LB/DON/43/01

# AN ANALYTICAL STUDY ON CITY CHARACTERS AND THEIR RELATIVE INFLUENCE AS DETERMINANT FORCES.

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations

A dissertation Presented to the,

University of Moratuwa,

for the,

M.Sc. (Architecture).

074106
University of Moratuwa

74106
72"00"
711.4

පුස්තකාලය
මොරටුව විශ්ව විද්‍යාලය. ශ්‍රී ලංකාව
මොරටුව.

K. R. N. SENARATHNA,

FACULTY OF ARCHITECTURE,

UNIVERSITY OF MORATUWA,

SRI LANKA.

DEPT. OF ARCHITECTURE
M.Sc / B.Sc
30 MAY 2000
DISSERTATION
DESIGN
University of Moratuwa, Sri Lanka.

74106

TH

**ACKNOWLEDGEMENTS.**

I wish to express my sincere gratitude to, Prof.: Nimal de Silva Head of the Department, Faculty of Architecture / Chairman of the Urban Development Authority.

Dr. D. Waduge, my tutor, whose criticism, discussions, as well as kind advice and necessary feedback given from time to time made this study a meaningful experience, and Dr. L.S.R. Perera whose guidance for methodical approach for a result full study,

Dr. R. Dayarathne - Senior Lecturer, Dr. S. Manawadu - Senior Lecturer, and Archt. Vidura Sri Nammuni - Senior Lecturer, Faculty of Architecture, for valuable thoughts and suggestions given made this study a success.

MS. Indu Weerasooriya - Deputy Director, Urban Develop: Authority, Archt Mr. Kiringoda, Archt. Mr. Ananda and Archt. MS. N.Thanuja - Senior Staff of the Ruhunupura Project at Urban Development Authority and the Staff of the Southern Development Authority for their kind hearted support given made this study a resourceful experience.

Mr. Niroshan for giving his valuable ideas and support in the preparation of this study, Mr. Joy Fernando, Miss. Gayana and my friends Bashini, Anusha, Ruwan, for all the kind help extended towards me, and very specially my loving parents and Punchi for their help and guidance in numerous way for successful completion of this study.

**THANK YOU ALL!**

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

**ABSTRACT**

sMan builds City and it is the place where man lives. Therefore the city can consider as the visual manifestation of man as an individual as well as a communal being. In addition, the city as a visual manifestation contains expresses and conserves the inner nature - the essence of the people who live in it. Thus each city in unique in character. If they're going to be a removal destruction or alteration subsequent diminution of quality of lives of it's people.

There are determinant factors, which influence the unique character of a city. When a physical structure of a city is developed in a agreement with these determinant factors such as historical, cultural, Geographical, etc... only the gain it's unique character.

Those determinants vary from city to city and according to the variation of character expresses that these differences are desirable. Identification of these complexities of character - determinant relation of cities facilities the creation of better city environment.

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

When the physical structure of a city developed in agreement with these determinant factors such as historical, cultural and geographical only, the city gains it's unique character. When the designing of a city and (design within the city) is not methodical or insensitive, that can drastically effect the;

(a) Evolutionary process of city development, going askew - out of normal usual position and

(b) Can create disharmony in the society itself or among the people who live in that city.

For this reason, there should be a better understanding and identification of the character mutual relationship (co-relation) between the character of a city and the relative influence of the determinant factors, solely for a pleasant city environment and harmony within the city.

It is essential that three types of primary city characters and their respective spatial qualities have to be identified first and foremost.

Secondly the determinant factors and the manner, they determine the characters are have to be identified. Thirdly the validity and applicability of character and determinant factors have to be illustrated using several-selected Local context. Finally with the light of above mentioned 3 aspects; have to established a foundation - a base upon which guide lines can be attributed for a creation of harmonious, pleasant desirable Living Environments with strong characters.

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

**AN ANALYTICAL STUDY ON CITY CHARACTERS AND THEIR RELATIVE INFLUENCE AS DETERMINANT FORCES**

**CONTENTS**


| | | Page no: |
|---|---|---|
| **ACKNOWLEDGEMENTS** | | |
| **ABSTRACT** | | |
| CHAPTER ONE: INTRODUCTION | | 01 |
| 1.1 | Topic Explanation | 01 |
| 1.2 | Importance of the study | 03 |
| 1.3 | Aims and objectives | 04 |
| 1.4 | Method of Work | 05 |
| 1.5 | Scope and Limitations | 06 |
| CHAPTER TWO: CHARACTER AS AN ATTRIBUTE OF A CITY. | | 07 |
| 2.1 | Identification of the notion of character | 07 |
| 2.2 | Identification of the Character of a city | 08 |
| 2.3 | Components of character of a city | 10 |
| | 2.3.1 Composition | 10 |
| | 2.3.2 Texture | 23 |
| | 2.3.3 Stance | 29 |
| 2.4 | Types of city character | 32 |
| | 2.4.1 Sacred or Majestic Character | 34 |
| | 2.4.2 Organic Character | 35 |
| | 2.4.3 Dynamic or Cosmopolitan Character | 36 |
| CHAPTER THREE: DETERMINANT FORCES OF A CITY CHARACTER. | | 41 |
| 3.1 | Identification of the determinant forces | 41 |
| | 3.1.1 History of a city and cultural aspirations of its people. | 42 |
| | 3.1.2 Geographical Location and topography of a city. | 56 |
| | 3.1.3 Functions associated with the a city. | 69 |
| 3.2 | Interrelationship of Determinant Forces. | 72 |


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

CHAPTER FOUR: AN ANALYSIS OF THE CITY CHARACTER IN RELATION WITH RELATIVE INFLUENCE OF DETERMINANT FORCES. 75

4.1 Identification of the relationship between a city form and relative influence of determinant forces. 76

4.1.1 Socio-Cultural Aspects. 76
The relation ship between socio- cultural aspect and the resultant city form.

4.1.2 Geographical Aspects. 95
The relation ship between geographical aspect and the resultant city form.

4.1.3 Functional Aspects. 103
The relation ship between function of a city and the resultant city form

4.2 The Relationship between Character and Form of a City 109

CHAPTER FIVE : CHARACTER DETERMINING FORCES IN APPLICATION TO LOCAL CONTEXT. 112

Electronic Theses & Dissertations
www.lib.mrt.ac.lk

5.1 Colombo 112

5.1.1 Introduction - Brief Historical Account 112

5.1.2 Character of Colombo 118

5.1.3 City form of Colombo 118

5.1.4 City form in Harmony with the Relative Influence of the determinants 132

5.1.5 Character in Harmony with the city form. 135

5.2 Galle 136

5.2.1 Introduction – Brief Historical Account 136

5.2.2 Character of Galle 138

5.2.3 City form of Galle 138

5.2.4 City form Harmony with the Relative Influence of the determinants 144

5.2.5 Character in Harmony with the city form. 146

CONCLUSION 148

BIBLIOGRAPHY 151

## LIST OF ILLUSTRATIONS


| Figure no: | Page no: |
|---|---|
| 1. The city form is the three dimensional composition of its physical Constituents primarily solids and voids. | 09 |
| 2. A city as the largest visual manifestation of man can therefore be easily and rightfully considered as a composition of forms and spaces. | 11 |
| 3. Organisation of forms and spaces of a composition is contributory to each other. | 12 |
| 4. Forms and spaces of a city can be organised in several distinctive ways thus the giving the its individual form. | 12 |
| 5. Grid organisation of spaces employed in a city. | 13 |
| 6. In a grid organisation, a three dimensional grid pattern of its forms and spaces and would appear as a set of repetitive modular units of spaces. | 14 |
| 7. The ability of this grid organisation has maintaining its identity as a grid. | 14 |
| 8. Linear organisation of spaces employed in a city. | 15 |
| 9. The linear organisation is a composition of spaces arranged in a series which either are directly related to one another or linked through a separate and linear spaces. | 16 |
| 10. Centralised organization is composed by a large, central, dominant space which is regular in form and a number of secondary spaces around it. | 16 |
| 11. A centralised spatial organization. | 17 |
| 12. A city of Palma Nouva- Italy. | 17 |
| 13. .Radial organization is a combination of centralised and linear organization consist of a dominant central spaces. | 18 |
| 14. Radial organization consist of a dominant central space from which linear spaces extend in a radial manner. | 19 |
| 15. The central space in a radial organization, usually is regular in form and the linear arms can either be similar or differ from one another. | 19 |
| 16. Radial organization employed in city. | 20 |
| 17. An Industrial city - Germany. | 20 |
| 18. Palma Nouva - Italy. | 21 |
| 19. Clustered organization employed in a city. | 22 |


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

20. The forms and spaces of a city or a town as of a building can be composed by either one of these organizations or a by a combination of several. 22

21. Texture of a place, may change accordingly the width, heights, and detail of the facades. 23

22. The nature of the skylines contributes greatly to the texture. 24

23. The mixture of different types of buildings, which have grown up over the centuries and which combine to create and interesting texture to the streets cape. 24

24. Texture can be taken as more visual and tangible aspect of character created by the nature and arrangement of similar constituents. 25

25. The width of the spaces, enclosed apposed to the height of the buildings add ' Texture' to a composition. 25

26. According to the variation of sky line, different size, detailing and materials of buildings texture also change. 26

27. A space in a city can be linked to a space within a room. 26

28. A space gains ' Texture' through the scale and proportions of enclosing elements. 27

29. A building gains its own individuality, through the texture. 27

30. Nature of the enclosing elements adds texture to the space enclosed. 28

31. A city, achieve texture through the interaction of its inhabitants and produces different textures to the city. 29

32. In a city sense, the stance is represented by the way of the city is set up in the surrounding environment. 30

33. A city placed on the top of a mountain. 30

34. A city placed in a valley, surrounded by hills. 31

35. Stance of a city can be, Dominating, protective pleasant... 31

36. The distinctive combination of these composition, texture and stance produces a inherent character of a particular city. 32

37. In many cities, their prominent a unique character for the simple reason that the city is place where the quality of life of people, their ideas, thoughts are often expressed through art forms. 33

38. In a sacred character of a city - the ability where every elements of the city had its proper location and meaning. 34

Electronic Theses & Dissertations
www.lib.mrt.ac.lk

39. In cities of organic character, each element of city is necessarily a part of the main structure. 35

40. The cities of dynamic character expresses rationality, simplicity and practicality. 36

41. A grand axis. It is well defined and constitutes enclosure, clarity of direction while effecting to the form of a city. 37

42. Main axis running from outer city to grand arch in France. 37

43. A great access totally determines the character of a city. 38

44. The specific aspects in history can be observed to have influenced the character of a city. 39

45. The city form which is dependent upon or determined by several determinant forces of which the relative influence change from one place to another. 40

46. Important historical events happened may influence the form of a city. 43

47. Chinese Architecture. 44

48. Catholic Architecture. 44

49. A shifts in direction of the street has created an interesting vista focusing the tower of the church. 46

50. In many societies the religious beliefs and practices play a vital role in integrating a way of life in to functional unity. 47

51. Ideologies and beliefs have influence the spatial organization from earliest times. 47

52. Social organization is considered as the significant grouping of individual in to social units. 48

53. The politic has decided to locate the city in a defence nature. Therefore city has treated in a centre of the surrounded water bodies. 49

54. A land mark act as a dominant feature in a middle of a street which inter connect four streets. 50

55. House of parliament in London. It's architectural style with rich detailing political importance location have established a strong character to the city. 50

56. Techno economic systems, together with other cultural systems such as religion, ideology and politics. 51

57. Advanced technology gifted the possibility of achieving greater heights there by changing the city character drastically. 52

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations

58. Modern architectural style has created adventurous built forms resulting uninteresting city forms. 53

59. With the technological advancements, new architectural styles developed from time to time which also resulted in remarkable changes in city character. 53

60. Telecommunication tower in London. Great height of telecommunication tower and their form create pre dominant land mark to the city. 54

61. The rapid growth of population, their needs and the increasing number of vehicles have contributed in different ways in changing the character of a city rapidly. 54

62. Elevated motor ways in San Francisco. 55

63. Elevated motor ways in New York. 55

64. The geographical location of a city, it has been observed contributes a lot of its character. 56

65. The cities, which originated with an agricultural based, usually lay on the flat lands and their location and topography of the area has been a determining character of a city. 57

66. A city occupying the top of a hill. The shape of the hill itself directly influences the character of a city. 58 58

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

67. Cities, which originated on riversides, normally developed linearly facing the river. 58

68. Landform contributes to the city structure. 59

69. The city laying of a plain usually such cities have originated with and agricultural base. 60

70. A city gains its own individual character according to the landform. 60

71. The cities located on hilltop with typical hierarchy in the layout of Buildings. 61

72. Topography of a place contributes much to the uniqueness of a place. 61

73. A city laying on a valley, usually such cities have originated with an agricultural base. 62

74. Cities built for trade or communication purposes, sited on river sides with canals running in to the city. 62

75. A city expresses their unique appearance according to their topography. 63

76. Hilly nature, presence of water and surrounding vegetation has contributed to the individual character of this place. 64

77. Amount of vegetation and the type of vegetation observable add uniqueness to a place. 64

78. Climate is one of major influencing factor in determining city form. 65

79. Climate which applies to the city. 65

80. Various dimensions of seasonal and daily changes of the feature of the climate will eventually influence upon the physical structure of the town. 66

81. A hilly nature presence of water has contributed to the uniqueness of this place. 67

82. A river side city. 67

83. Presence of water in the form of rivers will necessarily add the uniqueness or identity of a city. 68

84. Water resources contribute to the character of a city. s68

85. Function of a city are formed to be bearing a close relationship with the techno economics of the city. 69

86. A port city. Principle function of a city may be expressed through its physical appearance. 70

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

87. Functions of the city are essentially based upon the use of the city, the purpose it serves. 70

88. A Fortress city and the ' Security' act as the main function of this city. 71

89. Physical appearance and feature of a city may bear distinctive relationship to the functions associated with it. 71

90. Some cities formed or designed influenced by one principle function may change course in some giving priority to a different functions, thus causing changes in the city character. 72

91. The cultural aspirations of people, decide the 'land use pattern' of a city. Many Islamic cities give clear evident as to the inter relationship of the culture and the geographical location. 73

92. A Islamic city. The relationship of culture and the geographical location may clear evidence are available in these cities. 74

93. The city layout patterns, building forms and even in the detailing vary according to their inherent value systems and beliefs which finally effect the city form or a city character. 77

94. St. Peter's Square, Rome. 78

95. The Brunelleschi's dome in Florence. 79

96. The city was usually located at a strategic point, related to striking natural features of the environment. 80

UNIVERSITY OF MORATUWA
LIBRARY
SRI LANKA

97. The Greek City Estates. 81

98. The City of Athens - consisted mainly of three parts. 81

99. The 'Acropolis' occupied the highest elevation and dominated the other spaces. 82

100. Athens is one of the best examples were by the relative influence of determinants on the, 'City Form' and thereby the 'Sacred Character' of the city. 83

101. A perspective - reconstruction of the 'Acropolis'. 84

102. City of Rome - Romance always believed that Rome should become a world power. 85

103. Typical Roman Castra Plan. 87

104. The form of the Roman buildings were usually circular, square or rectangular. 87

105. Wastupurusha Mandala. City plan of Madhurai – India. 90

106. Chinese modal of spatial organization. 91

107. City plan of Pecking. 92

108. City plan of Pecking. Axial line of approach and bilateral symmetry. 93

109. The Yellow and Gold roofs, surrounding the blue sky and moat create a sensation of architectural power which has no parallel. 94

110. The city of Pecking expressed order, dominants, stability and evoked feelings of awe, pride and security. 94

111. From ancient times, the geography has played a major role in the placement of cities. 95

112. Venice - 13th Century. 96

113. Venice at the 16th Century. 97

114. Present day Venice. City form has remained unchanged up to the present. 97

115. Spatial organization of Venice, directly responded to the canal system. 98

116. Venice - Build fabric. Every part of the city is woven to gather and expressed subtle dependence on each other, expressing harmony continuity and balance. 99

117. The city-Delos. 100

118. The city-Camiros. 102

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations

119. New York City - Spatial organization. 104

120. Formality, Practicality and Directness employed in spatial organization. 105

121. Old New York - grid iron spatial division is clearly visible. 105

122. New York in early times. 106

123. Paris in the 16th century. 107

124. Paris in the 18th century. 108

125. Paris in the mid 19th century. New system of spatial organization introduced to the physical structure of Paris. 108

126. Colombo city. 113

127. Colombo City centre at the time of Portuguese. 114

128. Colombo City at the time of Dutch. 115

129. Colombo City centre at the time of British. 116

130. Colombo at the Ancient time. 117

131. City form- Colombo Fort. 119

132. Colombo city centre contains a grid iron organization of spaces. 120

133. Round the about – near the York street with strong chartered buildings. 121

134. A concentric spacer formed by a combination of buildings and roads. 122

135. Concentric space formed by the York street and Sir baron Jayathilake Mawatha. 122

136. Concentric space formed by Sir Baron Jayathilake Mw, and Leyden Bastion road. 123

137. Colombo city centre – Texture. 124

138. Echelon Square. 125

139. Vast openness created by the combination of the Galle Face Green and the Sea. 126

140. "Tunnel effect" of the first segment of the Janadhipathy Mawatha enclosed by high risers. 126

141. Upper segment of Sir Baron Jayathilake Mawatha. 127

142. Mudalige Mawatha. 128

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations

| | | |
|---|---|---|
| 143 | Upper segment of the Chatham street defined by comparatively built medium rise narrow frontage buildings. | 128 |
| 144. | Built fabric maintained a repetitive, highly detailed strong character. | 129 |
| 145. | First Cross Street. | 130 |
| 146. | A City Bazzar. | 130 |
| 147. | Narrow, linear spaces defined by a continues similar narrow frontage buildings. | 131 |
| 148. | Influence of the British expressed by the Texture of the city. | 134 |
| 149 | The built fabric maintained strong character. | 134 |
| 150. | Galle: Functioned as a Fort City. | 138 |
| 151. | Galle – A natural bay and surrounding environment harmony with the built fabric and produced unique character to Galle. | 139 |
| 152. | The city contains a combination of grid iron and linear spatial organization. | 140 |
| 153. | Main Public bus station. | 141 |
| 154. | A large open space. | 141 |
| 155. | Linear spatial organization outer city, Galle. | 142 |
| 156. | Texture of the town. | 143 |
| 157. | Uniformity and continuity expressed through the built fabric. | 144 |
| 158. | Open spaces enhance the quality of built fabric. | 145 |
| 159. | Fortress – maintaining the inherent character of Galle. | 147 |


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