

UN-Habitat and its Nairobi-based sister agency, the United Nations Environment Programme (UNEP) are currently conducting a project to promote energy efficiency in buildings in collaboration with the governments of Kenya, Tanzania, Uganda, Rwanda and Burundi. The project, jointly funded by Global Environment Facility (GEF) and the East African governments, is scheduled for completion in 2015.

Doing more with less energy

Energy efficiency does not mean that we should lower our living standards. We live and work better in energy efficient buildings, because they are conceived to maintain a good indoor temperature, natural light, frequent air changes. As a consequence, we reduce, re-use and recycle resources keeping a high level of comfort. It is also good for the environment.

Indeed, it is the cheapest way to reduce greenhouse gas emissions and mitigate climate change. A green building does even more: It requires less energy for heating, cooling, lighting or ventilation. A smart, green building consumes less water by harvesting rain water. It generates less waste during construction by using local materials and thus cutting transport costs. It can generate electricity through the installation of solar power units. But none of these systems works alone. You also have to adopt a good housekeeping by changing your behavior: use appliances that are energy efficient, recycle your waste, spreading the word to your neighbor...

As the Native American proverb says: *"We don't inherit the earth from our ancestors; we borrow it from our children."*

Did you know?

- The greatest opportunities for energy efficiency exist at the design stage.
- A proper design of your building can save you more resources.
- Use of solar water heaters can reduce your electricity bill by up to 60%
- Using energy saving lamps can cut your electricity bill by half.
- Energy price will continue to rise for generations to come!
- By investing on renewable energy for your home today, you set the cost for your electricity for the next 20 years!

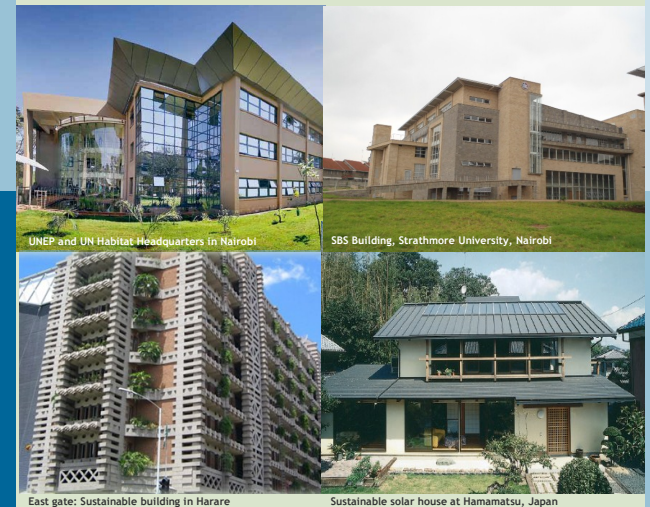
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FOR A BETTER URBAN FUTURE



Promoting Energy Efficiency in Buildings in East Africa



"Transition towards green building"

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The winning solution

You, your family and the environment all benefit. Our buildings are responsible for up to 57 per cent of national electricity consumption - more than the energy used for both transport and industry. As the demand for energy is increasing we need to invest more on affordable energy generation.

As we consume more energy, we also contribute directly to air pollution and thus to climate change. On average, in East Africa, up to 50 per cent of electricity generated drives from imported fossil-fuel, the production of which is responsible for most carbon dioxide emissions into the atmosphere.

Our industries cannot compete with foreign products because of the high cost of energy. Therefore to reduce the cost of business in East Africa we need to use energy wisely. And that starts with the building sector. This will allow us to expand our economies, create more jobs and improve the living conditions of our people.

Energy efficient solutions reduce the electricity bills for homeowners, businesses and governments, in new and existing buildings. The use of energy efficient appliances for lighting, refrigeration, television, machinery etc., mean lower electricity bills.

Well-designed buildings with environmentally friendly solutions use less energy. They require lower maintenance compared to ordinary buildings and are more comfortable spaces to live in. This enhances their property value.

Improving energy efficiency in buildings is a great way to promote economic development, improve the quality of life, protect the environment, avoid greenhouse gases and mitigate climate change.

The project

The project **Promoting Energy Efficiency in Buildings in East Africa** is aimed at mainstreaming energy efficiency measures into housing policies, building codes, and building practices in East Africa. It is also aimed at greatly cutting back on greenhouse gas emissions.

How we do it

To make sure we can save energy, we first need to understand how much energy we are using in our buildings, and for what. Ask yourself: What do you use for cooking? - gas, charcoal, or electricity? Do you know how much money you spend along the year to light your house, or to cool your office? And that you can save up to 50 per cent of this amount if you only change your bulbs to more efficient ones? Does your home have appropriate shading devices? In some regions, for instance in Nairobi, using air conditioning means that the building was not designed accordingly to the local climate. We should be able to cool our homes and offices only by opening the windows, if they are properly positioned.

To help in the design of energy efficient homes and offices, we are working with local governments in the building codes and regulations. These regulations will ensure that the techniques and technologies used to improve energy efficiency are adopted in the design and construction of buildings.



Think energy efficiency

If we think of energy efficiency when we are planning our houses, there will be no additional costs to it, but if this concern comes out only on a later stage, for example during the construction, we spend much more money. That is why we are training architects and building practitioners on green building design. That is also why you have to be aware of it!

This project will transform the building market. We are working to encourage the establishment of green mortgages by commercial banks and other financial institutions. We are also lobbying for financial incentives from governments to promote energy efficiency in buildings.

On the next three years, the project will influence 400.000 housing units in the five countries.



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| 1. Orientation | 7. Local building materials |
| 2. Vegetation | 8. Solar Water Heaters (SWH) |
| 3. Permeable area | 9. Solar Home Systems (SHS) |
| 4. Natural vertical ventilation | 10. Waste water re-use |
| 5. Natural lighting | 11. Rain water collection |
| 6. Overhang for shading | |