

Self- sustained energy residential complex



Kudsia suburb

The purpose of the project:

To achieve a data base for energy conservation methods that can be applied in the future to similar projects in Syria.

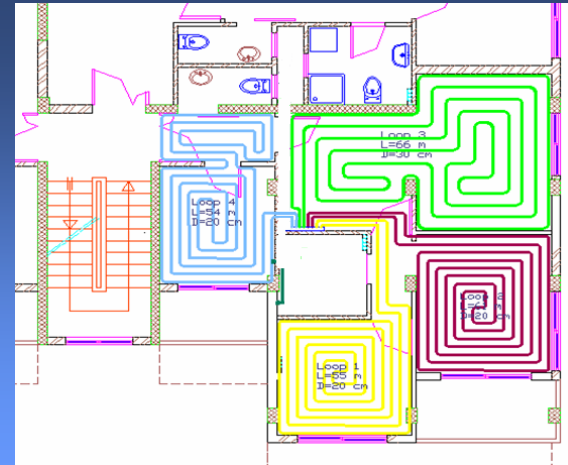
This will be accomplished by certain technical methods of identified energy efficiency measures that could be applied in different construction sectors.



Energy concept

Designing Conditions

- Outside winter temperature -3 c
- Outside summer temperature 38 c
- Inside temperature 22 c
- Building & system estimated life-time: 15y



The energy concept contains the following:

- Solar assisted Floor heating
- Natural cross ventilation also towards common stair-cases
- Solar chimney
- Window shading
- Exterior building insulation envelope
- Double glazing
- Exterior wall protection through plants
- Natural building shading through deciduous trees
- Interior cooling through plants

Economics and additional benefits

Heating energy & Domestic hot water

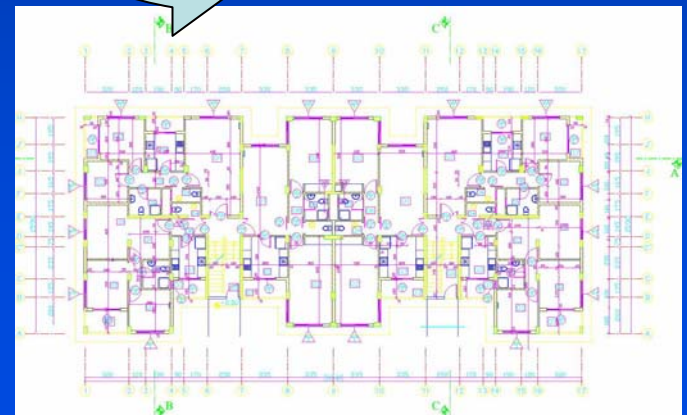
Investment saving by using pilot project = 3083 (Euro / year)
51300 (Euro / 15 year)

- Pay back period for (insulations + solar system) investment cost
- The pay back period (t) can be got by: $\{(Energy\ cost + maintenance\ cost) \times t + equipment\ cost + insulation\ cost\}$ PP
- $\{(Energy\ cost + maintenance\ cost) \times t + equipment\ cost\}$ Ordinary house
- $\{(3083) \times t + 68460 + 68132\}$ Pilot project = $9494 \times t + 74045\}$ Ordinary house.
- Pay back period for (insulation&heating system &accessories) in p.p = **9.75** year
- Energy cost saving rate by using pilot project = (energy cost in ordinary house – energy cost in PP) / energy cost in ordinary house = $(9494 - 3083) / 9494 = 67.5\%$

Status of the project

The project is now under construction in the out skirts of Damascus.

The location and orientation of the building, is North - South, Openings towards West are minimal to serve the purpose of the energy concept .



Status of the project

The project is now under construction.

The construction process started in the month of June of 2007. 50% of the construction will be achieved by end of November of 2007. The project is expected to finish by end of February

