



“The geothermal heat pump system was the only technology capable of meeting the guideline payback period....”

The Motor Tax Office building in Tralee was designed and built in 1999/00. Designers and interested parties decided that as a public building it should showcase leading renewable technology. Space heating and cooling is provided by a geothermal heat pump system, hot water is provided by an array of solar panels, the building is naturally ventilated and well insulated, there is a low energy lighting system and the entire building is monitored by an Energy Management System.

The ground source heat pump system draws heat from the ground via a horizontal collector. The collector coil is approximately 5,100m in length, buried at approximately 1.5m depth in a collector area of 2,000m². The heat pump can provide a maximum heat output of 130kW at a design performance efficiency of COP 3.7.

A key factor in the optimisation of the Geothermal System in Tralee Motor Tax Office is the use of the system for heating and cooling. During the colder months the heat pump draws heat energy from the collector field. In the summer months the geothermal system provides free cooling to the building. This period of cooling allows the collector field to recharge, ensuring high heat pump efficiency during the colder months.

The geothermal system has been in operation for over a decade. It has proven to be a reliable and efficient heating system. On average the heat pump system consumes $\frac{1}{3}$ the energy, per year, of a traditional space heating and cooling system.



An independent energy survey of the Motor Tax Building was carried out from September 2000 to May 2001 by Kerry Energy Agency. The results for the heat pump system were very promising. Of all the energy efficient technology installed in the Motor Tax Office, the geothermal heat pump system was the only technology capable of meeting the guideline payback period.

CLIENT

Kerry County Council

LOCATION

Tralee Motor Tax Office,
Rathass, Tralee,
Co. Kerry, Ireland.

SERVICES PROVIDED

Design and development of geothermal heat pump system,
Heat pump system installation.

VALUE OF SERVICE

€100,000

DURATION

Year 1999 - 2000

REFERENCE CONTACT

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DESIGNER

Dr. Paul Sikora

PARTNERS

Dunstar Ltd