American University of Beirut

English 206

Ecological/smart houses

Purpose:

A house is not a home. It is a machine for living. Four walls and a roof do not represent a house. What really makes it is the envy to live in it, the comfort, the feeling of occupying a space that belongs us. In ecological/smart houses, nothing will change from this side; yet even more comfort, flexibility and liberty will be possible.

However, this “machine for living” will have to change. As the price of energy has increased, we can’t allow ourselves to consume “blindly”. Not only did the energy costs increased, but a new idea emerged too: the accommodation of the living space to the long lasting development. The alarming problem of pollution is also inevitable. Its very high rate is extremely threatening to our environment and we should prevent it from increasing.

A house must have a great respect towards nature, emit less oxygen… This green house must by herself find her energy from renewable resources as the wind, the light or the ground.

This is the revolution of a long lasting living: the “machine for living” has now become a live machine!

We will see in this project, in theory and in practice how to develop this kind of houses. As engineers and architecture, it is our main concern to assure a livable planet for the future generations. We will also go through the new innovative materials, equipments that are nowadays used to succeed in such architectures.

The problem:

The concept of eco houses seeks an idealization of one of today’s world major problem. By reducing incredibly the negative impact that is produced on the environment and by assuring a livable planet for future generations, ecological houses should be adopted everywhere in the world.

If such a system of construction knows a great popularity today, then this means that our “old” type of construction present or presented important disadvantages. Fuentes Manuel, Thomas Stephanie and Roaf Sue.(2003). Ecohouse 2: a design guide Oxford: Architectural Press.

Actually, our environment is being harshly and consistently aggressed by all the degrading chemical products released in the atmosphere. The amount of these molecules in the air is alarming and new solutions must quickly be found. ( Roaf Sue, Crichton David and Nicol Fergus. (2005). Adapting buildings and cities for climate change: a 21st century survival guide. Amsterdam, Netherlands: Elsevier).

On another hand, our planet is about to know a lack of impassable energy if we continue on consuming at such a cadence those energies which aren’t effectively renewable.

Another encountered problem is the high costs of these technological houses. To what extent would one sacrifice a higher amount of money in order to assure a livable place for future generations?

When it comes to Lebanon, the problem is even bigger. Our country is still in development and its actual situation does not favor any evolution of such a project. The awareness of people in Lebanon about the importance of this catastrophe isn’t sufficient enough and expanded enough to create a real change in attitudes towards it.

Limitations of the research project:

Treating the topic of ecological houses in Lebanon leads to some problems.

The economical situation of the majority of the population isn’t a positive one. Rare are the people who are intending to stick to the concept of ecological houses.

Adding to this, the presence of sites working on such architectures may be very rare, if not totally absent. Not many examples are accessible in order for us to have a veritable placement of Lebanon within this problem.

Rare are the architects specialized in the study of ecological houses, therefore a direct contact aware about these architectures may be hard to find.

Rare are the sites constructing such houses.

**Pocedure:**

In order to make our research credible we will use several sources. Several sources are to be used: starting by live interviews with professionals, multiple readings taken from scientific books, in addition to articles and recent news published by websites.

Concerning our first source, since the project is new in Lebanon and there are rarely any ecological/smart houses, we can’t make any surveys concerning people’s opinion of their ecological/smart houses and ecological houses in general. Instead we will ask them whether they prefer some of the options of a smart house or a regular one, how advantageous they think it is and how concerned they feel about the drastic impact it has on environment.

In general the researches in the books and articles will be about smart houses that are practical & freezable, which middle class people can afford. We will give some of the main components of a smart house, examples and effects.

We will try to find some statistics from other countries which can help, including:

* The percentage of people using smart houses
* Cost if smart houses vs. regular ones
* Income of the people who live in smart houses
* The satisfaction of people living in smart houses

 In the end we will study all of the above aspects balancing between them, and give a final conclusion of smart houses VS. Regular houses.

**Conclusion:**

It is in our nature to always find new ideas and inventions that takes us a step closer towards fulfilling our needs and luxury.

 Smart houses are one of these generations’ recent ideas. It is definite that in Lebanon smart houses will start to increase and it’s only a function of time.

In addition we all face these days the direct effect of pollution and are trying to face it. Knowing that a smart house is a factor that reduces house pollution will also be one of the reasons that we will be seeing more of this kind of houses.

**References:**

**AUB library:**

Roaf Sue, Crichton David and Nicol Fergus. (2005). Adapting buildings and cities for climate change: a 21st century survival guide. Amsterdam, Netherlands: Elsevier.

Fuentes Manuel, Roaf Sue, and Thomas Stephanie. (2007). Ecohouse: a design guide. Amsterdam: Architectural Press.

Fuentes Manuel, Thomas Stephanie and Roaf Sue.(2003). Ecohouse 2: a design guide Oxford: Architectural Press.

Smith F. Peter. (2007). Eco-refurbishment: a guide to saving and producing energy in the home. Amsterdam: Elsevier

**Websites:**

Your Ecological House. (2008). Phillip S.Wenz. Retrieved March 10, 2008, from [www.your-ecological-house.com](http://www.your-ecological-house.com)

Le site du hors serie special climat du science et vie. (2007)Yves Sciama Retrieved March 25, 2008, from www.climat.science-et-vie.com/carte/

**More online sources are to be used for getting the latest technology about ecological houses.**