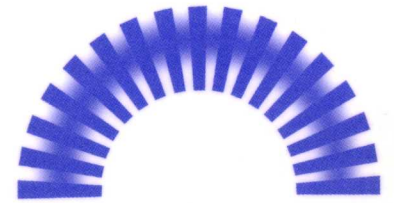


22nd International Conference

PLEA2005



LEBANON

Passive and Low Energy Architecture

Environmental Sustainability

The Challenge of Awareness in
Developing Societies

Editors: Dana K. Raydan and Habib H. Melki

Proceedings volume 2 of 2



Hosted and Organized by
FAAD
Notre Dame University-Lebanon

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Published by NDU Press

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ISBN 9953 418 69 1

Cover designed by
John Kortbaoui and Diane Mikhael, FAAD

Printed in Lebanon by Meouchy and Zakaria

The Importance of Guidelines Use in the Design of Comfortable Urban Space

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ABSTRACT: To design highly performing urban spaces (meaning liveable and comfortable) it is important to have tools for the analysis and evaluation of environmental comfort since the early stages of the design process.

The use of guidelines can help the architect in his/her work giving information on the specific microclimate in a street or a plaza and the modifications of comfort conditions with reference to the use of different pavement materials, shading devices and so on.

The guidelines proposed in this paper which are the results of the research project RUROS, allow to evaluate the mean radiant temperature in streets and squares.

Conference Topic: 03 Comfort in Outdoor Urban Spaces

Keywords: energy, comfort

1. INTRODUCTION

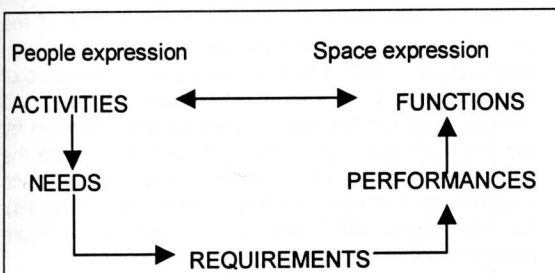
The strong interaction between urban spaces, environmental quality, users needs and comfort conditions requires new tools to evaluate and compare different design options looking for the best solutions in a specific context.

The conventional approach to needs and requirements, such as the control of safety, "accessibility", and so on, are well defined in urban design methodologies and tools [2]. Environmental comfort, and in particular the needs related to thermal comfort, have been approached only recently in terms of use of the spaces and related performances.

designer approaches the quantitative evaluation in a logic of "learning by doing" which has strong limits in educational processes mainly in the context of rapid urban microclimatic changes which weaken traditional solutions.

The guidelines proposed in this paper which are the results of the research RUROS, allow to evaluate the mean radiant temperature in streets and squares. These guidelines can help the architect in his work to give information on the specific microclimate in a street or a plaza and the modifications of comfort conditions with reference to the use of different pavement materials, shading devices etc and allows the evaluation of the environmental comfort since the early stages of the design process

In the preliminary design phases it is important to have quick evaluations to be performed with simplified tools and guidelines either for rehabilitation of existing urban spaces, either for the design of new ones.



2. EVALUATION METHODS

2.1 Overview

In the conventional design of open spaces the needs and requirements referring to environmental comfort (in particular thermal, acoustic and luminous) are usually considered in an intuitive way with no evaluation control on the effect of design choices on the physical parameters that affect the environmental performances. On the other hand a trained urban

2.2 Guidelines for urban spaces renewal

In case of urban renovation, designers have much more "information" and tools available to evaluate the environmental context than in the case of newly designed urban spaces. The site is already existing and all the information to orient an environmental conscious design of the open space is available (it is necessary to measure the values of parameters, it can be difficult, of course, but it is possible). The first important step is the analysis of the space in terms of microclimatic conditions and users behaviour.

Microclimate analysis is a fundamental action (together with the other environmental variables, such as air and ground quality, etc.) and should be performed through basic microclimatic measurements (solar radiation, air and globe temperature, mean