

COLOUR AND CHILD: USE OF COLOUR AS A FACILITATOR FOR KINDERGARTEN ACTIVITY

DISSERTATION SUBMITTED FOR THE DEGREE OF MASTER OF SCIENCE IN ARCHITECTURE AT THE UNNERSITY OF MORATIJW A, SRI LANKA

SAJEEVI SILVA FACULTY OF ARCHITECTURE UNNERSITY OF MORATUWA

2007

89491

Declaraiancn

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 another institution for a degree,
diploma or other qualification.

UOM Verified Signature

Signature of student Silva .S.S Department of Architecture Faculty of Architecture University of Moratuwa Dissertations

Signature of Principal Supervisor Architect Anishka Hettiarachchi Lecturer Faculty of Architecture University of Moratuwa Sh Lanka.

1.

Acknowledgements

I extend my heart felt gratitude towards

Archt. Anishka Hettiarachchi For her devoted guidance throughout, Senior Lecturer Dr. Harsha Munasinghe, Senior Lecturer Dr. Upendra Rajapaksha, Senior Lecturer Archt. Chris de Seram, Senior Lecturer Archt. Ranjith Alahakoon and Senior Lecturer Archt. Arosh Gamage For their assistance and encouragement,

The National Director, S. O. S. Villages Sri Lanka, Ioratuwa, Sri Lanka. The Staff of S. O. S. Village Nursery, Piliyandala and & Dissertations The Staff of St. Anthony's Nursery, Borella^{mrt.ac.lk} For their time and patience,

Aunty Devika, my kindergarten teacher, For her inspirational insights,

My friends and colleagues For their moral and material support and

Above all, to my family For giving me the greatest strength of all: The courage to believe in myself.

Contents

Ackr	nowledgements	5	ii
List	of Illustrations		v
Intro	duction		viii
Cha	pter One:	Kindergarten: The Play House of Learning	1
1.1	The Kinderg	arten : Introduction	3
1.2	Philosophy of	of Kindergarten Education	4
	1.2.1	Evolution of Early Childhood Education Philosophy	4
	1.2.2	Theories Currently in Practice	7
	1.2.3	Learning Through Play	11
1.3	Kindergarter	Architecture Electronic Theses & Dissertations	16
	1.3.1	Elements of Architecture ac lk	17
	1.3.2	Spatial Quality for Learning Through Play	18
Cha	apter Two:	Colour for Play	23
2.1	Colour : Intr	oduction	25
	2.1.1	Colour Theories	26
	2.1.2	Dimensions of Colour	29
	2.1.3	Colour Appearance	32
2.2	Physiologica	al & Psychological Aspects of Colour	32
	2.2.1	Physiological aspect of Colour	33
	2.2.2	Psychological Aspects of Colour-For Adults and	
		Children	49

2.3 Colour to Achieve Spatial Quality for Play

iii

52

Ch	apter Thr	ee: Colours at Play	60
3.1	Selection	Criteria & Method of Study	62
3.2	Case Stud	ies	
	3.2.1	St. Anthony's Montessori, Borella : Celestial Paradise	63
	3.2.2	SOS Village Nursery, Piliyandala : Home Away from Home	79
		,	
Conclusion		93	
Bib	liography		96



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

.

List of Illustrations

T		-	_
Р	a	a	ρ
	£0	r	E.

v

1.	Philosophers of early education (I)	05
2.	Philosophers of early education (II)	06
3.	Maria Montessori with her pre-school children	06
4.	Children's Behavior: in the classroom	14
5.	Children's Behavior: outdoors	14
6.	Qualities of Architectural Space	18
7.	Close to Nature: Kindergarten in Caesarea, Israel	20
8.	Light- the Multiplier of Form and Colour	21
9.	Views at Ground Level	21
10.	Spirit of Light	22
11.	Perception of Colour	25
12.	Additive Principle of Colour Combining Moratuwa, Sri Lanka.	26
	Subtractive Principle of Colour Combining & & Dissertations	27
14.	The Pigment Wheel www.lib.mrt.ac.lk	27
15.	3-D Diagram of Munsell's Colour Tree	28
16.	Value in Composition	30
17.	Active and Passive Hues	31
18.	Colour in Context	31
19.	Perception of the Eye	33
20.	Cone and Rod Responses	34
21.	Wave Lengths of Light	34
22.	Red	38
23.	Blue	39
24.	Yellow	39
25.	Green	40
26.	Violet	40
27.	Orange	41
28.	Brown	41

29.	Pink	41
30.	Black	42
31.	White	42
32.	Gray	42
33.	Colour Scheme Relationships on the Colour Wheel	45
34.	Monochromatic Schemes	46
35.	Analogous Schemes	46
36.	Complementary Schemes	46
37.	Split Complimentary Schemes	47
38.	Triad Schemes	47
39.	Natural Colour Schemes	47
40.	Spatial Effects of Colour (I) versity of Moratuwa, Sri Lanka	48
41.		48
42.	Spatial Effects of Colour (III). lib.mrt.ac.lk	48
43.	Natural Warmth and Brightness	53
44.	Monochromatic Colour Scheme	54
45.	Animated forms for the imagination	56
46.	Calling of the Outdoors	57
47.	Rooms with Radiance	58
48.	Mystical Outdoors	58
49.	The phenomenon of the interplay of light and shade	59
50.	The 'Introverted Box': The St. Anthony's Nursery facade	64
51.	The Opened 'Lid'	65
52.	Dynamism Within	65
53.	From lightness to firmness: The Colour Scheme	66
54.	Spots of Gold	67
55.	Spaciousness Enriched	67
56.	Space for the Imagination	68

vi

	P	age
57.	Subdued Contrast (I)	69
58.	Subdued Contrast (II)	70
59.	Triad Colour Scheme with Yellow highlights	70
60.	Contrast and Harmony	71
61.	Beyond the Sky	72
62.	Legibility through Colour	73
63.	Colour - The Life of Form and Space	73
64.	Identity of Place	73
65.	Bridging Time	74
66.	Rear Spectacle	75
67.	Kaleidoscope of Light	76
68.	Pools of Light	77
69.	Simplicity at its best: S.O.S. Village Nursery, Piliyandala Lanka	80
70.	Bright White Electronic Theses & Dissertations www.lib.mrt.ac.lk	81
71.	Streaks of Colour	81
72.	Cooler and Warmer	82
73.	Nature's Colour Pallet	83
74.	Colour against the Neutral	84
75.	Contrasting arrangements	85
76.	Triad Contrast	86
77.	Red on White	86
78.	Home away from Home	87
79.	Animated Spaces within Ordinary Structure	88
80.	Vibrant interiors	89
81.	Minute detailing	89
82.	The heart of the building: The central court yard	90
83.	Flood of Light	91
84.	Sky Lit Wonder	92

Introduction

The general notion that children 'like' colours and the mere liveliness of their character adults try to reflect by its use result in disastrous and alarming use of colour for children's spaces. It is evident in most play areas, kindergartens, nurseries etc. of our built environment. When the impact such spaces have on its primary users: children, is not comprehended, the activities of spaces suffocate from the lack of suitable ambience.

To overcome this gap between the use of colour and users wellbeing, kindergartens should be created with a thorough understanding of how colours can be used as a tool to generate and maximize the quality of spaces that facilitate the activities, satisfying the needs of children.

The Kindergarten is the place where almost all children form and develop their first impression of the built environment, outside their home. These special places for children have a unique ambience with regard to scale, form, textures, colours etc. The use of colour in pre school environments is accepted as a basic principle due children's unique development of perception and awareness of colour very early in childhood. This sensitivity makes colour a crucial issue.

Moreover,

"Colour is a constituent and it cannot be isolated from texture, surface, light and form." Dudek, M. (1996), Kindergarten Architecture: Space for the imagination, London: E & FN Spon, p.110.

Therefore, colour is an incompatible device that must be used with care.

Therefore this essay attempts to investigate how colours can contribute to the creation of apt ambiences of spaces within a kindergarten to enhance the quality of its activities, through which child development is stimulated. The first Chapter, "Kindergarten: The Play House for Learning", focuses on the required spatial quality of Kindergarten Architecture, based on the physical and psychological needs of pre-school children that generate the principles of pre-school education. Within its framework, the chapter runs through a vast array of fields from child psychology based philosophies of early childhood education to the elements of architecture, bringing together the concept of 'Learning through Play' and Kindergarten Architecture that facilitates it.

Scaling down to the spatial quality of colour in the second chapter, "Colour for Play", the potential of Colour in forming and shaping the physical and psychological environment for play is examined. The dimensions, theories, physical and psychological attributes of colour are discussed, extending the study towards children. The chapter attempts to conclude with the exploration of means of harnessing Colour's potential as a contributor to the creation of a stimulating Kindergarten environment for play.

The last segment of the dissertation, Chapter Three, "Colours at Play", demonstrates the use of colour through Kindergarten case studies. The case studies employ the methods of observation and in depth interviews with teachers, parents as well as the students, both past and present to examine the effect on the users in relation to the means previously identified, by which colour can contribute to enhance the spatial qualities of a kindergarten environment to facilitate learning through play.

ix