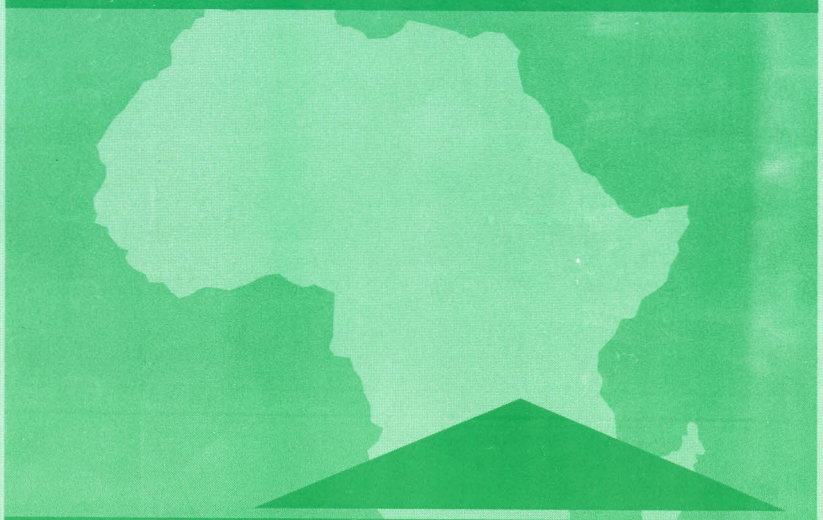
X

DOCUMENTATION CENTRE
UNIVERSITY OF NAIROBI
P O Box 30197

# Africa



# HABITAT

## Review 1(2006)

DOCUMENTATION CENTRE
UNIVERSITY OF NAIROBI
P O Box 30197

Journal of the School of the Built Environment, University of Nairobi

Africa HABITAT Review 1(2006)



# The Influence of Urban Public Space Patterns on Degradation of External Envelope of Urban Blocks: The Case of Nairobi Central Business District

*Bernard Otoki Moirongo

Received 19 May 2004; received in revised form 17 March 2005; accepted 3 March 2006.

**Abstract**

*A view through Central Business Districts (CBD) of most Kenyan cities show that some buildings have either been abandoned or been left unattended thus, enhancing dereliction and decay of the built environment. Since it is not whole city centres that are decaying, it is likelys that the spatial structure and hence the urban space patterns would be having something to do with social, economic and the environmental survival of these capital assets. This paper has empirically established that 33 urban space variables out of 436 variables significantly relate with dereliction and decay of built environment in the Central Business District of the city of Nairobi. This has been done by regressing indexes relating to abandonment, façade construction, completeness and exterior maintenance and cleanliness of buildings bounding urban space against urban space variables: spatial, social, cultural and economic. These established variables have been grouped into the following urban patterns: constitutedness of space, segregation or integration of space, distributedness of space, grain, land use, and density. The paper argues that most of these patterns have a lot to do with the presence and distribution of human in the settlements. The paper concludes that humanisation of settlements is very important in curbing the decay of built environment.*

**Key words**: *Urban space, Building degradation, Space syntax, Nairobi, CBD.*

## 1. Introduction

This paper aims at establishing the contribution of urban design in the management of dereliction and decay of built environment. Once this is done it should be easier to establish or set objectives and policies to guide the achievement of urban environmental management and hence environmental sustainability through management of dereliction and decay of built environment. The approach has been through the establishment of urban design patterns that would assist in alleviating the present problems and hence sustaining the urban environment in the third world city centres. Urban environmental sustainability has become a global issue at the moment and hence an appropriate area for research. This is because, previously, researchers focused on different elements of the urban form. But this has been inadequately related to urban management.

## 2. Definition Of Key Concepts

For better understanding of the paper, it is necessary to highlight the key variables of this research especially those adopted from space syntax theory. In this regard therefore the following terminologies have been defined.

Building space index of a space that is also known as the measure of constitutedness of the space refers to the number of buildings that are both adjacent and directly permeable or accessible from or to the space. This is in most cases referred to as permeability of the space.

Permeability per unit area is obtained by dividing building space index by the area of the convex space in question to get the intensity of buildings being accessed from that space per unit area of the space.

Degree of adjacency and impermeability refers to the number of buildings that are adjacent but have no access to the space.

Axial connectivity of a space refers to the number of axial spaces intersecting that axial space.

Depth of space from carrier space is a value that describes the location of the space in relation to the space surrounding the settlement that is also referred to as the carrier space. This is measured in terms of axial spaces one has to pass through before reaching that particular space.

Relative depth of axial and/or convex space that is also known as the measure of integration is a measure of depth of the whole settlement from that particular space. This is obtained by assigning a value of '0' to that original space and numeral '1' to the next space, numeral '2' to the next space and so on until all the spaces are accounted for. The average depth value is the relative depth of that convex or axial space that had been assigned numeral '0'. This exercise is repeated and always starting with the space whose relative depth is required. Low values of depth means all spaces are directly connected to the original space and therefore the system is shallow to that space and hence the space tends to integrate the system. High values of depth means all spaces are arranged in a unilinear sequence

* *Dr. Bernard Otoko Moirongo Ph.D. Director : School of Architcture and Building Sciences Jomo Kenyatta University of Agriculture and Technology; P.O.Box 69612-0400 Nairobi-Kenya;Email: bmoirongo@yahoo.com*