

**A STUDY OF THE DIFFERENCES BETWEEN THE
'INTENDED' AND 'RESULTED' PATTERNS OF USE OF
PUBLIC OPEN SPACES IN COLOMBO URBAN AREA**

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(08/9628)

Degree of Master of Science

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Sri Lanka

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Dissertation Submitted in partial fulfillment of the requirements for the
Master of Degree in Town & Country Planning

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Declaration

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Abstract

This thesis evaluated the differences between the ‘intended’ and ‘resulted’ patterns of use of four public spaces around the Colombo urban area

The research explores user intensity levels and activity pattern in relation to supplying elements presence or absence, amenities & other factors. The study found five key quality aspects of the places are, ‘comfortable’ and has a ‘good image’; ‘enrich the existing environment’; ‘mixed uses and variety of forms’; the space is ‘flexible design its changes’; and it is a sociable place and ‘make connections’, one where people meet each other and take people when they come to visit.

Urban designers’ intentions to regulate the public space in a particular way in designing and producing space considered the aesthetic and visual greenery and environmental quality improvements. However users are too different dimensions presence as a response to urban public space concern access, freedom of action, claim, change, to find quality user amenities.

The behavioral patterns of people experience and use these spaces is a valuable source of information for spatial planning. Indeed, studying how these spaces are used has also shown a significant difference between the intentions of planners and users.

However, currently facing challenge by urban designers and planners, how to make public spaces become usable for different types of users who come to use these spaces for diverse purposes and attach different meanings to them.

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Chapter 1

Introduction

1.1 Background

A public open space may be a gathering place or part of a neighborhood helps to promote social interaction and a sense of community. It serves as a location for people to meet, relax, and exchange ideas. A democratic space protects the rights of its user group (Mitchell, 2012). It should be accessible to all groups and provide freedom of action also for a temporary claim and ownership of the place.

Public open spaces are integral to the life and well-being of a city, helping to balance work, play and encouraging a sense of community. These spaces are providing cultural and social benefits while creating an opportunity for people to gather and get experiences within an urban setting. Therefore, it is important to consider the people's perspective and embed their aspirations when planning and designing public spaces.

Place making needs the understanding of place design theories and practices, the skill to design for a vibrant space and the decision to know when a place needs to be designed and when should be left for organic growth and development according to people's needs. However, urban designers and planners challenge to make public spaces become usable for different types of users who come to use these spaces for diverse purposes and attach different meanings to them. Generally considered, well-designed public space with appropriately arranged landscaped elements, colors and symbols materials can make the open spaces more attractive and popular, meets the needs of its users; it diverse and interesting; it connect people with place; and it provides a positive image and experience (project for public spaces, 2016).

The evaluating the actual usage of contemporary public spaces in relation to the designer perception and intention of user behavior, particularly in terms of their physical improvement and finding meaningful information about context and its dynamics of the urban public place. Planning, designing, developing and managing such places will require an understanding of the impacts on characteristics of urban spaces. The behavioral pattern of people experience and use of these spaces is a valuable source for spatial planning.

1.2 The Problem statement

Renewal of urban public spaces is increasingly noted in the main townships and attempt to provide much-needed space for outdoor activities. The Present trend is identified as landscaped improvement with increased visual image of existing open spaces. This in terms of urban planning and city beautification has led to transformations of physical activity of public open spaces across the Colombo urban area.

The majority of architectural or urban designers focused on western traditional models may not address the user needs and create great public spaces in order to contemporary urban development pattern. In contrast unsafe movement, poor design such as misuse of colors, symbols, materials and lack of maintenance, will direct to the underutilization of the spaces. All these newly created spaces, enforced regulations which may have to limits the user behavior pattern. Furthermore, it also identified that certain group of people such as disabled, women and elderly, barriers accessible to everyone at all times.

The designing of public open spaces is largely affected by less understanding that 'users also have an agency'. Planners and architects mostly design them with the understanding that they are the 'sole agency' of the designer. The designer's less concern the fact that the user's to having an agency in making of public open spaces. Users' experience and values are not directly visible, planners often neglect these and consequently space might not suit users' needs and requirements. They forget the fact that the ultimate product is a mutual transaction between the 'provider' (designer) and the provided (the user). While discussions are available on normative ('how to design') aspects and success stories, not much discusses on the gap between what is intended and what is available.

Although there is an upbringing interest and upgrading of open public spaces is seen in the country, the use of such spaces is always is critical and brought up a debate. One of the frequent observations is that they are used in a manner for which that they are designed for. In other words, their intended uses are not naturally occurring in them.

Although debates and explanations are there, there are no scientific studies on the causative factors behind such differentiation of uses of public spaces. In order to develop better public open spaces, such studies are important. The research problem will address to the lack of actual knowledge about open public space design and user behavior and their integration within the process of designing the contemporary urban public spaces.

1.3 The Objective of the Study

The purpose of this study to compare and contrast the designer's intentions and perceptions with the user's behavior pattern of the designed public open spaces. This is expected to be done through:

1. Find the dynamic patterns in relation to provided features and elements of the public open spaces in Colombo urban area.
2. It will explore the relationship between public space design, uses, and users.
3. Compare and contrast the 'intended' and 'the achieved' the designed public spaces.

This study examines in public spaces through analysis of two perspectives, first contemporary urban design intentions for making places as a behavioral setting of public life by professional perspective, and second people's responses to the public spaces in the urban environment. The aim is to find out whether users expectations are realized by designers or not.

1.4 Method of Study

The study departs from the position that the changes in uses of public open spaces are mostly a result of design approach, which is based on the designers and the user's behavior on making of public open spaces. In order to explore this, the study focuses both on the designers and the user's perceptions of the public spaces.

User behaviors find through the observation by physical activity type, users frequencies at different times of the day in different zones of the place. The physical components of public space, characteristics, elements and design qualities measured on observation within the case study locations. In addition, record the behavior pattern of space utilization and user intensity level.

The designers' perceptions and intentions will explore the urban design literature by considering space, place and urban design theories and concepts to determine whether they are existing or implemented in current public space designs and principles. Further the interview and discussion with designer perspective, most of the time the questions have not been structured or predetermined but asked in an open-ended manner.

The users' perceptions are studied direct interview have been selected according to the situations and events that have occurred during the field study of the place. Interview conducted with willing users or participant and discusses particular place benefits and issues, beliefs, values, and ideas.

It will analyze and compare the designer intention and user perception by using the discussions, interview and observation data. Finally, it will conclude key findings conclusions and the future research.

1.5 Scope and Limitations

The research focuses only the designer's intention and user perceptions of four open public spaces in Colombo urban area.

The study involved interviewing of the designer teams and conducting a questionnaire survey for the users of each outdoor public space. And further observations are carried on activities relation to the design elements.

This study only focuses on designed space and its elements with activities but annual events, festivals, seasonal variations, climatic changes etc. not considered.

Due to the small size of the sample analyzed and the limited statistic performed, no universal conclusion can be consistently made about the users' perception of urban public space in general.

Many aspects of urban public spaces could be measured and studied in relation to physical activity levels. Since it is not practical, to test them all in a single study. However, this study concentrates only inside of the design spaces and the user behavior pattern.

Chapter 2

Literature review

2.1 Introduction

This section will first outline the concept of space and place theories. Then explore the evolving of contemporary public spaces. Further, study finds the relation with design elements and activity pattern of public spaces. Lastly; it will examine the designer's perception and user behavior with different interests and conflicts of public spaces. The literature reviews find the gaps in knowledge related to the design of open public space.

2.2 Space and place identity

Space is about the significance of spatial distribution, and ways people organize and manage the spaces that people who experience it. Spaces are perceived, structured, organized and managed by people, and can be designed and redesigned, to achieve particular purposes.

A place can meet the basic functional requirements and, in addition, offer other qualities and opportunities, which contribute more quality of life of the people who experience it. The turning 'spaces' into 'places' take a step towards providing inhabitants with access to interesting, equitable and attractive settings to meet various needs and facilitate more interaction in the urban life. The Place can be described by their location, shape, boundaries, features and environmental and human characteristics (Australian Curriculum: Geography, 2012). Each place has unique characteristics. Some characteristics are tangible, for example, landforms and people, while others are intangible, for example, scenic quality and culture. The places in which we live are created, changed and managed by people.

The place is a concept directly derived from how humans experience their surroundings. It is created when the physical attributes, emotional connections, and psychological perceptions are combined to impart individual meaning and value. Therefore, a single space can be the setting for a multitude of different places depending on how it is used, read and perceived.

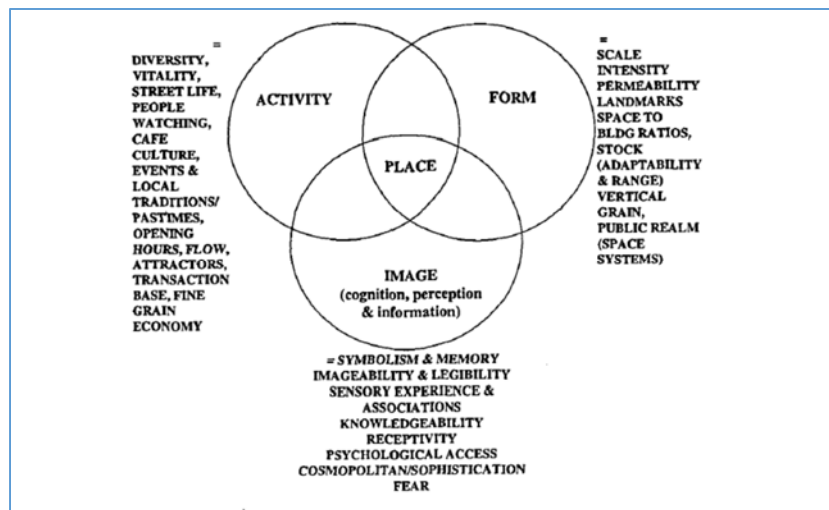
Sociologist Henri Lefebvre is credited with introducing the idea that space is socially produced, the analysis includes a historical reading of how spatial experience has changed over time depending upon social circumstances. The place is not merely a material setting but also, values and meaning attached to it. Lefebvre analyses each historical mode as three-part dialectic between everyday practices and perceptions, representations or theories of space and the spatial imaginary of the time.

Places consist of three dimensions with interdependent components that induce meaning to the environment: physical, personal and social dimensions and finally functions take place in that (Canter, 1977; Relph, 1976). Places used by people also have a psychological dimension. David Canter defines a place as an action setting

which is intended for a specific kind of behavior, how people make sense and cope with their surroundings and pointed out that places are more than just physical entities. In addition, the range of activities that a place holds is important in an accurate definition of place.

John Montgomery suggests in his article “Making a city urbanity, vitality and urban design”, in which he makes a systematic review of urban design theories and classifies them in these categories of form, image, and activity. The figure 2.1 diagrams illustrate how urban design actions can contribute to enhancing the potential sense of place (Montgomery, 1998; John Punter, 1991).

Figure 2.1: Policy directions to foster an urban sense of place (or place making)



Source: john Montgomery.1998

Space and place are among the most discussed concepts in urban design or architecture. The perception of fundamental concepts and basic characteristics of these two elements would have been useful in architectural processes of place making. The principle of place making is combining all the elements qualities or characteristics which produce successful places.

2.3 Evolving the Contemporary Public Space design

Urban public spaces have been critical sites of cultural, political, and economic life from early civilizations to the present day. Historically, public open space particularly in cities was developed for physical health purposes and contemplative relaxation, marketplace, and connection as well as functioned as meeting place. The idea of establishing parks for people's enjoyment has been traced far back to the Sumerians (4000-2000BC) of the first cities in “Mesopotamia” and ancient “Greece”. The Greek notion of "Agora" and the open Roman forum that were considered as an arena of public affairs among residents and the sociology refers to it as spaces for daily social interactions.

In ancient India, there were both parks for the king and many recreations for the public (Clayne R. Jensen, Steven Guthrie, 2006). In the Buddhist literature, we come across mention of pleasure gardens of a king (Bimbisra and Asoka) as a special place of diversion. The Venuvana and Ambanna in the vicinity of Rajagaha, the mahavana near Vaisali, the Nygrodharama near Kapilavastu and the Jetavana near Sravasti were the pleasure parks of king open all visitors (Shukla M S, 2002).

During the royal monastic gardens of the early and middle historical are referred to the Buddhist chronicles of Sri Lanka from the 3rd century B.C., the place for recreation was being used the “mahameunauyana” and the activity was being taken for pleasure and a unique landscape garden recorded in Anuradhapura kingdom.

The origins of the contemporary public space design can be traced to various points in history as the creative process of making public and open space in cities has evolved. The central park movement arises for many cities in the United States during the late 1800s and early 1900s. Many public places were established by the royal rulers of ancient Lanka. The first physical planning attempt in colonial time by Sir Patrick Geddes in 1921 is the main concern of the city of Colombo as "The garden city of the east". The western province structure plan in 1978 indicated the tourism activities and revised Colombo development plan in 2009 is permitted outdoor recreational activities for all zones but none of them yet implemented as per the plans. However, recent past years in terms of urban landscaped and city beautification in Colombo urban area transformed the recreational user behavior pattern.

2.4 Sense of public open space

The term of public space initially refers to the streets, sidewalks, parks, city hall, squares, open space, marketplaces and other forms of gathering spaces that are accessible and open to all people of the city. Public open spaces are in any region, where the collective spirit of a society comes alive. It is an integral part of the culture of cities, often shaping a city's image and identity. Public open spaces may be able to provide a variety of accessible opportunities to people and become a means of enhancing the quality of living in the urban environment.

People may feel attached to both the social and physical aspects of public spaces. Therefore, these spaces may be placed for socializing, hosting the greatest number of people's interactions. Moreover, their physical attributes may indicate particular meanings to the people, having a significant impact on people's perceptions, interactions, and activities. As some scholars of urban planning and designing, including Jan Gehl (2011) and William Whyte (1980), have argued, the use of public spaces is an empirical result of the physical qualities of space. According to Whyte, “there are four key qualities that make a public space successful. They are accessible; people are engaged in activities there; space is comfortable and has a good image;

and, it is a sociable place where people meet each other and increased social interaction.

Gehl's perspective, that outdoor spaces between buildings can be enjoyable for everyday social life in most climates, is richer and more about human senses, psychology and sociology, focuses on enable necessary activities social activities optional activities. The Attributes such as recreational place size ,paths, and sidewalks and the total number of features and amenities may promote public space use and physical activity.

A great public space is attracting a wide range of people who engage in different activities. It is the living room of the city, the place where people come together to enjoy the city and each other. Public spaces found in great cities of the world. London has a great grand park, palaces and open spaces such as Piccadilly Circus; Paris, the historic cobbled stone park Palace de la Concorde; New York the Times Square; New Delhi India Gate, their national monument standing amidst spreading lawns and Beijing a vast square by the Great hall of the people and Mao Zedong's tomb.

By creating democratic public spaces can lead to singular growth and acceptance of others. Public spaces should be planned to attract all different people and groups, to enable them to look each other in the face, to listen, maybe to talk. Public space creation, management, and enjoyment are ideal opportunities for the involvement of citizens, both at the city-wide and at the community level. As cities grow and density, access to well designed and pleasant public spaces is becoming an increasingly important asset.

2.5 Social Setting of the public open space

Urban public space help connects people with one another, it is important to know how to fulfill the potential of public space to support social connection and engagement. The people likely longer stay in a place that they will attract other people. When activities are in progress, new activities become present.

The social relations of public space reflect the class, gender, age and race in a diversity of people use the public spaces of the city. Further, it serves as an important site of human social interaction with all different kind of activities. According to the Stephen Carr, public space consists three basic things are responsive, democratic and meaningful.

A place that is compact enough so that people can see and hear each other. Although each individual's experience of a place is subjective, many of the elements that create these impressions are present in the urban environment. The materials, textures, detail, sounds, sights and movements all contribute to the quality of a place. The views of wider community's image of urban public spaces are important the reality of an experience when people decide whether to use a space or not.

2.6 Elements of public open space

This section explained the physical design and ambient features of the built environment can be influenced by the human behavior and experience of public spaces. Different urban places are designed for different functions, include activity zones designed for people to stay and engage in activities and pathways connecting them. An activity zone is a unit of space for staying and performing activities, often allocated for a single purpose. But public open spaces can serve mixed use attracted a greater variety than single land use planning. However, the foam of the place, enforced regulations, pattern of activities and capacity of the facility or other reasons cannot occur some activities in either the same place at the same time or the same place at different times.

According to the Whytes' fundamental aspects of urban public spaces study to focus on: size, shape, aesthetics, seating, context, sun, wind, weather, trees and water features are the key elements of the plaza. While Gehl (1987) briefly explains the importance of creating "life between buildings" through good design, it is also critical to note the different elements that compose a public space. In the Image of the City (1960), Lynch pointed out the physical form of city image into five key physical elements: paths, edges, districts, nodes and landmarks.

The context of design elements influences how public space is used and some elements are connected with other design elements. Seating is significantly associated in public open spaces, whether one needs to rest for a few minutes or sit for a longer time, or one wants to sit in the shadow or in the lawn area. People will often use steps for seating; steps should not be counted on to provide the majority of the sitting space. One single element that affects the use and popularity of public space, it may be the amount of sittable space, Whyte's, quotes: "People tend to sit most where there are places to sit." (Whyte 1980, p. 28) Steps and ledges, planter walls, benches, and individual moveable chairs are all viable options, are best when used together.

The important of water features in urban public spaces, follows that the contemporary designers use urban water features in ways that reflect current social cultural values. Today's focus on sustainability and ecologically responsive urban design, designers opportunities to create modern water features that fulfill the role of the urban fountain in public open space as well as contribute greatly to modern urban life.

The visual aesthetic character of urban places derives from more than their spatial qualities. The color, texture, and detailing of the surfaces defining urban space make significant contributions to its character. Visual attributes such as panoramas, views, vistas, foci, landmarks, attractive landscape details, interesting skylines, a pleasing balance of masses and spaces, balance of built form with greenery, the existence of viewpoints where necessary equally important. These elements cannot exist individually; they must act together as a whole to reveal an integrated city image.

2.7 Design of public open space

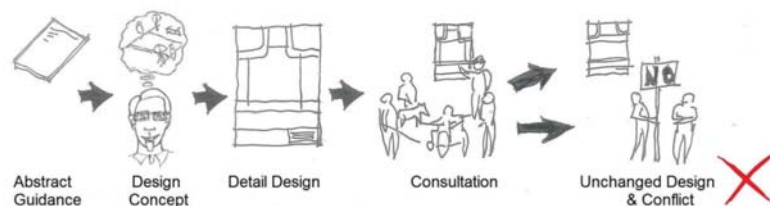
The design has an enormous impact on how users experience in a public space. Decent, responsible design yields an attractive, green, safe, clean public space that will exert a strong positive influence on the community. The design of the public space should be integrated with surrounding uses and should be accessible and appealing to users with a wide range of ages, interests, backgrounds, and abilities.

Design can affect the utilization of public open space. Smooth user movement pattern, landscaped design, appropriately arranged spaces can make the open spaces more attractive and popular. Possibilities for walking, standing, sitting, see, hearing, walking, playing, unwinding, small-scale services, designing for enjoying positive climate elements & sense experiences are key factors of public space designs.

“Design” is a social process lead by a range of stakeholders. It is not just a one-off thing happens when a new public space or green space is created, but an attitude of mind and an approach to solving problems that should also be an integral part of the on-going management of urban Public spaces.

The way in which the design process is currently set up does not allow the designer to receive this information at the correct time. The designer creates a design based on abstract guidelines and assumptions about user behavior. Once the design is well resolved, it is put to a limited group of users for 'consultation' at a point when it is usually already too late to make major changes (Figure 2.2 shows current typical design process). Designers dealing with design problems related to the “public interest,” such as public space and the equipment installed in it, tend to set up restrictive standards that may not meet the actual needs and preferences of the users. Moreover, designs related to public interest, are generally difficult to alter.

Figure 2.2: Current typical design process



Source: Tom Grey and Emma Siddall, 2012 adapted from Atkin, 2010

While planning and design of public open spaces are challenging, people from different cultural, political, economic, and professional backgrounds. Much of the difficulty with participation originates from the conflict between the official planning bodies and the desire to democratize them. The public's general lack of knowledge regarding a technical matter, lack of awareness and a lack of interest towards government programs has been also argued as the main factors. Planners can strive to

give citizens a meaningful role in the designing of places and ensure that information is made available to the public in a convenient format and sufficiently in advance of any decision. But Professionals do not always or adequately hear and respond to a broad range of stakeholders and the users also have an agency. Further, there is not sufficient statutory approach for community involvement in planning and design process. The user oriented approach, highly valued as a solution for a successful design, still produces user unfit designs. Government intuitions have tended to take a rational and develop user oriented approach to planning, designing and managing city spaces.

Public space design is concerned with how places function, not just how they look. The universal design approach is concern about the equitable use flexibility in use, simple and intuitive perceptible information, tolerance for error, low physical effort, size and space for approach and use.

Figure 2.3: Universal design approach



Source: NC state university, the center for universal design, version 2.0 -4/1/9

It is critical for public space design to remain current and to accommodate diverse users. Design options should respond to changes in community needs and in recreation trends. For example, adaptations in public space design can address changes in fitness trends or in the demand for facilities such as seating (both movable and fixed), restrooms, and food and beverage sales all contribute to the comfort and appeal of a public space.

A design is often prepared by a group of designers interacting with other professionals, with the agencies who control resources and rules such as landowners, financiers, planning authorities and politicians, with the users of the space, and with those who would be affected by it. The interaction continues with the parties involved in the implementation phase (Madanipour Ali, 1996).

Urban design and planning process may be a clash of different interests and a challenge to find a balanced result. The main parties involved in the process are the public sector, the private sector, the general public and the planners. Though the public sector has a lawful responsibility to protect the public interest, the current planning practice involves public voice only formally and has resulted in growing public discontentment.

The design of the public space is often tailored to the tastes and preferences of cultural, economic, and professional elites. This often results may do not meet the needs of the citizens. As such, public space can be viewed as a material expression of ‘actually existing democracy’ (Mitchell, 2012). However, as citizen participation in the design of public landscapes increases in importance, how are different voices expressed and what is the role of planning and design professionals in an increasingly diverse and cultural setting. The user oriented design approach, highly valued as a solution for a successful public space.

There are multiple bodies of research that explore public spaces; design-based literature and demographically based literature are the two largest contributors. The design based approach to public space is most notably emphasized by Whyte (1980), Gehl (1987), and Carr et al. (1992). All three researchers outline specific design elements and examine spaces post constructions. While another group of researchers examines access and use across a wide variety of factors including race, socioeconomics, gender and age (Shayna Pollock, 2014). However, these two ways of thought rarely converge to create a comprehensive examination of public space. No current research considers the success of public space in reaching the normative ethics while examining both design based and demographic factors.

The agency Theory explains how to best organize relationships in which one group determines the work while another group does the work. In this relationship, the principal hires an agent to do the work, or to perform a task the principal is unable or unwilling to do. Agency theory that interest between designers and users conflicts of with different interests in the same assets.

The literature on agency theory largely focuses on methods and systems and their consequences that arise to try to align the interests of the principal and agent. Whenever entities enter into causal relationships, they can be said to act on each other and interact with each other, bringing about changes in each other (Stephen A. Ross and Barry M. Mitnick, 1970, adapted by Charles W.L Hill & Thomas M.Jones 1992). Agency theory is concerned with resolving two problems that can occur in agency relationships.

The concept of public space has does not developed concurrently with urban development and there is a need f or a specifically architectural urban definition for contemporary public space in the Sri Lankan context with urban form and life. All of these concepts outline the conditions for the quality of urban places, which is the main area of review in this study.

The absence of available studies, to find the differences between the ‘designers’ and ‘users’ intentions on public open spaces will lead to knowledge gap between the two agencies of the public open spaces. The research attempt compares and the contrast the designer vs. user’s determinants and the significant review.

Chapter 3

Research Design

3.1 Introduction

The research focuses on understand the relationship between designers intention and user behaviour pattern in relation to design & its elements of four public open spaces in Colombo urban area. The study begins with a literature review that explores the place and space and evolving the contemporary public spaces. This includes design elements, social setting and an exploration into current arguments on designer and user intention in the literature. Then outline the research methodology including the research process tools and conduct in field study, observation, interview and discussions.

After it will explore the designed features in relation to activity pattern, compare the characteristics and elements of the case study area. Next interview and discussions data analysis to compare contrast in depth of the designer intention & user perception within the case study area.

Then evaluate the study findings and outcomes of the research. At the end, discuss the research conclusions and present opportunities for further research of the design of public spaces.

3.1.1 Intension of the Study

The aim of this research is to analysis how urban planners and designers intentions and understanding user behavior and their integration in order to design process of the contemporary urban public spaces.

The intension or objective is to study the differences between the designers' intensions and user's perceptions of the designed public spaces. The lack of actual knowledge between the designers and users about public open space design and user behaviour and their combination with in the process of designing the contemporary urban public spaces. The gap in knowledge is the lack of studies on this matter in Sri Lankan context.

3.1.2 Research Question

The research questions formulated Based on broad sense of how different intensions and perceptions of the designers and users of public open spaces. In order to answer these questions the following specific questions are formulated:

Observation

1. When, what time and how long the people use the public open spaces most?
2. What is the relationship between the activity pattern and design elements of the public open spaces?

Designer

3. How do the designers perceive the public open spaces?
4. What factors have been considered by the designers when they designing open public spaces?

User

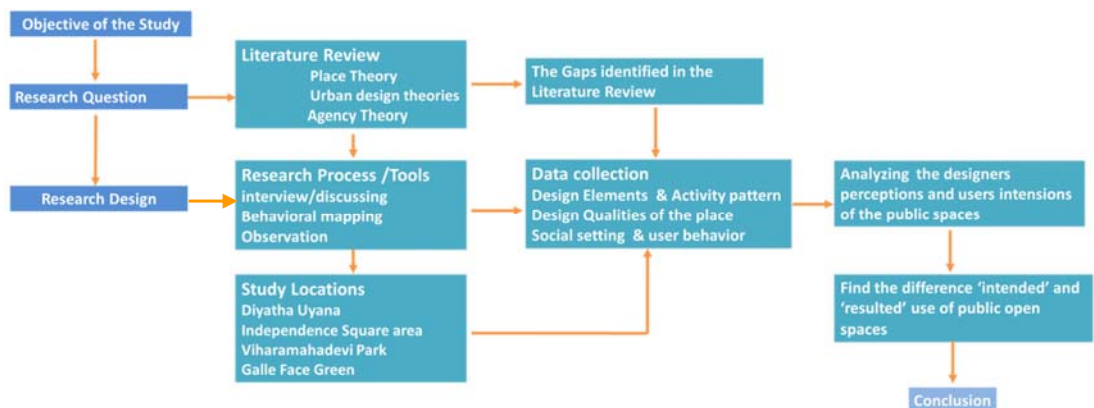
5. What do the users intend to do in open public spaces?
6. What do they expect the designed spaces?

3.1.3 Research process and Tools

The research process improves combine method approach by including both qualitative and quantitative methods of data collection by allowing for exploration of the reasoning behind certain views and decisions.

The explorations are made in selected public open spaces, research process details are given in figure 3.1.

Figure 3.1: Research process



Source: Author

The research method includes theoretical approach, field observations, interview and discussions. The findings of the interviews and discussions are validated through compare & contrast differences between ‘the intended’ and ‘the achieved’ the designed spaces. The research tools and techniques are in table 3.1.

Table 3.1: Research Tools

Tools	Method	Description	What can be learned
theoretical approach	literature review	archival material, and published literature to place and design elements	Design & its elements of open public spaces
designer Intention	original design drawings, documents	Designed elements	Urban designs, Landscaped components
user perceptions	Journal , researches	Human behavior, kinetics	Public views, participation
observation	Structured/ unstructured	users counts by activity at given space lapse , digital images(Quantitative Approach)	Types & frequency In selected intersections
	unstructured	digital images	Characteristics and designed elements of the public spaces
	behavioral mapping	User movement pattern one location to another	User intensity
interview/discussing conversation	Designers	design strategies	Design qualities
	user group	Interviews with users asking open-ended questions, conducted with interested survey respondents.	Preferences, likes, dislikes, meaning, beliefs and values of users
	Stakeholder	User Interview	Their views
analysis	comparative analysis method, original design with user behavior	frequency &duration, compare and contrast	actual utility of public space. explore the difference between ‘the intended’ and ‘the achieved’

Source: Author

Observations

Structured observation is use to record the number of people, to identify engaged with activities in and length of stay (duration) and its intensity of users at different block segments. The observation and the data collects 2 block segments in each public space which is approximately 25 to 30 meter in length. Unstructured direct observations are free to observe whatever relevant and important elements or characteristics of the place engaged by the people around the places.

Interview and discussion

Interview and discussion focus on designer perspective and user perspective. Group discussion with place designed architect, landscaped architect, town planner and project manager for each location. The interviewee and discussion was asked several questions relating to the factors that influenced their design decisions, particularly with each respective public space. The aim with the interviews has been to get a professional's perception on the contributing factors that make a public place function in order to contemporary urban design perspective.

User perception Interview conducted with willing users or participant and discusses particular place related topics, beliefs, values & ideas. And users Interview will conduct average 25 persons in each location.

3.2 Public open spaces in Colombo urban area

Urban public spaces are popular concept that has revitalized recent past years with in the main townships of Colombo. The revival schemes may improve the aesthetic & visual image of the places and provide much needed space for recreation & improved the quality of life with in the surrounding areas. These public spaces may create or redesigned for economic benefits and paying less attention on socio cultural aspects, which have regulated accessible to everyone at all times. Furthermore it was also identified that certain public open spaces design elements act as discourage or are unwelcoming a different group of people such as disabled, women and elderly, different social class of the people.

There is a certain regulations enforced to control the nature of recreational users activities within these spaces but weekend experienced by the users.

Figure 3.2: Beach activities in Galle face green



Source: Author

Walking, running and exercise allows some spaces but playing sports, games & riding are prohibited, but the existing regulations frequently not followed by the users.

Figure 3.3: Playing in Independence Square surroundings and Galle face green



Source: Author

Figure 3.4: Parliament Ground in year 2010 & 2016



Source: Author

The regulations are intended to control visitor behavior directly, and it may be significantly limit visitor freedom of choice. Due to the changed of the space & setting of parliament ground, new activity arises while decline the existing situation.

Figure 3.5: More aesthetics with common character



Source: World Wide Web (www)

Figure 3.6: Structures and vehicles dominate the front space of the place



Source: Google street view

Figure 3.7: Lack of amenities in Galle face green



Source: Author

Figure 3.8: User not follows the rules and regulations

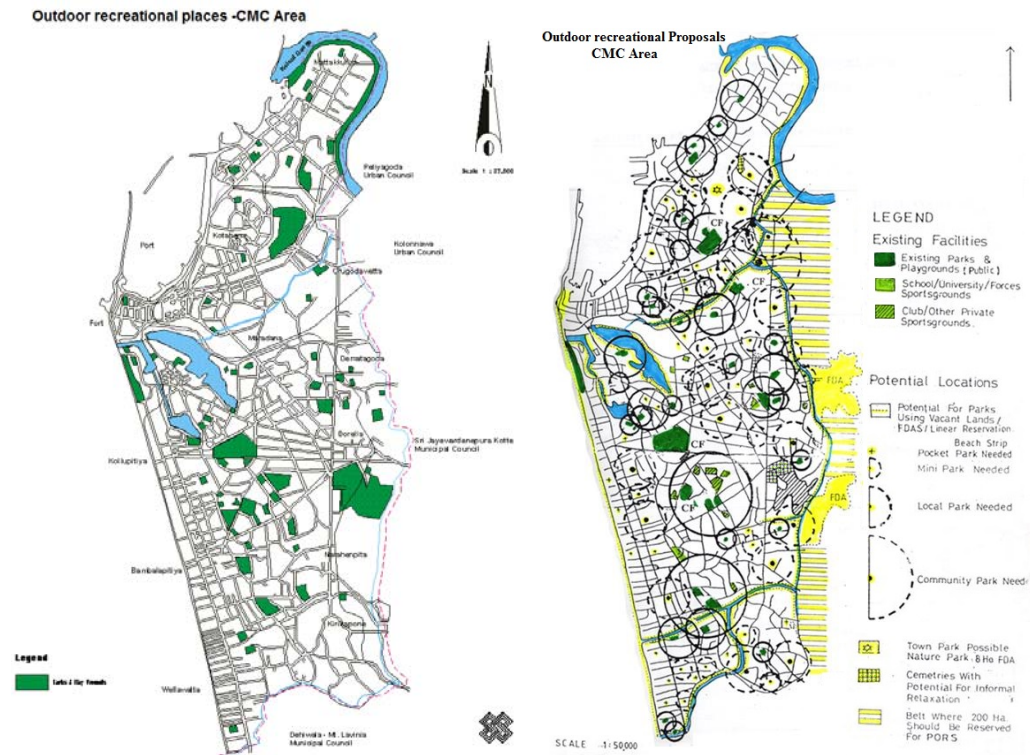


Source: Author

Consequently, matters such as how the physical and ambient features of public spaces affect behavior may receive the lesser attention or critical consideration by professionals.

Public open Space Planning also adapted and incorporates in many urban development plans as well as the CMC area shown in plan 3.9. However, none of them yet implemented or regulated according to the development plans.

Figure 3.9: Public open space & Proposals - CMC Area

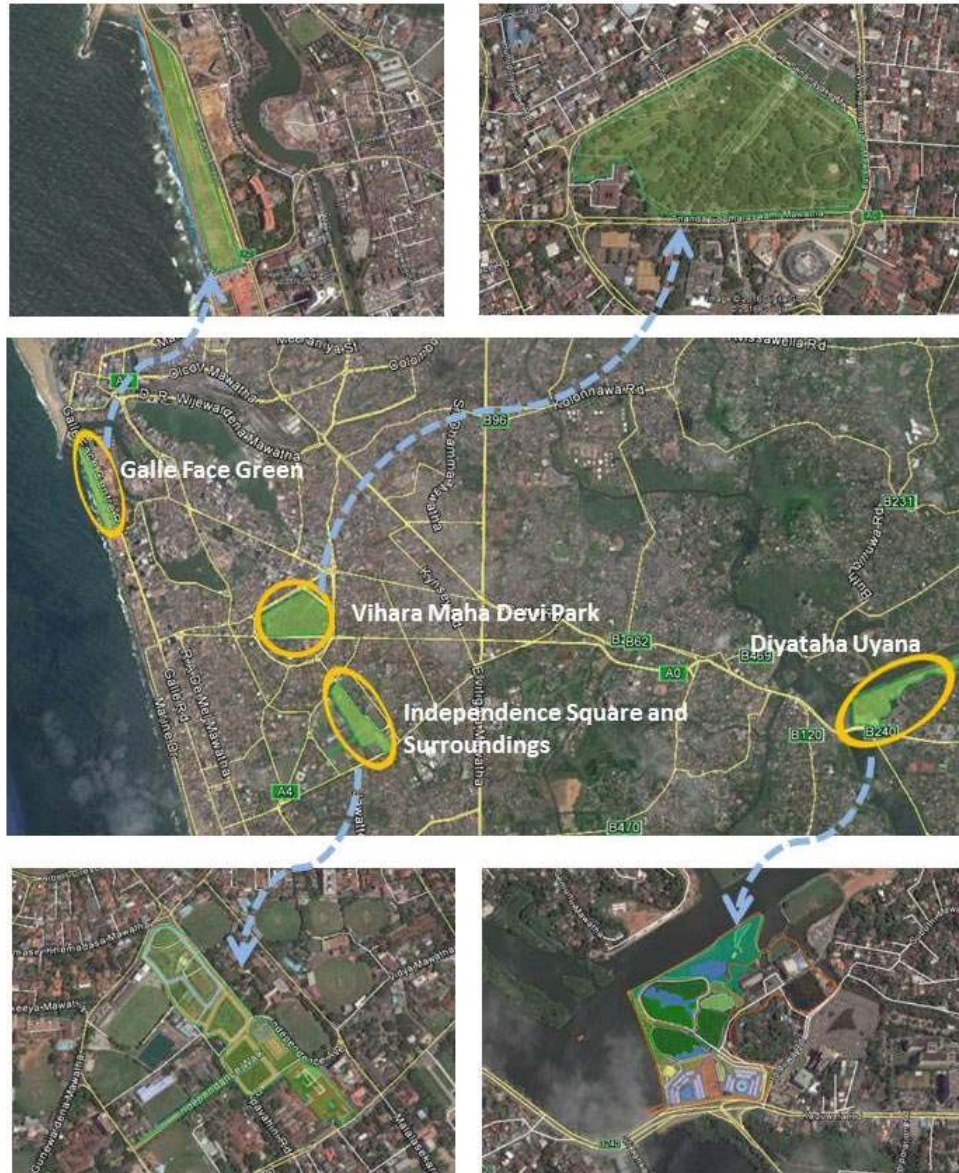


Source: Urban Development Authority.

3.3 Case study locations

The selected public open spaces fall into three categories, Urban waterfront Park, sea front open space and central park with in Colombo urban area. The public place locations are illustrated in Figure 3.10.

Figure 3.10: Locations of the selected public open spaces in Colombo

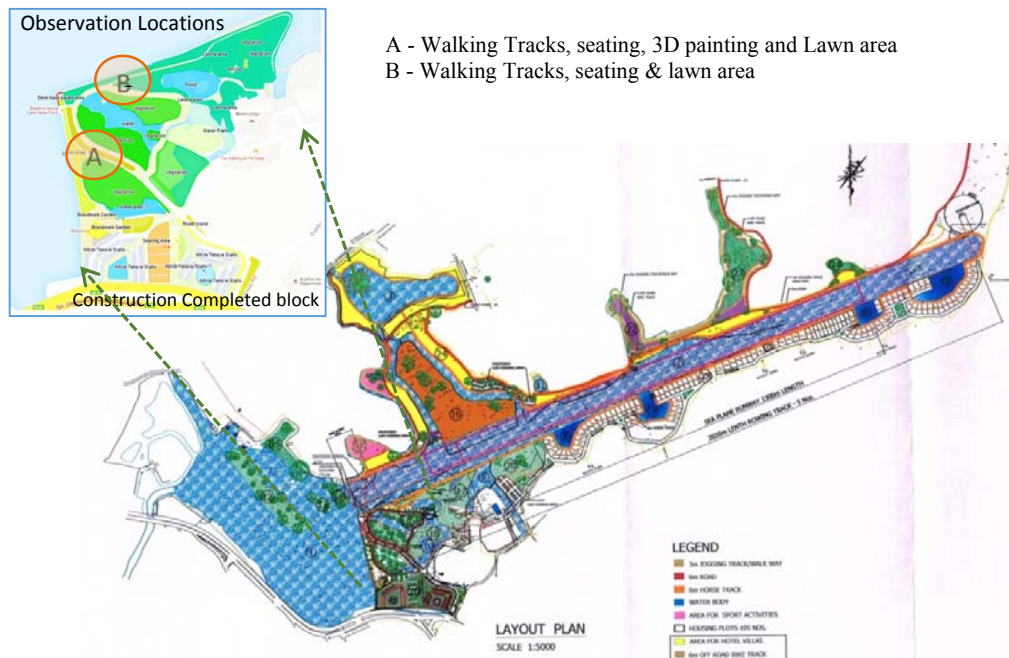


Source: compiled by Author using Google earth

3.1 Diyatha Uyana

The part of Diyawannaoya wetland has been completely converted with landscape improvement & built the Diyatha Uyana urban space. It was designed as bird sanctuary In1982 of Sri Jayawardenapura plan. The Sri Lanka Land Reclamation and Development Corporation has declared the as flood detention area, functioned until the changed the design and construction of the Diyathauyana in 2009.

Figure 3.11: Landscape plan in Diyatha Uyana - 2009



Source: Sri Lanka Land Reclamation and Development Corporation

Diyatha Uyana completed part of its design according to the layout plan 3.11 with paved pathways facilitate walking, jogging and children's cycling. Artists and photographers are attracted by the scenic beauty of the location. The walking tracks are created in and around with paving & sand, especially used by the elder's group in morning and evening fitness. The playing & sports activities are not allowed here and it closed after 11.00pm in the night.

Figure 3.12: Landscape Plan in good market & Food court area



Source: Sri Lanka Land Reclamation and Development Corporation

The Good Market, central foods court, children’s play areas with 3D paintings are welcoming features enjoyed by the users.

Figure 3.13: User Attractive locations of Diyatha Uyana

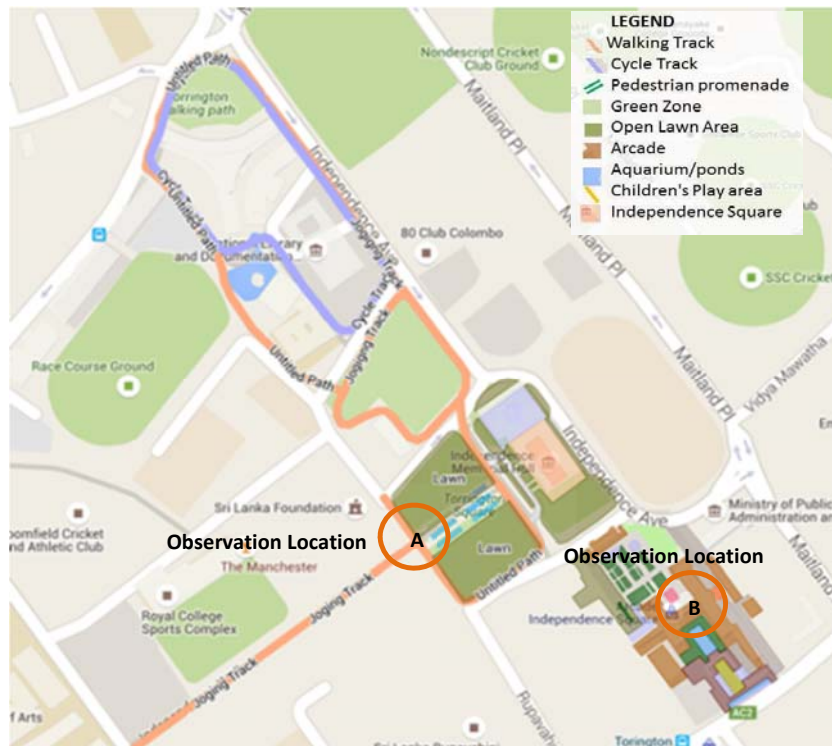


Source: Author

3.3.2. Independence Square and its surroundings

Independence Square and its surroundings were revived by the development of pedestrian links connecting the adjoining locations of importance such as the Racecourse, University of Colombo, Planetarium, Sri Lanka Broadcasting Corporation and National Archives. Pedestrian links through the public building premises connect with the national monument used for recreational means of walking, jogging, and cycling.

Figure 3.14: Independence Square surroundings layout plan



Source: Urban Development Authority

Figure 3.15: Independence Square surroundings landscape plan



Source: Urban Development Authority

The user's highly attractive features are, Children's play area, fish ponds and walking tracks.

Figure 3.16: User Attractive locations of Independence Square surroundings



Source: compiled by Author

3.3.3 Galle face green

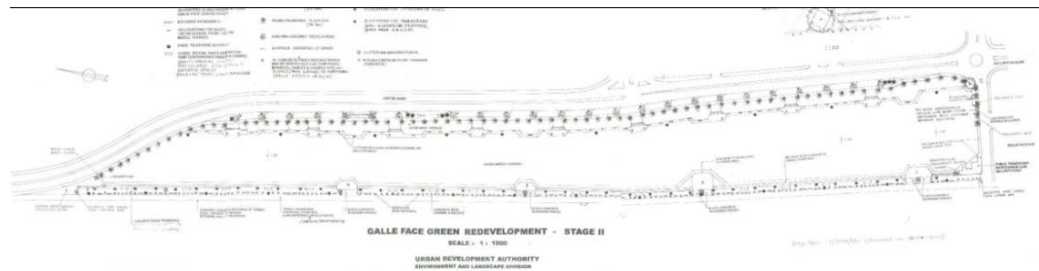
The Galle face green is large sea front leaner public open space in the Colombo urban area, which is utilized by the city dwellers and suburban people for their leisure walks in the sea breeze, exercises and relaxing.

The promenade bordering to the sea forms a strong edge to it, where a separation two elements of land and sea. "Water" and "sky", the natural characteristic of the place is formed, which constitutes the basic elements of a landscape.

The place utilized for sitting on the grass in the evening or simply enjoying a relaxing time in the open air and surrounded by a fresh sea breeze. There is no significant segregating space between different user groups or between different groups of the peoples within the place.

The center lawn area, tarmac sea side promenade and deck open to the sea area is highly user gathered.

Figure 3.17: Landscape plan - Galle Face Green



Source: Urban Development Authority

The Galle face green is physically accessible to everyone and attractive and successful public space that cater to all categories of users. There is a certain regulation enforced to control the nature of recreational user's activities within the Galle face green.

Figure 3.18: Physical features - Galle Face Green



Source: Google map 2015& field observation

Figure 3.19: User Attractive locations of Galle Face Green



Source: Author

3.3.4 Viharamahadevi Park

The Viharamahadevi Park is the largest outdoor recreational place created great environmental importance to the city with its profusion of mature trees representing many species. Now the ambiance and facilities have been improved with the surrounding fence and structures have been removed, producing a more visually accessible environment.

It has well-landscaped gardens with a variety of trees, flowers, lotus ponds, fountains walking tracks and well maintain large lawn area. On the northwestern side of the park is a special section for children play area with play features, Rock aquarium, and an amusement park.

Figure 3.20: Layout plan – Viharamahadevi Park



Source: Author compiled by using Google earth

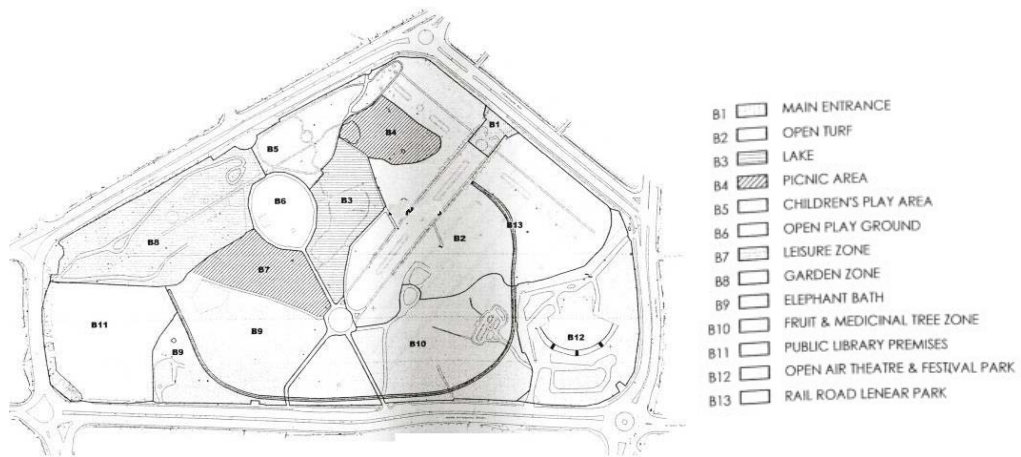
Figure 3.21: User Attractive locations of Viharamahadevi Park



Source: Author compiled

Most of the user activities found in open play area, children's play area and between the open play area and the children's park.

Figure 3.22: Activity Zoning plan – Viharamahadevi Park



Source: Metro Colombo Urban Development Project

Chapter 4

Analysis and Findings

4.1 Introduction

The structure of this chapter includes the direct field observation, interview, discussion and questionnaire survey results, analysis, and findings with particular reference to the comparison of user perception and designer intention within the urban public spaces in Colombo urban area.

The observation results and empirical knowledge expose the design elements impact on activity patterns and the actual use of the space considering two components of place, ‘physical setting’ and ‘user behavior pattern’.

4.2 Characteristics, features and elements of the places

Public open spaces are defined its main characteristics and design elements of the place. The place features & elements weighted based on physical & functional qualities of the space. Table 4.1 shows physical Characteristics & functional qualities of the spaces.

Table 4.1: Characteristics and Designed elements of the public spaces

	Diyatha Uyana	Independence square Surroundings	Viharamaha Devi Park	Galle Face Green
Size and Shape of Space	27 acre (stage I)	21 acre	52 acre	15 acre
Accessibility	☞	☀	☀☀☀	☀
Greenery	☀☞	☀	☀☀☀☀	-
Play features	-	-	☀☀☀	-
Seating	☀☀☀ food stall	☀	☀☀☀☀	☀
Steps	☞	☞	☞	☀☀☀
Lighting	☀	☀	☀	☀
Water Features	☀	☀	☀	☀ sea
Shades & shelters	☞	☀	☀☀☀☀	-
Aquarium	☀	☀	☀	-
Walking tracks	☀	☀	☀	☀ Promenade
Cycle track	-	☀	☀	-
Timber deck	☀	-	-	☀
Lawn area	☀	☀	☀	☀
Parking area	√	√	√	√
Food & snacks	√	√	√	√
Drinking water	-	√	√	√
Sanitary facilities	hidden	√	√	poor

Legend: High☀☀☀, Medium☀, Low☞, Features available√ (Source: author)

The observation data revile the Diyatha Uyana fascinated by green and water front space and Independence square surroundings stand as multifunctional greenery public square. The Viharamahadevi Park view as a central park and Galle face green observed as sea front linear public open space. It is observed the Viharamahadevi Park has accessibility, greenery, play features and shades & shelters higher than the other places.

Seating can be presented in different forms, act as a place to rest, a place to think, a place wait, a place to watch and place to talk. Although architects normally regard benches as primary seating, however the observation found in the public spaces the secondary seating, which is included on steps, lawn and edges may also be incorporated into the other elements give more freedom to the users.

Figure 4.1: Seating on edges, lawn area, floor & cement bench in study areas



Source: Author

Supplying elements tend to define by the recreationist activity pattern. Natural design elements are associated with other design elements. The water feature is the most popular subspaces; results indicate users like touch & play with water.

Figure 4.2: Water elements with activities in study locations



Source: Author

It is prominent, shades and shelters can see only in the Viharamahadevi Park. And open ply area for informal sport and play activities also seen only in Viharamahadevi Park. Whyte (1980) refers to as natural elements, people tend to sit on the edges if the heat is comfortable; but, people like the option of sitting in the shade when there is the sun. People like to sit under trees with a view of the action; thus, trees should be related closely to the sitting spaces.

Figure 4.3: Shades and shelters in Viharamahadevi Park

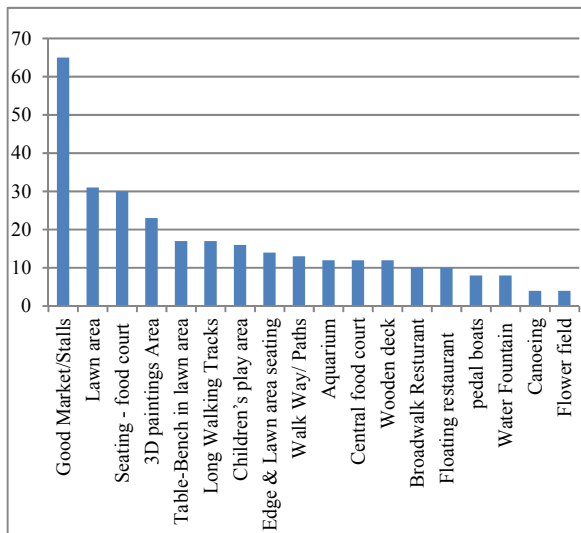


Source: Author- 2016

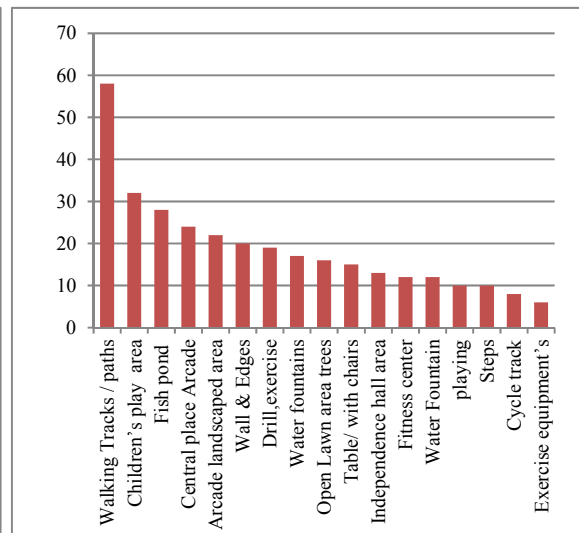
4.3 Users levels in relation to Design elements

Design and form of space and landscape features and elements affect the utilization of public spaces. Several features of public space positively and negatively influenced the space use. The user activities levels analyze by its frequency in each public spaces in figure.4.4.

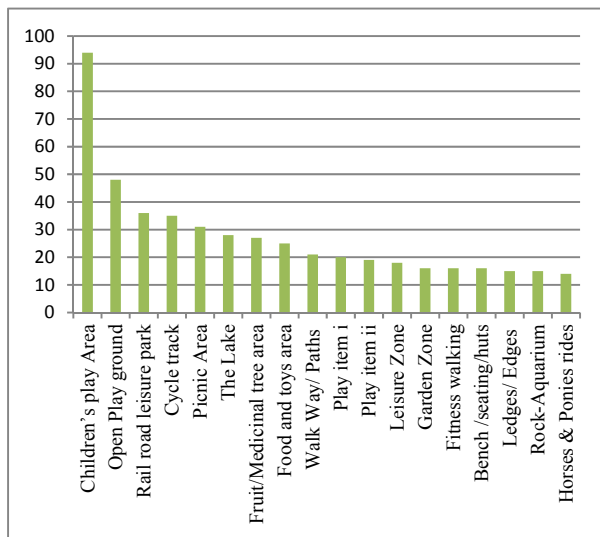
Figure 4.4: User levels with provided elements of the places



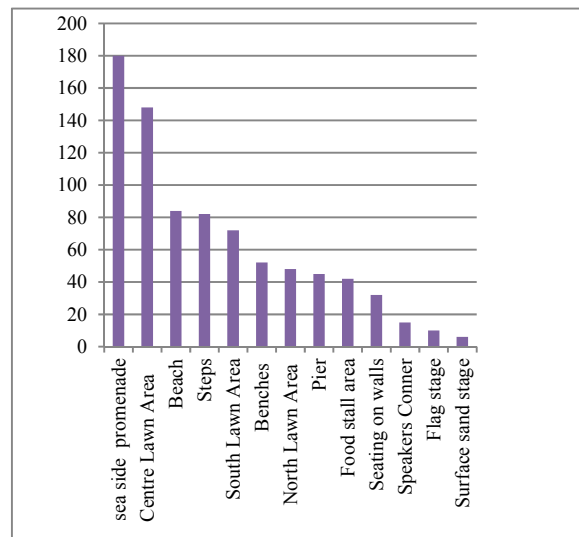
Diyatha Uyana



Independence square Surroundings



Viharamahadevi Park



Galle Face Green

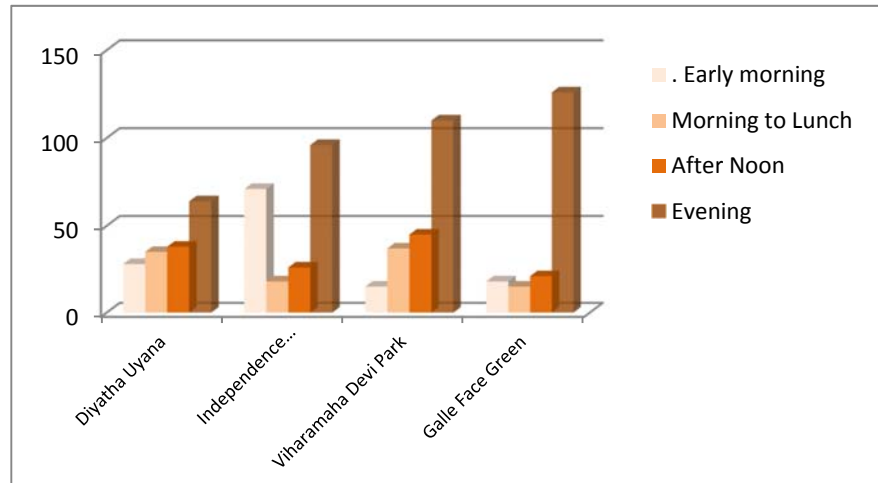
Source: Author

The study finds the differences between the types of users in each space in relation to supplying elements presence or absence, facilities & other factors. The Galle face green has most user diversity relaxing place leads different recreational activities in

the same place in a different time of the day. Walking for relaxing and standing & watching is the highest user levels recorded in seaside promenade.

The recreational activity levels of each public space in different time of the day indicated in figure 4.5. It is notable Independence square surroundings, morning walking for fitness & exercise user group higher than the other places.

4.5: User Level in different time of the day

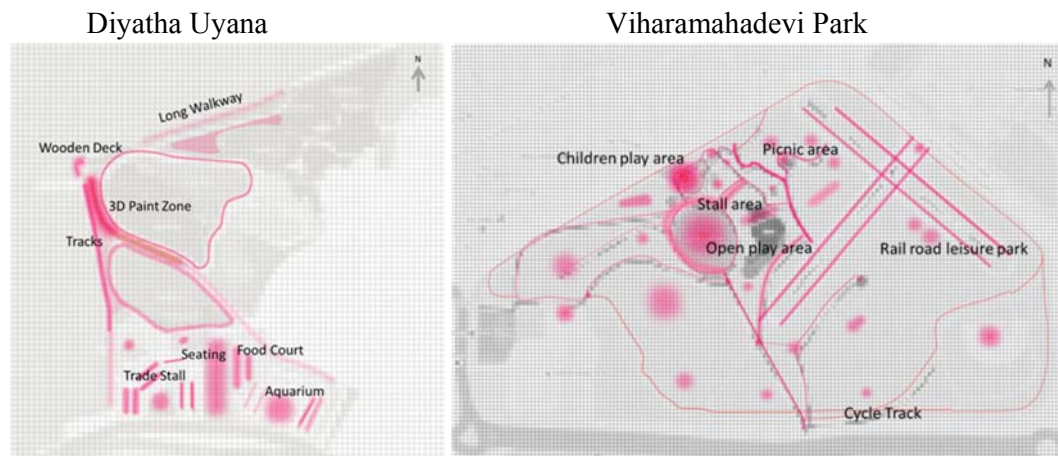


Source: Author

4.4 User intensity analysis of the spaces

The user intensity map illustrates high intensity contented zones users like stay and gathered. The elements and amenities associated with the high intensity activity zone refer to the amount of activity found in an area. Behavior mapping coded by the number of users, the busy and quiet times, the frequency of movement and stationary behavior pattern.

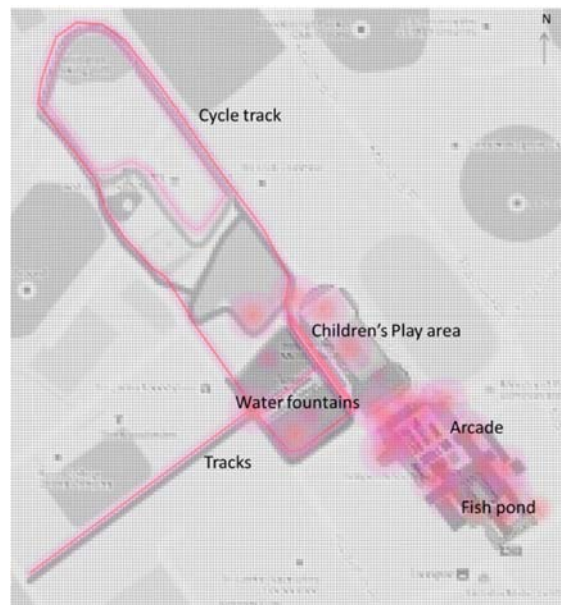
Figure 4.6: Users Intensity of public spaces



Galle faces green



Independence Square area

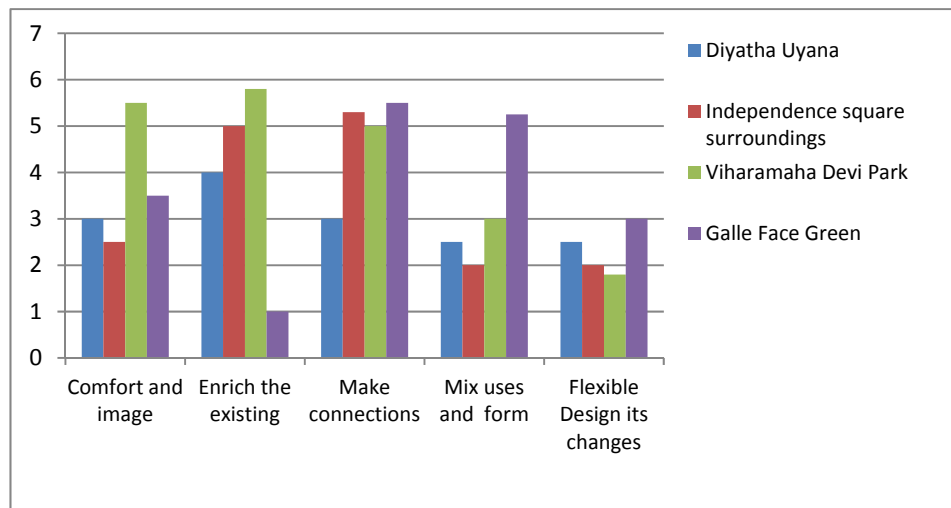


Source: Author

4.5 Design qualities of the spaces

The challenge facing urban designers and planners is how to make public spaces become a functioning place. Questions of societal norms, environment, culture and tradition must all to be considered. With all the challenges facing cities today, a particular pattern of urbanization can be hard to know how to tackle the problem of creating vibrant, safe, attractive public spaces. Creating a place, not just a design, places meet the needs of people first. In evaluating public spaces in a case study area found that successful ones have five key qualities.

Figure 4.7: Design quality aspects of public spaces



Source: Author

The key qualities of the designed public open were identified based on a review of the urban design literature & field observations. At different points focus on urban design qualities, potentials of the environment that depend on physical features but reflect the general way in which people perceive and interact with the location.

Comfortable and good image

The imageability is set thereby, as the “quality of a physical object that gives his a high probability of evoking a strong image in certain observer” (Lynch, 1960, p. 17). The Viharamahadevi Park has large green cover providing aesthetic value and shade from sun and heat to the users. A place has high imageability when specific physical elements and their arrangement capture attention, evoke feelings and create a lasting impression. Kevin Lynch (1960) defines ‘imageability as a quality of a space that makes it recognizable, memorable and distinguishable’.

Figure 4.8: Open Lawn Area – Viharamahadevi Park



Source: Author- 2016

The aesthetic qualities of a place such as greenery, a variety of materials and right physical proportions can also contribute to a sense of comfort.

Enrich the Existing Environment

Urban spaces must respond to their surrounding context and create a mutual relationship between the areas. The spaces should complement one another’s strengths and minimize their weaknesses (Jacobs, 1993). The Viharamahadevi Park highly captured by the designers to make enriched existing.

Figure 4.9: Landscape improvement of Viharamahadevi Park



Source: Author - 2016

The complexity of the visual richness of one particular location, it depends on the variety of elements, though it is used in a harmonious and balanced way.

Mixed Use and foam

Mixed uses and activities encourage people to stay in a public space with their diversity and complexity. A variety of forms, uses and activities will attract a large diversity of users from various groups, social classes, and age groups. This will result in the maximum use of the space throughout the day and year (Jacobs, 1993). The Galle face green is a higher diversity of user group and mix activity pattern than the other place, attract to the large open space and sea.

Figure 4.10: User diversity in Galle face green



Source: Author- 2016

Flexibility of Design for Change

Urban spaces must be responsive to changes in the urban fabric to continue to function and be used. A great degree of flexibility is needed for a change of purpose or use of the space in future (Wall & Waterman, 2010). The Galle face green land foam may Change towards the sea side.

4.6 Designers intention of the places

In designing and creating public spaces, architects and planners necessarily influencing connect with human behavior. The perspective of decision makers about the public space is mostly valuable to make rational decisions. Therefore it is vital to identify what is meant as public space by users or how users define public space according to their sense. Those facts will more crucial to making or upgrading any public spaces for the urban community.

The decisions of designers may be influenced by primary factors such as the government agencies' desires and limitations on time and budget, the decisions of urban designers and planners may be influenced by the requirements of planning legislation and government policies. Urban designers are those who make urban design and place making decisions under the politicians in central government, provincial council requirements. Often the matters that are most significant in terms of their impact on people are the most difficult to manage through policies and controls. This finding has highlighted the fact that landscape architects are carrying their duty just to fulfill the requirement by the clients.

Table no 4.2: Designer Intentions of the space

	Purpose of the design	Design Concept	Main features	Enforced rules	Issues
Diyatha Uyana	Flood mitigation in the area and enhance the environment beautification.	Enrich the existing wetland	Walking tracks(used as watching)	No foods ,pets, playing	maintenance
Independence square surroundings	To create a lively open green space with activities to promote more public use giving due respect to the independence hall.	To enhance the quality of space within in and around Independence Square.	Walking tracks(used fitness)	No playing ,No pets	High Maintenance cost
Viharamaha Devi Park	Re-design of the place	to create an environment that blends with the existing architectural character of the area	Greenery, Lawn, Shelters ,Tracks	No pets	Maintaining cost
Galle Face Green	Redevelopment	Rehabilitation in green	Open lawn area, promenade	No play, games, baths	Poor maintenance Low amenities

Source: Literature, Conversation and interview data, 2016

It is observed designers are more concern about improved the environment and greenery of the places. Aesthetic qualities: refer to an architectural style of built environment and add to the attractiveness as well as the identity of space. Green and water space elements are highly used features by the designers.

Designers should adopt two important roles actively. The first is as coordinators, gathering together different interested groups and professionals, and then as facilitators, assisting users in participating, modifying, experiencing, creating, producing, and actualizing the design.

The design professional who designs the site does not work with just one client but respects a diverse and larger group of people. This ability to understand the needs of the local community is crucial to creating a quality public space.

4.7 Users perception of the space

The design place has no real existence until it is used or the participation by the users that gives a design its meaning. The decent community places are where people want to be gathering and physically set up to encourage conversation and interaction. They provide reasons to go there and reasons to stay, feel safe and comfortable, and accessible and welcoming to everyone. Its benefit to any community or neighborhood to have as many of these natural gathering places as possible since they allow not only for interaction, but for entertainment, cross cultural learning and the establishment of inter group harmony, and the building of neighborhood and community pride.

Basic user needs for public space include comfort, relaxation, passive engagement, active engagement, and discovery. Passive engagement usually consist the form of people watching, seating, social interactions and active engagement comprises the form of more intense physical interaction. The users highly considered the facilities such as seating, shades and shelters, sanitary facilities and other amenities are shown in table 4.3.

Table 4.3 Questionnaire survey on user perception

no	Question	Diyatha Uyana		Independence square surroundings		Viharamahadevi Park		Galle Face Green	
		Yes		Yes		Yes		Yes	
1	On the whole, do you like the Place?	Yes	21	Yes	22	Yes	25	Yes	21
		No	04	No	03	No	0	No	04
2	When you use the place	Morn.- 02	Even. - 23	Morn- 13	Even -12	Morn- 07	Even- 18	Morn -1	Even- 24
3	What do you do here	Active 07	Passive 18	Active 17	Passive 08	Active-12	Passive 13	Active-09	Passive-16
		Buy/Eat	relax	ride	watch	kids Play	Leisure	Play	aesthetic
		Walk	Socialize	Walk	social	ride	study	Kite fly	watch
		kids Play	watch	Fitness	relax	play	relax	Beach ac.	social
			Enjoy nature	Exercise	Enjoy		contact nature		relax
4	How long will stay here	1< h	06	1< h	8	1< h	1	1< h	3
		1-2 h	16	1-2 h	11	1-2 h	9	1-2 h	14
		2 >	04	2 >	06	2 >	15	2 >	08
5	With whom do you come here	Single	05	Single	9	Single	4	Single	8
		Couple	08	couple	6	couple	12	couple	5
		Group	12	Group	10	Group	9	Group	11
6	Which is more attractive feature of the place	3d Paint	10	Tracks	8	Children's Area	12	Beach	7
		Tracks	02	Fish pond	5	Track	4	Lawn	4
		Good Market	08	Arcade	1	Lawn	3	Deck	10
		Lawn/Envi.	02	Ind. Square	3	Shades/shelter	3	Promenade	4
		Aquarium	03	Lawn	2	/seating area	2		
				Fitness	2	Aquarium	1		
				Kids play area	4				
7	What do you dislike most about the Place?	Vehicle parking, Service		User regulation Arcade Setting Cost of food items		Road safety, place Element, Access between zones		Toilet block Heat/sun Service	
8	Do you feel safe in the place?	Yes	21	Yes	20	Yes	19	yes	18
		No	04	No	05	No	06	No	07
9	Limitations/ barriers	User Regulations Seating Shades Facilities		User Regulations Seating Shades Facilities		User Regulations Facilities Seating Shades		User Regulations Facilities Seating Shades	
10	Facilities or Requirements	seats Water Toilet		seats Water Toilet		foods		Water Toilet seat	
11	Experience on Public participation on design or knowing about it	Yes	01	Yes	00	Yes	02	Yes	00
		No	24	No	25	No	23	No	25

Source: Author

The focus group session and interview explores a different perspective on the experiences of the users of public open space. It's also indicated that almost 55% of the respondents visited the park to have passive engagement, contact with nature.

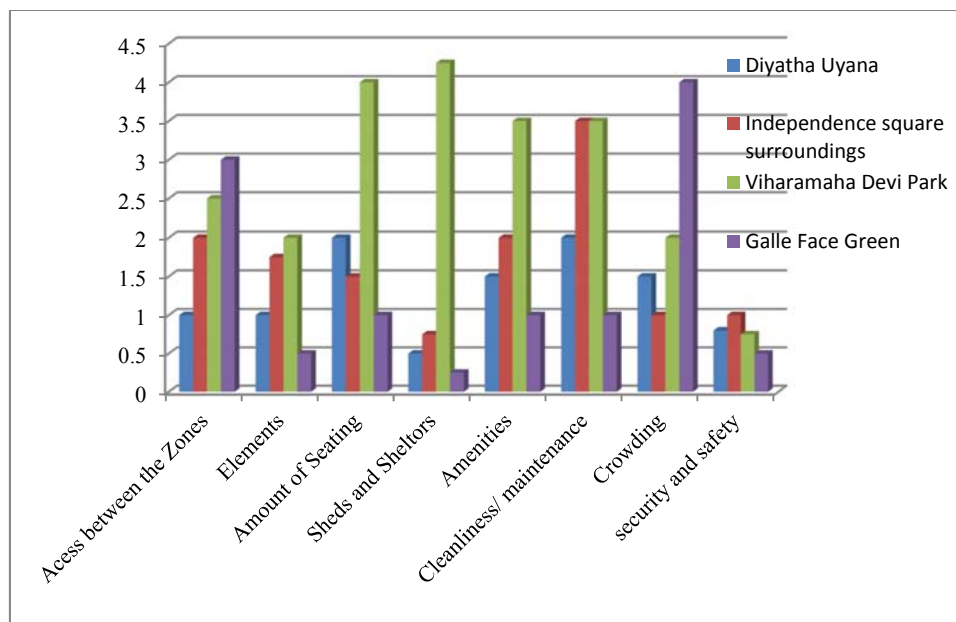
Based on the user interview find the significant factors of place functioning. The attributes of cleanliness, aesthetic were considered to be the most important characteristics contributing to the functioning the places. Respondents also considered the types of activities, elements, location and easy access are increasing the attraction and intensity of using urban public spaces.

Users stated they require spaces where they would choose to spend their spare time. Lack of visitor facilities is a major reason behind some locations people abandoning. The absence of a consistent association between amenities and physical activity may suggest that people find other ways to be active, such as play & games, seating despite the perceived, lack of safety in their environment.

People not only require good design but they also need a good quality of amenities and leisure services. To improve space performance towards user's satisfaction include the provision of protection sun & rain, seating, toilet, separation from vehicle traffic, natural elements, formal events, public art, food stall, restaurants, sports recreational and shops and so on.

The survey showed that respondents had least consulted in the planning and design process. Moreover, eight-fold problem areas shown in Figure 4.11 were also exposed by the users of case study locations.

Figure 4.11: Issues of the public spaces



Source: compiled by Author

Some design issues highlighted the respondents within the Independence square area and Diyatha Uyana include the provided features, its layout, landscaping, ease of access, visual appeal and other aesthetic features such as sculptures that are inappropriate according to them.

Minimizing thermal discomfort from the intense sun incidence and heat, providing adequate shade of outdoors surfaces and taking advantage of the prevailing the rain overcome by the Viharamahadevi Park. The effects of heat and rain over the Galle face green have been highly negative and limiting user activities. There are some forms of recreation such as playing and other sports that are not allowed in these particular places. However, it is observed playing fields are an essential part of the recreational spaces among the young and children's.

The findings of user group highlight how the different features of public spaces are capable of influencing the behavior and experience of people from a practical perspective. It has verified that the physical and ambient design of public spaces facilitates, crowding affects personal space needs, deters, people through unpleasant sounds and smells cause behavioral changes in response to perceptions of the places. These issues that should be considered and addressed by urban designers, planners and government authorities, not only to attract commercial investment but to create public spaces that people can take pleasure.

4.8 Differences in ‘Designers’ intentions and ‘Users’ perceptions

This chapter aims to examine and compare the designers' intentions and the users' perceptions of the designed public spaces.

Contemporary public open space design exists at a crossroads of architecture, landscape architecture, city planning and civil engineering works. The design has an enormous impact on how users experience in public spaces. It functions as a collaborative, creative process between several disciplines and results urban forms and space, enhancing the life of the city and its inhabitants. Urban planners' intentions to regulate public space in a particular way their intentions behind designing and producing space.

The users are too different dimensions presence as a response to urban public space. These aspects include the access, freedom of action, claim, change, to find qualities of the spaces. Public space users or visitors like to lay temporary claims and control over the space, and also create opportunities to socialize.

The differences in ‘designers’ intentions and ‘users’ perceptions in case study locations as summarized in table 4.4.

Table 4.4 Designers’ intentions and ‘Users’ perceptions

Designer intention	User perceptions
A process of the Rational Problem-Solving	Space for play , relax & social interaction
Providing more visual aesthetic landscape features & elements	traditionally designed elements use for a specific group engaged active and passive activities different aspects
Design based on theoretical concepts	Redefined the space by user experience their own ways
Government agencies’ desires, policies or requirements.	More benefits & requirements
Most design coming from Top-down approach	Least community involvement or participation or adapting their views.
Revised the design and put up quick solution by the designer group	activity pattern Changed foam of the space
Enforcing on regulatory controls	Users do not always follows regulations
Activity defined by the designer	More diversity defined by the user’s activities
Maintenance management	amenities and Cleanliness

Source: findings of questionnaire survey and interview data, 2016

The design based literature focuses on the factors of the physical built environment that can create a successful space (Gehl, 2010; Whyte, 2001). Urban designers are typically professionals employed or retained on account of their urban design expertise. Quite a large number of designers still expect and believe that they are able to predict users' ways of operating, predetermine users' likes and dislikes, and then produce their intended designs. They generate a design their intentionally, especially a design for public use, to suit a broad range of users.

However, it also found instances where the gap between the intentions of the designer and the social outcome of a design was far too wide. The facts tell us that designers today still find that their ability falls short of their ambition, while the demographic literature focuses on the underlying societal barriers to equitable public space access and use (Lefebvre, 1996; Mitchell, 2003; Fainstein, 2010; Harvey, 2012). However, the both theoretical and practical, on public space acknowledges equally important the interaction of spatial, socioeconomic/cultural, and planning elements (Talen E, 2011; Byrne J and Wolch, 2009).

It would be considered that professionals should adopt a sensitive approach to dealing with matters affecting human behavior. It has focused on how they can incorporate psychological considerations into their decisions and designs by improving the process of information gathering and decision making. As this case study explore the engaging difference in the planning and design of urban public space can advance the goal of democracy, not only in terms of participation but also in terms of the production of meaning for different social groups.

4.9 Findings

It should be noted that the object of this paper is not to devalue either professional designers or their designs. However, it should be noted that users expect and act differently, and sometimes contradictorily, to designers' expectations and decisions. When to review current designs and plans, particularly those claimed to be designed and planned in the public interest, professional designers and public officials frequently employ various strategies to get users to follow the predetermined modes of practice. However, on the contrary, users do not always follow exactly what the professionals decide and expect.

Adding to this, findings from the interview have also articulated that the designer's ego and the attitude of "designers know everything" add to the negative factors behind the lack of public participation in the design process. It can be considered as a form of two-way communication between user and designer. Most of the time, in this form of participation, many designer expect to retain or reserves the right to make the final decisions.

Finally understand the place making, which is a widely used concept, concerned with the process of planning livable spaces for people in cities. 'Whyte' and 'Jacobs' can be regarded as the founders of this approach to public space planning, but many authors have been discussed with social aspects. This means that there is a huge theoretical background supporting this concept and process within the urban planning field including;

- The positive aspects of the bottom up approach, thereby involving citizens in Planning and design.
- Evolution from the inside, not too detailed plans, but an opportunity for freedom.

The designers and planners can link the gap between design and behavioral pattern, in order to civilize the process of deciding, designing and elements of public spaces. The focus of this practice is on identifying not just the clients' preferences but also the values of the users of the environment. Involving people in the design and planning process is believed to be an effective way of demystifying planning processes and teaching designers to design with people rather than for people.

4.10 Key findings

- The designed public spaces are based on aesthetic and visual quality improvements and economic aspects, mainly concern the greenery and environmental quality improvements and user's expectation more relax enjoy and feel free user control regulations.
- It is observed design elements not support to all age groups. The children's and young group still need opportunity for playing activities, as well as accessible for disable users.
- The most diversity of users found in Galle faces green and design features highly connected with users in Viharamahadevi park.
- The users mainly look for the availability of “shade”, “views” in and locations for “seating”.
- Designer defined the user activities but the user does not frequently follow the place rules.

Chapter 5

Conclusions and Future Research

5.1. Conclusions

This thesis explores the design elements and user behavior on public spaces in Colombo urban area with understanding the designer intention and user perception. Through applying a combined methodology of direct observation, Interview survey data and discussion focus on designer perspective and user perspective on evaluating the environmental and physical context of four existing public spaces around the Colombo urban area.

This study limits only the selected public space user activities and discussion within the inside sites attributes. And also research not considered about the user's socio-economic factors.

The research found the two major cross sections through the observation, designer's discussion, and user's survey on designed public spaces

1. The public spaces literature and observed data revealed the designed public spaces have five key qualities, 'comfortable and good image', 'enrich the existing environment', 'mixed use and foam', 'flexibility of design for change', 'sociability and make connections' archived and level of the designed spaces.
2. Users have redefined the designed spaces their needs and expectations, so still there is gap in some areas to be realizing the user expectations are too difference.

Most spaces are designed and redesigned adapted aesthetic and visual improvements. However, the element especially 'water features', 'open lawn area' and 'children's play' areas attractive and highly used by the publics. The research revealed key elements significantly connected to the users like 'seating', 'shades and shelters' and 'user amenities'.

Through the results of the evaluation, it was identified that "design elements and its diversity" in Viharamahadevi Park, was the highest rated public space among those that were considered. Galle face green, Diyatha Uyana, Independence Square vicinity, rated second, third and fourth respectively.

Every public space should be designed with full consideration for diversity (Charter of Public Space, par. 16). The success of a particular public space is not solely in the hands of the architect, urban designer or town planner; it relies also on people adopting, using and managing the space, people make places, more than places make people. Further in planning process create a place, not a design, first life, then spaces, then elements.

Designers must recognize without a proper understanding of user behavior pattern, to make decisions for users. This means that they should not impose their value

judgments on users. And also with recognizing that they should not make arbitrary decisions for users, designers also should recognize that users have the right to actualize and modify designs to make them more suitable, to their needs and desires.

Based on these two recognitions, there are two alternatives which designers should seriously consider: allowing more "gaps" for users to fill and encourage user participation in designs developing. Allowing more gaps means that designs should offer more flexibility, and encourages users to modify them. For instance, in designing a community park, or public space elements, the design with the highest degree of user fitness is the one which allows and encourages users to voice their preferences, and to make modifications to fit their community and individual needs.

This means that the final design should arise from the exchanges between designers and users: (a) the designers provide opinions, professional advice, and discuss the consequences of various alternatives, and (b) users give their opinions and contribute their practical experience.

Decent spaces for interaction depend first on design, and design depends on, in turn on the needs and preferences of the people who'll be using the spaces. Those people should, to the extent possible, be involved from the beginning in the design or redesign of public spaces. Communities or public may do best by organizing and using their existing assets to themselves design and create areas that meet their needs.

There are lessons to learn, multi-disciplinary approaches to be pioneered by designers for better coordination and address the multiple concerns of achieving the design, effective management, and maintenance.

In conclusion, this thesis has emphasized the importance of attaining a meaningful understanding of the practical implications of design and development decisions, from an environmental psychology perspective. Thus, the design of spaces intended for mixed use must address inherent relationships between scale and intended use at different times of the day.

5.2. Future Research

The research argues the urban design progression that requires a deeper consideration of intentions related to places for human values and needs. It suggests the rethink about people's perception and behavior which can be influenced by socio-physical environment, and relate these terms in the design process.

Thus, this research proposes that we shift our attention from the designer and the design to the user and come back to the design. This is two-way communication dynamic process never end, changed one location to another and time to time. This perspective must be deeply study and understanding of the user activity pattern,

tracking system throughout daily, weekly and annually to better understanding the public space users' diversity.

While it is difficult to extract a public space complexity and diversity, pin conclusions solely on design, an in depth look at the relationship between design, uses, and users is an important starting place qualitatively explores the meanings embedded in public space design. This relationship will add insights into and complement the application of urban design theories and practice which could lead to further studies to improve the public spaces design and planning process.

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Appendix A: Theoretical principles of Physical and Social dimension of public spaces

Study	Physical component	Social dimension	Theoretical principles	Key words
Lynch (1960) Image of the City	five performance dimensions of urban design -paths, edges, districts, nodes and landmarks, five key physical elements - Vitality Sense Fit Access Control	Scale Legibility	fundamental urban design theories	Physical characteristics of the city.
Conzen (1960)	Geographical character of town urban landscape	Pattern of building forms	Urban morphology	Study in Town Plan Analysis
Jane Jacob(1961) The Death and Life of Great American Cities	Street and their side walks	Sun & shady Size & shape, Enclosure, Intricacy,	human activity and places of social interaction	Functional physical diversity among adjacent uses Location
Roger Trancik(1986)	Character of space ,openings surface ornaments	vitality	Place theory	Soft space and hard space
Clare cooper Marcus(1998) People Places: Design Guidelines for Urban Open Space	Size, Visual complexity, Boundaries & transitions Climate, Subspaces ,Seating, Planting, Level change ,Paving	Social and psychological factors in open space design	features that can be easily incorporated into the design process	
Whyte, W. H. (1980). The social life of small urban spaces.	Size, Shape, Aesthetics Seating, Context, Sun, Wind ,Weather ,Trees Water, Amount of Space Amount of Sittable Space, Heights, Steps	User Choices Self Congestion Bunching Patterns	qualities of city space and city activities	visibility, accessibility, variety
Edward Relph Place and placelessness	components of place	Dimension of human life and experience	review of space and its relationship to place	Geography of significant of place
Gehl,Jan Life between buildings	using public space	meaning and sense-of-place. between design and activity Necessary ,Optional ,Social activities	Urban Area Planning and Detailing Assemble or Disperse and Spaces for Walking and Places for Staying.	Soft edge
Rob krier Elements of architecture	Square Triangle Circle	Social patterns or topologies in the urban context	formulating a typology of urban space , spatial forms and their derivatives	Element of architects
Bentley et al Responsive Environment a manual for		Permeability Variety Legibility Robustness	geometrical pattern of their ground plan	design ideas of democratic setting & enriching

designers		Visual appropriateness Richness Personalization		
Allan B. Jacobs Great streets	Places ,Accessibility Density helps, Diversity, Length, Slope, Parking, Special design features: Details	Permeability, Variety Legibility Robustness Visual appropriateness Richness Personalization	physical, designable characteristics for the future of a good urban environment'	Physical qualities of Great Street
Wall & Waterman	Urban design	the unique perspective that landscape architects bring to urban design	urban design theory	landscape architects and sociologists in the field of urban design
Montgomery, John, 1998, "Making A City: Urbanity, Vitality and Urban Design",	elements of urban place	Components of a sense of place	Principles of Place Making	qualities of successful urban places
Lefebvre, Henri, 1991a, The Production of Space	spaces and places of everyday life	space is socially produced	'Spatial Triad'. perceived, conceived Lived space	Rhythm analysis, theory of moments, everyday life
Canter (1977), The psychology of place	place is seen as product of physical attributes, human conceptions, and activities.	psychological dimension of place	theory of place	people make sense or think and cope their surroundings or places
Production, Use, and Barriers to Access in Public Space Shayna Pollock, 2014	-	users rights	-	race, socioeconomics, gender and age
The Economic Theory of Agency Stephen A. Ross and Barry M. Mitnick	act on each other and interact with each other	designers and users with different interests	Agency Theory	Principle and agent

Source: compiled by Author

Appendix B: Features in relation to Activity Pattern- Diyatha Uyana

Features / Elements/zone	Image	Materials/ Description	Activity Pattern	No. of users	%
Good Market trade stalls		tensile trade shelters flower shops, organic food and other local products, sale track	Buying and Selling agricultural products	82	26%
Boardwalk Restaurant		cater to approximately 200 guests. white tensile structures	Eating, drinking. Seating	10	3%
Lawn area		grass area with trees shades	Standing ,watching, seating ,Lay, social activities events	28	9%
Walk Way/ Paths		interlocking paved/sand paths	early morning or evening fitness	8	3%
Long Walking Tracks		sand & soil path	walking	17	5%
Swan pedal boats		paddle crafts	Boat Rides	12	4%
Table/Bench in lawn area		cement seats and tables	Reading/seating	15	5%
Edge & Lawn area seating		grass, timber deck	seating	14	4%
canoeing		rowing craft, water	rowing	4	1%
Water Fountain		the fountain with changing colors	Seeing, hearing	8	3%

flower field		ornamental flowers and plants	Seeing	4	1%
Seating - food court		cement seats and tables	Eating, seating	30	9%
Aquarium		fish tank with stroll in a circle.	Watching, Standing	12	4%
Children's play area		tar surface	Playing, riding cycles	16	5%
Central food court		food and beverage stalls	Selling and Buying meals	12	4%
Floating restaurant		accommodate 35-40 guests on a 51 x 31 feet vessel	Seeing, eating	10	3%
3D paintings		3D street art	Watching, photographing standing	26	8%
Wooden deck		Wooden deck with railing raised on the water	Standing/ Watching	12	4%
Lighting		Lighting features	Provide lighting facility for illuminate the evening	-	
Electric bus transport Area		Electric bus	travelling Diyatha Uyana to Malabe	-	
Vehicle Parking		Car, van & motor cycle parking	parking	-	

Source: compiled by Author










Appendix C: Usage of Physical features of Independence Square area Surroundings






Features and Elements	Image	Materials/Description	Activity Pattern	frequency	%
Walking Tracks/paths		Paved interlocking bricks paths/sand soil path	Walking ,running, fitness	52	21%
Fitness center		indoor fitness facility	Indoor fitness activities	12	5%
Exercise equipment's		outdoor fitness facility	outdoor fitness activities	6	2%
Central place Arcade		mural sculpture	aesthetic purpose	15	6%
Fish pond and Water fountains		Surface glass and fountains	aesthetic purpose	18	7%
Arcade landscaped area		lawn, trees flower beds paths	social activities/ events	32	13%
Table/ with chairs		fiber/steel	seating	16	6%
Children's cycling area		surface tarmac	plying	12	5%
Wall & Edges		Cement walls	seating	15	6%

Water Fountain		Rock/cement	Seeing seat around wall	18	7%
Steps		Cement/concrete	seating	20	8%
Open Lawn area trees		Grass area with trees	Playing activities ,Lay, Standing,	25	10%
Cycle track		Tar mac	cycling	12	5%
Vehicle Parking Area		Road side	Parking	-	-
Lighting features		Light fittings	Illuminate the evening	-	-
landscaping features		Lighting ,paved paths, lawn, flower beds	Visual improving	-	-

Source: compiled by Author

Appendix D: Usage of supplying prominent Elements in Galle Face Green

Features and Elements	Image	Materials/Description	Activity Pattern	frequency	%
South Lawn Area		grass	Seating/playing/ watching	72	9%
Centre Lawn Area		grass	playing ,events social activities	148	18%
North Lawn Area		Grass area	Walking , watching, laying , standing	48	6%
sea side promenade		Tarmac road	Walking/Standing/ watching early morning or evening fitness/ aerobics	180	22%
Pier		Iron and wooden	seeing, standing	45	6%
Beach		Sandy beach , sea water	Seashore playing, Bathing ,Sand Modelling	84	10%
walls		Cement wall	seating	32	4%
Benches		Wooden/steel	seating	52	6%
Steps		Cement	seating Seating & Walking	82	10%






Food stall area		Temporary huts	refreshments	42	5%
Flag stage		Raised concrete slab with flag post	national flag hoisting	10	1%
Speakers Conner		Raised concrete slab	For speech to public(seating)	15	2%
Surface sand stage		Low height Open stage	Events/seating	6	1%
Public toilets with Maintenance room		Ground level of speaker corner	Sanitary purpose	-	-

Source: compiled by Author

Appendix E: Usage of supplying prominent Elements of Viharamahadevi Park

Features /Elements and /Zone	Image	Materials/Description	Activity Pattern	frequency	%
Children's play Area		Play features	playing	87	21%
Open Play ground		grass area	playing	44	10%
Rail road leisure park		grass and trees	sheds/ aesthetic purpose	28	7%
Cycle track		paved track	cycling	6	1%
Picnic Area		Picnic shelters /paths/trees	Seating/reading/	21	5%
The Lake		Pedal boat/lake	Pedal boat riding	13	3%
Fruit/Medicinal tree area		Trees, lawn	Sheds, aesthetic purpose	27	6%
Walk Way/ Paths		paved	Connect two locations	14	3%
Play item i		Water sprinkles	showering	16	4%

Play item ii		Fibre structure	play	14	3%
Leisure Zone		Trees,lawn	playing Lay, watching	31	7%
Garden Zone		Trees,lawn	Lay, Standing, seating	12	3%
Fitness walking		Paved paths	early morning or evening fitness	8	2%
Bench		Timber and iron structures	seating	35	8%
Ledges/ Edges		Cement wall	seating	18	4%
Rock-Aquarium		dome	watching	15	4%
Horses & Ponies rides		cart	Riding/ watching	12	3%
Food and toys area		Movable structures	Sales and buying	20	5%
Children's Wash room/Toilet		Concrete/steel	Sanitary purpose	-	-

Open Air Theatre		stage and seating	social activities/ events	-	
Water Fountain		sprinkles	aesthetic	-	-
Road signals and sign		Signal sign structures	Educational purpose	0	
Litter bins		litters	Collect litter	-	-
Flower beds		ornamental plants	aesthetic	-	-

Source: compiled by Author

Appendix F. Activity Pattern of Diyatha Uyana

Location A -Tracks



8.00 - 9.00 am



10.00-11.00 am



3.00 - 4.00 pm



5.00 – 6.00pm

Source: Author compiled

Location B - Tracks and lawn area



8.00 - 9.00 am



10.00-11.00 am



3.00 - 4.00 pm



5.00 – 6.00pm

Source: Author compiled

**Appendix G. Activity pattern in Independence Square area Surroundings
Location A -Tracks**



8.00 - 9.00 am



10.00-11.00 am



3.00 - 4.00 pm



5.00 – 6.00pm

Source: Compiled by Author

Location B - fish tank



8.00 - 9.00 am



10.00-11.00 am



3.00 - 4.00 pm



5.00 – 6.00pm

Source: Compiled by Author

**Appendix H: Activity pattern in Galle face green
Location - A Tree line area**



8.00 - 9.00 am



10.00 - 11.00 am



3.00 - 4.00 pm



5.00 - 6.00pm

Source: Compiled by Author

Location B - promenade area



8.00 - 9.00 am



10.00 - 11.00 am



3.00 - 4.00 pm



5.00 - 6.00pm

**Appendix I: Activity pattern in Viharamahadevi Park
Location A - Open play Area**



8.00 - 9.00 am



10.00 - 11.00 am



3.00 - 4.00 pm



5.00 - 6.00pm

Source: Compiled by Author

Location B - Children's Play Area



8.00 - 9.00 am



10.00 - 11.00 am



3.00 - 4.00 pm



5.00 - 6.00pm

Source: Compiled by Author

Appendix J: Structured Observation method

Observations Time	Time Duration of observations	Age category	Place
1. Early morning (8.00 - 9.00 am) 2. Morning to Lunch (10.00-11.00 am) 3. After Noon (3.00 - 4.00 pm) 4. Evening (5.00 – 6.00pm)	20 seconds < one minute, one minute - five minutes, five minutes - 10 minutes, 10 minutes -15 minutes, ≥ 15 minutes,	Children Teenagers Adults Older adults	1. Diyatha Uyana 2. Independence square surroundings, 3. Viharamaha Devi 4. Park Galle Face Green

Source: Compiled by Author

Appendix K: questionnaire survey, Interview & Discussion for Urban Designer

1. Questionnaire survey

- A. What is your opinion about the significance and purpose of public spaces?
- B. What policies, codes, legislation etc. influenced the design?
- C. To what extent was there input from the general public?
- D. Successful or unsuccessful areas within the designed space?

2. Interview & Discussion

Design Group	Purpose of the design	Urban Design Concept	criteria of the design	Main feature	Enforced regulations	Issues
Architect						
landscaped architect						
Town planner						
Project Director						
Other						

Appendix L: User perception, questionnaire survey

no	Question		
1	On the whole, do you like the Place?	Yes	
		No	
2	When you use the place		
3	What do you do here	Active	Passive
4	How long will stay here		
5	With whom do you come here	Single	
		Couple	
		Group	
6	Which is more attractive feature of the place		
7	What do you dislike most about the Place?		
8	Do you feel safe in the place?	Yes	
		No	
9	Limitations/ barriers		
10	Facilities or Requirements		
11	Experience on Public participation on design or knowing about it	Yes	
		No	

According to demographics data, 34% respondents were male, 62% were married, and the highest visitation age of respondents was 30-49 years.