

**MINIMALISM IN ARCHITECTURE
WITH SPECIAL REFERENCE TO CONTEMPORARY
URBAN DOMESTIC SPACES**

**LIBRARY
UNIVERSITY OF MORATUWA, SRI LANKA
MORATUWA**

A Dissertation

Submitted to the  University of Moratuwa, Sri Lanka
www.lib.mrt.ac.lk Department of Architecture of the
University of Moratuwa in partial fulfillment of the

requirements for the degree of

Master of Science

In

Architecture.

72 "04"
72 (043)

85431

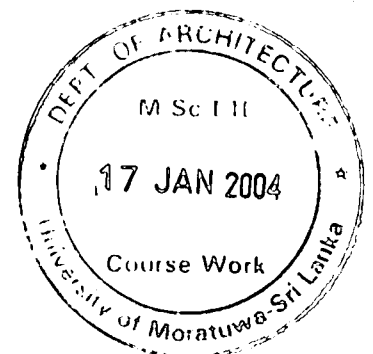


University of Moratuwa

by

Suranga Sanjeeveni Kannangara

January 2004



85431

85431

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.

Student's Signature :-..... *UOM Verified Signature*

Name of the Student :- S.S. Kannangara



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

ACKNOWLEDGEMENT

I wish to express my heart-felt gratitude to the following persons, whose assistance to me during the study, is greatly appreciated.

Senior Architect Vidura Sri Nummuni, Head of the department, Department of Architecture, University of Moratuwa, for valuable guidance.

Architect Varuna de Silva, my dissertation tutor, for the support and inspiration extended to me, in imparting his enrich experiences on the subject, and guiding me. I wish to extend my deep appreciation and gratitude to him for directing many aspects of this study, his patience and precious time expended in this respect.

Architect P. Kulatilake, coordinator of dissertation, for his continues guidance, and valuable comments given throughout the course of the study.

Architect Ranjith Alahakoon, Dr Harsha Munasihe, for their initial guidance, and valuable comments.


Architect V.N.C. Gunasekera for his useful comments, encouragement and valuable assistance. Further I extend my thanks to Architect Hiranthi Welandawe & Architect Shyamika Silva for their help & information.

Hasitha, for being my source of strength and became my shadow to help and encourage me whenever my sprits were at a low ebb.

My Parents, mother-in law and my brother for all their relentless support, tolerance, and love extended to me at all difficult times. Also I extend my thanks to Mr. Mahinda Jayasooriya for his kind help.

MINIMALISM IN ARCHITECTURE
WITH SPECIAL REFERENCE TO CONTEMPORARY URBAN DOMESTIC SPACES

CONTENTS

	Page
Declaration	ii
Acknowledgement	iii
Table of Contents	iv
List of Illustrations	vii
Abstract	x
INTRODUCTION	01
▪ The study	01
▪ Importance of the study	03
▪ Method of Study	04
▪ Scope and Limitation	04
 University of Moratuwa, Sri Lanka Electronic Theses & Dissertations www.lib.mrt.ac.lk	
1.0 CHAPTER ONE: Minimalism as Reflected in the Process of Human Habitation	05
1.1 Minimalism in Nature & Art	06
1.1.1 Minimalism in Nature	06
1.1.2 Minimalism in Art and Sculpture	07
1.1.3 Minimalism in Dance	10
1.1.4 Minimalism in Land Art	11
1.1.5 Minimalism in Architecture	12
1.2 Eastern Approaches to Minimalism in Architecture	14
1.2.1 Zen Buddhism and Architecture as a source of inspiration to Modern Minimalist Architecture	15
1.2.2 Traditional Sri Lankan House and Minimalist Architecture	19
1.3 Western Approach - Modern Movement and Minimalism	21

2.0	CHAPTER TWO: Minimalism In Contemporary Domestic Architecture	23
2.1	Architecture - Definition and Purpose	24
2.1.1	Architectural Space	25
2.1.2	Spatial Quality	25
2.1.3	Form & its Relationship with Space & Spatial Quality	25
2.1.4	Contemporary Domestic Space in the Context of Urbanization	26
2.2	Characteristics to Achieve Spatial Quality of Minimalist Architecture	27
2.2.1	Simplicity	29
2.2.2	Clarity	30
2.2.3	Tranquility	32
2.2.4	Elementary Geometry / Form	33
2.2.4.1	Two Dimension Form	33
2.2.4.2	Three Dimension Form	36
(a)	Monolithic Form to achieve Minimalism	36
(b)	Unity & Architectural Composition to achieve Minimalism	38
(c)	Balanced Composition to achieve Minimalism	39
(d)	Scale and Proportion to achieve Minimalism	41
(e)	Rhythm & Repetition to achieve Minimalism	42
2.3	Enhancement of Spatial Quality in the Minimalist Space	45
2.3.1	Use of materials & Textures	45
2.3.2	Use of colour & light.	48
2.3.2.1	Colour & Perception	48
2.3.2.2	Minimalism and Colour: Expressive Simplicity	48
2.3.2.3	Minimalism and Light: Expressive Simplicity	52
2.3.3	Element details	54

3.0	CHAPTER THREE: The Sri Lankan Minimalist Domestic Space; Case Studies in Contemporary Urban Situations	56
3.1	Case Study One : Lakmali Nanayakkara House; Arch. Varuna de Silva and Pradeep Kodikara	57
3.2	Case Study Two : Ratwatte House; Arch. Ranjith Alahakoon	63
3.3	Case Study Three : Nalin Indrasena House; Arch. Shyamika Silva	69
3.4	Case Study Four : Chandaka Jayasundere House; Arch. Varuna de Silva	76
	CONCLUSION	82
	BIBLIOGRAPHY	86



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



LIST OF ILLUSTRATIONS

- [Fig.01] Aesthetic experience of the moon and the sea at night.
- [Fig.02] Lightning
- [Fig.03] A minimal art.
- [Fig.04] Copper enamel & aluminum, Donald Judd, 1972
- [Fig.05] Donald Judd, 1970. Brass & fluorescent Plexiglass.
- [Fig.06] Dan flevin, 1964. Ultraviolet fluorescent light
- [Fig.07] Five abstract towers-Mexico city.
- [Fig.08] Minimal dance
- [Fig.09] Spiral Jetty, Robert Smithson, 1970.
- [Fig.10] Unity in pure form
- [Fig.11] Campo Baeza House; Clear purity of form.
- [Fig.12] Buddhist priest.
- [Fig.13] Typical Japanese tea house, Shugakuin detached palace.
- [Fig.14] Rock garden in Tofuku-ji, Kyoto.
- [Fig.15] Cave monastery, Sittulpawwa.
- [Fig.16] Traditional Sinhalese houses - minor tradition.
- [Fig.17] Sinhalese vernacular domestic building - courtyard type.
- [Fig.18] Minimal House at Molido - Portugal, Archt. Jhon Powson.
- [Fig.19] House on a Red Cliff in Mirissa, Archt. Geoffrey Bawa.
- [Fig.20] Lakmali Nanayakkara house; Archt. Varuna de Silva.
- [Fig.21] Ratwatte house, Archt. Ranjith Alahakoon.
- [Fig.22] House of Louis Barragon.
- [Fig.23] Church of Water, Archt. Tadao Ando.
- [Fig.24] Court Yard of the Neuendorf House, Jhon Pawson.
- [Fig.25] Minimalist approach in the bath room.
- [Fig.26] Chapel of Notre Dame du Hout at Ronchamp.
- [Fig.27] Elementary Geometry of the form, Hauei Residence, Japan.
- [Fig.28] Complicated Geometry of the form, Cachawal House, Thailand.
- [Fig.29] Elementary Geometry of the plan form, O'Reilly house, Sydney.
- [Fig.30] Plan of Cachawal House, Thailand.
- [Fig.31] Plan form – walls less house.
- [Fig.32] Minimal Interior of Walls Less House.

- [Fig.33] Spiral minarets of Iraq.
- [Fig.34] Louvre pyramid, Paris.
- [Fig.35] Hakuei Residence, Japan.
- [Fig.36] Composition of simple geometric forms, Luis Barragan.
- [Fig.37] White courtyard and colourful cubic forms, Luis Barragan.
- [Fig.38] Balanced distribution of elements about an axis.
- [Fig.39] Balanced distribution of elements to achieve minimalism.
- [Fig.40] Scale is a dialogue between man and object.
- [Fig.41] Minimal quality of the scale, Helmut Lang, New York
- [Fig.42] Rhythmic repetition and sense of order.
- [Fig.43] Repetition of simple, massive monolithic forms, Stonehenge.
- [Fig.44] Repetition of colours and shapes, Jigsaw store, London.
- [Fig.45] Repetition of forms, shapes and materials, Book Center, France.
- [Fig.46] The use of monolithic materials to achieve minimalism, Tadavo Ando.
- [Fig.47] Large pieces of table top marbles, Jhon Pawson's house
- [Fig.48] Timber planks cut to the width of a tree, Jhon Pawson's house
- [Fig.49] Use of mat finishes and rough textures
- [Fig.50] The distribution of colours and dynamic composition.
- [Fig.51] Colour and pure form
- [Fig.53] Full white spaces.
- [Fig.54] White walls, floor and furniture
- [Fig.55] Distribution of black and white, Teng Residence, Singapore
- [Fig.56] Distribution of Colours to define planes
- [Fig.57] Natural light penetrates in to the interior.
- [Fig.58] Church of the light, Tranquility of the minimalist space.
- [Fig.59] Use of innovative lighting design to avoid the monotony or boredom.
- [Fig.60] Simple gutter details.
- [Fig.61] Sculptural quality of elements.
- [Fig.62] The sculptural staircase, Casa Gilardi by Luis Barragan.
- [Fig.63] Ground floor plan of Nalin Indrasena House.
- [Fig.64] First floor plan of Nalin Indrasena House.
- [Fig.65] Monolithic form of the white cube.
- [Fig.66] Dark entrance corridor.
- [Fig.67] Contrast of forms.



- [Fig.68] Double height living & dining space.
- [Fig.69] Rear garden, the main focus of the house.
- [Fig.70] Balanced composition of colours and elements.
- [Fig.71] Ground Floor.
- [Fig.72] 2nd Floor Terrace.
- [Fig.73] Emptiness of the Central court yard.
- [Fig.74] Main light well-simplicity of form.
- [Fig.75] Spatial composition to achieve balance & unity.
- [Fig.76] Simplicity of the bathroom.
- [Fig.77] Use of artificial lighting to enhance the austerity and severity.
- [Fig.78] Ladder to the water tank.
- [Fig.79] Main stair case.
- [Fig.80] Ladder to book store.
- [Fig.81] A timber door
- [Fig.82] The Terrace.
- [Fig.83] Elementary geometry & monolithic quality of the 3D form.
- [Fig.84] Manipulation of pure geometric forms to achieve unity.
- [Fig.85] Pure white & blue shades harmonize the building with the sky.
- [Fig.86] Protruding shaded balcony as an extended space, of the bedroom.
- [Fig.87] Light well.
- [Fig.88] Simplicity and clarity of space.
- [Fig.89] Chromatic harmony.
- [Fig.90] Blue light well.
- [Fig.91] Grey cement floor.
- [Fig.92] Minimalism of elements
- [Fig.93] Simple form of the window.
- [Fig.94] Entrance door as an element gives an excitement to the elevation.
- [Fig.95] A simple bench
- [Fig.96] Façade to the road.
- [Fig.97] Plans of Chandaka Jayasundere House
- [Fig.98] Huge open free volume creates sense of wholeness.
- [Fig.99] The wall painted in orange.
- [Fig.100] White interior.
- [Fig.101] Open rise steel and timber staircase.

ABSTRACT

Architecture as an essential art, which expose throughout the man's life, it should provide man with the desired physical and psychological comfort. Therefore it is important to facilitate meaningful Architecture to eliminate inappropriate ornamentation & disquietingly ornate Architecture, which ignore the spaciousness & meaning.

Within above framework, this dissertation is an attempt to crystallize some thoughts about minimal Architecture, which can be seen as the pursuit of simplicity, as well as an ideal design approach which caters for essentialities out of different design approaches. Contribution of form as well as colours, light, materials, textures and elements, to achieve spatial quality in the minimalist space, is discussed in detail.

Special emphasis will be paid to contemporary domestic buildings in urban context. Thus the home should be a place of tranquility by banishing disorder, ostentation and vanity to feel it as the master of habitable space.

INTRODUCTION

▪ The Study

The simple definition of Architecture is the “**art and practice of designing and constructing buildings**. This includes the style on which it is design and constructed.” (Oxford dictionary, 10th edition).

A profound connotation of this word according to Kulatilake (1994:1)

“Architecture is a physical, emotional and intellectual experience. It facilitates man’s bodily comfort; emotionally attaches him into it, and, as a work of art, through symbolic communication, leads him towards a higher realm of contemplation”

To facilitate such architecture, minimalism has been widely discussed from different design approaches. This dissertation is an attempt to crystallize some thoughts about minimalism in architecture, which can be seen as the pursuit of simplicity. Special emphasis will be paid to contemporary domestic buildings in urban context. Further minimalism has been discussed in art, dance, sculpture, landscape but not in detail, only because this led to minimalism in contemporary architecture.

The minimum could be defined as “The perfection that an Artifact achieves, when it is no longer possible to improve it by subtraction.” (Pawson, J. 1992:7)

“Minimalism is considered as an attitude where with less consumption of elements, to achieve more.” (Pawson, J. 1992:7)

This is the quality that an object has, when every component, every detail and every junction has been reduced or condensed to the essentials. It is the result of the omission of nonessentials and inappropriate ornamentation. The greatest architecture is simple in appearance (like for instance, the architecture of Louis Barragan, Tadao Ando, Jhon Pawson et al) had a great deal of thought and detail behind it.

The desire for minimalism has a long history. It ranges from Zen Buddhism and it also applied in traditional Sri Lankan lifestyle, as a way of life free from the dead weight of an excess of possessions which can be considered as the eastern approach to minimalism.

Minimal living has always offered a sense of liberation, a chance to be in touch with the essence of existence, rather than be distracted by its trivial. Such architecture has been an inspiration to many Western architects.

Minimalism has been related much to the development of functionalism. The simplicity in minimalism cannot be equated to the sparseness of modernism, with the machine age aesthetic, stripped of ornament, so that form and detail are reduced to the mere blandness. Minimalism is an older, richer and broader tradition than that.

Minimalism can be seen as the reduction of architecture to its most basic concept of space and mass. **Its central theme is not elimination of ornament but celebration of space and form.** Therefore simplicity, clarity, tranquility, elementary geometry, are some of the expedients the designer can use in creating artifacts or spaces, that have the minimal quality.

Therefore, colour, texture, materials, light and shadow also play a major role to enhance the spatial quality of the minimalist space.



▪ Importance of the Study

Architecture is a dilemma in Sri Lanka as on many occasions it has not been successful in serving the qualitative needs required of it against the challenges of the modern era. When considering the contemporary situation, except for a few artifacts, most others do not cater to **the deeper meaning in architecture.**

As a result inappropriate ornamentation, disquietingly ornate architecture, can be seen everywhere that ignores the spaciousness, meaning and qualitative aspects of it. Minimalism as a design approach which facilitates meaningful architecture by providing calmness and simple wonderful spaces may be the best way to get rid of today's feverish and hectic environments. Further, it is appropriate, as it is a functional tool rather than a formal philosophy. This dissertation considers the importance of applying minimalism in the urban context. It is not an important task to create minimalism in the rural context, since it often contains large land plots, abundant lush greenery, views and scenery which contribute to the desired simple lifestyles we seek to achieve in the urban context. The challenge is to create calm contemplative, soothing and sensual domestic spaces in the hectic urban environments.

As “**A home is the common factor of being a retreat, a place of solitude**” (Powell R. 1993:3) it is appropriate to consider urban **houses.**

Therefore the importance of this study is to encourage minimal architecture and investigate the appropriateness of this approach to contemporary urban houses.

▪ Method of Study

A Case study approach has been adopted as the methodology of the study. In the first phase, a very brief description of the study, to convey the idea of minimalism shall be made.

The second chapter is a detailed study on contemporary minimal architecture with special consideration to characteristics, concepts and theories used to achieve spatial quality. Before starting on the topic of contemporary minimal architecture, some definitions and purpose of architecture will be discussed to clarify the framework of chapter two.

Finally selected case studies, to establish the theories and concepts of chapter two, will be described. Further these practical applications to justify the appropriateness of minimal architecture in the contemporary urban context will be discussed.



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

▪ Scope & Limitations

Minimalism is a large subject area which can be applied to life, nature and all kinds of arts, architecture and beyond that. This dissertation pays particular attention to **minimal architecture**.

Further, it concentrates on **contemporary domestic** buildings in the **urban context**. Since **spatial quality** would be considered here, contribution of **form** will be discussed in detail. Also the dissertation focuses attention on, the use of colour, texture, and light, materials & element details to enhance the spatial quality of the minimalist space.

Minimalism responds to environment, placement, and relationship to site. It is an interesting characteristic which can be applied to large land plots with views and vistas in rural context (eg. House designed by Archt. Jeffrey Bawa on a cliff at Mirrissa). Since tight urban plots are discussed, the previously mentioned character (minimal way of synchronize the building in the context) will not be discussed, in detail.



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

CHAPTER **O**NE

MINIMALISM AS REFLECTED IN THE PROCESS OF^o HUMAN HABITATION

MINIMALISM AS REFLECTED IN THE PROCESS OF HUMAN HABITATION

1.1 MINIMALISM IN NATURE AND ART

1.1.1 Minimalism in Nature

“Art imitates nature in her manner of operation” (Coomaraswamy, 1981: 67).
Most of the innovative creations are inspirations of nature.

The sun the moon, the sky stars, the sea, rivers, mountains and all components of nature would be man’s primary aesthetic experience. As minimalism is considered to achieve maximum quality or the perfection with minimum elements, nature inspires this on many occasions.



[Fig: 01] Aesthetic experience of moon and the sea at night depicts tranquility and calm.

Source: **Minimum**

With reference to fig 01, “it is a surface which is entirely untouched by man, which depends only on the natural order of things, and yet has a curious resonance

with the calm perfection of perfectly worked porcelain or a fine woven silk.”
(powson, J. 1992:60)

The rhythms & resonance of nature, which stimulate our minds and bodies, are the best determinant factors of architecture. (Thunder, Lightning, wind rain etc)



[Fig: 02] Lightning

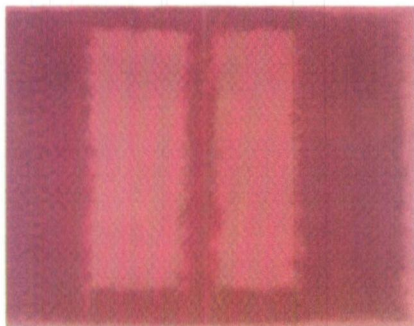
Source: [www.yahoo! picture gallery.com](http://www.yahoo!picturegallery.com)

To observe maximum transformation of the environment with the minimum number of elements, the example of lightning can be considered.



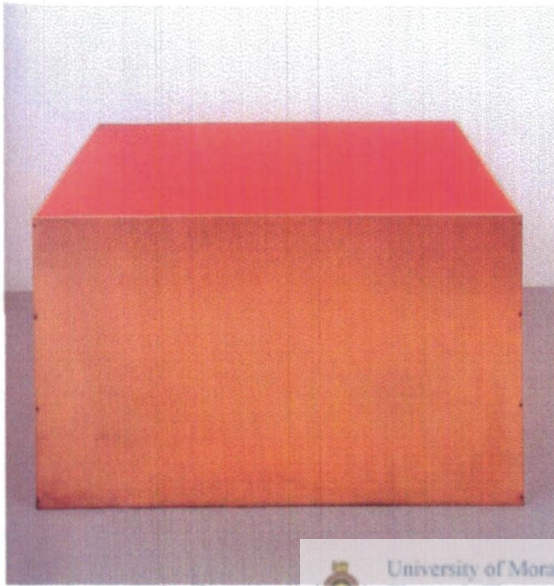
1.1.2 Minimalism in Art & Sculpture

The term minimalism was applied for the first time to an artistic movement developed at the end of the 1960s in the United States. **Minimalist works of art are reduced to a minimum number of colors, values, shapes, lines and textures.** This style embarked on a quest for the essentials. They used art as a way of expression, thus revealing their rejection of representing or symbolizing any type of object or experience.



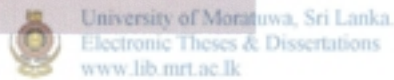
[Fig: 03] A minimal art reduced to a minimum number of colors, shapes, lines and textures. Source: **Minimum**

Minimalist art seeks to reference art itself, presenting, rather than representing, through its use of **geometry, clarity, precision,** and non-relational organization of the parts. Minimalist art places the emphasis on the real, the material, the here and now. Frank Stella, one of the minimal artist offers an easy summary of the movement's ideology referring to one of his paintings:” **What you see is what you see.**”

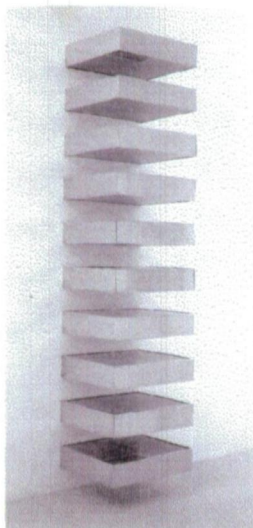


[Fig: 04] copper enamel & aluminum-
Donald Judd, 1972

Source: **Minimalisms**

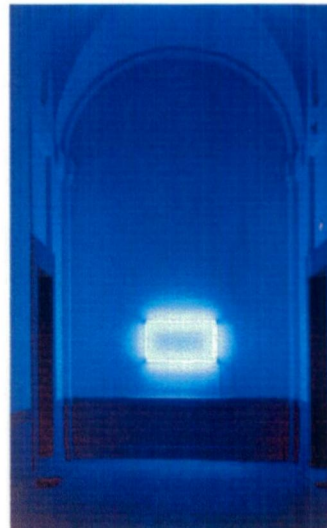


Abstraction, elementary geometry, austerity, monochromatism and repetition also can be considered as characteristics of minimal art.



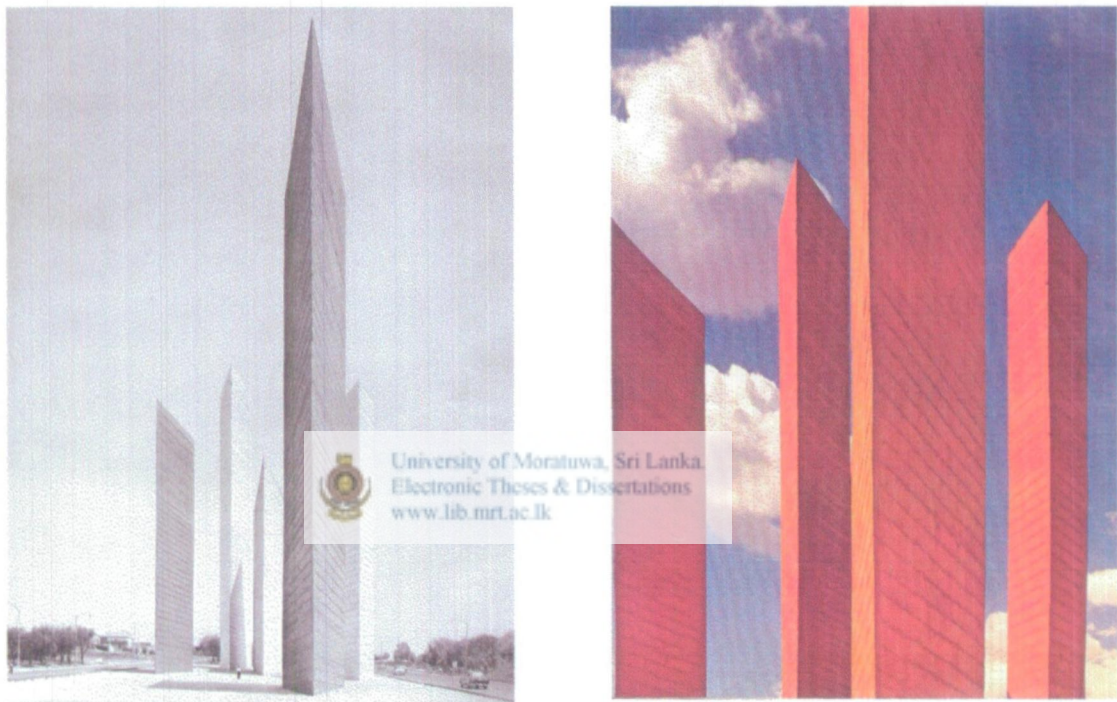
[Fig: 05] Donald Judd, 1970.Brass & fluorescent Plexiglass - Symmetrical abstraction.

Source; **minimalism**



[Fig:06] Dan flevin, 1964.Ultraviolet fluorescent light

Minimalist artists use silence, repetition and the exposure of the medium to induce a kind of meditation receptivity in the spectator. Silence can be understood as space: Quietness, emptiness, essence and absence create a space that induces passive meditation. In the visual arts, space is frequently used, either through the absence of definite images on a blank canvas or through the air surrounding a sculpture in a museum. Finally, the exposure of the medium supposes minimal technical complexity, in such a way that the artist simplifies the artistic method to such an extent that he reveals to the audience what is hidden behind art.



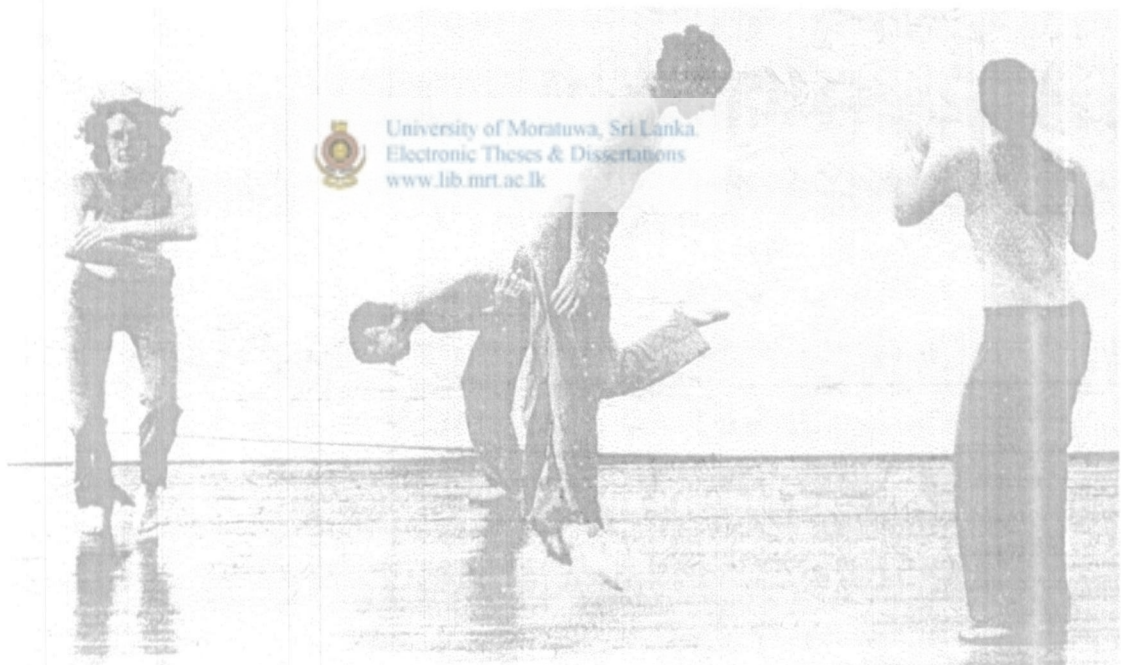
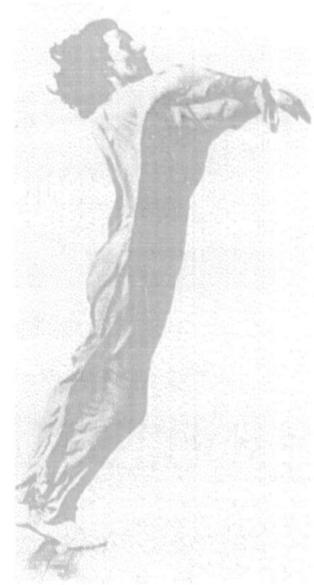
[Fig: 07] Five abstract towers-Mexico city.

Source; Luis Barragan

Within the final result of a work of art or a minimalist interior, an analogy can be seen: The essence of minimalism forces us to look into ourselves in order to try to discover why a particular shape or color is capable of evoking such powerful emotion independent of any rational context or secondary associations. In other words, both minimalist art and interiors are able to evoke emotion and aesthetic pleasure, derived from their manifesto of clarity and perfect order. Perhaps the success of minimalism, in both art and decoration, results from its skill at evoking the most universal passions through the austerity of the media used. This is irrespective of the march of time.

1.1.3 Minimalism in Dance

Minimalist Dance Almost concurrently with the emergence of Minimal Art. Some contemporary choreographers began to develop body movements in synthesis with minimalist sculpture. Most of the creators reduced movements to their minimal expression. Their repetitive sequences inviting the spectator, from his/her static position, to undergo a dynamic experience similar to that of the public who walk around minimalist sculpture and see it from different viewpoints.



[Fig.08] Minimal dance

source; minimalism in architecture and other arts; Less is more

“Some dancers have legitimized and renovated the stage space and the construction of movements with the body. They have managed to take much further than minimalist literature. The idea that architecture intervenes not only at the physical setting for these performances but also as the provider of criteria, forms and

dimensions which serves as models when it comes to devising the choreography or the sound of every show.”(savi v.,1996:48)

They extended objects, to a revelation of sense of gravity and of the disorientation produce by seeing bodies which are not standing in motion. Since then, ballet has followed the sculptor’s precepts: such work have not been about the least condition of art but about the necessary condition of art. **Always tried to have what is necessary to it.**

1.1.4 Minimalism in Land Art

From Minimal to Land Art there attempts went beyond the space of the art gallery and aspired to breathe in public space. The phenomenological experience of search for **maximum dialogue with the surroundings on the basis of minimal gestures was transferred to the environment.** Most probably it is about “**earth works**” which can be called **Land Art**.

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



[Fig.09] Spiral Jetty- Robert Smithson,1970.

Source; Minimum

Robert Smithson’s Spiral Jetty in the Great Salt Lake, Utah, constitutes a work of synthesis: a basic shape, the spiral, charged with space-time resonances, intervenes in the **landscape** by placing emphasis on organic references and on the process of construction of the work.

Furthermore, the Spiral Jetty is perceived differently depending on the observer’s distance from it. The reddish earth spiral enters the blood-coloured water, resembling wine. Smithson has written: “The matter which crumbled in the lake was

reflected in the form of a spiral and chemically speaking ; our blood is similar in composition to primeval seas. By following the steps of the spiral, we return to our origin”

A derivation from Minimal Art, this work, which reveals the ability of all interventions to provide the setting with a new identity, to transform the place, is a departure from the strict postulates of Minimalism.

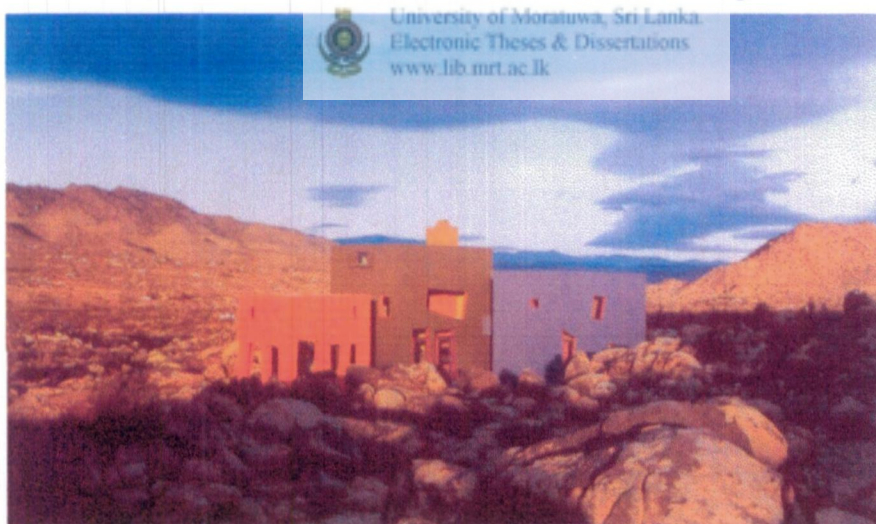


1.1.5 Minimalism in Architecture

The minimalism can be defined in different ways though the overall idea is similar.

“Minimalism is considered as an attitude where with less consumption of elements, attempted to achieve more but nothing is excluded. ”

Also “Minimum could be defined as the perfection that an artifact achieves when it is no longer possible to improve it by subtraction.” (powson, J. 1992:7)



[Fig.10]

Source; The Modern House

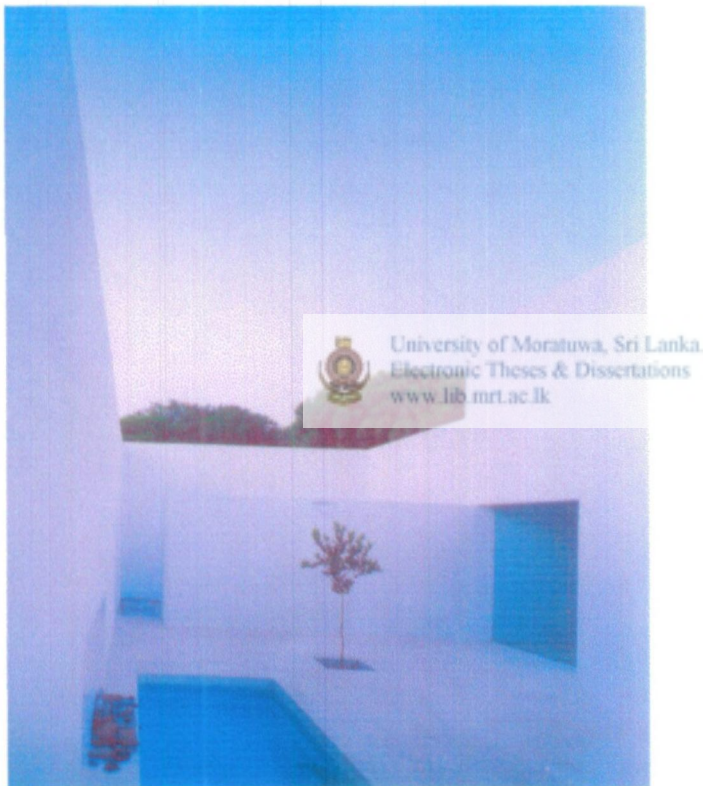
This is the quality that an object has when every component, every detail, at every Junction has been reduced or condensed to the **essentials**. It is the result of the omission of inessentiality and inappropriate ornamentation.

Likewise minimalist architecture has been defined and introduced in various points of view by different architects such as, architect Mies Vandroh, Tadao Ando, Jhon Powson, Luis Barragan, Cluodio Sivestreen etal.

Same as Peter Zumthor: has said, **“Beauty is at its most intense when there is some sort of Absence”**

Cludio Silvestrin described simple architecture as follows;

“Our human body in appearance is very simple, yet the human skin veils a complicated machine.” If we cut a body in half we would immediately realize that behind the simple and easy appearance there is a magnificent complexity. This is nature and some would say of gods making. It is nature which he believed on making of the environment. Also be equated the above idea with some artifacts.



[Fig.11] Campo Baeza House; Clear purity of form proves the concept, “more with less”

Source; **The Modern House**

A Modrain painting for instance looks simple and easy to the eye, but how much energy and thought Mondrain gave to achieve simple paintings.

As same greatest architecture, however simple in appearance even in Cistercian monasteries, the architecture of Louis Barragon, Tadao Ando have a great deal of thoughts and detail behind the it. So there is nothing easy about such artifacts.

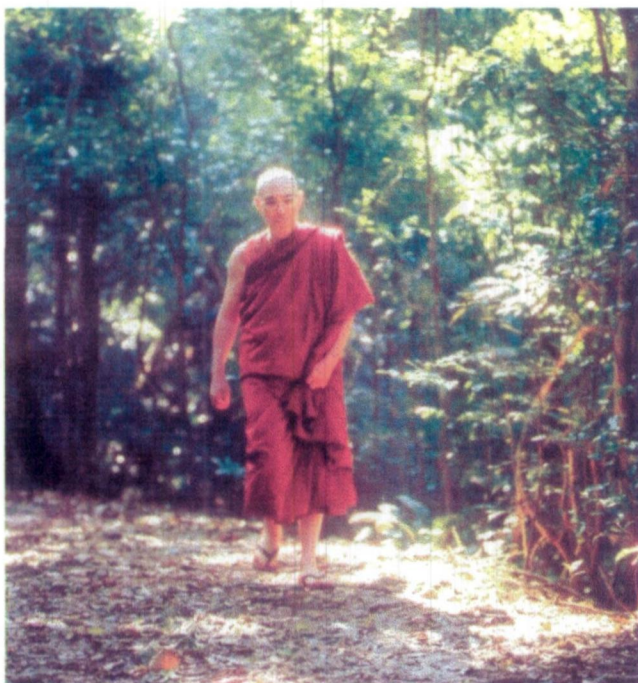
1.2 EASTERN APPROACHES TO MINIMALISM

Minimalism becomes an authentic philosophy of different life situations. It seeks the creation of a new society, one anchored only to the **essential** and which therefore moves away from materialistic eagerness.

When civilization first started, architecture was simple. People preferred simple workable structures. With the development of civilization, buildings with tremendous height and grace emerged. High ornamentation also appeared. **But the quest for simple tranquil lifestyle never died.** It emerged from time to time. Simple spaces offer tranquility and liberation from conventional distractions through the medium of uncluttered environment.

Although the means employed are relatively new, minimalism has been exercising its influence on **the concept of domestic space** for a little more than a decade, the search for a lifestyle based on simplicity goes back a long way. Its roots are found **beyond** the theories and geometric shapes of Bauhaus, beyond the “less is more” dictum coined by Mies vander Rohe, rather the rigorous renunciation of the monastic cells from the Middle Ages, the Japanese “wabi-sabi” aesthetic and the spirituality of Zen philosophy, with its reverence for emptiness, are some of the sources of inspiration.

The Concept



[Fig.12] Buddhist priest

The nature of all things is empty (*shunya*), but this emptiness (*shunyata*) is not the same as nothingness, because it designates the identity of everything.

Living in a minimalist ambience is an option which implies an attempt at renunciation and containment, of liberation from all useless things of reduction to basic elements. This means that to achieve a working minimalist home, honesty with oneself and the capacity to live with the minimum must be the first step. **Thus, starting out with the goal of reduction, the spatial and material qualities and the spatial depth of the house is enhanced, creating an atmosphere which has a direct bearing on the sensory experience.**

1.2.1 Zen Buddhism and Architecture as a Source of Inspiration to Modern Minimalist Architecture



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

Clear precedents for Western minimalist interiors can be observed in certain concepts of some oriental philosophies, especially Zen Buddhism. In its quest for the essence of things, and its flight from disorder, Zen philosophy is firmly rooted in the concept of minimalism. The Zen effort to eliminate everything superfluous, reaching simplicity that allows greater concentration and deeper appreciation of everything that surrounds us, has turned into the minimalist dream of the twenty-first century.

The Zen lifestyle, the essence of which is reached when the **unnecessary is eliminated**, corresponds to the philosophy that permeates **traditional Japanese houses**. **The austerity of these houses is not seen as deprivation, but rather liberation of the inner being by banishing disorder, ostentation, and vanity from our environment**. This austerity is perhaps best expressed in the purest style of tea house architecture, whose construction methods, later extended to other types of buildings.



[Fig.13] Typical Japanese tea house, Shugakuin detached palace, Kami-no-Chaya Tea Room.

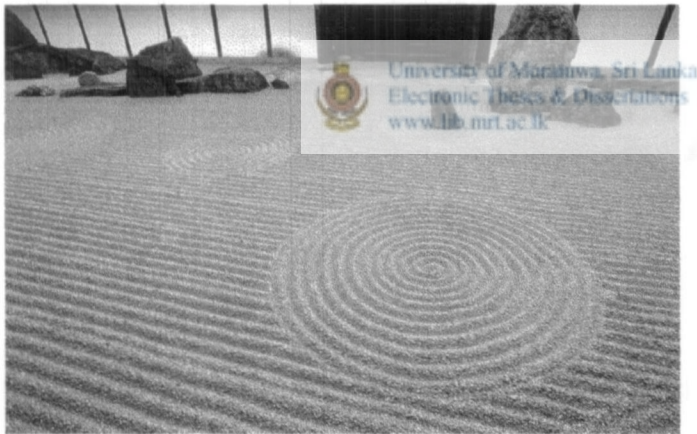


Source; **The Form of Japanese Windows**

It gave rise to the important style known as “Sukiyazukuri.” However, the original approach claimed not to focus on the building materials but on the emptiness that they contained, resulting in the definition of tea houses as “**houses of the soul**” or “houses of emptiness.” In fact, one can state that this kind of architectural style, principally developed by Zen monks at the end of the sixteenth century, is the only one that we can find before the arrival of the Modern Movement that rejects the incorporation of decorative elements, ostentation and complexity in favor of simplicity and restraint.

In the construction of tea houses, known as *chashitsu*, the form derived directly from the function. On the one hand, they were designed to unite a small group of people (a maximum of six) in a relaxed environment around a cup of tea. On the other, their purpose was to aid in the achievement of a profound spiritual satisfaction through the act of drinking tea and silent contemplation. Some Zen monks brought

specific innovations to the tea ceremony. Amongst them, we find Rikyu considered to be the founder of the ceremony as it is practiced in Japan today. **Rikyu thought that the proper spirit for the ceremony consisted of four elements: harmony, reverence, purity and tranquility.** He believed that, in general man was too egotistical and worried about protecting himself from others and the world at large. For this reason, Rikyu wanted to create, **through the art of tea, an atmosphere of such tranquility that men would feel no threat.** Based on this tranquility, each person would obtain an intuitive sense of the harmony that can be found in nature and a purity of heart acquired by an understanding of this harmony. This purity would bestow upon the individual such a state of well-being that it would result in respect for all of nature's creations. Consequently, the tea ceremony is a good way of escaping from the wrath and jealousy of everyday life and from the need for self-defense, finally reaching the spirit that transcends the form. What is created in the *chashitsu* is a poem of eternity in the shape of a building.



[Fig.14] Rock garden in Tofuku-ji, Kyoto

Source; [www. photographs of rock zen gardens.com](http://www.photographs of rock zen gardens.com)

Another surprising example of the effect of the empty spaciousness that infuses tea houses can be found in **classic rock gardens**, where the carefully composed stones underline absence. In both cases, the **richness of the simplicity**, the fascination for absence, and the respect for detail are evident. Minimalism is a resource at the disposal of today's society which allows us to get closer to this particular aesthetic, absorbing its capacity to find transcendence in simplicity.

To clarify this “transcendent simplicity,” it is necessary to make clear another concept inherent in the Zen aesthetic: the words *sabi* and *wabi*. *Wabi* and *sabi* refer not only to the quest for the strictest or most “puritanical” simplicity, but also signify freedom from anger, envy and anxiety. *Wabi* can also be understood as an element of renouncement and absence, interpreted in a positive way. When an interior is created with *wabi* and *sabi*, the inhabitant relates intimately with his environment, filling the empty spaces and finishing the composition in his mind, so it becomes a part of him and he a part of it.

Zen Buddhism, it is often said that the nature of all things is empty (*shunya*), but this emptiness (*shunyata*) is not the same as nothingness, because it designates the identity of everything. In this way, this kind of architectural expression and other forms of visual arts are not just a reflection of but the material incarnation of this spiritual emptiness that the Buddhists, and one might also dare to say the minimalists, want to reach.

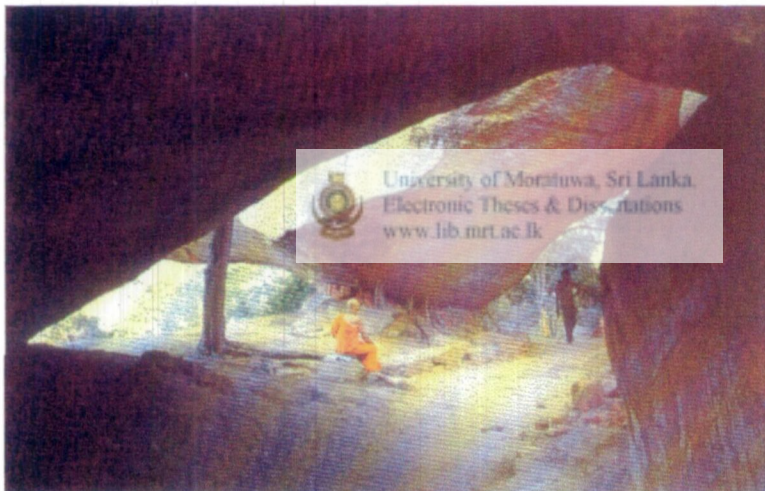
Looking to this tendency of Buddhist thinking, which has dominated Japanese thought for almost a thousand years, speaks to the need to find new means of expression that would introduce spirituality and calm into the frenetic and saturated style of contemporary Western life. Without achieving the austerity and extreme emptiness of traditional tea houses, we may try to remove all that is not necessary from our homes, and so attain the atmosphere of profound tranquility in the tea ceremony created by the master Rikyu; a state that can help us to learn more about ourselves and to feel in peace with the outside world. The results of this are interiors where we can enjoy the present, that transmit balance and order, that eliminate vanity through their simplicity and that are lasting and eternal, resistant to the passing of different fashions and times.



1.2.2 Traditional Sri Lankan House and Minimalism

Minimalism as an approach which caters to essentialities, some of the **traditional** Sri Lankan houses (minor tradition) can be considered as examples. Life style and environmental conditions together helped to generate a kind of architecture which has a unique character to it. It was very purposeful and catered for essentialities which can be seen in modern minimalist space.

Sri Lankan tradition is also the out come of the strong philosophy of the Buddhism, which focused to simplicity & impermanent nature of the physical objects, and people being the part of nature. People created their surrounding environment according to the perceptual ideas that they had about life and the world excess of position is discouraged.



[Fig.15] cave monastery- Sittulpawwa

Source; **Landscape tradition of Sri Lanka**

The man made cave, using natural rocks, that once created a peaceful environment for meditation & to suit for the simple life style of monks.

Houses were constructed using the simplest of technology and materials with sever limitations. Wood was used to make the basic structure as it is readily available in any part of the country. The most popular wall construction is wattle and daub, where a fabricated timber skeleton is used to reinforce the clay and sand wall. It was direct response to nature. In terms of climate these house are the coolest in the island. Eves which they are constructed provide dense shade. Leaves do not store or re-

radiate heat as other denser building material. These walls breathe and thousands of small openings allow cooling breeze to blow through the dwelling. Generally the houses are rectangular with simple geometric forms. There is a simple open volume divided in to two by a thin screen. More elaborated houses had a greater number of rooms with less number of walls, similar to modern minimalist houses in the urban context.

These houses have high textural qualities. Attractive textures of wattle and daub walls, cow dun floors, the palm leaves of which they are constructed often impart to them great beauty.



[Fig.16] Traditional Sinhalese houses-minor tradition.

Source: The architecture of island

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

The other type is the courtyard forms. They have commonly two buildings one opposite to the other, jointed together on each sides by a wall, which makes a square court-yard in the middle. They also have few rooms and satisfy themselves with one wall only which goes through the house and divided it. Since the heat in this land is very great, houses often more open than they later became.



[Fig.17] Sinhalese vernacular Domestic building- courtyard type

Source: The architecture of island



Jhon qavy, who visited the Kandy kindom at the beginning of the 19th century, describes “there best house those of mud with tiled roofs, raised on a low terrace, and always of a single storey building in the form of hollow squares. Presenting extremely a dead wall and internally bordering the open area is a veranda. Windows hardly large enough to admit the human head, (very small – due to climatic reasons in the Kandy distict) floors are of clay plastered with cow dong, enormously it is used for the sake of cleanliness and to keep off insects, and answer the purpose exceedingly well.”

1.3 WESTERN APPROACHE - MODERN MOVEMENT AND MINIMALISM

In order to precisely define minimalism, it is necessary to study its **origins in the Modem Movement, identified with functionalism**, which was developed in Europe. Already this is a style, which does not consider history and culture and started from the scratch. Less response on context, nature and human qualities. This movement came about as architects, designers and craftsmen, united by a spirit of innovation. The result was a radical change in the cultural and aesthetic sensitivity of society.

Although there are disqualifications, some factors influenced modern-day minimalist interiors. Specially the geometry. Even in arts, the use of rectangles and squares in flat planes of bold primary colors, together with black, gray and white, all carefully orchestrated with straight lines, directly related with some kinds of minimal arts.

As far as the aesthetic premises established by **Bauhaus** are concerned, apart from the already mentioned concepts of geometry, simplicity and honesty. One can also extract further influences that have been absorbed by minimalism: **Universality**,

direct expression, standardization, economy and the application of new technologies. However, the contribution of the Bauhaus school with regard to the creation of a new domestic environment does not only take shape today through its influence on minimalism but also through the practical innovations that were introduced, **namely the marriage of engineering with craftsmanship.** These innovations have profoundly affected current **industrial design and have come to form part of our lives.** As Frank Whitford comments in his book, *Bauhaus*, "Everyone sitting on a chair with a tubular steel frame, using an adjustable reading lamp, or living in a house partly or entirely constructed from prefabricated elements is benefiting from a revolution in design largely brought about by the Bauhaus." (Due to the influence of modern movement)

Mies van der Rohe, is fundamental to the very genesis of minimalism, Considered to be the most representative minimalist architect of the twentieth century. He tried to **remove the barriers between interior and exterior.** This new conception of space, full of significant **emptiness,** reminds us a new lifestyle based on freedom and the search for simple forms. **Also the modernism, influenced to design pure geometrical forms, smooth flat surfaces and removal of ornamentation,** which we can find buildings design by Le Cobusie, but he was not interested in perfection.

Though there are few influential factors, modernism can not be equated with minimalism. The simplicity in minimalism can not be equated to the sparseness of modernism, with the machine age aesthetic, stripped of ornament so that form and detail are reduced to the mere blandness.

Simplicity is very difficult to achieve. It **depends on care, thought, knowledge and patience.** Therefore minimalism is older, richer and broader tradition than that.



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

CHAPTER **T**WO

MINIMALISM IN CONTEMPORARY DOMESTIC ARCHITECTURE

MINIMALISM IN CONTEMPORARY DOMESTIC ARCHITECTURE

2.1 ARCHITECTURE - DEFINITION AND PURPOSE

The simple definition of Architecture is the “art and practice of designing and constructing buildings” this includes the style & in which it is design and constructed. In another point of view, “Architecture is the product and the process of human habitation” (Habraken J. N.,1985.), as it is an art which man exposes throughout his life.

A good work of architecture, while providing man with the desired physical comfort, caters essentially to his psychological needs. A profound connotation of this word to Kulatilake (1994:1), “Architecture is a physical, emotional and intellectual experience. It facilitates man’s bodily comfort, emotionally attaches him in to it, and as a work of Art, through symbolic communication leads him towards a higher realm of contemplation”

Always a good work of architecture grasps the inherent meaning and evokes a dialogue with its beholder.

“When one actually sees the solidity of the mountain or the vastness of the sea, when one comes upon it suddenly, there it is in its monolithic presence. Everything including one’s own ego has been pushed aside, except the majesty of the mountain or the sea. Such a sight absorbs you completely. It is beauty it self. If you are fortunate enough, to think of a building that absorbs you with the same intensity, that building can be called Architectur. The others are nothing but edifices.”(Silvestrin, 1998:8)

It is a matter of awaking people’s sensitivity. Also their purity of view. Architecture as a technique to bring to the fore spiritual energy, stillness of mind. Good architecture makes us silent.

2.1.1 Architectural Space

“Architecture is primarily a spatial experience. “Mans existence is spatial. One cannot divorce man and space. His all existence, ever since the fetus is grown inside the mother’s womb, is spatial. As he live in space, he captures the essence of his spatial experience and re-interprets it in the way he likes. This re-interpretation is considered as the architectural space.” (Schulz, 1971).

2.1.2 Spatial Quality

A human being is said to be a creature particularly sensitive to his surrounding physical environment in which he dwells, when space is encapsulated and coloured with, human feelings and emotions. Spatial quality is defined as a character of a space, the feeling it would evoke in a persons mind, the effects it would have on the behavior of a person in the space.

2.1.3 Form & its Relationship with Space & Spatial Quality



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

When consider the spatial quality, form of the space and its shape is extremely important. “With reference to architecture, there cannot be anything more natural than to start with the visible form and then gradually penetrate into the realm of the invisible. Space is the invisible realm that dwells as its inseparable companion, the visible form. In experiencing architecture, it is the visible form that a person confronts first, before capturing its underlying reality, the space.” (Oswald, 1986:12). Therefore the plan form, & three-dimensional form play the major role to achieve spatial quality. Colours, textures, Materials,& element details contribute to **enhance** spatial quality.”

“Shape is the primary means by which we recording and identify the form of an object. Since it can be seen as the line that separates the form from its background. Our perception of form & shape will depend on the degree of visual contrast between the form and its background” (Ching F. D. K., 1979:20). Colours, textures, light, materials, element details can be considered shapes of the form.

To facilitate such architecture minimalism would be an appropriate design approach.

2.1.4 Contemporary Domestic Space in the Context of Urbanization

“For the rural masses, Colombo was a celestial city (divayaloka), since its scale was outside their normal experience” (Desaram c: 1964:16)

Rural people sought employment, money & social mobility in urban areas. and profession, Status became an important factor in life, with urbanization. The increase in demand for land in Colombo, due to rapid growth of population and urban migration added new dimension to the transformation of domestic buildings. Therefore the size of land plot became partly responsible for a totally different architectural character. The need to obtain the maximum usage of valuable land to a house, which tended to occupy the entire land, has become a reason for the kind of **introverted houses**.

“This approach is to incorporate duality into the plan arrangement where the outside of the house has all the appearance of an exclusive enclosure, but the inside is comparatively open” (Powell. R: 1998:16)



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

In the 21st century world has become a very congested and busy place, in which people work like machines. As a result mentally stressed and physical exhausted persons have increased over the last few decades. Though we have calm places for relaxation, people find it difficult to visit them due to insufficiency of time.

“A home is the common factor of being a retreat, a place of solitude” (Powell. R. 1993: 10)

Today most of us view home as a place to which we retreat, a sanctuary from the stress of working life and a life apart from the millwheels of the economy. The house has been considered the spiritual core of a person. Thus it should be a place of tranquility, for the mind of the dweller.

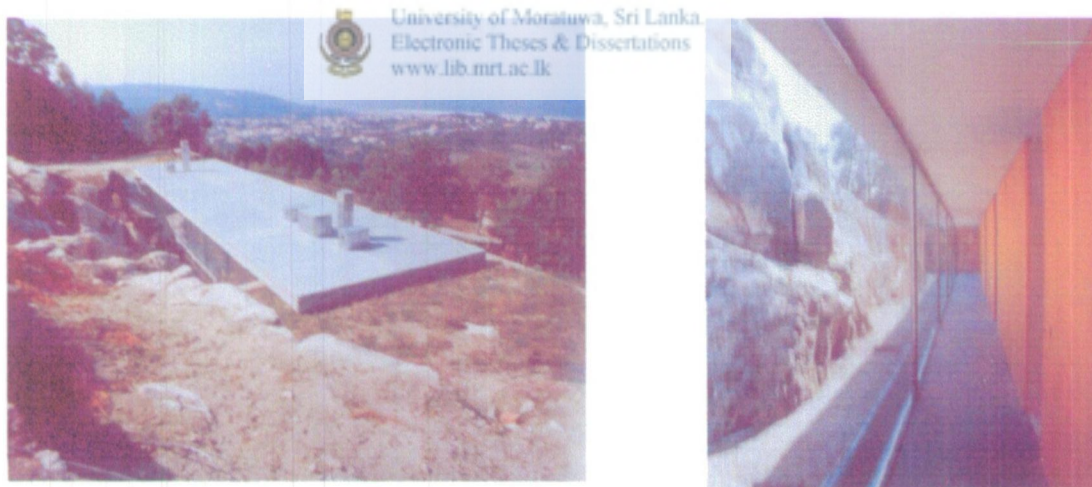
As such, the concepts of minimal architecture, reveals the way of enhancing the spaciousness and facilitate a sense of liberation. For such kind of life enhancement and to facilitate meaning full architecture, minimalism is the appropriate design approach, especially in the urban context.

2.2 CHARACTERISTICS TO ACHIEVE SPATIAL QUALITY OF MINIMALIST ARCHITECTURE

Architects and designers describe minimalism as **calm contemplative, soothing and sensual**. Perhaps it **caters for essentialities**, and it is a functional tool than a formal philosophy.

Though “minimalism” is difficult to insist on one correct definition, it seems clear that in general use minimalism has been reduced to a series of fairly basic concepts revolving around **simplicity, identity of material and absence of decoration**.

Minimalism **responds to social and political history, relationship to site, placement, mass, scale, environment** and the audience and display the unrealized qualities of materials. Minimalism has become a universal Art, because its constituent **parts seem to slot in to any cultural context**. **Simplicity, clarity, abstraction, elementary geometry, austerity and tranquility** are some general characteristics of minimalism.

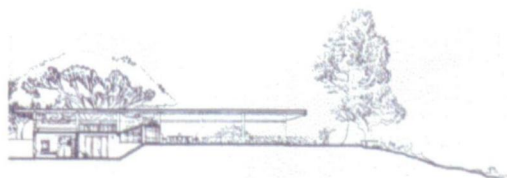


[Fig.18] Minimal Architecture responds to site & placement

House at Molido-Portugal, Archt. Jhon Powson

source : **Aspects of Minimal Architecture-2,AD Architectural design.**

This house is a result of a rigorous ordering of spaces informed by the constraints of site and context. The simplicity of the plan and simple interlocking geometry of the mass produce an internal spatial complexity that enriches the quality of space and light. Context was influential in the choice of building materials too. As a whole, the particular form has achieved unity in it with an inexplicable simplicity, in minimal architecture.



Section Through the site

House on a Red Cliff in Mirissa (Jayawardane house) by Archt. Geoffrey Bawa.



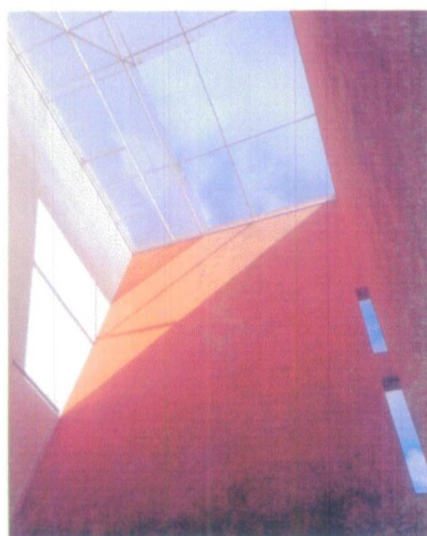
[Fig.19] Slender columns holding up the roof become part of the grave trees.

source : The Journal of the SLIA, vol.101 no.20

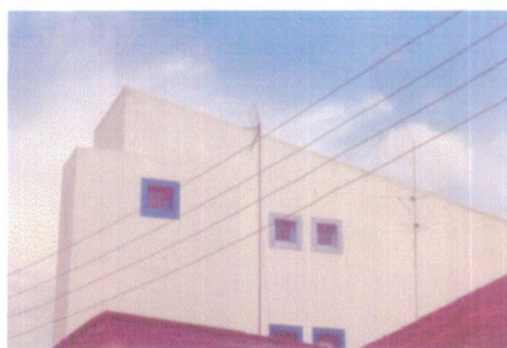


University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Here the Architecture has been pared down to a minimum. Magnificent views in all directions look out over a bay to the Northwest, the vast expanse of the Indian Ocean to the West, another bay to the South-west and the tremendous switchback of hills to the Northeast stretching back to the south platform and Adam's peak



[Fig.20] Lakmali Nanayakkara house; Archt. Varuna de Silva.



[Fig.21] "Ratwatte house", Archt. Ranjith Alahakoon.

Though minimal Architecture respond site, placement and context, it is difficult to illustrate such characters in urban tight plots, which are surrounded by four boundary walls. Only natural source is the sky. Although, when particular form achieves unity in the context. (harmonize with the surrounding) it gains itself with an aura simplicity. Minimal concepts can be used to facilitate such harmonization.

2.2.1 Simplicity

“What is truly grate is truly simple” (Brandford, 1968; 81)

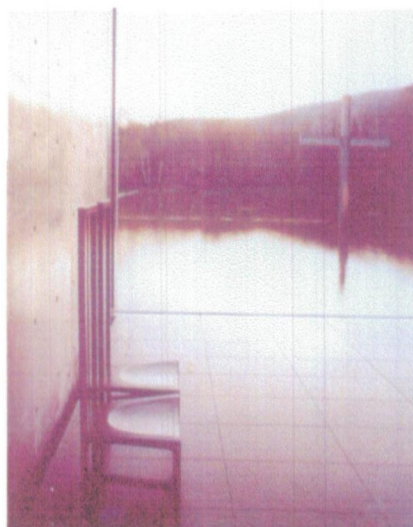
When particular form achieves unity in it, it gains itself with an aura of simplicity which is almost inexplicable. (It however is not the extreme order or lack of complexity which has become a common phenomenon in modern architecture.) Simplicity in minimal architecture, can only be achieved most complex of means.



[Fig.22] House of Louis Barragon

Source : The Architecture of Louis Barraga

The concept of simplicity has a long history, as mentioned in the chapter one, simplicity has always offered a sense of liberation, a chance to be in touch with the essence of existence, rather than be distracted by the trivial.



[Fig.23] Church of Water-Acht. Tadao Ando

Source : Tadao Ando: colours of light

Clearly simplicity has dimensions to go beyond the purely aesthetic. It can be seen as the reflection of some innate, inner quality or the pursuits of psychological or literary insight in the nature of harmony, reason and truth. Simplicity has a moral dimension implying selflessness and unwordliness. Simplicity is achieved by complete harmony.

The culture of simplicity has been advocated by almost every kind of religion and spiritual sects, specially in Buddhism. Whatever the other beliefs, as a virtue that can purify the spirit, and can offer adherents a sense of inner tranquility. Over the ages does not make it any easier to define its essence. So simplicity in architecture can some times only be achieved by the most complex of means.

2.2.2 Clarity



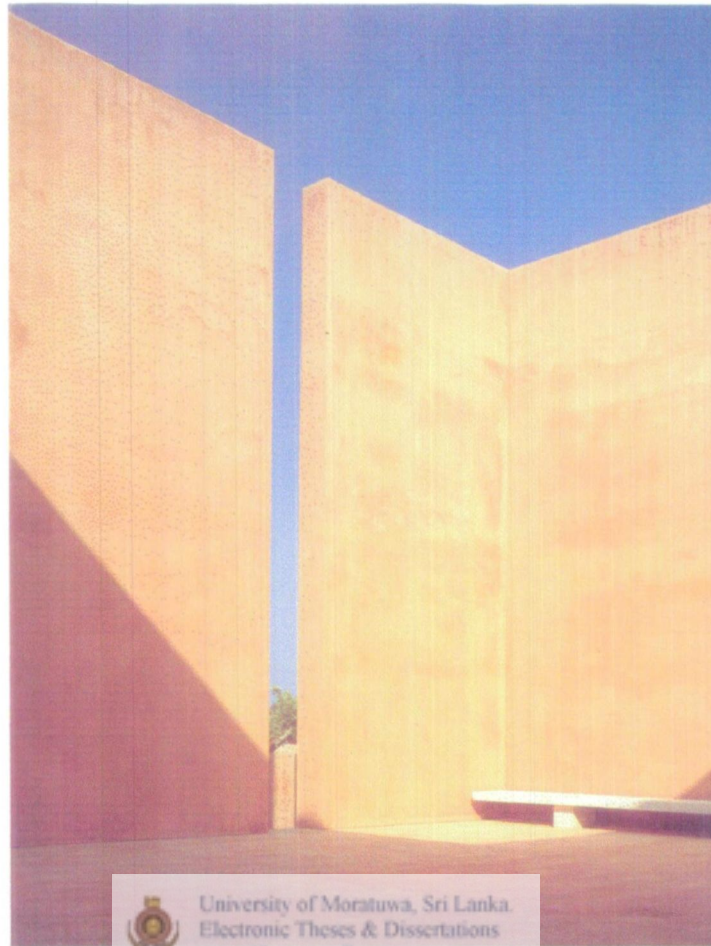
University of Moratuwa, Sri Lanka
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Clarity is the legibility of a built form. In experiencing, it becomes utmost important as it facilitates the beholder to read and understand easily, the expression of a built form (Refer fig.11)

It is not true to say that an empty room is necessarily bare and devoid of character. In fact it is the process of eliminating unnecessary to reach the essence (ref. P.14)

Once you reduce and simplify, at a glance there is less and less to look at. Then as you go on reducing and compromising, comes to a point at which you go through a barrier, and pass through in to a kind of mirror world, in which you see, enough clarity, not emptiness, but a sense of richness. Through such emptiness expected spatial quality would appear.

There is an excitement of empty space. It has the capacity to bring architecture alive. Emptiness allows us to see space as it is.

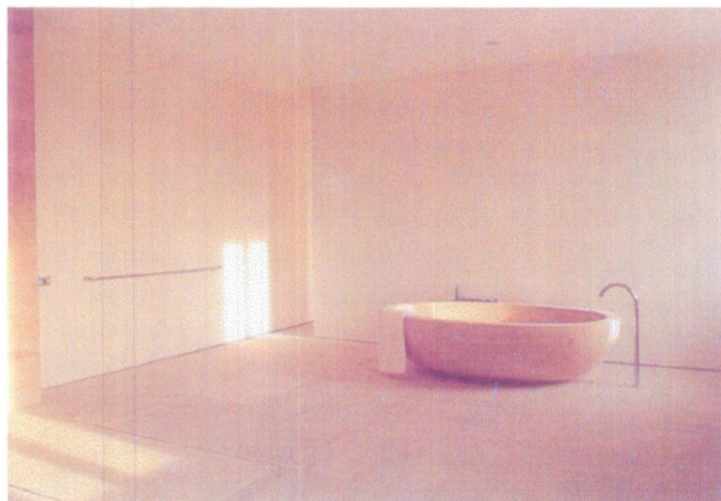


University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

[Fig.24] The Neuendorf House, Jhon Pawson

Reduction of Architecture to the barest possible minimum.

Source : **Minimum**



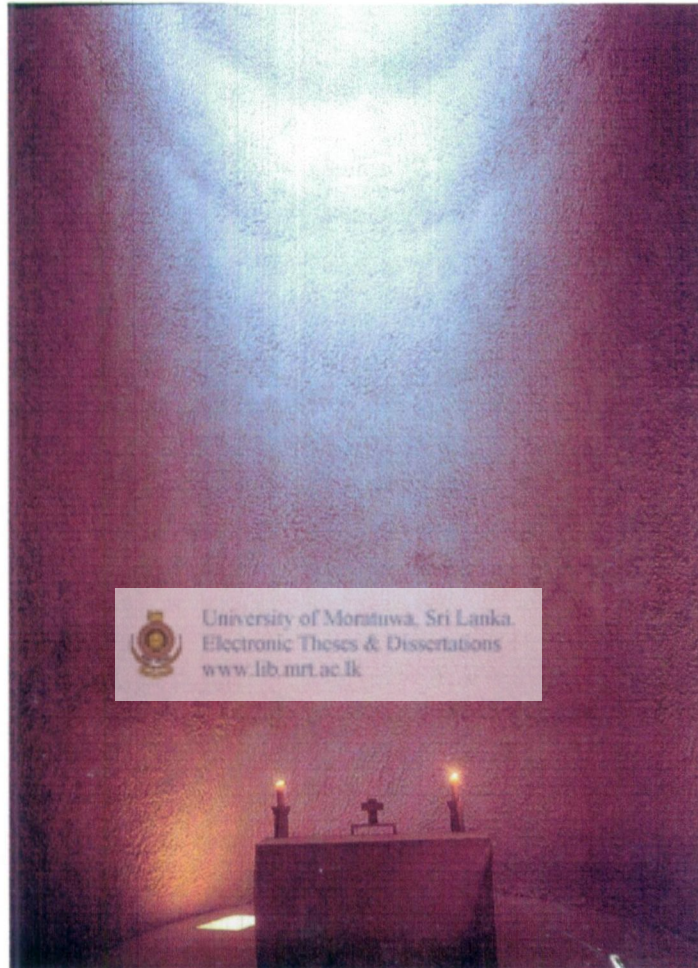
[Fig.25] Minimalist approach in the bath room

Source : **The Essential House Book**

Four no matter how small the room, providing your eye could travel freely around it, the space it contained was limitless.

2.2.3 Tranquility

Utter simplicity of forms, homogeneous materials, pure & monotone colours produce an austere mood and tranquil order. Further the use of light & shade in curious manner, facilitate tranquility.



[Fig.26] Chapel of Notre Dame du Hout at Ronchamp.

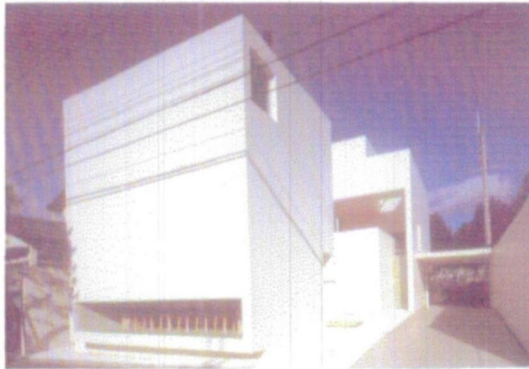
Tranquility and spirituality of minimalist space.

Source : **minimum**

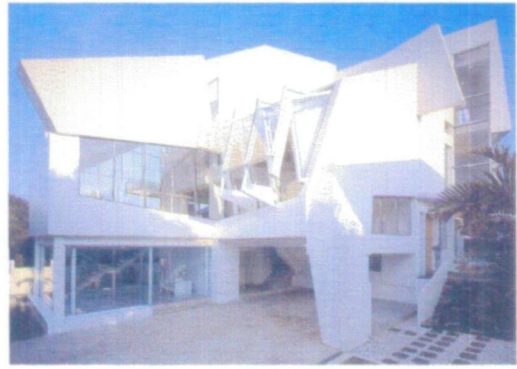
Tranquility of houses are not seen as deprivation, but rather a liberation of the inner being by banishing disorder, ostentation, and vanity from our environment. They thought proper spirit for the ceremony consisted of four elements: harmony, reverence, purity and tranquility. An atmosphere of tranquility, that men would feel no threat, is what we expect to achieve in urban minimal space. Based on this tranquility, each person would obtain an intuitive sense of the harmony that can be found in nature and purity of heart acquired by an understanding of this harmony. Tranquility is one of major ideas, inherent in Zen Architecture (ref. page 17)

2.2.4 Elementary Geometry

Minimalist architecture allows us to see space and form as it is. Because minimalism can be seen as the reduction of architecture to its most basic concept of space, light and mass. Its central theme is not elimination of ornaments but **celebration of naked beauty of the form and space**. Therefore, **simple and understandable geometry** is extremely important to facilitate minimal Architecture.



[Fig.27] Hauei Residence, Japan
Elementary Geometry of the form



[Fig.28] Cachawal House, Thailand
Complicated Geometry of the form

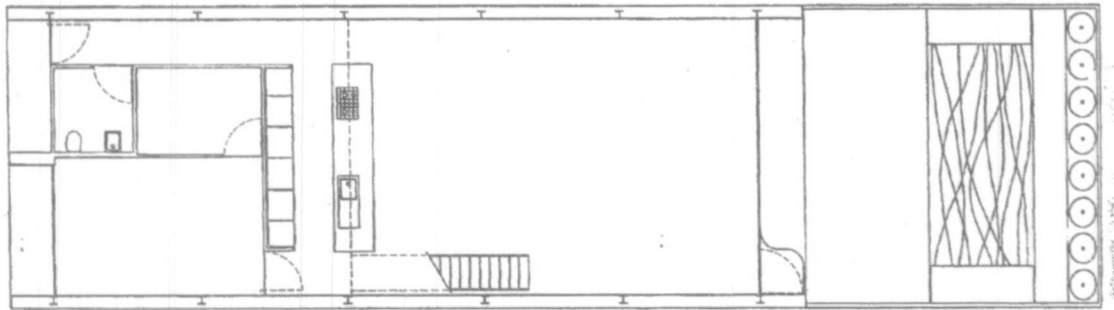
Source : ARCASIA Journal, Vol: Sept. 1998, Moratuwa, Sri Lanka Electronic Theses & Dissertations
www.lib.mrt.ac.lk

2.2.4.1 Two Dimensional Form

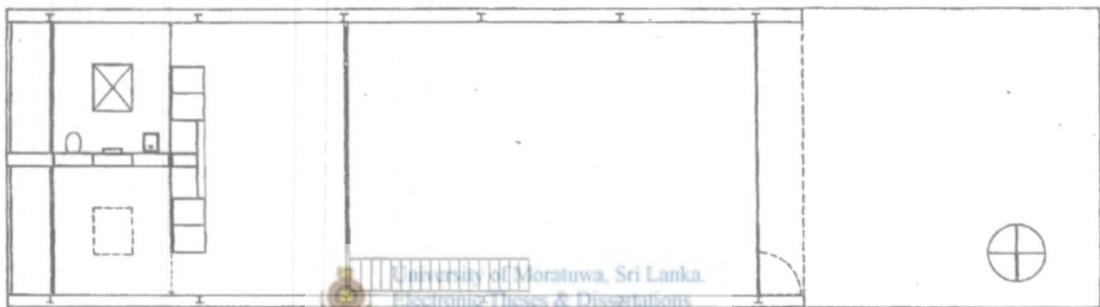
The plan form is the two dimensional composition of a building. Although the plan form of a building or a house is not visually seen (unless one flies above a building)

“The principles of composition involved in the production of a good plan may be considered from two different points of views; that which is concerned with abstract design, and that involved in the study of practice requirements. The seconded aspect is however related to the first, since a good plan is not only one in which all practical and functional requirements are fulfill, but one which result in the production of a architectural composition having the abstract qualities necessary to awaken the aesthetic and emotional sense of the be holder.”(Robertson.H., 1924: 100)

Plan form is extremely important to identify whether it has a minimalist approach or not. Simplicity, clarity and elementary geometry of the two dimensional form can be identified easily.



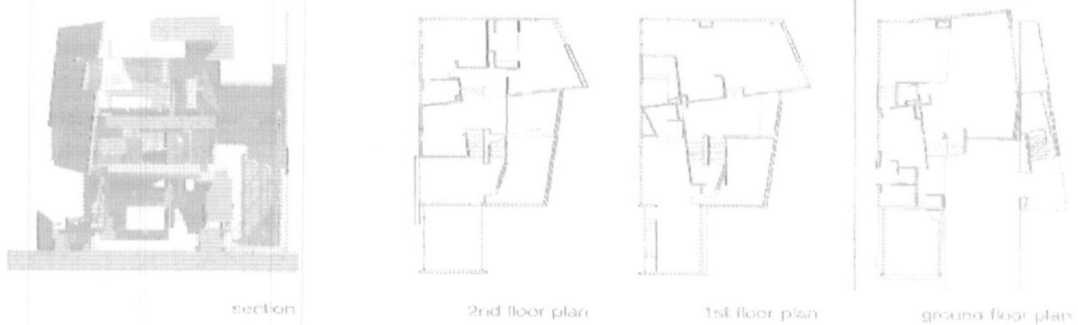
Ground Floor



Upper Floor

[Fig.29] Elementary Geometry of the plan form, O'Reilly house, Sydney

Source : The Architecture of Minimalism



[Fig.30] Cachawal House, Thailand

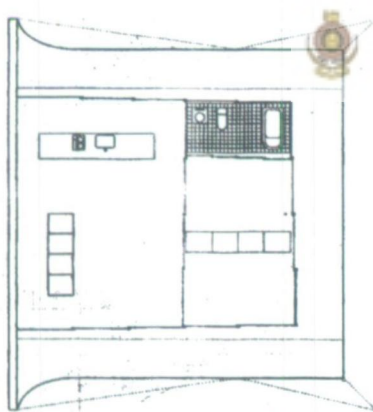
Complicated Geometry of the plan form provides unusable corridors, edges and corners which against with minimal concepts.

Source : ARCASIA Journal, Vol: Dec. 2002.

Minimalist Architects used to design buildings, with very few numbers of walls. Minimalism as an approach which caters for essentialities, minimalists uses few essential walls to exaggerate the clarity of the two dimensional form, avoiding unusable edges and concerns, with odd shapes.

By analyzing minimal 2D forms, could be identified a separation between private and public areas of the house. It is easy to cluster private space in one segment, as a result, automatically get large open volumes without any distraction and visual disturbance. Sense of wholeness can be achieved. As a result unnecessary corridors spaces and passages can be minimized. Such spaces can be identified as reduction of architecture to its most basic concept of space light and mass (ref. fig.29).

We find composition of primary geometric forms (specially square & rectangular forms) in plan arrangements of most minimal designs, rather than using complicated shapes like octagonal, hexagonal or unusable shapes. Specially in other buildings, which have large number of functions and spaces, illustrate repetition and rhythm in plan form, to achieve simplicity.

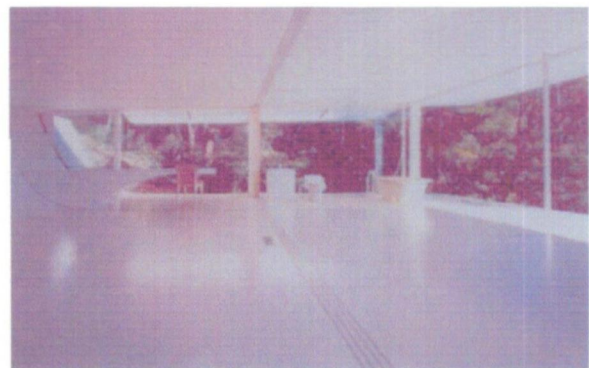
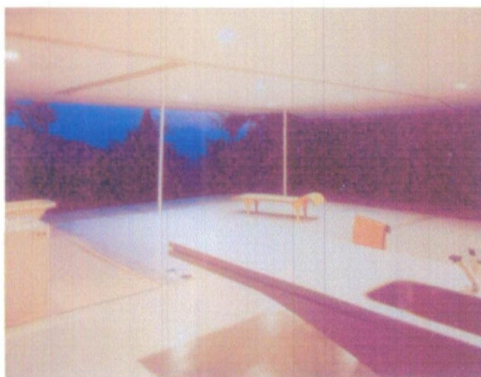


University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

[Fig.31] Plan form – walls less house

In order to express the Structural concept as purely as possible, all the walls and mullions have been purged leaving only sliding panels.

Source : Aspects of Minimal Architecture.



[Fig.32] Minimal Interior of Walls Less House

Large free volume facilitates sense of wholeness.

2.2.4.2 Three Dimensional Form

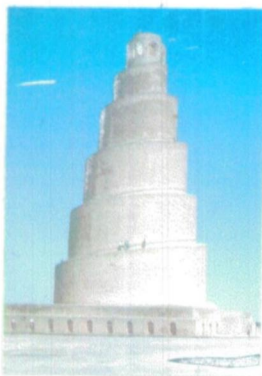
Three dimensional forms can be identified as volumes. (Length, breath, height). “With Reference to architecture, there can not be any thing more natural than to start with the **visible form** and then gradually penetrate in to the realm of invisible. Space is the invisible realm that dwells in its inseparable companion, the visible form. **In experiencing architecture, it is the visible form that a person confronts first, before capturing its underling reality, the space**” (Oswald.1986.12). This visible form is mainly about three dimensional forms.

Sub topics will be discussed, different principles of three dimensional form to achieve minimalism in architecture.

(a) Monolithic Form (Pure Geometry) To Achieve Minimalism

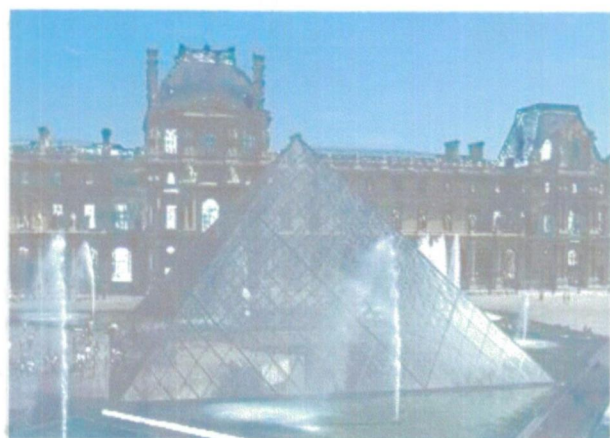
In the process of perceiving a visual configuration, one tries to make it, as simple clear and comprehensible as possible. There for when perceiving a slightly distorted composition which resembles a stable and unified form, the tendency is to perceive as a simple and unified one.

The most simple and unified configurations are the primary geometric forms or the mathematically ideal forms. The sphere, the pyramid, cone, the cube etc. Those have a calm and sense of response that is missing in more complicated or less pure forms.



[Fig.33] Spiral minarets of Iraq

Source : Minimum



[Fig.34] Louvre pyramid, Paris

Source : www.louvre-museum.com

For instance the geometric perfection of the spiral minarets of Iraq, what gives their simplicity? Brunelleschi's dome in Florence has the authority of simple formal perfection.

There are of course structural reasons for these shapes. But it is impossible not to see it as an extra-ordinarily beautiful form in its own right. Also the constraints of practical requirements, different site conditions, course for these forms. But these basic forms could be transformed by appropriate distortions to suit the particular practical and expressive necessities.

Many of the various shapes of buildings could be explained as distortions of primary geometric forms. It is by appropriate manipulating and altering of the dimensions or by adding or subtracting of minor/ lyrical forms, a final composition is achieved. Thus altering and manipulating should be within certain limits to maintain the resemblance of the final composition to the stable and unified initial form, from which the final one has been derived.



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

Additions of elements in formal manner do not harm the dominating effect of the large spherical form.



[Fig.35] Hakuei Residence, Japan

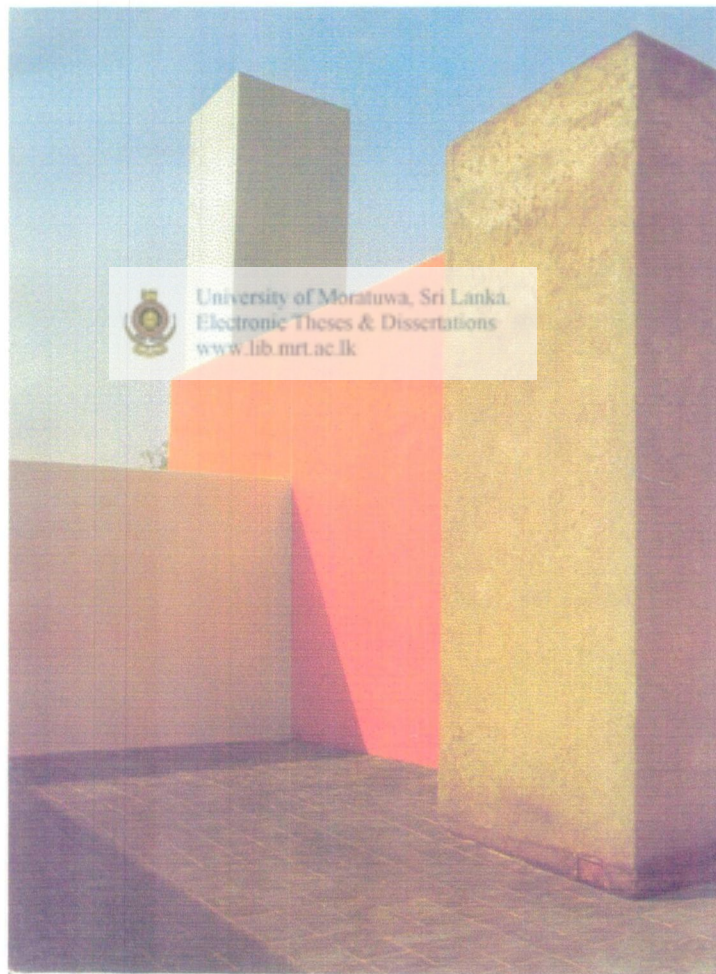
Source : *Architecture ASIA* – Aug./Sep. 1998

With reference to fig.35, Architect has manipulated number of monolithic forms (cubic forms) to achieve unity and simplicity in the overall composition.

(b) Unity & Architectural Composition to achieve Minimalism

Architecture deals with composing set of elements or spaces in a particular manner to create an intended expression. The act of composing spaces or elements should be governed by a certain set of principles, so that the intended expression is created while preserving the unity of the composition.

The unity is the quality of “one ness” in a composition, which is created, when the proper relationships existed between the different elements and the composition as a whole.



[Fig.36] Composition of simple geometric forms to achieve unity in the minimalist space.

Source : **The Architecture of Luis Barragan**

(c) **Balanced Composition to achieve Minimalism**

Two elements similar in size and shape might look different in weight, and at the same time, two different elements dissimilar in size and shape might look similar in weight. The apparent weight of an object determined by its properties such as scale, colour, textures, etc are the tools, used to achieve unity in this particular type of composition. By using these tools, a composition can be created where **dissimilar elements are delicately balanced about a principle axis** (ref. fig39). This balanced distribution of elements aided by inflection creates a sense of presence of the principle axis in the composition. The ability to sense the presence of such an axis aids the perception of the various different elements together in a unified whole.

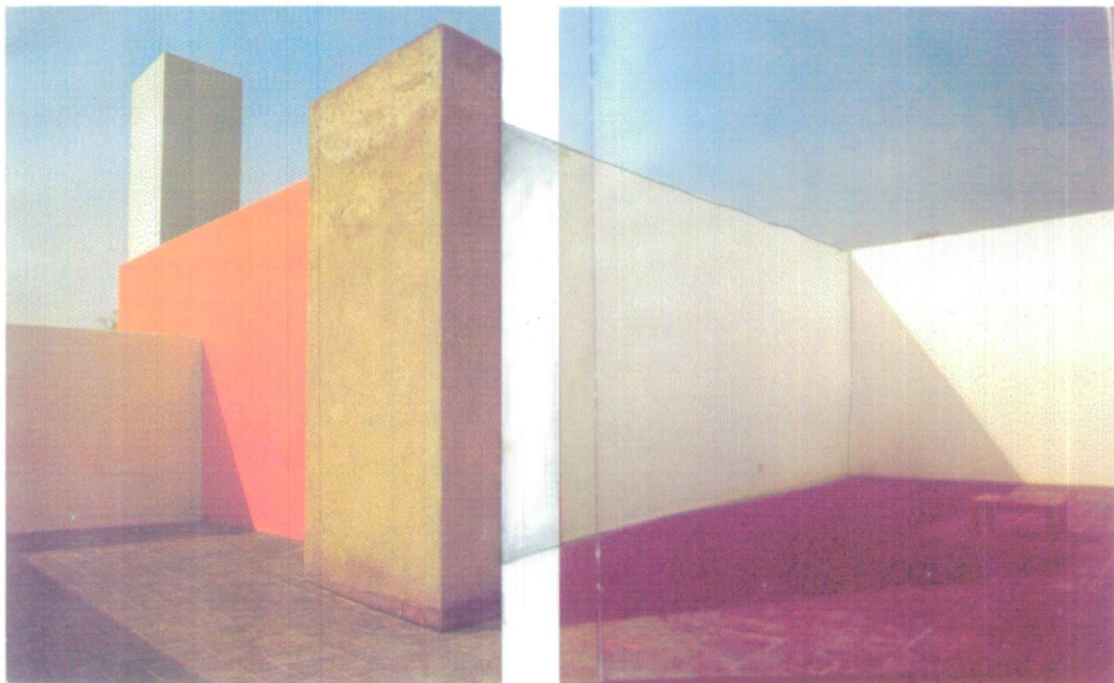
Definitions;

Axis – A line established by two points in space , and about which form and spaces can be arranged.

Symmetry- The balanced distribution of equivalent forms and spaces about a common axis or point (centre)

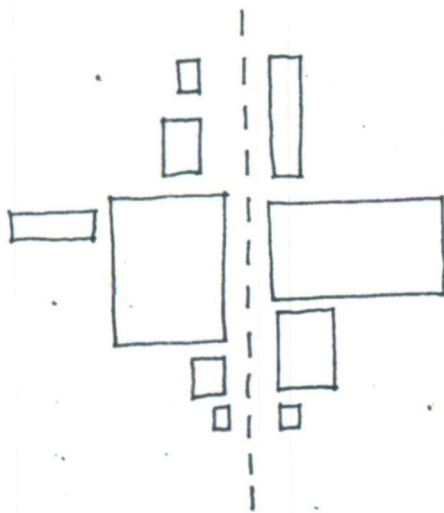


University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk



[Fig.37] Emptiness of the white courtyard balance with the combination of colourful cubic forms.

Source : **The Architecture of Luis Barragan**



[Fig.38] Balanced distribution of elements about an axis.

Source : **Space Form and Order**



[Fig.39] Balanced distribution of elements to achieve minimalism.

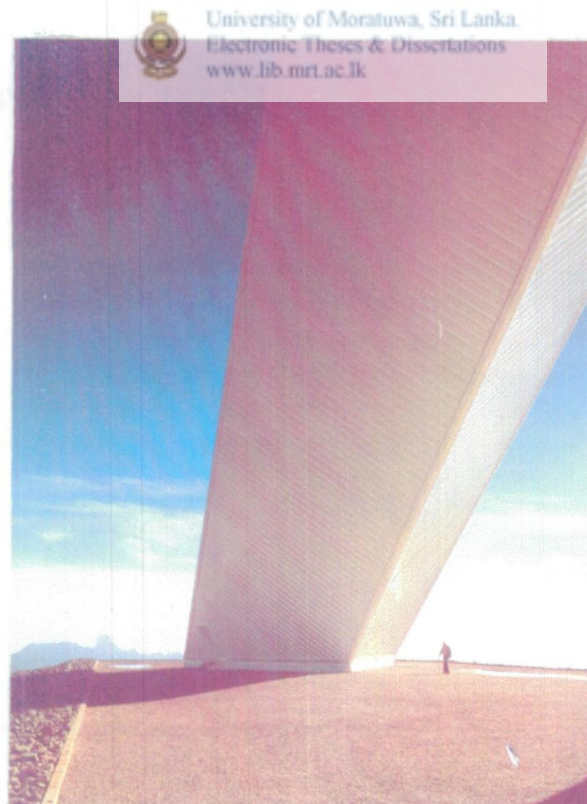
Source : **The Architecture of Luis Barragan**

(d) Scale and Proportion to achieve Minimalism

Simplicity in minimalism is closely associated with scale and size. Scale brings man directly with it, since experience is always linked with him.

“Scale is a dialogue between man and object. Sizes however not related to scale, although it has a bearing on bringing simplicity. “A built form quit large in size, may posses, human scale. It possesses adequate spatial articulation and built components familiar to man through which he can relate himself with the size of the built form.”(Antoniades:1985)

The scale refers to the size of something when comparing with the standard or another. The proportions allude to proper relation of one part or to the whole. Francis D.K. Ching depicts this fact as, “while scale alludes to the size of something compared to a reference standard or the size of something else. Proportion refers to the proper or harmonious relationship of one part to another”. This relationship may not be one of magnitude, but also of quality or degree to use the principal of scale and proportion to achieve minimal quality.



[Fig.40] Scale is a dialogue between man and object.

Source : Minimum



[Fig.41] Helmut Lang, New York Minimal quality has been achieved through the scale.

Source : Minimum

(e) **Rhythm and Repetition to achieve Minimalism**



University of Moratuwa, Sri Lanka.
www.lib.mrt.ac.lk

Composition that is based on a large degree of repetition tends to exhibit the quality of simplicity. “Principle of rhythm / repetition is, the use of recurring patterns, and their resultant rhythms, to organize a series of like forms or space” (Ching F. D. K., 1979:20).

Rhythm refers to the regular or harmonious recurrence of lines, shapes, forms or colours. It incorporates the fundamental notion of repetition as a device to organize forms and spaces in architecture. Almost all building types incorporate elements that are, by their nature, repetitive. **Beams and columns repeat themselves to form repetitive structural bays and modules of space. Colours and windows repeatedly puncture a building’s surface to allow light, air views and people to enter its interiors.** Spaces often recur to accommodate similar or repetitive functional requirements in the building program. The patterns of repartition that can be utilized to organize a sense of recurring elements, and the resultant visual rhythms create these patterns.



[Fig.42] The classical temples with their rhythmic facades have it, as do the many engineering structures of the nineteenth century. This rhythmic repetition instills a sense of order.

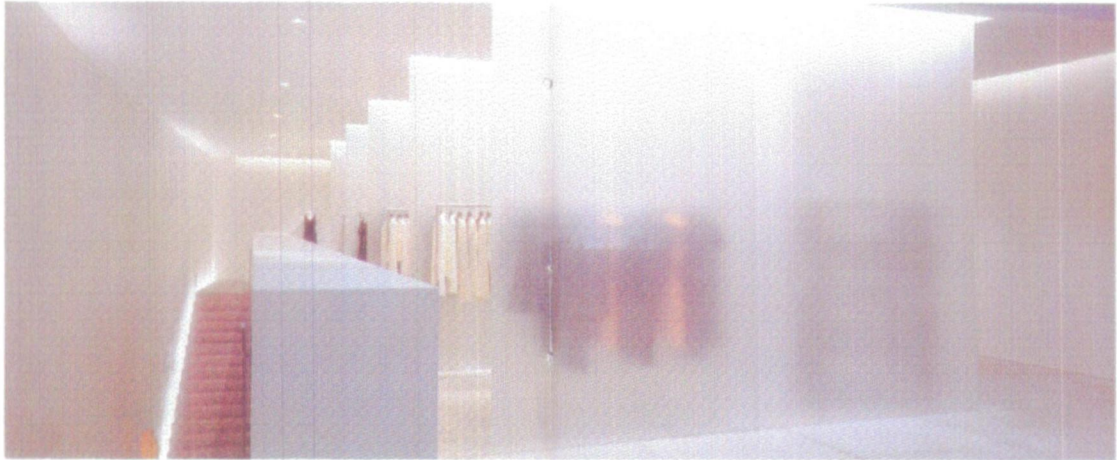
Source : Minimum



[Fig.43] Repetition of simple, massive monolithic forms.

Source : Minimum

Much of the visual power of Stonehenge lies in its repetition of simple, massive monolithic forms. It demonstrates that extremely large structures can have the quality of simplicity, as much as small ones.



[Fig.44] Jigsaw store, London, John Pawson - Repetition of colours and shapes in similar scale

Source : Minimalisms



[Fig.45] Dominique Terrault, Book Center, France - Repetition of forms, shapes and materials, facilitate minimalism

Source : Minimalisms

2.3 ENHANCEMENT OF SPATIAL QUALITY IN THE MINIMALIST SPACE

Materials, textures, light, colours, details, become the **fundamental elements** that give significance to the minimalist space.

2.3.1 Use of Materials & Textures

“The essence of minimalism is simplicity, but simplicity, without depth is merely cheap and one has to think deeply about the materials and the space, to achieve depth in the minimalist pace” says Tadao Ando, sitting with his interpreter at a plain timber trestle table in a spare gallery.



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

Simplicity in architecture can sometimes only be achieved by the most complex of means. **The use of monolithic materials is an important concept.**



[Fig.46] The use of monolithic materials to achieve minimalism.

Source : Tadao Ando; Colours of Light.

Monolithic materials such as solid marbles, or timber cut in to planks to the width of a tree has an intellectual simplicity. But to put them work practically involves an enormous and complex amount of organization. The apparent simplicity of such materials is simplicity only in purely visual sense.



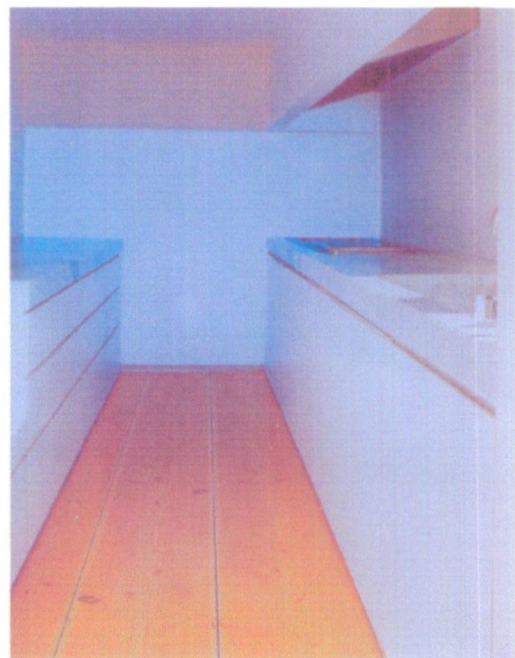
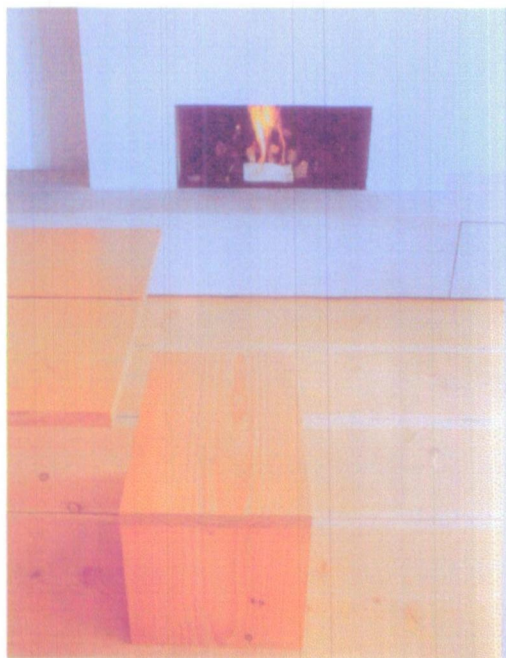
[Fig.47] Large pieces of marbles do not disturb the eye, Jhon Pawson

Source : The Essential House Book

Another idea is to use large pieces. The marbles which the work tops are made does not read as marble at all. It is more a reflection of an attitude about space, surface and sense of volume, seamless, and stretching effortlessly the full length of the room. Floor board in the houses has the same quality.



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



[Fig.48] Timber cut in to planks to the width of a tree has an intellectual simplicity.

Source : The Essential House Book

Timber planks are wide as the tree trunk. From which they were cut, and can run whole length of the house. **That is the idea to enjoy the seamlessness of the material in minimalism.** There are no cuts; seamlessness brings a **sense of wholeness.** The idea behind that is, not to break the visual concentration of the person who perceives that space, to feel entirely comfortable visually.(ref. fig.48)

Use of natural materials in the minimalist space is another concept. Generally choose natural materials, because of there sense of depth, and because they are living materials. When we use very artificial materials, perceiver's eye stopped instantly, never giving a feeling that the material continued beneath the surface. There are certain materials whose essential nature militates against any thing but minimal quality. Eg. thick mud bricks



[Fig.49] Use of mat finishes and rough textures

Source : Architecture ASIA, Issue 2 / June 2002

Most of the **minimalist architects prefer to use mat finishes and rough textures of materials** because of the reflection of smooth surfaces. Also Rough textures blend the interior with exterior.

Minimalism might seem to be style of nothing is further from its reality. Even in the past Sinhalese vernacular domestic buildings, used materials to cater for essentialities, created architecture with a unique character, which can be seen in modern minimalist spaces. These houses have high textural qualities, but they were not intentionally done. The wattle and daub and the cow dung floors have rough textures, which gave mat quality for the overall house, as well as the cooling effect, and used for the sake of cleanliness and to keep off insects and answer the purpose exceedingly well.

2.3.2 Use of Colour and Light in Minimalist Space

2.3.2.1 Colour & Perception

One could say that color is the essence of light and that light is the essence of life. Color perception is a subjective experience, due to the fact that it isn't a material attribute, but a sensation produced by the reflection of light, which is transmitted to the brain by the eye. Thus, the color of an object is the result of the change experienced by light when it is reflected.

The perception of color provokes different reactions in each person, depending on a number of interrelated factors that are generally associated with cultural inheritance and experience.

2.3.2.2 Minimalism and Colour : Expressive Simplicity

Colour plays an essential role in creating more "human" environments that respond to the need to live surrounded by colour. The direct and unmistakable perceptions conveyed to us by the brushstrokes of colour contrast with minimalism's particular lightness of shapes and forms, which at times appear to be diluted in space. When minimalism and colour are united appropriately, and in just the right doses, the results are compositions that produce harmony derived from the order of the parts. In these interiors, it looks as if nothing could be added or removed, because everything fulfills a determined function.

The position and proportion of different objects, of the empty spaces between them, and the distribution of colour appear interrelated and form a compact whole. The distribution of these objects and colours must achieve a dynamic composition that transmits some tension when viewed, in order to avoid the monotony or boredom.





[Fig.50] The distribution of colours have achieved a dynamic composition in order to avoid the monotony or boredom.



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations

Minimalism implies an effort of reduction, which leaves only the indispensable, only the essence. Everything else is superfluous. And within this search for pure and naked geometric forms, colour plays a predominant role because of its undisputed descriptive capacity, and the narrative discourse that it transmits in an implicit, unconscious, connotative way.

The introduction of vibrant colors in a room, whether through furniture or painted walls, adds touches of visual impact that, in addition to bringing life to the atmosphere break up the characteristic neutrality of the minimalist style.



[Fig.51] Colour breaks the neutrality and defines the pure form

Source : The Architecture of
Luis Barragan

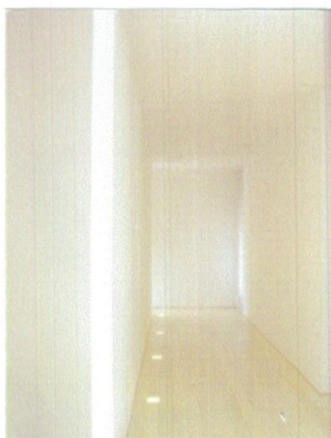
Even Zen defends the introduction of colour in interiors, because of its concentrated individuality and its specific attributes, like the properties that a spice can add to a dish. In an ambience characterized by emphasis on the fluidity of light and space, the subtleties of colour take on special importance, showing the infinite effects produced by the variations of the textures. The effects that have the greatest impact are obtained by visually opposing textures and colours. By adding unexpected touches of brilliant or natural colours, the atmosphere is filled with new centers of attention, which personalize the aesthetic purity of the space. This is part of the evolution from the severest form of minimalism, correcting the error that is often made of identifying minimalism exclusively with the colour white, a similar mistake to considering emptiness to be a lack of content.



[Fig.52] Use of earth colours to blend the interior with the environment

Source: **The Form of Japanese Windows**

Japanese houses inspired by Zen Buddhism, used monochromatism specially, earth colours and natural materials to blend the interior with the environment



[Fig.53]

Source: **Minimum**



[Fig.54]

Source: **The Essential House Book**

White walls, floor and furniture creates, too neutral interiors



[Fig.55] Teng Residence, Singapore

Source: [architecture ASIA](http://www.architecture-asia.com), March 2001

Distribution of black and white colours have achieved a impressive composition that transmit some excitement when viewed in order to avoid the monotony or boredom.

The different perspectives that we experience we move around these environments allow us to appreciate the deli-harmony of the whole, in which the colors contribute different sensations according to their lighting and their relationship with the other elements of the room. this way The emptiness is filled with content, establishing a balanced co-existence between simplification and The eloquence of color, which enriches the sensory experience in these interiors.

The effects that colors generate are essential to the achievement of a harmonious atmosphere. From the point of view of visual experience, harmony is understood as that which is pleasing to the eye. Consequently, in an ambience where chromatic harmony reigns, an infinite sense of order and balance is created in the visual perception. When harmony is broken, the resulting whole transmits either chaos or boredom, depending on whether the stimulation is too high or too weak.

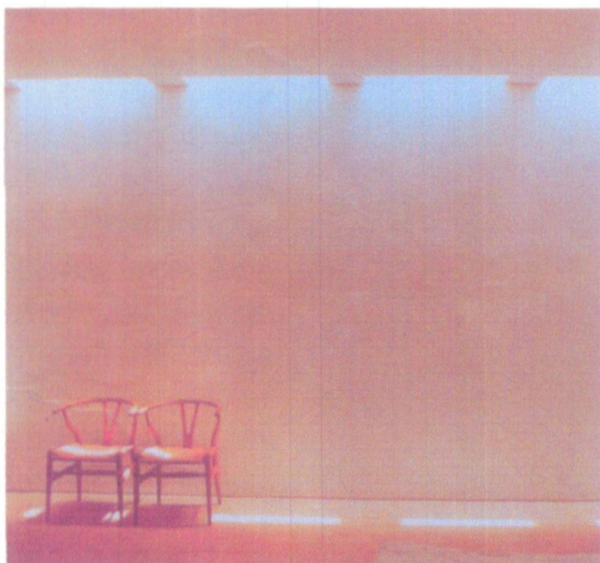


[Fig.56] Colours are used to define planes

Source: Colours

2.3.2.3 Minimalism and Light : Expressive Simplicity

Light is the simplest phenomena which symbolizes basic human emotions. Light is life and joy, and the darkness is death and sorrow. Between these two extremes, an infinite number of variations occur, such as tranquility excitement etc. There fore it is inseparable from architecture as well as minimalist space. As sigfried gedion says; “space dissolves in darkness, space is in annihilated by darkness” and the light that induces the sensation of space” (Rajapaksha A.1994- The fluidity of light through space, with its infinite play of light and shade, facilitate enormous impact to archive minimalism



[Fig.57] Natural light penetrates in to the interior, enhance the clarity of the monolithic wall..

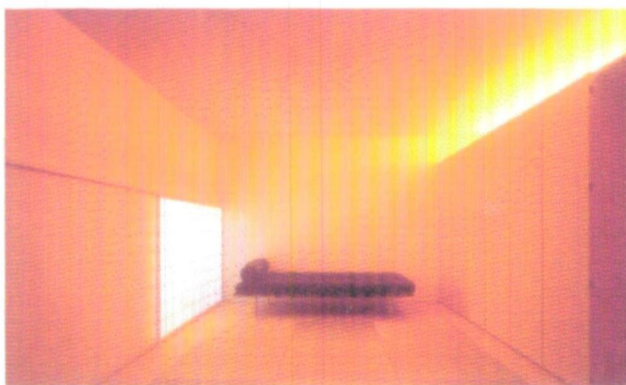
Source: The essentialHouse Book



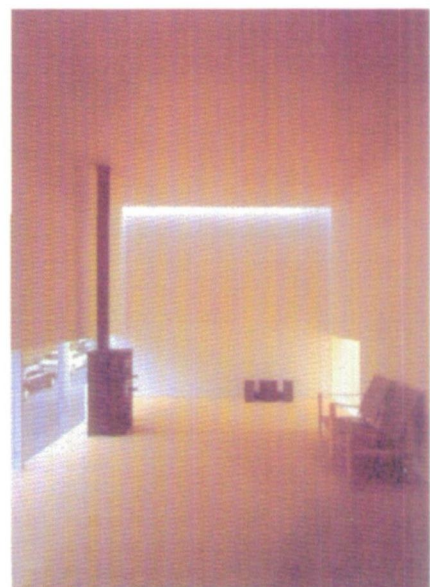
[Fig.58] Church of the light, Tranquility of the minimalist space has been expressed through the lighting concept.

Source: Tadao Ando: colours of Light

Church of the light design by the architect Tadao Ando is one of the best examples to highlight the importance of light in the minimalist space. This chapel drives its orientation from the direction of the sun. Lighting would be the most appropriate tool to understand the orientation, and the time variation of the day in minimalist interiors, specially in the urban context.



[Fig.59] Use of innovative lighting design to avoid the monotony or boredom in the minimalist space.



Source: architecture ASIA, September 1998, Hakuei Residence, Japan

2.3.3 Element Details

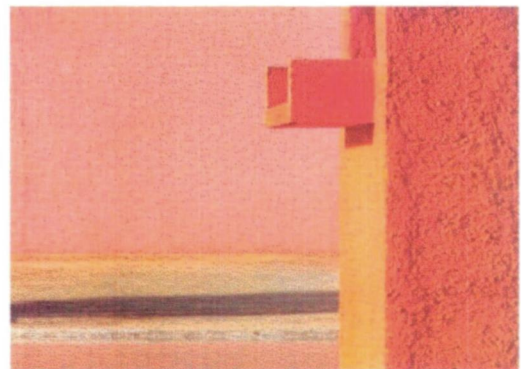
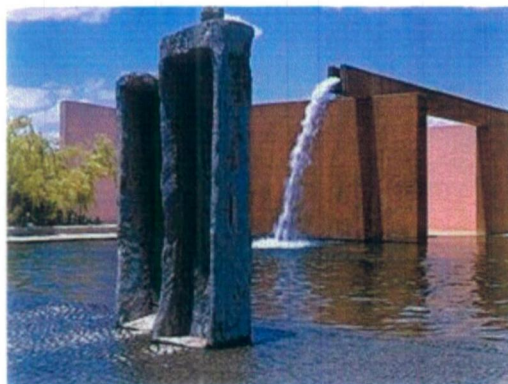


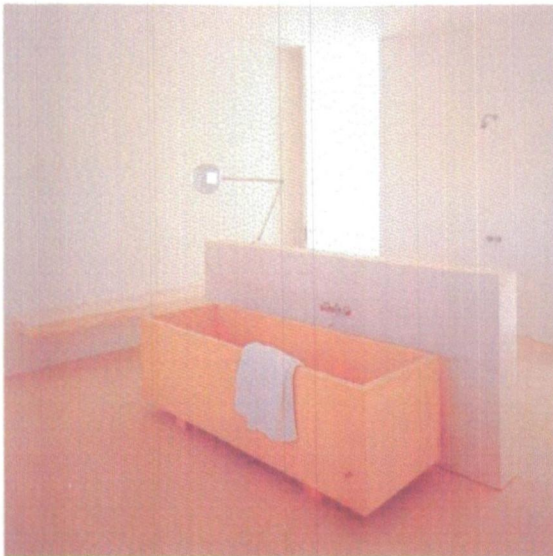
Minimal spaces where visual, spatial and tactical sensations are central, every small detail has an essential importance. As other aspects, element details also important to achieve a harmonious atmosphere. From the point of view of visual experience, harmony is understood as that which is pleasing to the eye. Functionalism and simplicity should be the starting point when choosing element detail methods and furniture. Also it is important to consider the way they are interrelated with other aspects, such as columns, textures lighting levels and materials.

[Fig60] Simple gutter details.



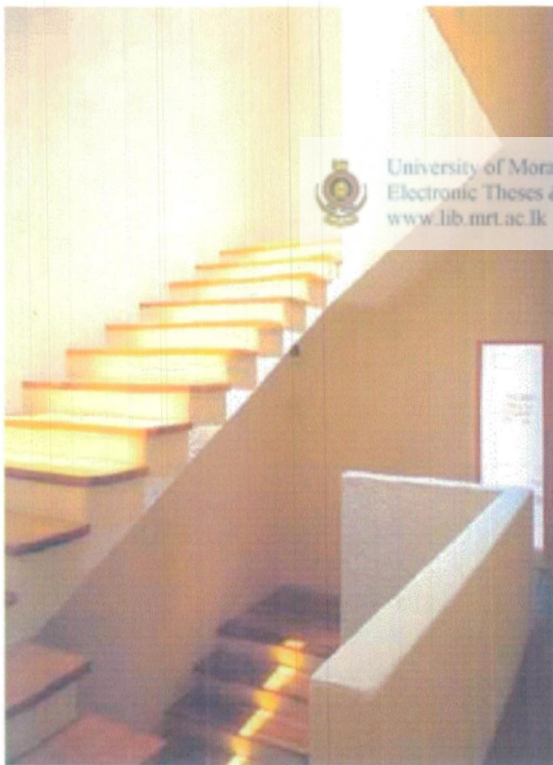
Source: The Architecture of Luis Barragan
Electronic Theses & Dissertations
www.lib.mrt.ac.lk





[Fig.61] Bath room, Neuendorf house, Claudio Silvestrin
Sculptural quality of elements

Source : Minimalisms



[Fig.62]
The sculptural staircase is lit by a skylight high above.
Casa Gilardi by Luis Barragán

Source : <http://www.mexicanarchitecture-luisbarragan-photo.com>



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

CHAPTER **T**HREE

**THE SRI LANKAN MINIMALIST DOMESTIC SPACE ;
CASE STUDIES IN CONTEMPORARY URBAN SITUATIONS**

Case Study - **O**ne**NALIN INDRASENA HOUSE** – Galpota Road, Nawala.

Arch. Shyamika De Silva

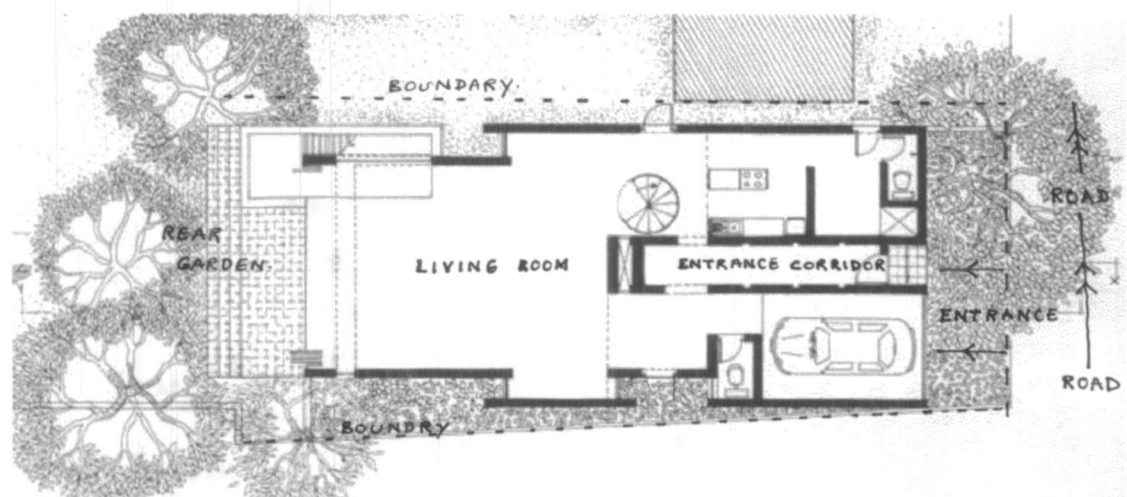
As piece of art, the house is avant-garde, built on a theme of minimalist architecture, by architect Shyamika Silva. This house is an impressionistic artifact, which can be identified as a typical contemporary urban introverted model, having minimalist design approach. (ref. page 26).

The client, Nalin Indresena, is a qualified Aeronautical engineer and is an accomplished pianist and artist, who like to have a simple life style as well as a collector of artifacts.

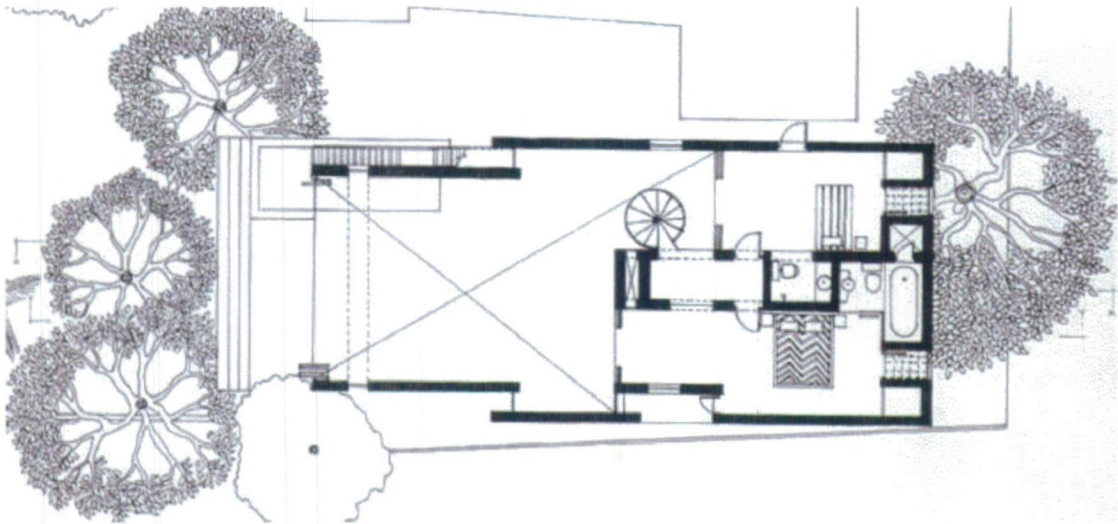
A tall white concrete cube is entered through a small doorway which accesses a dark corridor. Then “the sense of double height space full of light streaming into the living and dining area, opening out to a garden through rear glass doors, that are 20 ft high is awe-inspiring.

Elementary geometry of the house, can be recognized clearly, in sense of two dimensional and three dimensional forms.

Two dimensional form is extremely minimal in this design. Plan arrangement has reduced to a minimum number of essential walls, to express the clarity and simplicity. Also the Architect has clustered, private spaces into a one segment. As a result the rest of the can read as single free volume. It creates the sense of wholeness by avoiding unusable corridors, odd shape edges & corners.

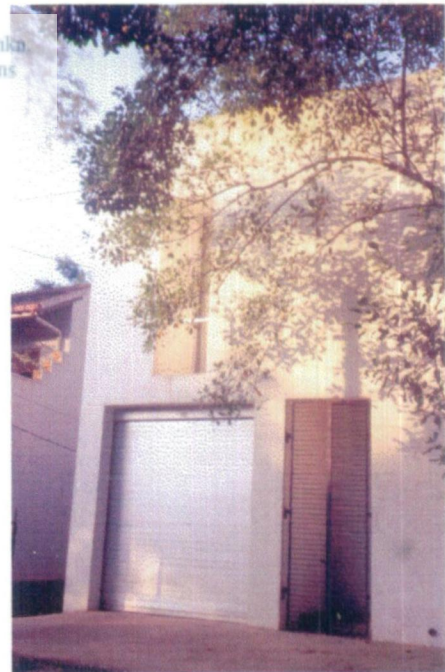
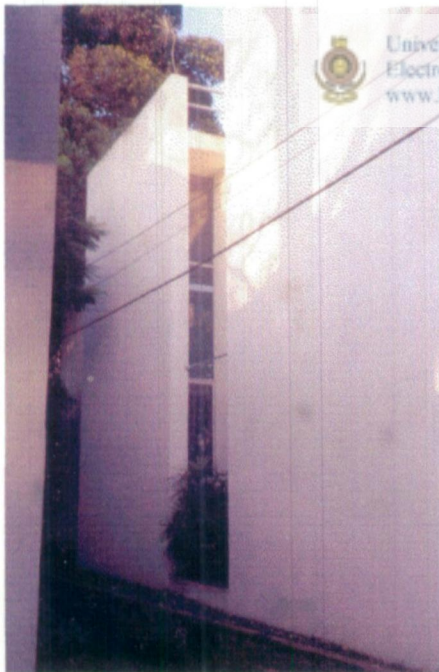


[Fig.63] Ground floor plan



[Fig.64] First floor plan

The white cube (As a primary geometric form) is neutral and stable, which possesses the simplicity & pureness. It is a simple and straight forward **monolithic three dimensional form**. Further the Architect has achieved monolithic quality by hiding all beams and columns. Since it looks as a single cube, manipulation of different geometric forms cannot be identified.

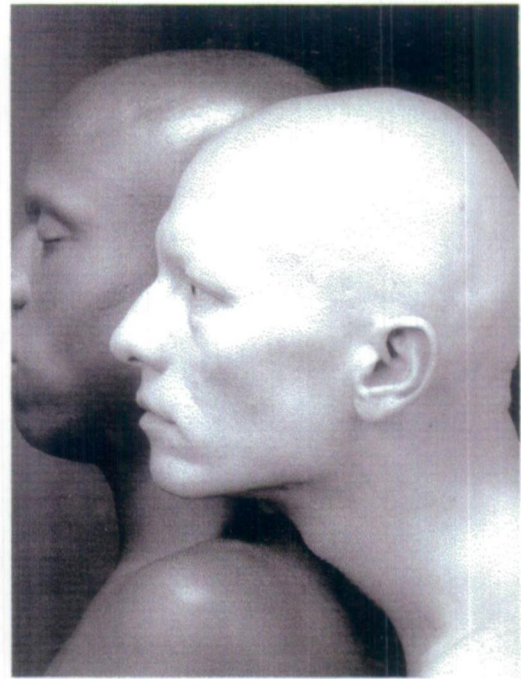


[Fig.65] Monolithic form of the white cube is softened by the lush greenery of the bushy Jack tree.

The **scale and proportion of the 3D form** have been used to achieve spaciousness of the minimal design. The **contrast** of the scale of narrow entrance corridor and the double height living and dining hall exaggerate that quality.



[Fig.66] Entrance corridor



[Fig.67] Contrast of forms

The narrow corridor entrance corridor with the colour of dark green (colour of “Nannan” leaves) is dotted with Indrasena’s Artifacts. Well lit niches with artifacts, which are in similar size and shape, repeating through the corridor. Such **Repetition** tends to exhibit the quality of simplicity. Repetition of niches, long narrow 3D form and the lighting condition, move people forward by exceeding the purpose well; by generating a feeling of curiosity.

When one enters the living and dining space; **elementary geometry & an absence of decorations, massive scale & pure colour facilitate the clarity of the built form.** The space within the form has created a kind of mirror world, in which you see enough clarity, not emptiness, but a sense of richness. Through such emptiness expected spatial quality would appear. Excitement and this emptiness allow us to see space as it is. (ref. fig.68)



[Fig.68] Double height living & dining space

White colour used throughout the house emphasizes on the fluidity of light and space, while enhancing the purity of form. Use of few numbers of colours is another important concept in achieving minimalism. Floors are cut white cement. The apparent simplicity has been achieved by **Seamlessness of the material** in minimalism.

The glass on the wall next to a small simple pool, which opens to sky, creating eye catching patterns of **light** on the walls and floor enhance the **tranquility** of the space.

Extensive use of glass façade and double height glass doors (repeating through the house) enhance the clarity through the transparency. Also it can be identified as the **monolithic use of Materials**. This gives a **Sense of wholeness**. The idea behind that is not to break the visual concentration of the person who perceives that space.

“Minimalism response site, placement & Environment”

Thought it is difficult to respond the site in tight urban plots, “whenever one sit in the house because of the clever use of the glass within discontinued walls will able to glimpse at least one tree in the garden. Rear garden is the main focus of the house while comparatively large “Nannan” tree being the main focal point of the living space. Double height glass doors, which open out in to the garden, gives an illusion of continuity and space. Trees create a canopy to the roof garden, to sit and relax, either in the Jacuzzi or lounge.

Rough textures of rear garden with bushy trees, balance with smooth textures of interior and facilitate unity in the composition.



[Fig.69]

Rear garden is the main focus of the house

When consider the **contribution of element details and furniture arrangements to achieve minimalist space**; an unobstructive black colour spiral is extremely simple. Glazed partitions which separate the bedrooms built on mezzanine floor, chairs in chrome and black leather and glass topped coffee table held up by concretes blocks, without any decoration, enhance the simplicity.



[Fig.70] Balanced composition of colours and elements

Indrasena's Artistic style, which is very much in line with the house, allows him to display some of his **minimal paintings on the walls complimenting the austerity and severity of the house design.**

Case Study - **T**wo**LAKMALI NANAYAKKARA HOUSE** - Gowers Street, Colombo - 07.

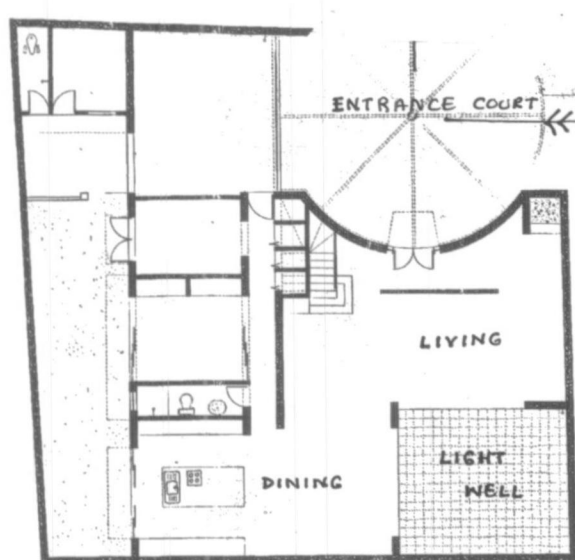
Arch. Varuna de Silva and Pradeep Kodikara,

The house is a typical contemporary urban house, designed by architect Varuna de Silva, who has a minimalist approach.

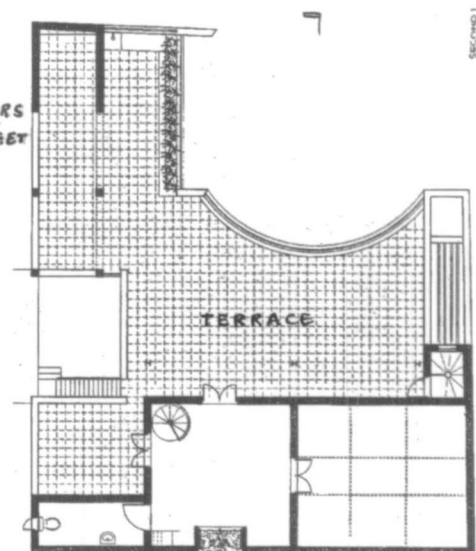
“The house is also a home for ones imagination – The senses become more awakened by being used, and they get shaper Also a” “home for our soul”

The design principle of this urban house is roofed in the traditional urban morphology of Colombo. High walls surround the site and, brick paved narrow path way leads to the house from Gowers street. “This approach is to incorporate duality in to the plan arrangement, where the out side of the house has all the appearance of an exclusive, but inside is comparatively open.” (Powell. R. 1992.21)

Two dimensional form; very simple plan form with few number of internal walls. The internal volume is all most open.



[Fig.71] Ground Floor

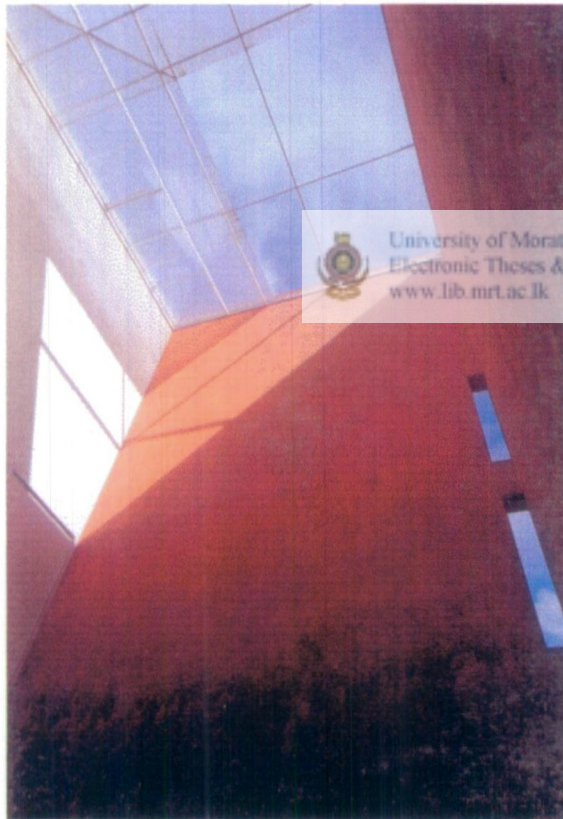
[Fig.72] 2nd Floor Terrace

The plan from consist of pure geometric forms, without having odd shapes or unusable spaces. Angle walls & curve shape wall has been constructed due

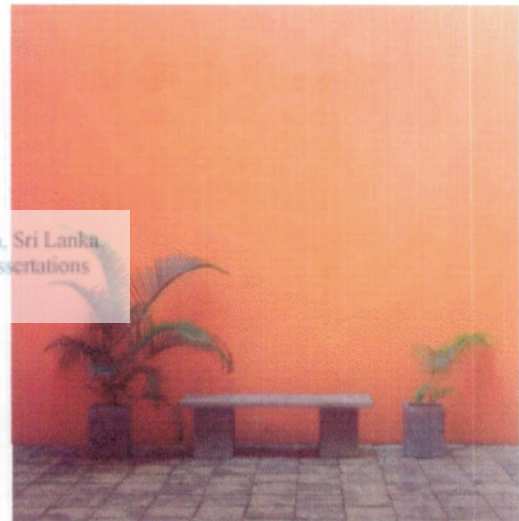
To site restrictions. Minimalism as an approach which caters for essentialities, Type of planning arrangement is the most appropriate in the urban context. Plan forms of minimal urban houses have lot of similarities with traditional Sri Lankan houses.

Architect varuna de silva's work is one of that reduces architecture to a minimum expressed as simple three-dimensional forms with special consideration on space within the form.[Ref;page25]

“In my opinion three elements are necessary to produce, Architecture; one is the **pure geometry** the basis or the structure that endows a work of architecture” (Ando. T, 1990:44)



[Fig.74] Main light well-simplicity of form



[Fig.73] Emptiness of the Central court yard –clarity(ref.page 30)



The house is organized on three levels, responding a large light well, which is paved with unpolished granite and roofed with transparent sheets by framing the view of the sky. The extraordinary height, **scale & proportions of the spatial composition**, facilitate sense of richness, as well as security.



[Fig.75] Spatial composition to achieve balance & unity.

Architect has expressed clarity of spaces perfectly through out the house. The architect has been able to exaggerate proper **relationships existed between different elements to achieve unity.** (ref.page29)

Balanced composition is an important aspect to achieve minimalist space. The apparent weight of an object also can be determined by solids, voids, colours & textures.

Smooth finish of white and orange walls, and the rough textured fare face concrete slabs and rough textured concrete walls have **balance the composition to achieve simplicity.**

Further the architect has used dark orange colour to balance the emptiness of light wells. pure white interior with furniture, **balance the composition** with the dark coloured, empty light well. This kind of balance of textures, colours or planes cannot be seen in the modern movement concepts. Blandness of surfaces can be seen all over the building.

Regular or harmonious recurrence of colours, textures and materials, incorporate the fundamental notion of **repetition** through out the house to achieve minimalism.

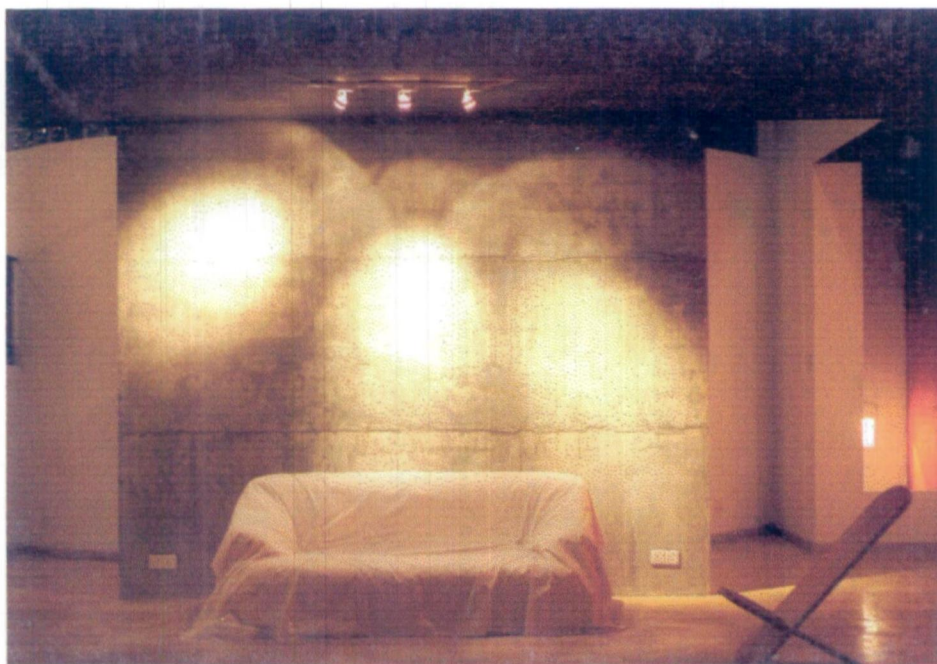


The architect has created calm, contemplative, soothing and sensual spaces with the identity of colour, textures, materials, light, element details & furniture arrangements without any decorations.



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

[Fig.76] Simplicity of the bathroom

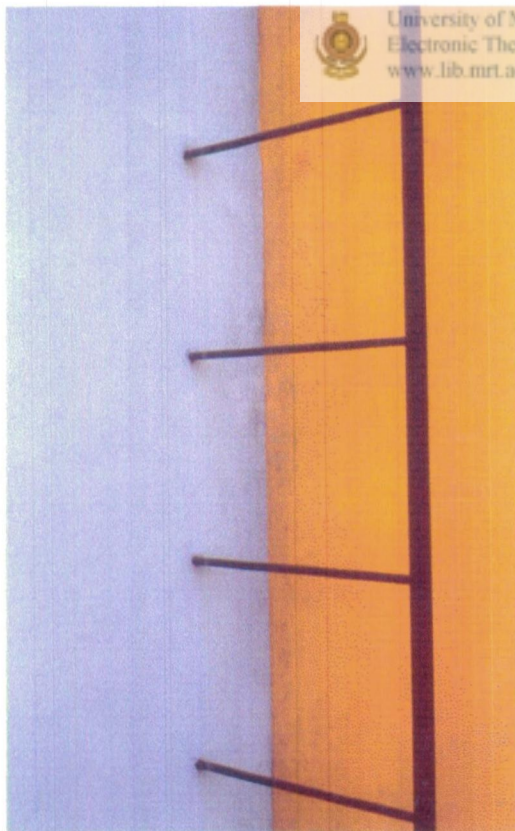


[Fig.77] Use of artificial lighting to enhance the **austerity and severity**.

Materials; The use of **monolithic materials** and use of **large pieces** can be considered as an important concept to achieve **sense of wholeness** or to experience **seamless quality** of materials in minimalism. The idea behind that is not to break visual concentration of the perceiver.

Grey cement floor, instead of using multi colour different shape tiles, which distract the perceiver's eye, soffit finish(ref,fig;75), timber cut in to the planks to the width of a tree with natural grains, which has an intellectual simplicity, has been use to door sashes & pantry cupboards have an enormous minimal quality.

Elements; Function and simplicity should be starting point where choosing **Furniture and detailing elements**, taking in to account how they are interrelated. Also the interiors are reduced to the basic, becoming a universal style that every one can enjoy. By showing the elements in the simplest and clearest way possible, an environment is created when which appeals directly to the senses.



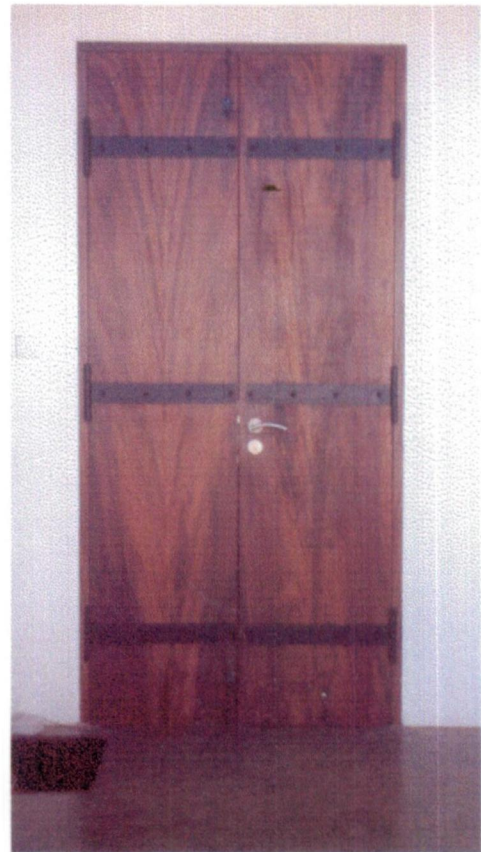
[Fig. 78] Ladder to the water tank



[Fig. 79] Main stair case



[Fig.80] ladder to book store

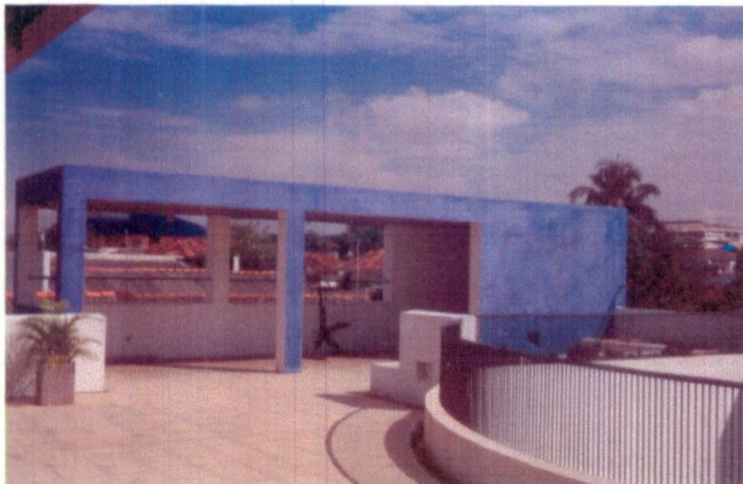


[Fig.81] A timber door



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

Though **minimal architecture responds the context, views and vistas**, the urban context, which is covered with high boundary walls, restrict that ability. The only natural source is sky.(ref.page:28)



[Fig.82] The Terrace.

The behind wall of the pavilion would have been roused to enhance the pure quality of the form.

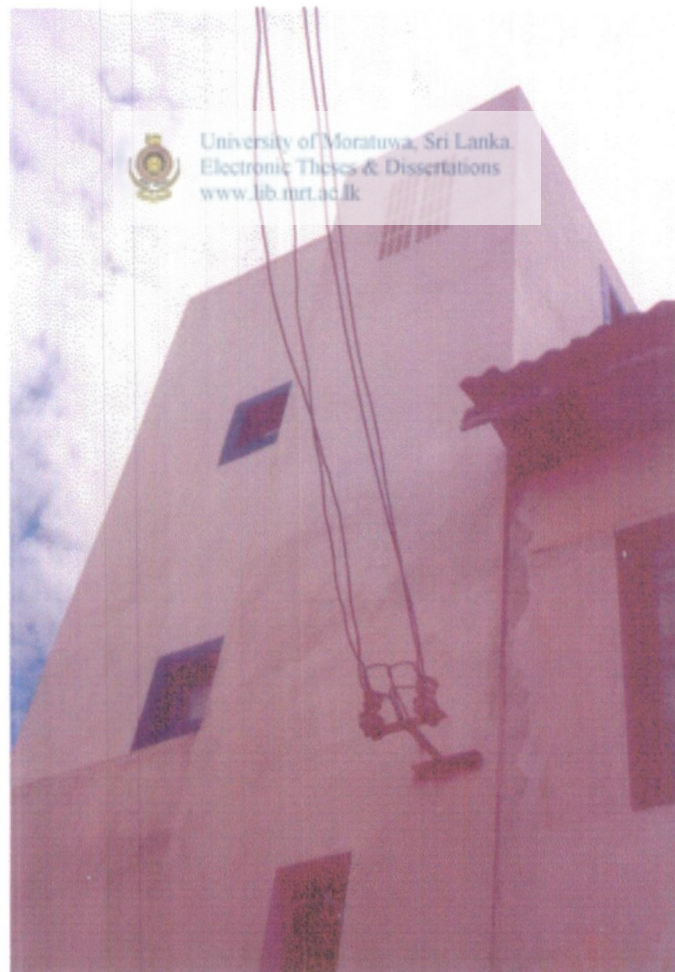
Pure geometry of the pavilion, harmonizes the terrace with the bluish sky. Blue colour and rough texture enhance the spaciousness.

Case Study – **T**hree**RATWATTE HOUSE** – London Place, Colombo – 07.

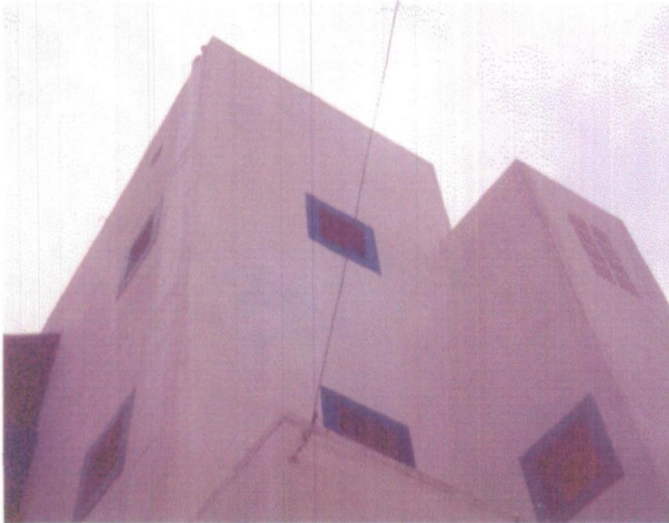
Arch. Ranjith Alahakoon.

This house is an attempt at building on a small, tightly packed urban site.

3D form ; This work reduces architecture to minimum, expressed as **simple forms in a context**, be it street or landscape. The concern therefore is in keeping the intervention minimal, to create a presence, to keep people interested. The priority becomes the **forms, composed as volumes against the sky**, enhancing and establishing the interest in them. Further the concern is also in building in a tropical climate where the volumes, planes and surfaces them selves become for the filters for the inside.



[Fig. 83.] Elementary geometry & monolithic quality of the 3D form (ref. page 33 & 37.)



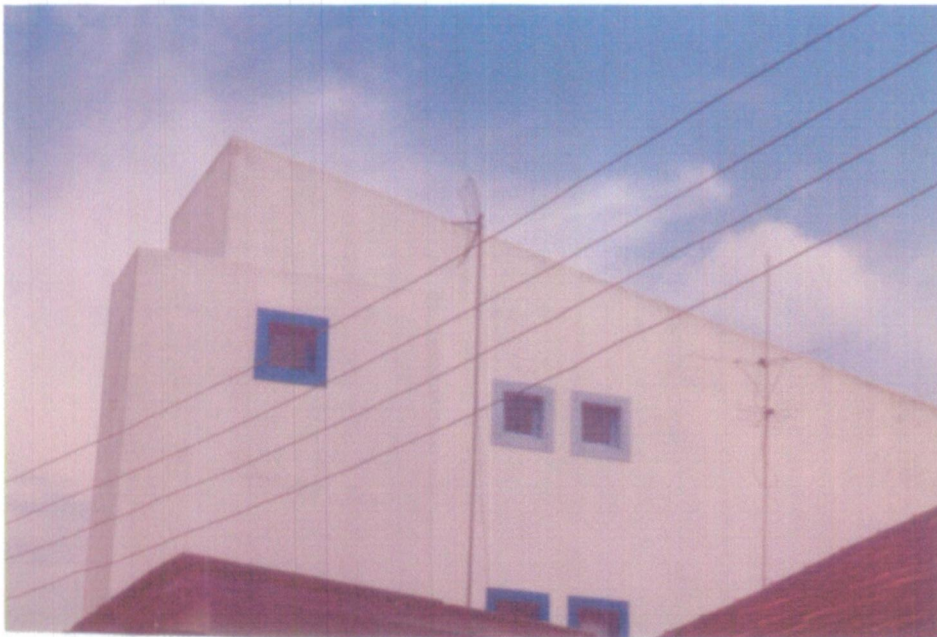
The house has composed as a single dominant volume given depth to by protruding shaded balconies and the tower at the entrance is viewed as a part of its context.

[Fig.84] Manipulation of pure geometric forms to achieve unity (ref.page.36)

Composition, scale, & proportion of three dimensional forms make a simple gesture creating an interest in it.

When **minimalism and colour** united appropriately, and in just the right doses, the result is compositions that produce harmony derived. Hence the architect has used pure white with blue shades to harmonize the building with the sky, and to enhance the simplicity of the interior.

In an environment where visual, spatial and tactile sensations are central, and where every small detail is of essential importance, the effect that colours generate are essential to achievement of a harmonious atmosphere.

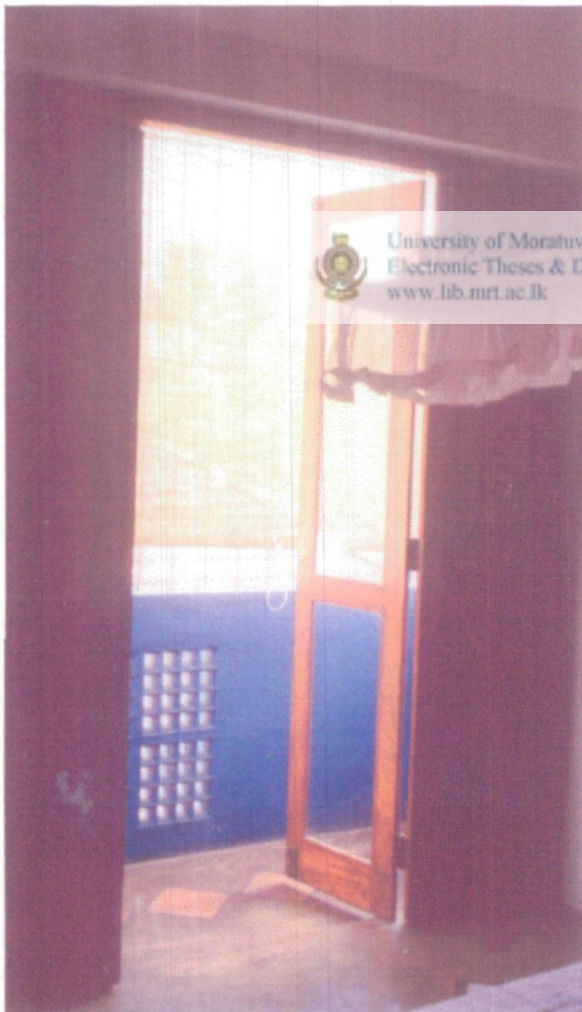


[Fig.85] pure white & blue shades harmonize the building with the sky

Minimalism as a functional approach;

Perhaps **minimalism caters for essentialities**, small square shape windows with a blue border line, position with a high sill in the white wall, frames the view of the blue textured sky. The reaction is to avoid ugly views and opening out on to someone else's roof or garbage heap as it were.

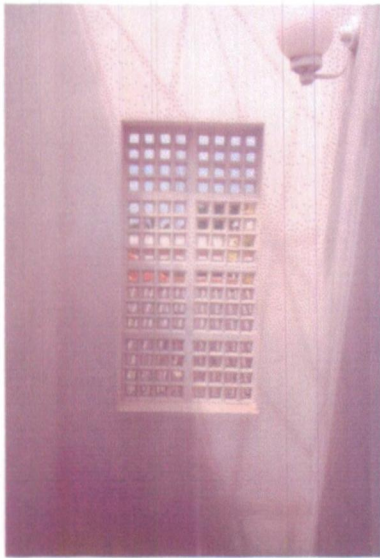
These openings are also generated as a reaction to the tropical climate of Sri Lanka. Using smaller shaded openings as letting in a minimal amount of out door heat, making the wall become filters for the inside.



The house is composed as a single dominant volume, given depth to by protruding shaded balconies which extends the bedroom space by providing wind in to the room.

[Fig. 86] Protruding shaded balcony as an extended space, of the bedroom.

Simple Geometry of concrete trellis work in the light well and the way light penetrates to the interior through a pure white wall with a rough texture facilitate **sense of richness and clarity** of space, while succeeding the purpose.



[Fig.87]

Light well, to provide light in to the huge bathroom with a laundry space.



From the point of visual experience, harmony is understood as that, is pleasing to the eye. Consequently, in an ambience where **chromatic harmony reigns, an infinite sense of order and balance is created in the visual perception.**

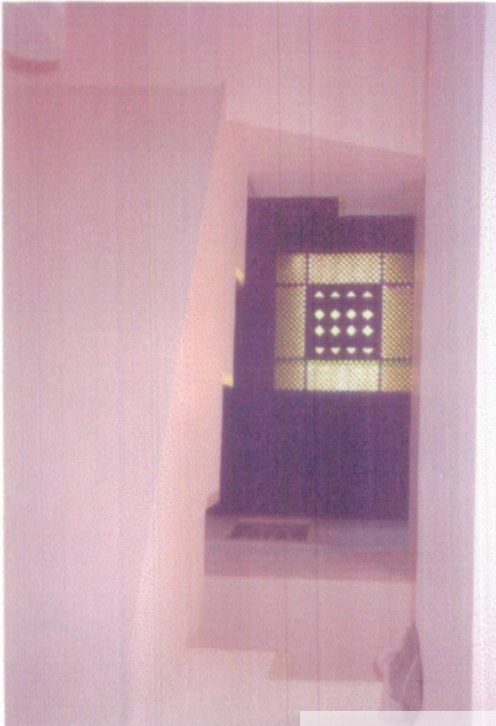


[Fig.88] simplicity and clarity of space



[Fig.89] chromatic harmony of space

Pure colour of the interior, with the use of different shades of white colour and the pure forms, which you see enough clarity.



[Fig.90] Blue light well in the pure white interior enhances the tranquility

colours of the interior **balance the composition.** (ref.page.39)



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



[Fig.91] Grey cement floor

The use of **monolithic materials** is an important concept, to achieve simplicity in minimalism. Smooth textured grey colour cement floor brings a **sense of wholeness & simplicity**. But to reduce monotonous and boredom, he has added some colourful tiles in particular spaces

Element details are another aspect which enhances the spatial quality of the minimalist space.



[Fig.92] Minimalism in elements & furniture arrangement - pantry.

- Pure geometric forms with straight lines & sharp edges.
- White cupboards to match with wall
- Monolithic & seamless quality of materials
- Blue cupboards to match with



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

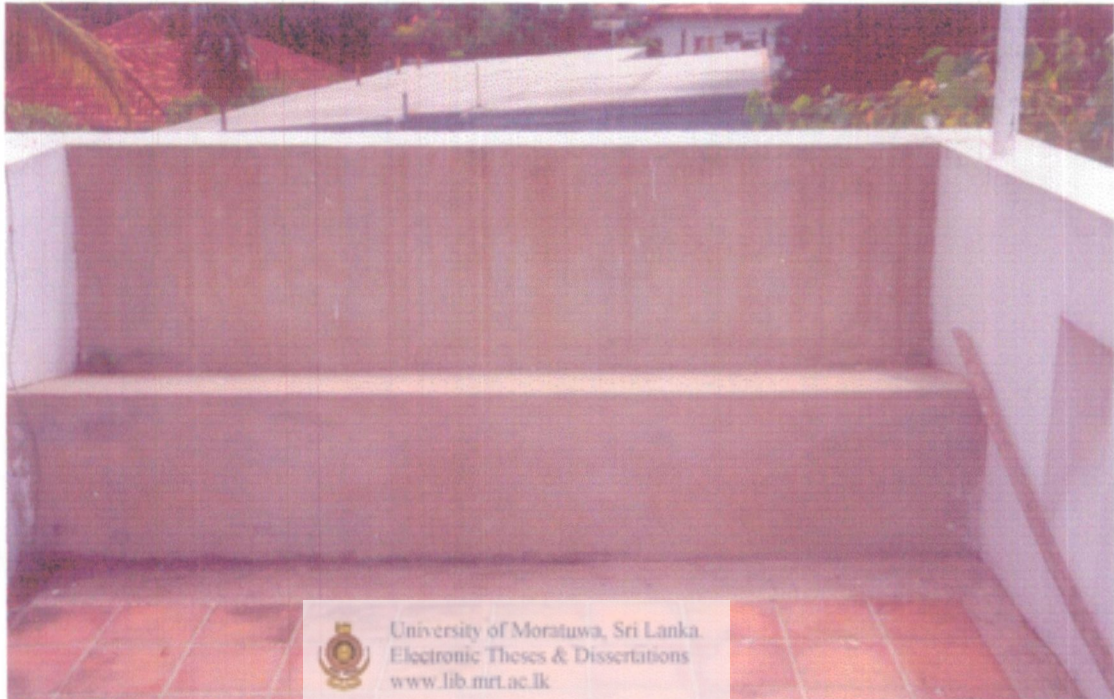


[Fig.94] Entrance door as an element gives an excitement to the elevation.



[Fig.93] simple form of the window.

The terrace, in the 3rd floor level is a very live space with the wafting cool breeze. Simple bench done in concrete with out applying any colours is the only thing we find in the terrace except the **emptiness**



[Fig.95] A simple bench

Living in minimalist ambience is an option which implies an attempt at reduction and containment, of liberation from all useless things of reduction to basic elements.

Case Study – **F**our**CHANDAKA JAYASUNDERE HOUSE** – Colombo.

Arch. Varuna de Silva

This is an **urban house** located in the outskirts of Colombo in a tight urban setting, sandwiched between two houses. The site was the side garden of the client's parents' home. It is a narrow 25 feet x 94 feet plot (2350 ft.). This is an **introverted house**, like most urban houses in Colombo due to the small plot sizes and also due to the fact that this site faces a somewhat busy road with residential sprawl. Therefore, the house is built to the boundaries on either side or front. The garden is at the rear. There is a mandatory rear space to be left open to the sky. This space has been utilized to become the garden.

The clients are a young professional couple, both lawyers, with a 5-year-old son. The brief was simple. They wanted a comfortable home with 3 bedrooms and two separate areas for the husband and wife to work. The husband has clients visiting for consultations at home. The rest was left to the architect.



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

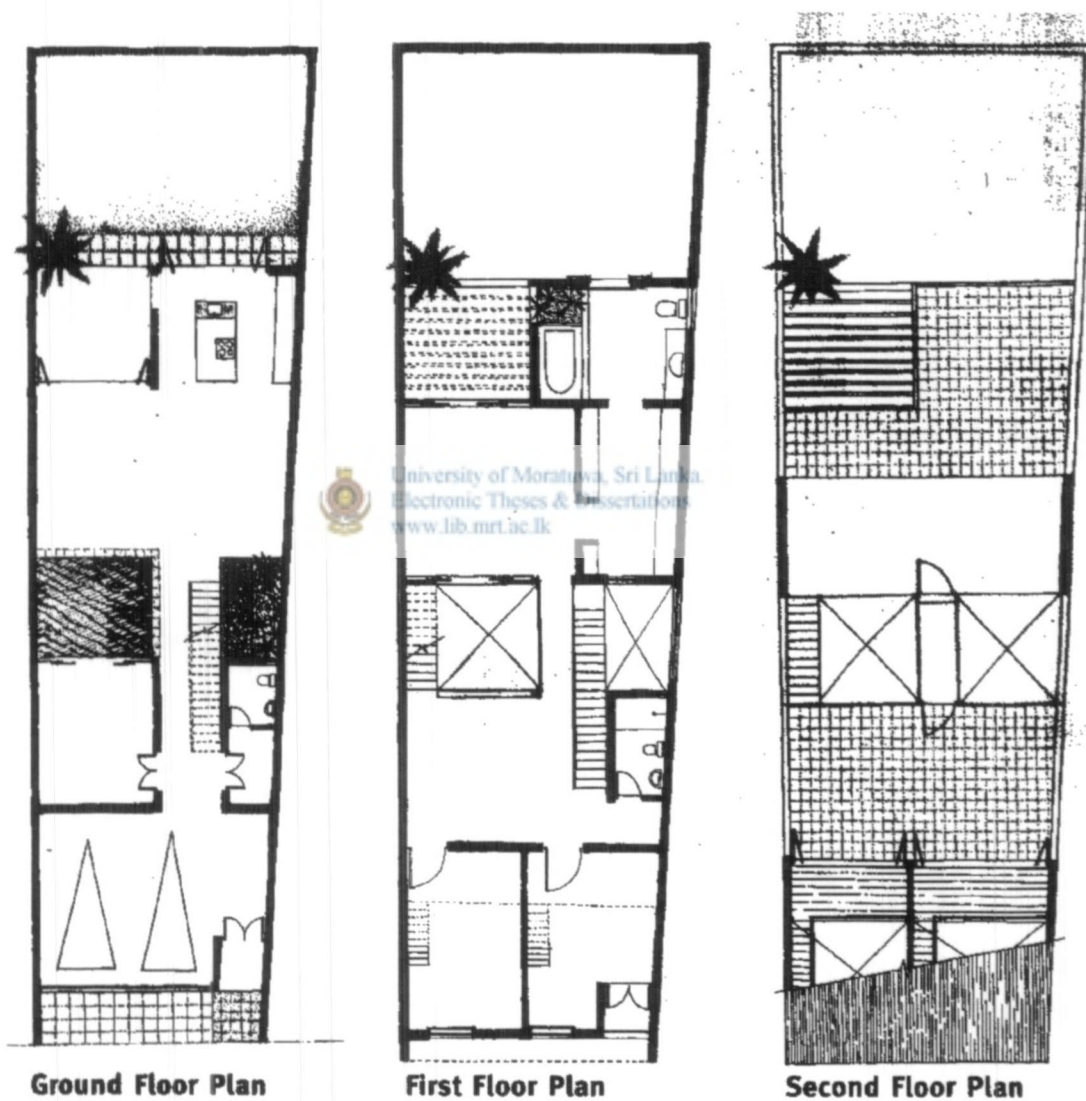
Elementary geometry of the house can be recognized clearly in the sense of 2D & 3D forms.



[Fig.96] Façade to the road.

Two dimensional form;

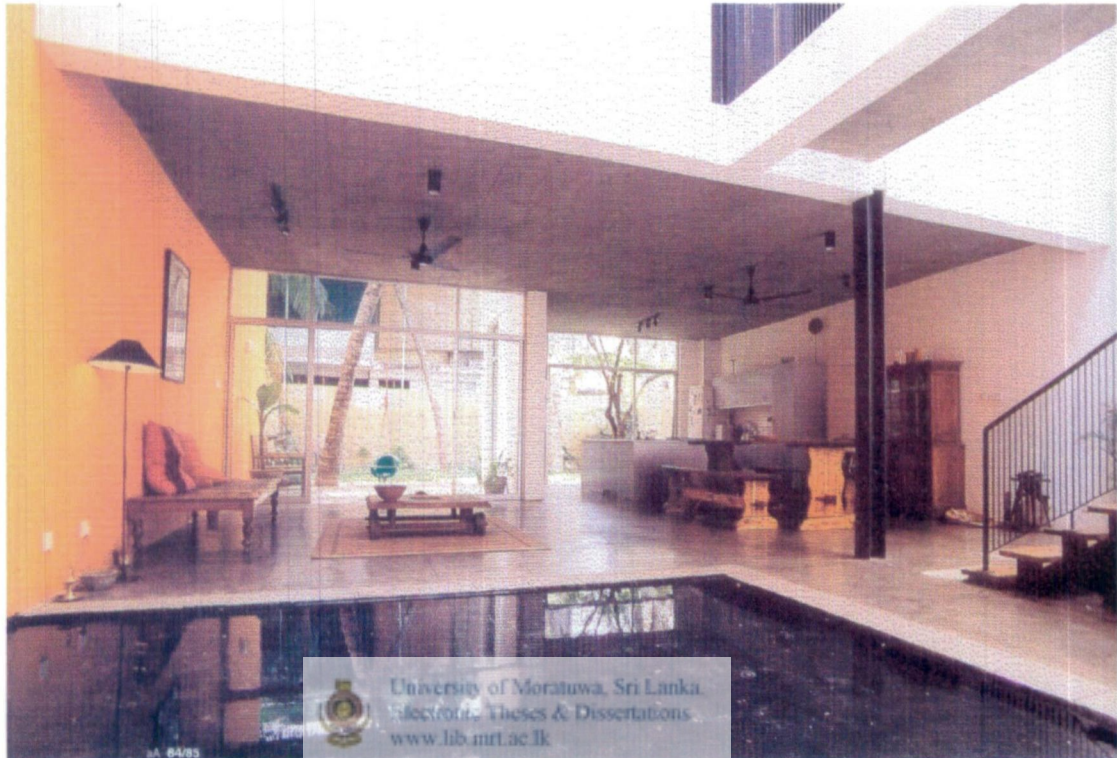
Two dimensional form is extremely minimal in this design. The use of separating partition walls was minimized to make the house look bigger and spacious. so that one space flows to the other freely. Staircases were also designed as light as possible so that the flowing quality of the spaces is not disturbed. It creates the sense of wholeness by avoiding unusable corridors, odd shape edges & corners.



[Fig.97] plans.



Huge open free volume creates sense of wholeness which does not break the visual concentration of perceiver. This is an important quality in minimal architecture.



[Fig.98] Huge open free volume creates sense of wholeness.

As the building is on the edge of a road, the carport is hence accommodated inside the house. The office is close to the carport. Much needed natural light and ventilation, to the house is obtained through the central triple-height void open to the sky space, which is a shallow reflecting pool and a small courtyard. The pool acts as a buffer zone between the office and living areas of the house **while maintaining a direct visual link. On the ground floor, only the office and the guest toilet have walls. All the other spaces flow from one to the other and open out to the garden, becoming part of it.** The cooking space is also part of this whole open area as the clients love cooking and entertaining close friends often. The living area has the dining, cooking area facing it, pool on one side and a double height verandah and the garden beyond.

The upper floor consists of three bedrooms and two bathrooms. The master bedroom looks down on the garden while the other two bedrooms are in front facing the road. These have small decks from which one could get on to the roof terrace. The family area is in the centre, from where one can communicate with the whole house, as this space is adjoining the void in the middle, which is the core of the house.

All these explanations are to emphasize the spatial interpenetration & sense of wholeness which one expects from a minimal house, has achieved by the architect throughout the house.

Minimalism as a functional approach which caters for essentialities, it is important to consider functional aspects. Further the architecture of this house has concentrated much on lighting, cooling, ventilation etc. which has not much considered in other case studies.



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

The client's necessity was to design a comfortable, easily maintainable home with a lot of natural light and ventilation. As the plot was narrow and long, to obtain light and ventilation to the centre of the house, part of the centre was opened to the sky. This is the method used in traditional Sri Lankan courtyard houses. In addition to natural light and ventilation, this keeps the house cool throughout the day. Much needed natural light and ventilation, to the house is obtained through the central triple-height void open to the sky space, which is a shallow reflecting pool and a small courtyard. Comparatively large black sparkling pool provide cooling effect while enhancing the spatial quality

Use of colours to achieve minimalism; one internal wall is painted orange through all three floors along the length of the house, but rest of the walls are painted with pure white. Grey colour has been used for the floor and soffit. Correcting the error that is often made of identifying minimalism exclusively with the colour of white, combination of orange colour (only in a single wall) with white, have achieved a dynamic composition, that transmit some excitement when viewed in order to avoid monotony or boredom.



[Fig.99] The wall painted in orange

[Fig.100] White interior with elemental staircase.

Use of material to achieve minimalism; cut and polished ordinary cement floors, fair faced concrete soffits with shuttering marks exposed enhance the simplicity of monolithic materials. The idea is to enjoy the seamlessness of the material in minimalism. Seamlessness brings a sense of wholeness to the perceiver. (ref. fig.98).

Natural lighting has been used to enhance the spatial quality as well as functional purposes. One internal wall is painted orange through all three floors along the length of the house. As the day progresses there is a subtle change of colour on this wall with the path of the sun. So light and shade animate this wall.

Element details; minimal spaces where visual spatial and tactile sensations are central, **every small detail has an essential importance.** The open rise steel and timber staircases & hand rails have enormous simplicity as elements of the house. (ref. fig.100).



[Fig.101] Open rise steel and timber staircase

Basically, this is a very simple, straightforward house with calm simple spaces.

C O N C L U S I O N

Though the term minimalism was popularized in the 1970's as a design approach, some important concept of minimalism have existed for long period prior to that. Clearly, precedents for contemporary minimalist interiors can be observed in certain concepts of oriental philosophies, specially in Zen Buddhism.

One concept is, to **eliminate the unnecessary to reach the essence**. Correspond to the philosophy that permeates traditional Japanese houses. Austerity of these houses is not seen as deprivation, but rather as **liberation** of the inner being by the **banishing disorder, ostentation, and vanity** from their environment.

The second concept inherent in Zen aesthetic is "Sabi & wabi". It refers not only to the quest for the puritanical simplicity, but also **signifies freedom from anger**. They wanted to **create an atmosphere of tranquility**.



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

Third & important concept is the concept of shunyatha (Emptiness). That is **the nature of all things is empty (Shunya), but this emptiness (shunyatha) is not the same as nothingness because it designates the identity of every thing**.

Looking to this tendency of Buddhist thinking, which has dominated in Japanese thought for almost a thousand years, speaks to the need to find new means of expression that would introduce **simplicity and calm** in to the **frenetic and saturated style of contemporary western life**.

According to the observation in this study; to create minimal Architecture "**Form**" is extremely important. Since its central theme is not elimination of ornaments but **concentration of space and form**. (ref. page25) The goal is the naked beauty of the moment which finds **maximum expressiveness in the least ornamentation possible**.



Unless one creates **minimal quality through the form**, that building would not be a successful minimal design. But Colours, textures, materials, light and element details are also **important to enhance the spatial quality of the minimalist space**. **Form** reveals the **elementary geometry** of both, two dimensional & three dimensional forms.

The common **belief** in minimal architecture is to design box shaped buildings (pure single cube) painted with pure white with flat roofs etc.

According to the analysis it deviates a little from the above belief, since it is not the correct way to achieve minimal architecture.

The concept is to create **simple & wonderful spaces, which do not distract the visual concentration of the person who perceives a space**.

Further, **when composition of forms in a building achieves unity in it**, it gains it self with an aura of simplicity which is almost inexplicable. (It is not the extreme order or lack of complexity which has become a common phenomenon in modern architecture.)



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

Use of monolithic forms and elementary geometry are important concept in minimal architecture. (ref. page33& 37) but according to the analysis the ideal way of applying that theory is, to manipulate pure geometric forms to achieve unity in architectural composition, rather than doing a boxed shape single cube.

Further, the scale and proportions, balance, rhythm, repetition and contrast of forms, are some principles which can be applied to, manipulate pure forms, to achieve unity.

Therefore, without flat roofs, even pitched or angular roofed house that suits the climatic condition of Sri Lanka can conform to minimalism. Here too, it is important to design a building that does not oppress the eye, but conveys a sense of wholeness.

This idea leads to a new study which can be named as “**Minimalism in tropical architecture**”.

The general idea about **use of colour in minimal architecture** is, **use of pure white or monochromatism**. This concept is also influenced by Japanese Zen architecture. Japanese houses inspired by Zen Buddhism, used monochromatism. Special they used earth colours and natural materials to blend the house with the environment. Applied to our society, this does not imply reaching extreme of the total austerity of Zen architecture, but each person must find the level of materials & colour reduction, which they feel comfortable.

According to the analysis, it appears that it is not essential to restricted to a single colour. Specially full white interiors could some times oppress the perceiver. correcting the error that is often made of identifying minimalism exclusively with the colour of white, the combination of one of two colours with white must achieve a dynamic composition that transmit some excitement when viewed in order to avoid the monotony or boredom caused by a too neutral interior.(Case study 2 & 4 have given special emphasis on this idea)

In an environment where visual, spatial and tactical sensations are central, and where every small detail is of essential importance, the effect that materials, light, Elements, furniture generate are essential to achievement of harmonious atmosphere, which can be seen in minimalist space. Use of monolithic materials, use of large pieces, use of natural materials or the idea to enjoy seamlessness of materials bring a sense of wholeness which is important in minimal architecture.

Minimalism is a design approach which caters for essentialities, while providing calm, contemplative, soothing and sensual spaces. It is a functional approach than a formal philosophy. Nothing cloud be added or removed since every thing fulfills a determined function.

According to the analysis of two dimensional forms, it is important to use elementary geometry rather than using complicated shapes. Also the private spaces should be clustered segment; as a result the rest will remain as large open volumes. It helps to avoid unusable corridor spaces, and odd shaped edges and corners. Also the use of few numbers of essential walls will help to have large open volumes (walls less

house). Such concept would help to get the maximum use of scarce land in urban context.

Since a case study approach has been adopted as the method of study; all above mentioned aspects have been illustrated in the case studies. Further the case studies have been used to prove the theories presented in the second chapter. Although every concept can not be seen in a single case study, most of the concepts can be recognized easily.

It is important to investigate the appropriateness of minimal architecture in contemporary urban domestic spaces (ref. page 27, 28). It is not a difficult task to create minimalism in the rural context since it often contains large land plots, abundant lush greenery, views and scenery, which contribute to the desired simple and calm life styles which seek to achieve in the urban context.

This leads to a further study on “Minimalism in Architecture with special emphasis on synchronize the building in the context”²¹




Contemporary urban environment has become a very congested and a busy place in which people work like machines, mentally stressed and physically exhausted. Today most of us view home as a place to which we retreat, a sanctuary from the stress of working life. The home has been considered the spiritual core of a person thus it should be a place of tranquility.

Disorder, ostentation, confusion and the superfluous should be eliminated from spaces in order to achieve minimalism. Spaces are reduced to the basic, becoming a universal style that everyone can enjoy by showing the elements in simplest and clearest way possible.

As a philosophy aimed to improve society, minimalism establishes the guidelines to eliminate distractions and material things from the domestic environment, creating homes where people can find balance. This effort of simplification creates spaces with a wider margin of freedom, where the **individual feels like the master of habitable space**, not like its servant.

BIBLIOGRAPHY

- Ambasz, Emilio (1986), *The Architecture of Lovis Barragan*, United States of America: the Museum of Modern Art.
- Ching, F. D. K. (1979), *Architecture: Form Space and Order*, New York: Van Nostran Reihold Co. Ltd.
- Conran, Terence. (1994), *The Essential House Book*, Conran Octopus Ltd.
- Coomaraswamy, A. (1956), *The Transformation of Nature in Art*, New York: Dover Publications.
- De Silva, Nimal. (1996), *Landscape Tradition of Sri Lanka*, Colombo 02: Deveco Designers & Publishers (Pvt) Ltd.

- Flat Glass Manufactures, (1997), *The Form of Japanese Windows*, Japan: Flat Glass Manufactures Pvt. Ltd.
- Francisco, C. (1999), *The Architecture of Minimalism*, Harpecollins Design International: ISBN:
- Habraken J.N. (1985), *The appearance of the form*, A water press, Massachusetts.
- Lewcock, R. & Sasoni, Barbra & Senanayake, Laki (1998), *The Architecture of an Island*, Colombo: Barefoot (Pvt) Ltd.
- Norberg, shulzc (1971), *Existence, Apace and Architecture*, London: Studio vista.

- Patricia, Bueno (2003), *Minimalism & Colour Architecture & Interiors & Furniture*, Harper Design International (HDI).
- Porter, T.S. (1995), *The Losangielies House*, London: Thames and Hudson Ltd.
- Powell, Robert (1996), *Tropical Asian House*, London: Thames and Hudson Ltd.
- Powell, Robert (1998), *The Urban Asian House*, London: Thames and Hudson Ltd.
- Powson, Jhon (1992), *Minimum*, London: Phaidon
- Roertson, H. (1924), *The Principles of Architectural Composition*, The Architectural Press, surrey.
- Robertson, Howord. (1924), *The Principles of Architectural Composition*, London: The Architectural Press.
- Savi, V.E. & Montaner, J. (1996), *Less is more: Minimalism in Architecture and other Arts*, Ingoprint.
- Welsh, Jhon. (1995), *Modern House*, Phaidon Press.
- Ypma, Herbert (1992), *London Minimum*, London: Thames & Hudson
- Zabalbeascoa, A & Macros, J.R., (2002), *Minimalisms*, Barcelona; Gustavo Gili.

Journal Articles

- Toy, M. (08/DEC/1998), "Something or Nothing: Minimalism in Art and Architecture", *AD Architectural Design: Aspects of Minimal Architecture II*, Vol. 12, P. 1-33.

