

Heat Exchanger for the Regional Government of Extremadura's Departmental buildings

Edificio III Milenio, Merida

The Extremaduran regional government's originally-styled departmental buildings were built by a Ferrovial Agroman-led temporary joint venture (MERIDA III MILENIO UTE).

The key design aim was to ensure comfort on the inside in all senses: thermal, visual, indoor air quality and acoustic quality, and enable optimum performance from architectural resources as an alternative to resorting to installing conditioning for the indoor atmosphere.

An important feature of these buildings is promotion of the use of renewable energies inside them, including micro-cogeneration, biomass, and geothermal and photovoltaic solar power.

Furthermore the design was awarded CENER's Environmental Building CME Plus Quality Seal (the National Renewable Energies Centre).

A key element which is especially representative of the departmental buildings is the earth-air heat exchanger which is used to cool the hot air prevalent in summer and also to heat cool air in winter prior to air entering the buildings via a system of buried pipes (geothermal power).

The heat exchanger allows for conditioning of the air conditioning system's input air, via the installation of 11 areas of 11m-long pipes with a diameter of 300 mm, which are installed 1 metre below the building's lowest basement car park.



Many studies bear witness to the energy efficiency of geo-thermal installations in cold climates although these may not be entirely applicable to facilities located in hot climates.

Environmental Benefits:



The functioning of the exchanger produces an annual energy saving of around **56,000 kWh**, which represents an annual energy saving of **4,400€**.



Atmospheric air is fed through by means of a system of buried pipes. As it flows through them, the air temperature adapts to that of the encasing soil.

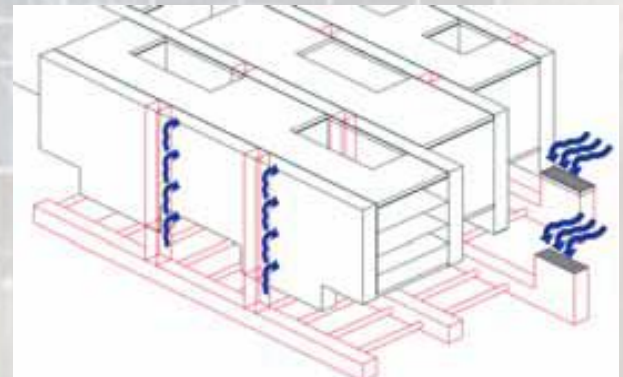


DIAGRAM OF THE EXCHANGE INCLUSION IN THE BUILDING



SELLO CENER - DE CALIDAD
MEDIOAMBIENTAL EN LA CONSTRUCCIÓN
A LA NUEVA SEDE DE LAS CONSERVADORAS LA JUNTA DE
EXTREMADURA EN MERIDA
Promoción: Consorcio del Ferrocarril de la Junta de
Extremadura. Arquitecto: GCP Oficina de Proyectos, S.A.

