RECLAIMING TRAFFIC INFLUENCED URBAN RESIDUAL SPACES FOR THE PUBLIC: SPECIAL REFERENCE TO COLOMBO DISTRICT.

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Masters Degree in Urban Design

Department of Architecture

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Dissertation submitted in partial fulfillment of the requirements for the Masters degree in Urban Design

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DECLARATION

I declare that this is my own work and this dissertation does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any other university or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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Signature (Anuka Weththasinghe) Date

The above candidate has carried out research for the dissertation under my supervision.

…… ……

Signature (Dr. Janaka Wijeesundara) Date

ABSTRACT

Although modern cities suffer from lack of open public spaces, there are many unused areas within the same city without being taken its full potential. Most of them are created to solve traffic related issues. The attention given to revitalize them is questionable. Therefore the study aims to identify the possibilities of traffic related urban residual spaces being reclaimed for public use. The study will explore most suitable reclaiming possibilities in selected urban residual spaces. Usage qualities, spatial qualities of existing residual spaces and revitalization possibilities were tested in this study. Both quantitative and qualitative approaches were adopted for this study. Data collection was done via questionnaires, interviews and systematic observations. Four cases were selected with variation in its physical layouts and locations to represent the traffic related urban residual spaces in Colombo district.

The study reveals spatial and usage qualities of traffic related residual spaces which vary mainly due to location type and size of the site; people feel unsafe in residual spaces due to vehicular movement and that feeling could be mitigated by physical separations and strategies. Lack of accessibility affects the users to be limited in to a particular category based on gender and age. With reducing the size of the residual space, the reclaim possibility is being changed. Due to traffic movement, most of traffic related spaces has higher visibility, defined site boundaries and it's a potential for reclaiming. Lack of management and control is the main reasons behind the residually. Although the traffic related residual spaces have residual symptoms, respondents believed that there is a possibility to reclaiming those spaces for public use. Every residual space has unique appropriation /intervention by users. By evaluating these appropriations it's possible to select most suitable reclaiming possibility for residual space.

Key words- *Residual space, Reclaiming, Traffic related, Spatial and usage qualities, appropriation*

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INTRODUCTION

Background/Introduction

Nowadays, urban land demand is very high due to rapid population growth. Urban Open lands for public spaces are rapidly decreasing. The smart usage of urban lands is becoming an urban need. Although the overcrowded cities suffer from lack of open public spaces, there are many unused areas within the same city. At the first glance; most of residual spaces within the city limits are created as a result of traffic related solutions.

Need for the study

- Urban development agencies are mostly involved and encouraged in developing large vacant open lads as public spaces.
- But it is observed that the general attitude towards urban residual open space is that it couldn't be used for any other useful manner.

Research issue (hypothesis)

- Although modern cities suffer from lack of open public spaces, there are many unused areas within the same city. Most of unused within the city are created due to traffic related issues. The attention for revitalizing them is questionable.
- Town Planners, Urban designers, traffic engineers suggest their proposals don't pay much attention about those residual spaces which are being created by them.

Research gap

- Many studies are available regarding urban spaces and its characteristics in Sri Lankan context. But the extension of such researches towards urban residual spaces is scarce.
- A study found on "reclaiming residual spaces for the public: a case study from the city of Cairo" (2013), it's a qualitative study which is based on

observations. But there is a potential to develop and apply that study for reclaiming possibilities of residual spaces for the public in Sri Lanka.

Main research problem

- What are the possibilities of traffic related urban residual spaces for reclaiming for public use?

Objectives of the study are as follows;

- Examine the definitions of URS and revitalizing approach – Literature review
- Examine a theoretical framework to identify revitalization possibilities — Literature Review
- Explore the occupants' perceptions and author's observations on existing usage or and proposed revitalization possibilities (Interviews, questioners)-case studies
- Explore most suitable reclaiming possibilities in selected urban residual spaces – conclusion

Method of Study

The above objectives are operationalized using following methods

- *Objective 1* - Examine a theoretical framework to identify the Residual spaces, their social-spatial characteristics. – Literature review

- *Objective 2*- Examine a theoretical framework to measure the impact level of identified social-spatial characteristics for reclaiming urban residual spaces. – Structured close ended questionnaire, systematic observations

- *Objective 3*- Identify the reclaiming possibilities for selected urban residual spaces as public space. Case Study will be done in 4 cases selected based on its variation in characteristics. The data to identify the reclaiming possibilities identified through the Literature Review (Objective 1 and 2) will be collected via Questionnaire, Interviews and Systematic Observations. Identifying the reclaiming possibilities through analysis and Interpretation of data

Research out come

- Identify reasons behind the residually and most relevant reclaiming possibilities in selected traffic related urban residual spaces.

Limitations

- Only consider the residual open spaces (Open side space and Open middle space and open underneath space) in urban areas of Colombo district which are being created by traffic related issues.
- The study will be limited to analyze reclaiming possibilities for public. Other factors will not be within the scope of this study.
- Since this is a basic study, five cases are being selected as a representative sample of reclaiming possibilities for the public. But the validity of the study will enchase by selecting more cases for different types.

Chapter 01

URBAN RESIDUAL SPACES, SOCIO-SPATIAL UNDERSTANDING AND ISSUES

This chapter illustrates the related literature on urban residual spaces, socio-spatial understanding and issues

1.1Urban residual spaces

According to Trancik(1986) Lost space is:

> "the left over unstructured landscape at the base of the high rise towers or the sunken plazas away from the flow of pedestrian activity in the city ,…they are the romans land along the edges of freeways that nobody cares about maintaining much less using….also the abandon water fronts, train yards, vacated military sites and industrial complexes. They are the vacant blight-clearance sites-remnants of the urban renewal days-that were, for a multitude of reasons never redeveloped" (p.3)

Trancik(1986,p3) defines the "lost space" as "the undesirable urban areas that are in need of redesign, anti-space, making no positive contribution to the surroundings of users"

Winterbottomm(2000)denotes three type of residual spaces: "non-spaces, "leftover spaces", "dual –use spaces "he used the term "dual used space" for areas which functioned in certain time with certain function and become residual on other times. Further he refers the "left over spaces "as un-programmed spaces detached from surrounding spaces.

Rilvin(2007) suggests that people also used less designed spaces found from their surrounding without only using plazas and public squares. He used the term "found spaces" for those spaces are located in convenient places which have easy access and high visibility.

According to occupation pattern of leftover spaces, Alanyali,(2009) argues that leftovers are signified with misuse, underuse and "appropriation". Based upon these three aspects, she concludes six typologies of leftover spaces in the Turkish context

mentioned as underutilized, potentially exploitable, abandon, appropriated, obsolete and unproductive.

1.2 The causative factors of residual space

Trancik(1986) argues that low control, undefined ownership and lack of management are the reasons for emerging "lost" spaces. Alanyali, (2009) refers to lack of control and maintenance as a reason for leftover space. Further she has identified two scenarios for a space to become a leftover space: a non-designed place by authorities and therefore it doesn't serve the public and has disorderly appearance and designed places by authorities but has subjected to no longer being used.

> "....two scenarios for a space to become leftover; first, a space never having its share of design by the authorities and therefore it doesn't serve the public and those spaces are usually characterized by a ruined disorderly appearance and second, a space which was once designed by the authorities but has been subjected to deterioration and became no longer used." (as cited in Khalil & Eissa ,2013,p.107)

1.3 Social –spatia1 understanding of residual spaces.

Madanipour (1996) denotes that the attempt to integrate the social and physical dimensions of space, or in other words to contextualize the physical space into human practices, is an important step in our understanding of space so it's necessary to consider social; and physical dimensions together.

1.3.1 Spatial qualities

Alanyali,(2009) refers to lack of boundaries and disorderly appearance as significant qualities of leftover space.

"Space can be measured: it has defined and perceivable boundaries; it is discontinuous in principle, closed, static, yet serial in composition. Anti-space, on the other hand, is shapeless, continuous, lacking perceivable edges of form" (as cited in Trancik,1986,p 61)

Table 1.0-1 Definitions and descriptions of residual spaces-spatial qualities

Spatial Qualities							Year	Theorist
Invisible/ unexposed	Deteriorating in appearance	Ill-defined (boundaries)	Uncertain & blurred	Indeterminate	Unplanned	In need of re-design		
							1983	Trancik
			Undefined	As in Rules of use	Under-designed		1986	Rivlin
							1995	Morallis
					Undeveloped		1996	Loukaitou-Sideris
							2005	Groth & Corjin
							2005	Crisman
					Unscripted		2007	Stvens
							2007	Doron
	Ruined		In terms of boundaries				2009	Alanyali
							2010	Carmona
							2010	Akkerman & Cornfeld
			In relation to land use		Undeveloped		2011	Kamvasinou

("Intersection of a theorist and a quality will be highlighted, had this quality been mentioned by this particular theorist. If a theorist used a different terminology that still signifies the same quality in the vertical column, the term will be added to the slot. If a different terminology was used by a theorist but it still signifies the same quality in the vertical column, the term will be written in the slot")

Adapted from" Reclaming Residual Spaces for the Public:A Case Study from the City of Cairo," by Khalil ,M.H., & Eissa, D.M, 2013: October, In proceeding of the international urban design conference, p. 111.Copyright 2013 by university of Moratuwa : Sri Lanka

Khalil & Eissa (2013) has explored the spatial qualities which is been presented by various theorists and studied the residual spaces by eight physical qualities; easy accessibility, security level, site boundaries, site topography, uniformity of form, area of site, sites location, neighboring facilities, site's proximity to heavy circulation routes .

Physical Qualities	Intrinsic Qualities	Accessibility	Safe , Dangerous
		Security level	High, Average, Low
		Visibility	Exposed, Hidden
		Site boundaries	Defined- Loose
		Site topography	Flat, Hilly
		Uniformity of form	Regular, Irregular
		Area of site	Tight, Spacious
	Extrinsic Qualities	Site's location	Peripheral, Central
		Neighboring facilities/assets	Views, Transportation facilities,...etc.
		Site's proximity to heavy circulation routes	Roads or Pedestrians Paths

Table 1.0-2 physical and usage qualities of residual space

Adapted from" Reclaming Residual Spaces for the Public:A Case Study from the City of Cairo," by Khalil ,M.H., & Eissa, D.M, 2013: October, In proceeding of the international urban design conference, p. 114.Copyright 2013 by university of Moratuwa : Sri Lanka

Khalil & Eissa, (2013) further explains that:

> "Site's accessibility could be dangerous, easy or unfeasible which affects possibilities of appropriation. A site's visibility affects its exposure and defines whether it would be noticed by vehicles moving on a high speed or pedestrians- and thus defines the potential customers. Also, the area of the site affects the amount of appropriators it could host and impacts the types of activities assigned to it. Qualities referring to the site within its context include neighboring facilities which may provide the site with a high pedestrians' flow. …. A site's location within the city is also a factor that might attract or repel appropriators."(p.113*)*

1.3.2 Usage qualities

"There is no logic that can be superimposed on the city. People make it, and it is to them, not buildings, that we must fit our plans" (Jacobs, 1958,p160)

“The human being, by his mere presence, imposes a schema on space…..he notes its absence when he is lost….. (Tuan , 1977,p36)

“In the absence of the right people and things, places quickly drained of meaning so that their lastingness is an irritation rather than a comfort.” (Tuan,1977,p140)

Alanyali(2009) argues that leftover spaces are signified with underuse, misuse and “appropriation “based on that ,she mentioned six typologies can be emergence in

Table 1.0-3 Definition and descriptions of residual spaces-usage qualities

Theorist	Usage Qualities						Term Used by Theorist	Year	Theorist
	Underutilized	Potentially exploitable	Abandoned	Appropriated	Obsolete (in terms of use)	Unproductive			
Trancik						Of no positive contribution	Lost spaces	1983	Trancik
Rivlin				Necessarily			Found spaces	1986	Rivlin
Morallis							Terrain vague	1995	Morallis
Loukaitou-Sideris							Cracks in the city	1996	Loukaitou-Sideris
Groth & Corjin							Intermediate spaces	2005	Groth & Corjin
Crisman							Sites out of sight	2005	Crisman
Stvens				Necessarily			Loose spaces	2007	Stvens
Doron				Often			Dead zone/ edge	2007	Doron
Alanyali				Often			Leftover spaces	2009	Alanyali
Carmona							Residual/ Neglected	2010	Carmona
Akkerman & Cornfeld							Fortui-tous leftovers	2010	Akkerman & Cornfeld
Kamvasinou						Inactive	Vacant urban land	2011	Kamvasinou

Turkish context as underutilized, potentially exploitable, abandon, appropriated, obsolete and unproductive.

(“Intersection of a theorist and a quality will be highlighted, had this quality been mentioned by this particular theorist. If a theorist used a different terminology that still signifies the same quality in the vertical column, the term will be added to the slot. If a different terminology was used by a theorist but it still signifies the same quality in the vertical column, the term will be written in the slot”)

Adapted from" Reclaming Residual Spaces for the Public:A Case Study from the City of Cairo," by Khalil ,M.H., & Eissa, D.M, 2013: October, In proceeding of the international urban design conference, p. 110.Copyright 2013 by university of Moratuwa : Sri Lanka

Khalil & Eissa (2013) explains that “Usage qualities of the site explain its current occupancy patterns. A space could be occupied on certain days of the week and abandoned on others…. Previous functions of a site may also affect its appropriation pattern”(p.113)

Khalil & Eissa (2013) considers pre and post-intervention usage qualities of residual spaces as below

Pre-intervention usage qualities-Use for site, users of site, time of use, frequency of use

Post-intervention usage qualities-intervention activity, intervention body, intervention time, intervention frequency.

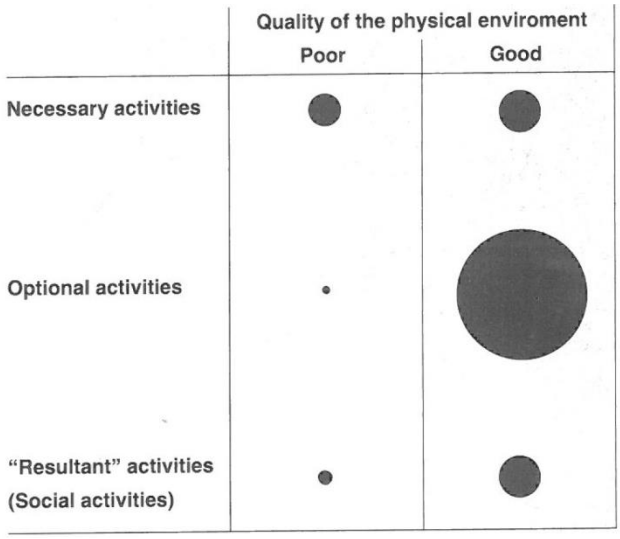
Khalil & Eissa (2013,p108) explains that “residual spaces are often acted upon and become informally modified by users to host various activities. This informal modification is referred to as “appropriation “.Korosec. & G.E.P.E (1976) denotes that appropriation activities lay under one of two categories: urging activities fulfilling a necessary need or optional activities such as recreation, entertainment.

Gehl(1987)further explains about those nessesary optional activities.

Table 1.0-4 Relationship between activities and quality of the physical environment

Graphic representation of the relationship between the quality of outdoor spaces and the rate of occurrence of outdoor activities.

When the quality of outdoor areas is good, optional activities occur with increasing frequency. Furthermore, as levels of optional activity rise, the number of social activities usually increases substantially.



Adapted from" *Life Between Building*," by Gehl, J, 1987,P 13

Gehl (1987,p13) explained that the outdoor activities in public spaces can be divided in to three categories:necessary, optional and social activities. Nessasary activities: “include those that are more or less compulsory”; optional activities: “those pursuits that are participated in if there is wish to do and if time and place make it

possible.social activities:"all activities that depend on the persence of others in public space". Further he explains that "when the quility of outdooor areas is good ,optional actiivities ocure with increasing frequency .furthermore,as levels of optional activity rise,the number of social activities ussualy increases substantially."

1.4 Manifestation of urban residual space

Tancik(1983)identifies unused sunken plazas away from the flow of pedestrian activity, abandoned water front, train yards, vacated military sites, areas beneath highways as "lost space".

Rilvin(1986) identifies strips of sidewalks isolated from surroundings, islands, street Intersections & squares were geologically set off from surrounding space as "found spaces"

Loukaitou-Sideris (1996) identifies decaying parks & playgrounds as "cracks in the city"

Cisman(2005) recognizes the gaps between one thing and another, collisions of scale and uses, leftover spaces under, over and along elevated highways and railway lines, or large urban voids and ruined places, fenced parks invisible from outside as "sight out of sight".

Alanyali(2009) identifies unbuildable areas, interstitial zones, space related to circulation routes, abandoned as in x-function sites, neglected(designed but not used), vacant buildable lands as "leftover spaces".

According to theorists, inactiveness and public ownerships and not well maintenances are the common features of above explained spaces although they are named as differently.

Khalil & Eissa (2013) defines the residual spaces as "inactive publicly owned latent pieces of land that are potentially exploitable".

As per the literature review train yards, areas beneath highways, street intersections, Street Island & squares are geologically set off from surrounding space, leftover spaces under/ over and along elevated highways and railway lines could be considered as traffic related residual spaces among above identified residual spaces.

Chapter 02

REVITALIZING URBAN RESIDUAL SPACES

These chapters discuss the revitalizing approach and revitalizing possibility

2.1 Revitalizing approach

Trancik(1986,p5) explains that “we need to reclaim these lost spaces by transforming them in to opportunities for development…existing public plazas, streets ,and parking lots that are presently dysfunctional and incompatible with their contexts can be transformed in to viable open spaces”
According to Khalil & Eissa (2013);

> ”Urban residuals offer a potential alternative to the scarecity of open spaces.this alternative should be seriously considered by governments instead of depending completly on vacant plots of land-which are usualy a scarce resource.the sucess of formal interventions or the permanance of appropriations in such spaces unravels a social agreement of accepting such interventions” .(p.120)

Further they denote that the interventions upon residual spaces could be either formal or informal. Formal interventions manifest in approaches by government or organizations with pre planned activities. Informal interventions manifest in appropriation.

Both of above theorists explains the revitalizing approach as “transformation” and “a potential alternative” for open, dysfunctional spaces with considering appropriations by users.

2.2 Framework for examine Revitalizing possibility

Khalil & Eissa (2013) present list of factors that”decide whether a leftover space is likely to be appropriated or not, and could portray persumed modes of appropriation”.

Physical Qualities	Intrinsic Qualities	Accessibility	Safe , Dangerous
		Security level	High, Average, Low
		Visibility	Exposed, Hidden
		Site boundaries	Defined- Loose
		Site topography	Flat, Hilly
		Uniformity of form	Regular, Irregular
		Area of site	Tight, Spacious
	Extrinsic Qualities	Site's location	Peripheral, Central
		Neighboring facilities/assets	Views, Transportation facilities,...etc.
		Site's proximity to heavy circulation routes	Roads or Pedestrians Paths
Pre-intervention Usage Qualities		Current use for site	Vending, Recreation, etc., or None
		Current users of site	Locals, Externals
		Time of current use	Day, Night
		Previous use for site	Industrial, cultural, etc.

Table 2.0-1 Physical and usage qualities of residual spaces

Adapted from" Reclaming Residual Spaces for the Public:A Case Study from the City of Cairo," by Khalil ,M.H., & Eissa, D.M, 2013: October, In proceeding of the international urban design conference, p. 114.Copyright 2013 by university of Moratuwa : Sri Lanka

Khalil & Eissa (2013) state that although the residual spaces have different forms, ”they all prove to be latent spaces with a potential for better utilization”further they discovered that ” formal and informal interventions of such spaces improve their utilization,either through leisurly or nessasary activities”.

2.3 Research design and methodology

This section illustrates the required Data for the study, Data Collection Tools and Method of Analysis, Pilot study, Case selection criteria, Sampling and Data Collection Tools.

2.3.1. Research Design

Mainly quantitative approach was selected to carry out the research objectives because the intention of achieving more accuracy in comparison of the 4 cases. But, qualitative study was done to identify some implications on the objectives. The method used in each stages of this study is shown by table 3.1. The main research objective, data which is needed to achieve it and the data collection tool/method is summarized below (table 2.2)

Table 2.0-2 Summery of methodology

Research Objectives	Data needed	Data collection tools/method
1. Examine a theoretical framework to identify – Defining the Residual spaces, their social -spatial characteristics.	Definition for urban residual spaces Spatial and usage characteristics	Literature review. **Use the framework which is used by** Khalil & Eissa (2013) **for identifying** social-spatial characteristics with authors' improvements.
2. Examine a theoretical framework to measure the impact level of identified social-spatial characteristics for reclaiming urban residual spaces	Users' perceptions/author's observations about identified social-spatial characteristics	**Structured close ended questionnaire** (allowed to present reasons behind the selections), **Systematic observations**
3. Identify the reclaiming possibilities for selected urban residual spaces as public space	Analyzed data (Users' perceptions/author's observations about identified social-spatial characteristics)	

2.3.2 Data, Data Collection Tools and Method of Analysis

The following section discusses the data, data collection tools and data measurement scales. The questionnaire items, format, scales for measurement for the impact level of identified social-spatial characteristics from respondents are explained in detail. Further the Checklist items - impact level of identified social-spatial characteristics to

be measured and the manner in which the data is collected through observations are discussed.

Impact level of identified physical characteristics

The importance in measuring the impact levels of identified physical characteristics is explained.

Data (part-1):
Impact level of,

Site boundaries (defined, loose), uniformity of form (regular, irregular), area of the site (tight, spacious), site location (peripheral, central), neighborhood facilities (views, transportation, residential, commercial, recreational buildings ….etc)

Data Collection Tool:
Systematic Observations, site surveys

Method of Analysis and Presentation:

Maps, sketches, graphs

Data (part-2):

Impact level of,

Easy accessibility, security level, visibility, site boundaries, area of the site, neighboring facilities, site proximity to heavy circulation routes for reclaiming urban residual spaces as public space are discussed.

Data Collection Tool:
Questionnaire - Close Ended questionnaire was selected since the factors were already established through literature review and a closed ended question would be easier for residents to answer without confusing and error.

Table 2.0-3 Qectionair content:impact of selected physical characteristics

	-2	-1	0	+1	+2
"This place is easy accessible "	S D	D	U	A	S A
"This is a safe place in terms of vehicular movement "	S D	D	U	A	S A
"This is a safe place in terms of social environment "	S D	D	U	A	S A

"This is an exposed place: not a hidden place "	S D	D	U	A	S A
"This place has defined site boundaries "	S D	D	U	A	S A
"The neighboring facilities are caused to come here" (*Neighboring facilities = school, shops, office, art gallery, restaurant, hotel, apartments, etc….)*what are they?	S D	D	U	A	S A

Measure- 5-point Likert scale.

-2 = strongly disagree (SD)
-1 =disagree (D)
0 =undecided (U)
+1 =Agree (A)
+2 = strongly agree (S A)

Method of Analysis and Presentation:

Analysis method- strongly disagree1=-2 score, strongly agree5=+2score

Presentation- comparison graphs relevant to seven cases will be presented

Impact of usage qualities

Data
a) Current users of site (gender, age category, no. of users) with time
b) Current use, activity of site (with time)

Data Collection Tool- systematic observations

Measurement:

a)Current users of site(no. of users, age category) with time

Table 2.0-4 data collection table: a) current users of site(no. of users, age category)with time

Time	**users**							
	Gender		Age category(yrs)					No. of users
	Male	female	1-10	10-20	20-40	40-60	Above 60	
7.00-8.00 a.m								
01.00-2.00 p.m								
6.00-7.00 p.m								
Total								

Table 2.0-5 Data collection table b) activities with time

Time	Activities													
	Type							Loiter time(minutes)						
	passing	talking	watching	smoking	eating	reading	other	Below 5	15	30	45	60	90	Above 90
7.00-8.00 a.m														
01.00-2.00 p.m														
6.00-7.00 p.m														
Total														

Method of Analysis and Presentation

Analysis method-calculate the percentage of gender, age category, activity type, loiter time from total number users.

Presentation - Comparison table relevant to seven cases will be presented

Possibilities for reclaiming as public space

Data (part-3):

User's perceptions about reasons behind residually and possibilities for reclaiming (finally reasons and possibilities are to be analyzed. This is only for ~~get~~ user's perceptions)

Data Collection Tool:

Use close ended and open ended questionnaire and allowed to present the reasons for the answers.

Table 2.0-0-6 questionnaire content: impact of selected physical characteristics

	-2	**-1**	**0**	**+1**	**+2**
"This place is well maintained " What are the reasons behind this utilization"…….	S D	D	U	A	S A
"This place has possibility to convert as proper public space " What are the functions you suggest for this place in future? (Only if it's possible)…….	S D	D	U	A	S A

Measure- 5-point Likert scale.

-2 = strongly disagree (SD)
-1 =disagree (D)
0 =undecided (U)
+1 =Agree (A)
+2 = strongly agree (S A)

Method of Analysis and Presentation:

Analysis method- strongly disagree1=-2 score, strongly agree5=+2score

Presentation- comparison graphs relevant to seven cases will be presented

2.3.3 Field Work Procedure

The following section deals with the case selection criteria and process adopted for case selection. It further discusses the pilot survey done, challenges and lessons learnt. The sample selection and data collection during the field survey are briefly explained.

Case selection criteria

Considered factors in case selection criteria;

It's selected the Open (Not indoor) urban residual spaces; located in same area (Colombo district).

Selected spaces have;

- Opened, limited, land area
- Physical boundaries are demarcated by streets and other elements.
  Spaces which are created by traffic related activities or proposals to maintain equal the physical quality: site proximity to heavy circulation routes.
- Different types: Side space, Roundabouts, Underneath
- Temporary (not established properly) or established function.
- Located in town limits in Colombo district

Pilot study

Step 1: Pilot survey was conducted to test the possible cases, questionnaire formats and challenges to be overcome during field work. Following which the main study field work was conducted in the following manner

Step 1 - pilot study and revision to data collection tools and program

Step 2- field work

Field work program

Preparation of documents for data collection

Data collection at site

2.3.4 Selected Cases

Pilot visit was done to select most suitable cases. Four different cases were selected as possible cases. The key factors of those cases are summarized in the table below.

Table 2.0-7 Summary of selected cases

Case	Case 1	Case 2	Case 3	Case 4
Name	Side space of Bambalapitiya roudabout	Roundabout at Kottawa junction	Underneath space of Dehiwala flyover	Roundabout at Maradana junction
Location	Colombo 04	Kottawa	Dehiwala	Maradana, Colombo 10
Characteristics	open Lenear,long ,Side space of the street	Open,triangular space created by streets	Open Linear space in between roads	Open,triangular space created by streets
Present usage	Unorganized parking	Paved area with "Bo "shrine	Parking	Landscaped area

2.3.5 Sampling and data collection

Total of 60 sample users per case were answered to the questionnaire at the selected site. The interviewers were selected randomly and the survey was done in a weekday and a weekend day (Sunday) to analyze the difference. 10 users were interviewed per one time period (Morning, Afternoon and Evening).

Sample size – 60 (30 per one day), It's considered that the male and female ratio is nearly equal (male 30, female 30)

Table 2.0 -0-8 Sampling

Age group		1-20	20-40	40-60	Above 60
Percentage (According to census of population and housing 2012 -Department of census and statistics)		33.3%	30.1%	24.2%	12.4%
Sample	Total	20	18	14	8
	Male	10	9	7	4
	Female	10	9	7	4

Chapter 03

ANALYSIS OF REVITALIZING POSSIBILITIES OF URBAN RESIDUAL SPACES AS PUBLIC SPACE

This chapter mainly focuses on seven case studies and identifies the reclaiming possibilities for selected urban residual spaces as public space. As discussed in the literature review chapters, measure the impact level of identified social-spatial characteristics for reclaiming urban residual spaces is the focus of analysis.

3.1Case 01 - Side space of Bambalapitiya roundabout(C1-BJ)

3.1.1 Introduction

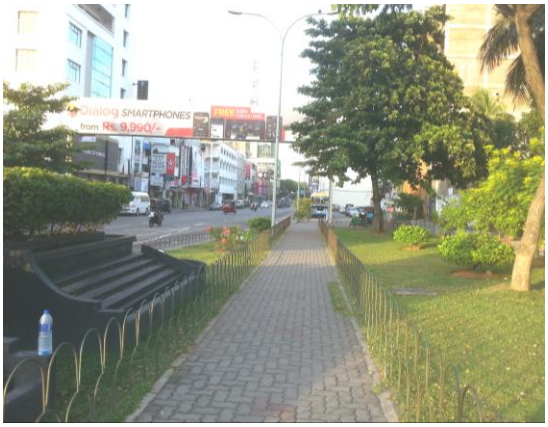


Figure 3.0-1 Lawn area, image from Galle road side

Figure 3.0-2 C.T.B bus stand

This side space is located in between Galle and R.A De Mel Mawatha in Babmalapitiya junction. As a result of new traffic plan in 2011, the road running in between Galle road and R.A De Mel Mawatha was converted as one way road. Earlier it was a two way road and there was a center island with a water feature. (See fig3.0-3). According to the new plan the center island was combined with near bus stand created with open side space. The small milk bar and other small structures were removed.

Now this side space is equipped with the Ceylon transportation board (C.T.B) bus stand, three wheeler park and open landscaped area which is covered by fences. In front of the side space there is a public parking space. Kadawatha - Bambalapitiya bus service starts from this bus stand. This side space is owned by the Road Development Authority (R.D.A) and C.T.B .It's maintained by Colombo Municipal Council

(C.M.C). Although private vehicles are not permitted to park in C.T.B bus stand, people park their private vehicles there making the area congested. City hotel, Mosque, two private educational institutes, shops, night club, financial institutes, fashion stores, unity plaza and majestic city shopping complexes and shops are located immediate surroundings of this space.

Figure 3.0-3 Transformation of the space

3.1.2 Indications of residually

This place is a poorly designed space. The existing parking areas aren't properly demarcated. People park their vehicles wherever they desire. The lawn areas were covered by fences. The water feature doesn't suit the space. This is an example for" identified strips of sidewalks" which is explained by Rilvin(1986) as "found spaces".

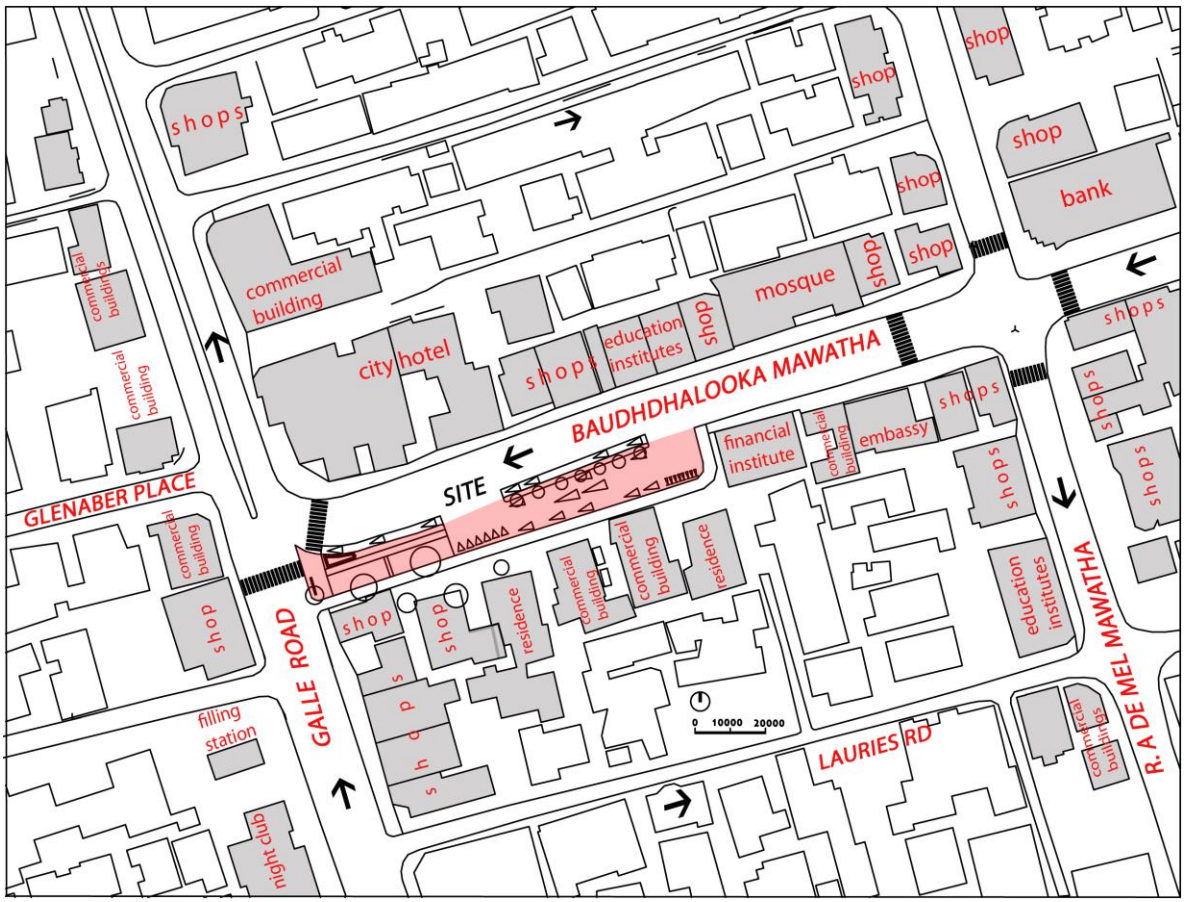
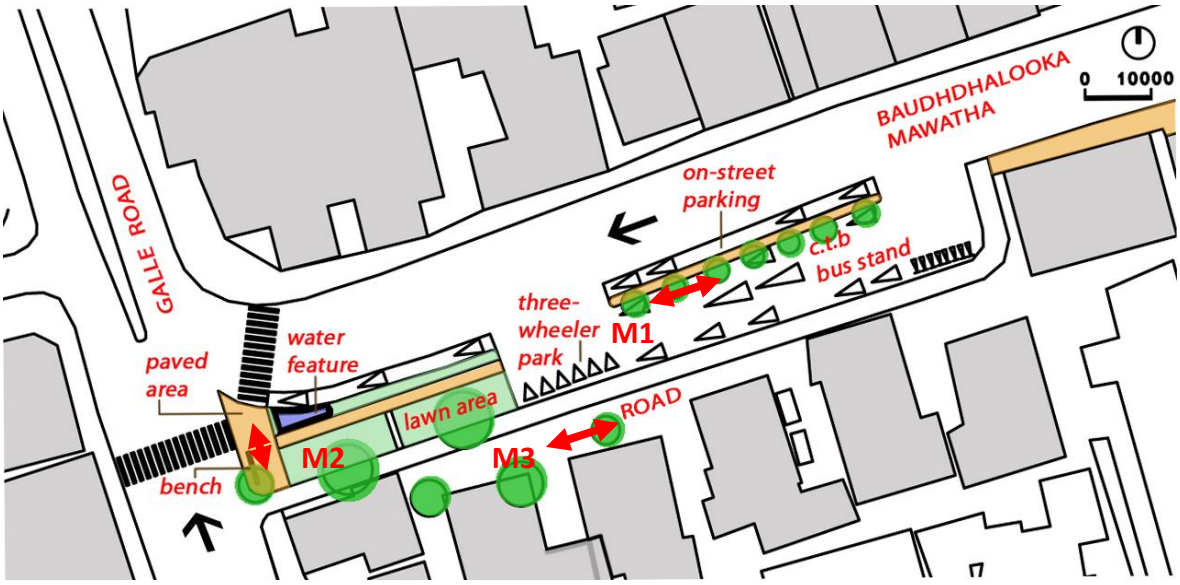


Figure 3.0-4 Bambalapitiya junction -Micro Context



User's movements with directions-M1-user's movement 1, M2- user's movement 2, M3- user's movement 3

Figure 3.0-5 Bambalapitiya side space-existing plan

3.1.3 Impact level of physical characteristics

Uniformity of form - Has regular land form. This is a flat land.

Area of the site - This is a spacious place comparatively other cases

Site location - It's a Peripheral side space located near the junction.

Table 3.0-0-1 Survey result-impact of physical characteristics

selected physical characteristics	SD (-2)	D (-1)	U (0)	A (+1)	SA (+2)	Agree	Disagree	Value
Accessibility				27	33	93		93
security level								
vehicular movement				35	25	85		85
social environment			5	16	39	94		94
visibility				8	52	112		112
site boundaries				13	47	107		107
neighboring facilities				11	49	109		109
						600		600

User perceptions show that this is a place which is easily accessible, secure in terms of vehicular movement and social environment. Majority of respondents believes that this isn't a secluded place which has properly defined site boundaries. All respondents come to this place due to facilities-provided by the neighborhood

Site boundaries

Bambalapitiya side space has well defined site boundary. It's defined by Bauddhalooka Mawatha, Galle road, rear private road and a multi-story building.

Neighborhood facilities

There are City hotel, Mosque, two private educational institutes, shops, night club, financial institutes, fashion stores, unity plaza and majestic city shopping complexes and shops adjacent to the place.

Easy accessibility

People can easily accessible to the place. There are three pedestrian crossings to reach this place from main roads. Vehicles can easily reach and drop people. The bus route Kadawatha - Bambalapitiya is ended with this CTB bus stand.

Security level

The place is safe in terms of vehicular traffic due to a separation from main road on street parking lane and pedestrian pavement. During day time everyone can see the activities which take place here. Three wheeler park functions in the whole day, even in night time due to city hotel customers. Even in day time three-wheeler drivers are in watchful eyes of the surrounding area. So it's a safe place in terms of social environment. According to their opinion if this place becomes a risky and dangerous place, people may tend to neglect the place and leaving them any of the hires.

"We don't allow to behave someone to disturbing or dangerous to people. If this place is named as unsafe, people don't come….definitely we will lost our jobs…."

-Three wheeler driver in the park (personal communication, January 26,2016)

Figure 3.0-6 people are waiting and moving

Visibility

The place is a not covered space. As this is an open space, everyone can see the activities happen around.

3.1.4 Impact of usage qualities

a)Current users of site (no of users, age category) with time-weekday & weekend

Male users are comparatively higher than females. Most of drivers of vehicles parked here are males. Most of females are tending to go other side of the road (mosque) because all the shops and education institutes are located in that side. Low number of (11,24)school children (age category 10-20) used this space because they get their vehicles near schools. Even though it's not an office day the number of users in week-days evening (334) are comparatively higher than weekend day morning (289) and afternoon (294). People used this space to cross to reach shops along Galle road.

Figure 3.0-2 Survey result-current users of site

Time	Day	Users							
		Gender		Age category(yrs)					No of users
		Male	Female	1-10	10-20	20-40	40-60	Above 60	
7.00-8.00 a.m	**weekday**	307	129	2	11	252	145	26	436
	weekend	207	82	1	22	169	71	26	289
01.00-2.00 p.m	**weekday**	362	96	1	24	308	108	17	458
	weekend	201	92		33	205	50	6	294
6.00-7.00 p.m	**weekday**	356	86	1	4	288	137	12	442
	weekend	239	95	1	3	219	92	19	334

b) Current use, activity of site (with time)-weekday and weekend

Majority who use the space are the people who pass by. The numbers of people who use this for crossing link are high in week days. The number of passing by people is high in weekend –evening (306) than weekend morning (265) and afternoon. (276)

Table 3.0-3 survey result-current use, activity of site

Time	Day	Activities															
		Type								Loiter time(minutes)							
			Activity in loiter time														
		passing	talking	watching	smoking	eating	reading	other	no of loiteres	Below 5 (Passing)	15	30	45	60	90	Above 90	Total users
7-8 a.m	**week day**	408	22	6					28	408	19	5				4	436
	week end	265	18	5	1				24	265	13	10	1				289
1-2 p.m	**week day**	424	22	10	2				34	424	18	16					458
	week end	276	16	2					18	276	15	3					294
6-7 p.m	**week day**	418	21	3					24	418	14	7	2	1			442
	week end	306	23	5					28	306	23	1	4				334

Lowest no of users loiter in the area during weekend-afternoon (18). Highest no of users linger in weekday-afternoon (34) it is sunny during day time. In weekday mornings (28) people wait for shuttle services to reach their working places. In weekend evenings (28) people tend to remain on the road and chat while shopping. Their loitering time is high during weekend evening. (45 minutes- 4 users). There is only one seating place at the end of this space near Galle road. Some users merely use the space to sit there looking around.

Among the users who loiter, most of them just talk to each other or talks over the phone talking (each other or via cell phone). Some users are waiting for someone or a bus.

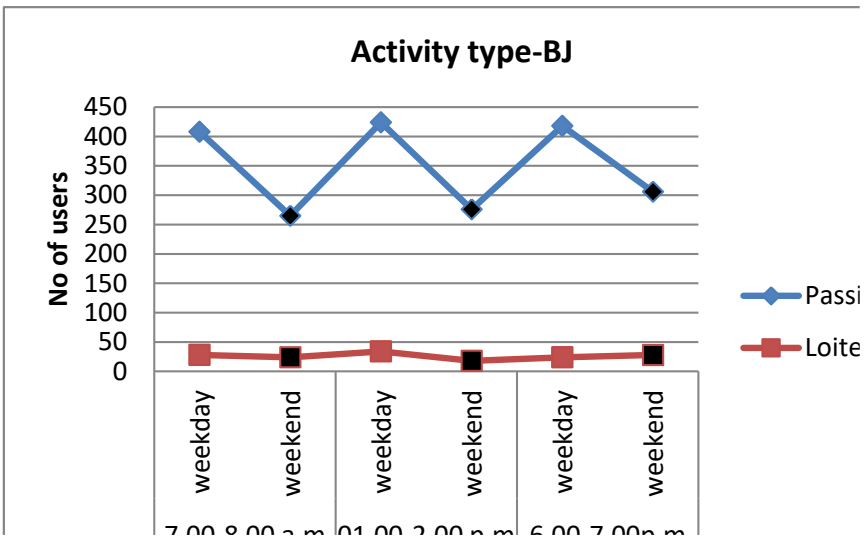


Figure 3.0-7 Survey result- Activity type-BJ

Figure 3.0-8 People sitting on benches near Galle road side

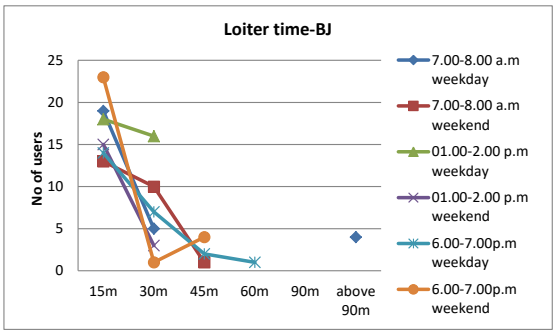
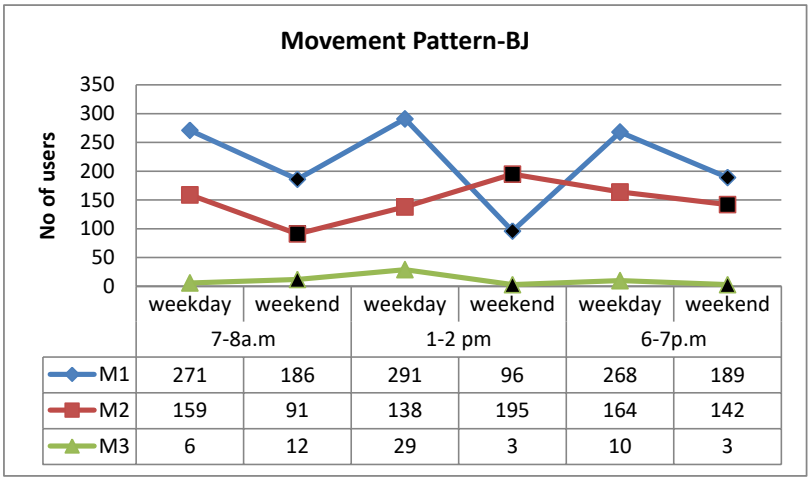


Figure 3.0-9 Survey result-loiter time -BJ

Movement



	weekday	weekend	weekday	weekend	weekday	weekend
	7-8a.m		1-2 pm		6-7p.m	
M1	271	186	291	96	268	189
M2	159	91	138	195	164	142
M3	6	12	29	3	10	3

Figure 3.0-10 survey result-movement pattern-BJ

In weekdays, movement 1-M1(see fig 3.0-5& fig 3.0-10) is the highest one.M1(user's movement) became its peak in weekend afternoon. M1 became its lowest in weekend afternoon. It indicates that working community is affected to this change. Further M2 become its highest level in weekend afternoon. M3 become its highest in weekday afternoon because the offices and shops are opening at that time. But M3 is the lowest one in all over the day.

3.1.5 Reasons for existing residual qualities

Table 3.0-4 Survey result-reasons for existing residual qualities-BJ

Statement	SD (-2)	D (-1)	U (0)	A (+1)	SA (+2)	Value
"This place is well maintained "	38	14	1	7		
	-76	-14		7		-83
Respondent's Comments-"no responsibility to C.T.B regarding the space", "not properly clean by C.M.C"						

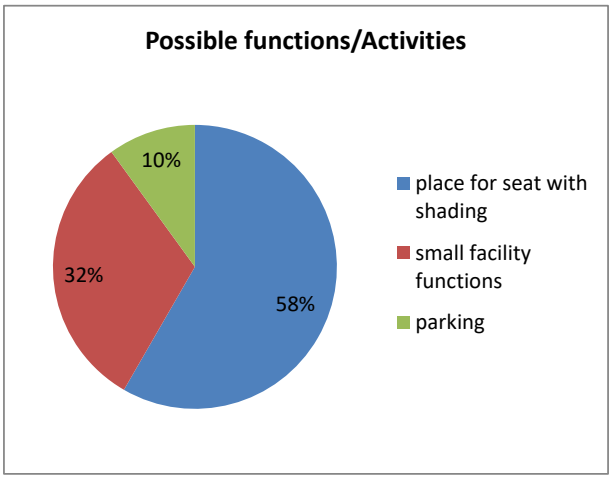
Majority of respondent says that this place isn't properly maintained. This side space is maintained by the Colombo Municipal Council (C.M.C). Although private vehicles are not permitted to park in C.T.B bus stand people park their private vehicles there. The place is not properly cleaned; nor does it have proper controlled parking system.

3.1.6 Possibilities for reclaiming as public space

Table 3.0-5 Survey result-possibilities for reclaiming as public space-BJ

Statement	SD (-2)	D (-1)	U (0)	A (+1)	SA (+2)	Value
"This place has possibility to convert as proper public space "			1	11	48	
			1	11	96	107

According to all respondents, this place has the possibility of being converted as a proper public space which functions smoothly. Majority are expecting a place for seating, waiting with shading (58%) to spend until they stay there for a little time. The place lacks proper seating space except the bench near Galle road side. It's also not shaded. Due to hot climate it's important to provide shading spaces with seating arrangement in urban spaces like this. The place already has potential to develop as a shaded space without covering it by fences.



Activity/function	No
place for seat with shading	35
small facility functions	19
parking	6

Figure 1.0-11 Survey result-possible functions/activities-BJ

Figure 3.0-12 cement benches near Galle road

Figure 2.0-13 lawn are covered by fences

32% of respondents proposed to introduce small facility functions like milk bars, food outlets, newspaper shops and lottery kiosk which may intend to attract users. Before the new traffic plan there had been a small milk shop and a lottery kiosk at the corner of this place which was functioning well. Several people mentioned about the milk shop and lottery kiosk in their interviews which proves that it might have been functioning really well.

Finally it appears that this place needs small additional supportive activities/functions to strengthen the existing potentials as public space.

3.2 Case 02- Roundabout at Kottawa junction-(C2-KJ)

3.2.1 Introduction

Figure 3.0-14 Kottawa middle island and surrounding

Figure 3.0-15 "Bo "shrine in Middle Island

Kottawa junction consists of connections of old Kottawa road, Horana road, High level road and Athurugiriya road. The selected island is located in the middle of this junction with a "Bo "tree. The traffic plan (2015) which they used was changed here. Previously, the center island was comparatively large (see fig 3.0-16). It was used as a part of the bus stand. There was also small shrine which people used to go often and worshiped. According to new development plan; a part of bus stand was removed from this middle space and the large middle island was divided into two individual islands.

Now both center islands are finished with cement paving. The "Bo"tree was left with small shrine in one island. This place is owned by R.D.A and maintained by Municipal Council. Public market, police station, bus stand, post office, financial institutes and shops are located around these immediate surroundings.

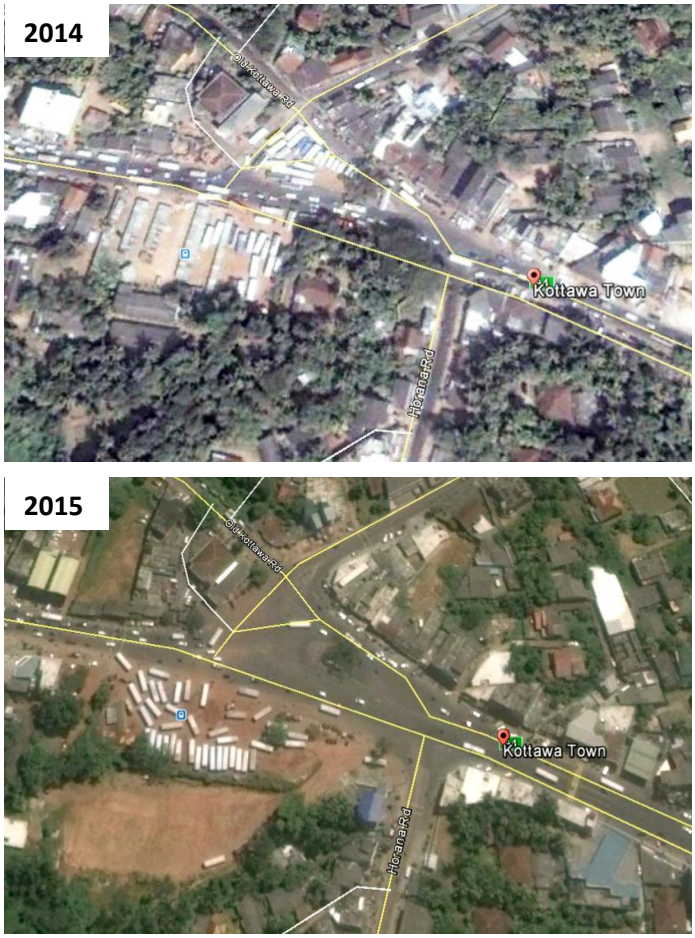


Figure 3.0-16 Transformation of Kottawa junction

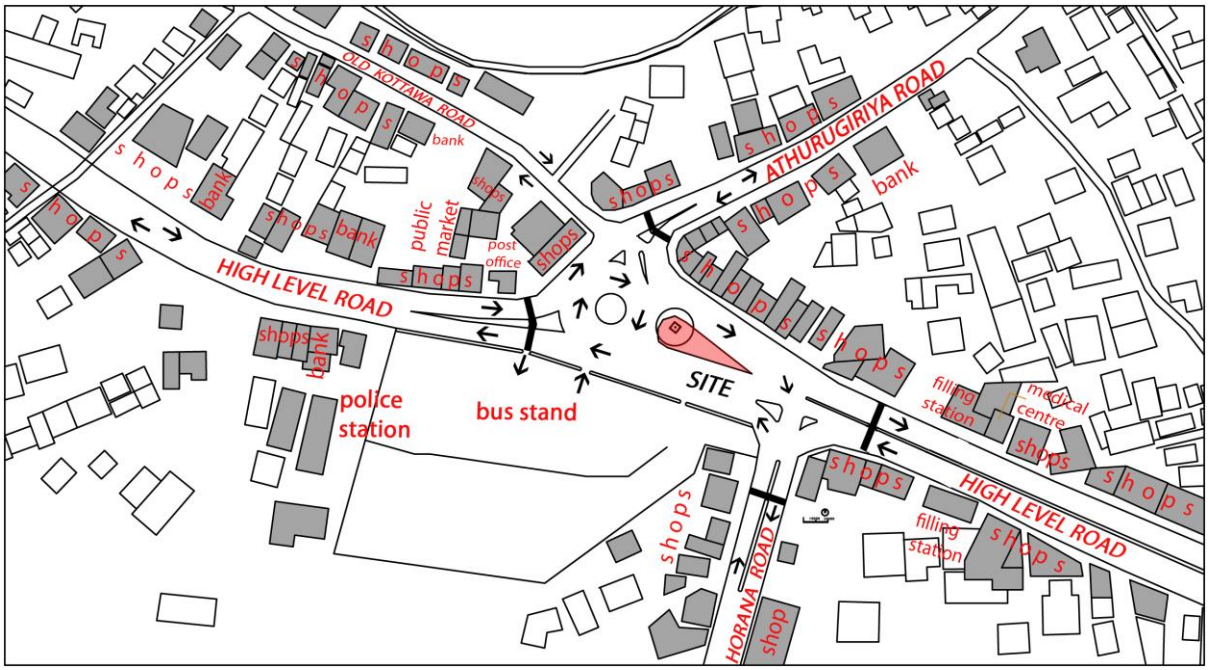
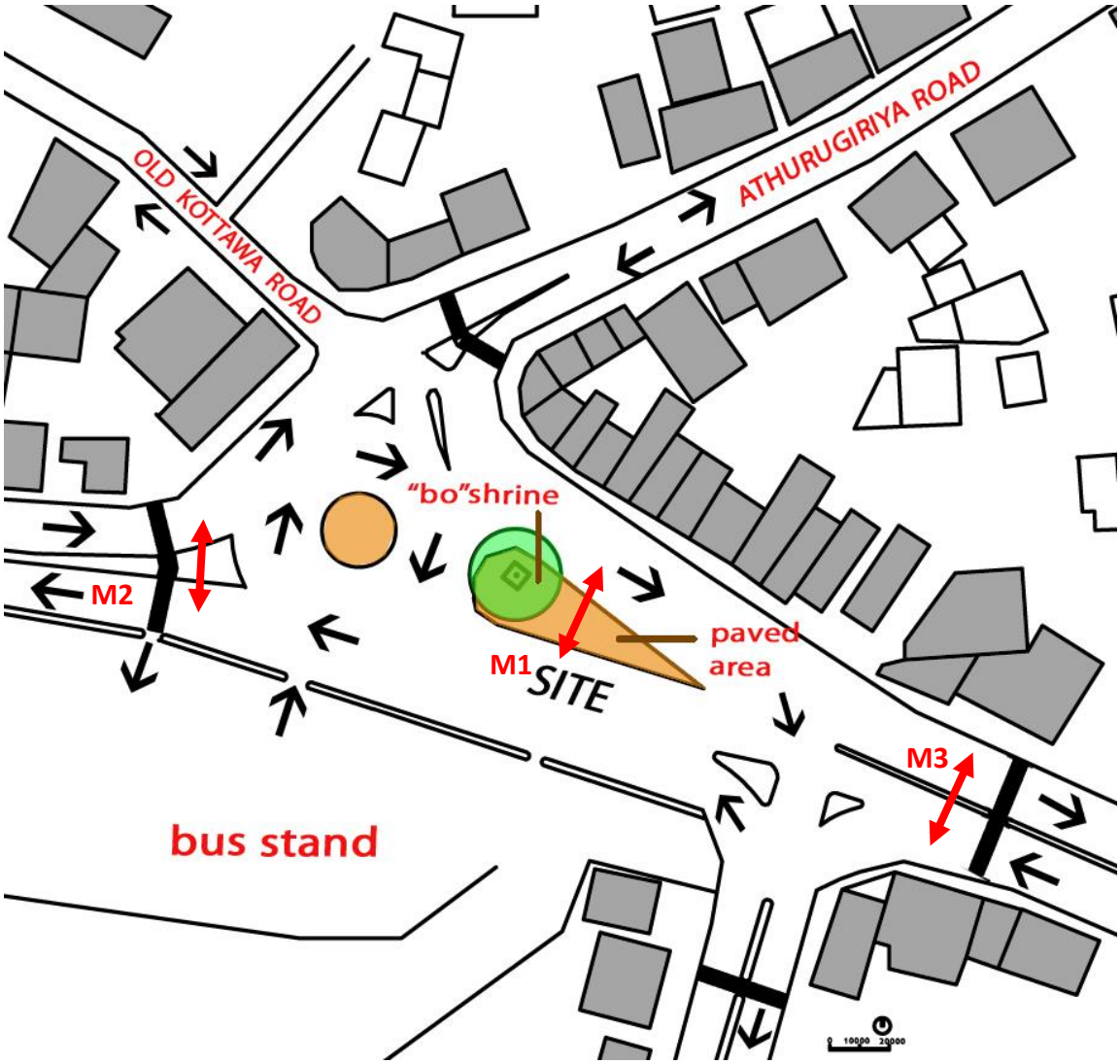


Figure 3.0.17-Kottawa middle island micro context



User's movements with directions-M1-user's movement 1, M2- user's movement 2, M3- user's movement 3

Figure 3.0-18 Middle island-KJ

3.2.2 Indications of residually

The selected island is located in the middle of this junction. Center islands are paved using cement paving. This is an example for the "islands" which was described by Rilvin(1986) as a" found space". And according to Alanyali(2009),this is a" space related to circulation routes". Further it's has indeterminate spatial qualities according to Rilvin(1986).

3.2.3 Impact level of physical characteristics

Uniformity of form - Has irregular land form. This is a flat triangular land.

Area of the site - This isn't a large spacious place now.

Site location - It's a center island located in the junction.

Table 3.0-6 Survey result-impact of physical characteristics-KJ

Impact of selected physical characteristics	SD(-2)	D(-1)	U (0)	A (+1)	SA (+2)	Agree	Disagree	value
Accessibility	14	24	4	16	2	20	-52	-32
security level								
vehicular movement	22	28	2	8		8	-72	-64
Social movement	2	16	9	31	2	35	-20	15
visibility			2	28	30	88		88
site boundaries				14	46	106		106
neighboring facilities				39	21	81		81
	-76	-68	17	136	202	338	-144	194

User perceptions show that this is a place which is difficult to access, not a secure place in terms of vehicular movement and social environment. Majority of respondents believed that this isn't a hidden place, as it has defined site boundaries. All respondents come to this place due to neighboring facilities.

Site boundaries

Kottawa Center Island has well defined site boundary. It's defined by surrounding main roads.

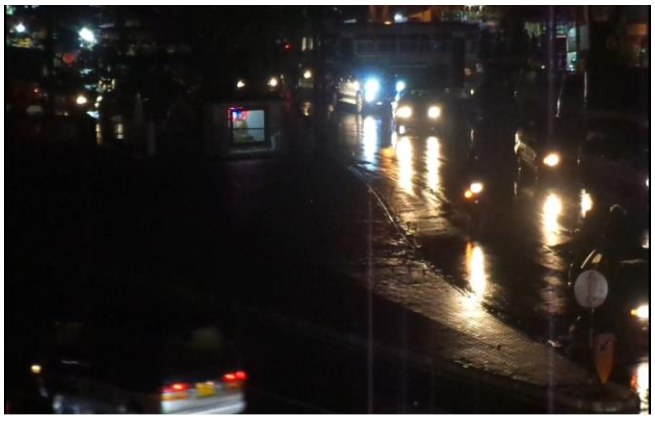


Figure 3.0-19 Dark Middle island in night time

Neighborhood facilities

Public market, police station, bus stand, post office,
Financial institutes and shops
are located around these immediate surroundings

Easy accessibility

People can't easily access the place. Presently there aren't any pedestrian crossings to reach this place from main roads. It's very difficult to reach this place due to heavy traffic flow in around the main roads.

Security level

Respondents believe that this place isn't safe due to heavy traffic flow surrounding main roads. Further some people believe that this is a safe place due to its' openness, visibility but it isn't a safe space in terms of social environment caused by lack of proper lighting during night time. There isn't even a street lamp although, it situated at the junction. (See fig 3.0-19)

Visibility

The place is not covered space. This is an open space and everyone can see the activities happened here in day time.

3.2.4 Impact of usage qualities

a)Current users of site (no of users, age category) with time-weekday & weekend

Table 3.0-7 Survey result-current users of site-KJ

Time	Day	Users							
		Gender		Age category(yrs)					No. of users
		Male	Female	1-10	10-20	20-40	40-60	Above 60	
7.00-8.00 a.m	**weekday**	23	16			27	12		39
	weekend	48	10			39	19		58
01.00-2.00 p.m	**weekday**	37	24			46	15		61
	weekend	30	18			29	19		48
6.00-7.00 p.m	**weekday**	21	14			24	11		35
	weekend	23	16			26	13		39

Comparatively there are fewer users. Majority of users are male aged 20y-60 yrs. The users below 20yrs and above 60 yrs aren't using this place. It clearly shows that this place is difficult to be used by women, children and elderly people due to lack of accessibility.

b) Current use, activity of site (with time)-weekday and weekend

Majority of the people who use this space is the people who pass by. In weekdays evening, the majority is users who loiter (15). The passing users have more time to loiter. The numbers of passing by people are high in weekends while the numbers of users who loiter are high in week days. Passing by users are low in weekdays and

weekends evening. It's clear that people are difficult to cross this middle space and if they cross, they have to loiter more time on this middle area due to heavy traffic flow in week days. The users always have to wait and watch for an opportunity to reach other side of the road.

Table 3.0-8 Survey result-current use, activity of site-KJ

Time	Day	Activities															
		Type								Loiter time(minutes)							
			Activity in loiter time														
		passing	talking	watching	smoking	eating	reading	other	No. of loiteres	Below 5	15	30	45	60	90	Above 90	Total users
7-8 a.m	week day	21		18					18	21	18						39
	week end	53		5					5	53	5						58
1-2 p.m	week day	42	2	17					19	42	19						61
	week end	46			2				2	46	2						48
6-7 p.m	week day	9		15					15	9	15						24
	week end	33	3	1	2				6	33	6						39

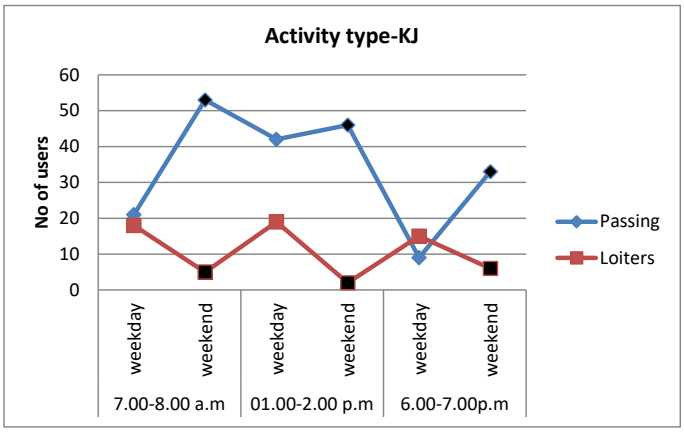


Figure 3.0-20 Survey result-activity type-KJ

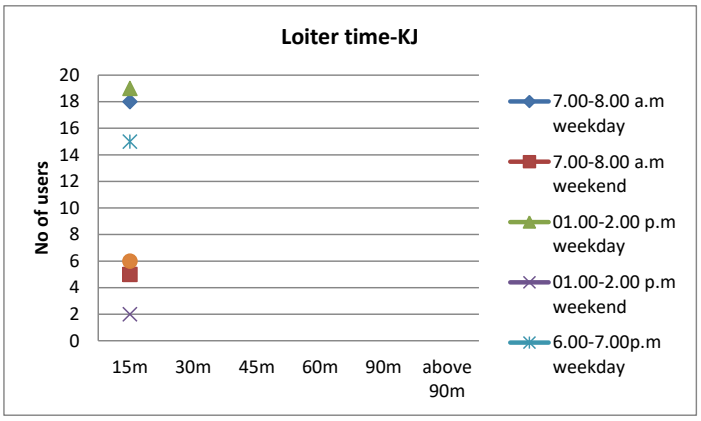
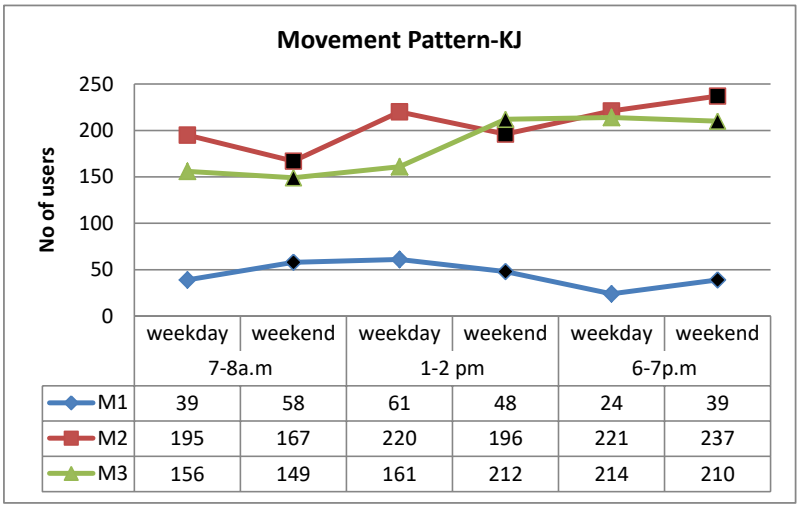


Figure 3.0-21 Survey result-loiter time-KJ

Most of time, the users have to wait more than 5 minutes (generally 5-15 time duration) until they get a chance to cross the road. Although there is a 'Bo 'shrine, People couldn't able to reach there easily due to lack of accessibility.

According to the observations most of bus drivers, conductors and shop owners have to cross this place to reach other side of the road. Some of them wait there to smoke here. Some people park their motorcycles under the shading of "Bo" tree and wait a little time.



	weekday	weekend	weekday	weekend	weekday	weekend
	7-8a.m		1-2 pm		6-7p.m	
M1	39	58	61	48	24	39
M2	195	167	220	196	221	237
M3	156	149	161	212	214	210

Figure 3.0-22 Survey result-movement pattern-KJ

Movement

Generally the movement 1-M2 (see fig3.0-18 & fig3.0-22) is slightly higher than M3. M2 is the comparatively shortest path towards other side of the road from bus stand. Comparatively the movement 3(M1) is the lowest one.

3.2.5 Reasons for existing residual qualities

Table 3.0-9 Survey result-reasons for existing residual qualities-KJ

Statement	SD (-2)	D (-1)	U (0)	A (+1)	SA (+2)	Value
"This place is well maintained "	6	29	4	15	6	
	-12	-29		15	12	-14
Comments-"space is restricted due to roads" "can't access, have to be fined if, we cross"						

According to majority of respondents, this place isn't properly maintained. This place is owned to R.D.A and maintained by Municipal Council. Although it isn't properly maintenance, the main reason is for the residually difficulty to access the island.

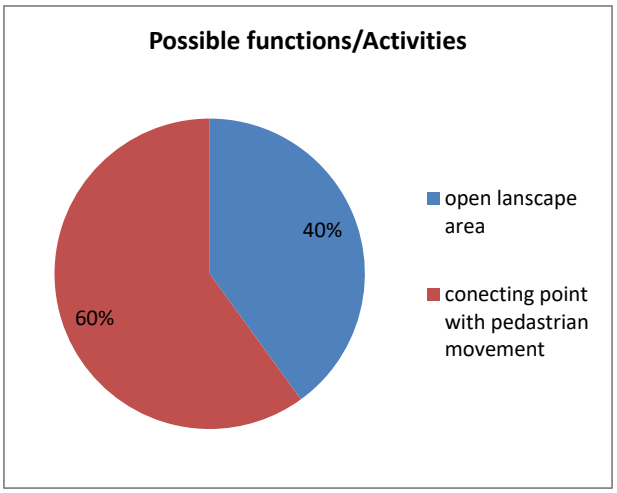
3.2.5 Possibilities for reclaiming as public space

Table 3.0-10 Survey result-possibilities for reclaiming as public space-KJ

Statement	SD (-2)	D (-1)	U (0)	A (+1)	SA (+2)	Value
"This place has possibility to convert as proper public space "				24	36	
				24	72	96

According to all respondents, this place has the possibility to convert as proper public space. Majority are expecting a connecting point with pedestrian movement (60%). They expect a solution like underpass, bridge, pedestrian crossing. 40% of respondents proposed open landscaped area. They expect a water feature, information boards...etc. in this space.

However, it appears that it's a needed a solution to access this place if it is converted as a proper public space. Maintenance problems like lighting up at night time can be solving easily. Otherwise this place could be an open landscaped area which discourages people in crossing this space.



Activity/function	No
open landscape area	24
connecting point with pedestrian movement	36

Figure 3.0-23 Survey result-possible functions/activities-KJ

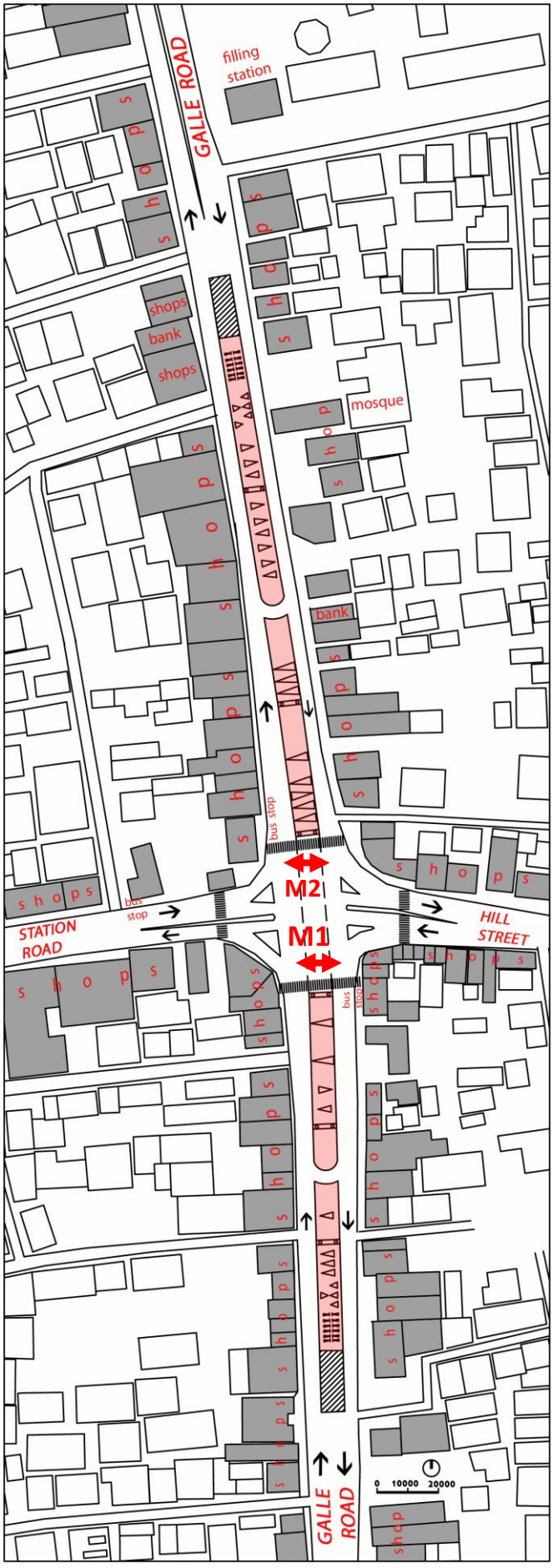
3.3 Case 03- Underneath space of Dehiwala flyover –(C3-DF)

3.3.1 Introduction

Dehiwala junction connects Galle road, Srimath D.B Jayathilake mawatha and station road. The fly over was built over Galle road at Dehiwala junction in 2009 as a solution for traffic congestion during rush hours. It's a two lane flyover which is 337m in length and 7.35m width.

The underneath space is currently used as parking space and there are two pedestrian crossings under the fly over. This underneath space belongs to R.D.A and maintained by Municipal Council. Bus stand, railway station, fashion stores and shops are located around these immediate surroundings.

Figure 3.0-24 Dehiwala flyovers and it's underneath space



User's movements with directions

-M1-user's movement 1, M2- user's movement 2

Figure 3.0-25 Dehiwala junction-macro plan

3.3.2 Indications of residually

The underneath space is currently used as an unplanned and uncontrolled parking space. This is an example for the "leftover spaces under …elevated highways "which Crisman(2005), and "areas beneath highway" Trancik(1983) explains. Crisman(2005) uses the term "sight out of sight "to describe such abandoned usage quality.

3.3.3 Impact level of physical characteristics

Uniformity of form - Has regular land form but curve 3D form due to flyover above.

Area of the site - This is comparatively a spacious place.

Site location - It's a central space located in the junction.

Table 3.0-11 Survey result-impact of physical characteristics-DF

Impact of selected physical characteristics	SD (-2)	D (-1)	U (0)	A (+1)	SA (+2)	Agree	Disagree	Value
Accessibility	8	28		24		24	-44	-20
security level								
vehicular movement	24	29	3	4		4	-77	-73
social environment	12	11	8	29		29	-35	-6
visibility	8	12	3	21	16	53	-28	25
site boundaries		28		4	28	60	-28	32
neighboring facilities				47	13	73		73
	-104	-108		129	114	243	-212	31

User perceptions show that this is a place which is difficult to access, not a secure place in terms of vehicular movement and social environment. Majority of respondents believed that this isn't a hidden place, had defined site boundaries. All respondents come to this place due facilities provided in the town.

Site boundaries

Underneath space of Dehiwala flyover has well defined site boundary. It's defined by surrounding main road.

Neighborhood facilities

Bus stand, railway station, fashion stores and shops are located around these immediate surroundings

Easy accessibility

There are two pedestrian crossings with traffic lights to facilitate pedestrian movement across this underneath space. Although the bus stops are very close to this pedestrian crossings and there was no bus bays. So it creates unnecessary traffic block here, it disturbs pedestrian flow and make pedestrians uncomfortable to use it with ease. Parking vehicles underneath this space also makes disturbances to the pedestrians. At night time this space is dark. Specially the corner end spaces are dark and leaving it to be a space for beggars to sleep in.

Figure 3.0-26 Pedestrian crossings are blocked by buses

Figure 3.0-27 Road is blocked by vehicles from underneath parking area

Security level

Respondents believe that this place isn't safe in terms of vehicular traffic due to disturbances causing to pedestrians by improper bus stops and parking activity. Further people believe that this isn't a safe space in terms of social environment due to the lack of light at night time.

Figure 3.0-28 Dark corner spaces at the end of fly over

Visibility

The place is not a fully covered space (covered only upper side by the flyover). This is an open space and everyone can see the activities take place here in day time. But the visibility of corner ends is less due to parking activity in day time. At night time the visibility of corner space is further lessened.

3.3.4 Impact of usage qualities

a)Current users of site (no. of users, age category) with time-weekday & weekend

Table 3.0-12 Survey result-current users of site-DF

Time	Day	Users							
		Gender		Age category(yrs)					No. of users
		Male	Female	1-10-	10-20-	20-40	40-60	Above 60	
7-8a.m	**weekday**	498	355	14	66	330	326	117	853
	weekend	228	178	19	49	189	103	46	406
1-2p.m	**weekday**	672	519	114	309	434	265	69	1191
	weekend	512	395	51	122	352	260	122	907
6-7p.m	**weekday**	483	405	33	136	323	273	123	888
	weekend	525	452	55	210	364	213	135	977

Maximum numbers of users utilize this space in weekday afternoon (1191). Comparatively less users occupy this place in weekend morning (406). Generally this space functions well during weekdays and also weekend days because it's compulsory to pass this space to reach other side of the road and facilities are provided for crossing (pedestrian crossings and traffic lights). This place is used by all age categories, genders and it's is an advantage for reclaiming as public space.

b) Current use, activity of site (with time)-weekday and weekend

Most of users are passing this underneath space without stopping. So the users who loiter here are very few. The owners of parked vehicles in this space spent some time here. Some people stop in this middle space to talk via phones. Few users stop here and talk with their friends who meet while crossing the road. Some people read newspapers sitting on their motor cycles. There is hardly anyone spent more than 15 minutes here.

Table 3.0-13 Survey result-current use, activity of site-DF

Time	Day	Activities															
		Type								Loiter time(minutes)							
			Activity in loiter time														
		passing	talking	Watching	smoking	eating	reading	other	no of loiteres	Below 5	15	30	45	60	90	Above 90	Total users
7-8a.m	week day	850	1	1			1		3	850	3						853
	week end	403	1	2					3	403	3						406
1-2p.m	week day	1187	2	2					4	1187	4						1191
	week end	902	5						5	902	5						907
6-7p.m	week day	885	3						3	885	3						888
	week end	971	5	1					6	971	6						977

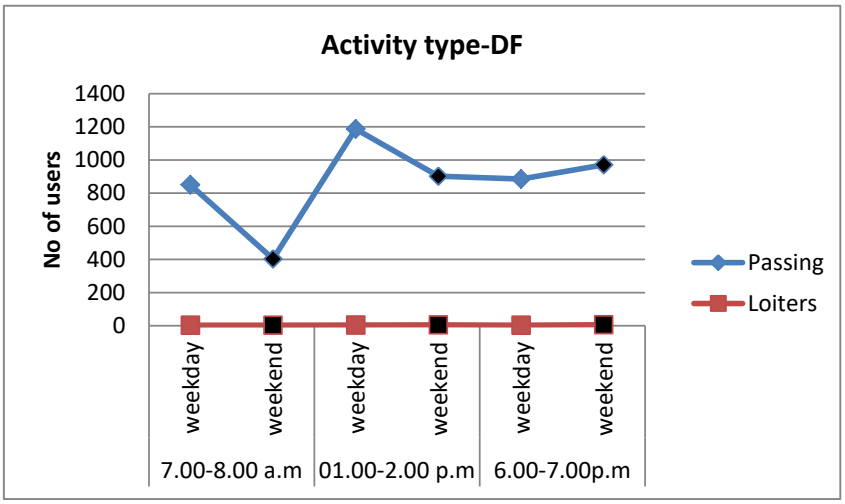


Figure 3.0-29 Survey result-activity type-DF

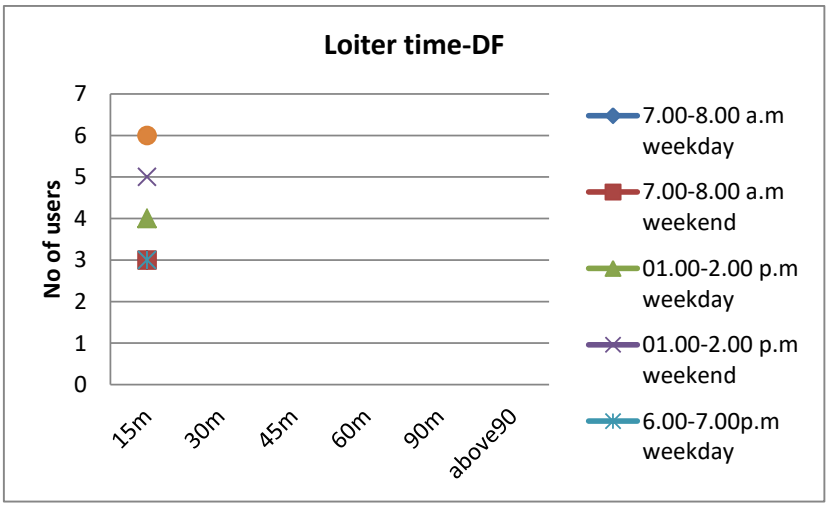


Figure 4.0-30 Survey result-loiter time-DF

Figure 3.0-31 invented activities in underneath space by people

Movement

Generally there is no difference between movement 1 and 2 and people used both pedestrian crossings equal manner.

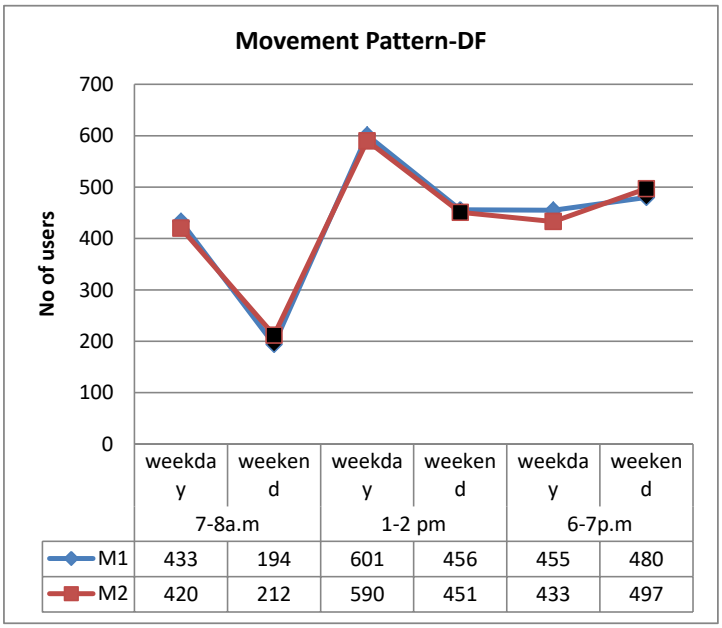


Figure 3.0-32 Surveyors result-movement pattern-DF

3.3.5 Reasons for existing residual qualities

Table 3.0-14 Survey result-reasons for existing residual qualities

Statement	SD (-2)	D (-1)	U (0)	A (+1)	SA (+2)	Value
"This place is well maintained "	32	12		16		
	-64	-12		16		-60

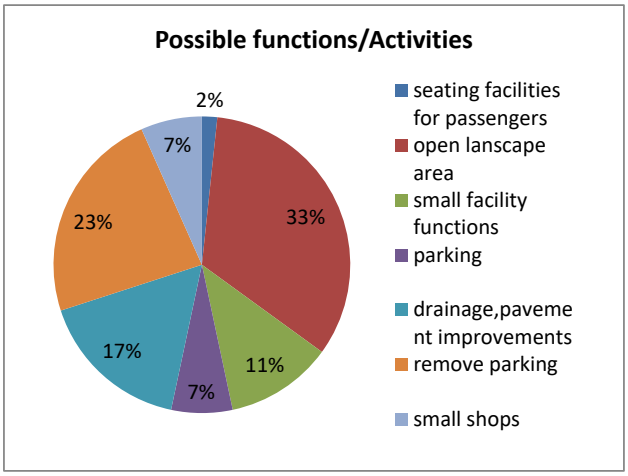
Majority of respondent says that this place isn't properly maintained. This place is owned to R.D.A and maintained by Municipal Council. They don't properly supervise the existing parking facility. Some heavy vehicles are parked here the whole day. Even at night time this space isn't lit up properly and this darker environment is a threat and the pedestrians insecure.

3.3.6 Possibilities for reclaiming as public space

Table 3.0-15 Survey result possibilities for reclaiming as public space-DF

Statement	SD (-2)	D (-1)	U (0)	A (+1)	SA (+2)	Value
"This place has possibility to convert as proper public space "				42	18	
				42	36	78

According to all respondents, this place has possibility to convert as a proper public space. Majority (33%) is expecting an open landscape area (painting the bridge with colors, flower fence etc. 23% of respondents proposed to remove the existing parking function. Small facility functions like lottery kiosk, drainage and pavement improvement, seating facilities for passengers are other proposed functions by the respondents.



Activity/function	No
seating facilities for passengers	1
open landscape area (painting the bridge with colors, flower fence)	20
small facility functions	7
parking	4
drainage, pavement improvements	10
remove parking	14
small shops	4

Figure 3.0-33 Survey result-possible functions/activities-DF

This is a place which has high pedestrian movement. So it's important not to block this movement by vehicle parking. Removing parking function is important because it create traffic in the vicinity. It's also important to introduce bus bays to prevent traffic block and make pedestrians feel insecure. It's important to build some obstructions to prevent vehicles parking in the middle island spaces which are allocated for pedestrian movement. It can be done to suit aesthetically to the context without conventional steel barriers. Other than painting the bridge with colors this underneath space can used for street art.

3.4 Case 04-Rounderbout at Maradana junction-(C4-MJ)

3.4.1 Introduction

Figure 3.0-34 Maradana middle space with void

Figure 3.0-35 Maradana middle space-paved path way

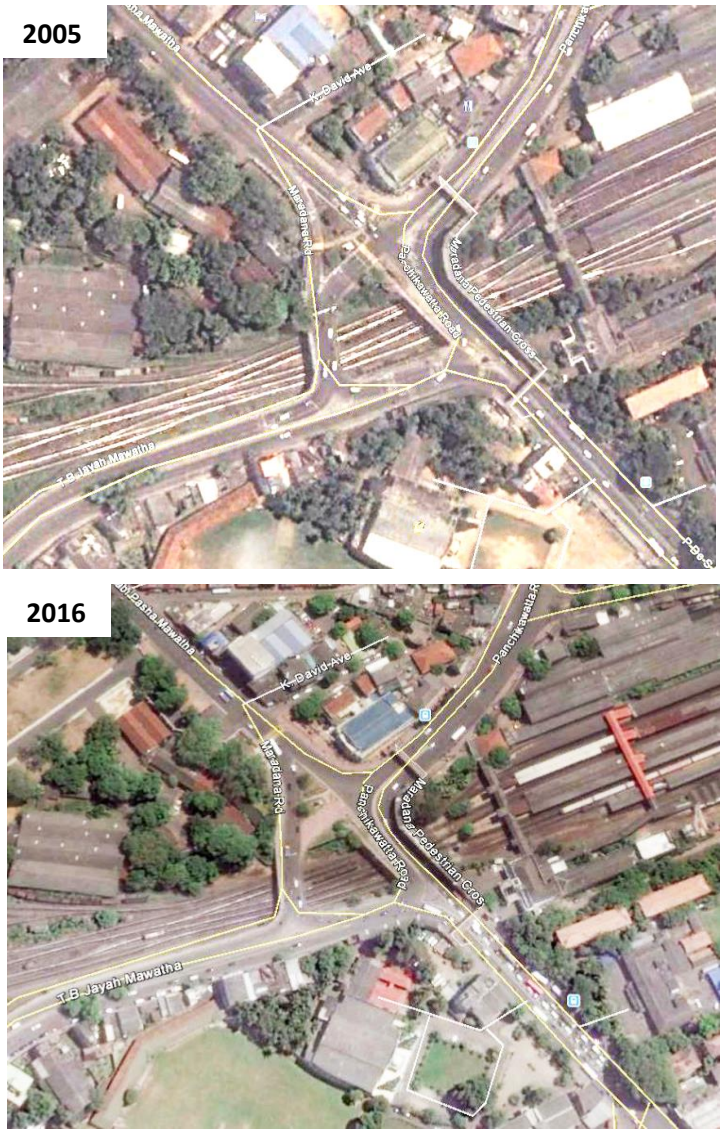


Figure 3.0-36 transformation of Maradana middle space

This middle island is located at Maradana junction. It's consists of landscaped area and a void area which is generated by road bridges. Earlier the void space and landscape area was divided by middle road. But after new traffic proposals the middle road was closed, two parts are combined and Panchikawaththa road is converted to a one way road. Railway tracks runs under the void space. (See fig 3.0-36)

This space is used as landscaped area with flower pots and a statue. This space belongs to R.D.A and maintained by C.M.C. Railway station, Tracie expert city(IT city),cinema ,Elphiniston Theater, Tower Hall, Hotels,Zahira college, Police station and shops are located in this immediate surrounding area.

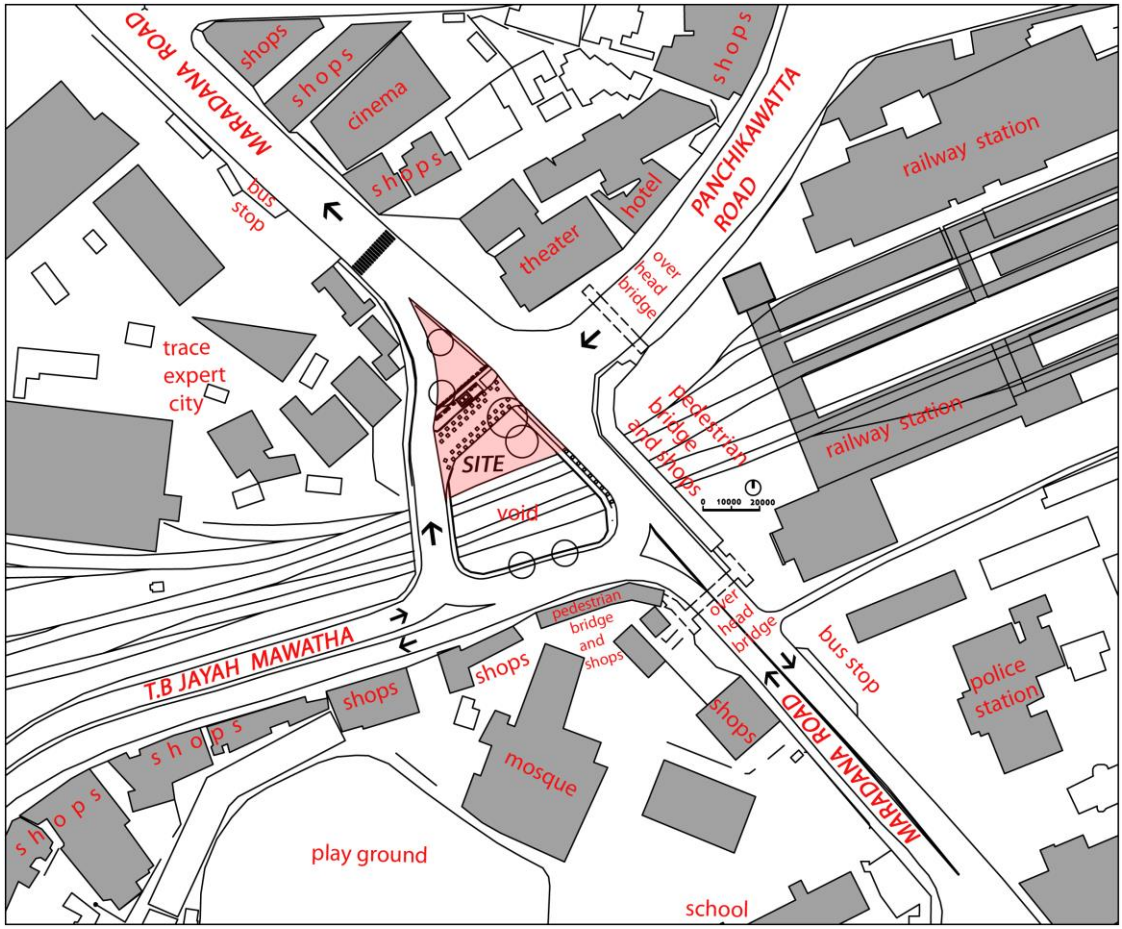
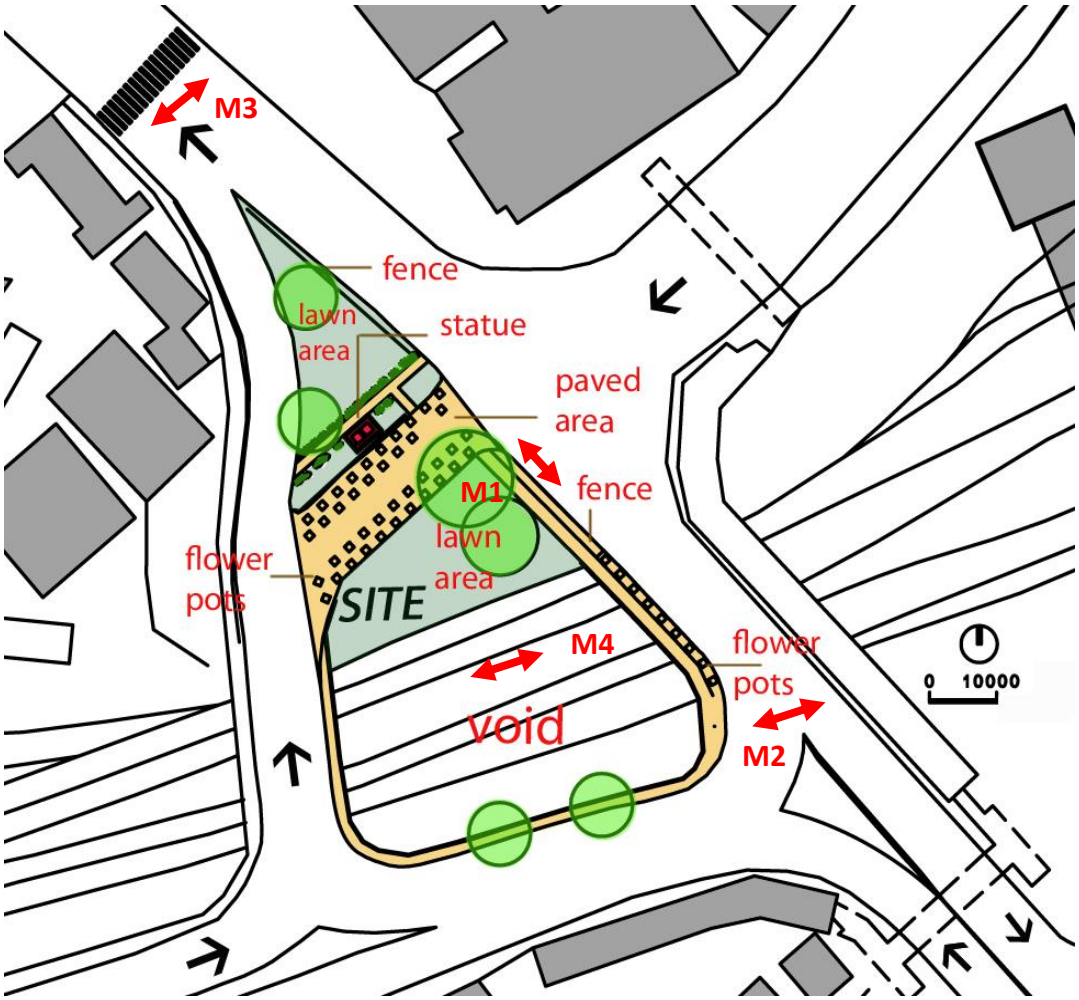


Figure 3.0-37 Maradana middle space-micro context plan



User's movements with directions-M1-user's movement 1, M2- user's movement 2, M3- user's movement 3, M4- user's movement 4

Figure 3.0-38 Maradana middle space- existing plan

3.4.2 Symptoms of residually

Presently there isn't proper activity planned except a mere pass-by. Original designs were changed and now it becomes an unplanned space. It belongs to" islands with is explained by Rivlin(1986) as "lost space" . "Leftover spaces over railway line is explained by Crisman(2005)as "sites out of sight".

3.4.3 Impact level of physical characteristics

Uniformity of form - Has triangular, flat land form. Railway tracks are running under the void space.

Area of the site - This is spacious than Kottawa middle space. (case2)

Site location - It's a central place located in the junction

Table 3.0-16 Survey result-impact of selected physical characteristics-MJ

Impact of selected physical characteristics	SD (-2)	D (1)	U (0)	A (+1)	SA (+2)	Agree	Disagree	Value
Accessibility	36			21	3	27	-72	-45
security level								
vehicular movement	12	16	4	12	16	44	-40	4
social environment	4	4	8	12	32	76	-12	64
visibility				24	36	96		96
site boundaries			4	12	44	100		100
neighboring facilities		4	4		52	104	-4	100
	-104	-24	20	81	366	447	-128	319

User perceptions show that this is a place which is difficult to access, a secure place in terms of vehicular movement and social environment. Majority of respondents believed that this isn't a hidden place, as it has defined site boundaries. Majority of respondents come to this place due to neighboring facilities provided by the town.

Site boundaries

Roundabout at Maradana junction has well defined site boundary. It's defined by surrounding main road. It also has boundary fences.

Neighborhood facilities

Railway station, Tracie expert city (IT city), cinema, Elphiniston Theater, Tower Hall, Hotels, Zahira college, Police station and shops are located in this immediate surrounding area.

Easy accessibility

People can't easily access-the place. Presently there aren't any pedestrian crossings to reach this place from main roads. It's difficult to reach this place due to heavy traffic flow in surrounding main roads. Instead of on ground pedestrian crossings there is an overhead pedestrian's bridge to cross the main roads. Although it's dangerous, reasonable number of people tend to cross the middle island without using overhead bridge.

Figure 3.0-39

Pedestrian movement-M2 (MJ)

Security level

Respondents believe that this place is safe in terms of vehicular traffic although there is heavy traffic flow in main roads. They feel like that due to the surrounding boundary fences. Further people believe that this is a safe place in terms of social environment due to this is an openness.

Visibility

It is not a covered space. This is an open space and everyone can see the activities happened here in day time. In night time this place is well lit by street lamp posts.

3.4.4 Impact of usage qualities

a)Current users of site (no of users, age category) with time-weekday & weekend

Table 3-17 Survey result -current users of site-MJ

Time	Day	Users							
		Gender		Age category(yrs)					No of users
		Male	Female	1-10	10-20	20-40	40-60	Above 60	
7.00-8.00 a.m	**weekday**	206	14	14	104	59	31	12	220
	weekend	72	9	1		28	30	19	78
01.00-2.00 p.m	**weekday**	168	36	12	94	53	33	12	204
	weekend	76	8	3	4	37	29	11	84
6.00-7.00 p.m	**weekday**	159	33	4	15	108	46	19	192
	weekend	142	17	2	3	75	62	17	159

Most of users are males. Number of users are high (220,204) in weekday mornings and afternoons. At that time most of school children walk across this place. It clearly

indicates by the increased number of users belong to 10-20 yrs category in that time. The number of users is high in weekday afternoons due to office workers who travel across this place. The numbers of users are comparatively low in weekend-days.

b) Current use, activity of site (with time)-weekday and weekend

Table 3.0-18 Survey result-current use, activity of site-MJ

Time	Day	Activities															
		Type								Loiter time(minutes)							
		Activity in loiter time															
		Passing	talking	watching	smoking	eating	reading	other	no of loiteres	Below 5	15	30	45	60	90	Above 90	Total users
7-8a.m	weekday	219						1	1	219	1						220
	weekend	79	2						2	79		2					81
1-2p.m	weekday	201	3						3	201		3					204
	weekend	82		2					2	82	2						84
6-7.m	weekday	182	6	4					10	182	5	4	1				192
	weekend	156	2	1					3	156	3						159

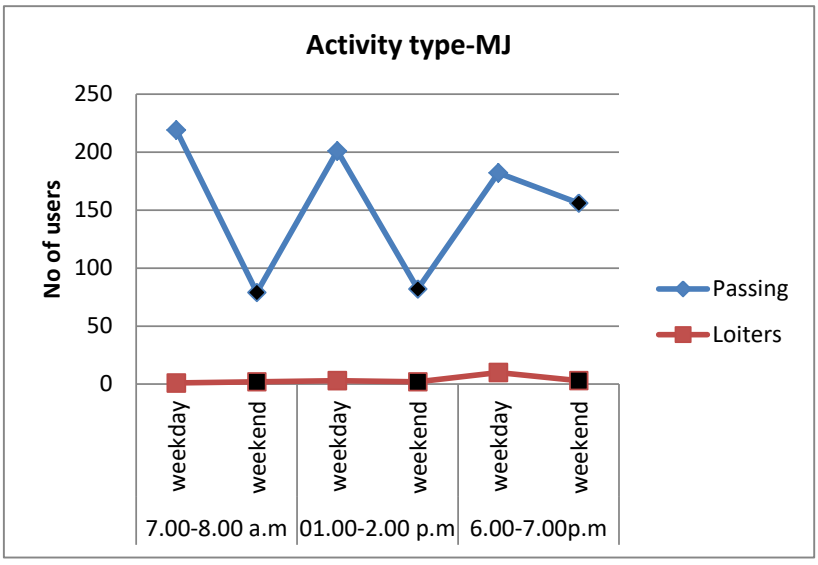


Figure 3.0-40 Survey result-activity type-MJ

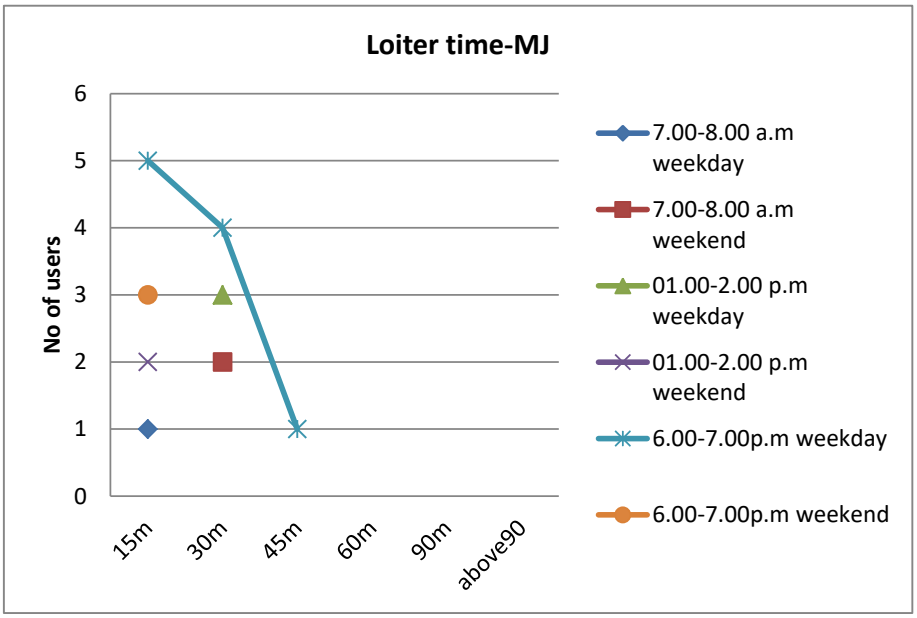


Figure 3.0-40 Survey result-loiter time-MJ

Most of users pass this place and not tend to loiter here. In weekends the number of users increases in evening time due to low traffic flow and its easy accessibility.

In weekday evenings, some people come into this place to watch trains sitting on the steps of the existing statue while chatting with each other. In afternoons the cleaning workers sit on the stones under the small tree here and chat with each other for some time.

Figure 3.0-41 People movement -M1

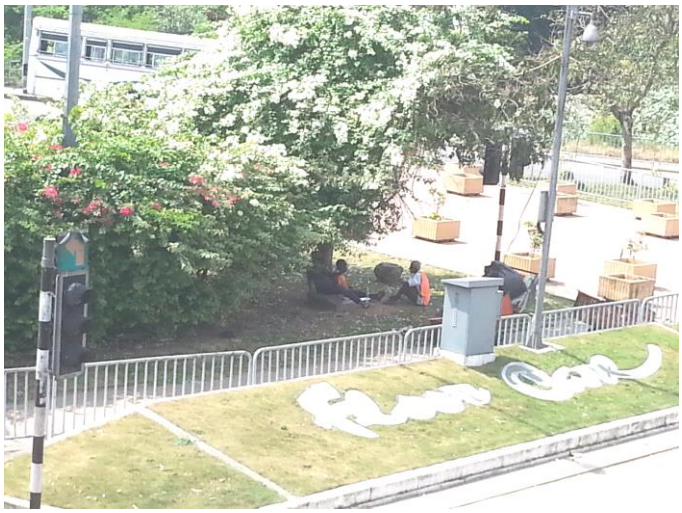
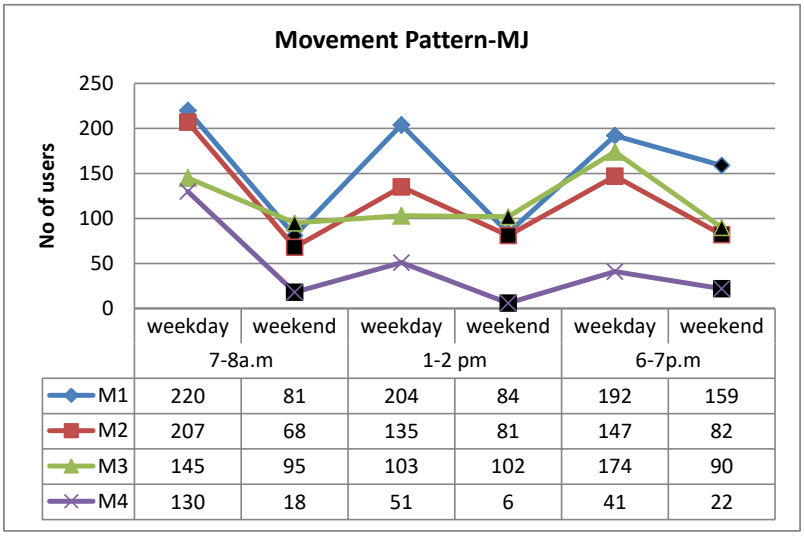


Figure 3.0-42 –people are seating under the shaded area and chatting

Movement



	weekday	weekend	weekday	weekend	weekday	weekend
	7-8a.m		1-2 pm		6-7p.m	
M1	220	81	204	84	192	159
M2	207	68	135	81	147	82
M3	145	95	103	102	174	90
M4	130	18	51	6	41	22

Figure 3.0-43 Survey result-movement pattern-MJ

Even though there aren't any accessible supportive elements like pedestrian crossings, the M1(see fig 3.0-38 for user movement & fig 3.0-43) has the highest movement in weekdays. M2 hasn't supportive by on ground pedestrian crossing (there is an overhead bridge over movement 2) while M3 is supportive by .M2 is higher than M3 in weekday morning and afternoon. School children and office workers mostly contribute for this incensement but evening M3 is higher than M2 as office workers use to this path to get a bus towards the Pettah side. Specially there is a noticeable movement along the underneath of this void place. Although the size of the movement

is always lower than others, during week days movement is comparatively higher than weekend movement of M4. In weekdays some office workers who uses the train contribute to this movement as railway quarters are located in that area. This underneath space is also connected with adjoining Trace expert city site which has more movement which people follow is a potential for reclaiming this place as public space.

3.4.5 Reasons for existing residual qualities

Table 3.0-19 Survey result-reasons for existing residual qualities-MJ

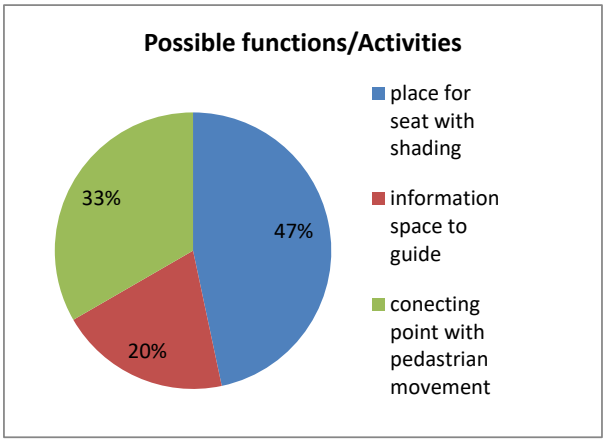
Statement	SD (-2)	D (-1)	U (0)	A (+1)	SA (+2)	Value
"This place is well maintained "	16	-12		32		
	-32	-12		32		-12
Comments-"not properly maintained"						

Majority of respondent says that this place isn't properly maintained. This place is owned to R.D.A and maintained by Municipal Council. Now, there are flower pots here as landscape elements. But they are used as a decoration. It's better to make shading space here from landscape point of view.

3.4.6 Possibilities for reclaiming as public space

Table 3.0-0-20 Survey result-possibilities for reclaiming-MJ

Statement	SD (-2)	D (-1)	U (0)	A (+1)	SA (+2)	Value
"This place has possibility to convert as proper public space "				20	40	
				20	80	100



Activity/function	No
place for seat with shading	28
information space to guide	12
connecting point with pedestrian movement	20

Figure 3.0-44 Survey result-possible functions/activities-MJ

According to all respondents, this place has possibility to convert as proper public space. Majority (47%) is expecting a place for seat with shading for spent some time here. there is no place for waiting expecting some one or meet someone around this junction even though there is railway station, they aren't provided such place for the public. The railway passengers expect a place for spent some time other than standing in front of the railway station.

"I spent here (at in front of railway station) about 45 minutes for expecting my friend come by the train to go the class …it's good that if can use this central space to create garden with shady trees to facilitate the railway users like me…"

-Railway passenger (personal communication, January 25,2016)

The shop owners of the pedestrian bridge had some negative imagination regarding the above garden idea. They thought that if it covered by bushes and trees it'll be a place for crummy activities in the middle of the town. However it has some reasonability. However it's clear that there is a need of a landscaped area with some kind of shade with seating but the people should be aware and see what happens here. It's important for safe public place.

33% are expecting a connecting point with pedestrian movement here. According to their views it'll be used as an underground pathway. However it has a potential with existing movement pattern and key supportive functions like cinema in closer proximity. Theaters, railway station, school, trace expert city which surrounding here. 20% of respondents are expecting informative items like displaying railway time table etc…to aware the train schedules easily. It is a possible idea but it should be done without disturbing the drivers.

3.5 Comparison of cases

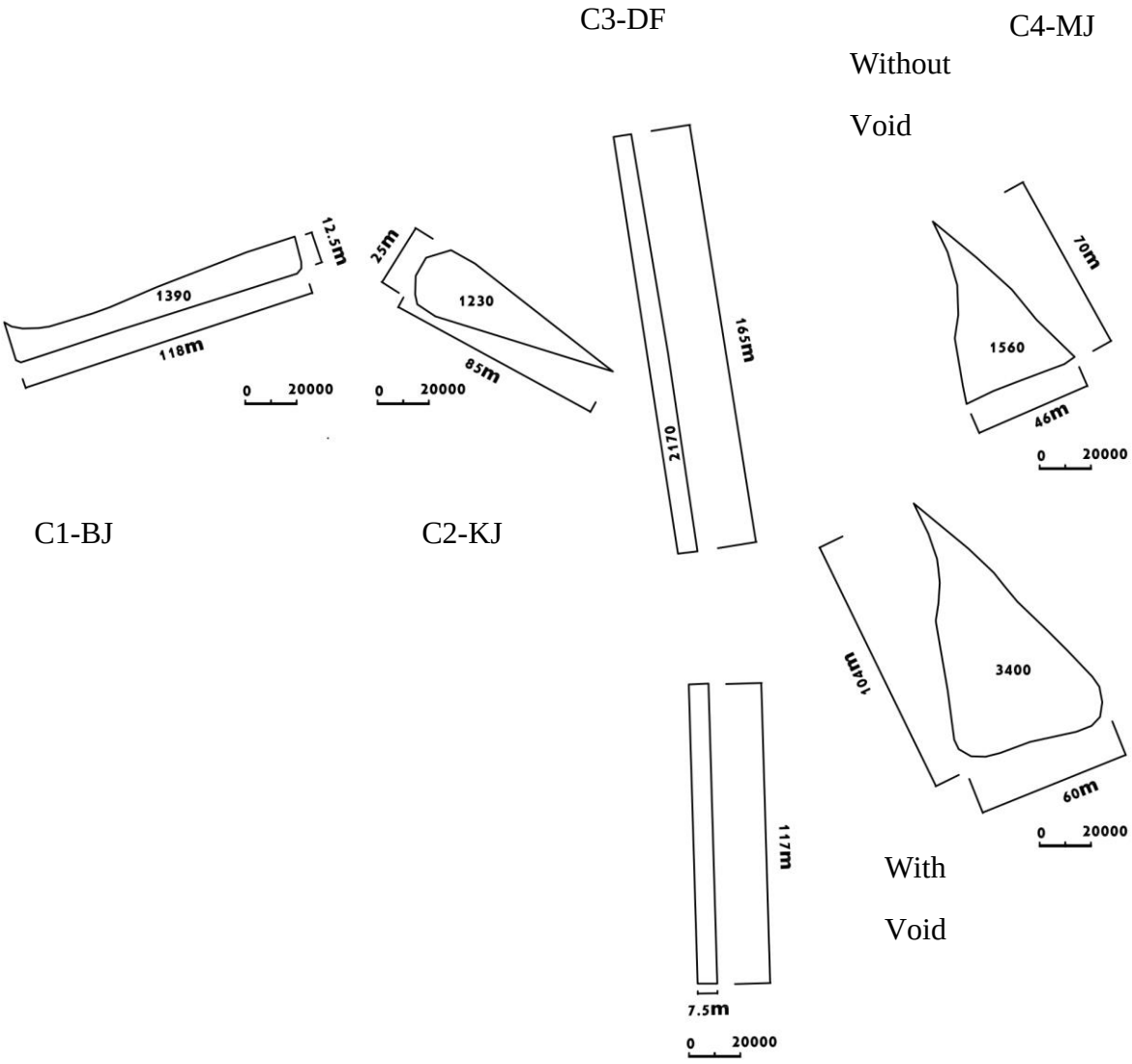


Figure 3.0-45 Site area comparison

Site area - C3-DF > C4-MJ > C1-BJ > C2-KJ

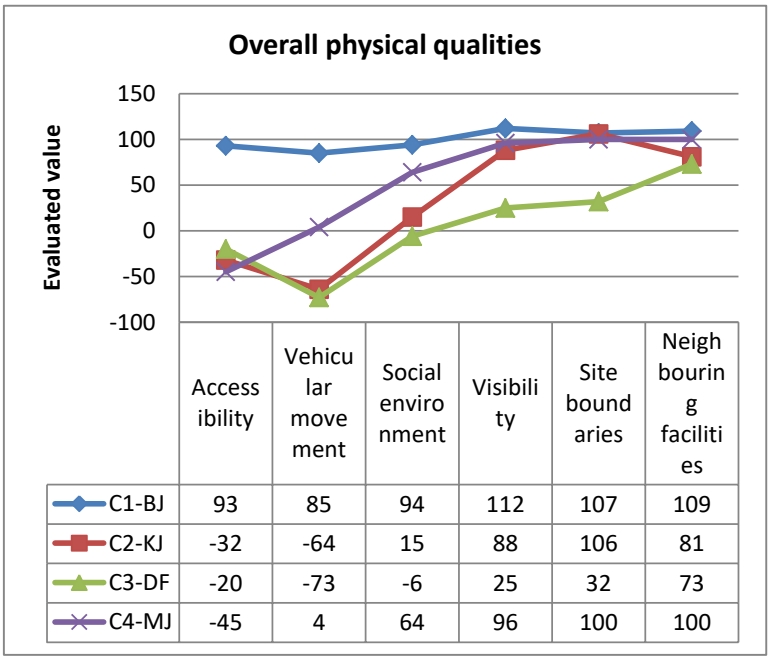
C1- Side space of Bambalapitiya roudabout

C2- Roundabout at Kottawa junction

C3- Underneath space of Dehiwala flyover

C3- Roundabout at Maradana junction

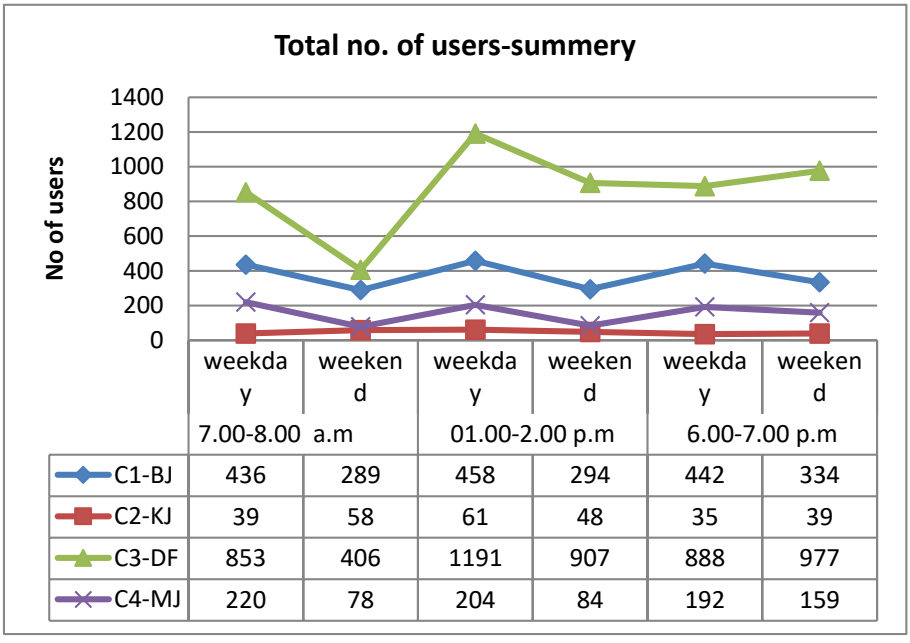
According to above comparison C3-DF has large area. C2-KJ has small site area and the usable area is reduced due to the triangular shape. It has opportunity to increase the area of the C4-MJ by adding the void space. It doubles the existing land area of the C4-MJ.



	Accessibility	Vehicular movement	Social environment	Visibility	Site boundaries	Neighbouring facilities
C1-BJ	93	85	94	112	107	109
C2-KJ	-32	-64	15	88	106	81
C3-DF	-20	-73	-6	25	32	73
C4-MJ	-45	4	64	96	100	100

Figure 5.0-46 Survey result-overall physical qualities-all cases

When considering about physical qualities Case 1-BJ has all positive physical qualities for reclaiming as proper public space.



	7.00-8.00 a.m		01.00-2.00 p.m		6.00-7.00 p.m	
	weekday	weekend	weekday	weekend	weekday	weekend
C1-BJ	436	289	458	294	442	334
C2-KJ	39	58	61	48	35	39
C3-DF	853	406	1191	907	888	977
C4-MJ	220	78	204	84	192	159

Figure 6.0-47 Survey result-total no of users-all cases

Among three cases the numbers of users are high in Case1-DF. Lowest numbers of users are in Case2-KJ.

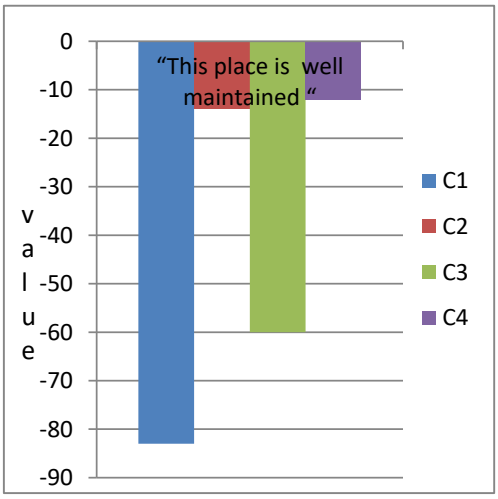


Figure 3.0-48

Reasons for existing residual quality-all cases

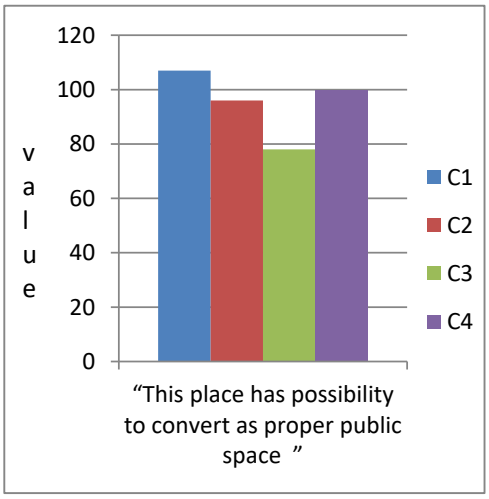


Figure 3.0-49

Possibilities for reclaiming as public space

All of respondents believed that the places aren't maintained properly and the places have reclaiming possibility as public space. Thus, the selected four case studies can be summarized as below.

Table 3.0-21 Summery-all case studies

Case	Uniformity of form	Area of the site	Site location	Negative physical qualities	No of users	No of loitering users	Users Age category	Properly maintained	Invented activities by users	Possib-ilities for reclaiming	Possible Analyzed Functions/facilities
C1-BJ	Open, Regular, Leaner. flat	Spaciousarea1390Sm width12.5m(max) Length118m	Peripheral side space	-	High 2253	156	All	X	Talking(standing & seating) Watching/waiting for someone, smoking	√	need small additional supportive activities/functions(milk bar, food outlet, newspaper shop, and lottery kiosk) to strengthen the existing potentials
C2-KJ	Open, Leaner ,triangular, flat	Not a spacious, Tight Area-1230Sm Width-25m(max) Length -85m	Center ,middle space	Accessibility, security from vehicular movement	Lowest 269	65	20yrs-60yrs	X	Talking, watching, smoking	√	need a solution for access to this place if it converted as proper public space Otherwise this place could be an open landscape area which discourages to cross this space.
C3-DF	Open, regular, underneath space	Spacious Area-2170Sm Width-7.5m Length-282m	Center ,middle space	Accessibility, security from vehicular movement, security from social environment	Highest 5222	24	All	X	Talking, Watching Reading	√	It's important not to block this movement by vehicle parking. Removing parking function , build some obstructed to avoid reach vehicles to middle island spaces which allocated for pedestrian movement .this underneath space can used for street art
C4-MJ	Open, ,triangular, flat	Spacious than C2-KJ Area,1560Sm, 3400Sm(with void) Width-46m Length-70m	Center ,middle space With corner void	Accessibility	Low 940	21	All	X	Talking(seating standing), Watching(train)	√	Need, Landscape area with some kind of shade with seating but the people should aware and see what happened here. A connecting point with pedestrian movement here. It'll be an underground pathway. An informative items like displaying railway time table etc…to aware the train schedules easily .that is a possible idea but have to do it without disturbing to the vehicle drivers.

CONCLUSION

The selected case studies can be divided in to three main categories:

Open side space - C1-BJ

Open middle space - C2-KJ,C4-MJ

Underneath middle space - C3-DF

Open side spaces are the most accessible ones because it is already connected to one side. As a result of high accessibility all categories of users tend to get attracted to this place. There is a better sense of security (safety) from vehicular movement than in a middle space. As a result of this side space the sense of security from vehicular movement can be increased by physical separation like on street parking, shady tree line etc…In case one, there is sense of security due to on street parking and pedestrian pathway. In such side space, the required additional supportive activities/functions strengthen the existing potentials. Then the optional activities may be increased and it leads to the improvement of social activities.

In open middle spaces people feel unsafe due to vehicular movement. When physical barriers are introduced, the unsafe feeling is reduced. Although the C4-MJ is open middle space people feel that it's a safe place from vehicular movement. In middle space, accessibility is a main issue which caused comparatively low usage of the space lead to being residual. Then the users could be limited to some age category. In C2-KJ most of users are 20yrs to 60 yrs but when increasing the size of the middle space with safe atmosphere, people tend to use it neglecting its' difficulty in access.(ex-C4-MJ). It's a needed a solution to access–these middle places if it is converted as proper public space.

When considering similar type local examples suitable for C4-MJ, Rajagiriya children park seems to be a successful open middle space as a public space. Ragagiriya children park has positive features in terms of public space. It has three pedestrian accesses from three directions to the place so all age categories can access there easily while it generates a safer feeling without any interference of vehicular movement. There is a level deference between pedestrian path to play area. It also provides some

secure feeling from vehicular movement. It has children play spaces in middle space. Playing is the optional activity here. Shady trees, seating benches, pedestrian crossings, surrounding pedestrian paths provide better physical environment. So the place helps to social activities like gathering, discussing, watching the playing children like that. Comparatively the area of the land in Rajagiriya is higher than C4-MJ and C2-KJ. So it has enough area for the activity. But C4-MJ has comparatively lager area than C2-KJ. The usable area of C4-MJ could be increased by using the void ("sites out of sight" according to Crisman(2005)). In the cases like C4-MJ the middle place may be a connecting point of pedestrian movement with easy pedestrian accesses, improved buffer zone like pedestrian pathway in between road and middle space. It has to be a place which facilitates people for optional activities like seat, rest and spent some time in busy urban environment.

Figure C-1 Rajagiriya Children Park with surrounding pedestrian path, on street parking and elevated functional space

Figure C-2 elevated functional space- Rajagiriya Children Park

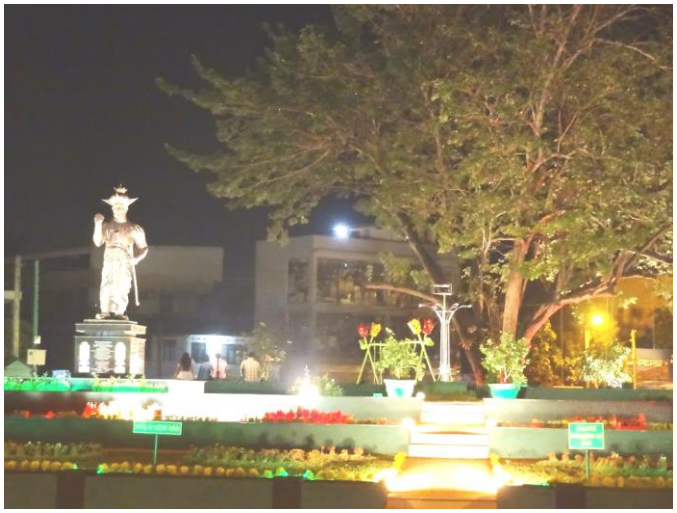


Figure C-3 light up functional area at night time

Otherwise these places could be an open landscaped area which discourages to cross this space.in narrow space it could be effective. Ex. C2-KJ but the cases C4-MJ it's not a proper solution because it's comparatively a larger space. When considering similar type local examples suitable for C2-KJ, there are some positive features in Rajagiriya middle spaces along main road and middle space in Panchikawatta. Rajagiriya middle space is tiny elevated, lawn area in between two roads. Because of the high elevation people can't cross the space and disturb to the traffic flow and discourage dangerous pedestrian movements. The height also does not disturb the views of drivers. Although it's elevated, the vehicle can be seen from other side from driver's eye level. The panchikawatta middle place is used to buildup image of the area. A horse which made from vehicle parts is used as a monument in higher elevation. (Panchikawaththa area is famous for spare parts).If isn't providing accessibility as a result of traffic related solution; the solution might be a combination of panchikawatta and Rajagiriya middle space. The small middle space like C2-KJ might have the features which discourage to cross this space while helping to enhance image of the area as visual usage of the space.

Figure C-4 Panchikawaththa middle space-residual space as used for enhance immovability

Figure C-5 Rajagiriya middle space-elevated space to prevent crossing

Underneath middle spaces like C3-DF people feel difficult to access due to parking of vehicles. It's important to build some obstructions to avoid vehicles parking in the middle Island space which is allocated for pedestrian movement. Generally underneath space of flyovers have pedestrian crossings to facilitate the pedestrians and huge number of pedestrians use to cross this kind of space. So it's different than open middle spaces like C2-KJ and C4-MJ. So it's necessary movement as a result of orientation of flyovers. Generally those underneath spaces are shady spaces from weather. So it could be used for optional activities related to public art, small seating arrangement for resting and to spend some time under the shade in surrounding hot climate. This solution may be a combination with physical and visual usage because the fly over eventually becomes an urban element. It's important to avoid hidden corner spaces in day and night time which lead in creating unsafe social environment for the users.

Figure C-6 Parks Pasupati, is a Park located under Pasupati Bridge, Bandung, West Java which has graffiti wall, seating benches for seating and exhibit items

Reprinted from, *Mayor's biography*, Jan 2015., Retrieved March 01, 2015, from https://nadhirajihan.files.wordpress.com/2015/01/105915869.jpg. Copyright 2015 by wordpress.com

All created spaces have to be visible properly in day and night time. Then it has a sense of security due to its openness and not tends to do improper activities. Visibility is eventually has for most of traffic related residual spaces. All of respondents are believed that the places aren't maintained properly by authorities. It is true but the lack of consideration affects those residual qualities. Although they changed traffic proposals, the authorities aren't considering upgrading the affected immediate places like middle spaces and side spaces and underneath spaces. Whatever, the users thought that those places have reclaiming possibility as public space.

All traffic related residual spaces have "appropriation" which was explained by Aranyali(2009). Spatial qualities like accessibility, security, area of the site and visibility are the main factors caused to the "appropriation" related to traffic related urban residual spaces. Based on that appropriation it's possible to improve those activities if it suitable. Otherwise if it isn't suitable that activities can be discouraged.

If there is a necessary usage, it's a greater potential for reclaiming. When introducing optional activities as reclaiming possibility, the physical quality of the space must be improved for proper facilitating it. The traffic related reclaiming possibilities which is possible to apply can be divided in to physical and visual usage.

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Annexure -1

Questionnaire

case		Respondent no	

- This survey is conducted in order to investigate about **reclaiming traffic influenced urban residual spaces for the public: special reference to Colombo district** as **a study for the postgraduate dissertation** of Faculty of Architecture .University of Moratuwa.

- I would very much appreciate your assistance in answering the question below.

- Please be kind enough to follow the instructions and fill the form according to your views.

1.Respondent's Detail (Put tick √)

1.1Gender

Male ☐
Female ☐

1.2 Age(yrs)

1-10	10-20	20-40	40-60	Above 60

2. Impact of selected physical characteristics (Put tick √)

Key:

Strongly disagree (SD)
Disagree (D)
Undecided (U)
Agree (A)
Strongly agree (S A)

	-2	-1	0	+1	+2
2.1"This place is easy accessible "*(not dangerous)*	S D	D	U	A	S A
2.2.1"This is a safe place in terms of vehicular movement " ***(no harm)***	S D	D	U	A	S A
2.2.2"This is a safe place in terms of social environment " ***(safe from harmful persons and their activities)***	S D	D	U	A	S A
2.3"This is an exposed place: not a hidden place "	S D	D	U	A	S A
2.4"This place has defined site boundaries " ***(has buildings/roads/fences as demarcation)***	S D	D	U	A	S A
2.5"The neighboring facilities are caused to come here" (Neighboring *facilities = school, shops, office, art gallery, restaurant, hotel, apartments, religious place etc….)* What are they?..... …….	S D	D	U	A	S A

3. Possibilities for reclaiming as public space

	-2	-1	0	+1	+2
3.1"This place is well maintained " **What are the reasons behind this (existing situation)utilization"……** **……**	S D	D	U	A	S A
3.2 "This place has possibility to convert as proper public space " **3.3 What are the functions you suggest for this place in future? (Only if it's possible)……..** **…….**	S D	D	U	A	S A

The End.

Thank you for your time and effort!

A.I Weththasinghe,
Postgraduate,
Masters of Urban Design Program,
Faculty of Architecture,
University of Moratuwa.

case		no	

සමීක්ෂණය

- මෙම සමීක්ෂණය සිදු කරනුයේ මොරටුව විශ්ව විද්යාලයේ නාගරික නිර්මාණ පශ්චාත් උපාධිය සඳහා වූ අධ්යනයක් සඳහාය.
- පිලිතුරු ලබා දීමෙන් ඔබ දක්වන සහයෝගය අගය කරමි.
- කරුණාකර සඳහන් කොට ඇති උපදෙස් පිලිපදින්න.

1. ප්‍රතිචාර දක්වන්නාගේ තොරතුරු (√සලකුණ යොදන්න)

1.1 ස්ත්‍රී/පුරුෂ භාවය

ස්ත්‍රී ☐
පුරුෂ ☐

1.2 වයස (අවු)

1-10	10-20	20-40	40-60	60 වැඩි

2. භෞතික ලක්ෂණ වල බලපෑම (√සලකුණ යොදන්න)

යතුර:

දැඩි ලෙස එකග නොවෙමි (SD)
එකග නොවෙමි (D)
තීරණයක් නොමැත (U)
එකග වෙමි (A)
දැඩි ලෙස එකග වෙමි (S A)

	-2	-1	0	+1	+2
2.1 "මෙම ස්ථානය පහසුවෙන් ලගා විය හැකි ස්ථානයකි" (ලගාවීම අනතුරුදායක නැත.)	S D	D	U	A	S A
2.2.1 "වාහන ගමනාගමනය පිලිබදව සලකා බලන විට මෙම ස්ථානය ආරක්ෂා සහිතය"(වාහන ගමනාගමනය නිසා මෙහි සිටීම අනතුරුදායක නොමැත")	S D	D	U	A	S A
2.2.2 "සාමාජීය පරිසරය(හොර සතුරන් වැනි හානිකර පුද්ගලයන්) පිලිබදව සලකා බලන විට මෙම ස්ථානය ආරක්ෂා සහිතය"	S D	D	U	A	S A
2.3 " මෙම ස්ථානය අවට පරිසරයෙන් සැගවුනු ස්ථානයක් නොවේ"	S D	D	U	A	S A
2.4 " මෙම ස්ථානයේ පැහැදිලි	S D	D	U	A	S A

සීමාවක්(ගොඩනැගිලි හෝ මහාමාර්ග හෝ වැටමායිම්) දක්නට තිබේ.					
2.5 " මෙම ස්ථානයට පැමිණීමට මෙම ස්ථානය වටා අති පහසුකම්/ ආයතන(කාර්යාල,බස් නැවතුම,බැංකු ,දුම් රියපොල,පල්ලිය,වෙලදසැල්,හෝටල්,නිවාස සන්කීර්ණ.)ආදිය හේතුවක් වේ. එසේ හේතුවූ ආසන්නව පිහිටි පහසුකම් / ආයතන මොනවාද ?.....	S D	D	U	A	S A

3. පොදු ස්ථානයක් ලෙස පත්කිරීමේ හැකියාව *(√සලකුණ යොදන්න)*

	-2	-1	0	+1	+2
3.1" මෙම ස්ථානය හොදින් නඩත්තු කරයි" " දැනට මෙම ස්ථානයේ භාවිතාවට(තිබෙන තත්වයට) හේතු ලෙස ඔබ දකිනේ මොනවාද?.....	S D	D	U	A	S A
3.2 " මෙම ස්ථානය වඩාත් උසස් පොදු ස්ථානයක් බවට පත් කිරීමේ හැකියාවක් තිබේ" 3.3 " එසේ හැකියාවක් තිබේ නම් ,මෙම ස්ථානයේ අනාගතයේදී පවතිය හැකි යයි ඔබ සිතන ක්රියාකාරකම් මොනවාද?).....	S D	D	U	A	S A

....අවසානය...

ඔබ මෙම සමීක්ෂණය සඳහා ලබා දුන් සහයෝගයට ස්තුතියි!

අනුක වෙත්තසිංහ,
පශ්චාත් උපාධි අපේක්ෂක, නාගරික නිර්මාණ පාඨමාලාව, මොරටුව විශ්ව විද්යාලය.

Case	
Day	

Annexure- 2

Authors' check list

1. Impact level of;

Site boundaries - defined/ loose

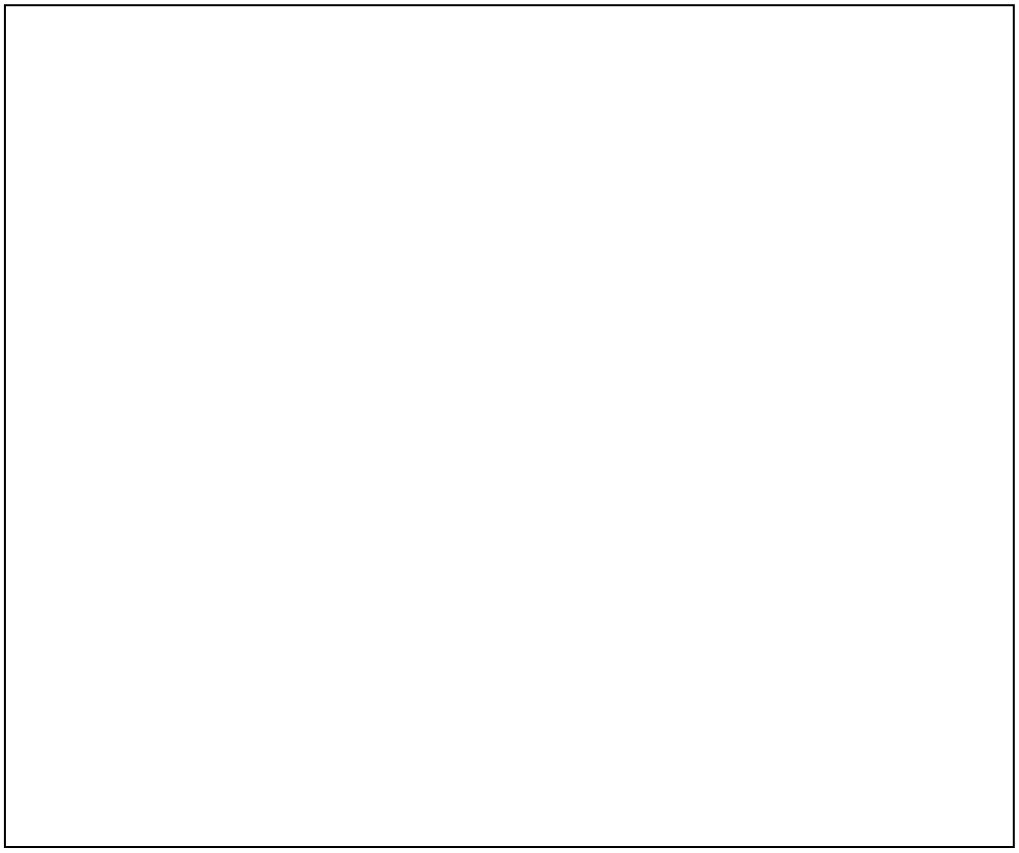
Uniformity of form - regular/ irregular

Area of the site -tight/spacious

Site location -peripheral/central

Neighborhood facilities (views, transportation, residential, commercial, recreational buildings ….etc)

Sketch



2. Impact of usage qualities

Case	
Day	

a) Current users of site (no of users, age category) with time

Time	users							
	Gender		Age category(yrs)					No of users
	Male	female	1-10	10-20	20-40	40-60	Above 60	
7.00-8.30 a.m								
12.30-2.00 p.m								
6.00-7.30 p.m								
Total								

b) Current use, activity of site (with time)

Case	
Day	

Activity type	Loiter time (minutes)							Total
	Below 5	15	30	45	60	90	Above 90	
7.00-8.30 a.m								
passing								
talking								
watching								
smoking								
eating								
reading								
other								
Total								
12.30-2.00 p.m								
passing								
talking								
watching								
smoking								
eating								
reading								
other								
Total								

Activity type	Loiter time (minutes)							Total
	Below 5	15	30	45	60	90	Above 90	
7.00-8.30 a.m								
passing								
talking								
watching								
smoking								
eating								
reading								
other								
Total								