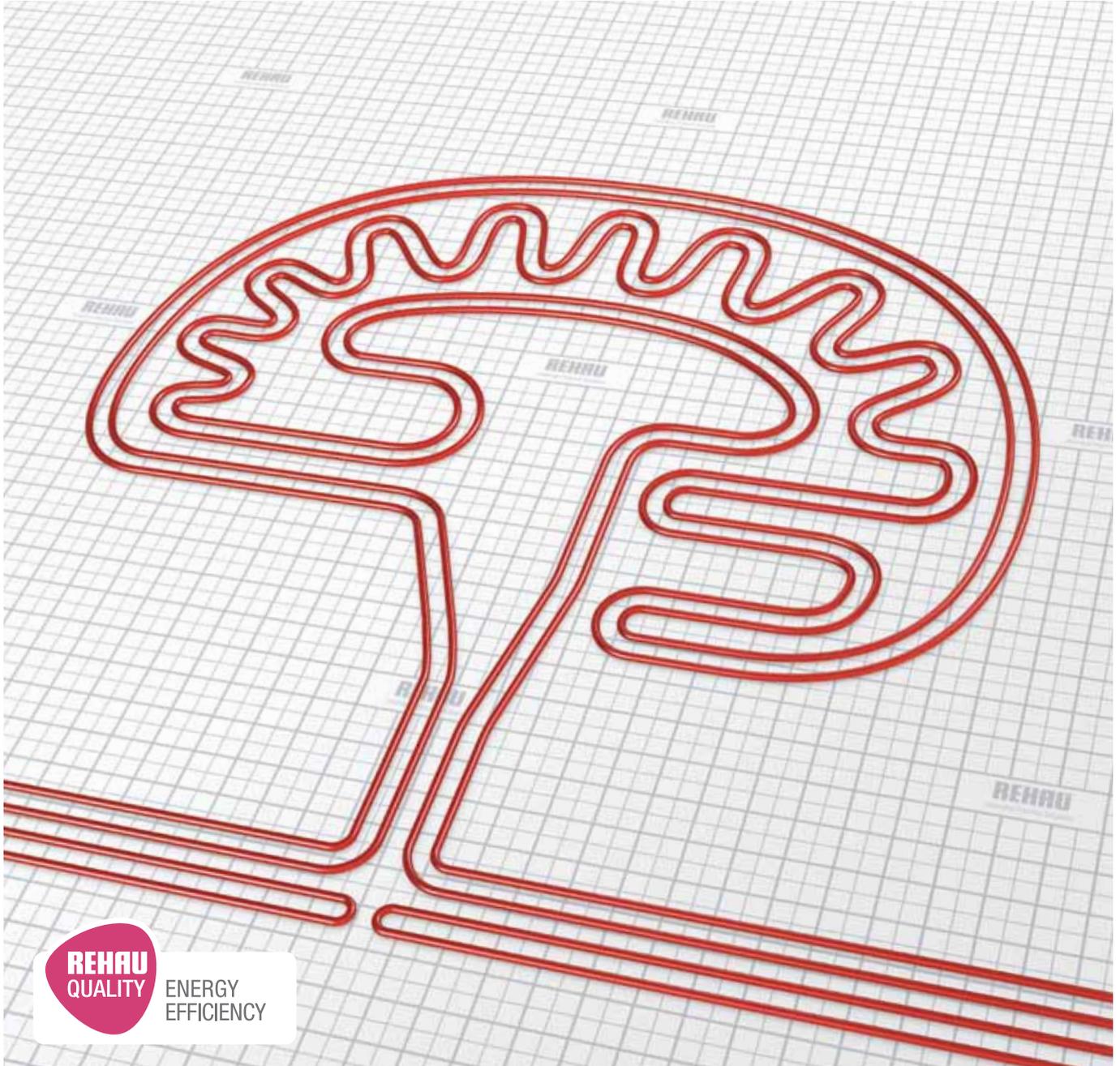




REHAU®

Unlimited Polymer Solutions



REHAU
QUALITY

ENERGY
EFFICIENCY

SUB-SURFACE HEATING & COOLING SYSTEMS

IT'S UNDER CONTROL



BANFF & BUCHAN COLLEGE, SCOTLAND



When we talk about underfloor heating, we're not only referring to our distinctive red pipe that has become a hallmark for quality – but the design capability, technical expertise and dedicated support we offer to our customers.

Customers like you.

Here's a little something about what you can expect from REHAU.

REHAU & COMMERCIAL SECTOR

REHAU SYSTEM BENEFITS



Recognised for quality and performance, the REHAU pipework is the ideal solution for underfloor heating as well as hot and cold water and central heating.

REHAU underfloor heating systems provide cost-effective comfort and safety in a variety of installations, including offices, factories, hospitals and schools.

Specialising in the commercial sector we can offer a heating or cooling solution that fits your needs. Each system you choose is tailored to suit the space and its occupants.



Education

Schools, Colleges & Universities



Distribution

Warehouses, Distribution Centre's & Cold Stores



Health

Hospitals, Care Homes & Medical Centres



Transport

Airports & Stations, Pedestrian Pathways & Check-in Areas



Retail

Shopping Centres, Supermarkets & Restaurants



REHAU UNDERFLOOR HEATING

OUR PROPOSAL TO YOU



Underfloor heating is a favoured choice for industry professionals. Practical, cost-effective and flexible.

Underfloor heating is increasingly specified instead of traditional radiator systems and has established a reputation as the preferred modern-day heating solution in the commercial and domestic sector.

REHAU underfloor heating has a number of advantages over traditional radiator systems:

Comfort

Even spread of heat provides a high level of comfort.

Economical

Reduced demand on boilers and no wasted heat at ceiling height typically saves 15% in fuel costs.

Cost and energy efficiency

Reduced on-site maintenance – servicing of boilers and pumps only.

Flexibility

Unrestricted wall surfaces in both old and new buildings.

Safety

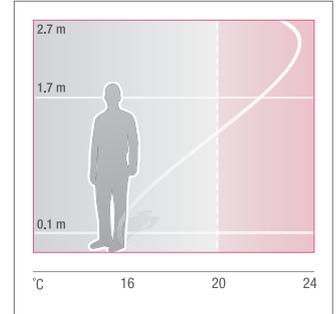
No hazardous wall projections or hot surfaces.

Control

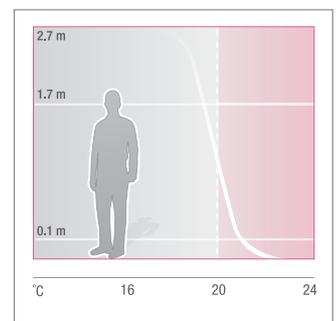
REHAU comprehensive BMS controls offers a solution for commercial building applications.

Compatibility

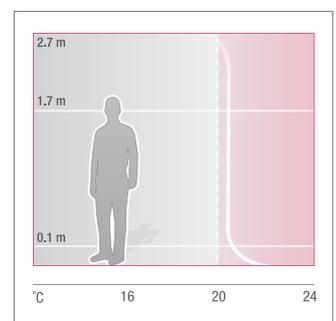
Renewable energy sources can be used for heating applications.



Temperature Profile – Radiator



Temperature Profile – Ideal

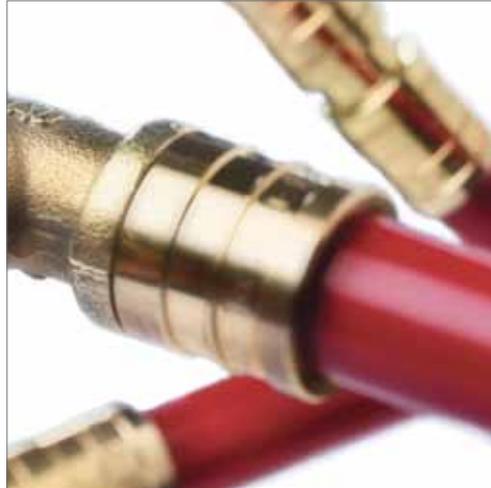


Temperature Profile – Underfloor



OUR PROPOSAL TO YOU

A RELIABLE, QUALITY PRODUCT



The REHAU system features:

- PE-Xa pipe with EVAL barrier to prevent oxygen diffusion to DIN 4726.
- A projected life well in excess of 50 years BS 7291.
- Pressure rating of 6 bar at 95°C.
- Corrosion free/limescale free.
- Low noise transmission due to low frictional resistance through pipe and fittings.
- Save installation time with the REHAU EVERLOC™ compression jointing method.

- Reliability – High integrity jointing system with over 500 million installed worldwide.
- Extensive fittings range made from DZR brass.
- All REHAU products are manufactured to ISO 9001 standards.

- Advantages of polymers over metal:

- No corrosion
- No leaks
- Low weight = quick installation
- No hotworks required



Cross-section of REHAU EVERLOC™ jointing.

REHAU underfloor heating and plumbing 10 year warranty. Up to £100,000.

If REHAU RAUTHERM Universal PE-Xa pipe or compression sleeve fittings are found to be defective due to a manufacturing fault within the first 10 years of the warranty period, compensation shall be paid for any damage resulting from the removal and replacement of the defective pipe and fittings. REHAU shall assume the liability up to an amount of £100,000 per installation, inclusive of the supply of the replacement pipe and fittings.



OUR PROPOSAL TO YOU

OUR SERVICE



REHAU's high specification, top-performing heating systems are backed by equally high standards of customer services and support.



Sample design drawing

Our unrivalled technical expertise and design capability in large scale projects means that whatever design you're working on, we'll make it work for you.

Technical Support

Throughout the lifecycle of your projects, we'll assign a dedicated technical team of experts to help with your installation. Our design team offer full CAD design and support, if you provide us with the project data, we will be able to assist from calculations and design drawings to material costs, providing you with a high quality service for a successful installation.

REHAU ACADEMY

Installer Courses

The REHAU Academy offers a range of specialist training courses for heating and plumbing professionals. The flexible courses provide up-to-date knowledge of REHAU products and applications, combined with useful market information and opportunities.

The courses are free of charge and can be provided at a regional facility.

Current courses include:

- Underfloor heating for specifiers
- Underfloor heating for installers
- Underfloor heating design
- Underfloor heating/cooling BMS controls

CPD Seminars

We also hold regular CPD Seminars at the London Building Centre, on site or at customer premises. The CPD seminars usually last for a few hours, and often feature guest speakers who present on different areas within the heating & cooling industry.

For further information please contact us at

enquiries@rehau.com



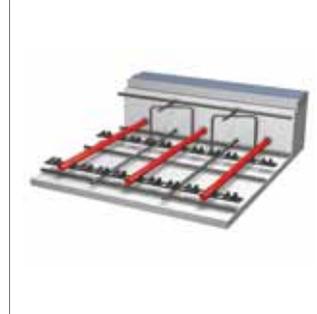
REHAU UNDERFLOOR HEATING SYSTEMS



Raufix system – Floor covering, 75mm screed, edge insulation, UFH pipe, RAUFIX rail, subfloor.



Tacker Sheet system – Floor covering, 75mm screed, edge insulation, UFH pipe, Tacker Sheet, subfloor.



Industrial floor heating – Floor covering, 75mm screed, edge insulation, UFH pipe, Tacker Sheet, subfloor.

Raufix/Raufix

This system is ideally suited for screeded applications in large areas. Raufix or Railfix clip rails are secured with staples on to the insulation and membrane at regular intervals.

The underfloor heating pipe can then be accurately clipped in place allowing large areas of underfloor heating to be quickly and effectively laid. Raufix is the system of choice for commercial projects.

Tacker sheet

The tacker sheet system saves significant time and cost during the installation process by combining several installation steps into one. Tacker sheet comprises EPS sheet insulation, with a grid patterned polyethylene membrane.

The pipe is fixed in place using a staple gun, following the grid pattern marked on the PE sheet. By using this system time and cost is saved, the membrane no longer has to be rolled out and fixed in place and fixing rails are no longer required.

This system is ideally suited for applications where underfloor is being installed in awkward areas and circuits need to avoid drains, pillars, alcoves etc. as the pipe can be laid around such obstacles.

Industrial floor heating

In industrial applications, the relative size of spaces means that energy is wasted heating air by the ceiling long before any effect reaches ground level. Also, when warehouse or hanger doors are opened, the heat carried in the air by convection systems is lost, while the heat from an industrial floor heating radiant system remains.

Industrial floor heating systems are assembled into the concrete slab. The underfloor heating pipe itself is mounted on reinforcing mesh inside the slab.

The system uses the mass of the structural slab to store and distribute heat to the building, providing heat in winter and cooling in summer.

REHAU UNDERFLOOR HEATING SYSTEMS



Thermally Activated Building Structure – Concrete structure with PE-Xa pipes integrated within the slab.



Diffusion Plate system – Floor covering, chipboard, UHF pipe, aluminium plate, insulation, joist hanger.



Floating Floor system – Floor covering, dry floor element, edge insulation, UHF pipe, foil faced prerouted panel, insulation, PE membrane, subfloor.



Sprung floor – Floor covering, dry floor element, edge insulation, UHF pipe, foil faced prerouted panel, insulation, PE membrane, subfloor.

Thermally Activated Building Structure (TABS)

In TABS, the building's concrete mass is utilised to store heat energy.

This allows heating and cooling operations to be carried out at low, resource-saving temperatures. Cooling units can be sized smaller than conventional air conditioning equipment.

Diffusion Plate

The REHAU diffusion plate system is designed for timber joist floors. The system uses aluminium plates to diffuse the heat over the floor area.

Plates heat faster than screed systems resulting in quicker reaction times.

Floating Floor

The floating floor system is ideal when time is premium.

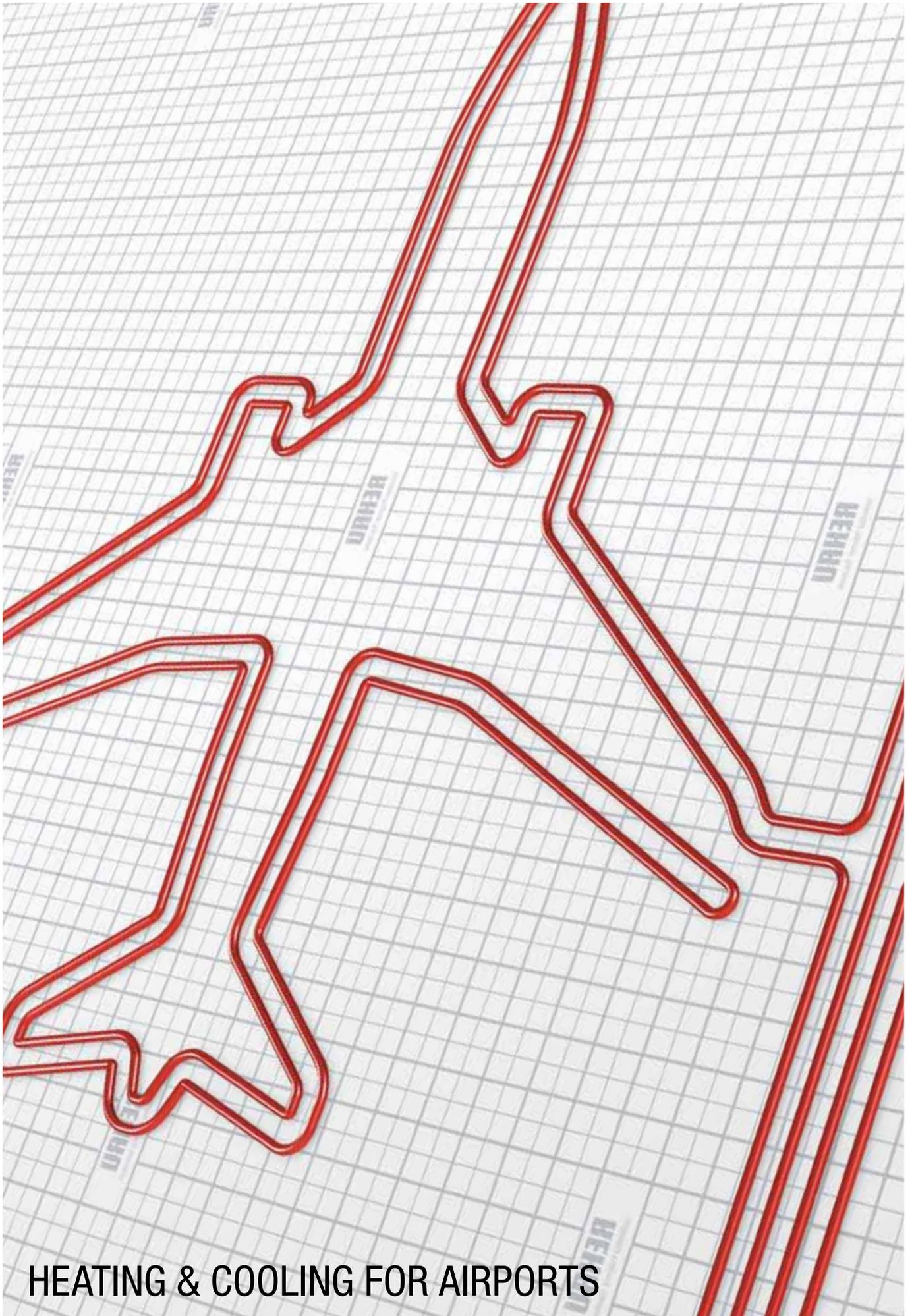
This system is the quick alternative to screed as there is no need to wait for screed to cure. Pre-routed polystyrene panels are laminated with a strong aluminium foil which diffuses the heat uniformly across the entire floor surface.

As with plate systems the response time is significantly faster than screed systems.

Sprung floor

REHAU has developed a special system for use with sprung floors.

The sprung floor system is specially designed so that it is not fixed to the sprung floor structure. This ensures that the REHAU underfloor heating system can be enjoyed without limiting the performance of the sprung floor.



HEATING & COOLING FOR AIRPORTS

PROJECT CASESTUDY

CHRYSTON HIGH SCHOOL



The largest ever installation of REHAU underfloor heating is in the new £22m Chryston High School, Scotland, being built as part of North Lanarkshire Council's £200m Schools and Centres 21 programme.

More than 45,000m of REHAU PE-Xa 16mm pipework has been installed by REHAU Authorised Partner Express Heating of Edinburgh across a floor area of more than 8,000m² - larger than a full size football pitch.

In the classroom and corridor, the pipework has been fixed in reverse spiral circuits using REHAU's TACKER system. In the cultural centre, community hall, assembly hall and sports hall it will be fixed using REHAU's Sprung Floor system. This fixes the pipe on an insulating layer between the flooring joists in a void below the floor surface, preserving the performance characteristics of the sprung floor without compromising the efficiency of the underfloor heating.

The REHAU system was specified by consultant Rybka who had been impressed both with the quality of the REHAU pipework and the technical and sales support provided by the team at REHAU's regional sales office in Glasgow.

The heat source for the underfloor heating system is a combination of high efficiency biomass plant and gas boilers. The main heat source is the wood chip fuelled biomass plant which provides significantly lower running costs than gas. This reflects the high focus on sustainability on the project.



PROJECT CASESTUDY

TOLLYMORE OUTDOOR CENTRE



REHAU Authorised Partner White Underfloor Heating has teamed up once again with the design team which delivered the award winning Orchard Building at Stranmillis University College.

REHAU installed almost 1000m² of underfloor heating and 6000m of hot and cold water supply pipe at the newly opened Tollymore National Outdoor Centre.

The £5m centre, sited on the edge of the Mourne Mountains, is a dramatic new building designed for Sport Northern Ireland by Consarc Design Group Ltd, with detailed design by Knox & Clayton Architects and constructed as a design and build project by Glasgiven Contracts.

The main building features a roof finished in copper art membrane curved in three dimensions over the entire three storey structure which is supported by glue laminated timber beams. The building is comprised of meeting areas, training rooms and residential accommodation.

Below this is a lower ground area housing changing rooms, shower facilities and a rolling pool for canoe training, with REHAU underfloor heating and pipework throughout supplied and installed by White Engineering.

The project has been built with close attention paid to its impact on the environment and includes both a biomass boiler as the heat source for the REHAU underfloor heating system and solar panels to provide heat for the hot water supply, as well as a rainwater recycling system. As a result, it has been awarded a BREEAM Excellent rating.

White Underfloor Heating was specified for the project by M&E consultants Taylor and Fegan, on the basis of the Strangford-based company's long and successful track record on high profile projects such as the Orchard Building, University of Ulster Warwick Building and Victoria Square.

UNDERFLOOR HEATING

BERLIN BRANDENBURG INTERNATIONAL AIRPORT



Up to 27 million air passengers per year, 85 aircraft parking spaces, around 20,000 employees, an underground railway station and its own motorway access.

The figures for the new Berlin Brandenburg International (BBI) airport are impressive. After its expansion by around 1,000 hectares, the site will cover an area of almost 1,500 hectares, equivalent to around 2,000 football pitches.

Using experience from projects on a similar scale, polymer specialist REHAU has developed solutions for both safe rainwater disposal and the extraction of geothermal energy for terminal heating, combined with comprehensive planning support. To date, the company has delivered over 1,000,000 metres of pipes to the airport for the expansion of the infrastructure.

The successful management of a mega-project such as the expansion of Berlin-Schönefeld airport into Berlin Brandenburg International airport requires not only excellent planning services but also reliable partners.

The airport energy supply was a key focus, with the use of alternative resources being the stated aim. In order to use geothermal heat for cooling the six-storey terminal in the summer and heating in the winter, the building initially had to be provided with 318 energy piles of 1.2m diameter. 51,000m of geothermal collector pipes were integrated into the 10 to 15 metre-long terminal foundation piles. These pipes extract the underground heat through a closed circuit.

In addition, in order to guarantee the permanent supply of food and goods to the airport, outdoor facility heating of around 1,700m² ensures that the ramp accesses are kept free of snow and ice in the winter and therefore accessible for delivery transfer.



UNDERFLOOR HEATING

SNOW DOME, HEMEL HEMPSTEAD



38,000m of REHAU PE-Xa pipe along with 800 REHAU EVERLOC™ joints have been installed as part of the snow cooling system at the new Snow Centre in Hemel Hempstead.

The system consists of 400 REHAU PE-Xa pipe circuits laid across the indoor ski slope to circulate the cooling medium required to maintain optimum conditions for the created real snow. The circuits are terminated at each end with a REHAU EVERLOC™ joint to allow connection to the cooling system flow and return headers.

Designed by Acer Snowmec Consultants, the system has been installed by REHAU Authorised Partner Shires Technical Services Ltd using clear 20mm PE-Xa pipe laid at 300mm intervals across the 140m long, 40m high slope. The pipe was specially manufactured for the project by REHAU in Germany.

The ski slope cooling system, installed by Cryotech Systems Ltd, circulates a 45% mono ethylene glycol and 55% water mix circulating at -15°C from the chiller plant to the REHAU pipework on the upper and lower sections of the slope and to the overhead gantry coolers.

In addition to the pipe cooling installation, Shires also installed underfloor heating with a glycol mix circulating at 35°C in the Snow Centre's concrete foundation slab to operate as a frost heave – isolating the ground from the freezing slope and reducing potential damage to the slab.

A further heated slab in the entrance lobby also helps to melt the snow carried through on skiers' boots and provides a buffer between the heated and cooled zones in the building.

REHAU pipework was chosen for the installation because of its proven quality and performance under extreme conditions and also because it could be extruded at REHAU's plant as a clear polymer to allow the installation team to observe the glycol flow whenever this was required.

The main contractor at the £23m Snow Centre, was Sir Robert McAlpine.

PROJECT CASESTUDY

VODAFONE SITE SOLUTIONS INNOVATION CENTRE



The Vodafone Site Solutions Innovation Centre has been awarded South Africa's first six-star Green Star rating.

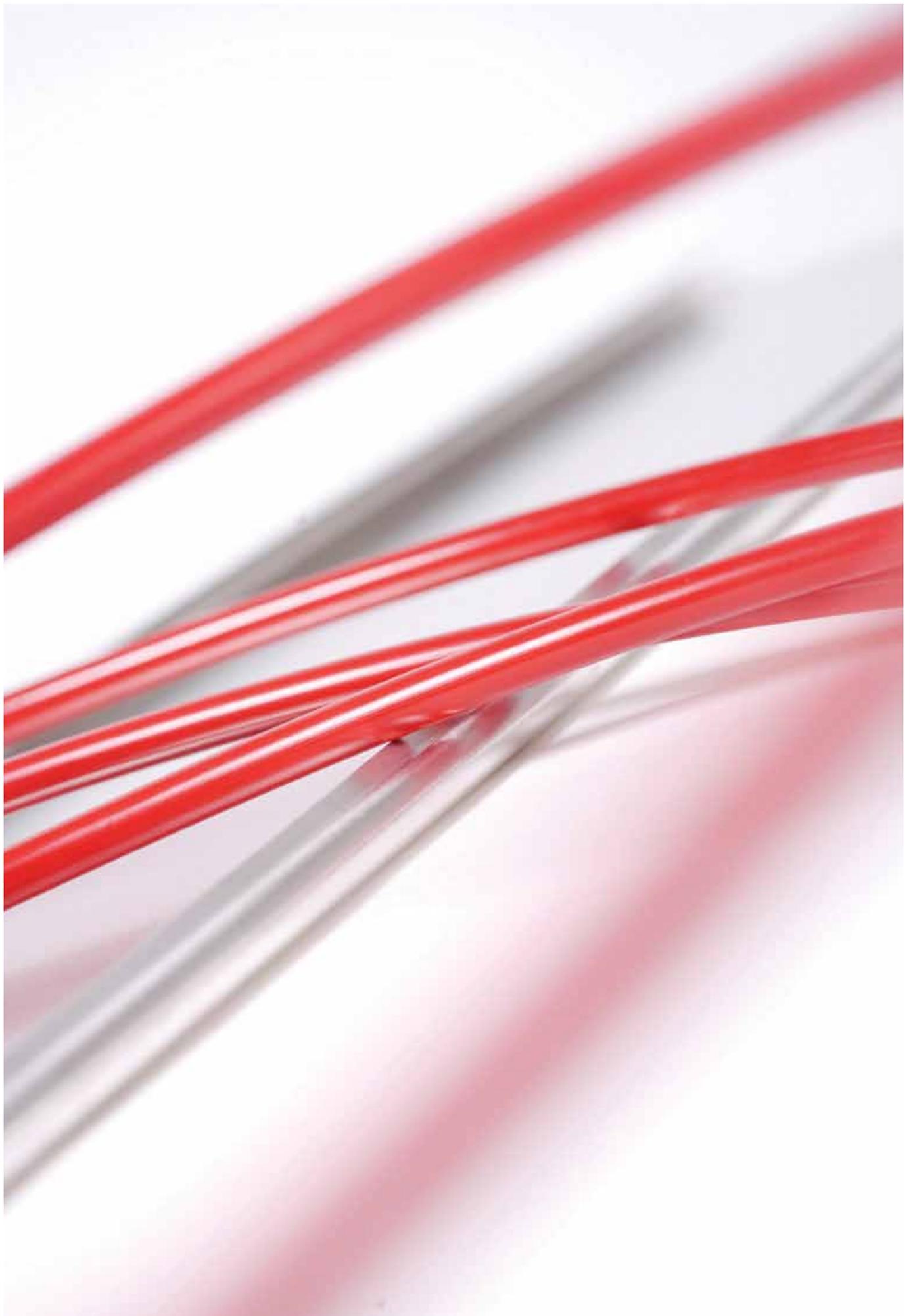
The six-star rating makes the Site Solution Innovation Centre one of Africa's most environmentally sustainable buildings.

Located at the Vodacom Campus in Midrand, South Africa, it will be powered with renewable solar energy, use passive and thermal cooling/heating technologies. WSP Group commissioned REHAU South Africa to design a Concrete Core Tempering (also referred to as Thermally Activated Building Systems or simply TABS) to augment and operate in conjunction with the air-conditioning system.

Concrete Core Tempering (CCT) is a method of introducing heating or cooling into a concrete structure by means of embedding a series of pipes in the concrete floor or ceiling slab. The heating or cooling energy produced is used to substitute the heating or cooling load generated by a central air-conditioning plant. Studies have shown that as much as 70% of the air-conditioned air can be replaced in this way through passive radiant heating/cooling, saving on the electricity costs used to drive the air-conditioning system, as well as the size of the air-conditioning plant.

The single floor slab resulted in a relatively simple installation. Rolls of PE-Xa pipes were decoiled on site and fixed to a steel mesh. The loop lengths were designed in such a way that there were no joints required.

Prior to casting the concrete layer, the system was tested at 6 bar pressure. The system was placed under pressure the entire time it took to pour the concrete in order to monitor the work activity and check for leaks. As a testimony to years of global development and experience the installation was leak proof and the concreting operation went smoothly.



UK & IRELAND SALES OFFICES

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