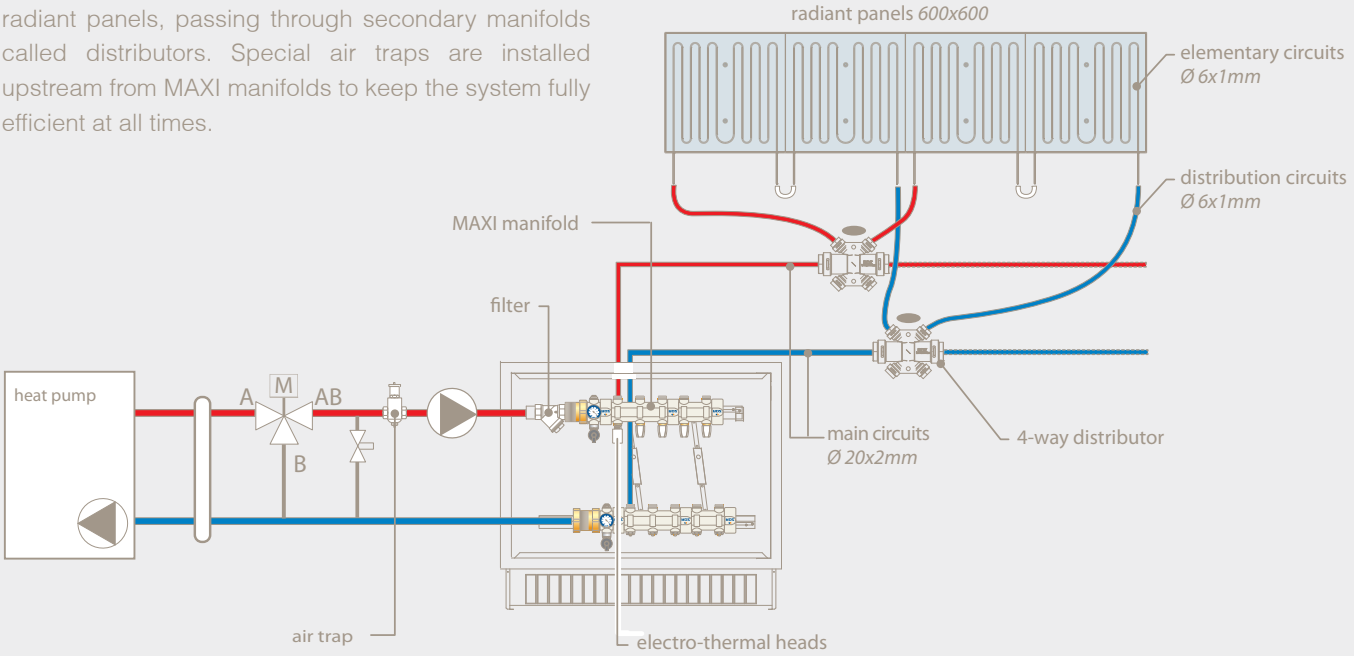
How does it work?

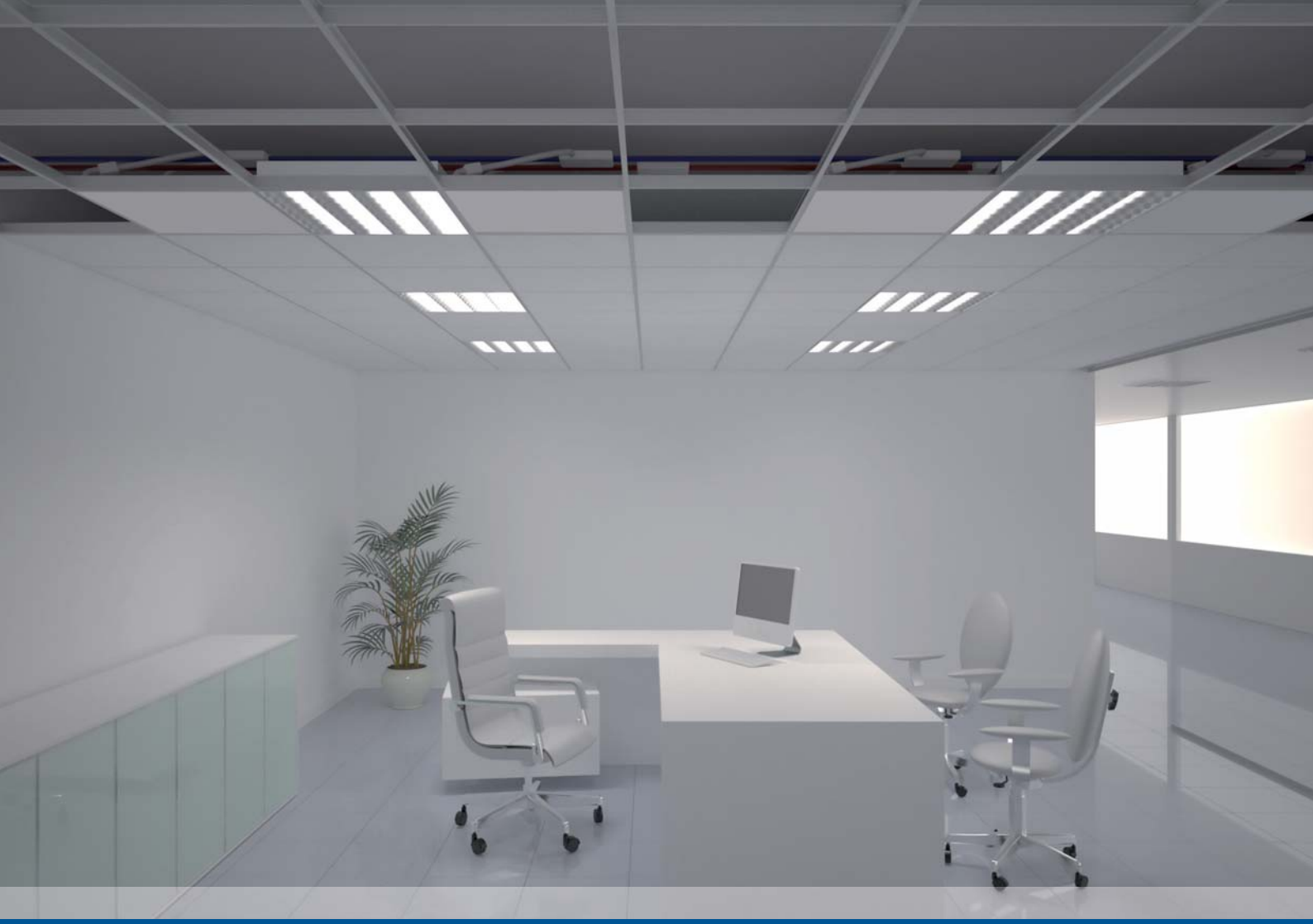
b!klimax system works in similar way to underfloor heating since the cooling/heating pipes are located in the ceiling or walls instead of the floor. The reason why b!klimax system can use up to 50% less energy is that it uses large surface areas to transfer energy. This means you do not have to heat or chill the water as much as a traditional air conditioning system to obtain a comfortable room temperature. The less energy required to heat or chill water means the lower your running costs.

b!klimax radiant system is an excellent solution both for winter and summer running, which guarantees the highest performance when it is combined with a specific thermoregulation system and with a proper dehumidification system. b!klimax system is completely concealed in ceilings or walls; this makes it possible to use all the available space whilst improving the appearance of the room.

b!klimax distribution diagram

Using suitable temperature control systems (and buffer tanks, if necessary), the water is sent from the heat generator (boiler and chiller or heat pump) to the main manifolds (called MAXI manifolds) and from there to the radiant panels, passing through secondary manifolds called distributors. Special air traps are installed upstream from MAXI manifolds to keep the system fully efficient at all times.





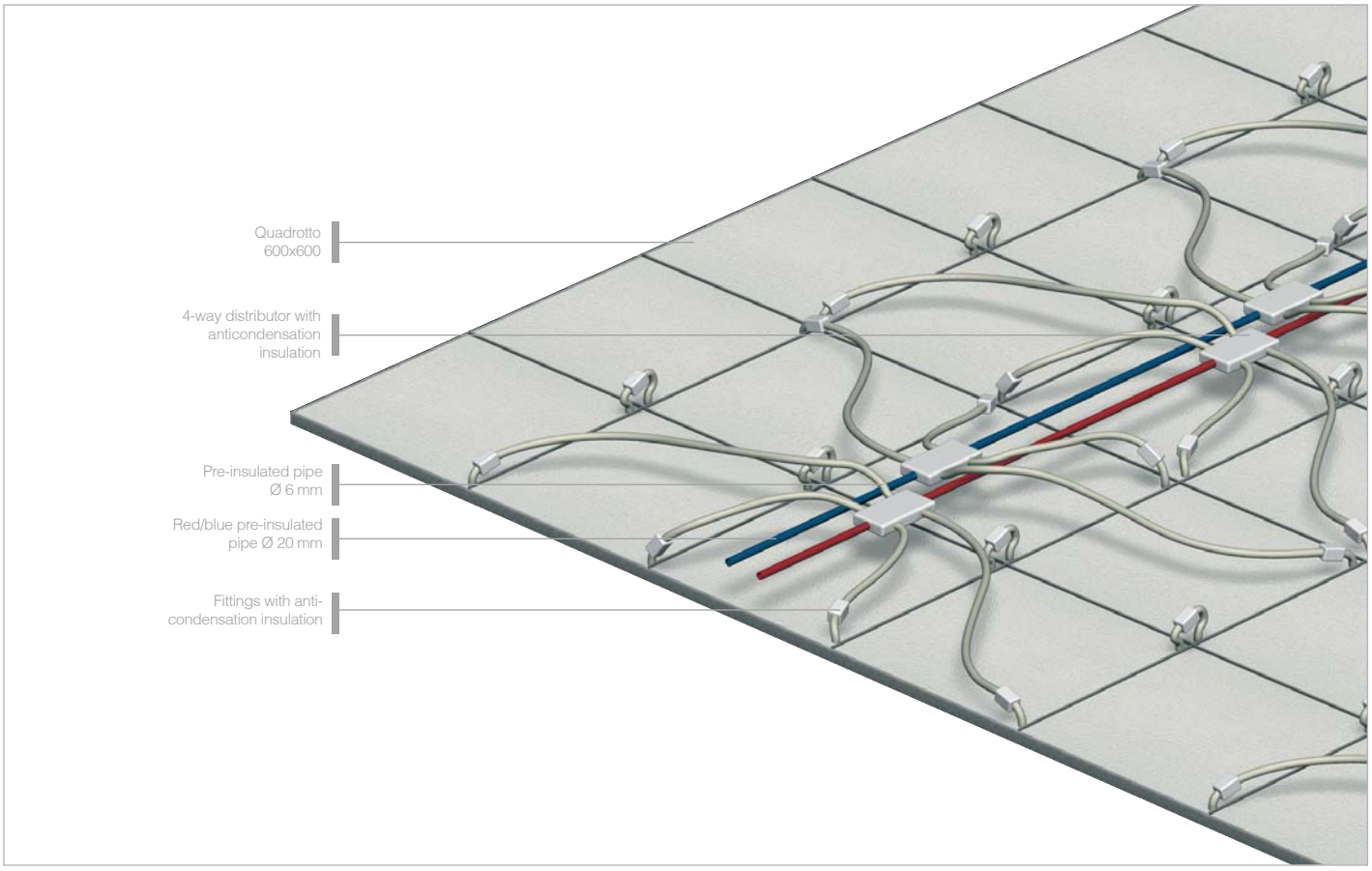
b!klimax Ceiling System - Commercial

RDZ b!klimax Quadrotti system represents the heating and cooling solutions for metal false ceilings with plafonds 600x600 and 1200x600mm. It is particularly suitable for commercial applications thanks to its low thermal inertia, high performance, practical installation, easy hydraulic connections and fine aesthetics.

This solution, which perfectly functions in winter and in summer, guarantees the highest performance when it is combined with specific thermoregulation devices and suitable units to control humidity.

Section of Quadrotto 600x600 with polystyrene insulation

Example of distribution for Quadrotto 600x600



8-way/4-way open/closed distributors
The distributors are an important part of the system. Maxi manifolds are connected to the distributors by pre-insulated polybutylene pipes Ø 20x2 mm, while the distributors are connected to the panels by pre-insulated polybutylene pipes Ø 6x1 mm.

Maxi manifolds
Maxi is the name of the manifolds in b!klimax system, from which main circuits are distributed. Maxi manifolds can be installed both upwards and downwards, and they can be equipped with electrothermal heads for On-Off control on each main circuit. These manifolds are provided with anticondensation shells and accessible filter in order to prevent water impurities from clogging small pipes.

Air Temperature and Humidity Control

RNW Dehumidifiers

For the correct functioning of the radiant system in summer cooling it is very important to control humidity. RDZ dehumidifiers control the relative humidity in rooms without affecting the temperature of the air.

Radiant cooling affects room temperature but is not enough to ensure comfort in humid summer conditions. In order to assure comfort you must combine the radiant cooling system with a suitable dehumidification unit. There are different dehumidification versions according to their application and they can be installed on the wall or into false ceilings. The most powerful versions can be ducted.

The dehumidifiers do not run constantly, they only start when the humidity in the room reaches a certain level. They use very little power and are virtually silent.

Wi Controllers

In order to guarantee the highest comfort and energy saving it is necessary to use a thermoregulation system. The electronic control ensures the ideal management of all components involved in the systems functioning. These units can manage small or large multi-zone systems, as well as systems with centralised power production and thermoregulation for each user.

RDZ controllers offers the option of monitoring and controlling the home or office from a computer any where in the world.
In January 2012, a smart phone application will enable complete control of all zones in the home or office remotely from a smart phone.

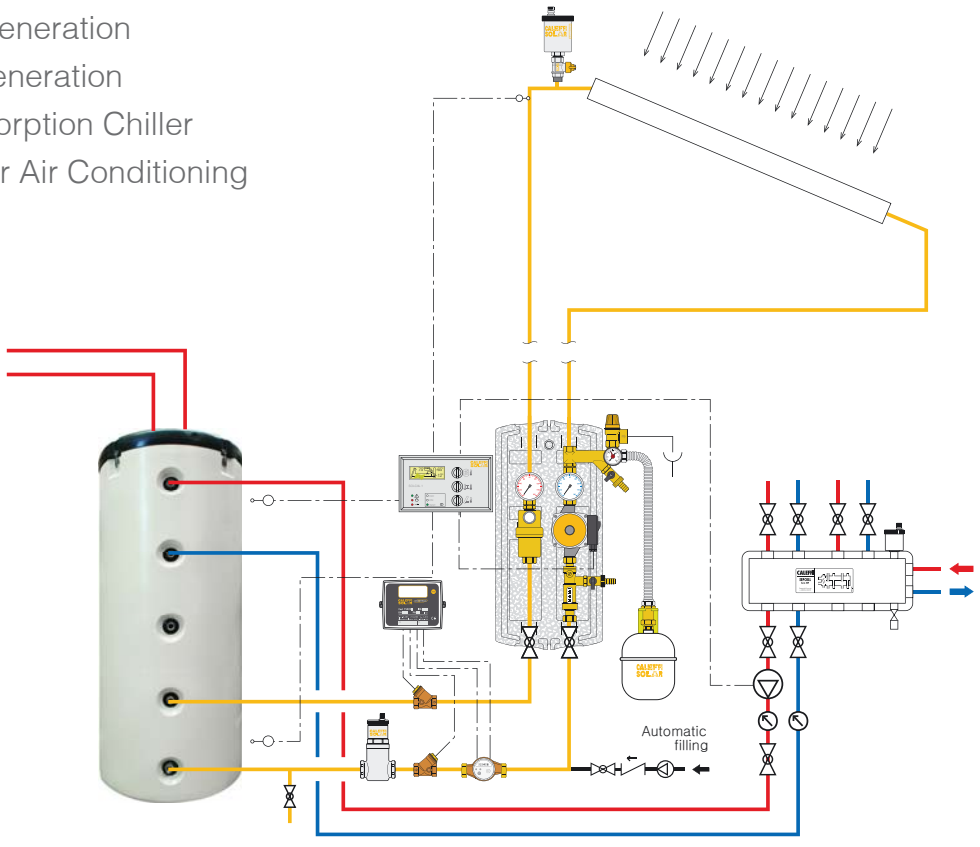
SmartHeat SH-500l

- Multiple heat source inputs
- Up to 5 internal coils inside for multiple heating requirements
- Compact design
- Large storage capacity
- Australian Made
- High UV resistance
- Highest quality materials used
- Suitable for indoor and outdoor installation
- Application: underfloor heating, pool, domestic hot water and reclaiming heat

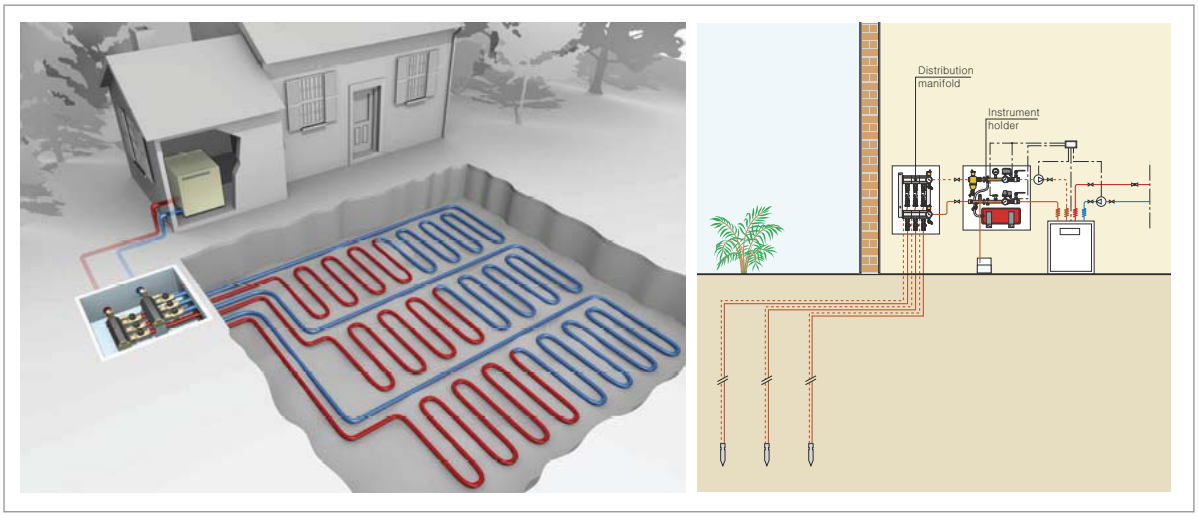
Type	
Application range	Up to 90 °C
Storage capacity	500 Litres
Dimensions	780mm Diameter x 1780mm High
Weight (empty) not including coils	65kg (filled 565kg)
Side fitting options	25/40/50mm
N° of internal coils	Maximum of 5
Insulation thickness	75 mm
Australian made	Yes

Energy Source Options

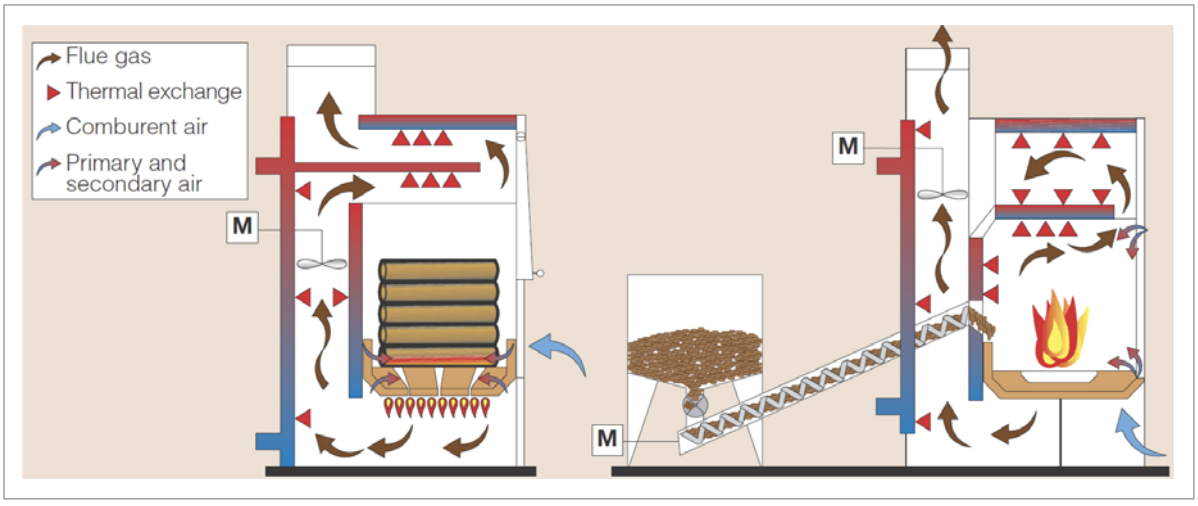
- Heat Pump
- Gas Boiler
- Solar
- GEO Thermal
- Woodfire Boiler
- Cogeneration
- Trigeneration
- Absorption Chiller
- Solar Air Conditioning



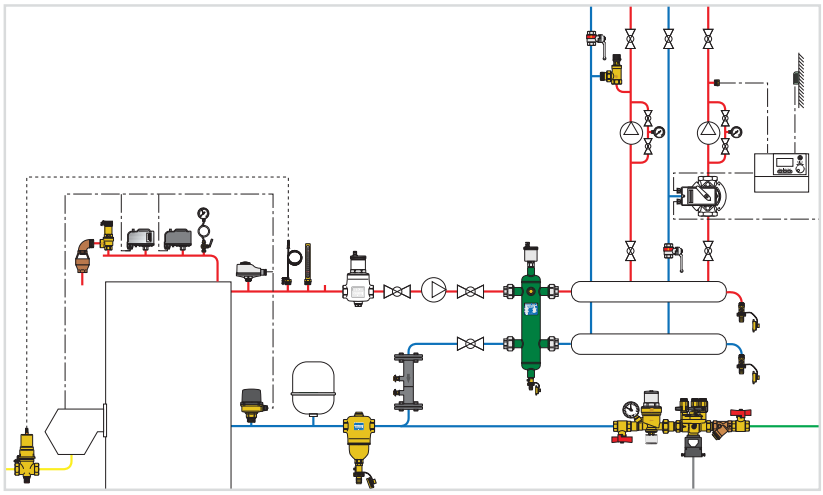
GEO Thermal



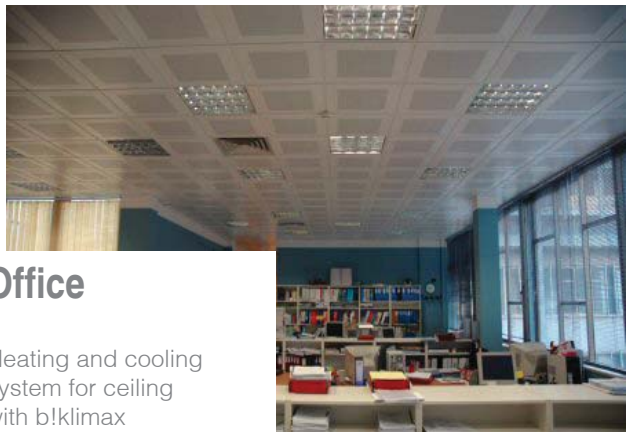
Woodfire Boiler



Hydronic System

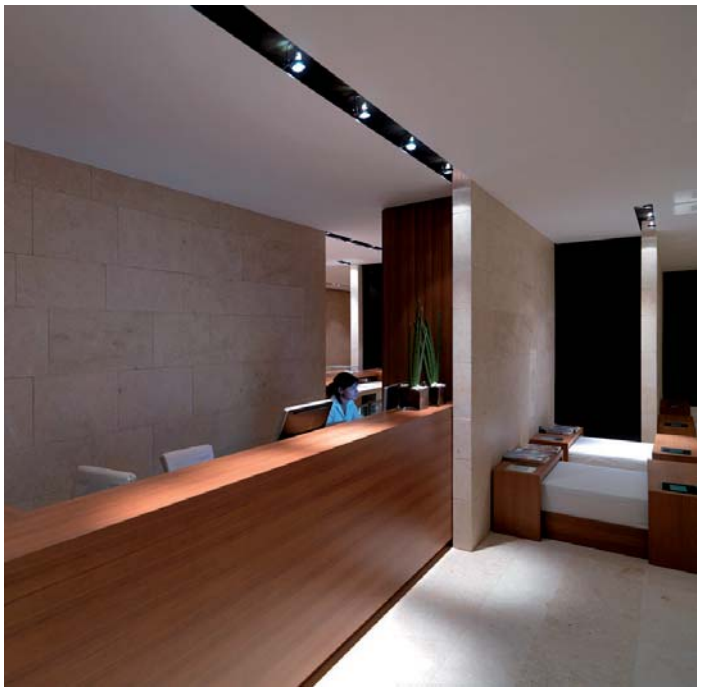


Reference Projects



Office

Heating and cooling system for ceiling with b!klimax square panels



Hotel

Ceiling heating and cooling with b!klimax system

Renovated residence in Mestre

RDZ

All Valve Industries

Unit 2, 18-28
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