

Design for Climate
Guidelines for the Design of Low Cost Houses for the Climates of Kenya

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INTRODUCTION

This manual is directed towards house designers and those concerned with the climatic aspects of building design. Although the design guidelines, that form the bulk of this manual, relate to houses it is hoped that they will also be useable by designers of other simple building types. The guidelines, which attempt to show how (often for little or no extra cost) comfortable, or at least tolerable, conditions may be achieved in houses in the different climates of Kenya, will hopefully be of use to students of architecture and building as well as practitioners.

Section 1 explains the choice of climatic zones, describes the factors affecting human comfort, and considers the presentation of climatic data. Section 2 investigates the impact that the principal climatic elements, namely temperature, solar radiation, humidity, rainfall, and wind, have on building design. Sections 3 to 8 contain the climatic design guidelines for Kenya's six climatic zones. Although summary guidelines for each zone are provided at the beginning of this manual these are inevitably somewhat stark and it is hoped that practitioners using the manual will prepare their own design check list after reading the relevant section or sections. For locations where no climatic data sheets are provided, it will usually be possible to get a reasonable idea of likely temperature and humidity levels by consulting the data sheets of nearby locations that are at a similar altitude. As winds often vary considerably over a small area, local advice should, however, be taken concerning prevailing wind directions.

The numbers within brackets e.g. (15) at the end of sentences in the text refer to the bibliography at the end of the manual. The most useful additional reference on the climatic aspects of house design is probably reference 23 "Climate and House Design", copies of which are available at the Kenya Building Centre, Kenyatta Avenue, Nairobi. This United Nations report contains solar charts (together with the necessary solar projector) which can be used for determining solar angles at different times of the day and year at different latitudes. School architects might wish to consult either reference 2 or 24, both of which are principally concerned with the design of school buildings.

The Housing Research and Development Unit has developed a range of housetypes that are suitable for use in the Highland Climatic zone and will in due course be developing housetypes for Kenya's other climatic zones. A design manual for rural medical buildings, that places considerably attention to the problems of climatic design, is currently in preparation at the Unit.

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