S.O.L.I.D. Gesellschaft für Solarinstallation & Design
Herrgottwiesgasse 188
A-8055 Graz
Tel +43 (0) 316 292840
Fax +43 (0) 316 29284028
www.solid.at office@solid.at

Project description
Solar Cooling System in Pristina/Kosovo

The Austrian Solar Company SOLID and the Engineering Company IC Consultants could agree with the European Agency for Reconstruction (EAR) and UNIPROJECT from Pristina/ Kosovo as general Contractor to realize one of the biggest solar cooling system worldwide for the renovation of the EAR Tower in Pristina. The funds for this investment came from the European Union managed by the Task Manager Otto-Roman Barnert, with the Technical Assistance being provided by the LOUIS BERGER S.A. group.

This project is a milestone for the application of environmental friendly technology for cooling purpose in commercial use carried out by Austrian solar technology leaders.

The 9 storey high EAR tower with 300 m² in each floor was damaged badly during the war of Kosovo and has to be renovated completely. This renovation includes a new heating and cooling system.

Up to now all cooling systems are operated with electric power. The big demand of electric power in summertime already caused serious troubles even in highly developed countries like the USA because the peak load could not be managed by the power grids. This peak in electric power consumption can also be watched in most of south European countries but still electric power is going to be used more and more.

As electric power is produced by burning fossil fuels or using nuclear power this causes enormous environmental impacts on carbon dioxide emissions. In Kosovo an old coal fired plant supplies most of the energy.

EAR tower in Pristina/Kosovo before refurbishment

EAR tower – current status

The new energy supply system by SOLID and IC is operated with solar thermal energy. 227m² of “Gluatmugl”- solar collectors deliver heat to two absorption cooling machines producing totally 90 kW of cooling power. This cold water is distributed in the house to fan coils and an air handling units. The radiation profile of the sun is conform to the cooling demand in the building that is caused by internal heat from computers, lightning and working people during daytime. The conformity between load profile and consumption profile allows a very efficient energy supply system without the need of a storage tank.

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EAR tower in Pristina/Kosovo after refurbishment
-with solar plant and cooling tower

In winter, spring and autumn where less or no cooling demand exists the solar energy is used to support the heating system covering a significant part of the space heating demand.

Domestic hot water is produced the whole year with solar energy but there is a low demand for it in an office building.

The solar plant will be optimised and supervised by a telemonitoring system from Austria in cooperation with local companies. The construction started in January 2003 and is going to be finished in March 2003.

This solar plant will avoid the burning of at least 100.000 l oil (heating) and 250.000 kg coal (Electric power/cooling) during its lifetime. A total CO_2 reduction of 1.010 t will be achieved.

We expect an economic pay back period of 10 years while the lifetime is more than 20 years. Besides energy costs in operation, service and maintenance are reduced significantly because the solar plant does not include heavily used mechanical parts.

Further applications for this type of system are public buildings, hospitals, stores, production sites but also hotels and tourist infrastructure.