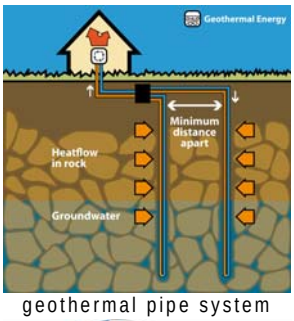
SUB-GROUP 2 :
ECO-RESTORATION

05, 07, 09, TALSSTRASSE

back front of the buildings

piping of the heat probes



geothermal pipe system

SHORT DESCRIPTION OF THE PROJECT:

The ensemble of buildings is located in the Talstr. 5,7,9, in the old town centre of the city of Freiberg in Saxony/Germany. It was built in the end of the 1920s/beginning of the 1930s.

Due to the typical architecture and the formative corner construction the building ensemble was designated a listed monument. During the extensive restoration of the apartment –building and the adaption of the floor plan to modern requirements, important stylistic elements will be assimilated. As part of modern redevelopment energy-efficient measures will be performed to ensure sustainable CO^2 reduction. For the first time in Freiberg geothermal heat will be used as sole energy source in a multiple dwelling to heat the flats and to provide domestic hot water.

MAIN OBJECTIVES:

This ensemble of buildings has been chosen to test and demonstrate the feasibility and compatibility of a complex eco-restoration using renewable energies in a listed monument:

a) A thermal simulation has been implemented to proof the compliance of the energy saving regulations (EnEV), financial and environmental aspects that will ensure long-lasting low energy consumption and minimum running costs for the tenants.

b) Model calculations have been run to precisely dimension the geothermal system that consists of 6 borehole heat exchangers and a heat pump. Though the quality of the ground has been considered as well as the parameters of the buildings. The depths of the boreholes are between 100 and 120 m.

c) A monitoring and evaluation process will be arranged for the future periods from the letting of the flats on to get reliable data of the system (e.g. coefficient of performance) and real life experience.

ESPECTED RESULTS OF THE PROJECT:

(1) The technical and architectural concept produces minimum running costs over the total life cycle of the buildings.
(2) The results of the thermal response tests of the proper site for the efficient use of geothermal heat will be confirmed.
(3) According highest environmental aims a significant CO^2 reduction will be received by this complex eco-restoration.
(4) This eco-restoration ought to be best-practice for comparable projects.

PARTNERS :

City of Freiberg and Municipal Housing Company Freiberg (SWG)

Team for the restoration :

- Developer: IGC Cossebaude GmbH (www.igc-online.de)
- Architect: AGG SEEHARS. ARCHITEKTEN Dresden (www.agg-dresden.de)
- Geothermal design &engineering: geoENERGIE Konzept GmbH (www.geoenergie-konzept.de).

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