

**GENDER SENSITIVE PARK DESIGN:  
TOWARDS SAFETY AND SPACE OF WOMEN AND GIRLS  
IN PARKS, DELHI**

***Submitted***

*In partial fulfilment of the requirements for the  
award of the degree of*

**MASTER OF ARCHITECTURE  
(LANDSCAPE)**

By

**Nitti Negi**  
2017MLA002



**SCHOOL OF PLANNING AND ARCHITECTURE, BHOPAL  
NEELBAD ROAD , BHOURI, BHOPAL – 462030**

**MAY 2019**

**Department of Landscape**  
**School of Planning and Architecture, Bhopal**



**Declaration**

I **Nitti Negi**, Scholar No. 2017MLA002 hereby declare that the thesis entitled Gender Sensitive Park Design: Towards Safety and Space of Women and Girls in Parks, Delhi , submitted by me in partial fulfilment for the award of Master of Architecture (Landscape), in School of Planning and Architecture Bhopal, India is a record of bonafide work carried out by me. The matter embodied in this thesis has not been submitted to any other University or Institute for the award of any degree or diploma.

17<sup>th</sup> MAY 2019

Nitti Negi

**Certificate**

This is to certify that the declaration of Nitti Negi is true to the best of our knowledge and that the student has worked under the guidance of the following panel.

**RECOMMENDED**

Ar. Richa Raje  
Asst. Professor (Landscape Department)

**ACCEPTED**

Prof. Sanjeev Singh  
Head, Department of Landscape

## Gender Sensitive Park Design

### Towards Safety and Space for Women and Girls in Parks, Delhi

---



Imagine our streets full of women talking, strolling, laughing and gesticulating.

Imagine parks and beaches dotted with young women sitting alone.

Imagine street corners taken over by older women reflecting on the state of the world.

Imagine maidens occupied by women workers planning their next strike for a raise in minimum wages.

**IF ONE CAN IMAGINE ALL OF THIS, ONE CAN IMAGINE A RADICALLY ALTERED CITY!**

Inspired by the book 'Why Loitre?'  
by Shilpa Phadke, Sameera Khan and Shilpa Ranade



## ACKNOWLEDGEMENT

I would sincerely like to all the combined thoughts and efforts of the people who helped me put this thesis together.

Firstly, I would like to express my gratitude to all the faculty members of the department: **Prof. Dr. Surinder Suneja** for helping me to find and select a topic of my choice; **Prof. Shishir Rawal** for their time, effort and ideas in helping me through whenever I got stuck during the process; **Ar. Richa Raje** for guiding and motivating through the various stages of the project; without her great care, precious advice and responsibility, my thesis could not have been successfully finished; **Prof. Saurabh Popli, Prof. Sonal Tiwari, Ar. Shivani Paliwal** and for their motivation and support throughout in Master's programme.

Next, I would like to thank my classmates for the constructive feedbacks, healthy competition and for all the fun throughout the semester which helped us in keeping our sanity intact. I also want to thank one of my close friend **Debashmita** for helping me throughout in my thesis work and constant motivation.

Last and the most heartfelt thanks I would extend to my **parents and family** for their moral support, faith and understanding; and a few very close friends, esp. **Anupama, Sadaf, Sanjana, Tवेशi, Apurvi, Akshita, and Mannjinder** for their unconditional love and laughter, anytime and every time.

Nitti Negi  
2017MLA002  
Department of Landscape Architecture  
School of Planning and Architecture, Bhopal

## Table of contents

ACKNOWLEDGEMENT .....	5
LIST OF FIGURES.....	8
LIST OF MAPS .....	8
LIST OF GRAPHS.....	8
Chapter 1 .....	10
Introduction .....	11
1.1 The concept of Gender .....	11
1.1.1 Women and urban-outdoor space relationship: .....	11
1.1.2 Gender equality in Public spaces: .....	11
1.2 Historic Background .....	12
1.2.1 Women-space relationship in Indian context .....	12
1.2.2 Women-space relationship in Mid nineteenth century .....	15
Chapter 2 .....	17
Issue Identification.....	18
2.1 Issues at micro and macro level.....	18
2.1.1 Parks- A recreational space or crime generators?.....	19
2.1.2 Urban Parks: Women and Space .....	20
Chapter 3 .....	21
Regional context: Delhi .....	22
3.1 Introduction .....	22
3.2 Green / Recreational areas (As per MPD-2021) .....	23
3.3 Parks in Delhi .....	24
3.4 Observation: Women’s Preferences and Perspectives on Using Parks .....	25
Chapter 4 .....	26
Aim and Objective .....	27
4.1 Aim .....	27
4.2 Objective .....	27
4.3 Methodology.....	27

Chapter 5 .....	28
Case study .....	29
5.1 Live case study .....	29
5.2 Literature case study .....	30
5.2.1 Gender Sensitive approach in Vienna: .....	30
5.2.2 CPTED Design Guidelines for Urban Parks: .....	33
Chapter 6 .....	36
Site Analysis.....	37
6.1 Site Introduction .....	37
6.2 Vegetation Mapping .....	38
6.3 SWOT Analysis .....	39
6.3.1 Strength: .....	39
6.3.2 Weakness:.....	39
6.3.3 Opportunity: .....	40
6.3.4 Threat: .....	40
6.4 Site Context.....	41
7 Programme Brief .....	42
7.1 Policies and Guidelines .....	42
7.2 Programme Development .....	43
8 Design proposal and recommendation.....	45
9 Bibliography .....	46

## LIST OF FIGURES

Figure 1- Public spaces inaccessible by women .....	19
Figure 2- Spaces where women feels unsafe Source: Results of ICRW Survey, 2012e\ .....	19
Figure 3- Reasons for not accessing public space by women's .....	20
Figure 4- Loss of Forest and cultivated area in Delhi (1987, 1999, 2006).....	23
Figure 5- Distribution pattern of recreational greens or open greens .....	23
Figure 6- CPTED safety components.....	33
Figure 7- Conceptual Plan.....	43
Figure 8- Multiple user of all age-group.....	43
Figure 9- Sight lines .....	44
Figure 10- Vegetation Density.....	44
Figure 11- Lighting .....	44
Figure 12- Lighting .....	44
Figure 14- Activity generators .....	44
Figure 13- Mix Land use.....	44

## LIST OF MAPS

Map 1-Map showing most unsafe states for women Source: Crime in India, 2016.....	18
Map 2- Master plan Delhi-2021 .....	22
Map 3- Parks in delhi.....	24
Map 4- Swarn Jayanti Park, Rohini .....	29
Map 5- Lodi Garden, Delhi .....	29
Map 6- MPD-2021 .....	37
Map 7-Dwarka sub-city: Composite Plan and Landscape Plan.....	37
Map 8- Vegetation mapping on site.....	38
Map 9- Vegetation cover on site.....	38
Map 10- Site and surrounding Landuse .....	41
Map 11- Accessibility.....	41
Map 12- Activity Mapping .....	41

## LIST OF GRAPHS

Graph 1- Form of sexual harassment faced by women's .....	19
Graph 2- Factors making Delhi unsafe Source: Understanding women's safety, Research Findings, Delhi .....	20
Graph 3- Urban land v/s Urban greens .....	23

Graph 4- Number of Parks in Delhi .....	24
Graph 5- Visitors ration in park.....	29
Graph 8- Purpose of visitng park.....	29
Graph 6- Vistiors ration in park and economic bacground of site context.....	29
Graph 9- Activities in park-1 and 2 .....	31



**Chapter 1**

**INTRODUCTION TO PROJECT**

## 1 Introduction

### 1.1 The concept of Gender

“Gender refers to the social characteristics of men and women, ' the different tasks, responsibilities and expectations defined by the society and assigned to men, women, boys and girls, it changes from society to society, from one culture to another (Anon., n.d.).

#### *1.1.1 Women and urban-outdoor space relationship:*

Using outdoor space is an important part of everyone's everyday life and an important arena for promoting urban social attachment. But, still in most societies around the world, it is only for reasonable purposes that women are allowed access to outdoor public space and are expected to walk directly from home to their purpose without a loiter.

It seems that urban women have better access to public spaces, with numbers of women participating in the workforce, traveling in public transport on a daily basis, etc. Women not only perceive and experience cities differently from men, but they also use different ways of using public spaces. Centuries of women's movements have ensured women the right to vote, the right to education, the right to participate in the workforce, and several other rights to emerge from their kitchen and claim equal citizenship in public life.

Home and cooking are considered to be women's primary domain and men's outer world. Women are allowed to move out in public space, but they don't own it, while men own public spaces without fear, walk on roads and parks, and jog lanes, tennis stadiums, and school trails.

#### *1.1.2 Gender equality in Public spaces:*

Gender equality is not only a fundamental human right, but an important foundation for a successful and sustainable world (United Nations, n.d.). UN Women defines gender equality as equal rights, duties and opportunities for women and men providing equal access to education, public spaces, health care, decent work, and representation in decision-making processes ensures sustainable development (United Nations, n.d.). Public spaces allow women, girls, elderly and other marginalised groups (transgender, migrants, etc.) to participate in public activity, they are meant for everyone, regardless of their gender or age. In India, it is noticed that women use public spaces and streets lesser than men and tend to limit their participation to day time because of physical and psychological harassment in parks, streets and public transports which raised the level of fear or vulnerability among them (Phadke, 2012).

## 1.2 Historic Background

### *1.2.1 Women-space relationship: Changing relationship of women with outdoor public space in Indian context*

Women's status in India has been the substance of many major changes over the past couple of years. Their history has been eventful with deterioration in their status from ancient to medieval times, to the promotion of equal rights by many activists. Women's population is half of the world's population. But the hegemonic masculine beliefs made them suffer a lot in different parts of the world, as they were deprived of equal opportunities as men. However, the rise of feminist thoughts has led in modern times to a remarkable improvement in the condition of women around the world. Access to education was one of these women's rights movements' most urgent demands. Women's education in India has also been a major concern for both government and civil society as education plays a major role in the country's development and well-being. Education of women not only helps the development of half of human resources, but also improves the quality of life at home and abroad. The public space is meant for everyone which consists of men and women, multiple users, different age-group; it is not a contested territory, giving more rights to one gender over another (Shdhganga, n.d.).

#### Status of women in Vedic India (1500 BCE - 500 BCE)

As per ancient Indian grammarians such as Patanjali and Katyayana, women were accomplished with education in this period and they held important position in the society superior to men. They were given highly respect and honour same given to the Goddess, portrayed as the feminine picture of important qualities and powers. They were allowed to go outside and use public outdoor spaces without any discrimination and boundations.

#### The age of Dharma-Shastra's (1250 BCE - 1000 BCE)

After the Vedic period there were noticeable deviations in the status of women's position due to some reasons, among which the important was the education of women as they were not allowed to go out of the house for centres of education but were only taught by brother, sister nearby relatives. Women's freedom was taken away; there were visible changes in the status of women, they eventually began to lose touch with the Vedas and were forced to do domestic works only.

#### The Buddhist Interlude (3rd century BCE - 6th century CE)

The status of women in Indian society during the 6th century BC was servile, degraded, and miserable. A strong and deep-rooted Indian caste system also

existed. Gautama Buddha, as a spiritual leader and social reformer, brought remarkable changes to human society regarding the total destruction of the caste system and women's freedom in the Buddhist world. The Buddha gave equal status to women and men. He told his followers that women of all ages should be respected. The Buddha disagreed with men's supremacy over women. Without discrimination, he preached his teachings to men and women. Buddhism does not think that women are inferior to men. Biological and physical differences are accepted between the two sexes, Buddhism believes that men and women are equally beneficial to society. Buddha felt that women deserved compassion, too, and no distinction should be made between man and woman. Buddhism does not restrict either women's educational or religious freedom opportunities.

#### Pre-medieval Period (3rd century CE - 12th century CE)

In the early period, women were generally considered mentally inferior. They had a duty to blindly obey and follow their husband. Women were still denied the right to study the Vedas. In addition, girls' marriageable age has been lowered, thereby destroying their higher education opportunities. Women's status has deteriorated and their activity was confined to home only, they were not allowed to go outside.

#### Medieval Period (12th century CE - 16th century CE)

With the passage of time, the status and situation of women in India declined. Woman was given a lower position to man during the medieval period. The equality and equal rights of woman and man were not recognized by law and religion.

The place of the women was largely considered to be in the home. In short, it was conceived that the role of women was one of submission to her husband, the family's master and ruler. Hindu society became extremely conservative. The era was marked by complete women's seclusion.

#### Women in Mughal India (16th century CE - 18th century CE)

The position and status of a woman in the Mughal period was not quite high, unlike in the ancient Indian period. Purdah and marriage between children had become common. Except for those of the lower classes, women did not move out of their homes during the Mughal period. Much more strictly observed purdah by the Muslims than by the Hindus.

Polygamy and purdah were two of India's Muslim conquerors' most important social institutions. Women's areas have been completely isolated from men and have been designed as women-only spaces like: Mughal Harem, Meena Bazaar, Zenana Gardens..

#### British Period:

The status of women had fallen to the lowest level when the British came to India in the latter half of the 18th century. It was the worst period in the country's history due to child marriage and the Sati system. Women were denied equal rights in marital, family, social, educational, economic and political fields.

#### After Independence:

There was improvement in women's position and status after Independence, Indian women made their mark by becoming Governors, Cabinet ministers, and ambassadors. The improvement in the position and status of women became more evident when Indian women made their mark by becoming governors, ministers of the Cabinet, and ambassadors immediately after independence. The Government of India has taken several measures to assign women equal position in the social, economic and political spheres. To show their talents and have a sense of participation in national activities, more avenues have been opened to them. India's Constitution promises men and women equal status and opportunities. Parliament's passage of several Acts and the process of social change brought about by industrialization and urbanization over the past couple of decades has done much to emancipate women both legally, politically and socially. Now the members of the family are individuals before the laity, and under the Constitution women have been guaranteed equal rights.

### 1.2.2 Women-space relationship: Mid nineteenth century marks a visible change



**Women's Own Space: Pakka Ghat of Mirzapur**  
It's a women's bathing ghat and a women's bazaar along the Ganga River. It's called the Ghat of Pakka. There are many other 'zenana' ghats, but one rarely finds the situation of public space like the Pakka Ghat exclusively for women because it includes a market place, religious centers and a place of congregation used only by women.



**Women only Parking: South Korea**

These parking spaces are known to the public as 'she-spots.' They are longer, wider and bordered by hot pink outlines and also display the traditional woman's logo marked with pink skirts. According to the Korean radical feminist, their intention is not to degrade women, but to add a 'feminine touch' to the city.



**Special compartment in Metros**

There were no reserved seats for women in Delhi Metro earlier, but now the every first subway coach and a few seats are reserved for women in each compartment. Mumbai Metro is reserved with half of a coach, and Kolkata Metro has reserved some seats in each compartment. Indian Railways has general compartments in their trains as well as some women's reserved berths.



Ladies only parks and beaches:

Dubai In Jumeirah Beach Park or Al Mamzar Beach Park, on ladies-only days, no males over four years of age will be allowed to enter the above parks. The move is part of the plan of the civic body to make the recreational destinations more women-friendly in order to encourage them into more physical activities and keep fit.



Pakistan's first women-only park opens:

Lahore In Pakistani city of Lahore, a park is built exclusively for women. It spread over a four-acre area for women of all ages where they can enjoy nature and surroundings and use all the elements like jogging track, badminton court and gymnasium.



Zenana Bagh: Nizammudin Basti Creating Safe spaces for women and children

"This area used to be a dump yard with waste mounds, unkempt parking and a haven for gamblers. Today it has turned into a ' Parda Bagh ' (women's park) that all of us women can use while our children are in school. We now have a place where we can breathe fresh air outdoors."

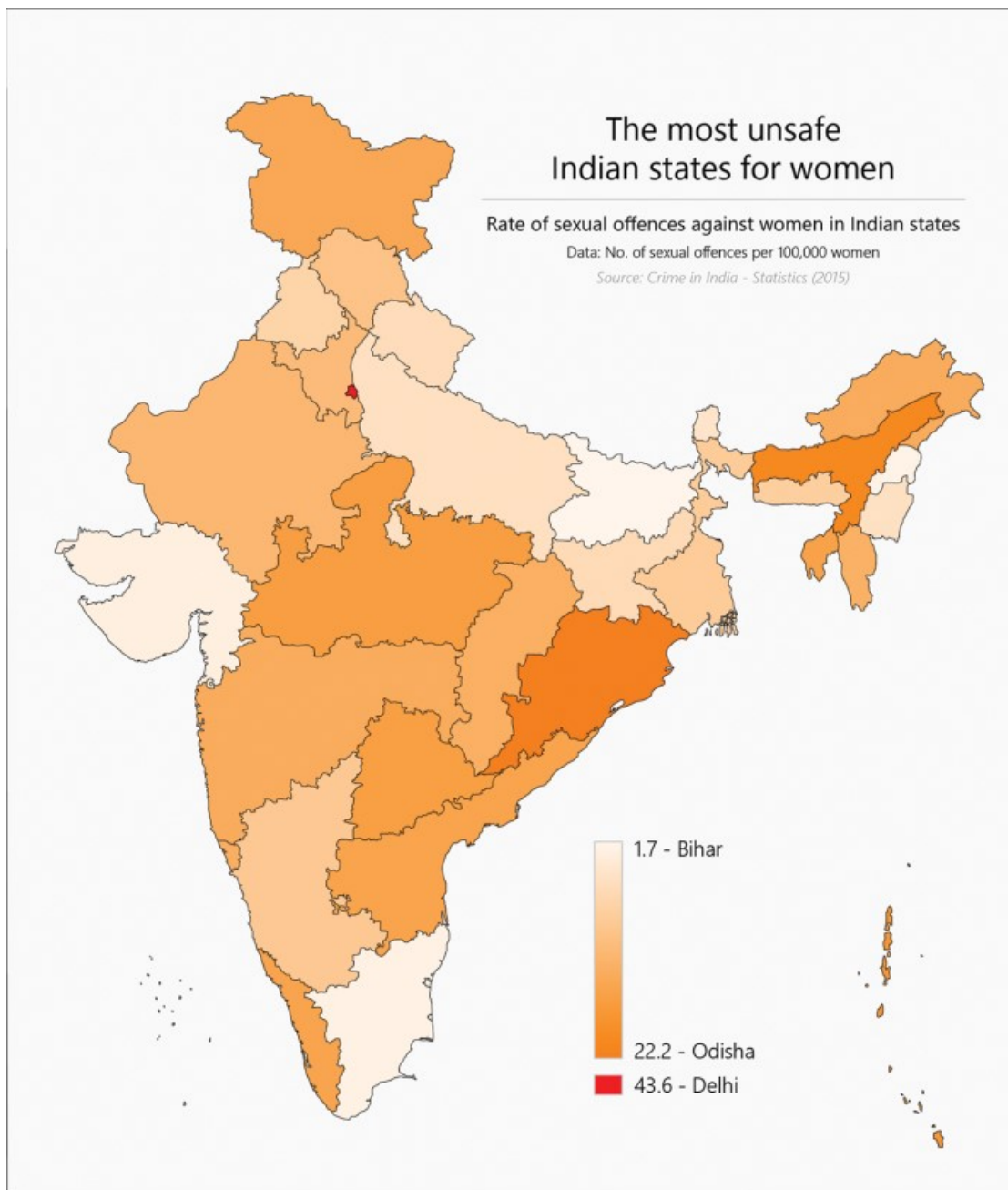
**Chapter 2**

**ISSUES**



## 2 Issue Identification

### 2.1 Issues at micro and macro level



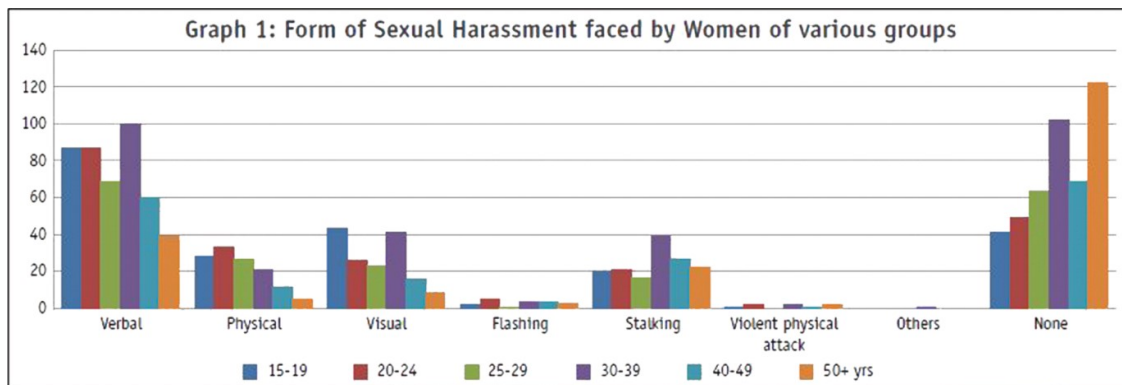
Map 1-Map showing most unsafe states for women

Source: Crime in India, 2016

Safety is an important aspect of urban environment perception and one of the factors that enhance urban green space's environment and aesthetics. As the presence of these spaces is now widely viewed as a health promoting characteristic of urban environment and has been associated with numerous advantages to the place's social and economic value. However, when safety issues have been disregarded

while designing parks and open spaces, many visitors may be discouraged from using and enjoying these public open spaces as park users are sometimes prevented from using these parks due to lack of safety.

Due to rapid urbanisation, the distance between city residents and nature is increasing day by day; Urban green space is one of the ways to bridge this gap between people and nature. But now days, these green spaces are becoming a safe haven for criminals to commit crimes in today's situation. Designing safe open spaces for everyone means that the greater the number of visitors involved in positive activities, the greater the likelihood of discouraging anti-social behaviour. Safe and secure design is based on what is generally considered a good design: it meets the needs of end users; it is diverse and interesting; it connects people to spaces; it gives a sense of security and must be considered a primary component of any planning process. While good design does not necessarily eliminate fear perceptions or opportunities for crime, the preconditions are for effective control can be created.



Graph 1- Form of sexual harassment faced by women's

### 2.1.1 Parks- A recreational space or crime generators?

Parks are known to promote healthy living. Promote social inclusion, relief stress, but nowadays they are often seen as places easily taken over by unwanted activities such as homeless living spaces, drug dealers ' markets that encourage crimes such as eve-teasing, robbery, physical abuse, sexual harassment, kidnapping, etc.

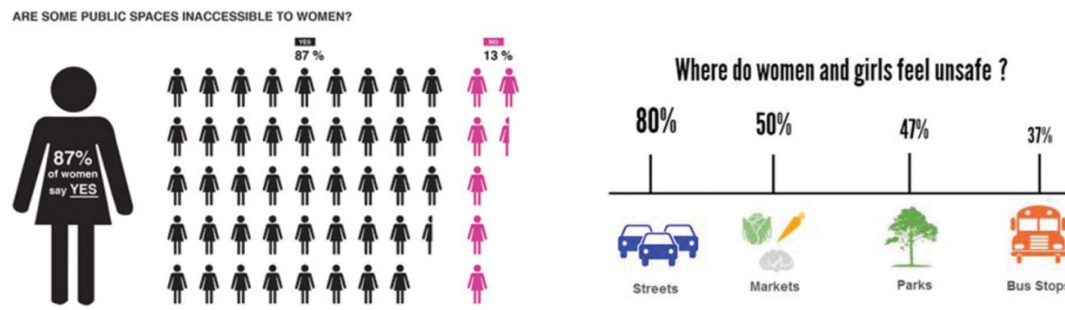


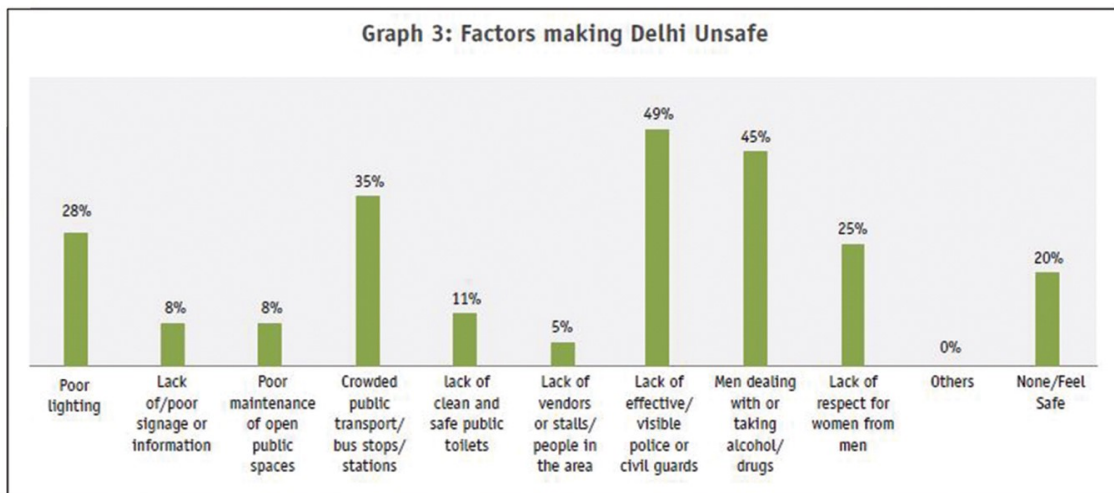
Figure 1- Public spaces inaccessible by women

Figure 2- Spaces where women feels unsafe  
Source: Results of ICRW Survey, 2012e1

### 2.1.2 Urban Parks: Women and Space

Women's search for parks because they provide contact with the natural and social environment that offers opportunities to meet friends, play with kids, watch others, all contributing to a sense of comfort and security. The presence of multiple activities or activity generators attracts and increases the use of positive users in a park. Wherever possible, programming and activity generators should be incorporated as they reinforce the interconnection between use and safety in a park environment.

There will be no reason to come there if there is nothing to do in the space. Space will not be safe when the space is empty. Activity and recreational programming can foster positive use, increase monitoring, limit any one-user group's dominance and reduce the possibility of inappropriate behaviour. Safety planning and design is important for women and girls because it creates public spaces in which women and all users have equal opportunities to be healthy, safe and happy.



Graph 2- Factors making Delhi unsafe Source: Understanding women's safety, Research Findings, Delhi

A city must be conceived as a space that involves various sets of people with different needs and goals. The quality of a city needs to be judged by what it offers its residents—the right to live, move around and work with dignity and security, but Delhi does not provide this for many of its residents, particularly the most vulnerable and marginalized.

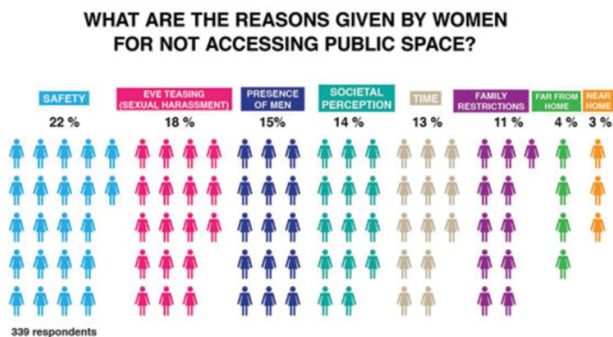


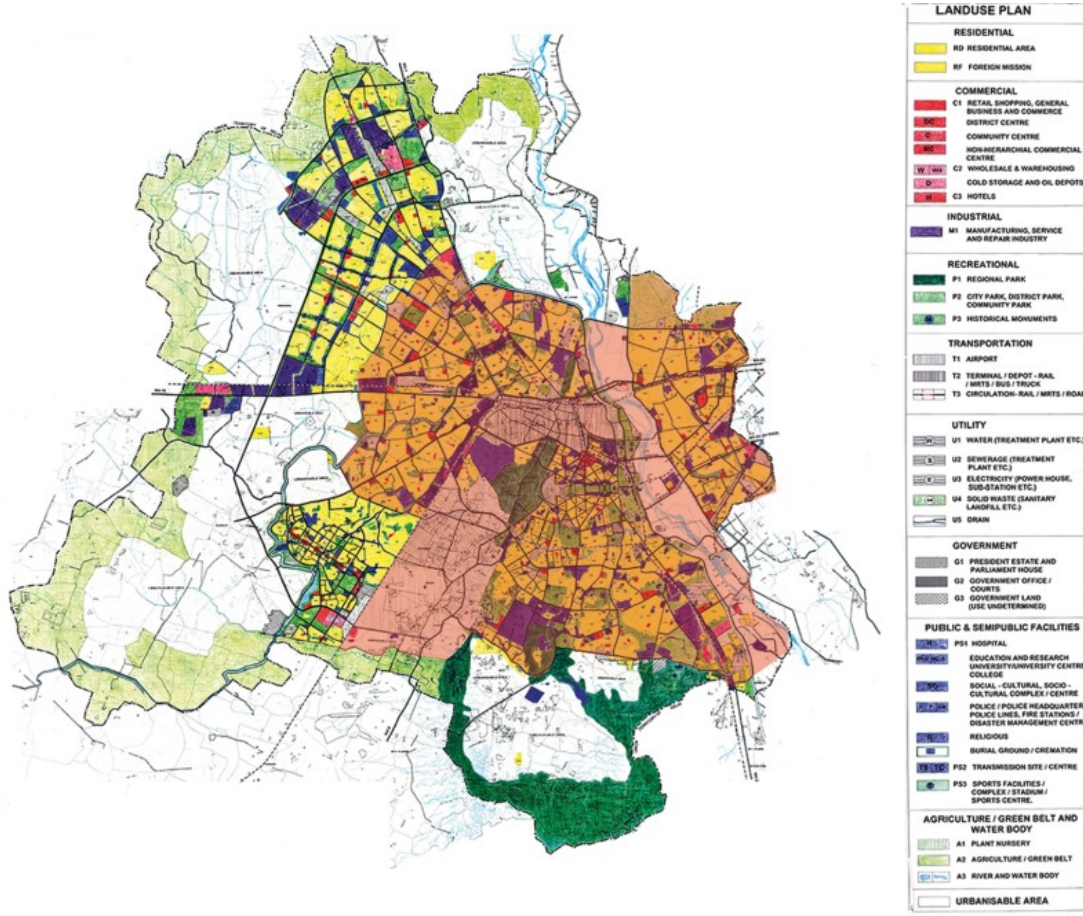
Figure 3- Reasons for not accessing public space by women's

**Chapter 3**

**REGIONAL CONTEXT: DELHI**

### 3 Regional context: Delhi

#### 3.1 Introduction



Map 2- Master plan Delhi-2021

Delhi is India's capital city and is considered the nation's heart. Delhi has grown into a Union Territory and now a state from being a mere capital city. In recognition of the growing urban scope, Delhi's 1962 master plan emphasized the need to maintain the city's open and green character, advocating a large number of district parks, green linkages and the conservation of the Ridge and the green belt around the city. For its enriched culture and heritage, the city is popular. It is bordered on the east by Uttar Pradesh and three other sides by Haryana. It covers an area of 1,484 kilometres square. Delhi's NCT population is 16,753,235 according to the 2011 Indian census. The corresponding population density was 11,297 people per km<sup>2</sup> with a sex ratio of 866 women per 1000 men and 86.34% literacy.

Of a total surface area of 1483 sq. approximately 50% of the km have already been urbanized and the rest are under heavy urbanization pressure. Delhi has a much larger green cover than any of the country's other metropolitan cities and might well be called a "green city."

Gender Sensitive Park Design: Towards safety and space of women and girls in Park

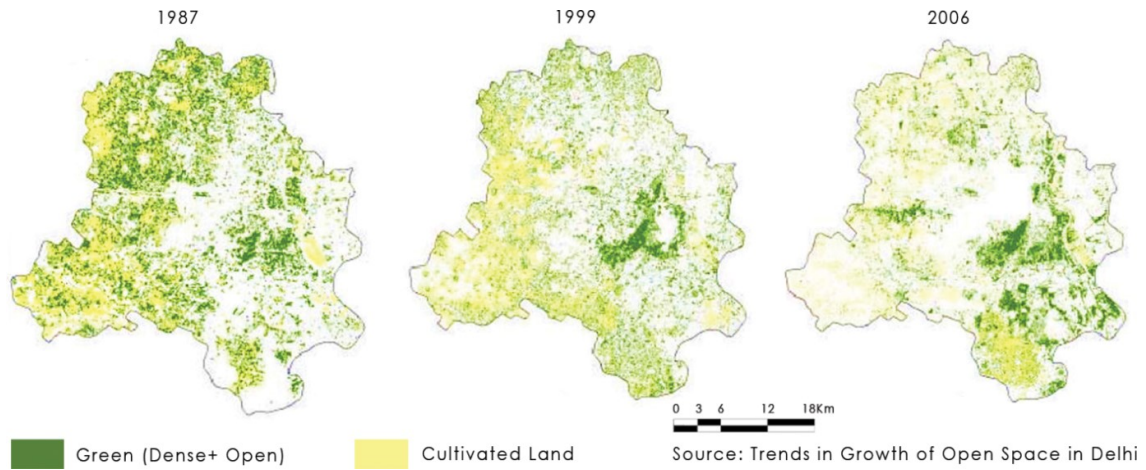
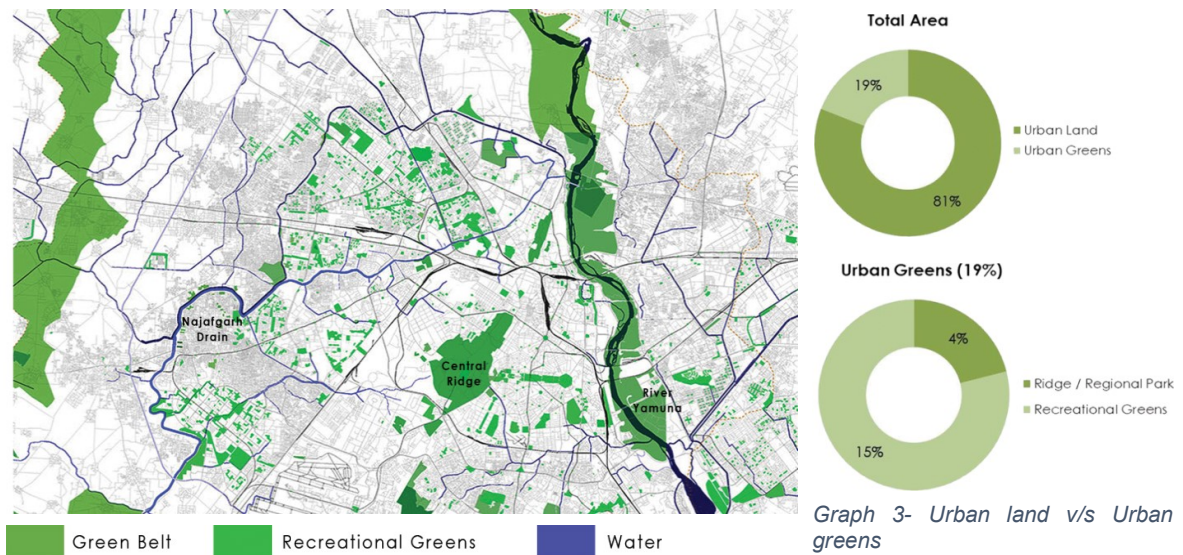


Figure 4- Loss of Forest and cultivated area in Delhi (1987, 1999, 2006)

3.2 Green / Recreational areas (As per MPD-2021)

Green / recreational use is 8,722 hectares of land as per MPD 2001, about 19 percent of the 44,777 hectares of total urban land area. This includes 1577 hectares. The rest of the Ridge is rural below the North, Central and South Central Ridge. The recreational / green balance area uses 7145 ha. Approximately 15% of the total urban land area in the form of District Parks, City Parks, Community Parks, etc. In addition, a large chunk of green area is provided in the form of Neighbourhood Parks/Tot lots in the gross residential use zones, plantations/greens in large campuses.

NCT has more than 18,000 parks and gardens spread around 8,000 ha across Delhi in various locations. Of which, the DDA has created 255 neighbourhood parks over 316,06 ha and 111 district parks over 630,78 ha throughout Delhi have created a serene social-physical environment for the city.

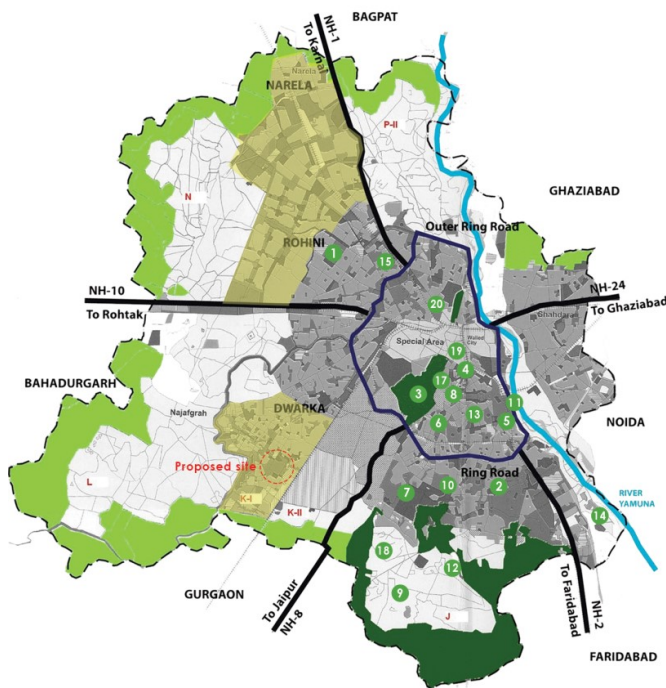


Graph 3- Urban land v/s Urban greens

Figure 5- Distribution pattern of recreational greens or open greens

Various sets of people with different needs and aspirations need to imagine a city as a space. What it offers its residents—the right to live, move and work with dignity and safety—must judge a city's quality. This is not delivered by Delhi to many of its residents, especially the most vulnerable and marginalized populations. This issue is addressed from the perspective of women's access to and right to public spaces. The anonymity of public spaces in a city provides space and freedom for many men and women to escape the hold of the family or traditional community. But for women, the high rates of violence against women that have come to define Delhi have severely hampered this freedom (Mehrotra, Apr. 28 - May 4, 2007).

### 3.3 Parks in Delhi



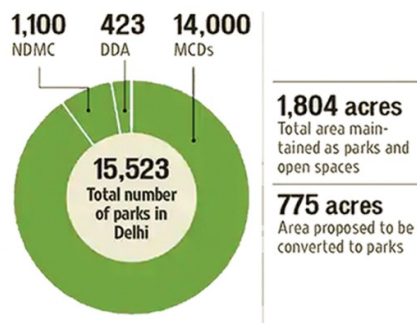
**LEGEND:**

1. Swarn Jayanti park rohini | 250acres
2. Aastha Kunj | 200acres
3. Buddha Jayanti Park | 81acres
4. Central Park, Connaught Place | 10acres
5. Sunder Nursery | 90acres
6. Nehru Park | 80acres
7. Deer Park |
8. Mughal Gardens | 15acres
9. Garden of Five Senses | 20acres
10. Gulmohar Park |
11. Indraprashta Park | 85acres
12. Jahanpanah City Forest | 435acres
13. Lodhi Gardens | 90acres
14. Kalindi Kunj
15. Shalimar Bagh
16. Netaji Subhash Park
17. Talkatora Gardens
18. Lake Park-Sanjay Van | 783acres
19. Aaram Bagh
20. Roshanara Bagh | 57.29acres

Map 3- Parks in delhi

### PARKS AND RECREATION

WHO guidelines say every city ideally should have 9 square metres (sqm) of space per city dweller. A DDA survey shows Delhi has over 12.14 sqm per person



Graph 4- Number of Parks in Delhi

Hierarchy of Organised Greens in the City (As per URDPFI -2014)	
Housing Area Park	(Less than 5,000 sq.m.)
Neighbourhood Park	(5,000 - 10,000sq.m.)
Community Park	(10,000 - 50,000 sq.m.)
District Park	(50,000 - 2,50,000 sq.m.)
Sub-city Park	(2,50,000 sq.m. \$ above)

### 3.4 Observation: Women's Preferences and Perspectives on Using Parks



Community Park- Women's are actively participating in Yoga and Exercise, early in the morning.



Community Park- Group of women sitting at one corner of a park and chit-chatting with each other.



Community Park- Group of men playing cards at one side of a park and Group of women talking, playing, enjoying at other side of park with no interference of men folks.



District Park- Women's are very active in and around exercise station; exercising, playing badminton, jogging near to main entrance .



City Park- Combination of small scale and large scale sub-zones. Networking of open spaces and gathering places.



**Chapter 4**

**AIM AND OBJECTIVE**

## 4 Aim and Objective

### 4.1 Aim

To identify the factors restricting female visitors in urban parks and to frame design guidelines for parks towards Gender sensitive approach.

### 4.2 Objective

- To understand the importance of urban greens in this rapid urbanisation.
- To identify the factors which restrict female visitors in urban parks.
- To analyse the character of usage of urban parks by female visitors during different time intervals in different parks.
- To understand the priorities and choices of female visitors in terms of design components in urban parks.
- To identify the design factors affecting women safety in urban parks through different case studies, literature studies and questionnaire survey.
- To formulate ways to enhance safety measures through policy and guidelines.
- Designing of an urban park as a Gender sensitive approach towards safety and space for women's and girls.

### 4.3 Methodology

This thesis focuses on three parts; one is literature study, second one is case studies and third one is design and development.

- Literature study- It will include the study of women-space relationship in Indian context before and after independence, safety issues at micro and macro level.
- Case studies- It will include literature case study related to gender sensitive approach and live case study of different parks which include site visits, observations and questionnaire survey, to find the activity pattern and factors restricting female visitors in parks and analysing them to take out some design solutions for the prevailing problems.
- Policy and Guidelines- Safety measures and Design guidelines for all parks.
- Design and Development- Designing of Gender Sensitive Park with spaces of women interest where they can move freely and happily.

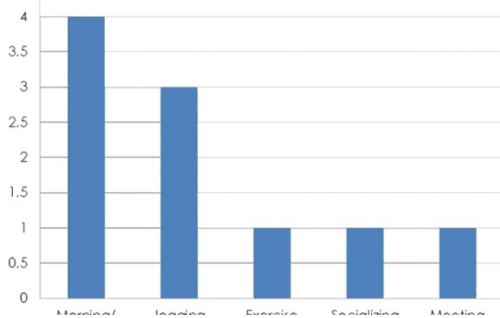
**Chapter 5**  
**CASE STUDY**

## 5 Case study

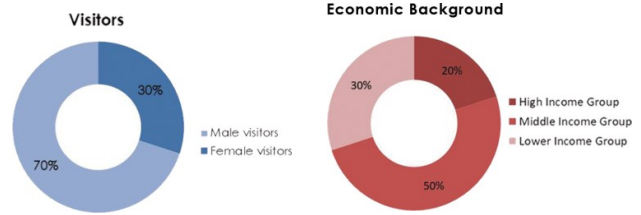
### 5.1 Live case study



Map 4- Swarn Jayanti Park, Rohini



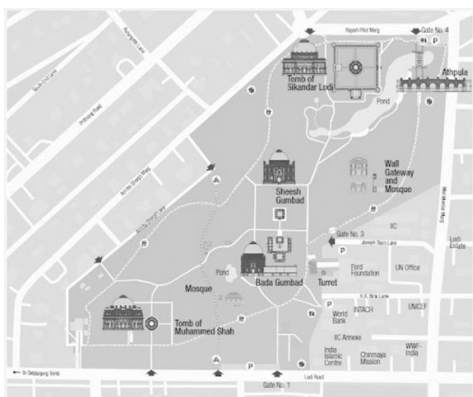
Graph 6- Purpose of visiting park



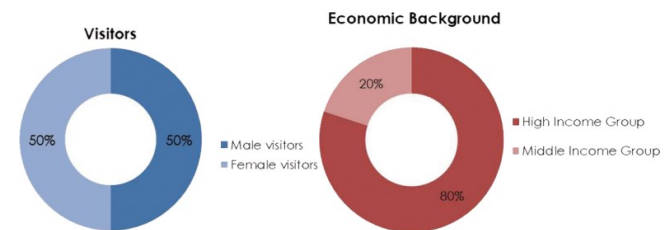
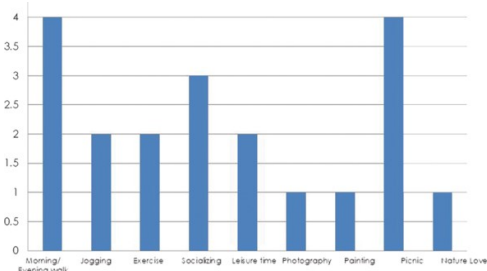
Graph 5- Visitors ration in park

Swarn Jayanti Park is located in sec-10, Rohini and it was developed in late 90's. The park is known as major lung space and a retreat for the residents of north-west Delhi.

There are also several malls and amusement park surrounding the park, providing a bouquet of shopping and eating choices. In this park, the ratio of female visitors is much lower due to the nature of the park's activities and the economic background of the surrounding context.



Map 5- Lodi Garden, Delhi



Graph 7- Visitors ration in park and economic background of site context

Lodi Garden, located on Lodi Road between Safdurjung's Tomb and Khan Market in southern Delhi, is dotted with beautiful monuments and tombs. It includes, Mohammed Shah's Tomb, Sikandar Lodi Tomb, Shisha Gumbad and Bara Gumbad, 15th century architectural works by Lodis.

## 5.2 Literature case study

### 5.2.1 *Gender Sensitive approach in Vienna:*

Twenty-five years ago, male urban planners and architects dominated the urban planning and landscape of Vienna. As such, in the urban design and architecture of the city, the concerns of women, children and minority groups were not adequately reflected. This imbalance began to change when gender mainstreaming was adopted by the city as a way of creating a shared fair city. Vienna, Austria's capital, serves as its economic, cultural and political centre. Since 1990, it has focused on gender mainstreaming while designing its public spaces, housing, mobility and infrastructure. The gender mainstreaming concept is being incorporated mainly in the design of streetscapes, public squares and public parks.

#### Open Space and Gender:

There is a spatial dimension to all human activity. But "space" is not only a physical-material concern environment. Through cultural, social and individual action and design, it is constantly generated, confirmed and changed. The factors that determine spatial appropriation for women and men differ in importance because our society is strongly shaped by the gender system, the gender-specific division of labor, and the related differences in the social positions of both sexes. This means that in terms of space utilization, appropriation and evaluation, women and men often have different requirements, appropriations, opportunities, and options for action.

Observation: Using and Appropriating Public Squares, Green Spaces, and Parks by women visitors A range of studies has shown that women generally spend time in neighbourhood squares, parks and open spaces than men. This is attributed to their child-minding role, but also to their great aspiration for social contacts and a greater interest in nature and a greater awareness of health. As per observation and survey, Women are mostly accompanied by kids; kid's play areas are there specific centre of attraction for them as well as easily accessible green spaces is also important for them. In public spaces, green areas, and parks, men continue to move more extensively, tending to linger in central areas exposed to view. Women, on the other hand, prefer less extensive activities and quieter, more protected positions from which to observe events. In existing parks, new design ideas should be rearranged to provide a gender-sensitive place for girls and young women and to accomplish a more stable situation in public parks between male and female children. Girls should be encouraged to use more frequently park areas. Subjective safety feelings should also be raised through appropriate design elements.

#### Gender-sensitive Public Parks Design: Re-design of Einsiedler Park and St. Johann Park

Gender-sensitive solutions to make it possible for every girl and young women to

make safer and better use of public spaces and parks. The basic idea of gender-sensitive redevelopment of existing parks is to give better positions to girls and young women in public spaces and public parks. In public parks, girls between the ages of 10 and 13 spend less time specific interests related to games, sports and other leisure activities should therefore be incorporated into the design of public parks. The main objectives of the project were to -

To motivate girls and young women to use the parks more often

To improve perception of safety in the parks

To improve elements to attract elderly and parents with little children, and

To have intense professional exchange of ideas during the planning phase.



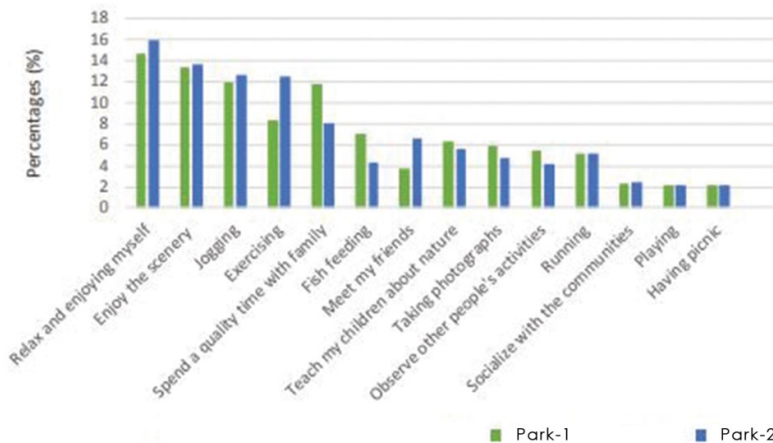
Group discussion towards the requirement of female



Structuring of spaces into sub-zones



Good visibility of park from surrounding buildings



Graph 8- Activities in park-1 and 2

Observation:

Girls aged 9-12 years, compared to boys, do not spend as much time in parks and playgrounds. And while boys playing active soccer all around may have the memory, girls are really missing. Girls like chatting, explaining to some, and spending time indoors.

Well, you don't feel you're a pretty good

explanation, not an expert in gender studies. Twice a way, girls go through Einsiedler Park. Pre- and post-school. They cross the park's paths and disappear quickly. The park is located in the Viennese district of ethnic diversity. Girls from ethnic background families were the other group of girls we saw. They come and look for their younger siblings, this is a typical situation, explains Claudia Prinz-Brandenburg, a landscape architect who works for Vienna's Park Department.

This pilot study comprised of numerous rounds of workshops surveys with girls within one year's time. The results were quite surprising, showing that they had no facilities, girls had no reason to stop here. So a park inventory came in. For

basketball, benches, greenery and relatively poor lighting, closed, locked playground. Because there was nothing to serve young girls, Viennese chose the rapid attraction strategy. Different elements such as platforms, interactive installations of games, hammocks were placed along main footpaths.

Gender-sensitive planning measures:

The participating consultancies conducted workshops and meetings with residents, mothers, and representatives of schools and kindergartens in the district, etc. to identify common goals for the project. They paid attention to girls' interests specifically to develop strategies for encouraging their involvement in public and outdoor activities (Policytransfer.metropolis.org, 2018). Several gender-sensitive design elements were introduced in these parks, such as-

- Football cages were converted for activities that accommodates both genders; in this case, badminton and volleyball courts.
- Hollows in the meadowland were converted to be used as arenas, for ball-games, gymnastics and sitting together.
- Multifunctional play areas.
- Efficient lighting was provided on the main paths.
- Park keepers ensured that the rules are followed.
- Good visibility and clear-cut organisation of footpaths.
- Well-maintained public toilets.

Impacts:

Over time, the projects witnessed significant physical and social impacts. Physical transformations like open common areas, gender-neutral field of activity, group chatting places, etc. motivated women and girls to spend more time in the park. Features such as visibility in main avenues and proper lighting also enhanced safety aspects (Policytransfer.metropolis.org, 2018). Noticeable presence of women of all age groups was found in St. Johann's park (Harth, 2018).

Looking at the response, City of Vienna implemented pilot projects of gender sensitive re-design in other parks of the city. On similar concepts, gender sensitive design elements such as structured footpath network, efficient illumination, multifunctional plazas, multifunctional lawns, etc. were incorporated in Rudolph-Bednar Park (Damyanovic, Reinwald and Weikmann, 2013).

### 5.2.2 CPTED Design Guidelines for Urban Parks:

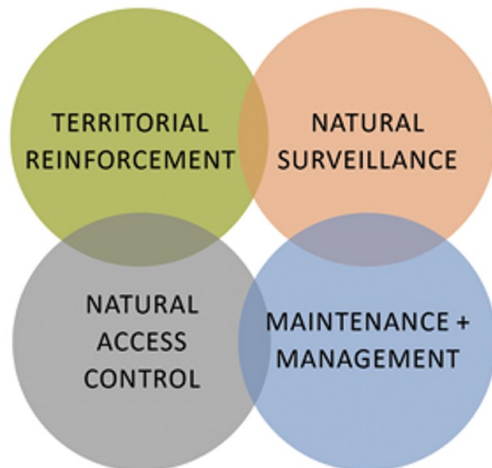


Figure 6- CPTED safety components

Crime Prevention through Environmental Design (CPTED) is an approach to preventing criminal behaviour through the effective design and use of the built environment. The aim of such methodology is to promote a reduction in crime fear, a reduction in the actual number of crimes, an improvement in community security perception, and an improvement in a community's overall quality of life. CPTED strategies have been shown to influence offender decisions preceding criminal acts, thereby deterring criminal activity.

#### CPTED Principles:



**Natural Access Control**– Control of natural access depends on fences, shrubs and other physical elements to keep unauthorized people out of a specific location unless they have a legitimate reason to be there.

**Natural Surveillance**– The basic premise is that there is no willingness to observe criminals. Monitoring or placing legitimate street eyes increases the perceived risk to offenders. This can also increase the actual risk to offenders if they are willing to act in situations of potential danger.

**Territorial Reinforcement**– Naturally, people protect their own territory and have some respect for the territory of other people. Clear boundaries between public and private areas are ways of expressing ownership through the use of physical elements such as fences, pavement treatment, art, signs, good maintenance and landscaping. Identifying intruders in such well-defined spaces is far easier.

**Maintenance**– Consideration must be given to maintenance and management at the design stage, as the selection of materials and finishes will affect the types of maintenance schemes that can be sustained over time. To avoid criminal behaviour, park needs to be maintained.

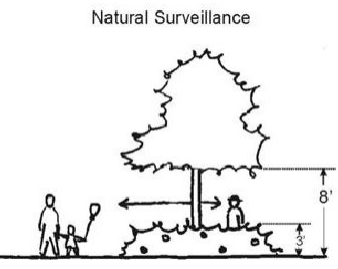
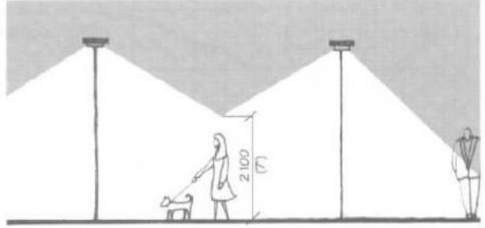


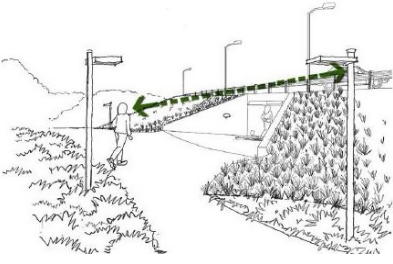

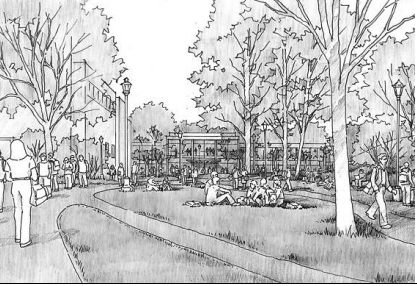
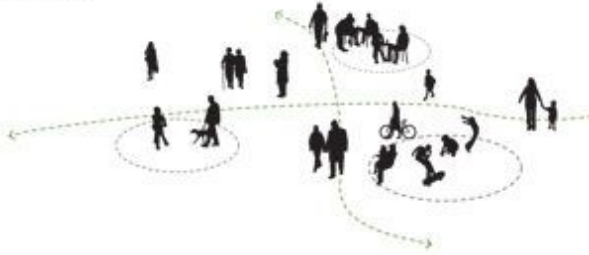


The four CPTED principles can be translated into various planning and design strategies that would enhance security. These strategies can be categorised as follows:

- clear sight lines,
- provision of adequate lighting,
- minimise hidden and isolated routes,
- avoid entrapment,
- Minimize isolated spaces,
- encourage mix land use,
- use of activity generators,
- create a sense of ownership through maintenance and management,
- provide signage's and information and
- Improve overall design

Many studies have shown that using the perfect environment of design and construction that can effectively reduce the likelihood of crime and fear. Globally, CPTED concepts have been widely used to minimize the potential for this site to facilitate and promote criminal behaviour.

Design Elements and Spatial Parameters responsible for Crime such as:

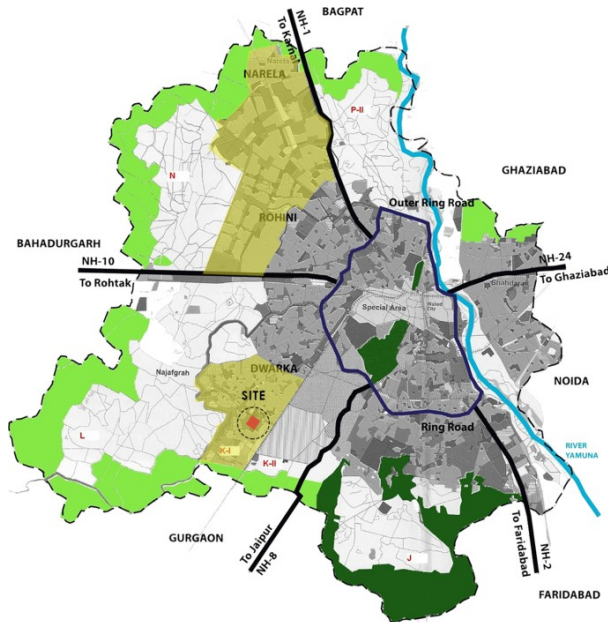
<p><b>Natural Surveillance</b>          Designing for natural surveillance involves giving legitimate users ample opportunity to observe the space around them, engaged in their normal activities.</p>	<p>Natural Surveillance</p>  <p>The diagram illustrates natural surveillance with a tree and people. A vertical line on the right indicates a height of 8' from the ground to the top of the tree's canopy. A horizontal line indicates a height of 3' from the ground to the top of the tree's trunk. Two people are shown on the ground, one looking towards the other.</p>
<p><b>Lighting</b>          Safety lighting provides necessary illumination during normal situations to protect human wellbeing and reduce chances of accident or harm to people.</p>	 <p>VERTICAL DISTRIBUTION OVERLAP</p> <p>The diagram shows two streetlights with overlapping light beams. A vertical line indicates a height of 2100 from the ground to the top of the light beams. A person is shown walking on the ground, and a dog is on a leash.</p>

<p><b>Design Visibility</b> Design visibility allows clear sight lines in the built environment and avoids isolated or hidden spaces.</p>	
<p><b>Vegetation Density</b> Landscaping is designed to minimise interference with sightlines.</p>	
<p><b>Activity</b> An active place that is safely enjoyed, increased the use of the activity space, increasing visitor numbers, adding value to the space, and discouraging non-legitimate user actions.</p>	
<p><b>Circulation</b> Emphasizes on visual and physical connectivity to the different zones of parks.</p>	
<p><b>Access Control</b> Park visitors should be encouraged to follow signs concerning the designation of private, semi-private and public spaces. The number of dead-end streets in parks should be limited in order to minimize the number of places with low visibility.</p>	
<p><b>Signage</b> Signage might be useful if circumstances arise in which it alerts users to the wayfinding if bad incidences occur.</p>	

**Chapter 6**  
**SITE ANALYSIS**

## 6 Site Analysis

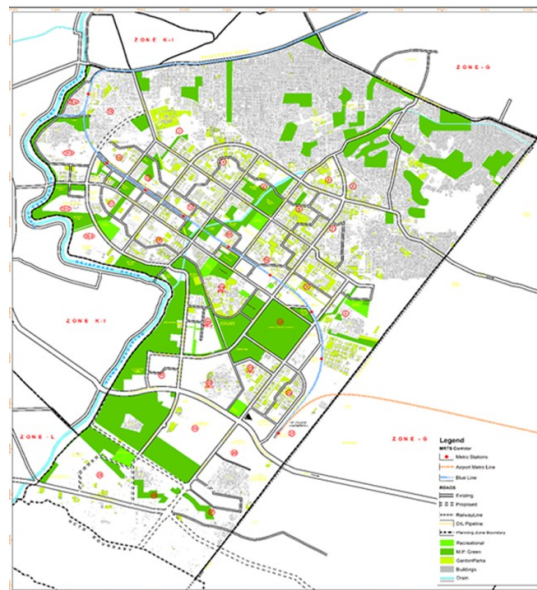
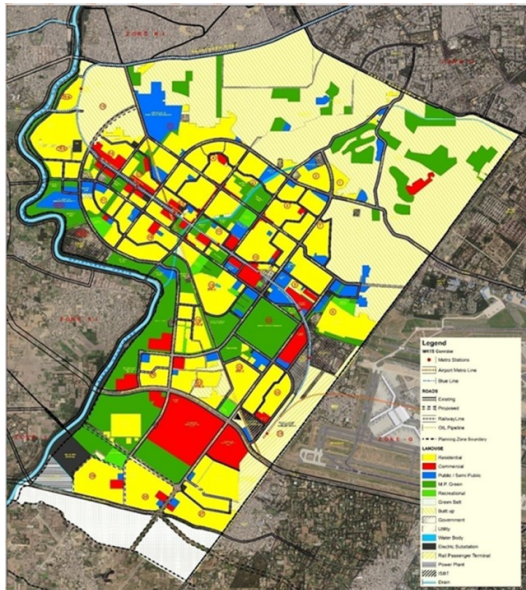
### 6.1 Site Introduction



Urban Park-Sector-20, Dwarka is a designated District Park as per MPD-2021 spreading over an area of 79,735 ha (197acre), which is surrounded by major roads 60.0 m wide on the NW and SE side and 45.0 m wide on the NE and SW side of the road. It is easily accessible from all the sides and the nearest north-eastern metro station is the Dwarka metro station sector-9. Dwarka's sub-city is planned as the sub-city with residential neighbourhoods, strong infrastructure and several urban amenities is well planned.

Map 6- MPD-2021

The sub-city Commercial spine is proposed to be served by DMRC and developed on the site's edge to make it accessible for city-level operation. The neighbourhoods also offer their residents numerous parks and cultural and leisure attractions. The recreational areas represent approximately 17% of the total sub-city area. The site is also strategically located close to IGIA, IT hub-Gurgaon, southwest and central Delhi, complimenting and hiring local visitors, as well as national and international tourists.



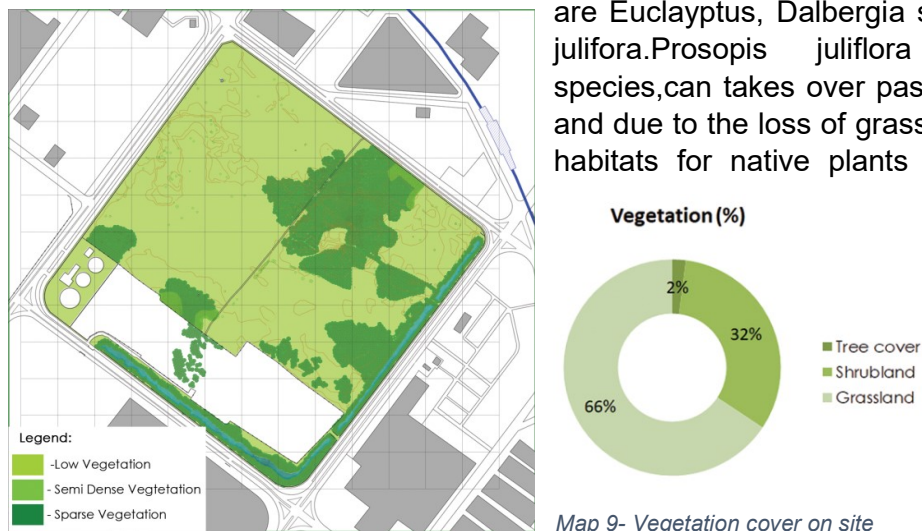
Map 7-Dwarka sub-city: Composite Plan and Landscape Plan

## 6.2 Vegetation Mapping



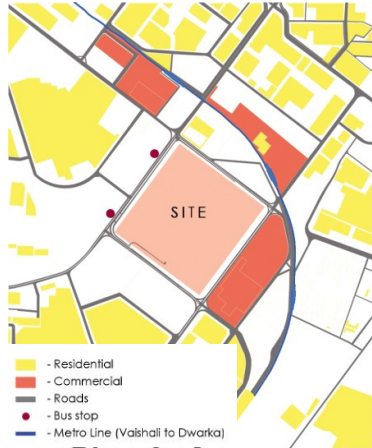
Map 8- Vegetation mapping on site

There are total 233 number of trees, 9 species at site, out of which dominant species are Eucalyptus, Dalbergia sissoo, Prosopis juliflora. Prosopis juliflora is invasive species, can take over pastoral grasslands and due to the loss of grasslands which are habitats for native plants and animals, it causes land erosion.



## 6.3 SWOT Analysis

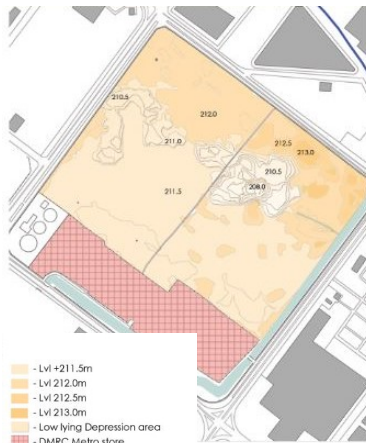
### 6.3.1 Strength:



- **Site Context:**  
Site is centrally located in zone k-II. It is surrounded by commercial and residential buildings.

There are several upcoming city-level infrastructure projects in the vicinity of the site, namely golf course, soccer stadium complex, sports complexes, international convention centre.

- **Accessibility:**  
It is well connected by major roads from all four sides. It is well connected by metros station and Bus stops within a walk of 5 minutes.

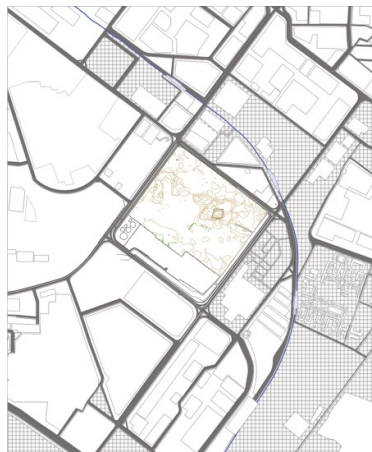


- **Topography:**  
The terrain is more or less flat with a small gradient of approximately 1 m between the highest and lowest point (211.5 m – 212.5 m above sea level).

- **DMRC Metro Store:**  
Metro store is proposed within the site area can be incorporated in Design as a Design element to invite more visitors in park.

Map 10- Topography

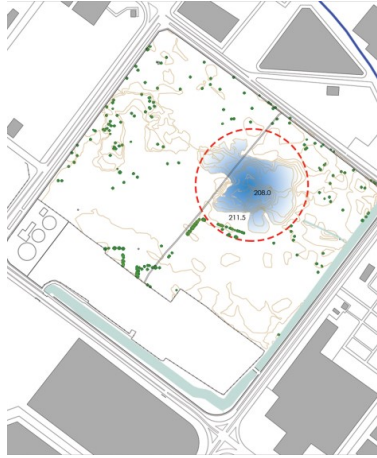
### 6.3.2 Weakness:



- **Heavy Traffic:**  
Site is surrounded by major roads with heavy traffic all time will lead to -Noise pollution inside park premise. Risk due to heavy traffic.

- **Development:**  
Site is located in Sub city Dwarka, k-2 zone which is one of the developing area in Delhi which is partially developed and rest is in process of Development. The Subcity is located extremely near to IGI Airport.

### 6.3.3 Opportunity:



- **Low Lying Depression Area:**  
Low-lying depressions (208.0 m) are the groundwater recharge zones.

It can be incorporate in design as a water body, design element in the park.

- **DMRC Metro Store:**  
Metro store and park can be collaborate to make park more safe, efficient and welcoming.
- **Vegetation:**  
The entire area harbors grasslands with very few trees , so planting can be done accordingly without any constraint.

### 6.3.4 Threat:



- **Open Drain:**  
There is an open storm water drain that runs along the south-east and south-west side of the site at the east corner of the site. After taking a bend at the west corner, it runs west wards through a culvert ; and finally drains into Najafgarh Drain.

It receives run-off from the village of Palam and the area around the airport.

The drain is contaminated with 200 mg / l BOD.

- **Vegetation:**  
One of the Dominant tree is Prosopis Juliflora. an invasive species is a threat due to-

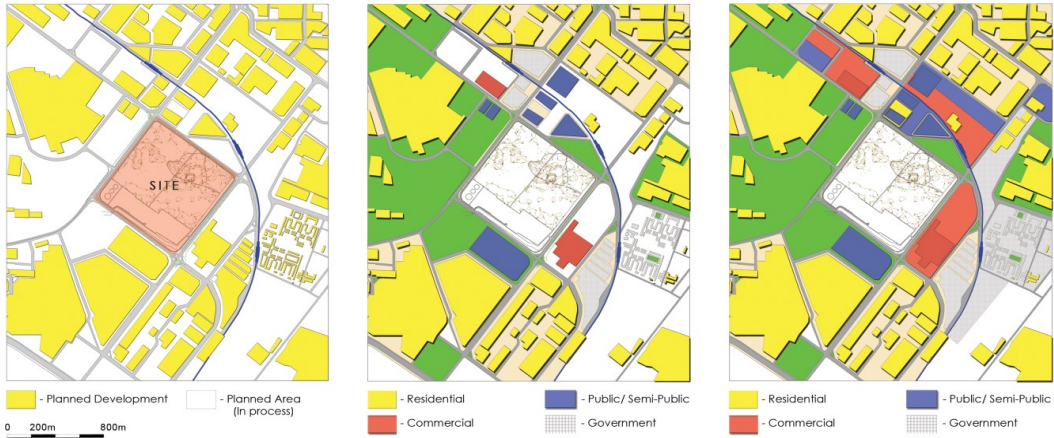
Fast growing

Trees form thorny thickets quickly, reducing biodiversity

Deep penetrating roots in the water table caused severe imbalance, drying up the surrounding water bodies.

Because of the loss of grasslands that are habitats for native plants and animals, it causes land erosion.

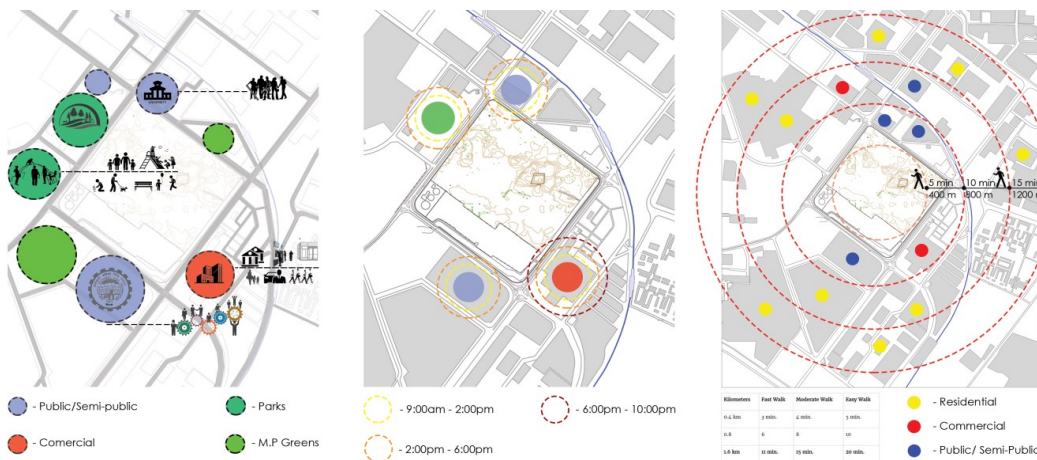
6.4 Site Context



Map 11- Site and surrounding Landuse  
 Site is surrounded by residential, commercial and public/ semi-public land use as per MPD-2021



Map 12- Accessibility  
 Site is well connected by mode of transport such as metro station and bus stops.



Map 13- Activity Mapping



## 7 Programme Brief

### 7.1 Policies and Guidelines

The design of a safe park is based on what is generally considered good design: it is different and interesting; it meets the needs of its multiple users; it connects people to places; it provides an optimistic image and experience for people. While good design can construct the requirements for effective control, the following areas should be considered when considering a park or recreation facility's safety and perception of safety:

- The activities of the park should be located near the perimeter of the park, near the entrance or next to the main footpath.
- Food courts or Cafeterias should be located at the edge of the park to serve both the street and the park.
- Make sure park activities include human presence early in the morning until evening.
- Create the programming and physical design of the park to encourage park use at evening time also.
- Develop activities beyond those for organized sports facilities and playgrounds.
- Organising of tours or events to encourage wider use of parks during weekdays or weekends which enhance positive uses.

The key factors to consider when dealing with park safety issues are:

- Involvement of multiple users of all age-group and gender in the design or redesign of park spaces.
- Clear and visible signage helps to enhance the sense of security as it provides direction and orientation for people.
- It is important to reduce vandalism, inappropriate activities and feelings of isolation, formal / informal monitoring or the extent to which other people can observe park activities.
- Improved lighting and increased legitimate activity enable increased monitoring of the night.
- Clear sightlines give the perception of physical security as people see what's going on and around them and when other people are visible as well.
- Physical access in park should be maximized with a choice of clear routes.
- Higher intensity of use may be encouraged by diversity. Variety in landscape element shape, colour and texture and a variety of activities contribute to a remarkable environment that attracts multiple users.
- Signage in the form of maps and graphic text at regular intervals promotes a greater sense of safety as it gives direction to people, where they are and where they want to go.

## 7.2 Programme Development

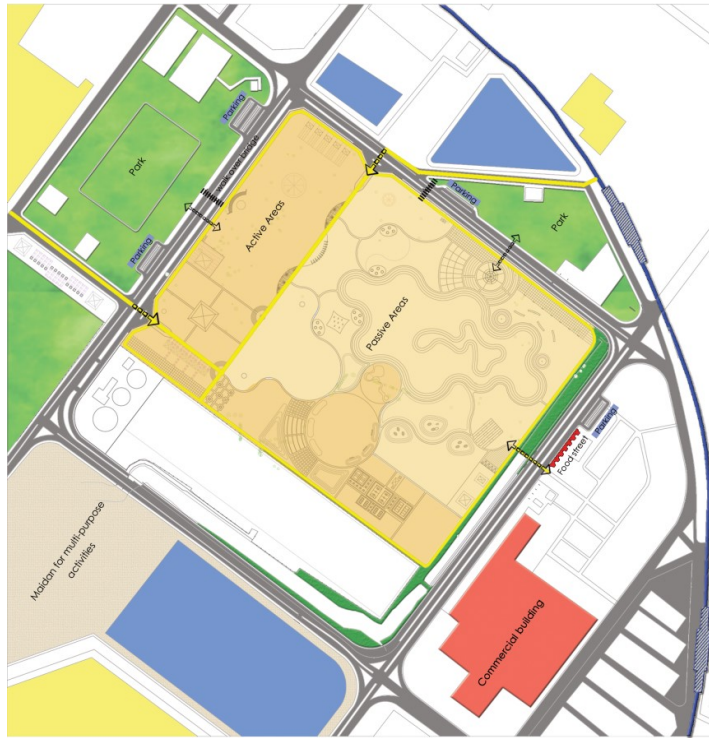


Figure 7- Conceptual Plan

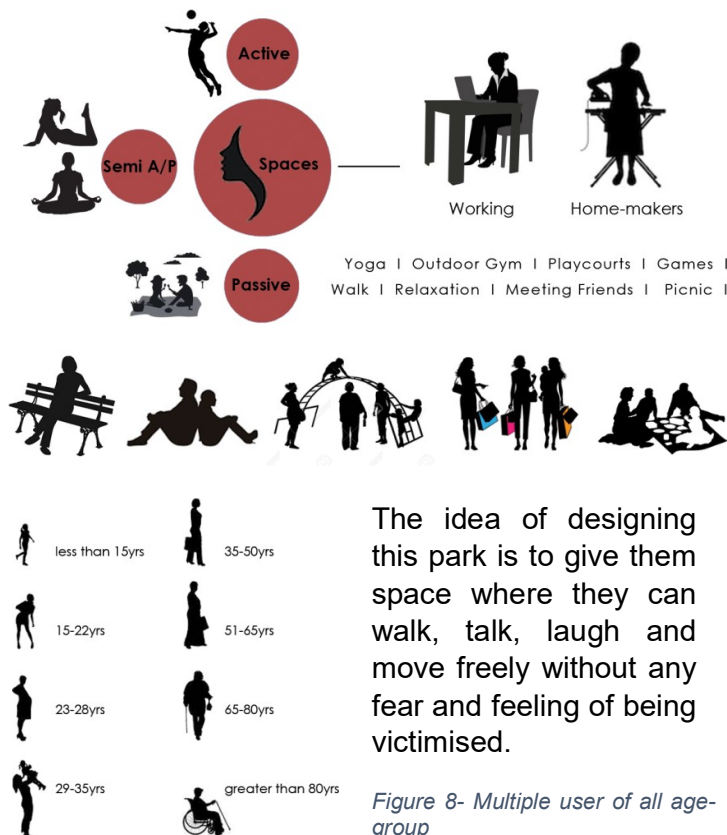


Figure 8- Multiple user of all age-group

### ACTIVITIES AND PROGRAMME:

1. Welcoming Zone
  - Entry and Exit Points
  - Parking Areas
  - Entrance Plazas and Pause Points
2. Health Zone
  - Cycling Track
  - Jogging Track
  - Yoga and Meditation
  - Exercise station
3. Congregational Zone
  - Socio-cultural gathering
  - Diwali Mela
  - Holi Party
  - Christmas Festival
  - Food Festival
4. Shopping Zone
5. Events Zone
  - Open air theatre
  - Dance class
  - Music class
  - Theatre
6. Recreational Zone
  - Picnic lawn
  - Pavilion
7. Sports Activity Zone
  - Badminton
  - Basketball
  - Volleyball
  - Cricket pitch
  - Playfield
  - Club House
8. Kid's Zone
  - Kid's play area (Age-wise)
  - Kindergarten
  - Science Garden
  - Sculpture park
  - Open art gallery
9. Ecological and Educational
  - Herbal Garden
  - Theme Garden
  - Nature Walk
  - Vegetable Garden
  - Fruit Orchard
  - Nursery
  - Tree court
10. Food Zone
11. Public amenities

Safety measures:

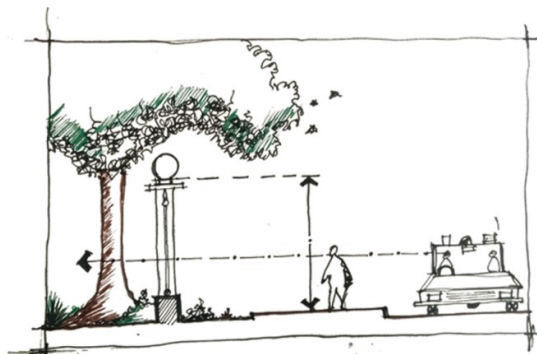


Figure 9- Sight lines



Figure 10- Vegetation Density

Sight lines- Visibility of design in the built environment means clear lines of sight and avoiding isolated or hidden spaces.

Vegetation Density- Landscaping is designed to minimise interference with sightlines.

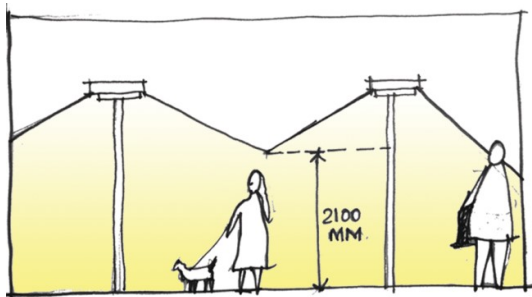


Figure 11- Lighting

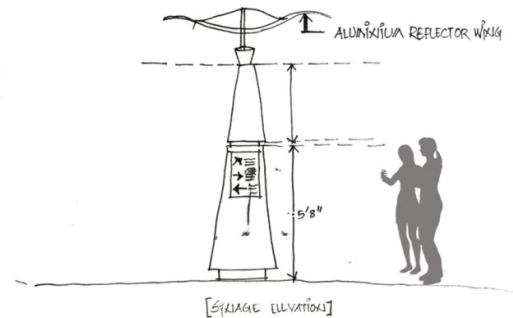


Figure 12- Lighting

Lighting- It takes sufficient lighting to see and be seen by people. From a security perspective, strategically placed lighting can have a significant impact on reducing crime fear.

Signs and Information- Well designed ; signs and maps that are strategically located contribute to a sense of security. Signs should be standardized to provide street messages that are clear, consistent, concise and readable.

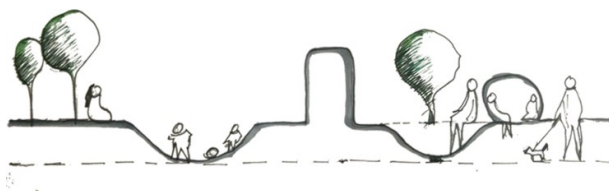


Figure 13- Activity generators



Figure 14- Mix Land use

Use of activity generators- Generators of activity are uses or facilities that attract people, create activities, and add life to the street or space, thereby helping to reduce crime opportunities.

## **8 Design proposal and recommendation**

## 9 Bibliography

Anon., 2009-10. *UNDERSTANDING WOMEN'S SAFETY:Towards a Gender Inclusive City*, Delhi: s.n.

Anon., 2016. *Crime in Inida*, Delhi: National Crime Records Bureau.

Anon., n.d. *Creating Safe Park Environments*. s.l.:National Recreation and Park Association.

Anon., n.d. *Crime Prevention through Environmental Design Guidebook*. s.l.:s.n.

Anon., n.d. SMART CITY ACTION PLAN. *CIDCO@ smart newsletter*.

Anon., n.d. *Social Welfare:Women and child development*. [Online] Available at: <http://vikaspedia.in/social-welfare/women-and-child-development/women-development-1/gender-concepts>

Aparna, n.d. *A Women's Own Space*. s.l.:s.n.

Basu, S., n.d. *Where are the women in Delhi?*. [Online] Available at: <https://www.firstpost.com/long-reads/where-are-the-women-in-delhi-men-largely-occupy-connaught-places-open-spaces-3953493.html>

DI Eva Kail Barcelona, 5th of October, 2011. *Gender Implementation in Vienna*. s.l.:s.n.

Dr. Jonathan Casper, D. M. H., n.d. *GENDER DIFFERENCES IN PHYSICAL ACTIVITY AND PARK AND RECREATION FACILITY USE AMONG LATINOS*, s.l.: s.n.

Environment, D. o. S. a., n.d. *SAFER DESIGN GUIDELINES FOR VICTORIA*, Victoria: s.n.

Grover, A., n.d. *GENDER PERCEPTION OF SAFETY IN URBAN PUBLIC SPACES:CASE OF NEW DELHI*. Delhi: International Journal of Arts & Sciences.

Harth, A., n.d. *Open Space and Gender - Gender-Sensitive Open-Space Planning*. [Online] Available at: <https://difu.de/publikationen/open-space-and-gender-gender-sensitive-open-space.html#2>

Mehdi Khakzand, Y. G. M. a. S. T. G., n.d. *A Specific Park for Women or a Public Park*. s.l.:Armanshahr Architecture & Urban Development.

Mehrotra, K. V. a. S. T., Apr. 28 - May 4, 2007. 'Shall We Go out?' Women's Safety in Public Spaces in Delhi. *Economic and Political Weekly*, Vol. 42, No. 17(<https://www.jstor.org/stable/4419521>), pp. pp. 1542-1548.

Phadke, S., 2011. *Why Loiter? Women and Risk on Mumbai Streets*. Mumbai: s.n.

Riechert, E., April, 1997. *Urban Parks: Women's Fears and Planning/ Design Considerations*. Calgary, Alberta: s.n.

Shah, A., August 1, 2018. *6 Times Desi Women Reclaimed Public Spaces As Their Own*. [Online]

Available at: <https://feminisminindia.com/2018/08/01/women-reclaimed-public-spaces-campaigns/>

Shdhganga, n.d. Chapter-2. *STATUS OF WOMEN FROM VEDIC PERIOD TO MODERN PERIOD*.

Sherk, K., 02 June 2014. *INFOGRAPHIC: HOW SAFE ARE DELHI'S PUBLIC SPACES FOR WOMEN AND GIRLS?*. [Online]

Available at: <https://www.icrw.org/infographic-how-safe-are-delhis-public-spaces-for-women-and-girls/>

Shodhganga, n.d. Trends in Growth of Open Space in Delhi. *Chapter-3*.

United Nations, 2., n.d. *Universal Declaration of Human Rights, 2018*. [Online]

Available at: <https://www.un.org/en/universal-declaration-human-rights/>

Washington, U. o., n.d. *Crime & Public Safety*. [Online]

Available at: [https://depts.washington.edu/hhwb/Thm\\_Crime.html](https://depts.washington.edu/hhwb/Thm_Crime.html)

Women, J. c. @. J. a. U., 2011. *Report of the Baseline Survey Delhi*, Delhi: s.n.