

H O U S I N G B L O C K C O U R S E

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LECTURE COURSE

Lecture : 1.7

Title : DWELLING UNIT DESIGN II

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Abstract : The following notes briefly summarise climatic design requirements, structural principles and cost considerations to be applied in the design of urban low-cost dwelling units in Kenya.

1. Introduction

This lecture covers three subjects which are related to the design of dwelling units in Kenya:

- Climatic design requirements
- Structural principles
- Cost considerations

In the time and space available in this lecture - outline each of them can only briefly be summarised. While in depth understanding of climate as a design parameter should have been acquired in the Environmental Science Course, structural principles were previously taught in Theory of Structures and Building Technology. Therefore, only main points will be underlined.

It is a largely recognized necessity to design urban spaces and buildings with a view of their climatic environment. This may be of particular relevance in housing, where human comfort is most directly affected.

Which aspects of dwelling unit design are most dependant on climatic requirements?

The house type itself needs to be chosen from a wide range of available alternatives. Main aspects are houseform, layout and orientation of rooms, the relation of indoor to outdoor spaces, the height of development, as well as a number of details incorporated in the walls and roofs of dwelling units. Plots need to be dimensioned to fit the chosen house type, taking into account:

- total private living space requirements, composed of indoor and outdoor spaces. These requirements are conditioned to a certain extent by the climatic environment.
- The relation of indoor to outdoor spaces, depending on the climatically appropriate house plan.
- The grouping of houses (horizontally and vertically), generating the climatically appropriate layout or cluster.

2. Climates of Kenya

The HRDU - publication "Design with Climate" provides the most suitable guidelines for the design of low cost houses for the climates of Kenya, that have been presented up to date. A subdivision of Kenya into six basic climatic zones is suggested. According to their geographic location the zones have been designated as follows: