# PRESS RELEASE

**Kenyan builders to receive training on design for Sustainable Building Practices**

**Nairobi, 23 August 2013.** A group of building practitioners will on Tuesday gather at the Sarova Panafric Hotel in Nairobi, at the start of a special three day training, where they will acquire skills to integrate sustainable design principles into architectural designs with a strong focus on energy efficient strategies for buildings.

The training will be held from 27-29 August 2013, and is jointly organized by UN-Habitat, the Kenya Association of Manufacturers and Italy's Department of Architecture, Built environment and Construction Engineering at the *"Politecnico di Milano*" –under the coordination of Prof. Federico Butera.

The course is designed to address the emerging trend of developing healthier and smarter buildings by defining effective ways to utilize energy through introducing basic principles and tools on sustainable buildings design for use in Kenyan climates. The participants - comprising of architects, engineers and developers- will also learn how to implement these principles through a hands on studio session aimed at showcasing strategies for incorporating energy efficiency into site planning, building design and construction.

Key course topics include; thermal and visual comfort; designing with the local climate; solar geometry; passive design and commercial buildings design in Kenyan climates. The course applies a highly interactive group work methodology, structured around design exercises stimulating peer-to-peer learning and multi disciplinary work. A hands on approach will be adopted to enable participants to gain basic information and tools associated with sustainable building design in Kenya.

This edition of the '*Green Buildings'* training builds on the '*Sustainable Integrated Building Design'* course held at the Ardhi University in Dar es Salaam from 13-17 May 2013. It marks a further milestone in academic collaboration developed within the broad framework of the programme '**Promoting Energy Efficiency in Building in East Africa'** implemented by UN-Habitat in collaboration with governments of Kenya, Uganda, Tanzania, Rwanda, Burundi and the United Nations Environment Programme (UNEP). The five-year program is co-funded by the Global Environment Fund (GEF) and aims at mainstreaming energy efficiency measures into housing policies, building codes and building practices in East Africa.

The course will also take the opportunity to launch in Kenya, a draft copy of the *"Integrated Building Design - Handbook of Sustainable Architecture in the East African community climates*" developed by UN-Habitat and the *Politecnico di Milano*, under the framework of the above programme. Another key highlight that will take place during the opening session of the training shall be the signing of a Memorandum of Understanding between Kenya Association of Manufacturers and UN-Habitat to further build capacities of stakeholders in the building sector on energy efficiency.

**For more information please contact:**
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# BACKGROUNDER

## Green Buildings Training Course

### Introduction

Energy used in commercial and residential buildings accounts for a significant percentage of the total national energy consumption. It is estimated that 40% of the total electricity generated in the region is used in buildings alone, consuming more energy than the transport and industry sectors. The building sector encompasses a diverse set of end-use activities, which have different energy use implications. The amount of energy used for cooling, heating and lighting is directly related to the building design, building materials, the occupants' needs and behaviour, and the surrounding micro-climate. Majority of modern buildings in Sub Saharan Africa (mainly tropical climates) are replicas of buildings designed for the western world (cold and temperate climates) and do not take into consideration the differences in climate. As a result, buildings are heavily reliant on artificial means for indoor comfort, i.e. cooling, heating and lighting. The problem is that inefficient design and construction using inadequate materials, combined with poor understanding of thermal comfort, passive building principles and energy conscious behaviour, has led to tremendous energy wastage and furthermore, high electricity bills.

The East African Community is characterised by five different climates, according to the Köppen classification, ranging from the tropical rainforest to the desert climate. Sustainable architecture must take into account this climatic diversity that involves issues such as thermal comfort, energy consumption and building materials, as traditional architecture was used to do. We can use some principles that were guiding traditional architecture, but not copy them, since todays building materials, comfort requirements and building use are very different from the past. Sustainable buildings design is a more complex process than the usual one, and requires not only a wider and deeper know how but also the use of appropriate design tools.

### Training Objective and Description

The objectives of this hands-on training are:

1. To provide the participants with useful technical tools for sustainable building design in Kenya applicable to other Tropical countries. The core of the course will be passive building design, which minimizes energy demand.
2. To advice practitioners on how to incorporate energy efficiency into some of their design projects, through a hands-on studio session.

The training will be jointly held by experts from UN-Habitat and from the "*Politecnico di Milano*", Italy, Department of Architecture, Built environment and Construction Engineering; under the coordination of Prof. Federico Butera. The aim of the course is to provide basic information and tools for sustainable buildings design in Kenyan climates, and will encompass the following subjects:

- Principles of thermal and visual comfort
- Designing with the local climate: application of climatic data in building design
- Solar geometry; sun charts, shadow masks and software tools
- Passive design (site and building layout and planning, shading, natural ventilation, natural cooling), focussed on Kenya climatic zones.
- Commercial buildings design in Kenyan climates (windows design, daylight enhancement,).

This training is aimed at building practitioners (architects, engineers and developers). Participants will receive a copy of the "Integrated Building Design - Handbook of Sustainable Architecture in the East African community Climates", developed by UN-Habitat and the Politecnico di Milano, under the framework of the programme **"Promoting Energy Efficiency in Building in East Africa".**

## PROFILES

**Federico M. Butera** is professor of Environmental Applied Physics at the Politecnico di Milano, Italy. For more than 25 years he has been actively committed in the field of low energy architecture, solar energy applications and sustainable urban development, with a wide scientific production, books on energy issues for non-specialized audiences and projects regarding low and zero energy buildings and communities in Italy and abroad.

**"Promoting Energy Efficiency in Building in East Africa"** is an initiative of UN-Habitat in collaboration with the governments of Kenya, Uganda, Tanzania, Rwanda and Burundi and the United Nations Environment Programme (UNEP). The five-year program (2011-2015) is co-funded by Global Environment Fund (GEF) and aims at mainstreaming energy efficiency measures into housing policies, building codes and building practices in East Africa.

**PROGRAMME**

**DAY 1 – 27/08**

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| **8:30 – 9:00** | Registration | |
| **9:00 – 9:30** | Welcome Remarks by KAM /UN-Habitat/POLIMI | |
| **9:30-10:00** | Integrated design for energy efficiency - **POLIMI** | PRESS CONFERENCE (TBC)<br>Signing of MoU KAM -UNHabitat/<br>Launching of Draft Handbook<br>UN-Habitat – KAM - Politecnico di Milano |
| **10:00 – 10:30** | Climatic data in Kenya - climatic zones – **UN-Habitat** | |
| **10:30– 11:00** | **COFFEE BREAK** | |
| **11:00 – 12:00** | Application of climatic data in building design (Journal of Sustainable Building Design) | |
| **12:00 – 13:00** | Thermal and Visual Comfort | |
| **13:00 – 14:00** | **LUNCH** | |
| **14:00 – 15:30** | Passive building design | |
| **15:30 – 16:00** | **COFFEE BREAK** | |
| **16:00 – 17:00** | Discussions on the design exercise - **all** | |

**DAY 2 – 28/08**

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| **9:00 – 10:30** | Natural Ventilation/Shading |
| **10:30– 11:00** | **COFFEE BREAK** |
| **11:00 - 12:00** | Solar geometry |
| **12:00 – 13:00** | Solar Shading + exercices |
| **13:00 – 14:00** | **LUNCH** |
| **14:00 – 15:30** | Windows design and sizing / Daylight enhancement |
| **15:30 – 16:00** | **COFFEE BREAK** |
| **16:00 – 17:00** | Technical Exercice |

**DAY 3 – 29/08**

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| **9:00 – 9:30** | Bowman Associates – new KAM Headquarters – case study |
| **9:30 – 10:00** | Design guidelines summary |
| **10:00 – 10:30** | Overview Ecotect |
| **10:30– 11:00** | **COFFEE BREAK** |
| **11:00 – 13:00** | Design exercise |
| **13:00 – 14:00** | **LUNCH** |
| **14:00 – 15:30** | Design exercise/evaluation |
| **15:30 – 16:00** | **CERTIFICATES / GROUP PICTURE/ COFFEE BREAK** |