

New office space benefits from a renewable energy solution from Thermia



When MicroStep Europa decided to build a new office in Bad Wörishofen the main criteria were energy efficiency and sustainability.

MicroStep Europa

MicroStep manufactures and supplies CNC (Computer Numeric Control) machines equipped with plasma, laser, oxyfuel, waterjet and 3D mill technologies. Besides machine technology they develop and supply advanced control systems for machine tools and CAM software with custom modules for various applications. MicroStep Europa® GmbH is a sister company of MicroStep s.r.o., whose offices are located in Bad Wörishofen, Berlin and Dorsten. Through a network of authorized dealers and subsidiaries, the company is present in 48 countries worldwide whereby over 95% of production is destined for export. In the field of plasma cutting the company counts among the world's largest producers.

Efficient heating and cooling was a must for this 21st Century build.

MicroStep decided to build their new office in Bad Wörishofen. The most important investor requirement was: maximum savings using renewable energy and maximum efficiency in heating and cooling the building. When choosing materials for the build the aim was to reduce heat loss as much as possible. It was clearly stated from the beginning that the heat source must be in accordance with the quality of the materials used for construction, moreover the heating system supplier must have extensive experience in



MicroStep Europa® GmbH new office in Bad Wörishofen, Germany – rear view



Conference room

that field and the appliance must be durable, with a long life span; shortly speaking be good for decades to come.

Thermia's solution coupled with an efficient heat distribution system allows for extraordinary savings.

After intensive research a choice was made to go with heat pumps offered by Thermia. This was due to nearly a hundred years of experience in the heating industry and over 40 years of experience in heat pump design and manufacturing. The demands and expectations on the heat pumps were set high as not only were they necessary for heating and cooling but also for domestic hot water production. The building's heating and cooling demand required the

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says Ondřej Kučera, business development manager at IVAR CS



Foyer at conference rooms

installment of three heat pumps. The advantage of Thermia heat pumps is the cooling circuit which is assembled directly during production, requiring only minimum maintenance during operation.

IVAR CS was selected to carry out all constructions work related to the building's infrastructure, such as, heat pumps, heating and cooling distribution, hot water tanks, photovoltaic solar panels as well as a water filtration system.

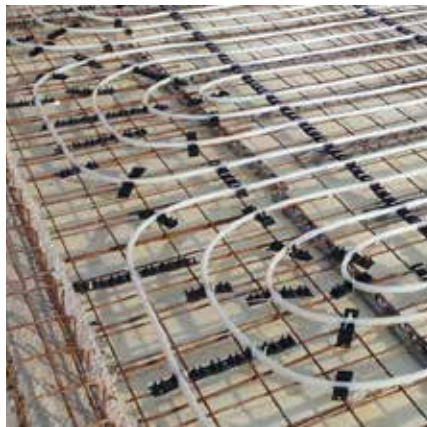
In the foundations of the construction, Pex pipes for heating or cooling were installed – known as, Thermally



Thermia Atec air source heat pumps (outdoor)



Atec control system (indoor)



Thermally Activated Building Structures (TABS) – pipe in fundament for heating/cooling the building envelope



Floor heating (indoor)

Activated Building Structures (TABS). These systems integrate the indoor climate management into the fabric of the building, minimizing the need for conventional technologies. When the foundations were finished then work proceeded with a focus on high-quality insulation. Using a modular solution, the heating distribution system was divided into several heating circuits. The major benefit is being able to independently control individual zones of the building. A Thermia Atec air source heat pump with indoor control system was installed in the technical room. All the heat pumps can be remotely controlled by a user-friendly interface.

It is worth underlining that besides heating, Thermia Atec provides cooling in the summer when the

indoor temperature is between 22-24 °C and when the outdoor temp. is approx. 34-36 °C. It is energy efficient and optimal for maximum comfort. Furthermore, the cold water temperature is approx. 22°C -so it's perfect because significantly less energy is consumed, compared with typical air-conditioning where the coolant needs to be about 7 °C and what's more, a humidity sensor is not necessary.

'Already the first season has proved that investing in a Thermia air source heat pump has paid off, along with its perfect functioning and totally reliable operating conditions, it also has exceptionally low energy consumption.' – says Ondřej Kučera, business development manager at IVAR CS

Fact Box

Characteristics of the building

- Heating demand 54 kW
- Functions: heating, hot water and cooling

Applied renewable solution:

- three Thermia Atec, air source heat pumps
- Photovoltaic 2700 m²

Heating / Cooling distribution system:

- Thermally Activated Building Structures (TABS)
- hydronic floor heating

Completion date: 2015

IVAR CS – your experienced partner in renewable energy in Czech and Slovakia



IVAR CS spol. s r. o. acts as a commercial and technical representative of several European companies in the fields of water, heating, gas, filtration and water treatment, pumping equipment, solar systems and heat pumps, storage tanks, fan coils and air conditioning. Our primary goal is customer satisfaction. Therefore, we provide a wide range of products in sufficient quantities as to be always ready for immediate delivery.

IVAR updated its organizational and technical parameters introduced during the 2000 global quality standards: ISO 9001 and environmental policy with ISO 14001 in 2004. IVAR CS is continuously increasing its sales in the Czech and Slovak markets. One of the principal ways of achieving this is the participation in exhibitions and fairs. Exhibitions allow IVAR to build awareness from the general public and maintain contact with individual customers.

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Thermia The ultimate energy provider since 1923



Pioneering heat pumps

For the last 50 years, we have dedicated all our resources and knowledge to developing and endlessly refining one product: the heat pump. Our focus on geothermal energy has given us world-leading knowledge in heat pump technology.



Engineered with passion

Developing truly sustainable renewable energy solutions can only be achieved with passionate, dedicated and uncompromising experts. Some of Europe's most highly qualified engineers can be found in our own R&D center.



Born in Sweden

All our products are designed, manufactured and tested in Sweden using the latest technology and the highest quality components. We are proud to count world-leading industry specialist, Danfoss, among our technology partners.