



**STREETS FOR URBAN LIVING:  
AN INVESTIGATION OF USER AND ACTIVITY  
VARIATIONS OF SELECTED URBAN STREETS AT  
THE METROPOLITAN REGION OF COLOMBO.**

A DISSERTATION SUBMITTED TO THE DEPARTMENT OF  
ARCHITECTURE OF THE UNIVERSITY OF MORATUWA IN PARTIAL  
FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER  
IN SCIENCE OF ARCHITECTURE.

BY  
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2007

89486

Declaration

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

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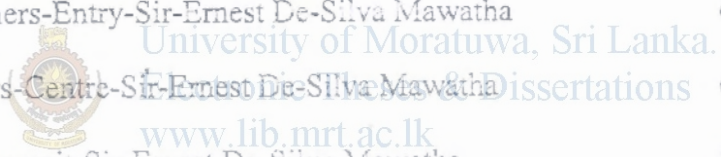


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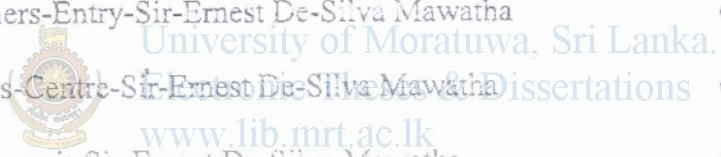


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## ACKNOWLEDGEMENTS

I wish to express my deep gratitude and thanks, to several persons for the services, guidance and assistance given by them in connection with the preparation and successful completion of my dissertation.

I wish to acknowledge to, Professor S.Manawadu, Head, Department of Architecture, University of Moratuwa for the guidance, encouragement and valuable comments given throughout the academic years of study covering all aspects, related to architecture and social science, which focussed me to look in to a more comprehensive study in this dissertation.

My deep gratitude to, my personal supervisor Auct. Dr. Mrs. Indrika Rajapaksha, Senior lecturer of the Department of Architecture for the valuable comments, guidance and immense help given to me throughout and Auct. Dr.Harsha Munasinghe, Senior lecturer and coordinator for M.Sc dissertations, Co-year master for M.Sc final year, Department of Architecture for the comments and criticism, which encouraged me to do this study.

I am especially thankful to, Auct.Dr.Upendra Rajapaksha, Senior lecturer and the Co-year master of the M.Sc year one Dept. of Architecture, for the valuable comments and unreserved help given during the critical stages of this study.

Auct.Jayanath Silva and Auct.Aroscha Gunathilake, Co-year masters of the M.Sc final year for the guidance and encouragement. My sincere thanks are due to Prof. Nimal De-Silva, Senior professor of the Department of Architecture, and Mr. K.D Fernando, Senior lecturer, Department of Town and Country planning for all the valuable comments.

Very special thanks are due to, the incharge, Reading room, Dept of Architecture for the assistance given especially in hunting for resource data. Also I am thankful to the librarian and the staff of the University of Moratuwa, willingly helped me for finding necessary reference.

My special thanks are due to, Mrs. Kamalini Madanayake, Senior Inspector, President's security Division, Colombo-07 for her willing support extended in getting security clearances for field surveys which were done in the Colombo's high security zones.

I am also grateful to my, senior friends, Thanuja, Miuru, Prasad, Ishani, Roshini, Shamalee and Priyani akka for their valuable support given to me.

I express my thanks to Mr.Harishchandra, Ranjith, Bandula and Chamara for being cooperative when ever I needed help.

For the guidance, encouragement and love given to me throughout the study to my mother, husband and also for my little daughter for missing me so much.

Finally, I sincerely offer my thanks to everyone who assisted me to present this dissertation.



## INTRODUCTION

### A. Significance

Urban development has evolved in a less than satisfactory manner since the beginning of the 20<sup>th</sup> century. More attention has been paid to urban design in terms of functional aspects neglecting the real requirements of the inhabitants. The application of such concepts has resulted in the disappearance of the street, traditionally an essential element in the city. In the book 'Architecture city sense' the author states about the situation,

*"Cities with a variety of street scene, a road width of building height, even when ugly are a source of joy and pride to their inhabitants, because they have identity. Cities which act in this way are almost always old cities where identifiable buildings have accreted over the years.*

*New towns, because of their newness and their separation of functions, lack identifiable elements. Old cities are all mixed up; housing, shopping, offices, workshops are all in the same street, often in the same building. This makes for the unity in diversity, the complexity which is the essence of living in cities.*

*Once functions are separated, the city goes to pieces. One might therefore produce an axiom that a city or a section of a city does not depend on its size, but on its arrangement. Given every possible function of the city will create and sustain itself. Given only one function, it will inevitably decay..."*

University of Moratuwa, Sri Lanka.

The above quotation simply explains how much it's worth to keep and conserve the historic districts in cities. The mixed up functions unify the city with the original identity and may not let the city to be broken into separate places. It also shows the most vital qualities of streets, which should be retained in case of urbanisation. Therefore the streets and its intermediate spaces which play a vital role in sustainable cities should be preserved in the process of urbanisation.

The street is the matrix: urban chamber, fertile soil and breeding ground. Its viability depends as much on the right kind of architecture as on the right kind of humanity. The common character of building in such city establishes an order among them and governs their relationships with the outside. The outside of the buildings, the streets and squares, thus lend to the shared commonality by being useful gathering spaces. Today's streets are left out from living areas and only functions mere passageways from one point to another.

In modern cities, which are mainly trade and business oriented, there are hardly established orders. However, streets could be transformed into liveable spaces by consciously relating buildings to the street.

### B. Intention of study

In practice, many cities have developed in a piecemeal and evolutionary manner, planned and designed over many centuries and involving countless individuals. Although the result is that planning has typically been incremental and ineffective to adapt to new pressures, such as for example, transport, the result is a richness and

variety of urban environments. Both in positive and negative terms. These qualities affect our perception of urban spaces and how we use them.

The contemporary urbanisation process treats buildings as isolated objects sited in the landscape and not as a large fabric of streets. Squares and properties of shape and scale in connection to one another. As a result today's cities are merely a collection of individual buildings. What the 20<sup>th</sup> century urban planning with its sophisticated technology knows how has forgotten, is to treat the 'city as a whole.'

With the environment rapidly heading towards being entirely urban, the cohesiveness of the 'natural links' that were slowly disappearing. With that there is a degeneration of bonds between people, resulting in alien and disintegrated individual societies that deny people their human and social needs. These individual places thus fail to realise their potentials to affect people emotionally.

The binding component of destinations, where a change of condition or a state is experienced to indicate a transfer from one place to another. Also it is the place we left and the place we are going to are meaningful and dense places. The intermediate space we move through is pure function and less value.

The street is also sometimes the meeting point of conflicting phenomena, where human behaviour needs adjustment and adaptation in order to fit into a particular environment. The Winnicott's definition for transitional space states:

*"This is an area and a time when something very important happens between mother and child. At first the child does not know or recognise objects as independent. In the transitional environment the mother and the child play and this play occurs under the injunction, Winnicott says, never to ask, is this thing real or not, imaginary or not. But through this play, the child comes gradually to establish what is real, what is out there and what is imagined. Therefore I would argue that it is a place where what is learned become integrated with the self and make a step in development."*

Despite the fact that an essential change is always a necessity, liveliness of space is a topic that needs to be explored in a greater depth, for a sustainable built environment.

### C. Study hypothesis

In sustainable urban developments, the concept of environmental diversity is intended not only to make environmental design responsive to a richer and therefore more realistic spectrum of criteria; it also seeks to contribute to a more profound cultural issue. Research into sustainability has opened a view of urban and architectural process that are dynamic in nature of considerable complexity of scale and inter-relatedness and after with very long-term consequences.

The aesthetics and spatial design have been made the responsibility of the architect to encourage sustainable development.

*"The architect uses methods of juxtaposition and interpenetration to regulate interior exterior relationships and to articulate transitions as inside-outside, man-nature,*

*private-public, element-context...He establishes intermediary zones of transition which belongs to both". By Von Miesse 1992:109*

This situation distinctly identified in individual buildings is less evident in a larger urban context, where these spaces are seldom considered as important architectural entities. As a result, they have failed to accentuate destinations, ultimately in poor place making. The catalyst that converts any environment into a 'place' is a process of experiencing deeply. Since the primary constituents of particular environment, the behavioural space is not properly articulated. The achievement of the "overall sense of place" is limited and incomplete.

This phenomenon is apparent in behavioural spaces in urban streets. Where links have become weak and fragile, inevitably resulting in poor interaction and understanding. Since the spatial link is weak, these little psychological preparation directing the mind towards a change in cultural, social and spatial values. The enigmas revealed have ultimately directed the study towards a comprehensive analysis of urban street characteristic social values, their culture and overlapping spatial manifestation in terms of transition.

This study will demonstrate the significance of the behavioural diversity of streets in the urban built environments in relation to social and cultural understanding. It will attempt to reveal the nature in which place making is affected when links are inadequately designed.

It is viewed that, spontaneous urban settlements rather than rigidly planned urban settings represent stronger links of this nature as they have remained in their existential foot hold. Since a community's social, cultural, economic and spatial needs are primary to all others. It is felt that such a study would reveal the ingredients and the spirit on a liveable space in streets.

#### **D.Objectives of the study**

The study proposes to examine the importance of creating successful and well designed liveable spaces in-between streets and buildings. More importantly it would inquire into the significance of such successful behavioural space on place making.

It would pursue their potentialities and contributions towards creating meaningful 'places' and discuss many options of transforming these spaces to accentuate and integrate with their destinations. It also intends to provide a foundation for further studies to derive principles, which could be used as guidelines by future urban designers and planners.

#### **E.Scope and limitations**

This study will distinguish and limit its focus to the urban context of the Colombo city limits to enable a sustainable development of that area. It limits its scope to the urban context as man's needs; both psychological and physical are more pronounced in such situations.

Additionally the problems encountered due to limited or missing space and its relevance to street-building links is also a current dilemma. Further distinctions will be given to the users' sociological, economical and cultural profiles and their tributary spatial manifestations within their respective neighbourhoods to reveal their effect on place making.

#### **F.Method of study**

The study initially provides a general overview on the spatial progression of streets in the urban context. It further discusses the issue of behavioural space existence and its significance as a functional dimension; and stipulates the need to understand the behavioural diversities on streets and is further identified as an objective space that significantly changes behaviour patterns of the user.

The study then discusses the concept of space within its physical, psychological and functional dimensions and establishes the principles of the place making theory. The selected case studies describe the spatial adaptations of the user emphasising their behavioural diversity. The study represents their unique contexts in order to portray their particular variations.

In conclusion the study analyses the behavioural environment as a part of the communities' space that occupies along the street. It attempts to visualise the magnitude of metamorphosing spatial entities of identical spaces in streets, according to their socio-cultural profiles to distinguish the relationship between place making and the transitional space. Also a user survey and photographic survey of the context will be a backup to analyse the study.

# CHAPTER 01: "The role of street in urban structure"

## 1.1 Historical background of a street

Throughout the history there are many instances that street have been at the centre of attraction of various academics. Regardless of urban or rural 'street' has been defined in different ways by them. Probably the simplest representation of a street may be,

*"A line necessarily marked with points or crossings that code potential arrival, movement, event and access"*

(Anderson, S. 1978:1)

The history of the street has yet to be written, either as urban form or as institution. It should, of course, be both. For on the one hand, the street clearly belongs to the history of architecture and urban design in the strict sense of physical fact. But the street as an institution is an equally a critical subject. Beyond its architectural identity, every street has an economic function and social significance.

The purposes of street traditionally have been for traffic, the exchange of goods and social exchange and communication. All three are inseparably related to the form of the street; the material ways in which these activities are housed and helped along. There are intricate levels of social engagement encouraged and hosted by the street structure.

The street, in Joseph Rykwert's phrase, is *human movement institutionalized and human intercourse institutionalized*. In this way, therefore, the history of street is about both container and content. If the correspondence of the two cannot be perfectly synchronic, it is because the frame of the street is more permanent than the uses made of it.

Fig. 1  
Perugia's via dell Acquedott  
is a 13<sup>th</sup> century aqueduct that  
has been converted into a  
pedestrian walk



There was a time before streets, even in the proto-urban environment of Western Asia. Catal Huyuk in Asia Minor (7<sup>th</sup>-6<sup>th</sup> millennium B.C) was really one intricately assembled complex without streets. All pedestrian movement was made on the roof of buildings and social interaction might take place in the courtyards.

The first invention of street was at Khitokitia, in the 6<sup>th</sup> century BC. This spine of communication, running uphill from the river bank and down on the opposite side of the hill, was built of limestone and raised considerably above ground level, with stone ramps leading down at regular intervals among the houses huddled on either side.

A number of themes remain relevant throughout the history of the street, whatever the period. One of these has to do with a variety of private challenges to the public control of the street space and the corresponding public effort to preserve the integrity of the street channel and keep it free of encroachments.

The key reality here is that the street remains the stage of a constant struggle between private and public interests. The moral is that when public control falters, private abuse becomes endemic. The public good requires that the street space to be kept open, accessible to all, and equipped for its functions. By explicitly defining an outdoor space for general use, the community makes a commitment to this principle. The private urge is to appropriate this space for one's own purposes. This is done in one of the two ways: through encroachments and blockage or privatization. The great antiquity of both practices is a matter of record. Henri Frankfort, the premier student of ancient Mesopotamia, tells us that there

Tradition regarded it very inauspicious to usurp public space for private use. An omen text states: *"If a house blocks the main street in its building, the owner of the house will die; if a house overshadows or obstructs the side of the main street, the heart of the dweller in that house will not be glad."*

A saying of the Prophet Muhammad, *"La dharar wa la dhirar,"* was sometimes interpreted to mean *"No infringement, whether profitable or not."* Encroachments are incremental over time. In this instance, abutters consider the street as unoccupied ground space into which they might extend their built premises.

The above facts express that, streets found connections with factors such as social, political and psychological etc. These factors also looked into aspects such as public leisure, housing development, traffic engineering, urban development etc. As a result, many different intellectuals concentrated their attention on the functions of different streets.

## 1.2 Urban street

In a city structure, the dense arrangement with enclosed character, which is created by the buildings themselves that are flanking the street, becomes the prominent feature of any of the urban street. Haphazard development and the growth in urban streets result in a mixture of architectural patterns which is a common characteristic of the urban street. This type reflects inequality and a lack of uniformity in street architecture.

### 1.2.1 A definition

*"The street is a form that is more easily imagine. In the past it was a 'small universe', where the character of the district and of the town as a whole was presented in condensed form to the visitor".*

(Norberg Shultz, C.1971)



Jane Jacobs, an important critic of the urban form identified, the streets are the most important element in the city. According to her, “Streets and their sidewalks, the main public places of a city are its most vital organs. If a city’s street look interesting, the city looks interesting. If they look dull, the city looks dull”.

### 1.2.2 Components

Each and every place has a definable character of its own. This unique character or the sense of place is often based upon various aspects of the urban society such as the enclosure of the space, the shape of the area or space, linkage system, building facades and specific visual ingredients. Experiencing an urban street could be identified in two aspects, which are across the street and along the street. Across the street could help to identify the character of street by its street canyon, transitional space, building facade and along the street could help to identify the role of entry, centre and exit of a street through spatial progression.

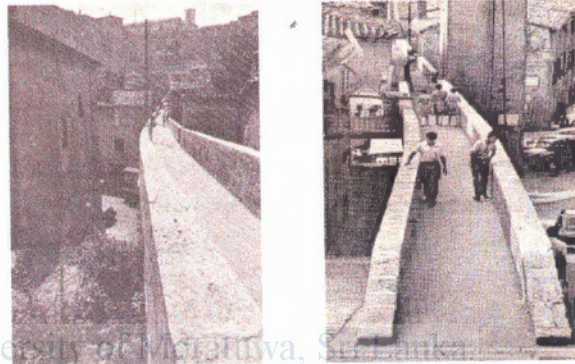


Fig. 2  
Experiencing the street



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#### 1.2.2.1. Street canyon



Fig. 3  
Across the street

#### 1.2.2.2. Transitional space

Transitional spaces provide spaces for actual physical movements or human activities to take place in relation to a building. They basically provide “room” spaces that link the road and the building with gardens, lawns, courtyards and so on or as spaces that link outside and inside with patio, balconies, corridors and terraces and as space that link different spaces inside the building such as corridors and lobbies.

*Todd, W. Kim-Site, space and structure*



Fig. 4  
Transitional spaces

These “rooms” or occupied transitional spaces can be created in different forms to satisfy different transitional needs, required by the building. They can be designed to give a static feeling of an occupied territory an enclosure with privacy and security or an outdoor room for relaxation or perhaps as a corridor or pathway as a possession in movement.

### 1.2.2.3. Building facade

Building facades also bear an importance to the city character produced by the elements, colour and texture. At the same time the building section also has a great importance in a sense the role it plays in the creation of a sense of enclosure in the urban street.

Openings in the façade represent an interruption in the surface continuity. The nature of this interruption depends on the distribution and shape of the openings. As an example the different types of buildings which have grown over the centuries, combine together to create an interesting, varied and yet some how integrated street scene. There is a mixture of materials, window size, height and width of buildings.



Fig. 5  
Elevations of urban facades



### 1.2.2.4. Spatial progression

The experiencing of a journey as a whole begins with a starting point which culminates at a climax, the main space. This is the main path of spatial progression. However there may be spaces of secondary importance which may have secondary paths of spatial progressions leading away from the main path of progression.

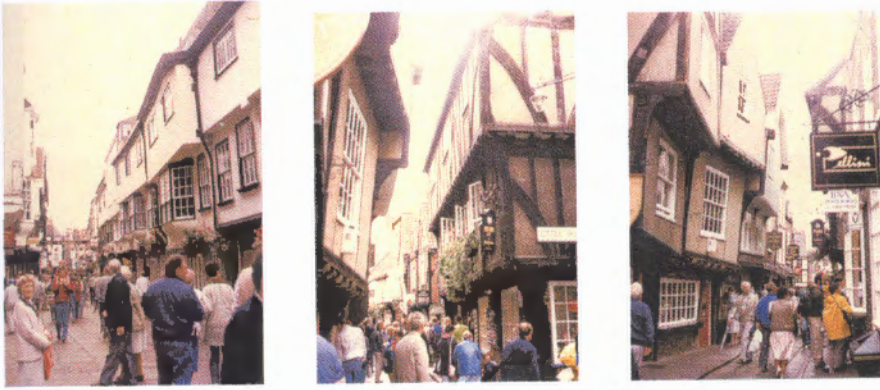


Fig. 6  
Urban street

The movement of an urban street leads with the main path of spatial progression which consists of the important spaces in an architectural product. These components always connect to one another. Therefore each individual spatial quality is not generated by its own constituents, only but it is also affected by the way the other two spaces are connected on either sides.

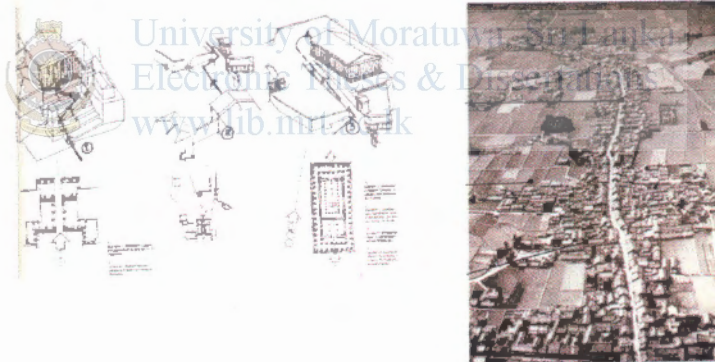


Fig. 7  
Spatial sequence of  
Acropolis of Athens

### 1.3 Function of a street

Street has become quite different functional purposes perceiving as a circuit of space within a city. They have formed in responding to overall geometry or typology of the organization in terms of physical structuring of functions in a city. Cities are divided into large fields, square, a circle, a rectangle....etc possessing logical environmental ways of subdivisions. They can be regarded, aggregates thus seem loosely related fields in to a whole. They articulate the periphery responding to string conditions of centre or final edge defining them.



Fig. 8  
Acting as a seam



Fig.9  
Acting as an edge



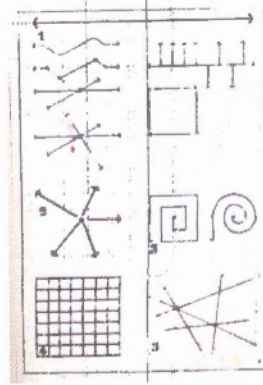
Fig.10  
Acting to link two important  
Entities – Washington D.C



Fig.11  
Generating circuit of spaces  
Manhattan Southern Tip

In allowing these structuring functions to the city itself, streets organize themselves in different patterns. These patterns can be categorized into identifiable configurations. Such as linear radial, spiral, grid, network and composite.

Fig.12  
 Linear, radial, spiral,  
 grid network  
 (Source: Ching, K 1992:252)



It is necessary to examine the function and role of the street within the urban fabric, where the designer will be able to understand better the form of the city. Function of a street bears many facets. The street can be regarded as a physical element within a city which promotes movement from one place to another. On the other hand the same can be regarded as a place where many of social interactions happen.

### 1.3.1 Street as a physical element

Physical functions of the street primarily places upon its physical design. Most ordinary to the most secular human activities are unfolded within a street and it is on the actual physical setting of a street. It's length, width, sizes of the walks, the street furniture, the features, how all the buildings, the remarkable ones, nature of the buildings, density of them, where the most intense development, whether there are trees, the focal points, the perspectives....etc give description of the street itself.

It is difficult or impossible to separate the interplay of human activities and the physical nature of the street. This interplay of human activity with above important physical details gives us the notion on different settings, different places and countries where these streets stand. As a link it facilitates the movement of people as pedestrians, vehicles and also the movement of goods to sustain the wider market and some particular uses with the street.

#### 1.3.1.1. Street as a road for vehicles

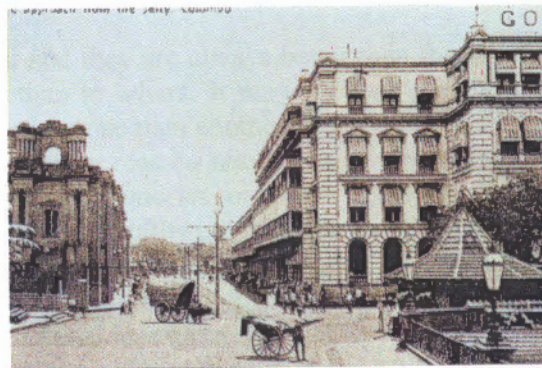


Fig.13  
 The variety of vehicular streets  
 dealing with the physical elements

### 1.3.1.2. Street as a path for pedestrians



Fig.14  
Pedestrian paths



### 1.3.2 Street as a social element

The street encourages human participation. Therefore unanimously it has become a 'shared public world'. People engage in their day to day activities on streets. It provides us a place to meet, sleep, to read, to stay, to relax, to eat, to sell, to play, to sit, to walk, to born and die and basically to live. It is a space for weddings, for funerals, for political celebrations, for entertainment, for transportation, for races and simply for celebrations. At the same time it may be a place to be alone, to be private and to wonder what it was once like and what it could be like. It can be a place for the mind to wonder until whatever is inside the street unfolds.



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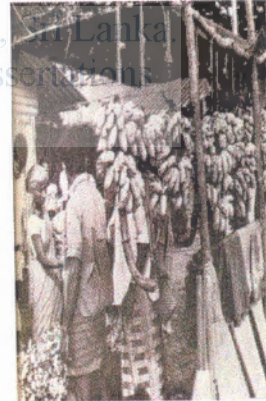


Fig.15  
Variety of social activities

### 1.3.3 Street as a psychological element

Best streets are those can be remembered and they are always better than the others. One might go back to them more often than to others. It may not just become the things to do or have to do are more centred on one than another, may be it is because it focuses a part of the life more on one street for reasons not necessarily economic or functional. Probaably that street may unlock memories or offers expectations of sometimes pleasant to be seen or probably on possibility of an encounter. Therefore as a remark for the understanding of the urban street phenomenon it can be said that physical functions makes social functions possible and it creates a psychological comfort for the user and this kind of environment is responsive for user.

Fig.16  
Memories



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## CHAPTER 02: "Living streets for urban life"

### 2.1 Nature of street life in living streets

Liveable place is a place where people like to live in or stay in. Generally people experience and appreciate places physically and emotionally. Therefore it is necessary to create a healthy environment which consist psychological as well as physical well being of the people. Thus emotional satisfaction could be achieved by the articulation of spaces which are created for different purposes, by evoking different feelings of the user.

As an architectural entity, the street could also be taken as a liveable place where people are made to stay in. It is an emotional slow down of the movement which depend on the street architecture. Christopher Alexander states that, "*a street is a place for people to stay*".

(Christopher, A. *A pattern language*, 1977, p. 590)



Fig.13  
The street as a liveable place

To make a street liveable, it should consist physical and psychological comfort both. In the sense that it should be liveable means, that people should feel the sense of liveability. To achieve this number of techniques have been suggested for the design of a comfortable street. Such as the form, scale, propotion, contrast, rhythm ....etc.In the design of a street, these could be identified as strategies used to make a street liveable.

#### 2.1.1 The users

The purpose of structuring and organizing space and time is to facilitate the communication of users, their interaction and avoidance of dominance so on. Through ritualized behaviour and various ways of marking territories, meaning is given to places and behaviour. The organization of spaces constitutes a built environment and varies with different groups of people, from agricultural based settlers to hunters, city dwellers so on.



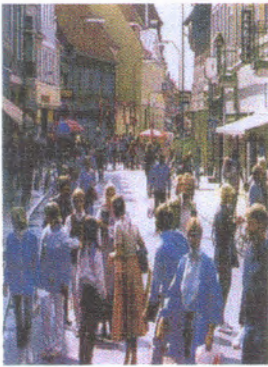


Fig.14  
Different types of users.

People with different attitudes and ideas respond to different physical environments. These vary from place to place, because of changes and differences in the interplay of social, cultural, ritual and economic factors. These factors and responses may also change gradually in the same place with the passage of time, with changing attitudes, values and life styles of the users. Therefore the liveliness of streets could also vary with the play of various user categories. As a whole all these users of streets could either be its inhabitants, neighbours or visitors.

### 2.1.2 The function



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The street and the activities in and along it, promoted its role as a social condenser and as a focus of common interests. Similarly, the best known streets and the city centre came to symbolise the collective interests and values of the surrounding community. Any street can be evaluated differently by different groups; visitors may see it negatively while neighbours see it positively and visitors' views may change with time and experience. When people feel that they can control and influence the environment and have an imprint on it, they feel rather different about it than if they cannot.

The street may be centrally located and prominent and have an important level of function; that level may not be noticeable from the nature of the street or the signs of change may not be congruent with the activities taking place within it. Therefore, there may be lack of congruence between the location, form and signs of activity and conflict and uncertainty about the setting.

People are special organisms in special environments. Interactions between man and physical environment depends on socio-cultural settings and extend through time until both elements are cultural artifacts. The urban street, in terms of user interaction during street functions can be discussed broadly under the following categorisation which will be formulated to identify the necessary liveability of urban streets.

### 2.1.2.1. The street as a place of communication

In the past decade there have been several attempts at describing the city as an aggregate of open and sheltered spaces, spaces of public gathering and passage that by virtue of their multiplicity of use and their proximity, can be considered effective devices for sustaining maximum intensity and choice of communication among people.

It is the urban street from the first origins of settlement has acted as a principle place of public contact and public passage, a place of exchange of ideas, goods and services, a place of play and fight, of carnival and funeral, of protest and celebration. Its place in the web of associations that have sustained human society is therefore paramount.



Fig.15  
Street as a place of communication



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How many urban streets serve as excellent communication and transportation channels and still serve as a place something more for its users has become important. A stop in a street may enable a person to rest and escape from the confusion, noise and crowds of the surroundings. At another time, there will be a need to connect with others. Active engagement of this nature represents a more direct experience with the street.



Fig.16  
Awareness on street

Although it may make sense to speak of the relative obsolescence of certain communication artefacts, it is difficult to speak of the urban street in those terms. The street as a place of communication is endowed with permanence that survives the physical evolution of the city and even of its destruction.

### 2.1.2.2. The street as a social fact

The street should not only be a means of access but also an arena for social expression. The urban street includes a set of assumptions about who would own and control it, which would live on it or use it, the purposes for which it was built and the activities appropriate to it. Public welfare has been a primary motivation for creating or improving public space. The urban street has become grounds for public protest thus serving as settings for public demonstrations. It also served a critical function at times, placing value on the street, as a forum for debate and public outcry.



Fig.17  
Street as a social fact

Therefore, the street must facilitate interaction and should essentially be accessible to, and should benefit a group. It can serve human needs through quiet relaxation or active engagement. What attracts most appears to be observing other people, and that too can be a popular activity which brings about contact and promotes public life.

### 2.1.2.3. The street as a place for celebration

Ceremony, celebration and festivity are qualities people often seek in streets. People require joyousness to refresh their lives. Community life is enhanced by people watching, socialising, being entertained and buying or consuming food and other goods. This carnival street draws a crowd.

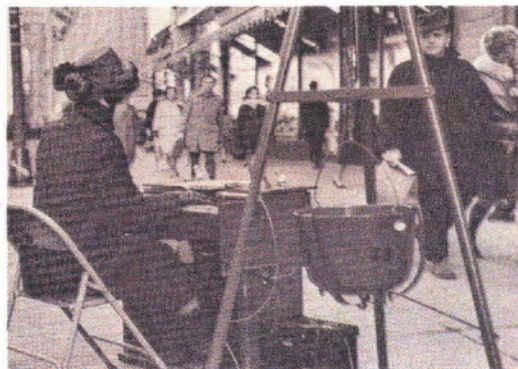


Fig.18  
Joyful street

Consider a street that responds to the direction and steadiness of a viewer's gaze or to his signals, one that is dull when unseen, but lights up to attention, affection, curiosity and anxiety. This is no longer a display to be watched passively. The connection between the man and the setting would be as immediate as between musician and instrument.

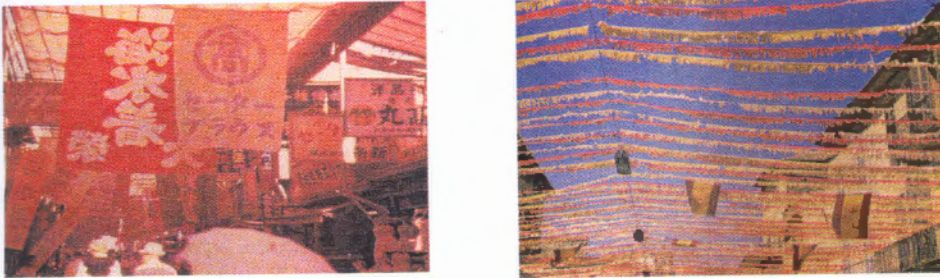


Fig.19  
Celebrative street

Thus, the street becomes a stage of gatherings, special events and performances and a place for a wide range of pleasures. Performances and organising of special events on a street can do so much more and bring together a mass of people, even for a short period of time. The characteristics of a successful art of this nature, exemplified as a celebration on an urban street, will be simplicity, rhythm, grandeur, a direct connection with natural changes and environmental meaning and a strong reference to human activity and community life.

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#### 2.1.2.4. The street as a learning experience

A setting rich in communication, producing a changing flow of new information is an education itself. People learn by doing and a setting allows it, invites or challenges, is good learning device. Children spend a lot of time outdoors and the street has always been an excellent place of play. Places that are diverse in character, with different kinds of surfaces, adequate spaces to play, places where they can hide, make good places for children to play.



Fig.20  
The street as a place to experience

Thus a street becomes a learning environment, where they learn about nature and social life by the people on the street and are consequently exposed to numerous experiences. Therefore the general concept is to use the city and the street as a teaching device that systematically exposes children and adults to the rich diversity of people, activities and forms and encourage them to learn by active involvement.



Fig.21  
Place for gaining information

#### 2.1.2.5. The street in terms of adaptability

Often we see that previous development becomes an obstacle, to the achievement of some state later derived. Adaptability on a street keeps the future open for change.

*“Change is an important dimension of successful urban spaces. The ability of a place to evolve and change over time is an important quality of good environment”*



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Change has complex meaning because it can occur in many different ways. Elements could be added temporarily and permanently, and people should retain and organize their knowledge of their surroundings in order to act effectively within it. In these terms, physical features on street can play an important role. People are attracted to them and may walk a great distance to see a particular focus of interest.



Fig.22  
Users are adapted to the culture of the street

But a highly adaptable street environment may cause neutrality of form and can disturb behaviour and the environmental image. People should be comfortable in an adaptable setting. Stable symbolic focuses such as a rock, a temple or a tree can help to hold a shifting scene. People can subsequently learn to take pleasure in possibility and surprise.

### 2.1.3 The life style

Throughout the history people had a great pride and responsibility in their homes and streets was evident in their remarks. Livability of a street leads more towards its users dwelling. The people try to maintain the privacy firstly and then contribute to the sense of community. Residence on their streets considers part or all of the street as their territory, maintain their street, monitor street behaviour. Therefore considering the public life and well as the private life of the street dweller has become an important phenomenon.

Fig.23  
Cleaning streets



Public and private space ensures the desired levels of interaction, inclusion and providing the appropriate defences. It deals with whom one interacts, when and under what conditions and the ability for such interaction. Social problems have enhanced this situation in that, people are forced to be secluded in their houses without outside involvement, mainly for proposes of safety and security. It is virtually impossible for governments to provide security for each and every individual and therefore they resolve to find protection for themselves by means of imprisonment in a suppressed space.

Fig.24  
High walls



The nature of the community, its size and heterogeneity also affects the balance between public and private. Sources of choice stems from the ability of people to live both public and private roles. These places are complimentary and people need access across the interface between them. The urban street will contribute in fulfilling the public component.

## 2.2 Governing forces of live streets

The study of streets around the world reveals that some streets had a particular liveliness which responds to environment and their socio-cultural needs. These emphasise to identify the life of street based on its governing forces.

### 2.2.1 Environmental influences

Climate and nature of land acts as a modifier on the existence of a public life and its setting development. The public life is more visible in warm areas. But still it changes with the perceptions of the variety of users.

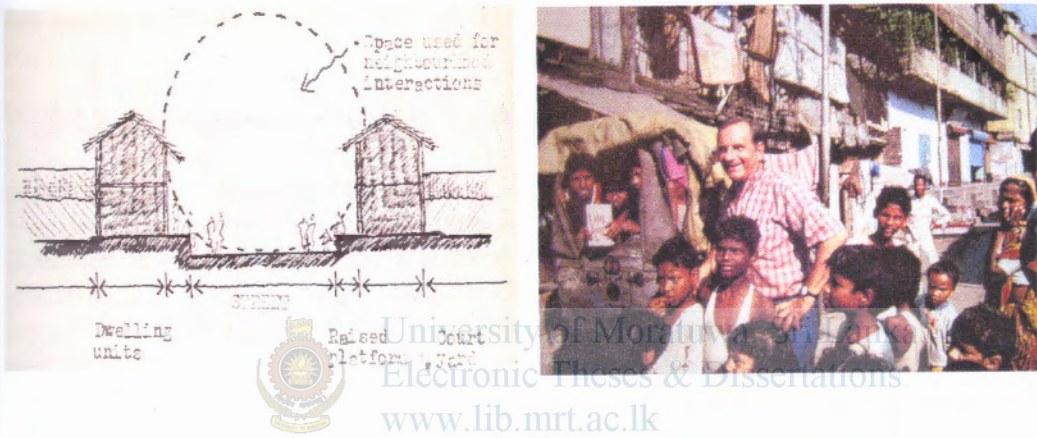
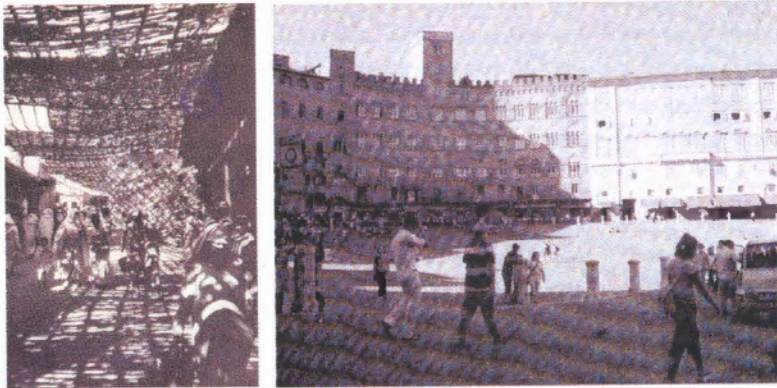


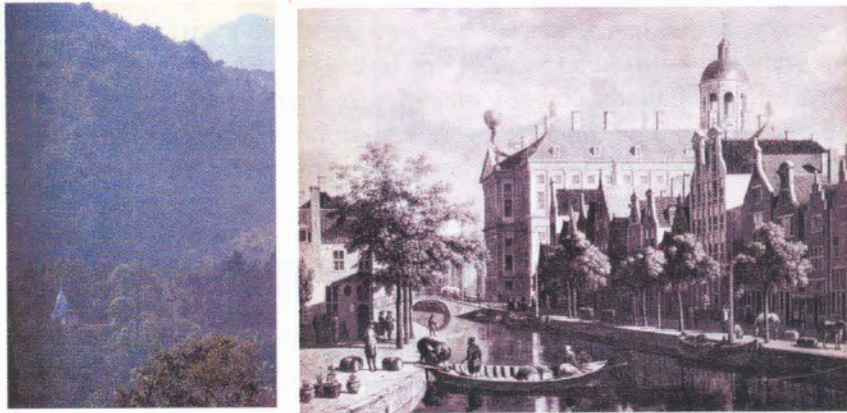
Fig.25  
Public life in tropics

Fig.26  
Public life in non-tropics areas



Buildings along a street in hot humid climate are much further away from each other for the purpose of air flow and ventilation. Arabs in the dry hot climates had narrower streets to get shadow for buildings adjacent. Streets were narrow in colder, windy European climates to prevent heat loss and for the protection from chilly winds.

Fig.27  
Hills, Canal  
banks



Also, the topography and natural features in street patterns brings a new outlook in life styles of people.

### 2.2.2 Socio-cultural influences

In the normal, everyday state of street, the relative balance between the abutter's freedom of action and the identity of the public domain, independent of any regulating influence of laws, is ultimately a cultural matter. It depends on the traditional needs and attitudes of society, which of course change over time. The private element, in the tug-of-war between the public and private nature of streets, is represented by houses and shops.

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At certain times in history this private element is paramount. This is so in Mesopotamia, in ancient Greece, in the cities of Islam. The common dominator here is prevalence of in turned courtyard of Islam. The common denominator here is prevalence of in turned courtyard residences. These do not contribute much to the street except to act as boundary wall. These consist doors, through which people enter into and exit from the street channel and negotiate with passing vendors; and they have high windows in which plants bloom and heads appear. When the houses are combined with ground floor shops, the dual function of the street is perfectly expressed in the nature of the street walls: they are at once the street front and the "back" of the houses.



Fig.28  
Islamic culture





But these practical considerations are only one side of the story. The determining factor is culture. Some societies are demonstratively outgoing, others are not. In Islam, the seclusion of women from the public eye, and the sanctity of family privacy, is sufficient grounds to seal the lower ranges of the facades or obstruct the view of passby. Even so the function of the street as a theatre for housebound women and children is essential. A balcony or a window is a viewing stand, and so the Islamic house perforates the upper range but, by means of finely detailed lattice work, screens the occupant who uses these openings to look out.



Fig.29  
Celebration on streets

Also the symbolic public life develops out of the shared meanings people have for physical settings and the rituals that occur in public. They are spiritual and mystical experiences in a society where the celebrations of past events and memorable women and man that kindle bond across people. Letting provisions for the occasional cultural, religious and other functional celebrations to happen and liveliness to the streets, where some times the user is made to feel alive simply by its memory.

Therefore, understanding the public life that leads to increase beneficial contacts between different cultural groups and gathers tolerance and understanding is much to be desire. It is towards a rich diverse and lively street life that we should be striving. These arrays of environment and socio-cultural needs which no doubt could be gained opportunity, for joy, fun and peaceful living. These qualities are gradually vanishing from many places of the world around. But still the references which provide clues state that some streets are still prevailing with liveliness. Also identifying the variety of these liveable streets could be a base for futuristic developments of streets.

### 2.3 Identifying the diversity of urban streets

The natures of streets in different parts of the world are varied and vivid. The streets in western cities are very different from their eastern counterparts. The factors of climate, culture ...etc have altered and changed the nature of streets in different locations.

Urban streets normally consist of pedestrian traffic as well as vehicular traffic. Therefore urban streets could be seen as carriers of traffic and as areas of human movement. Due to its function, the street could be called as commercial, residential, while some have mixed functions. In some streets there are greater diversities of users while in others associated with particular users.

### 2.3.1 Eastern countries

#### a. Commercial streets

##### 1. Prince street-Pettah-Sri-Lanka

The Pettah area was historically used as the commercial and transportation centre of the City of Colombo. Since the streets of Pettah were not designed for automobiles, they were narrow. Also the commercial activities at the time were relatively low profile, so the plots given to shop and residential units were narrow and closely packed. However, over the years these commercial activities have grown into massive scale and proportions, but the streets remain the same.



Fig.30  
Activities doesn't suit the street



Fig.31  
Pedestrian movement is heavy and the narrow pavements cannot cope with the density.

Prince Street runs through this wider context. It is a busy street full of activity and congruent with lifestyles of people. The enclosure of the street space contributes to the tense and dynamic character. There is hardly a space for pedestrians; they are invariably walking or rushing past vehicular traffic. A person can experience the narrow and condensed space of street.



Fig.32  
Lack of transitional environment

People use the street mostly as a transitional space and stop along the way, on occasion, if necessary. It is necessary to make walking a pleasure and an interesting thing to do, but here it is simply undesirable. The street does not provide any opportunity for communication, involvement or interaction in any way. People stand wantonly, peering, idling against the wall, peering in to corridors where homeless women scratch, scream at ragged children, seeking coins they can get. Continuous traffic makes ugly bleats.

Therefore, it is necessary to redevelop what exists by acknowledging the presence of historical layers. This urban revival would contribute in achieving the necessary qualities and character and reduce the chaotic, unpleasant aspects that are existing. This could be an interesting way of bringing community life back into the street and the public would be offered an architectural experience that has been rooted to the culture and tradition.

## 2. D.N street-Bombay-India

D.N road stretches from Hutatma Chowk fountains, up to Crawford market and the Police Commissioner's office building junction at north. It is an asset to the city, a major artery which touches the heart of the city and is not left untouched by agitating groups of workers or social and environmental activities and is versatile in every respect.



Fig.33

The prominence of a facade (source-Indian Architect & Builder, Vol.8 No.10, 1995)



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It becomes a social space for people and a setting for performances to collect donations for disaster affected areas of the country. The arcades along the way provide for sheltered cheap bargain shopping. Accordingly, the linear quality is recognized into a series of outdoor rooms, which develops into a sequence of places along the street.

### b. Residential streets

#### 1. Peddler street-Galle-Sri-Lanka

The Peddler street is a quite broader street, where re-development of the site has created fundamental problems in both physical and social environments. The street tradition cannot be distinguished as one particular tradition. It's a mixture of Dutch, British, Traditional Sri-Lankan, Islamic and even the modern movement architecture.



Fig. 34  
The monotony of the Peddler Street.  
Lost the quality of residential  
scaled street. Disharmony can be  
experienced.



Fig. 35  
New facade showing the different building  
character.

New outcomes of urbanism have changed the character of street though the residential units still exists, many modifications are done to them makes the street a dull place and break the continuity and character of street.



Fig.36  
Public building violating the average  
plot width. The sudden change of the  
width of facade make the dweller uneasy.



Fig.37  
Continuity of the building line is  
destroyed by set-back buildings.

## 2. Chinatown-Singapore

The heart of Chinatown has always held a special place in the hearts of people. Chinatown's shophouses, so humbly and strenuously used, exhibit a sense of proportion and refinement of architectural detail timeless in their appeal. These shop houses adjoin the Lai Chun Yarn theatre, and provides a dramatic backdrop to modern Chinatown street life. The shop houses extend in the form of stalls and wayside boutiques and people make this a meeting place.



Fig.38  
Street activity along  
Trenngar street (Source-  
Gretchen Liu, Singapore Sketch book)

The food stalls at this shady corner of the junction, draw office workers from nearby government offices. People gather to relax, due to the variety of uses. The street provides a sense of containment of the space, which reinforces the feeling of protection and security. Just down the street is the historical Thian Hock Keng Temple, which is an image of the past and a strong hold to the changing scene. Along the street it is possible for people to communicate, interact and observe others, and it becomes a place full of life, activity and splendour.



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Fig.39  
A strong feeling of  
public life (Source-  
Gretchen Liu, Singapore  
Sketch book)

### c. Sub-cultural/mixed streets

#### 1. Panchikawatta street-Sri-Lanka

The street is connecting a high traffic road which is the Kandy road and a high junction in Colombo. By its location it provides access to many important regions of the city, especially Maligawatte, where government offices and residential areas are located. Therefore the vehicular movement and the pedestrian movement are expected at a high frequency, especially on weekdays.



The activities performing are different and the process of the business is bound with its own ethics. This could be concerned as a way side market which is familiar. But here the things sell are very exclusive and from different parts of the country people get there to collect spare parts, specially used and hard models. By the street or the road buildings and the vegetation is between creating the spaces for people to and engage in activities happening rather than moving just passing them by. The road for traffic and the pavements with trees for pedestrian movement and the way side shops to promote their goods has created an attractive urban space where people will stay easily and supports the activities.



Fig.40  
Pedestrian movement is encouraged with the compositional arrangement of the pedestrian path.

Concerning the activities pedestrian movement has to be encouraged in these streets so there should be healing qualities in the architecture or in the spaces created intuitively.



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## 2. Lamington street-Bombay-India

The street is rough, dirty filled with vegetable and animal refuse. They serve as drying grounds in good weather. Market places and dwellings that lead from these streets are filthier, worse ventilated, and dark and crime hidden. Vehicles, people and animals all occupy the street, which becomes a setting of diverse activity.



Fig.  
Lack of pedestrian facilities

The street does not seem enough to accommodate all this, but life goes on. most people do not appear to be affected by all this, while they get about their routine activities. There is a lot if misery, chaos and crime on the street, but there is an apparent feeling of excitement that one cannot be understood at a single glance, and one needs to see more. The setting suggests there is more.



Fig.41  
Lack of community life

But there seems to be no place or activity that could attract people sufficiently. It is simply an area to pass through. The street does not provide places for communication or social interaction, in any manner, nor does it seem safe or interesting for children to play. In short, it does not provide the atmosphere for people to come together.

But the street can be regenerated to have an exciting response to existing urban fabric. Pedestrianised streets can be promoted by inducing continuous activity based on sense of place and motion. Visual opportunities created within the physical boundaries can be considered as windows of the street.

### 2.3.2 Western countries

#### a. Commercial streets

##### 1. Hay street-Sydney-Australia

The pedestrian movement in Hay Street is especially high, due to the fact that the biggest entertainment centre in Sydney is at this location. The pedestrian movement is tied through the monorail. The space experienced not as a composite of individual frozen sectors, but as a whole, and the building forms determine the physical setting.



Fig.42  
Street activity promotes public life

The street becomes a stage and people congregate for wayside entertainment, thus revitalising the whole area. It is clear that this street is changed instantly by the presence of people. The lone user may feel as though to occupy the street was to do something forbidden but by populating this with laughing, eating, drinking, talking, moving human beings the scale, mood interest and the use of space all change. This is a fascinating street in human terms.



Fig.43  
Activity opens out  
to the street

## b. Residential streets

### 1. Strata Nuova street-Italy

The broader sense of residential street is one which public authorities assume no responsibility. This is because the open spaces serves only the property owners directly involved, or is exclusively intended for such humble, private uses as the temporary storage of refuse or the parking vehicles. The classic locus is the back alley or the English mews. When these service corridors are gentrified and turned into residential strips, they usually enter the public domain.

But this ad-hoc, typically low-life privacy of alleys and cul-de-sacs should be distinguished from the self conscious creation of residential streets for the privileged few. The aim here is exclusive: to live without city interference in a setting that allows for a concentrated display of superior taste. Those who choose to live in such secluded oases within the urban structure are willing to forego the public benefits of street life, not least, from their point of view, the mixed admiring crowds of public streets, for the sake of avoiding accompanying nuisances.

Fig.44  
Genoa (Italy), Strada  
Nuova, a mid-16<sup>th</sup>  
century private street  
of palaces. The original  
paving was to be brick,  
with flagstones at the sides.





The exemplary Strada Nuova of Genoa was a state initiative built to serve a private clientele. It was the Doge who created this street by decree in 1550 for the merchant aristocracy and high members of the republic's administration supervised its execution. Situated on the hillside between the castle and the town, the street was intended as a civic monument. The straight street with a width of 25 feet, and the palaces, together made up an ideal urban fragment in the new renaissance style. The purchasers of the building sites were obligated to put up palaces or predetermined size holdings to a straight line. The main entrances had to face each other across the street space. The street was inaccessible to vehicles, being blocked at one end by garden and at the other end by stairs.

### c. Sub-cultural/mixed streets

#### 1. Gagate walking street- Norway

The street is situated in the holistic town in central Norway; one of the downtown streets is close during summer days to create a gagate, or walking street. It is open for auto traffic only during the evenings and the limited vehicle use has enabled the street to keep much of its local character. Locals gather in the street chatting as tourists stroll, looking at the displays. Accordingly, this becomes a place of communication.



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Fig.45  
The walking street in Norway

As one strolls along the street, the historic wooden Roros church is visible in the distance and that is reflection of the changing scene. When not closed to traffic, the street looks like most streets in town, with narrow side walks, parking and moving vehicles. Time separation is an interesting feature here. Therefore the street is high in flexibility, different from traditional streets, emphasising urban life and fostering an attachment to the street.

The literature review of the diversity of urban streets shows, due to haphazard development and growth in urban streets consist a mixture of different types of buildings and architectural patterns which is a common characteristic of urban street. This is clearly shown in most of the eastern countries than western countries. This type reflects inequality and a lack of uniformity in the street architecture.

In some urban streets there are groups of buildings still maintaining its individuality in the relevant period of style. Therefore the built environment has to be designed as the natural shells to protect and help their way of living just as forms of nature had to adjust their design conditions of their particular environment to sustain. Where the liveliness of streets should be handled with greater care and understanding.



Fig.46  
Architectural character



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## CHAPTER 03: “Urbanization and the city of Colombo”

### 3.1 Colombo

Colombo, the capital of Sri-Lanka is also the main financial and commercial centre for the country. Its location specifically being a coastal city, the harbour has helped it to achieve a significant position in the international trade as well.

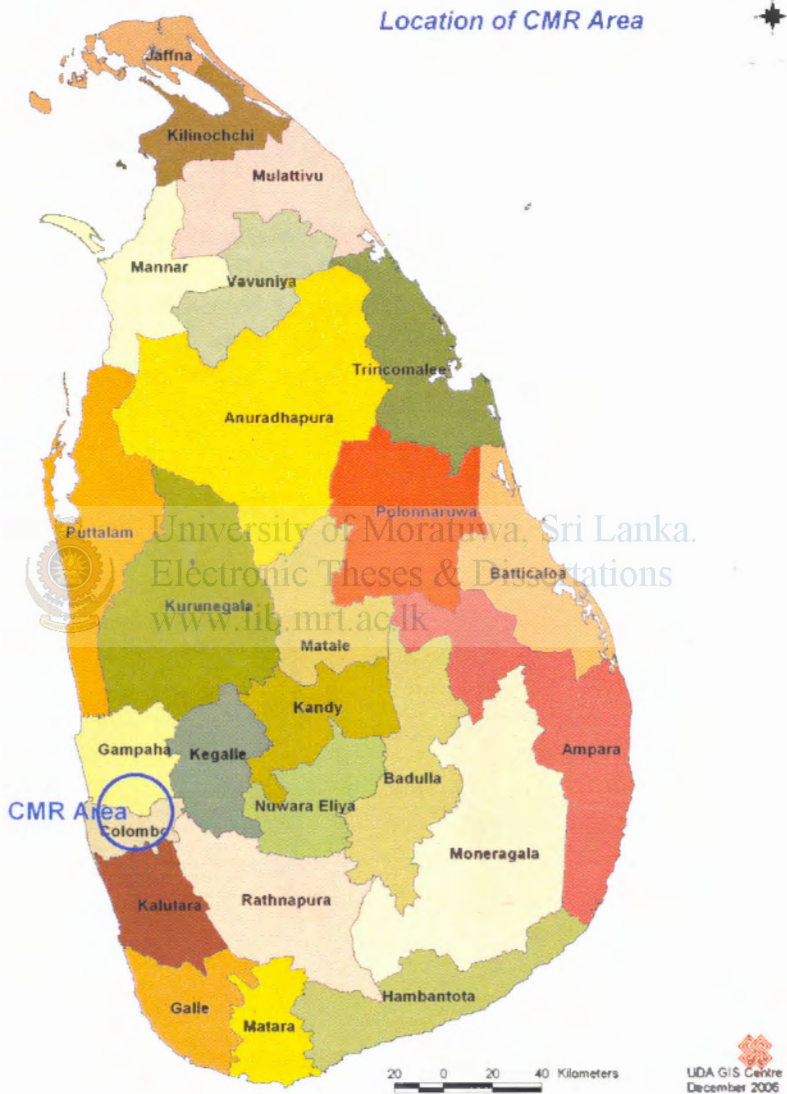


Fig.47  
Location of Colombo Metropolitan Region

### 3.1.1 General characteristics

The city has a growing concern over the changing face of its development. But the development priorities in the past failed to recognize the importance of these issues. At the same time, the overall city planning technology has become environmental conscious.

‘Sustainable technologies’ are new techniques that city planners are practising instead of conventional planning techniques. Therefore, I feel understanding the basic characteristics firstly and its issues secondly could be a more effective aspect for a better future development.

### Population

The population of the CMR in 1996 was 4.6 million and the projected population is 6.5 million, by the year 2010. In 1996, the CMR had a gross population of 13 persons per hectare and its increase is expected to approximately to 18 persons per Ha. by 2010. During the same period, the share of the urban population to the CMR is expected to increase from 51% to 74%.

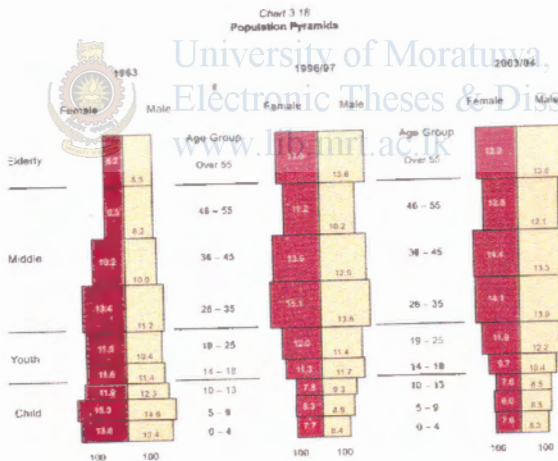


Fig.48  
Table 1996 CMRSP

### Land use

The built up area in the CMR has increased from 3.3% in 1981 to 5.5% in 1996. The district wise distribution shows that in 1996 about 17.6% accounted for the built up area in Colombo, 3.3% in Gampaha and 2.2% in Kalutara.



Fig.49  
Increasing demand for land use

The major issues of land use in the CMR are the incompatible users of the lands in the CMR, ad hoc conversion and fragmentation of high lands, agricultural lands for urban activities, increasing demands for reclamation of marshy lands and filling of abandoned paddy fields for building construction.

### Climate

In Colombo the coolest temperature during November to February is 26.1 C and the warmest during April to May is 32.2 C. The relative humidity varies about 70% during the day and about 90-95% at night, rising as temperature drops. The average rainfall varies from below 1000mm in the arid parts of the northwest and southwest of the island to 4000mm at certain places on the south-western slope of hills.

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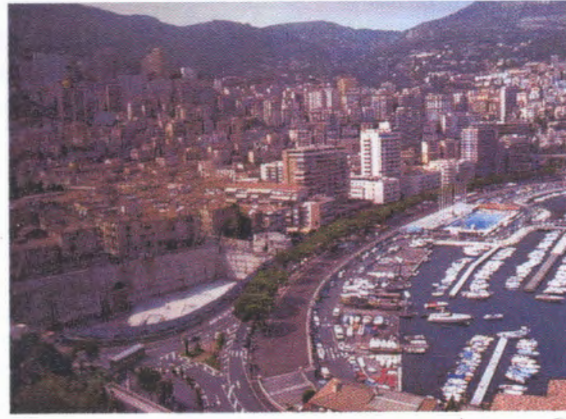
Fig.50  
Urban heat island phenomena



### Transport Network

Incompatible land use and ribbon development along the trunk roads in the region has led to traffic congestion and delays in passenger travel. As a result the cost component of transport in the production of goods and services is rapidly escalating within the region. The 'combined land use-transport strategy' adopted in the CMRSP aims to provide more space for efficient modes of transport and action programmes to derive optimum benefits from urban development in the region.

Fig.51  
Rapid urbanization



The characteristics of Colombo emphasises that, communities across the city are increasingly recognizing that the spread out patterns of growth, which have shaped them for the past several decades, cannot be sustained. Problems of increased traffic congestion, overburden public facilities, increased housing and infrastructure costs, loss of open space and loss of other valued community resources are typically associated with such patterns instead, an increased emphasis on developing passed over parcels within developed areas and on maximizing use of existing public facilities are needed. Therefore the needed or existing urban development should be handled by greater care in terms of understanding the issues of the urbanization process.

### 3.1.2 Urbanization and its impact



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Urbanisation has become a world-wide phenomenon with an increasing proportion of the world population living in urban areas. Cities in Latin America, Africa and Asia have the highest growth rates and the rapid urbanisation is associated with several problems. The rising flood of urbanization creates cities congested and uncomfortable. The transitional spaces where greater amount of human contact and interaction take place have been vanishing with no time.



Fig.52  
Increasing population



Especially in Colombo, the gross inadequacy of architectural and urban design efforts makes its cityscape haphazard. Though open spaces are expected to provide physical and psychological comfort, some areas have become 'dead' spaces after a certain time of the day. Therefore people are used to gather in different spaces in a subtle way during their daily routine.



Fig.53  
Streets becomes lonely at certain times of the day

The negative effect of the built environment and particularly urban streets on human comfort and interaction has led to a number of studies related to bio-climatic issues and social investigations.

### 3.2 Problems related to land use pattern of Colombo

The broad concept of the urban study was framed for the purpose of the revision of the city of Colombo Development Plan which was prepared in 1978 by the urban development authority for the purpose of the revision of the plan it requires to consider many aspects in relation to its development trends over one and half decades, constraints and potentials for future development, public participation in the main stream of planning. Therefore this study has been attempted to reflect the major changes that occurred in important areas like use of land and its intensity of development, functional efficiency of urban infrastructure system, floor space development programme etc.

As Colombo evolved over several centuries, both the physical form and land use pattern has changed dramatically. Past planning efforts to chart a course for the development of the city have been sound conceptually along with the development expected at that time. Since all the economic and physical development patterns of the country, especially in the city of Colombo, and in whole Colombo metropolitan region has changed, it is now time for the implementation of a revised sort of land use plan taking into consideration the changing pace of the expected development areas.

Demands for land in the central parts of the city are already quite evident and they are likely to increase all the time with the course set by government. Hence every part of the land must perform a function directly related to vital commercial, managerial, entertainment or governmental activity. These uses constitute the basic uses of land in the city of Colombo. Therefore it is necessary to study the land use pattern of the city of Colombo in detail before embarking on any proposals for major changes.

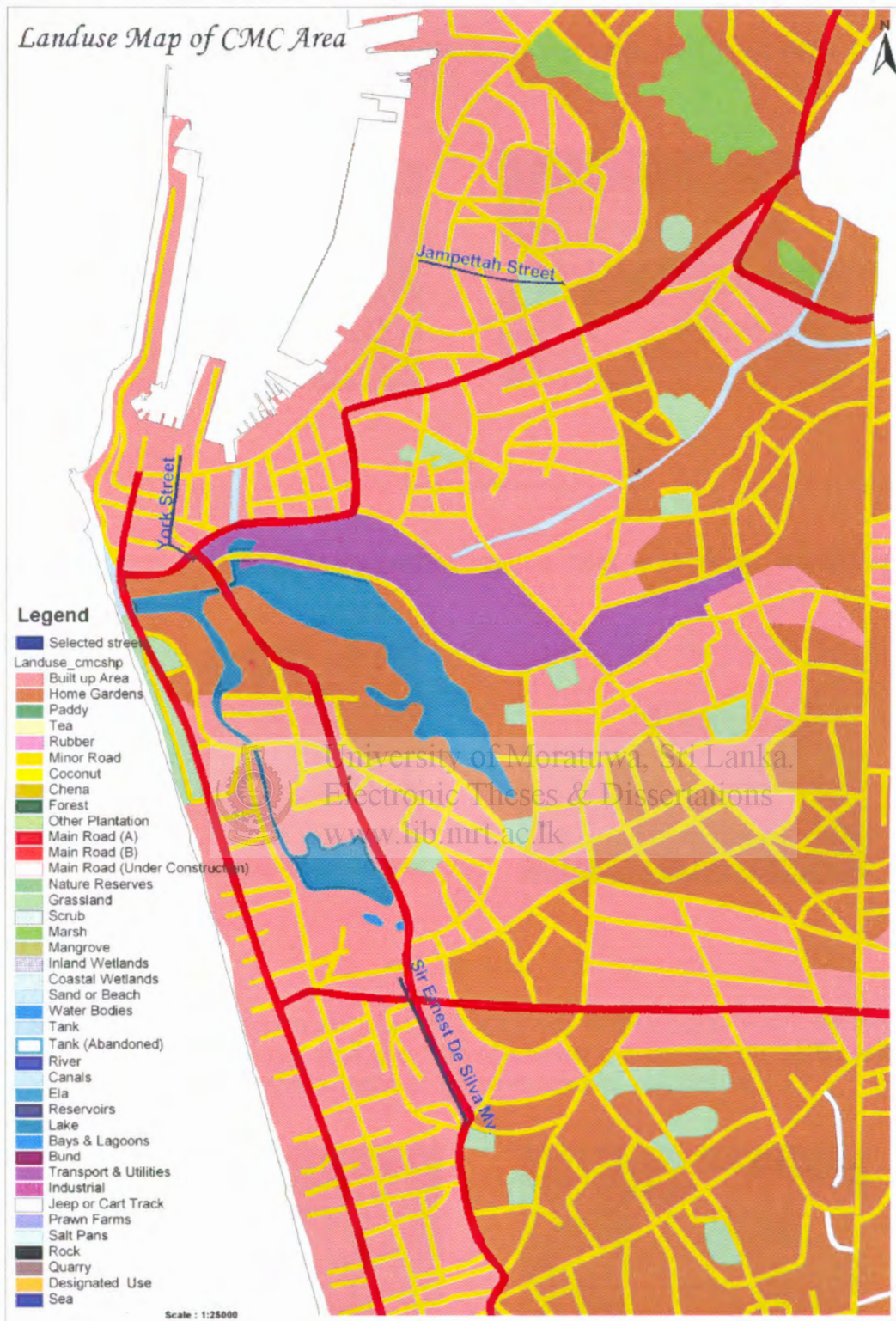


Fig.54  
Land use map of Colombo Metropolitan Region



Identified problems:

1. Development projects taken place in the recent past are located in an adhoc and piecemeal manner in many parts of the city.



Fig.55  
Adhoc development on road

2. 75% of ageing buildings in the existing building stock is physically obsolete at present.



Fig.56  
York street bldgs

3. Since individual development projects taken place in these areas which are not compatible with the existing land uses, heavy demand can be seen for traffic and transportation, parking, traffic congestion and environmental pollution etc.



Fig.57  
Incompatible land

Fig.58  
The high traffic congestion on street



4. Off street, on site parking as well as pavement hawkers blocked the free pedestrian movements as well as free flow on traffic in many parts of the city.

Fig.59  
Street hawkers

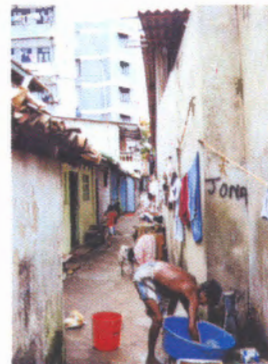


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5. Since the planning agencies have not properly implemented a physical development programme the functions of the city has not been fully operated. This has happened as a result of non availability of buildable lands in the city proper areas.

Fig.60  
Non availability of land



6. Inadequacy of public areas, circular areas and other recreational areas restricted the city life to the areas where people are residing.

Fig.61  
No city life

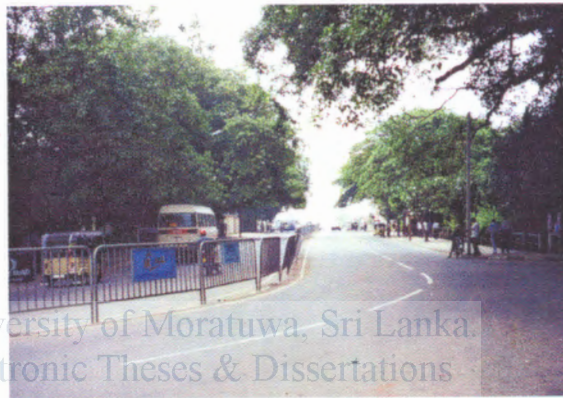


7. Expansion of linear development along major roads and more attractive roads blocked the maximum utilization of road capacity.

Fig.62  
Road network



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The above facts emphasises that, the broader objective of the study of the land use pattern of Colombo in the past , present and the inventory of floor space is important element, projecting a new image of future requirements. It is therefore undeniable that economic growth should matched with proper physical planning. The user of space and their activities has become an important phenomenon to identify the desired physical environment to facilitate the present issues.

### 3.2.1 User categorization

There are various types of user categorization methods worldwide. The user population of the world/state/country/city/area or street could be categorized according to their religion, culture, age, sex, economy, and occupation....etc.

The consumer finances and socio-economic survey 2003/04 is the eighth in the series of household surveys that was initiated by the central bank of Sri-Lanka over 50 years ago, with a view to collect information on key economic and social variables at the household level.

The primary objective of the CFC 2003/2004 was to collect up to date information on household income, expenditure, consumption, savings and investments, as well as household data on demographic features, education, health, the labour force, housing conditions, household amenities and land ownership, to update the current household level information base serving policy makers, planners, administrators and researchers, in both the private and public sectors, as well as students and general public, in assessing the living conditions of households in the country. Therefore the economic categorization of the users could be a reasonable method for the purpose of the study.

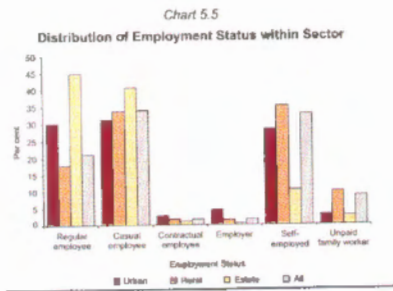


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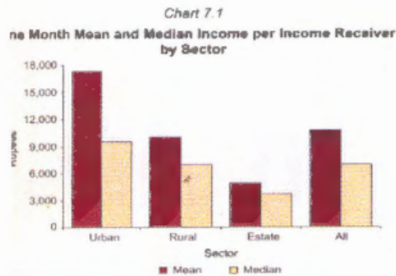


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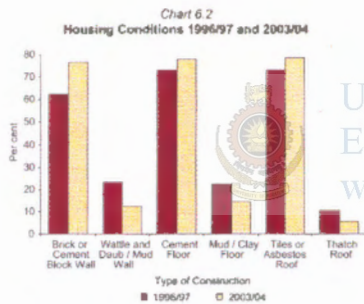


Fig.65

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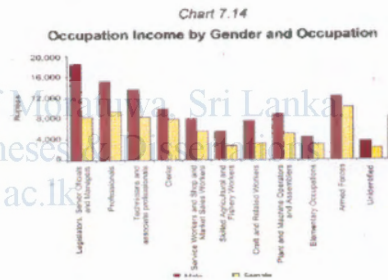


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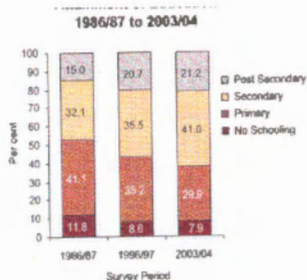


Fig.67

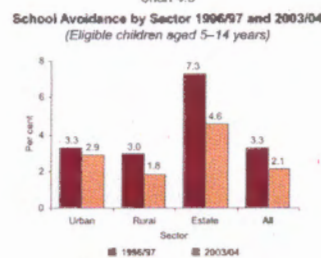


Fig.68

Chart 8.1  
Distribution of Expenditure by Sector 1996/97 and 2003/04

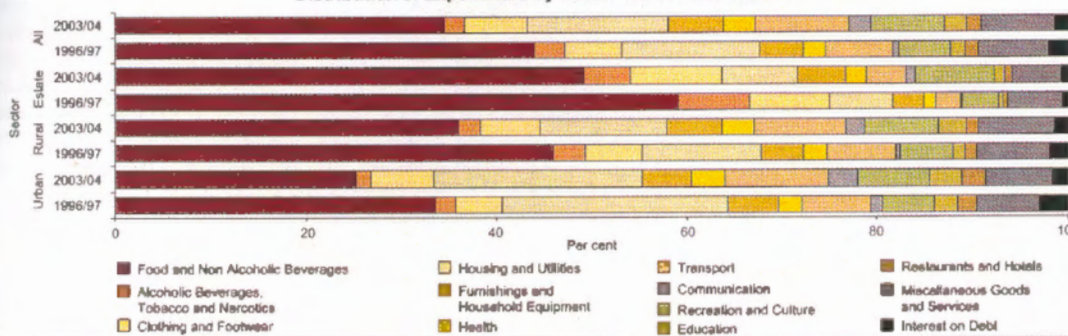


Fig.69

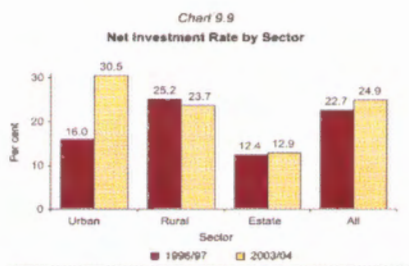


Fig.70

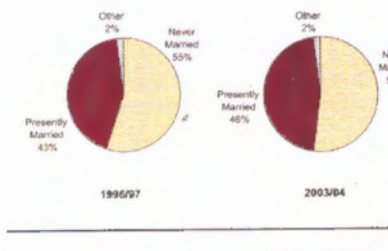


Chart 3.30  
Marital Status by Sector  
1996/97 and 2003/04

Fig.71

The changes in living standards ultimately reflect the effectiveness of socio-economic policies that have been implemented by successive governments and can be used to monitor their effectiveness. The above are some of the selected categorization methods.

### 3.2.2 Activity categorization

Activities of the user could be categorized according to their activities happening in different type of buildings or the usage of buildings/spaces for different purposes. Therefore the identifiable methods could be such as: the usage of buildings, demand on the physical environment .....etc

Therefore the usage of buildings/spaces could be a reasonable method in an urban situation. It could be categorized into sub headings such as: public activities, semi-public activities and private activities. Where, public activities are activities of users happening in buildings or spaces which are more accessible to all and free to interact with each other.

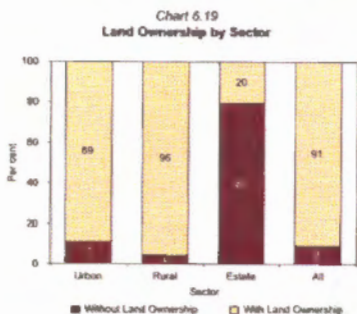
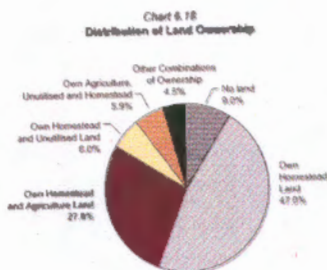


Fig.72



## CHAPTER 04: "A questionnaire survey of user and activity variation of selected streets in Colombo Metropolitan Region".

### *Introduction*

A city or a town is basically experienced through streets. It emphasises that, streets could be viewed as a key element in a city composition. Maintaining harmony of a street is therefore important to overcome it being ugly and misfit for the inhabitants. This study accordingly intends to explore the need for maintaining harmony in a particular streetscape.

The observations on streets, shows us that much of the problem derives from the loss of considerations of identifying the changing behaviour of streets in the same region or town. Yet all over the world, our planning endeavours seem to concentrate almost exclusively on the latter consideration. We seem to be loosing the ability to stand back and look at what we are producing as a whole. Therefore the study leads to capture the essence of various streets in creating responsive environments.

### **4.1 Approach to the research**

The present situation of the environment has become every body's concern today. The lack of understanding of the balance between the behaviour of natural and man made environment is often disrupted resulting in architectural disharmony thus affecting the quality in life of its inhabitants. As a result the street life in an urban context is getting deteriorated. The main objective of the study is to identify the significant character of streets in a particular area with relation to its behavioural diversity.

Hence it is important to derive the methods and strategies which are applicable to Sri-Lankan situations. Investigating and analyzing the live situation is needed to make most suitable guidelines to the Sri-Lankan situation. Therefore few examples in the city of Colombo are examined in order to find out the ways by which could be used to create a responsive environment on street, a physically and qualitatively unified whole.

### **4.2 Methodology**

#### **4.2.1 Theoretical approach**

The theoretical background for this study was obtained mainly from the literature review. In the survey of world streets, a great variety of strategies have been discovered in several aspects. One could be concerned with the physical design, either alone or primarily which makes the street a great place. But some examples reveals that, for the well being of a street, physical and social aspects both should be considered together during the design process.

According to my view in designing a street as a place to live, the physical and social environment should be considered in relation to the diversity of its user's and their activities. Therefore the intention of this study was to investigate further in this area



and then to establish the fact that there is a gap between the behavioural diversity of users and the created built environment of streets.

To identify its magnitude through a user response was obtained in relation to different aspects of a street. There are different types of user response surveys such as:

1. Being a participatory observer.
2. Being a detached observer.
3. Conducting structured and unstructured interviews and
4. Using a questionnaire.

Although the participant observation method is the most effective method of gaining information, had to deviate from this method as it requires a considerable time. Thus to make this study complete as possible in a limited period of time a combination of questionnaires and interviews were adopted.

#### 4.2.2 Data collection

The field work was carried out after repairing the structured questionnaires. There were two types of questionnaires, which followed a comparative study among the user categories and their activities to analyse, the success of street character. It was tested at the main points of the street progression, such as the entrance, centre and exit. The variation of these aspects was also considered at different time periods of the day. (Morning – 8a.m to 10a.m, noon-12a.m to 2p.m, evening 6p.m – 8p.m)

The participants were provided with the structured questionnaires. They were asked to take their own time to answer. While answering the questions they were interviewed in order to clarify certain response marked in the provided questionnaire. Finally the analysis of collected data was done based on the information gathered from the field work. This information was transformed into forms of line charts. The details of the analysis and the findings based on these charts are described in chapter 4.3.

#### Format of the structured questionnaire

##### THE QUESTIONNAIRE

Sir/Madam,

I 'm an M.Sc final year student at the Faculty of Architecture, University of Moratuwa. I'm supposed to prepare a dissertation for my final year examination and hoping to do its study on particular urban streets in the Colombo Metropolitan Region.

By the way I need some information from these particular streets, where it will be very useful for my ongoing study. Therefore it would be a great help, if you could answer me the following questions to fill this questionnaire for the above purpose.

Your answers to the following questions are to let us know if you are interested in the ideas as well, what you feel should be done and how much you would be willing to do to improve this street.

Therefore I would promise that, this information will be used only for the purpose of the study and will not be published in any other manner for any other reason.

Thank you!

M.N Chandrasekera  
( Post graduate, Faculty of Architecture,  
University of Moratuwa)

1. How long have you lived on this street?-----

2. Do you like living on this street? -----

3. Where do you mostly gather on street? -----

4. Do you work? ----- If so what do you do? -----

5. How many people live with you? -----

What are their occupations? -----

6. Do you find the street attractive looking? -----

Unattractive? -----

Neither? -----

7. Do you ever use the street as a place to chat, sit in the sun, and play games?  
Please describe briefly the ways in which you use your street? -----

-----

8. What type of activities do you perform on street? Where?

Public -----

Semi-public -----

Private -----



Street entry -----

Street centre -----

Street exit -----

9. If additions of the street is made on the street, which of the following would you like to see?

a. additional lighting-----

b. banners-----

c. benches or seats-----

d. community bulletin board -----

e. more attractive paving-----

f. painted wall murals-----

g. fresh paint on fences, building fronts,etc-----

h. trees and plants-----

i. change of buildings-----



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10. If a vacant lot on the street or nearby is available, would you like to see it cleaned up, decorated and turned in to:

a. a small park-----

b. a play ground-----

c. a garden-----

11. If street changes are made, should they be designed especially to serve any of these user groups:

Low incomers-----

Middle incomers-----

High incomers-----

12. Where on the street would you like to see changes?

Street entry-----

Street centre-----

Street exit-----

13. Do you think the kinds of changes suggested in this questionnaire would be popular or unpopular on the street?

-----

#### 4.2.3 Data analysing

Analysis of the data was carried out simultaneously with the data gathering process. In the process of analysis, priority was given to identify and then classify the materials collected from the users. One aspect was to identify the particular user category and function of each street. Another aspect was to sort out the responses made by them could be transformed into the need of change of the built fabric or the street. Though this attempt has been made to make a number of observations, simply to see whether the provided built environment of the streets were satisfactory or unsatisfactory and find the reasons for it. Therefore the study will be categorised under several aspects. Such as: 1. The character of street (Historical background, architectural response and the colour of activity)

2. Observations.

3. Concluding remarks.

Since the analysis emphasis a particular user group and function for each street, the existing architectural response of street façade details also will be tested as positive and negative aspects in response to the study. The study could be further developed with design strategies to enhance the responsive architectural character to suit the variety of identified streets.

#### 4.2.4 Site selection

The sites were selected from highly populated areas of Colombo, where the transitional behaviour could be observed easily.

<p>Commercial urban street fronts-York street, Fort</p>	<p>Fort was identified as a commercial setting of the context. It constitutes a pattern of linear organization with high commercial usage and the rich architectural style with grand character. Varieties of users are engaged in public, semi-public and private activities with a higher variation.</p>
<p>Residential urban street fronts-Sir Ernest De-Silva Mawatha-Flower road, Kollupitiya</p>	<p>Colpetty was identified as a mixed residential setting of the context. The boulevard creates a pleasing residential environment. The dominance of building change breaks the visual and spatial unitary image of human behaviour in movement from a dynamic entity to a relaxing setting.</p>
<p>Sub-cultural urban street fronts-Jampettah street, Kotahena</p>	<p>Kotahena was identified as an urban sub-cultural setting of the context. The spirit of place towards Kotahena consists of cultural interaction through visual identities in the radial paths. Buildings are located exceeding the critical distance that creates cohesiveness between buildings.</p>

The study analysis is categorized according to the behavioural diversity of the users of different streets. This aspect will be analyzed in relation to the variety of user's income level and the mode of function.









Fig.74  
Street selection in the Colombo Metropolitan Region

### 4.3 Case study

#### 4.3.1 Commercial urban street fronts – Fort – York Street

Colombo Fort gains a very special place in the context of Colombo city, owing to its rich architectural heritage. The colonial architectural character organized into a grid iron pattern enriches the immediate context, as the area is designed to a common basic theme. York Street could be nominated as a specimen that expresses the identifiable commercial and administrative character of Colombo Fort.

Characteristics	Description
<p><b>1.Type of Buildings</b></p>	<p>The York street starts at Echelon Square and ends up at Church street. The cross section of the street encourages the image of commercial and administrative character, where the street itself depicts to a greater extent of an architectural harmony fulfilling the aesthetical and functional efficiency to a considerable degree.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Fig.75 Public bldgs</p> </div> <div style="text-align: center;">  <p>Fig.76 Semi-public bldgs</p> </div> <div style="text-align: center;">  <p>Fig.77 Private bldgs</p> </div> </div>
<p><b>2.Variety of users</b></p>	<p>People gather for various purposes at York street. Most of them gather for commercial activities. These users are identified according to their level of income.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Fig. 78 Low incomers</p> </div> <div style="text-align: center;">  <p>Fig. 79 Middle incomers</p> </div> <div style="text-align: center;">  <p>Fig.80 High incomers</p> </div> </div>

**3.Variety of function**

The variety of function varies according to the usage of buildings/spaces.



Fig. 81  
Public



Fig. 82  
Semi-public



Fig.83  
Private

**4.Street edge**

Cannot identify any variation of the building line and street line. The building edge is clearly defined. The street is broader in size. It is the same along the street length.



Fig.84  
Street length



Fig.85  
Street width

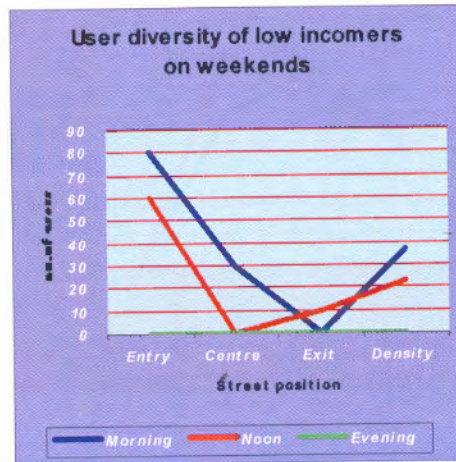
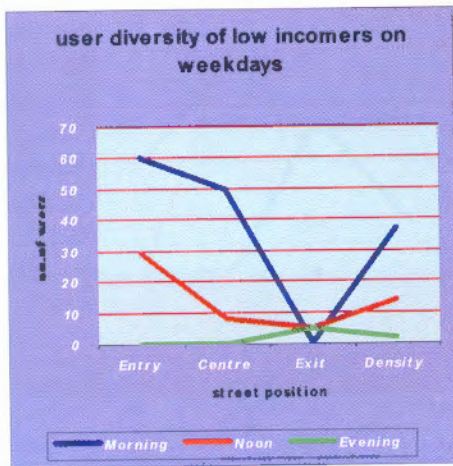


Fig.86  
Street edge

# User diversity of York Street during the week

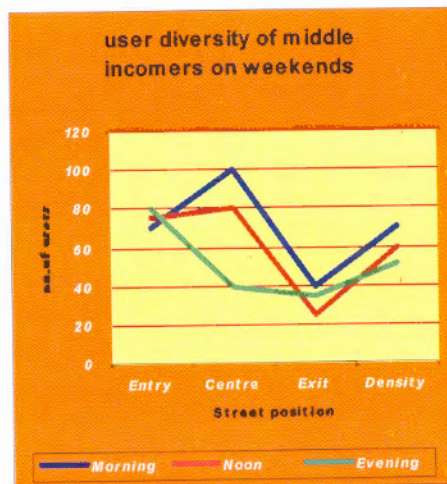
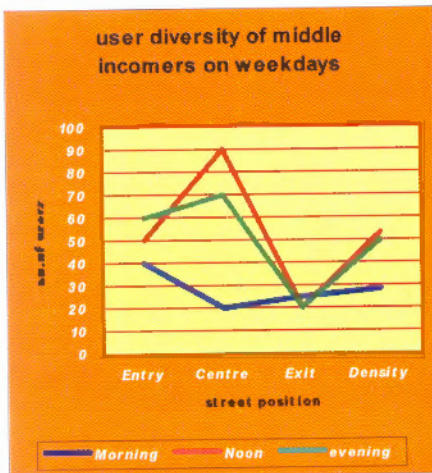
## Income group

### 1. Low incomers



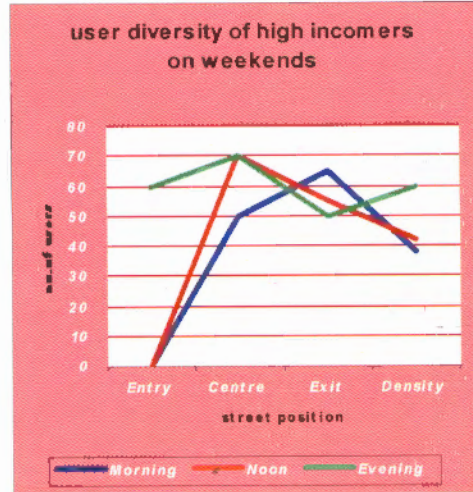
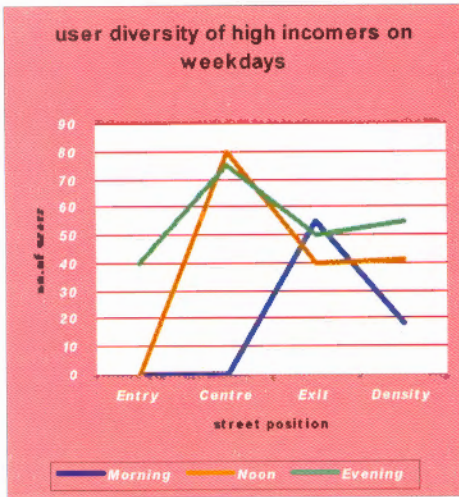
The charts explain that the highest gathering densities of low incomers are firstly at the **entry** of the street. Secondly at the centre and thirdly at the exit of the street. The sequence is same during different time periods of the day. But the value of density decreases. It is clear that the low incomers gather more in the **morning**. This observation is same for weekdays and well as weekends, but still the percentage of users reduces at weekends.

### 2. Middle incomers



The chart shows the highest no. of middle incomers at the **centre** of the street. Secondly at the entrance and thirdly at the exit. Though the sequence is the same during the week, the no. of the users change with the day variation. Weekdays the highest density is shown at **noon** and weekends it is in the **morning**.

### 3. High incomers



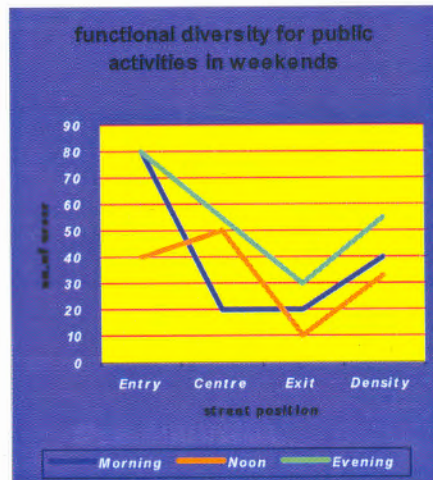
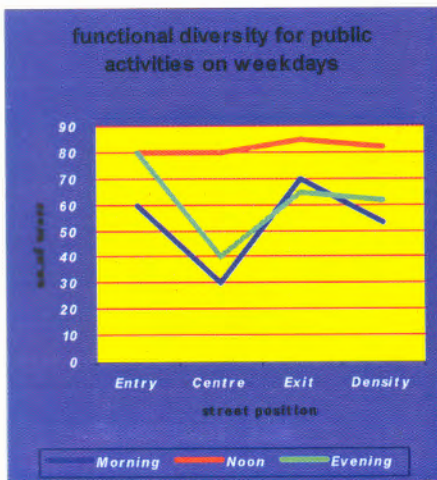
The chart expresses that most of the high incomers gather at the **centre** of the street. Secondly at the exit and thirdly at the entrance. This is same during the day. But the day variation is different at the peak points. Weekdays it is at **noon** and weekends it is at **noon** and **evening**.

### Functional diversity of York Street during the week



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#### 1. Public activities

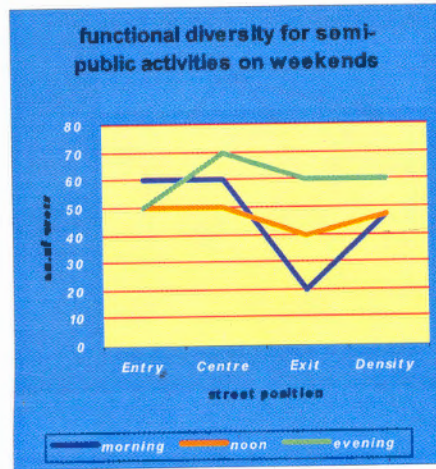
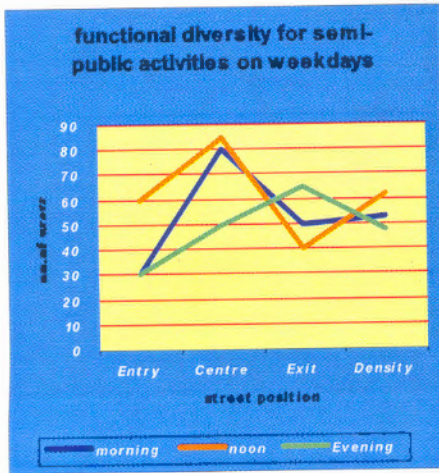


The chart explains that at **weekdays** the highest percentages of public activities are almost the same at the **street progression**. It is identified at **noon**. But it changes



during the weekend. The highest percentage of public activities is happening at the entry in the morning and evening.

## 2. Semi-public activities

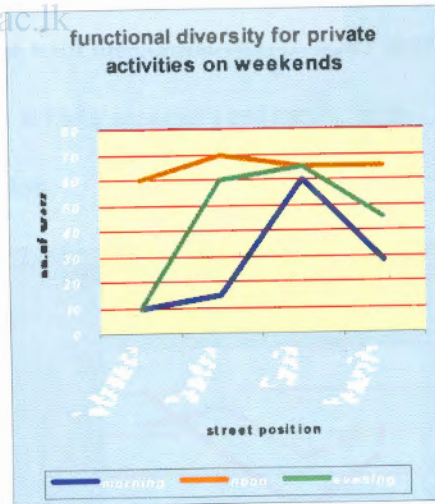
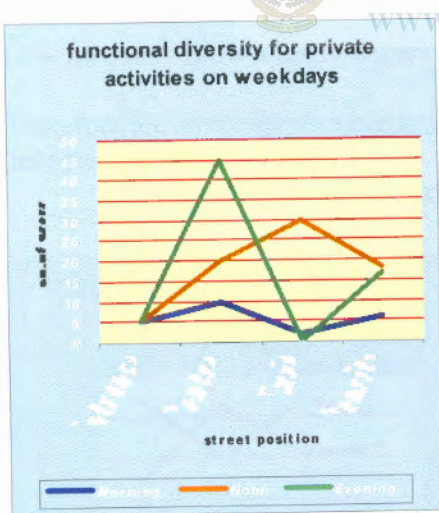


The chart shows the highest no. of semi-public activities are happening at the centre of the street. On weekdays it happens at **noon** and weekends during the **evening**.

## 3. Private activities



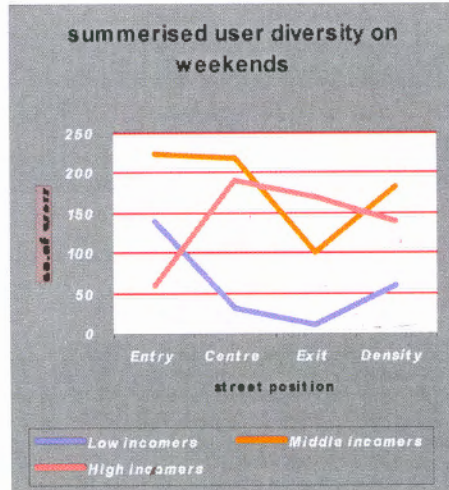
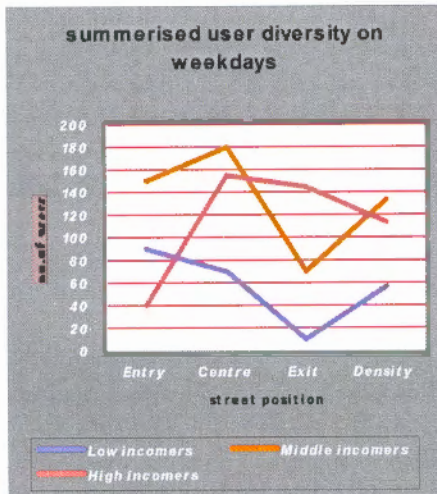
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The chart explains that the highest no. of private activities is happening at the centre of the street. But the day variations for weekdays are **evening** and weekends are **noon**.

## Summary of user and activity variation during the week

### User variation



-The charts express the highest no. of users at the street progression. **Entry and the centre-middle incomers and the exit-high incomers.**

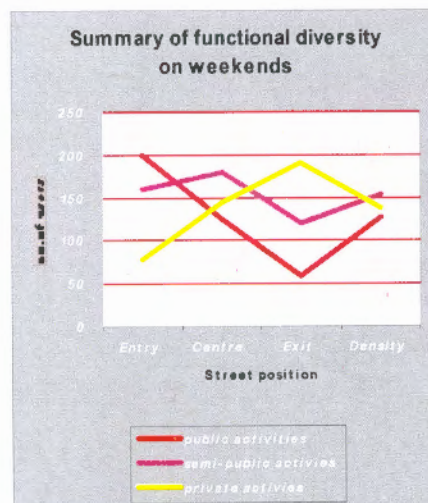
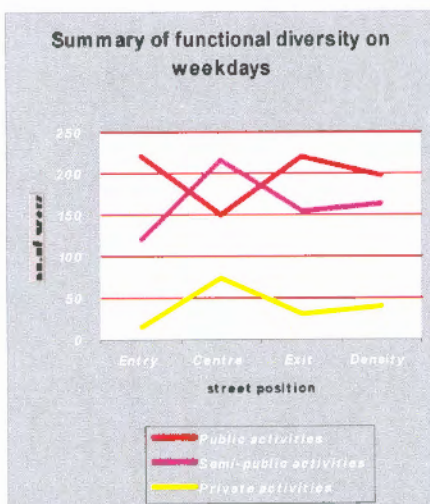
-The observations show that middle incomers are more dynamic than other users at the entry and centre of the street. It is clearly shown during morning and noon hours during the week.

-The high incomers are more dynamic in the exit of the street. This is prominent during the noon and evening of the day.

-Low incomers show a lesser degree of percentage with the comparison of other users.

-Therefore the street shows a highest diversity for middle incomers primarily, high incomers secondly.

### Activity variation




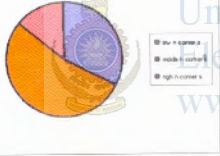

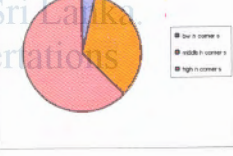

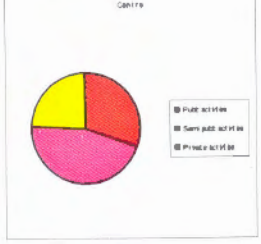


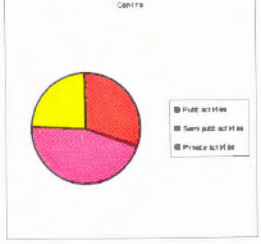

- During the street progression the highest no. of functions cater for **public activities** at the **entry**, **Semi-public** activities for the **centre**. It is same during the week. But at the **exit** it is **public activities** for the weekdays and **private activities** for the weekends.
- The observations clarifies that, there is a higher possibility for public activities at the entry of the street.
- The street centre shows the highest demand for semi-public activities.
- The street end shows a higher variation from public to private activities during the change of weekday to weekend.
- The comparison of user and functional variations shows a parallel pattern in behaviour. Such as,
- The entry of the street-more dynamic for middle incomers and public activities.
- The centre of the street-more dynamic for middle incomers and semi-public activities.
- The exit of the street-more dynamic for high incomers and public and private activities.












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## CONCLUDING REMARKS

Characteristics	Street Position		
<p><i>1. Street progression</i></p>	 <p style="text-align: center;">Spatial Progression of York Street</p>		
<p><i>2. Behavioural character</i></p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Entry</p>  <p>The prominent user at the entry is <b>middle incomers.</b></p> </div> <div style="text-align: center;"> <p>Centre</p>  <p>The prominent user at the centre is <b>middle incomers.</b></p> </div> <div style="text-align: center;"> <p>Exit</p>  <p>The prominent user at the exit is <b>high incomers.</b></p> </div> </div>		
<p><b>A. User Variation</b> (During the week)</p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Entry</p>  <p>The prominent function at the entry is <b>public activities.</b></p> </div> <div style="text-align: center;"> <p>Centre</p>  <p>The prominent function at the centre is <b>semi-public activities.</b></p> </div> <div style="text-align: center;"> <p>Exit</p>  <p>The prominent function at the exit is <b>Semi-public activities.</b></p> </div> </div>		
<p><b>B. Functional Variation</b> (During the week)</p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Entry</p>  <p>The prominent function at the entry is <b>public activities.</b></p> </div> <div style="text-align: center;"> <p>Centre</p>  <p>The prominent function at the centre is <b>semi-public activities.</b></p> </div> <div style="text-align: center;"> <p>Exit</p>  <p>The prominent function at the exit is <b>Semi-public activities.</b></p> </div> </div>		

<p><b>C.Type of user</b></p>	 <p>Fig.87 Middle incomers</p>	 <p>Fig.88 Middle incomers</p>	 <p>Fig.89 High incomers</p>
<p><b>D.Type of function</b></p>	 <p>Fig.90 Public activities</p>	 <p>Fig.91 Semi-public activities</p>	 <p>Fig.92 Semi-public Activities</p>
<p><b>E.Trend of spirit</b></p>	<p>The physical character of the street should facilitate more towards middle incomers and public buildings/spaces.</p>	<p>The physical character of the street should facilitate more towards middle incomers and semi-public buildings/spaces.</p>	<p>The physical character of the street should facilitate more towards high incomers and semi-public buildings/spaces.</p>
<p><b>3.Physical character</b></p>	 <p>Fig.93</p>	 <p>Fig.94</p>	 <p>Fig.95</p>
<p><b>A.Type of buildings</b></p>			

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<p><b>B.Strategic elements of buildings</b></p> <p>a.Entrance of buildings along the street</p>	<p>Most of the buildings are semi-public buildings. The interior of colonial buildings are converted into office complexes.</p>  <p>Fig.96</p>	<p>The centre of the street covering the junction is more dynamic with the users and their activities. Most of them are a mixture of public and semi-public activities.</p>  <p>Fig.97</p>	<p>Towards the end of the street buildings such as the grand orient hotel, Grindleys bank, NSB creates a mixture of semi-public and private buildings.</p>  <p>Fig.98</p>
<p>b.Arcades</p>	<p>Most of the buildings entrance falls through a transitional space. Ex: Colonial arcades. There cannot find any variation of the building line.</p>  <p>Fig.99</p> <p>Arcade acts as a transitional space for the users. It doesn't function as a leisure environment for the user during their day to day activities.</p>	<p>Most of the building s entrances are through an arcade. Some of the public activities are happening on the street payments and some are along the inner space of arcades. Therefore a change in building fabric is necessary to support the user needs.</p>  <p>Fig.100</p> <p>Ensures the uniformness in the streetscape. Needs a variety in the interior to facilitate the tired users.</p>	<p>A special variation of the entrances cannot be identified. The flanking buildings are encroached onto the building line maintaining the building line as the same.</p>  <p>Fig.101</p> <p>Some of the arcades acts as dead spaces during the day. The transitional environment should suit the present culture.</p>

c. Balconies



Fig.102

Most of the buildings doesn't show a continuation of balconies, which are acting as liveable spaces for users.



Fig.103

Some of the colonial building represents balconies as individual elements. There only been used for the purpose of penetration.



Fig.104

Some of the balconies of the old buildings are sheltered by canopies. These are used as a part of the interior space of the buildings.

C. Physical form

a. Street width



Fig.105

The street is broader in width. The Interaction between either sides buildings are less.



Fig.106

The junction of the street creates interaction among the users to some extend. But the street width doesn't change.



Fig.107

The street is broad in width. The street is mostly used for vehicles.

b. Street length



Fig.108

Length of street is clear in direction. Gathering points are not created.










Fig.109

Flow of the length is the same. The relationship of buildings and street is less.



Fig.110

Length of the street doesn't change. If variation of direction could occur along the length of street, liveliness could be enhanced in an effective manner.

<p>c.Height of street edge</p>	 <p>Fig.111</p> <p>Height of the street edge is the same.</p>	 <p>Fig.112</p> <p>Height of the street edge is the same. The liveliness of street doesn't increase with increasing floors.</p>	 <p>Fig.113</p> <p>Height of the street is the same.</p>
<p>d.Features</p>	<p>Nothing identical.</p>	<p>Nothing identical.</p>	 <p>Fig.114</p> <p>Evokes the memory of the street.</p>
<p>e.Path shape and topography</p>	 <p>Fig.115</p> <p>No special paving systems and greenery identified other than pavements.</p>	 <p>Fig.116</p> <p>No special paving systems and greenery identified other than the roundabout.</p>	 <p>Fig.117</p> <p>No special paving systems and greenery identified which enhance the liveable quality of streets.</p>








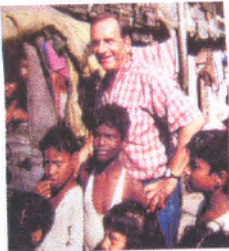


With a hard edged design and little greenery, the York street is nevertheless lively. There have been a very few changes since it was conceived in the colonial era. The hard materials and the solidity reflect the aesthetic of that decade. A series of recurring elements convey a sense of cohesion and modernity. But still the type of buildings needed during the street progression should be organized to suit the user requirements. The unnecessary buildings should be renovated to suit the upcoming trend at the required points of the street. Also as a consequence, pedestrian amenities, such as places for people to relax , should be provided. Seats, trees and open air cafes should be installed, with gathering spaces for the users to rest, celebrate, chat....etc. All these measures were considered necessary for the survival of the street and especially for its historic core. The prosperity of central Colombo is essential to the functioning of the metropolitan and national trade industries, to tourism and the international competitive power and prestige of the city.



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### 4.3.2 Residential urban street fronts-Kollupitiya-Sir Ernest De-Silva Mawatha (Flower road)

The extremes of transition could be identified in the area of Kollupitiya. Though the character of the spaces spreads towards commercial and institutional, the flower road gradually develops more in residential quality. This represents the activity pattern, spirit of place as the prominent patterns.

Characteristics	Description
<p><b>1.Type of buildings</b></p>	<p>Architectural style is derived from the prominence given to the linear organization and activity pattern. Most of the buildings maintain a two storey skyline, also which changes to the beginning of another character at the end of the street. Most of the buildings in the ground level merges activities with the road and adapts a transparent quality. Some buildings are designed as complete forms with no relations to the fabric. However the colonial houses stand still with large front gardens, bordering the streets, which bring a relaxing character to the street.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Fig.118 Public bldgs</p> </div> <div style="text-align: center;">  <p>Fig.119 Semi-public bldgs</p> </div> <div style="text-align: center;">  <p>Fig.120 Private bldgs</p> </div> </div>
<p><b>2.Variety of users</b></p>	<p>The variety of users cannot be identified in this area. Most of the users seem to be more reform, elite people.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Fig. 121 Low incomers</p> </div> <div style="text-align: center;">  <p>Fig.122 Middle incomers</p> </div> <div style="text-align: center;">  <p>Fig.123 High incomers</p> </div> </div>

### 3. Variety of function

Most of the activities happening on the street are institutional, recreational and for residential purposes.



Fig. 124  
Public activities



Fig. 125  
Semi-public activities



Fig.126  
Private activities

### 4. Street edge

Comparatively the street length and width shows a moderate value. The street edge is clearly defined. But the variation of street line and building line changes during the street progression.



Fig. 127  
Street length



Fig.128  
Street width

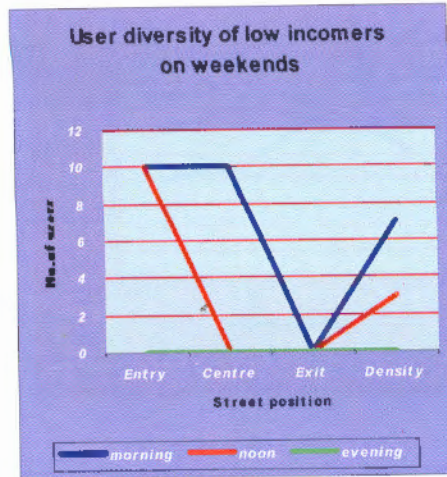
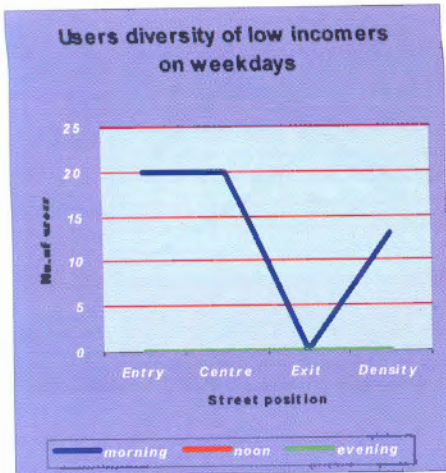


Fig.129  
Street edge

# User diversity of Sir Ernest De-Silva Mawatha during the week

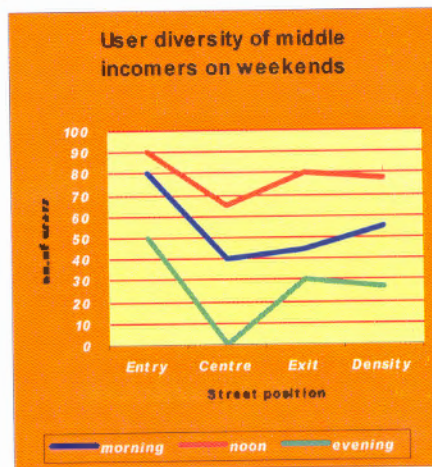
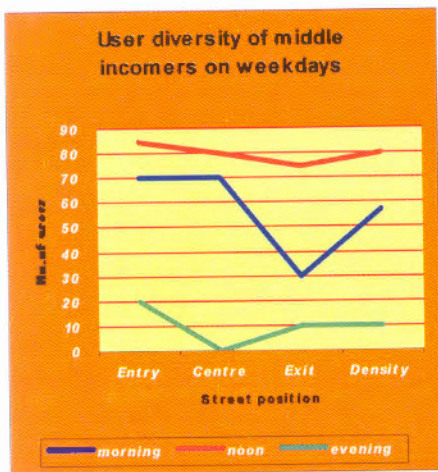
## Income level

### 1. Low incomers



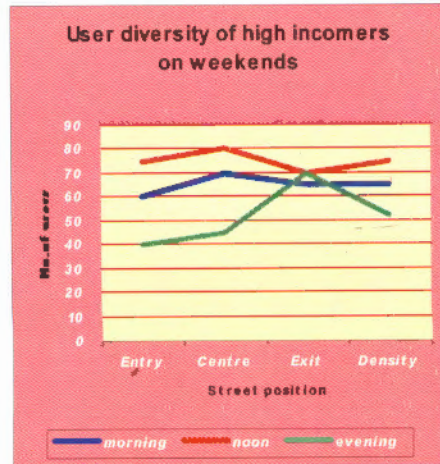
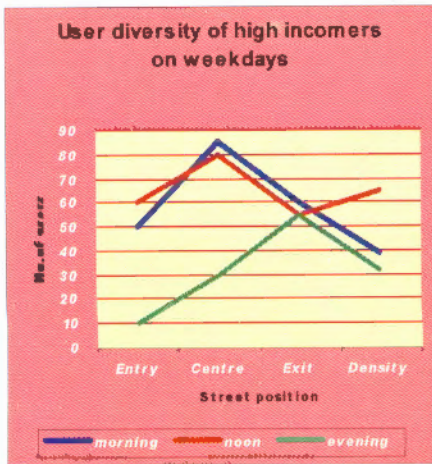
The charts show the highest percentage of low incomers is at the **entry and centre** of the street. It is prominent in the **mornings** on weekdays and in the **morning and noon** during weekend. The user percentage is very low at the street end during the entire week.

### 2. Middle incomers



The highest diversity of middle incomers is shown at the **entry** of the street. It is prominent during **noon**. It decreases at the end of the day. The second highest diversity of users is at the street exit. The least diversity is shown at the street centre.

### 3. High incomers



The chart shows that most of the high incomers like to gather at the street **centre**. It is visible in the **morning** during weekdays and in the **noon** on weekends. Secondly their gathering percentage is high at the exit mostly at evenings during weekends.

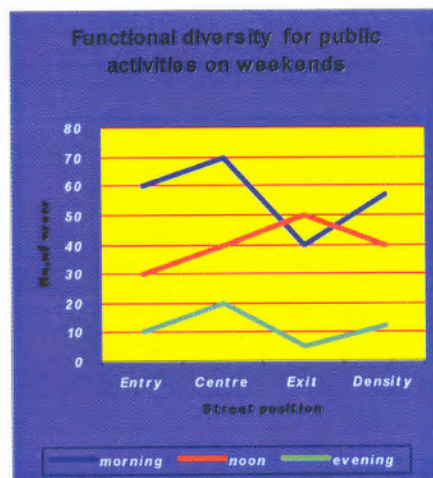
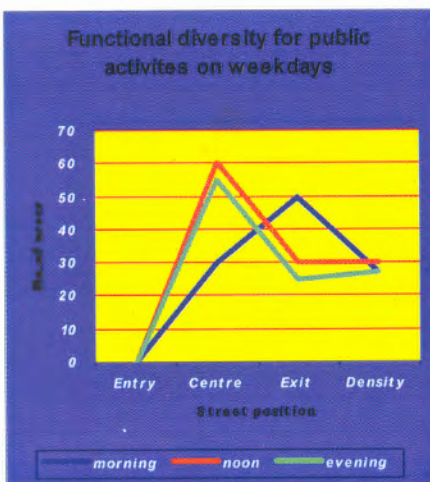


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### Functional diversity of Sir Ernest De-Silva Mawatha during the week

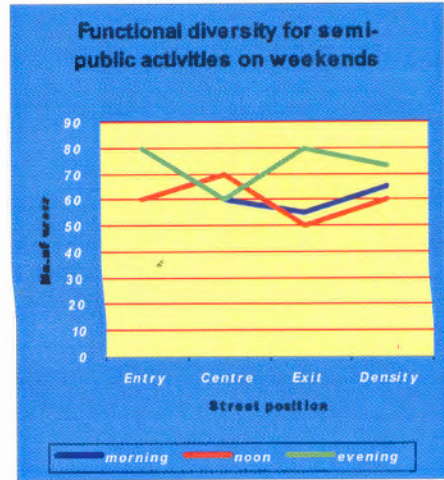
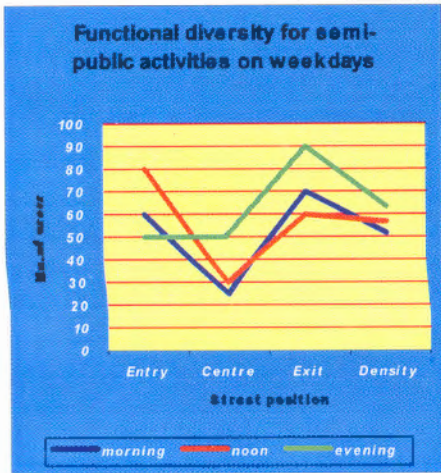
#### Activity level

#### 1. Public activities



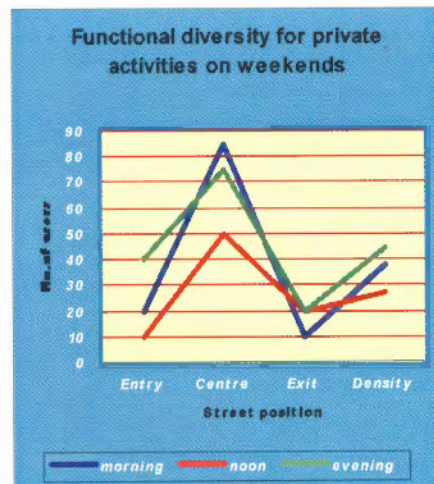
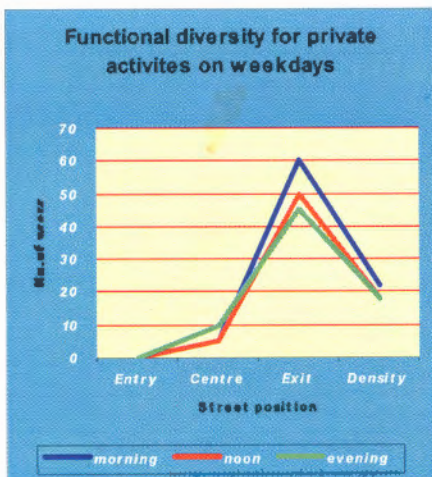
The functional diversity for public activities is **very low** at the street **entry**. But there is a **peak** of public activities at the **centre** of the street. It is noticeable at noon during weekdays and morning during weekends. Secondly the street exit carries a higher percentage of users in the morning during weekdays and noon during weekends.

### 2. Semi-public activities



There are a **higher** percentage of users for semi-public activities at the **exit** of the street. Especially during evenings throughout the week. Secondly it is visible at the entry and finally at the centre.

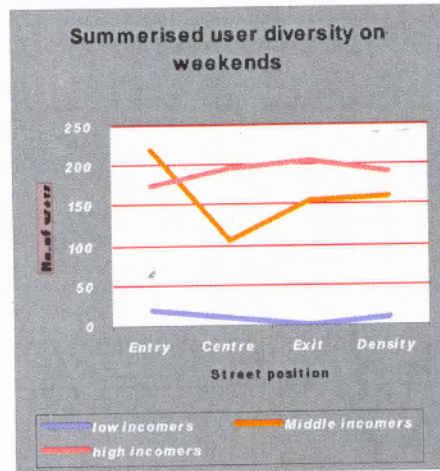
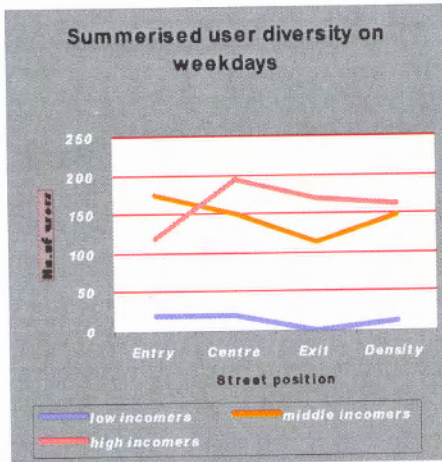
### 3. Private activities



The diversity for private activities shows a **higher** percentage at the **exit** of the street during weekday mornings. It changes over to street **centre** during weekend mornings. The diversity for private activities is very low at the street entry and it develops a considerable value at the street exit.

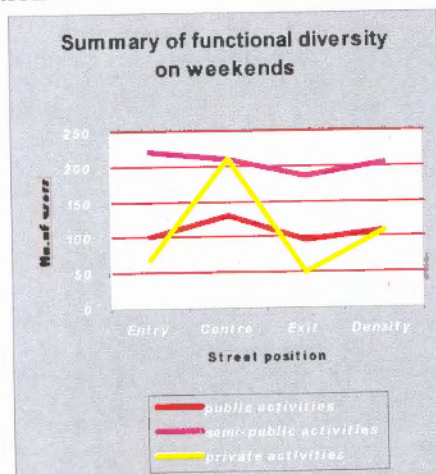
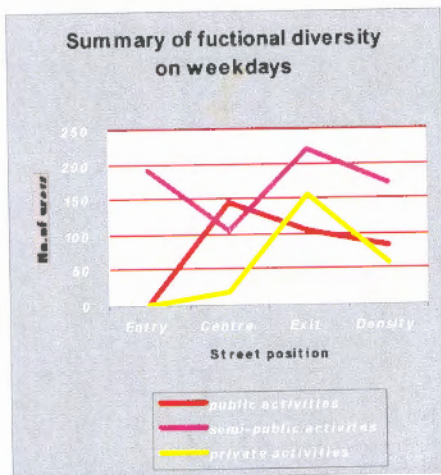
### The summary of user and activity variation during the week

#### User variation



- The chart expresses the highest no. of users at the street progression. **Entry for middle incomers, centre and exit for high incomers.**
- The charts expresses that the diversity of middle incomers are higher than other users at the entrance of the street.
- High incomers are very dynamic at the street centre and exit than other users.
- It clearly shown that, low incomers are very static and low in percentage during the street progression.

#### Activity variation




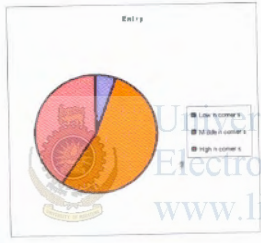
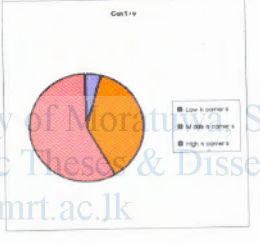
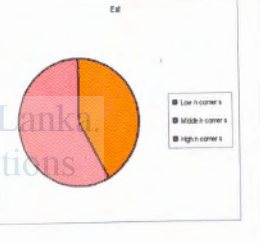
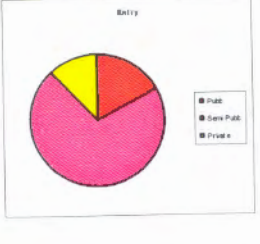

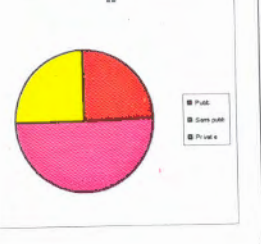
- The chart shows the **entry** of the street is more in demand for **semi-public activities**. Street **centre** for **public activities** during weekdays and **semi-public activities** during weekends. The street **exit** is very prominent for **semi-public activities**.
- The street entry is very dynamic for semi-public activities. In the other hand the prominent users are middle incomers.
- The street centre and exit is for semi-public activities and high incomers.
- The life style and behaviour of users expresses that there is a parallel diversity between them.












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## CONCLUDING REMARKS

Characteristics	Street Position		
<p><i>1. Street progression</i></p>	 <p style="text-align: center;">Spatial Progression of Sir Ernest De Silva Mawatha</p>		
<p><i>2. Behavioural character</i></p>			
<p><b>A. User variation</b></p>	<p>The prominent user at the entry is <b>middle incomers</b>.</p>	<p>The prominent user at the centre is <b>high incomers</b>.</p>	<p>The prominent user at the exit is <b>high incomers</b>.</p>
<p><b>B. Functional variation</b></p>			
	<p>The prominent function at the entry is <b>semi-public activities</b>.</p>	<p>The prominent function at the centre is <b>semi-public activities</b>.</p>	<p>The prominent function at the exit is <b>semi-public activities</b>.</p>

<p><b>C.Type of user</b></p>			
	<p>Fig.130 Middle incomers</p>	<p>Fig.131 High incomers</p>	<p>Fig.132 High incomers</p>
<p><b>D.Type of function</b></p>			
	<p>Fig.133 Semi-public activities</p>	<p>Fig.134 Semi-public activities</p>	<p>Fig.135 Semi-public activities</p>
<p><b>E.Trend of spirit</b></p>	<p>The physical character of the street should respond more towards Middle incomers and semi-public activities.</p>	<p>The physical character of the street should respond more towards high incomers and semi-public activities.</p>	<p>The physical character of the street should respond more towards high incomers and semi-public activities.</p>
<p><b>3. Physical character</b></p>			
<p><b>A.Type of Bldgs</b></p>	<p>Fig.136</p>	<p>Fig.137</p>	<p>Fig.138</p>

**B.Strategic elements of buildings**

a.Entrance of buildings along the road.



Fig.139

Entrance of the buildings changes according to the purpose of the building. Most of the buildings entrance maintains a small gap between the building and street lines. These are directed to the street.



Fig.140

Entrance of the buildings maintains a moderate gap between the street lines. These are used for out door living, leisure activities.



Fig.141

Some of the entrances of elite houses maintain a large garden space between the street and building line. The entrances are through high boundary walls due to security purposes.

b.External staircase



Fig.141

Most of the buildings have a series of steps starting from the street pavement towards the entrance.

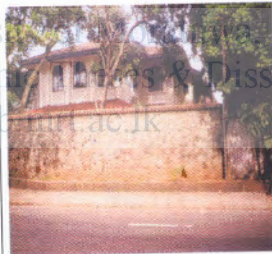


Fig.142

Nothing prominent.



Fig.143

External staircases could be identified as service stairs in high-rise buildings.

c.Balconies












Fig.144






Fig.145



Fig.146

<p><b>C.Physical Form</b></p> <p>a.Street width</p>	<p>Nothing prominent.</p>  <p>Fig.147</p> <p>Includes a moderate value. Relationship between building and street is less.</p>	<p>Balconies of some semi-public buildings reflect as a part of interior.</p>  <p>Fig.148</p> <p>Includes a moderate value.</p>	<p>Most of the apartments, elite houses reflect balconies as out door spaces for some extend.</p>  <p>Fig.149</p> <p>Includes a moderate value.</p>
<p>b.Street length</p>	 <p>Fig.150</p> <p>Street doesn't show any variations in the direction along the street length.</p>	 <p>Fig.151</p> <p>Along the street length a variation of liveliness cannot be identified.</p>	 <p>Fig.152</p> <p>The street length doesn't bring any change in the liveliness of the street.</p>
<p>c.Height of street edge</p>	 <p>Fig.153</p>	 <p>Fig.154</p>	 <p>Fig.155</p>

<p>d.Features</p>	<p>A clear street edge could be identified. But the height varies through the street progression.</p> <p>Special features cannot be identified.</p>	<p>The street edge height maintains a moderate value.</p> <p>Special features cannot be identified.</p>	<p>The height of street edge increases around ten floors.</p> <p>Special features cannot be identified.</p>
<p>e.Path shape and topograrhy</p>	 <p>Fig.156</p> <p>Some of the public buildings include landscaped area at the entrance of the buildings.</p>	 <p>Fig.157</p> <p>With the street progression more greenery and boulevards could be identified.</p>	 <p>Fig.158</p> <p>Most of the elite houses could be identified with grand scale paving and gardens.</p>



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The atmosphere throughout Sir Ernest De-Silva Mawatha is pleasant, even though its design is quite simple. But still the interactions between the users have been decreased due to various aspects such as privacy, social status and security of them. Therefore the user and activity variation change from place to place. It is left to the designers and pedestrians to provide colour and liveliness to the street. The street signs should be modest and tasteful. The pedestrian routes should provide for the users to sit and relax; there could be few benches or seating areas. The street centre calls for more amusement and informal entertainment. Shops give careful attention to their window displays, which are designed to capture the interest of strollers. But still on warm days, especially during the noon the users find difficult in their activities. Therefore liveliness of street could be enhanced by nature friendly transitional spaces. Therefore the revision of circulation patterns and the improvement being made to the existing buildings should be done through the investigation of the user and functional behavioural patterns of the street.



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### 4.3.3 Sub-cultural urban street fronts-Kotahena-Jampettah Street

A changing character of Kotahena is nominated in the proportion without a proper continuation of rhythm. The entry to the street is a place where defines mass organization is visible. The street spatial progression changes the quality of transitional spaces created on in-between spaces.

Characteristics	Description
<p><b>1.Type of buildings</b></p>	<p>The shops are being opened to the street connecting the inside of the shop with the street. The building edges made people to hang around the shady spaces of “Kottamba trees”. Some of the buildings are connected with each other, which creates both a boundary and a path along it, which is destroyed by having inter-mediate spaces. But still these create pathways, which allows people to sit on, sell goods, stroll...etc.This makes the place more familiar and liveable having a constant watch on street. Also breaking points of this fabric are the accesses for the alleyways, which give an identity for the social fabric of the place.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>Fig. 159 Public bldgs</p> </div> <div style="text-align: center;">  <p>Fig.160 Semi-public bldgs</p> </div> <div style="text-align: center;">  <p>Fig.161 Private bldgs</p> </div> </div> <p>There is a variety in the user types. The cultural background of them has brought a different perception for the users and their behaviour patterns.</p>
<p><b>2.Variety of users</b></p>	<div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>Fig.162 Low incomers</p> </div> <div style="text-align: center;">  <p>Fig. 163 Middle incomers</p> </div> <div style="text-align: center;">  <p>Fig.164 High incomers</p> </div> </div>

**3.Variety of function**

The activities of the users also changes. Their very dynamic in quality.



Fig.165  
Public activities



Fig. 166  
Semi-public activities



Fig.167  
Private activities

**4.Street edge**

The street edge is clearly defined. But the continuation of street along the length changes at the breaking points of alleyways. Also the street hawkers, vendors make the street edge haphazard with their unauthorized encroachments.



Fig.168  
Street length

Fig. 169  
Street width

Fig.170  
Street edge



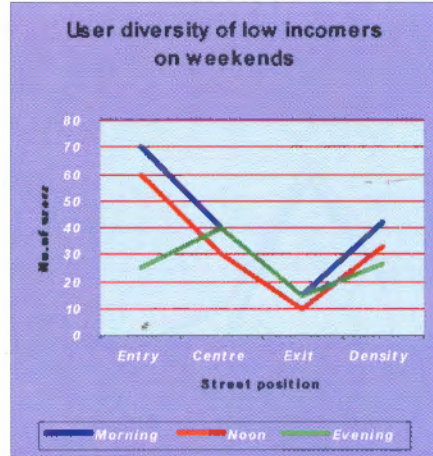
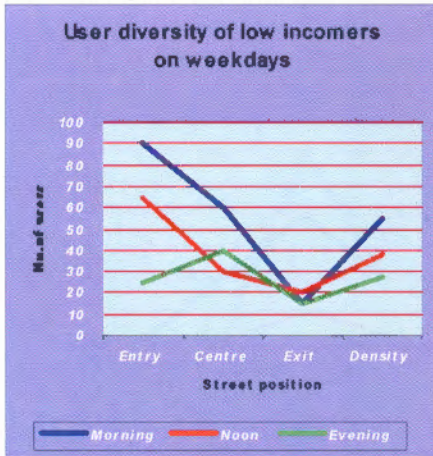
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# User diversity of Jampettah Street during the week

## Income level

### 1. Low incomers

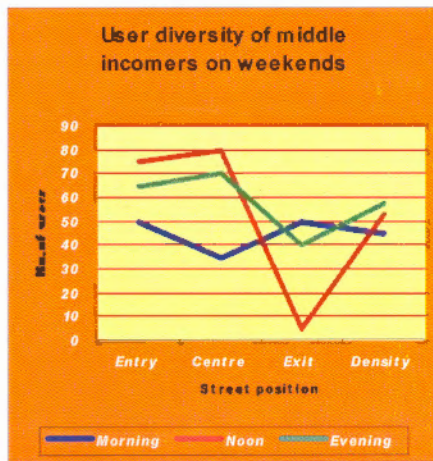
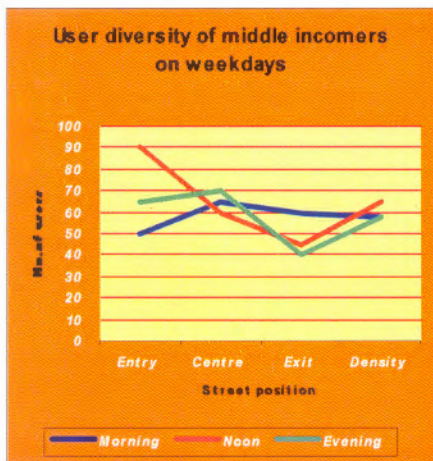


The charts show that, the highest no. of low incomers gather at the **entry** of the street. It is prominent in the **mornings**. Secondly the highest no. of users gather at the centre during mornings and evenings. The lowest gathering happens at the end of the street.



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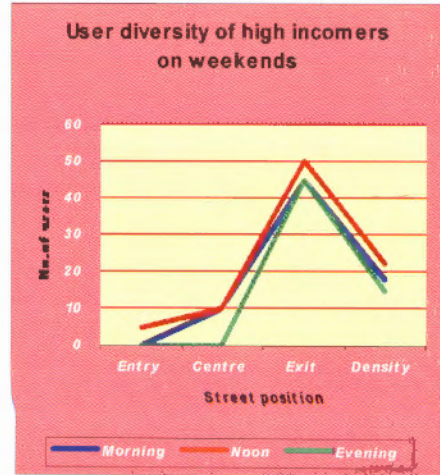
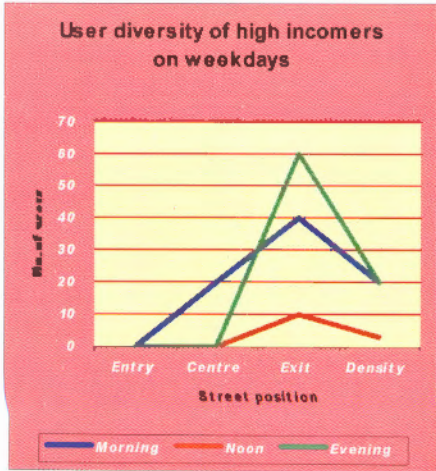
### 2. Middle incomers



The highest no. of middle incomers gathers at the **entry** of street during **noon**. Second highest percentage is at the centre of the street. It is identified during evenings on

weekdays and during noon on weekends. The lowest gathering happens at the street exit.

### 3. High incomers



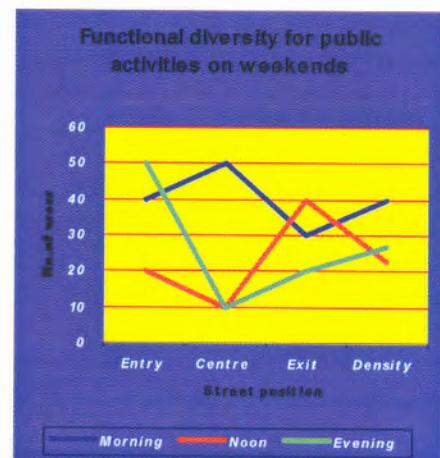
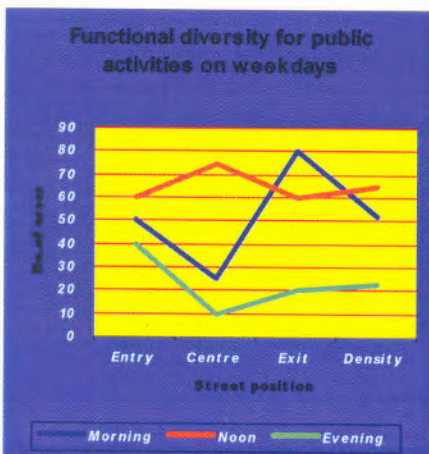
High incomers gather more at the **exit** and it decreases accordingly at the street centre and exit. Weekdays the peak gathering happens at **evenings** and weekends it is at **noon**.



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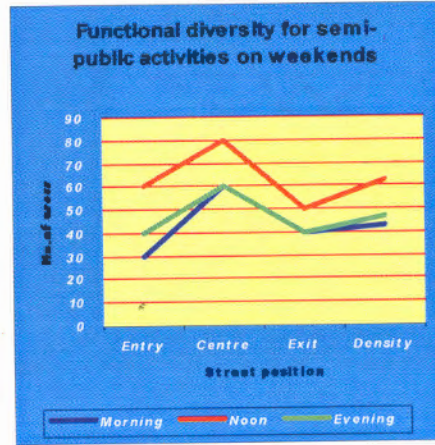
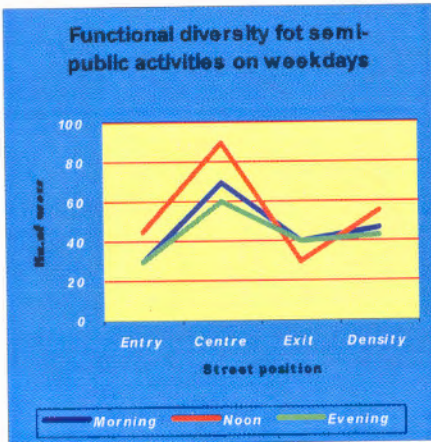
### Functional diversity of Jampettah Street during the week

#### 1. Public activities



The highest percentage of public activities happens at the **exit**, in the **mornings** of weekdays. During weekends the highest percentage could be identified at the **entry and centre** at evening and morning.

### 2. Semi-public activities

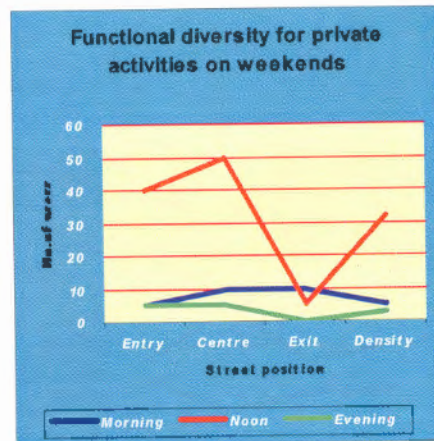
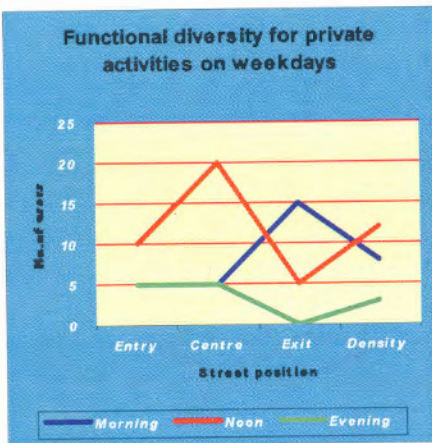


Highest no. of semi-public activities are happening at the **centre** of the street at **noon**. Secondly it is at the exit and finally at the entry.

### 3. Private activities



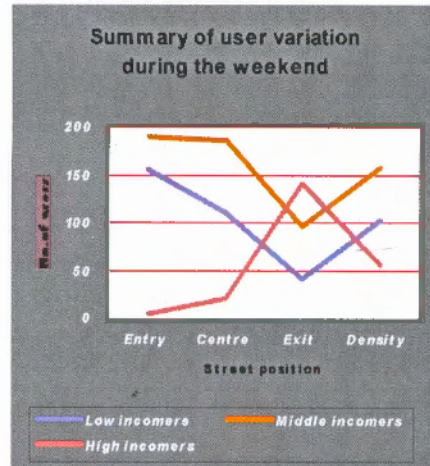
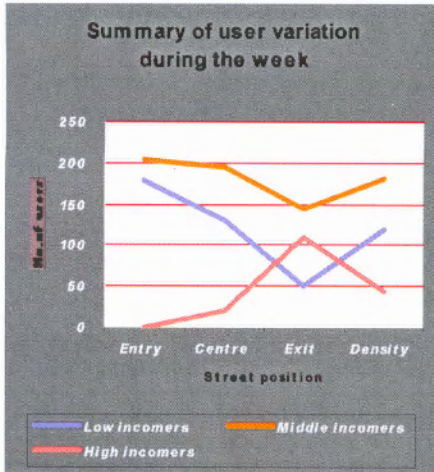
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The highest no. of public activities are happening at the **centre** of street at **noon**. Second highest no. of activities are identified at the entry and finally at exit.

## The summary of user and activity variation during the week

### User variation

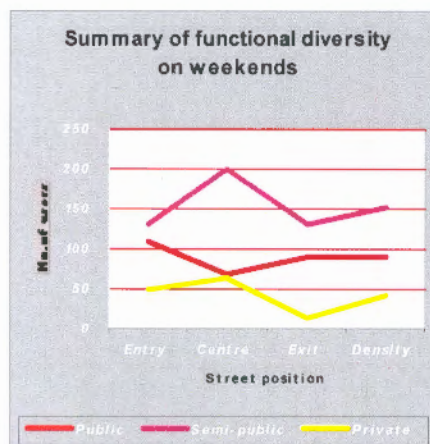
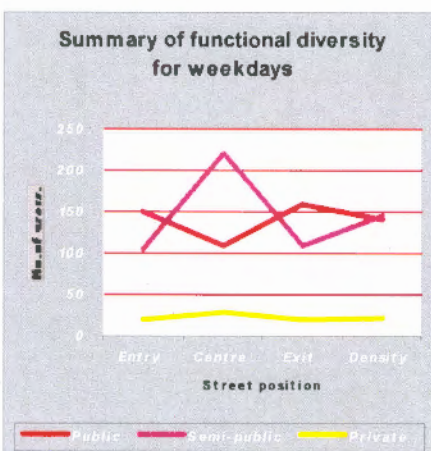


-The chart expresses the highest no. of users at the street progression. **Entry-middle incomeers, centre-middle incomeers and exit-middle incomeers during weekdays and high incomeers during weekends.**

-By considering functional variation of the street middle incomeers are prominent at the street progression.

-They carry the highest percentage at the entrance, centre and exit of the street. But the view of exit changes during weekends by the high incomeers.


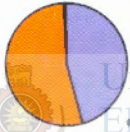
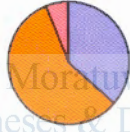
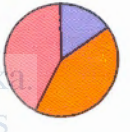



### Activity variation



- The chart expresses the highest no. of functions at the street progression. **Entry for public activities, centre for semi-public activities and exit for public activities.**
- The street has a trend for mostly public and semi-public activities.
- Also the trend of user is mostly middle incomers and secondly high incomers.
- These show a parallel relationship between them during their day to day activities.



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Characteristics	Street Position		
	Entry	Centre	Exit
<p><b>1. Street progression</b></p>  <p style="text-align: center;"><i>Street Progression of Jampettah Street</i></p>			
<p><b>2. Behavioural character</b></p> <p><b>A. User variation</b></p>	<p style="text-align: center;">Entry</p>  <p style="text-align: center;">The prominent user at the entry is <b>middle incomers</b>.</p>	<p style="text-align: center;">Centre</p>  <p style="text-align: center;">The prominent user at the centre is <b>middle incomers</b>.</p>	<p style="text-align: center;">Exit</p>  <p style="text-align: center;">The prominent user at the exit is <b>high incomers</b>.</p>
<p><b>B. Functional variation</b></p>	<p style="text-align: center;">Entry</p>  <p style="text-align: center;">The prominent function at the entry is <b>public activities</b>.</p>	<p style="text-align: center;">Centre</p>  <p style="text-align: center;">The prominent function at the centre is <b>semi-public activities</b>.</p>	<p style="text-align: center;">Exit</p>  <p style="text-align: center;">The prominent function at the exit is <b>public activities</b>.</p>

**C. Type of user**



Fig.171

Middle incomers



Fig.172

Middle incomers



Fig.173

High incomers

**D.Type of function**

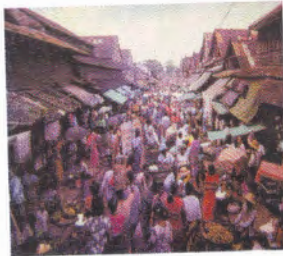


Fig.174

Public activities



Fig.175

Semi-public activities



Fig.176

Public activities

**E.Trend of spirit**

The physical character of the street should cater more towards middle incomers and public activities.

The physical character of the street should cater more towards middle incomers and semi-public activities.

The physical character of the street should cater more towards high incomers and public activities.

**3.Physical character**

**A. Type of buildings**



Fig.177



Fig.178



Fig.179

**B. Strategic elements of buildings**

**a.Entrance of buildings along the street**



Fig.180

Some of the old buildings front facades



Fig.181

No special identity for



Fig.182

Some of the dwellings verandahs facing the

are converted into shops. The entrance is formed through the street entrance.

the entrances. Haphazard development could be identified.

street are covered by large grills due to security reasons. The interaction between users is high to some extent than other streets.

**b.External staircases**



Fig.183



Fig.184



Fig.185

**c.Balconies**



Fig.186



Fig.187



Fig.188

**C.Physical form**

**a.Street width**



Fig.189



Fig.190



Fig.191

**b.Street length**



Fig.192



Fig.193



Fig.194



c.Height of street edge



Fig.195



Fig.196



Fig.197

d.Features



Fig.198



Fig.199



Fig.200

e.Path shape and topography



Fig.201

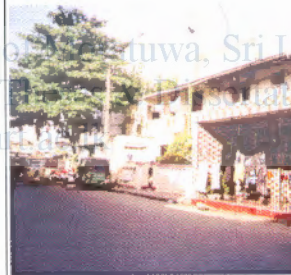
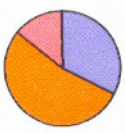

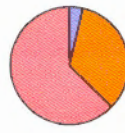











Fig.202

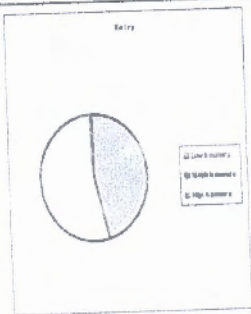


Fig.203

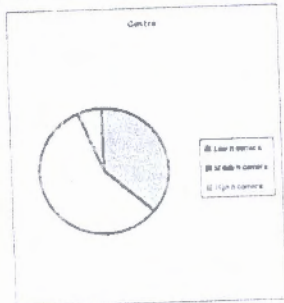
## SUMMARY OF CONCLUDING REMARKS

Type of street	Concluding remark
<b>1. York street</b>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Entry</p>  <ul style="list-style-type: none"> <li>Low corner</li> <li>Medium corner</li> <li>High corner</li> </ul> </div> <div style="text-align: center;"> <p>Centre</p>  <ul style="list-style-type: none"> <li>Low corner</li> <li>Medium corner</li> <li>High corner</li> </ul> </div> <div style="text-align: center;"> <p>Exit</p>  <ul style="list-style-type: none"> <li>Low corner</li> <li>Medium corner</li> <li>High corner</li> </ul> </div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Entry</p>  <ul style="list-style-type: none"> <li>Public activities</li> <li>Semi-public activities</li> <li>Private activities</li> </ul> </div> <div style="text-align: center;"> <p>Centre</p>  <ul style="list-style-type: none"> <li>Public activities</li> <li>Semi-public activities</li> <li>Private activities</li> </ul> </div> <div style="text-align: center;"> <p>Exit</p>  <ul style="list-style-type: none"> <li>Public activities</li> <li>Semi-public activities</li> <li>Private activities</li> </ul> </div> </div>
<b>Interpretation</b>	<div style="text-align: center;">  <p>University of Moratuwa, Sri Lanka. Electronic Theses &amp; Dissertations <a href="http://www.lib.mrt.ac.lk">www.lib.mrt.ac.lk</a></p> </div>
<b>2. Sir Ernest De-Silva Mawatha</b>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Entry</p>  <ul style="list-style-type: none"> <li>Low corner</li> <li>Medium corner</li> <li>High corner</li> </ul> </div> <div style="text-align: center;"> <p>Centre</p>  <ul style="list-style-type: none"> <li>Low corner</li> <li>Medium corner</li> <li>High corner</li> </ul> </div> <div style="text-align: center;"> <p>Exit</p>  <ul style="list-style-type: none"> <li>Low corner</li> <li>Medium corner</li> <li>High corner</li> </ul> </div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Entry</p>  <ul style="list-style-type: none"> <li>Public</li> <li>Semi-public</li> <li>Private</li> </ul> </div> <div style="text-align: center;"> <p>Centre</p>  <ul style="list-style-type: none"> <li>Public</li> <li>Semi-public</li> <li>Private</li> </ul> </div> <div style="text-align: center;"> <p>Exit</p>  <ul style="list-style-type: none"> <li>Public</li> <li>Semi-public</li> <li>Private</li> </ul> </div> </div>

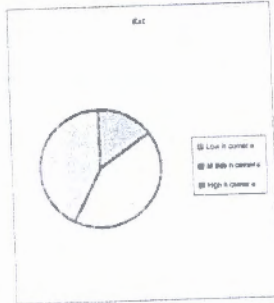
3. Jampettah street



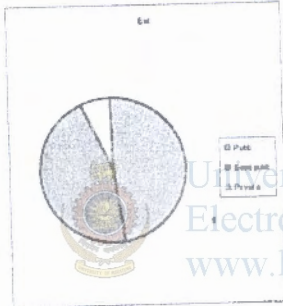
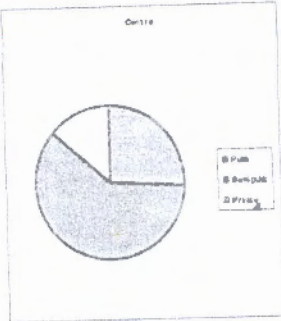
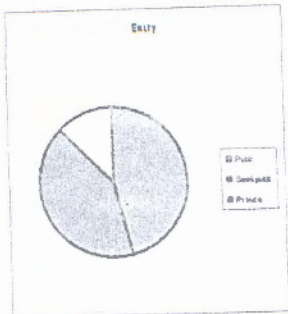
Middle incomers



Middle incomers



High incomers



Public activities

Semi-public activities

Public activities

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Interpretation

Street is identified as a sub-cultural – public street for middle incomers.

The environment of Jampettah Street is very dynamic and live at most of the day. Although the interactions between the users have been changing during the day due to various issues, such as the economy, social status and built fabric. Therefore there is a diversity in user and activity. Considering about the built fabric, the side walks have been eliminated and the road surface mostly paved with grey slabs in different patterns. The paving is dull, but there are no steps, curb stones or other impediments to inhibit the pedestrians. Also the street edge is defined with a row of retail shops and restaurants. It has no proper place for entertainment. Consequently it is a busy day, but practically dead at night. The street should be developed with street furniture, pavilions, flower boxes...etc. But still the presence of street vendors, lottery kiosks and children amusement along the street adds to its vitality. Also restaurants, cafes, beerhalls and movie theatres could enliven the night life in this particular area. The old fabric could also contain not only civic monuments, but also more importantly incorporated to the purpose of the liveliness on street.



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## CONCLUSION

The urbanization process has brought the street development as a wide spread phenomena, in favour of efficiency, technology of speed considered as the prime determinants of street design. The designers considered the towns and cities as their models, giving less prominence to street as livable element. Therefore architecture cannot just be built forms which only sub serve technology, style or any other quantitative attributes rather than qualitative attributes. This will ensure variety and pleasing prospects which will also facilitate human interaction.

Historically, streets have been the dominant physical organizing infrastructure of the city, as they will continue to assume this role in recent decades, the previous character clarifies a greater differentiation of street types. Service streets, pedestrian streets as residential, commercial, sub-cultural streets, transit-only street, even covered streets.

In this study is aimed to explore the ways by which the responsiveness of streets is maintained in a given urban situation. Designing of street is more than having a few or many of the physical and desirable things that contribute to the success of a street. Even the making of lively streets should not be an exercise in lively streets should not be an exercise in design for designers sake the satisfy alone someone's concept and beauty.

But the knowledge of what have been done the past could be helpful to bring the life to the street, by identifying early street scapes, what they look like, their dimensions, their context, their relationship to other would be essential. Other than the physical character the behavioral character of the street also has become an important phenomenon presently.

Users and their activities on street adds vividity to a city thus can be identified as a very important component of city life. This was discussed in the previous chapters, where in early cities, notably in living communities, where houses did face narrow streets in turns making the streets live, active and memorable. Therefore, it is the responsibility of the designer or architect to enhance the city with liveliness by providing required space for such activities.

The intension of this study was to investigate the relationship of users and activity variations of urban streets. Mostly the modern urban situation doesn't offer spaces to induce behavior patterns for different purposes. The study reveals most of the urban streets are not responding to their users. Some of the buildings have become dead spaces during certain time periods of the day. This was tested at the main points of street progression, such as the entry, centre and exit. It was shown that some of the less functioned buildings are recalled for certain other places of the street during its progression. These spaces are live for certain groups of user and activities during the day. Therefore investigating the changing trend of street at the proper place has become a important phenomina. The existing physical character needs to be change in accordance to its behavioral character.

As Kevin Lynch states in Good City Form, the fit of a settlement refers to how well it's spatial and temporal pattern matches the customary behavior of its inhabitants. It is the match between action and form in its behavior settings and behavior circuits. Fit

is linked to characteristics of the human body and of physical systems in general. This context is universal. But since fit is the match between place and whole patterns of behavior's it is intimately dependent on culture: on expectations, norms and customary ways of doing things. Places are modified to fit ways of behaving, and behaviors are changed to fit a given place. There are two ways of observing fit. The first is to watch people acting in a place, in order to see how well overt actions match the characteristics in a location. The second is to ask to users themselves, whose sense of the appropriateness of a place is the final measure of its fit.

Therefore it justifies, that the liveliness of street could be enhanced by merging its physical and behavioral character together. The case study reveals that, though streets separates by its categorization such as commercial, residential, sub-cultural...etc. The overview of function deviates at certain important places during the street progression. As an example, York street could be identified as a commercial-public – middle income street.

Therefore understanding the parallelism of users and their activities are important on streets. It clarifies that, there is a behavioral diversity on street. The literature review clarifies; some of the developed countries have carefully handled this particular scenario to create a livable environment. Understanding the diversity of users and their activities justifies the proper planning of a streets physical and social environment.

The specific composition of these spaces at the street progression has become an important aspect and proper thought should be given in designing such spaces. If the spaces and buildings are of the required composition, the street activities and users are encouraged thus adding 'character' or 'sense' to the street forming livable cities. If all of this is done, the urban pedestrian will be enriched with a diversity of choice in routes, activities and amenities. It will recall the life of pedestrian malls, fantasies of outdoor cafes with parasols, play areas filled with laughing children, bustling shop activities and an oasis of trees, grass, flowers and fountains in the middle of the urban morass.

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