

PHYSICAL CONTEXT AS A GENERATOR OF ARCHITECTURE

Manipulation of built environment in harmony with nature

LIBRARY
UNIVERSITY OF MORATUWA, SRI LANKA
MORATUWA

A Dissertation Submitted for the Department of Architecture of the
University of Moratuwa in partial fulfillment of the
Requirements for the degree of
Master of Science
In Architecture



Draft copy

72"05"
72(043)

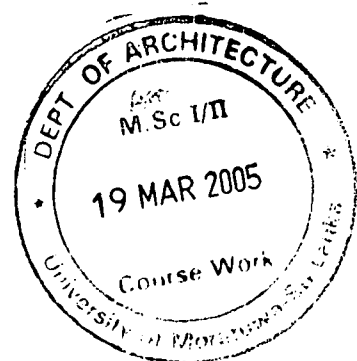
University of Moratuwa



85466

H.L.A Lakshika

March 2005



85466

85466

DECLARATION

I declare that this dissertation represents my own work, except where due acknowledgement is made, and that it has not been previously included in a thesis, dissertation or report submitted to this university or to any other institution for a degree, diploma or other qualification.

UOM Verified Signature

(H.L.A. Lakshika)

UOM Verified Signature



University of Moratuwa, Sri Lanka
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Prof. S. Manawadu,
Principal supervisor,
Dept. of Architecture,
University of Moratuwa.

ACKNOWLEDGEMENT

I am thankful with respect and gratitude to,

Archt . Vidura Sri Nammuni , the Head of the Department.

Further it is extended to

Prof. S. Manawadu , Principal supervisor for Dissertation.

Dr. Upendra Rajapakshe , Subject co-ordinate for Dissertation.

Archt. Jayanath Silva and Archt. Gamini Weerasinghe , Year Masters of M.Sc (Arch) Final Year 2004/05

Archt. Prasanna Kulathilaka, Year master of M.Sc (Arch) First Year 2003/2004

For the guidance and continuous encouragement given throughout the study and for their fullest co-operation when collecting information.

I like to endorse here with complement the co-operation extended to me by the library staff and reading room staff.

I acknowledge with thanks to willing and fatherly encouragement given to me by

Archt. Rohan Aluwihare.



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations

My sincere thanks should go to my dear friends Sabeel, Manodya and their parents

Finally I thank to all other friends who helped me in numerous ways and my special thanks to my loving brothers, sister and my special respect to my ever loving mother and father for their loving and affectionate good wishes.

LIST OF CONTENTS		Pg.No.
DECLARATION		I
ACKNOLGEMENT		II
LIST OF CONTENTS		III
LIST OF PLATES		VI
LIST OF FIGURS		VIII
ABSTRACT		IX
INTRODUCTION		
0.1 Topic explanation		01
0.2 Observation		01
0.3 Scope and limitations		02
0.4 Methodology		02
1.0 CHAPTER ONE – GENERATORS OF ARCHITECTURE IN BUILT ENVIRONMENT		
1.1 Man and the Built environment		04
1.2 Built environment and architecture		05
1.3 Generative factors of architecture in built environment		07
1.4 Context as a generator		10
1.4.1 Wider context		10
1.4.2 Local context		11
1.4.2.1 Non physical context		11
1.4.2.2 Physical context		11
1.5 Aspects of physical context as generators in creation of built environment		12
1.5.1 Man made environment		12
1.5.1.1 Composition		12
1.5.1.2 Scale		12
1.5.1.3 Rhythm		13
1.5.1.4 Texture		13
1.5.1.5 Stance		13
1.5.2 Natural environment		14
1.5.2.1 Cosmic nature		14
1.5.2.2 Physical nature		15
1.6 Concluding remarks		17

2.0 CHAPTER TWO – HARMONIZING CHARACTERISTICS OF NATURE IN CREATION OF BUILT ENVIRONMENT

2.1 Nature and architecture	18
2.2 Architecture, aesthetic and harmony	19
2.3 Harmony in nature	20
2.4 Identification of harmonizing characters of nature in generating architecture	21
2.4.1 Symbolic characteristics in nature	22
2.4.1.1 Volume	24
2.4.1.2 Scale and proportion	25
2.4.1.3 Balance	26
2.4.1.4 Rhythm	27
2.4.1.5 Hierarchy	28
2.4.1.6 Transformation	28
2.4.2 Visual characteristics in nature	29
2.4.2.1 Topographical variations	30
2.4.2.2 Geometrical variations	30
2.5 Concluding remarks	32

3.0 CHAPTER THREE – EXAMINATION OF MANIPULATION OF BUILT ENVIRONMENT HARMONY WITH NATURE

3.1 Responding to the character of nature in harmony	33
3.1.1 Built on large lands	34
3.1.2 Built on sloping silt	37
3.1.3 Built on flat land	41
3.2 Built Form as a responsive mode in harmonizing with nature	42
3.2.1 Attributes of form	42
3.2.1.1 Plan configuration	42
3.2.1.2 Orientation	43
3.2.1.3 3D compositions	43
3.2.1.4 Hierarchical order of spatial arrangement	43
3.3 Manipulating the built form in harmonizing with nature - Case studies .	44
3.3.1 Kandalama Hotel - Dambulla	45
3.3.2 Blue waters - Wadduwa	53
3.3.3 Polontalawa estate bungalow - Nikarawetiya	56

CONCLUSION	61
BIBLIOGRAPHY	63



LIST OF PLATES	Page No.
(01) Natural living of Aborigine Australia	05
(02) A street house at trulli	07
(2b) Station building-Pukemiro	08
(03) Olympic stadium - Australia	08
(04) Objects achieving higher purpose	09
(05) Architecture generate responding to the wider context	10
(06) Local context as a generator	11
(07) Response to climatic differences	14
(08) Variation in ecological world	15
(09) Waterfront as a generator	15
(10) Harmony in boulders with vegetation	16
(11) Harmonious integration of natural elements	20
(12) manipulating the harmony in nature	21
(13) Built in harmony	21
(14) Seasonal variation and texture	23
(15) Responding to the pattern	23
(16) Enhancement of the volume	24
(17) Variation of the volume	24
(18) Dialogue between elements	25
(19) Symmetrical balance	26
(20) Asymmetrical balance	26
(21) Rhythmic pattern of tree trunks	27
(22) Hierarchy in objects in nature	28
(23) Transformation of the basic pattern	29
(24) Response to the topographical variation	30
(25) Natural context as a generator	33
(26) Adjusted according to topography	33
(27) The placing of building on a sloping site	39
(28) Performing art pavilion Concord, California	40
(29) The grate wall of china	40
(30) Red rocks amphitheater Denver	40
(31) Flow with the topography	40
(32) Building placed on contours merges with the forest	41
(33) Taliesin west in Arizona	41
(34) Prominence of the nature -Kandalama Hotel	45

ABSTRACT

Nature is a very complex entity regarding with its creation. It exists through its harmonious integrations of cosmic and physical rhythms, from the beginning of time. Man was has embodied in nature and dependent on natural forces. It gives the birth to all creations of man. He built his shelter obeying to these inherent characteristics of the nature.

Man interpreted his inspirations as an intelligent understanding of nature rather than a perceptible understanding. These experiences, studies the surrounding environment which gives the way to create harmonies built environments with nature, without simply having superficial imitations.

Any building to maintain a good conversation with the context, should respond to the essential character of the place. The essential character or the inherent quality of a place is generated out of a number of features such as physical and non physical components.

The harmonious integration of the built environment with nature always gives rise to a good piece of architecture. Such a harmonious product undoubtedly become meaningful and express its inherent meaning through its built form. Hence the built form becomes the resultant output of the certain generative forces thus it becomes a harmonious product with the context.

