

EDGE MORPHOLOGICAL CHARACTERISTICS OF DESIGNED URBAN PUBLIC SPACES: STUDY OF SELECTED PUBLIC SPACES IN COLOMBO

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Abstract

Public spaces are vital for a vibrant and healthy urban society. It is pertinent to design such public spaces with very specific and clear intentions. Sri Lankan cities do not have many designed public spaces. When they have, they are either from colonial time or the very recent past without any continuity in between. Parks and squares that are recognized as public spaces in the local context, sometimes are not purposefully designed or developed as spaces with appropriate morphological elements. The effectiveness of public places will be greatly increased if appropriate morphological characteristics are taken into account at the design stage. Some of these characteristics are Edge Character, Visual Profile of the Top Edge and Edge set back of the surrounding built fabric. These characteristics can be collectively labelled as 'Edge Responsiveness'. Therefore, the aim of this study is to have an analysis of the characteristics at the edge of such designed public spaces in Colombo, Sri Lanka. This will help in creating more socially responsive urban spaces and will be useful as a design guideline for such work. The research focuses on four selected designed public space: two parks and two squares and their ability to satisfy the typologically appropriate design attributes. It is evident from the results of the analysis that the 'Edge' is generally neglected or ignored when designing these spaces leading to less responsive public spaces.

Keywords: Design Urban Public Spaces, Urban Edge Responsiveness, Urban Space Typology, City Squares, Urban Parks

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Introduction

A public space is a gathering space that is open and accessible to all citizens. Streets, public squares, parks and beaches are typically considered as public space.

In variable urban context most of these spaces have been “**designed**” from one stage to another within a certain period of time. Such designed public spaces are considered for this study. The study looks at **urban squares** and **recreational urban parks** around Colombo.

UN-Habitat sees public spaces as “a vital ingredient of successful cities” which help to build sense of community, civic identity, culture. A well maintained and well-designed public space add healthy and safety to the urban environment.

(UN-Habitat, 2016)

Development of the urban environment in Sri Lanka is lagging behind compared to developed countries. Colombo is one of the few cities of Sri Lanka where there are reasonable number of public spaces can be found. Some of these, such as Viharamahadevi Park (previously Victoria Park) were purposefully designed public spaces, while others such as Galle Face Green (previous Military Parade Ground) have been adopted. Edge responsiveness of some of these places vary due to their inherent design and others due to continue changes and evolution of the surrounding context.

Therefore, a study is necessary to identify how far public spaces in Sri Lanka are appropriately designed, especially in terms of Edge Responsiveness.

City Squares and Urban Parks as Public Spaces

Among urban public spaces public squares and parks are two dominant categories. They are designed places in contrast to spontaneous spaces. Therefore, main concern of this study is aimed to subset of designed urban public spaces: squares and parks in cities.

The "public square" has both a figurative and literal meaning. It can be a street corner, a park, a sidewalk, a bulletin board, a blog, a break-room at work, a play-ground at school, an accessible outside area on a college campus, or an actual public square.

(Get Informed, n.d.)

Simply, a public square is a kind of space with built edges, as citizens, we have the independence to behave.

Urban parks are most dominant and significant feature in a developed urban structure. They play a vital role in city planning and in keeping liveliness of the city.

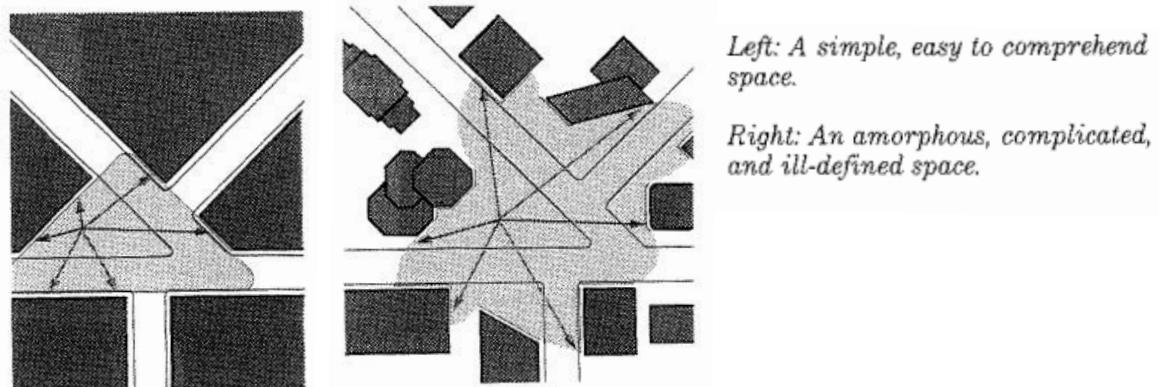
Public urban park can be defined as green areas in a town or a city which is open and accessible to all and which is mainly used for recreation. There are several typologies of public urban parks in landscape architecture based on functions and use, city structure and chronology.

(Susi-Wolff, 2010)

Therefore, Urban Parks are green spaces contained within the cities designed with permeability to fulfill variety of needs of citizens.

It is also important that these public spaces have well defined edges. Richard Hedman and Andrew Jaszewski in their book ‘Fundamental of Urban Design’ have described how shape and forms affected to people’s impression. Simple and arranged urban edge responsiveness always

effect the public spaces. However, above facts raises doubts on how far that public spaces in



Colombo have responded.

Fig. 1 Example of simple and complex form arrangement
Source:(Hedman & Jaszewski, 1984)

Overview of urban space Typology

According to Uribe- (Open Space Typology as a Framework for Design of the Public Realm) a place should be designed according to correct typologies. Further he explains the attributes that evaluate appropriate typology related to urban parks and city squares. From these, the dominant attributes that are common for public parks and squares can be used to evaluate a proper design.

Typologies of some of urban public spaces are as following

- Leaner systems and green corridors
- Parks
- Streets
- Squares

From that common attributes for parks and squares are safety, amenities, permeability and urban edge responsiveness considered for the main research. In addition this paper only focuses only on '**urban edge responsiveness**'.

Placemaking Theory and Study Urban Space Typology

In 1960's people like William Whyte and Jane Jacobs introduced revolutionary ideas about designing cities for people. Therefore, the placemaking theory is not recent.

Ian Bentley et al. in his book "Responsive Environment"(1985) suggests permeability (access), legibility, variety and etc. as key factors that would affect in designing a responsive environment.

"Placemaking is the process of creating quality places that people want to live, work, play and learn in." (Wyckoff, 2014)

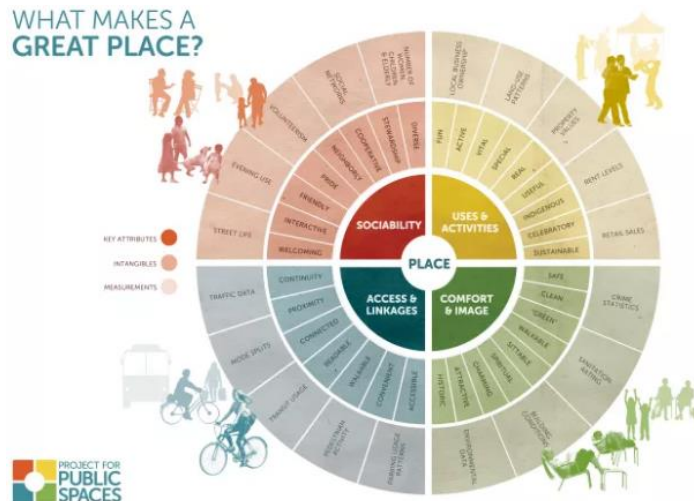


Fig. 2 The Place Diagram developed by PPS: The inner, middle and outer ring represents a place's key attributes, intangible qualities, and its measurable data respectively
 Source: (Project for Public Space, n.d.)

Urban edge responsiveness

Edge responsiveness can determine by many factors with respect to city squares and urban parks. A City square should have more public edges than private edges. However, both squares and parks should respond to the city's characters including facts such as block patterns, building types and land uses.

Common factors that can be applied for the city squares and urban parks are,

- Edge character
- Visual Profile of the Top Edge
- Edge set back of the surrounding built fabric

➤ **Edge character:**

- Generally in a same line



Fig. 3 Generally in a same property line
 Source: Fundamentals of urban design

- Same spacing between buildings



Fig. 4 Same spacing between buildings
Source: Fundamentals of urban design

➤ **Visual profile of the top level**

Visual top level impose a major impact to city character. The building height can make the sense of topography upside down. Moreover, it allows direct sunlight & wind to flow effectively. Most importantly having a same or closely similar height of building top levels can provide a sense of unity which affect positively on the viewer’s image of the context.

(Hedman & Jaszewski, 1984)

These settings can be clearly seen in Central Park, NY as shown below.



Fig. 5 visual top level
Central Park- NY
Source: Compiled by author

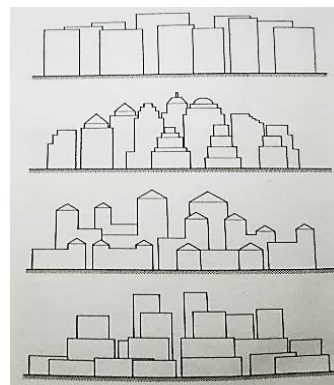


Fig. 6 Potential variety of urban forms
and heights
Source: Fundamentals of urban design

“The combination of bulk and height controls can be used to direct city form and to contribute to a distinctive style and character. Cities need not passively accept the dictates of a bland homogenized development” (Hedman & Jaszewski, 1984).

➤ **Edge set back of the surrounding built fabric**

Olympic plaza in Calgary and Tomkins Square indicate successful and failed attempts for urban edge responsiveness. According to Uribe, Olympic Plaza does not respond its location because of the incorrect edge condition. On the other hand, Tomkins Square is comparatively a successfully design in terms of response to its location.

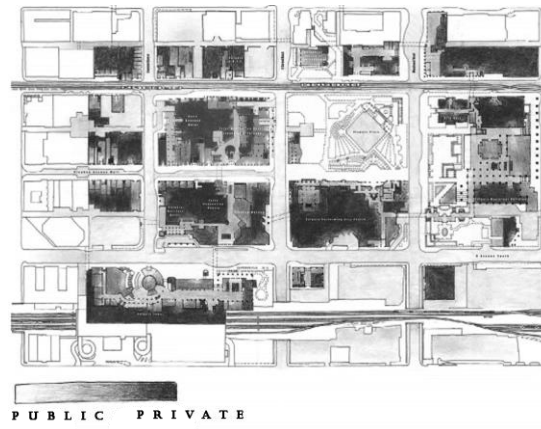


Fig. 7 Olympic Plaza in Calgary
Most of the buildings are private use and few openings to the public space
Source: Drawing by B. A. Sandalack and F. Alaniz Uribe

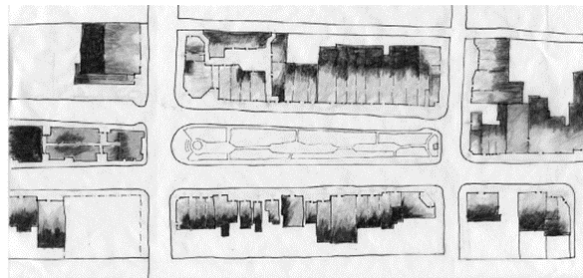


Fig. 8 The degree of publicness of Tomkins Square area
Public edges more than private edges
Source: Drawing by B. A. Sandalack and F. Alaniz Uribe

Methodology

The study was conducted to see how much urban parks and squares are typologically appropriate, common attributed which are related to appropriate typology of an urban public spaces will apply here in order to find it.

Primary data was collected through a survey conducted in four prominent public spaces in Colombo. They are Viharamahadevi Park, Independence Arcade, Independence Square and Wetland Park. Both qualitative and quantitative data were collected from selected spaces. Secondary data have been gathered from previous researches, books, journal articles and web sites.

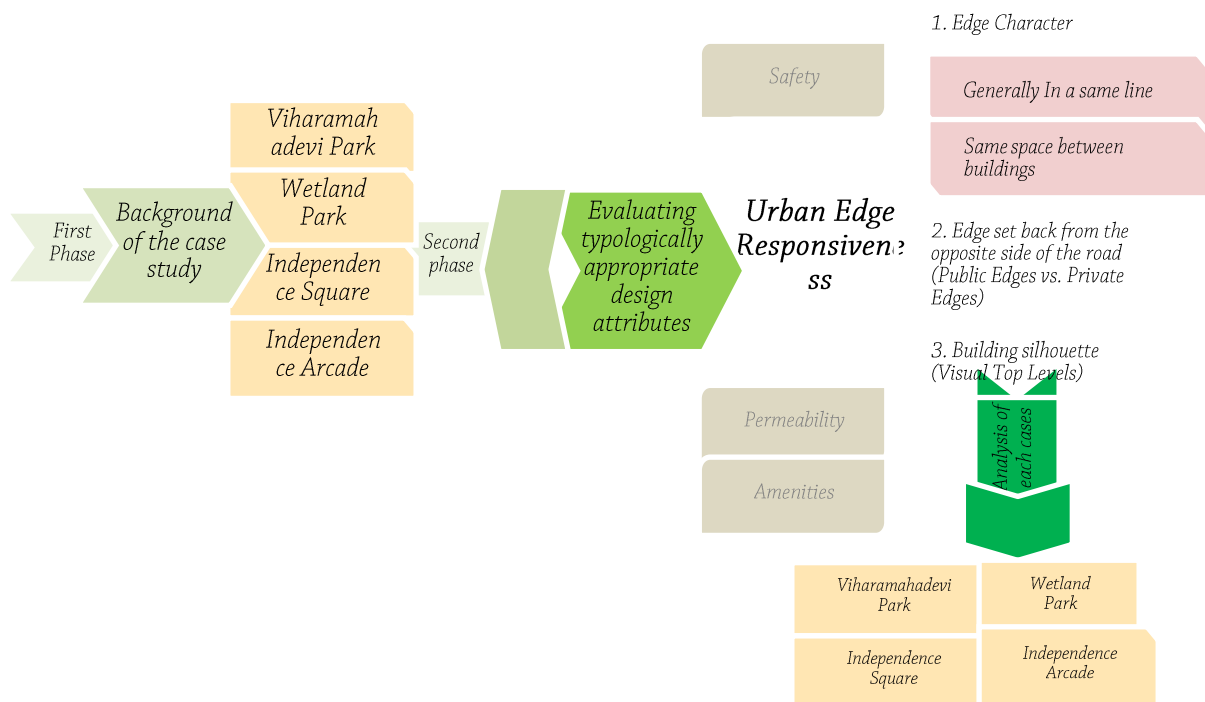


Fig. 9 Methodology diagram
 Source: Compiled by author

Only few and most important factors that are effective in describing the edge responsiveness are analyzed and discussed in this paper. This research is only appropriate for the built urban areas except natural vegetative edges. Therefore, all the selected parks and squares were chosen from highly urban contexts.

The research was conducted by considering the entire space of each cases than selecting a portion of a places or group of people. Data was collected through figure ground maps and they were used to determine city responsiveness.

Figure ground maps provide a better understanding about solids and voids within a city. It helps to understand building patterns, shape and size.

Nolli's map conveys an understanding of the city's topographic and geo-spatial structure, the patterns of private and public buildings, and their relationship to the entire urban ensemble. This encourages an understanding of the building, not as isolated event, but one that is deeply and intrinsically embedded in the fabric of the city (Tice, 2005-2016)

Pre-prepared rating scales were used to rate each attribute within an urban public space. Then the survey results have been analyzed according to that scale. Previous researchers such as Jie-eun Hwang and Kimberle Koile have used figure ground maps to represent publicness and private ness of the cities (Hwang & Koile, 2005).

Characters of the solids (buildings) and voids (spaces) determine the city responsiveness. According to the map, red circular area highlights improper distribution.

Edge Responsiveness as a key aspect in Public spaces in Colombo

There are many studies that were carried out on urban public spaces in Colombo, Sri Lanka and most of them are based on environment, health, people satisfaction and etc. But a study related on morphological analysis in terms of edge responsiveness of urban public space has not been carried out.

This study looks into four prominent public spaces in Colombo, namely;

- Viharamahadevi Park
- Wetland Park
- Independence Arcade
- Independence Square

In Sri Lanka, most of those public spaces including some of the above, are not specifically designed for their exact purpose. Therefore, it needs to subject to broader discussions. For an example, the Galle Face was initially used to lay cannons by the Dutch to defend against Portuguese. Later it was used to sport activities, but at present the Galle Face green is used as an urban park.

Further, Independence Square is a monument which was built to commemorate the independence of Sri Lanka. The Arcade was used as a lunatic asylum at its beginning, which had been used by several governmental departments. At present it is open for general public. On the other hand, the Viharamahadevi Park has a history of being a park but in early days it was also used as a cricket playground. Later it was renovated as an urban park. Wetland Park, Nawala is a recent development project by the Urban Development Authority (UDA), Sri Lanka and it was originally intended to be built as an urban park. By looking at these, it is worth to conduct a research to identify the level of appropriateness of these urban public spaces in relation to their edge responsiveness.

Other than the designs of these public spaces, the surrounding urban structure also affect the outcome. Yet, most towns in Sri Lanka were transformed into towns from villages. Colombo is a city that has also evolved likewise. But there had been several attempts after independence to modify Colombo according a proper design. One such example is the Metro Colombo Urban Development Project. However, Colombo still does not have a complete and proper planning of spaces to an acceptable level.

Case Studies

Viharamahadevi Park

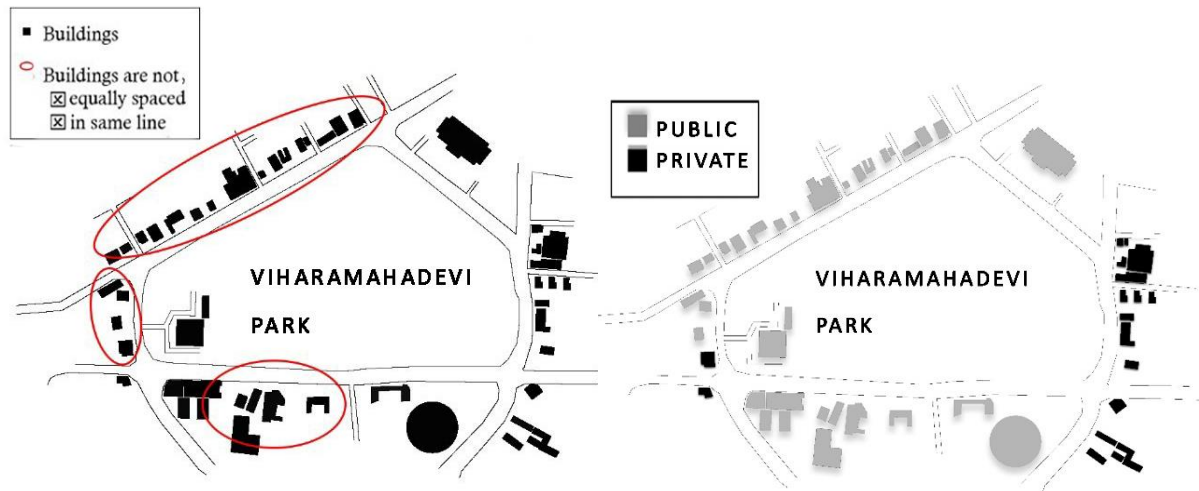


Fig. 10 Figure ground map and Public and private edges - Viharamahadevi Park
Source: Compiled by author



Fig. 11 Visual top level – Viharamadevi Park
Source: Compiled by author

Above maps highlight building patterns around the Viharamahadevi Park. According to the first map (Figure 10) buildings are not equally spaced and are not in the same line. The second map (Figure 10) shows private and public edges around the park. It should have public edges more than private edges in order to be a typologically appropriate park. The map indicates public edges more than private edges. The figure 11 shows the unorganized distinct building developments around the park. Unequally spaced building and randomly spaced roofing would never make sense of unity in one's mind. The existing buildings along the street line do not create powerful visual linkage with the park. Therefore, Viharamahadevi Park can be considered as a place with minimum level of responsiveness.

Wetland

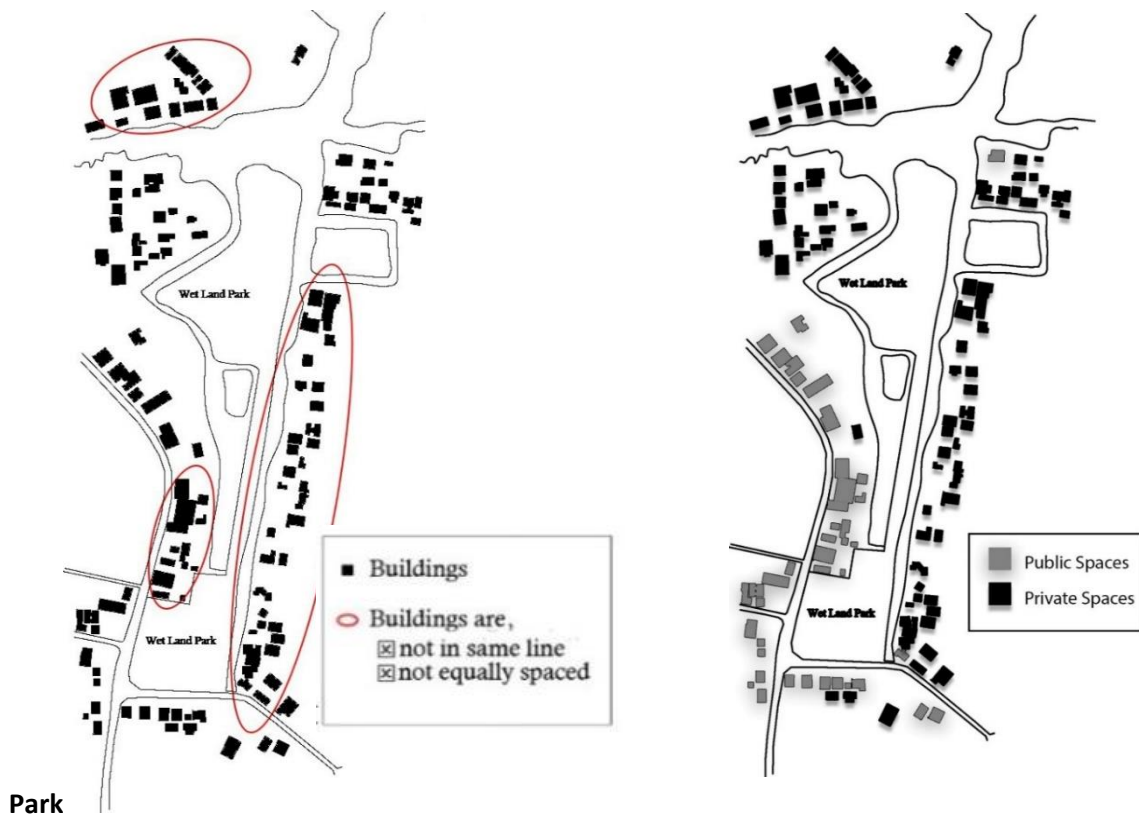


Fig. 12 Figure ground maps & public, private edges - Wetland Park
Source: Compiled by author



Fig. 13 Visual top level – Wetland Park
Source: Compiled by author

Buildings are not in the same line in the surrounding context of the Wetland Park. Space between buildings are different. At the same time, there are more private edges than public edges. When considering façades and visual top level, the adjacent build environment satisfy the subjective attribute up to some extent. Yet, vendors have put goods for sale to the road side breaking the linkage with the park. However, the buildings onto the road side possess the same height.

Independence Arcade

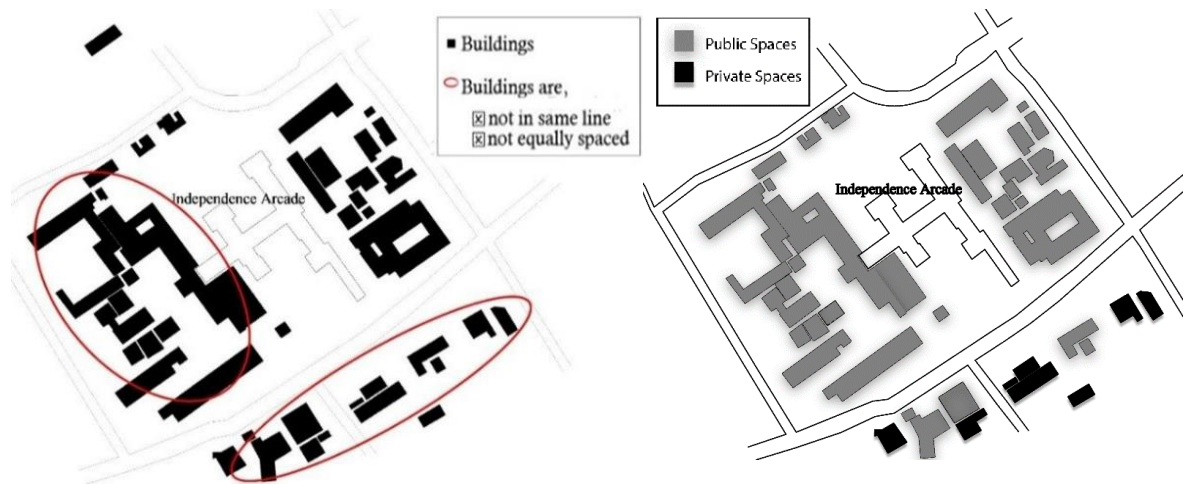


Fig. 14 Figure ground Map and Public and private edges - Independence Arcade
Source: Compiled by author



Fig. 15 Visual top level- Independence Arcade
Source: Compiled by author

The building line appears only from one side of the Independence Arcade. The visual top level has minimum positive effect on the design as it is mostly created by boundary walls. The park of Independence Arcade have many public edges than private edges. Yet those edges are not in same line or have the same spaces between buildings. Therefore, Independence Arcade too have minimum responsiveness to its location.

Independence Square

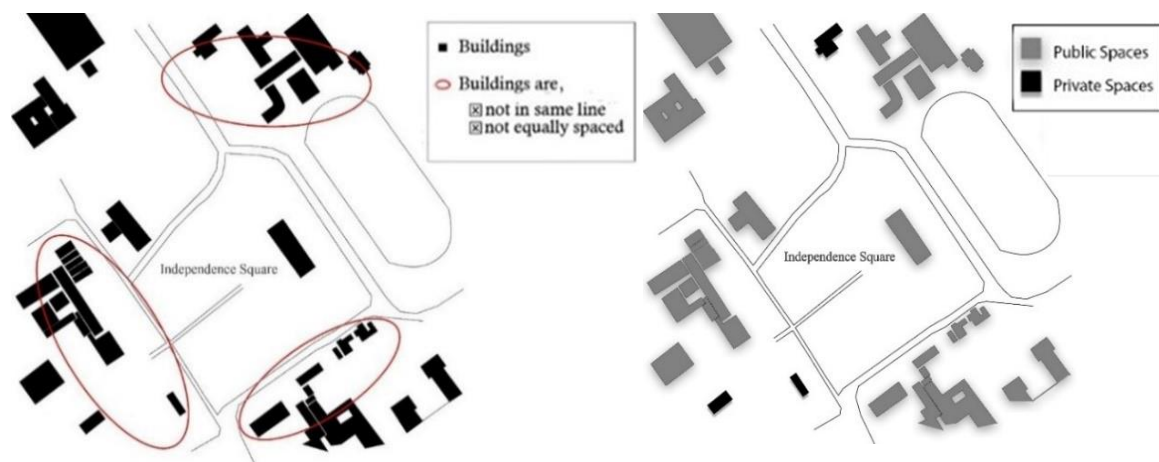


Fig. 16 Figure ground Map and Public and private edges - Independence square
Source: Compiled by author

Independence Square is not surrounded by a building line, but mostly by an open land. The visual top level effect is negligible. The space has many public edges than private edges. Nevertheless, those edges are not in the same line or has the same spaces in-between buildings. Therefore, Independence Square too has minimum urban edge responsiveness.

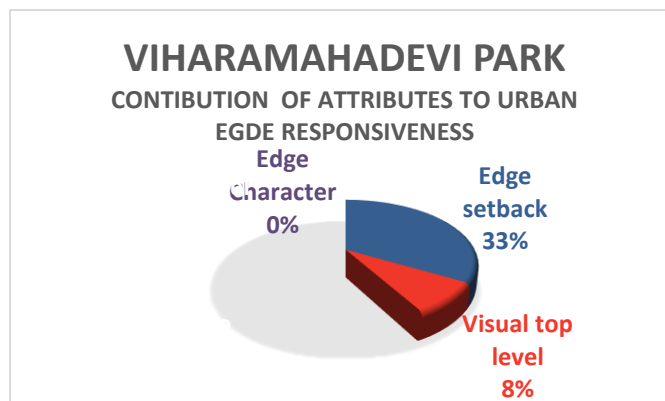
All the above factors contribute to the edge responsiveness, which is a vital factor that a public space should satisfy to be a typologically appropriate public space. The contribution can be mapped as shown below in the table, contribution of an attribute can be defined as No, Minimum, Moderate or Yes.

Table 8 Factors contribution to urban edge responsiveness

Property	Viharamahadevi Park	Wetland Park	Independence Arcade	Independence Square
Edge Character	No	No	No	No
Edge setback	Yes	Moderate	Yes	Yes
Visual top level	Minimum	Moderate	Minimum	No

Better understanding and representation, can be achieved by converting the above data into a numerical value. The term “No” indicated that the public space satisfy almost about 0% of the attributes and “Yes” is for nearly 100%. The terms Minimum and Moderate are valued by assuming that the space satisfied around 25% and 75% respectively. If all three attributes: Edge Character, Edge setback & Visual top level are perfectly satisfied, the contribution of those attributes is considered as 100%. Graphical representation shown below is based on the said numerical mapping produced for the analysis to be easily understandable.

To further explain above mapping, let’s take the Viharamahadevi Park as an example. If it has perfect (100%) edge responsiveness the all three properties: Edge Character, Edge setback and Visual top level are needed to be state as ‘Yes’. Then the contribution of 33.33% from each concerned property make the 100% satisfaction. But here, Viharamahadevi Park almost fully satisfy only the Edge setback property. Hence the contribution from Edge setback property is 33.33% for the overall urban edge responsiveness. Likewise, Edge Character property doesn’t have any contribution towards the overall urban edge responsiveness as it states “No” in above table. The satisfaction level of Visual top level is Minimum in Viharamahadevi Park. As described above, it satisfy only 25% of the property and contributes 25% out 33.33% to overall urban edge responsiveness. I.e. approximately 8% ($\approx 25\% * 33.33\%$) of contribution to the overall urban edge responsiveness.



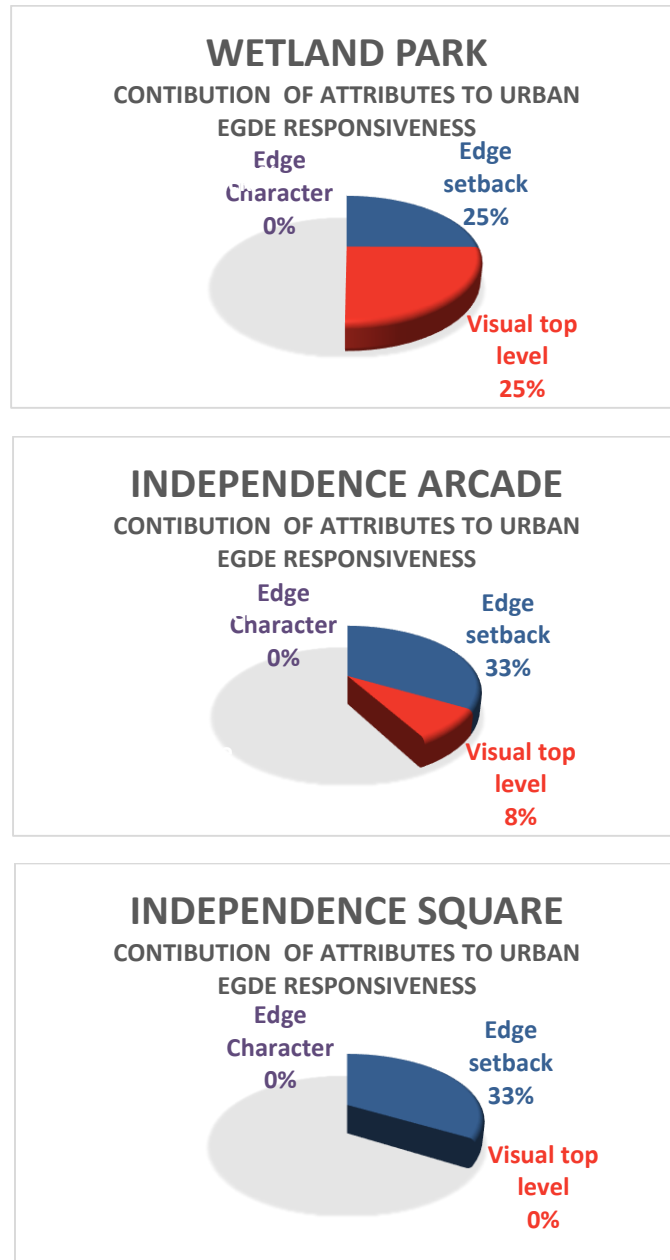


Fig. 17 City responsiveness as a percentage
Source: Compiled by author

The above graphical analysis shows, up the level that urban edge responsiveness is satisfied by the selected public spaces and how much each attribute has contributed. Wetland Park has the highest value for the attributes and the Independence Square possess the least value. Even though, the Wetland Park satisfy least level of Edge Setback property. It only possess few public spaces compared to others. Wetland Park significantly satisfy the attribute of visual top level compared to others. However it can be seen the Edge Character property was simply neglected when designing and developing all above public spaces.

Conclusion

Main task of this study was to find out whether the edge responsiveness of designed urban public spaces (parks and squares) in Colombo, are appropriate.

Not only for the users, if urban parks and squares respond more to the attributes, it would be easy to classify according to the general type. It would give great advantage for community and also for the designers and planners.

The selected cases are very prominent parks in Colombo and are subjected to recent developments and their edges are also rapidly changing.

In above analysis, it can be seen that the urban edge responsiveness is relatively poor. Mostly this is due to neglect of urban edge characteristics when designing and developing above spaces.

This may be due to several factors; lack of consideration given to this aspect in city planning or in certain instances lack of city planning at all, designers in not identifying the urban edge responsiveness as a vital factor or weaknesses in urban enforcement laws.

This is not to say that these public spaces are in vain. They do serve a useful and important role in the day to day life of the habitants and the visitors of the city. However, their worthiness may increase many folds if their edge responsiveness could be improved by fulfilling the above factors.

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