

# THE HIGH ENVIRONMENTAL VALUE

## ENERGETICAL APPROACH

In the GREEN SQUARE project, the comfort of future occupants and energy savings were handled with particular care.

## ENERGY OBJECTIVES

Our objectives are ambitious :

- respecting the new PEB regulation (Building Energy Performance) in force since July, 2008 in the Region of « Brussels Capital»
- Aiming at satisfying the future PEB regulations which will come into effect in July, 2011.

In a concrete way, we try to implement construction methods and techniques allowing decreasing the demand of primary energy of more than 50 % with regard to the previous thermal regulations.

For example, for a 110 m<sup>2</sup> apartment, the energy bill will be about 420 € cheaper a year based on the energy prices on 01/01/2009)

For the whole complex, we will decrease the annual production of CO<sub>2</sub> corresponding to the emission of more than 50 cars making the tour of the Earth.



## TECHNICAL CHOICES

The modelling of the project allowed us to optimize most of the retained technical options :

### PASSIVES MEASURES

- Architecture limiting the solar contributions in summer and facilitating them in winter
- High performance double glazing
- High performance wood frame or metal frame with thermal break
- Strengthened insulation (mineral wool, wooden wool or equivalent) between first floor and basement: minimum 6 cm , outer walls: minimum 8 cm and roof: min 15 cm
- The residences will be equipped with a double stream ventilation system with energy saver ( heat exchanger)

### USE OF RENEWABLES ENERGIES

- Solar heat energy  
Solar panels coupled with several hot water tanks will ensure a minimum of 35 % of the annual needs in domestic hot water.
- Solar electrical energy  
According to the materials available on the market, which is in constant evolution, several concepts will be analyzed. Photovoltaic panels will be used to produce part of the electricity.

### USE OF THE FOSSIL FUELS IN A EFFECTIVE WAY

#### Condensation boiler

The condensations boilers will ensure the centralized production of hot water for the heating and will complement the solar panels for the production of domestic hot water.

#### NOTE

The recovery of rainwater completes the environmental approach (two tanks for a total capacity of 60m<sup>3</sup> are planned).

