

Low-energy house in Aqaba selected as National Winner of Energy Globe World Award 2007

Aqaba, 14.03.2008 – An award-winning model residential building in Aqaba reduces energy cost by 72%. The innovative house of Emtairah Consulting Corporation, a Jordanian Developer, has been realized with the support of the EU-financed MED-ENEC project.

The Jordanian Success Story

The Aqaba Residence Energy Efficiency (AREE) Project is the Jordanian demonstration building of the MED-ENEC project that is managed by gtz International Services. The objective of this Pilot Project, by Dutch architect Florentine Visser, is to show the technical and economic feasibility of energy efficient design, construction techniques and equipment for a typical residential building in the hot and dry climate of zones like Aqaba.



The AREE building is located in the 9th district of Aqaba. The official opening is planned in October 2008. The house will be used as a study centre with guest-researcher lodgings, open for the public, during the first years. Afterwards, it will be used as a private residential building. The following features allow a substantial reduction of energy consumption, compared to a conventional building:

- Design: avoiding heat gains in summer and heat losses in winter by orientation of the building, reducing the windows surface, natural ventilation and other “passive” features
- Building envelope: insulation of roof and walls, double glazing, thermal mass, etc.
- Energy-efficient lighting (CFL’s, etc.)
- Solar cooling (and as option: generation of electricity by photovoltaic panels)



Roof garden with grey-water drop-watering



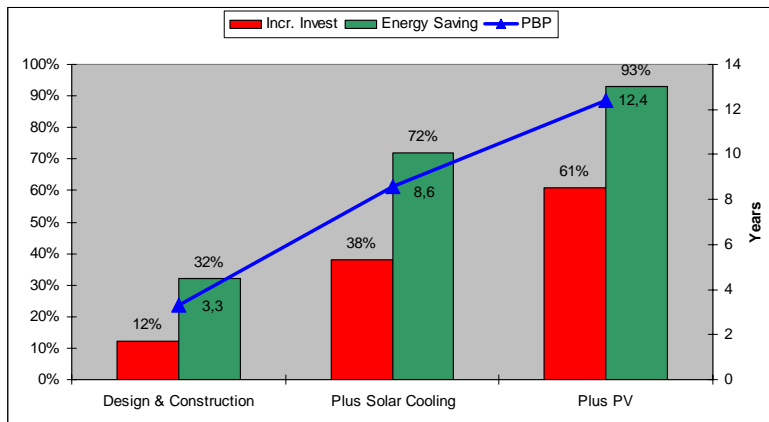
Grey-water tank and planned water treatment (plants still to be introduced in the gravel bed)



Vacuum solar collectors for solar cooling

Results and potential for dissemination

The 420 m² house is almost finished and will save over 70% of electricity, with incremental cost of about 38%, compared to a conventional house. The pay-back period for this investment is 8.6 years. The energy savings correspond to a yearly reduction of CO₂ emissions of 21 tons, e.g. 315 tons over the minimum lifetime of the house. If photovoltaic panels will be added, the savings may amount to 93%. The performance indicators of the different technologies used are indicated in the following chart:



Performance indicators AREE: PBP=pay-back period

The experiences of the Pilot Projects are currently being used by the AREE architect for a new project, an office building in Cairo.

The Jordanian Pilot Project has been implemented and supported by

- Emtairah Consulting Corporation, Amman
- Architect/Project Manager Florentine Visser, Amman
- Engineering by Mohammad Abu Afefeh, Aqaba
- CSBE, Joud Khasawneh, for support in dissemination and communication material
- NERC, Amman, for monitoring of performance indicators
- The Aqaba Special Economic Zone Authority (ASEZA) for the water efficient garden
- The MED-ENEC project of the European Union for technical and financial assistance and dissemination.

(gtz: The following text is for a frame on the right side of the text)

MED-ENEC

MED-ENEC aims at boosting energy efficiency and the use of renewable energies in buildings in 10 countries south and east of the Mediterranean. MED-ENEC has an integrated project approach, combining the improvement of framework conditions such as laws, standards and incentive programs with networking, demonstration projects, capacity building and the promotion of business cooperation and technology transfer. MED-ENEC is implemented by a consortium lead by gtz International Services, and including Ecofys (The Netherlands), NEEDS (Lebanon) and ERC (Egypt). The two project offices are in Tunis and Beirut.

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