

URBAN OPEN SPACES

A PROSPECT TO REDEFINE TUNDIKHEL

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Thesis

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ABSTRACT

Urban open spaces are an important part of the urban environment, which creates the framework for public life. The existence of such spaces in cities not only responds to citizens' everyday needs but also lead to the creation of a healthier society. Besides, these spaces provide an opportunity for a positive social interaction.

In the 21st century, cities have become home to increasing numbers of people and the ongoing worldwide urbanization trend is seen critical to the future Earth and significantly creating the distance between the people of city and nature. The nature of open space in urban areas of Nepal has changed profoundly in the past decades, because its function and form have evolved with society's changing needs, increased mobility and changes in life-styles. The urban sprawl concentrating on economic activities led to the haphazard development of cities at the expense of open areas and Kathmandu is no exception.

There are so many spaces in the city that remained under-utilized for years, which awaits the redevelopment to cater the urban functions. Tundikhel is one of them that situates at the urban core area of the city, which is being exploited. The fragmentation of Tundikhel and the encroachment around the peripheral land has caused rapid degradation.

This thesis is an attempt to take notions of open space and their potentials and look beyond them, towards possible new concepts and challenges to address.

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“So as cities become home to increasing numbers of people as we move further into the twenty-first century, the quality of life for people in those cities is important. However open spaces are defined, or whatever state they are in, there can be no doubt that each urban conurbation has many of them. How can such open spaces affect the quality of life for city dwellers? What are the benefits and opportunities of such open spaces to people? How might such open spaces be used? Are such open spaces important to people’s lives? Surely people who use these spaces do not spend hours discussing definitions of the types of spaces they are using, neither do they debate the benefits provided by urban open spaces, rather they experience the benefits and sometimes take the open spaces for granted. But they do value and own such spaces and use them as part of their daily life, thus these spaces contribute greatly to an individual’s and a community’s quality of life in the urban context.”

- Woolley, 2003

1. Introduction

1.1. Urbanization Trend

The ongoing worldwide urbanization trend is seen critical to the future Earth and also significantly creating the distance between the people of city and nature. It was expected that 50 percent of the world's population will be living in urban areas by year 2025 (United Nations, Centre for Human Settlements [UNCHS], 1996). But the urban population is growing faster than the expectation. According to the report stated by UN in 2018, around 55 percent is thought to be already living in an urban area or city. With this figure of dramatic growth of the urban population, it is estimated that two-thirds of world's population will live in cities by 2050 (Meredith, 2018).

1.1.1. Urbanization in Nepal

Nepal, being one of the ten least urbanized countries in the world (UN DESA, 2014:p.198), is also one of the top ten fastest urbanizing countries in the world (Ibid, 68). In the world urbanization prospects, the country profile will remain amongst the top ten fastest urbanizing countries in the world with a projected annual urbanization rate of 1.9 per cent, for the period 2014 to 2050 (Ibid, 68). The large and medium cities are significantly dominating the urbanization in Nepal with an excessive population concentration in the Kathmandu Valley. Kathmandu is the capital city of Nepal, and it combines with Kirtipur, Lalitpur, Bhaktapur, Madhyapur Thimi, and smaller regions to form the Kathmandu Valley. Kathmandu makes up the core of the largest urban agglomeration in the Kathmandu Valley with the population of 1.4 million (World Population Review 2019).

Over the centuries, the mobilization of people towards urban centers and development of rural life into urban civilization have been accompanied by highly significant changes in social and environmental aspects. Many cities around the world are struggling to cope with the pressure from significant increase in population towards urban centers. Urban areas are facing environmental problems such as air pollution, water pollution, noise and waste generation, accompanied by increase in consumption of energy and materials.

1.2. Motivation

The nature of open space in urban areas of Nepal has changed profoundly in the past decades, because its function and form have evolved with society's changing needs, increased mobility and changes in life-styles. The urban sprawl concentrating on economic activities led to the haphazard development of cities at the expense of open areas and Kathmandu is no exception.

Owing to rapid urbanization, incessant fragmentation of private land and encroachment on public land, open spaces in urban areas are fast shrinking. There is an all-out march from all sectors to capture the public land or open space. If the current pace continues there will be no secured open space left in the next decade. As open spaces continue to shrink and big houses are blossoming around, there is less chance of surviving if an earthquake of a big magnitude hits Kathmandu again.¹

The urban open space design of Kathmandu Valley demonstrates numerous problems starting from lack of open spaces itself to their poor design, improper or lack of use and lack of maintenance. The city is deprived of public parks and playgrounds, which are supposed to be the integral part of modern cities. Scarcely built parks are far from meeting the needs of the public in general. The lack of proper open spaces is actually forcing people to lock themselves up in the private houses, as the outdoors is either unsafe or too crowded. Children, mostly, are depending on passive entertainment than active activities. This can lead to health issues such as premature obesity diabetes. Thus, reviving urban open space has become a major contemporary issue.

Urban open spaces are an important part of the urban environment which creates the framework for public life. The transformation of open spaces into successful public spaces is crucial in this regard. In the context of target-driven performance it is essential to identify the value of successful urban open spaces, along with the characteristics that define them. As a subject of remarkable interest, the time has come to focus on the revitalization of cities with the major emphasis on urban open space in order to offer lively, diverse settings that can accommodate a wide spectrum of users, especially in light of increasing urbanization placing pressure on scarce open spaces within cities.

The focus of this thesis is on the interventions of redefining open space into healthy open space in an attempt to reflect on the possibilities within practice in relation to what is captured in theo-

¹ Nepal lies in the major earthquake zone in the world map. Nepal is still being rocked by the recent devastating earthquake on 25 April, 2015 and its aftershocks. Tundikhel (an open space in the heart of Kathmandu) including many other open space in Kathmandu sheltered the inhabitants after this earthquake.

ry. A study including various literature and practical designs concerned with the planning of public open space, identified characteristics of successful public open space based on the most frequently used within all of the literature. Broader and sometimes unconventional visions for urban open space in this new century are discussed in this thesis. This thesis is an attempt to take notions of open space and their potentials and look beyond them, towards possible new concepts and challenges to address.

1.3. Objective of study

The main objective of the study is to bring together knowledge from different theoretical disciplines and design practice, and ultimately develop possible ideas for uplifting the current situation of Tundikhel. The study also has a direct expression of concern about the sustainability of urban open spaces.

1.4. Scope and Limitations

The study takes a pragmatic perspective of the open space into its systematically relevant context. It uses different worldviews and combines both objective and subjective knowledge to create a comprehensive understanding of a research problem and find solutions to the problem. While the provision of open space is diminishing in new neighborhoods of Kathmandu, it remains neglected how such changes are affecting the perception of people on urbanization. This thesis attempts to explain the importance of open space and aware people about the shrinkage of such valuable spaces in the city.

Urban open space has a wide range of scope. This thesis focuses mainly on the public open spaces of urban area. The emphasis will not be on the private open spaces such as private gardens. Data collected are based on primary as well as secondary sources. Any kind of inaccuracy might occur in the validity of the data extracted from the secondary sources.

1.5. Structure of the thesis

The thesis is divided into chapters. The general outline of this thesis is as follows:

Chapter 2 is a literature review that reflects on the study of the terminologies and typologies of open spaces. This chapter highlights the need of open spaces in urban context stating the benefits and opportunities that open spaces offers.

Chapter 3 is the study of successful urban open spaces from different countries. The selection of the places for study is such that they have similar physical situation as Tundikhel. Practical de-

sign features as well as some unconventional visions for urban open space design in this new century are discussed in this chapter. Subsequently, Chapter 4 and 5 are the analytical evidences in practical design settings gathered from chapters 2 and 3, which presents the aspects and elements for designing. Chapter 6 is the short review on the historical open spaces of Kathmandu. The progression of ideas moves from gathering knowledge to identifying problem and generating solution in chapters 7.

Chapter 8, the final chapter, answers the research to the academic and societal debate, and explores implications for future research and urban design practice. Chart 1.1 presents a structure of chapters.

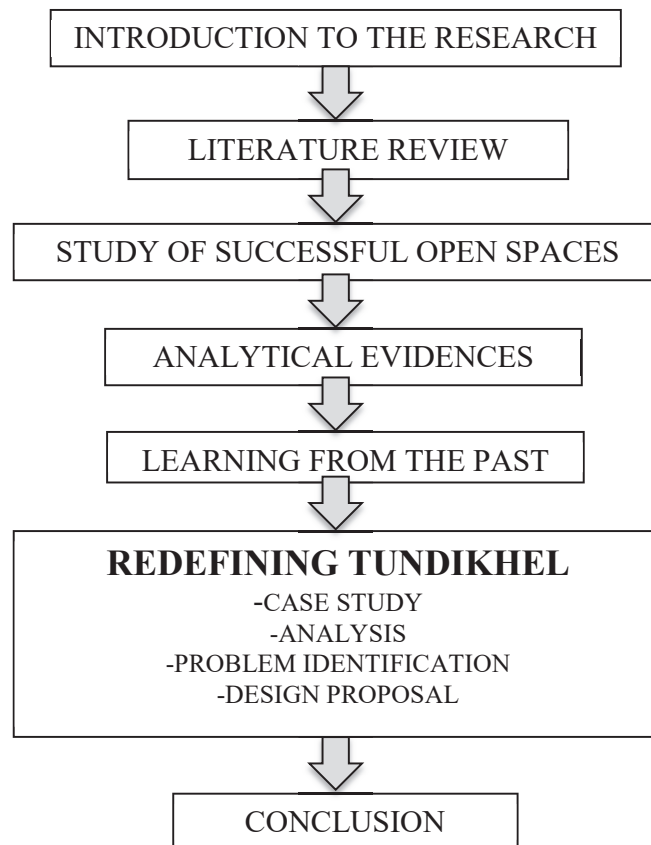


Chart 1.1 Structure of the Thesis

2. Urban open spaces

Open spaces within the cities are often described as lungs that aerate or irrigate the urban matrix. The open spaces are not only the breathing spaces of the city but are the places for interplay between people, activities, movement and urban forms. Moreover, these are the open air theaters for an array of displays: from the complex festivals, to the expertise of trade, to the frozen artistry of the astounding monuments that quietly shape these premier urban open spaces (Joshi, 2010:p.60). Various authors have suggested a range of definitions for open spaces according to specific characteristics.

In its most general sense, Open spaces are land and water which are not covered by buildings, or any undeveloped land in an urban area (Gold, 1980:p.237). Other definition holds that, open space *includes not only all land or the water in and around urban areas which is not covered by buildings, but the space and the light above the land as well* (Tankel, 1963:p.57).

Marilyn (1975) also explains the reason for whom and why are the open spaces; “Open space is land and/or water area with its surface open to the sky, consciously acquired or publicly regulated to serve conservation and urban shaping function in addition to providing recreational opportunities”. Venkatasubramanian (1991) defines open space as, “undeveloped or predominantly undeveloped land in an urban area which has a value for park and recreation purposes, conservation of land for historic and scenic purposes”. The open spaces has always been an arena that allows for different types of activities encompassing politics, religion, commerce, sports; space for peaceful coexistence and impersonal encounter of people in urban area. One vital role that urban open spaces play is providing opportunities for the expression of diversity, both personal and cultural. Its character expresses and conditions the public life, civic culture, everyday discourse (Walzer, 1986:p.470).

2.1. Terminologies

Urban open spaces can range from playing fields to highly maintained environments to relatively natural landscapes. Different types of open spaces are described below:

Gardens

- **Private gardens**

A garden is a planned space, usually outdoors, set aside for the display, cultivation, or enjoyment of plants and other forms of nature. Private gardens are individual plots on private land.

- **Community gardens**

A community garden is a single piece of land gardened collectively by a group of people. Community gardens utilize either individual or shared plots on private or public land. The community gardens can fulfill variety of purposes such as aesthetic and community improvement, physical or mental well-being, or land conservation. On the other hand, community gardens also provide opportunities for getting together with a small group of people.

- **Roof Gardens**

A roof garden is a garden on the roof of a building. Besides the decorative benefit, roof plantings also provide opportunity for temperature control, hydrological benefits, architectural enhancement, ecological benefits, and recreational opportunities.

Allotments

Allotments are area of land rented out for non-commercial gardening where an individual or a family can grow vegetables, fruits and flowers, for some with the aim of a degree of being self-sustaining. There may be physical distance to allotment from home which verge them towards neighborhood group (Woolley, 2003:p.57).

City farms

City farms are agricultural plots in urban areas, which involve people working with animals and plants to produce food. In urban context, they are considered important as an educational resource for children and as a community resource for adults as they give an opportunity for experience with farm animals and nature (Woolley, 2003:p.82).

Woodland

A woodland or wood is a low-density forest forming open habitats. Woodlands may support an understory of shrubs and herbaceous plants including grasses. Higher density areas of trees with a largely closed canopy that provides extensive and nearly continuous shade are referred to as forests.

Parks

A park is an area of natural, semi-natural or planted space set aside for human enjoyment and recreation or for the protection of wildlife or natural habitats. An urban park is a park in cities and other incorporated places to offer recreation and green space to residents. Parks can be considered to be the most democratic of urban open spaces because they are available to all for different purposes such as jogging, meeting friends and family members, walking a dog, or just spending leisure time.

Playgrounds

Playground is a place specifically designed to enable children to play while some target other age groups too. Both traditional and adventure style playgrounds can have a role to play in providing opportunities for children to play in urban areas.

- **School playgrounds**

The playground in schools provides a safe outdoors environment within the school. An imaginatively designed and well-maintained school playground stimulates children to use their creative energy in healthy interactions with one another.

- **Playing fields and sports ground**

Playing fields and sports grounds are the open spaces within the urban framework that most directly provide opportunities for sports. The provision of playing fields on educational sites or elsewhere is very important for improving physical health.

Golf Courses

Golf courses are the grounds where golf is played. They are a specific sports facility that is usually not encompassed within a space, but are a discrete open space in themselves.

Streets

Streets are public thoroughfare in a built environment of an urban context, on which people may freely assemble, interact, and move about. Streets are the connections between spaces and places, as well as being spaces themselves. It serves as the connecting element in urban form. Apart from addressing the functional aspect of a city, it also defines the visual and psychological aspect. They are defined by their physical dimension and character as well as the size, scale, and character of the buildings that line them. Streets range from grand avenues to small, intimate pedestrian streets. The patterns of the street network define character and lifestyle of cities and people living there. They shape the generation of spaces, the evolution of form, and the building typology and help people relate to their cities.

Squares

Squares are one of the oldest types of open space commonly found in the heart of a traditional town used for community gatherings. Town/city squares are also known as civic center, urban square, market square, public square. They are an important feature of many towns and cities around the world.

Plazas

Plazas are significant urban spaces and are larger in size than squares (Woolley, 2003:p.88). They are intentionally established open space framed by buildings on most sides. Plazas can host a diversity of civic activities and tend to be multi-purpose. Squares and plazas are usually hard surfaced.

Courtyards

A courtyard is a circumscribed area, open to the sky, often surrounded by buildings or complex. In cities, courtyards provide small, private outdoor areas.

Cemeteries

A cemetery or graveyard is a place where the remains of dead people are buried. In Western cultures, funeral ceremonies are often observed in cemeteries.

Incidental spaces & natural green spaces

In today's increasingly regulated cities, a noticeable pattern of open space between buildings and streets has emerged as inevitable by-products of urban spatial development. Incidental spaces might include small areas by a road junction or some local shops or even a bus stop; a tree and a seat being the smallest possible (Woolley, 2003:p.83). The natural green spaces can serve as recreational areas in areas lacking open space. It is suggested that such spaces could be designated as Local Nature Reserves in some areas for supporting local communities and acknowledging the value that they place on incidental spaces (Harrison, 1993 as cited in Woolley, 2003:p.83).

Water Bodies/ Features

Ponds, lake, river and other forms of water bodies are essential part of urban open space from which both aesthetic and ecological benefit can be obtained. Water features in urban parks, squares, plazas can be fountains, ponds, streams, cascades or waterfalls. Water features can bring a relaxing atmosphere to any space and are also known for their ability to increase air quality and humidity and decrease noise pollution by drowning out noise with the sound of running water. People and their children take such elements as place of joy and refreshment.

2.2. The historical roots of Urban Open Spaces

The concept of open space has evolved since long time ago. Urban open spaces have been critical sites of cultural, political, and economic life from early civilizations to the present day. The basis for many urban open spaces seen today across Europe and the West began its process of development in the 17th and 18th centuries (Wikipedia, 2019a). For historians of urban open space, the correspondence between ancient Greek urban spaces and democratic practice often represents the starting point. In the ancient civilization of Greece, a number of open spaces such as the market place, gymnasia, and sacred burial groves were traditional. In modern literature, the Greek agora has become a symbol of the public sphere.

Plazas and squares

Historical narratives often abruptly jump from these classical settings to medieval Europe. At this period, plazas were usually paired with Christian churches. Large plazas, often planned by government or religious authorities, have been common in a wide variety of urban contexts through history. Formal plazas were common features of Soviet cities from Eastern Europe to

Central Asia. In some pre-modern cities, formal plazas or large courtyards within or adjacent to royal palaces form a distinctive subcategory of city-level plazas. These features are historically documented for palaces in Bali and also in Nepal. Neighborhoods in old towns of Nepal; Kathmandu, Bhaktapur and Lalitpur, are similarly oriented around plazas or squares. Plazas hosted a wide variety of socioeconomic and recreational functions. As the Renaissance emphasized secular and private values, urban open spaces reflected this shift. Urban squares then appeared in certain areas, such as the Place des Vosges in Paris, the Bloomsbury squares in London, and downtown areas of Philadelphia and Savannah. These were planned exclusively for surrounding residential use (Crouch, 1981; Carr, Francis, Rivlin, & Stone, 1992; Carmona, Magalhaes, & Hammond, 2008).

These spaces have simultaneously supported food and craft production, markets, communal wells, and social interaction in the history and also in present days. Market squares were initially part of the temple precincts and therefore not accessible to all, which was later made accessible to people. The market was a by-product of the people coming together for many other reasons than merely doing business. People met or gathered and exchanged the news in the marketplace. Fairs and events also took place in these spaces. These social functions of the marketplace continued to develop in a range of urban open spaces. In some instances squares have also been used for political activities. Some of the squares were purely devoted to markets and had residential properties for the different types of traders. Squares are clearly defined by the built form that surrounds them, and are in fact contained by the walls of such buildings. In most instances the city square is linked to the street pattern of the city center. (Woolley, 2003:p.87-88)

Courtyards

Courtyards have been part of the urban and civic fabric around the world. In both ancient and modern times, courtyards have been part of the buildings and provide opportunities to use spaces for their own purpose: religious, official, military or domestic. Temples of stepped pyramids, temples of the Middle East and Egypt had courtyards in them. Many Greek towns had an acropolis which was initially a fortress with king's palace and later a religious center with the courtyard filled with temples. Chinese palaces and temples of 1st and 7th centuries respectively had courtyards. Domestic courtyards were identified even earlier in China from 1st and 2nd century BC. Buddhist monasteries buildings with courtyards were built between late 6th century and mid-8th century in Japan. The 15th and 16th centuries palaces in Italy, Spain and Portugal had courtyards.

By the 17th century Korea too had temples with individual buildings within courtyards with connecting galleries. Islamic architecture too has made good use of courtyards (Woolley, 2003:p.95-96). Mosques often provide courtyard space to accommodate peak assemblies. Arab-Islamic urban residences are also often conformed to courtyard-based planning. Similarly in Nepal, the planning of the traditional town in Kathmandu is characterized by the narrow streets and distinct neighborhood pattern with courtyard as common open space. The Durbar squares of Kathmandu, Bhaktapur and Lalitpur are planned with series of courtyards linked by alleys.

Parks and gardens

Gardens, parks, and landscaped grounds surrounding central state institutions have been significant sources of open space in urban history. In ancient states, large gardens and parks were usually royal and had access only to selective public access (e.g. to upper classes). In the 19th century, urban parks rapidly multiplied as specialized recreational space. They have often been appropriated by authorities and converted to public use. Today, large urban parks and gardens originate primarily from municipal or state planning, or from the initiative of institutions, such as churches, schools, and corporations, covering a range of public, semi-public, and private settings. Parks and gardens in many cultural contexts have been constructed as sites of aesthetic reflection or for specific social practices.

Stadiums

Functionally specialized for recreation, stadiums were utilized for the public viewing of ceremonial, sporting, or other cultural events. Coliseums and theaters in the Roman Empire were important cultural and political spaces. Mesoamerican ball courts combined sport, symbolic, and ritual dimensions. In the 20th century, cities all over the world have constructed specialized stadia to host sports, music, and conventions (Stanley, Stark, Johnston, & Smith, 2012: p1099).

Cemeteries

Large urban cemeteries are common in ancient cities and American cities. They also function as city-scale green space. The roads leading away from Roman cities were lined with tombs, some surrounded by lush gardens.

Streets

Boulevards, streets, and alleys in urban history reflect a range of origins carved out by local initiative. Accommodation of fossil fuel based vehicles drastically increased the functional specialization of many streets and boulevards. This clearly represent that technology can transform the form and function of open spaces.

Water bodies

Water bodies or water features are also important aspect of urban areas. Initially water in urban areas was there for functional reasons such as drinking and as part of drainage systems (Woolley, 2003:p.89). The first fountains in Rome were functionally practical and it was not until the second half of the sixteenth century that ornamental fountains were purpose built (Girouard, 1985). The water features were developed bringing together art and nature.

2.3. Overall concept of open space

The concept of open space in complex urban matrix is not limited only to the urban parks and preserves but also non park-non-natural places. The rise of industrial zones and the dramatic spatial city growth related to advances in transport technology both seem related to the amount and variety of incidental spaces. Incidental space appears inseparable from the highly organized planning of state and institutional entities. The functional specialization of urban open space perhaps emphasized more in modern than ancient cities. In ancient cities, empty lots may reflect family decisions and neighborhood activities more than state or municipal projects.

The short term or temporary open space such as waste lots, empty lots are awaiting redevelopment but are not currently managed. These are the indeterminate areas of open space and these specific spaces are also much necessary. In many 19th and 20th century colonial cities in South Asia and Africa, native urban areas were segregated from the residential units with greenbelts, so that intermediary vegetation and physical distance would prevent the spread of “foreign” diseases (King, 1976 as cited in Stanley et al., 2012:p.1107).

The urban open spaces evolved in time embracing all types of opportunities to meet the varying needs of urban inhabitants and urban environment.

2.4. Open space typologies

The grouping of urban open spaces has been developed from time to time as a planning tool, which usually resulted in either a typology or a hierarchy of urban open spaces. Open spaces are classified based on theory of classification and their combination. This is used to describe a group of objects according to the similarity of form and structure.

The first attempts to formulate open space typologies in modern urban studies focused on morphology: form, shape or structure of the spaces (Moore, 1996; Cavanagh, 2002; Carmona, 2010a, 2010b; Krier, 1979). Open spaces are also discussed and classified in terms of their functions (Eckbo, 1969; Carr et al., 1992). Carr et al. (1992) made a list of open space typology in twelve main types and further subdivided it into 24 categories in western European cities. Besides the design literature, later typologies also focus on the relation between urban spaces and social relationships, cultural norms, class formation, and political-economic power (Carmona, 2010b). Form-based categories of open space can be seen as analogous to regions defined from homogeneous or uniform characteristics, whereas function-based categories are analogous to functional or nodal regions (Richardson, 1979:pp.19-22). Tankel (1963) classified urban open space, based on the scale or level of the urban development, into street, community, county and region (including both land and water); which suggests the role of open space at each scale (p.61). Generally considered open to the public, urban open spaces are sometimes privately owned. In this context, Newman (1972) has categorized open spaces as public, semi-public, semi-private and private open space; physically identified by their legal ownership and boundaries. Private open space includes individual gardens or open land to homes; while communal gardens and the common courtyard to houses are the semi-private open spaces where a limited number of people use the space. Parks and plazas can be identified as public open spaces which are shared with strangers, people other than relatives, friends or work associates. School playground is possibly the easiest to understand Semi-public open spaces; spaces with limited opening times for particular group of public. Similarly, streets and roads are the widest and most accessible public open space networks.

Most traditional typologies have been determined from the point of view of the planner or designer. This help to prioritize urban open spaces for development or regeneration (Woolley, 2003:p.55). Thus, Woolley (2003) has suggested a typology considering the situation with re-

spect to daily urban living. Based upon the concept of home range, the typology consists of three groupings of urban open spaces-domestic, neighborhood and civic, subdivided into various categories (Chart 2.1). The experiences of the three groupings of urban open spaces suggest the spaces for all having user as the focus of attention at three social levels- familiarity, sociability and anonymity (Woolley, 2003:p.57-101).

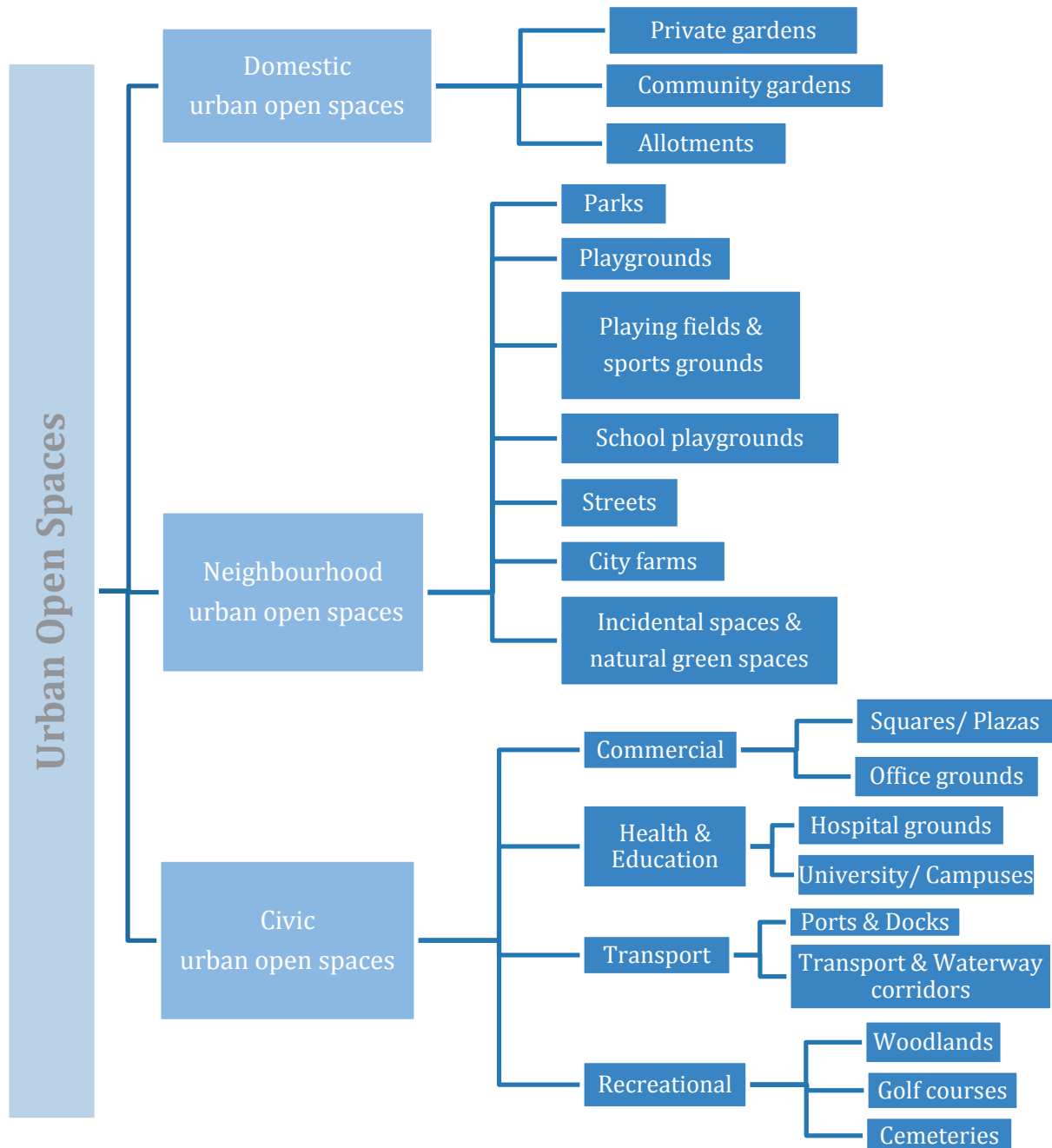


Chart 2.1 Typology chart of urban open spaces based on Woolley's classification, Source: Author

Stanley et al. (2012) employ a simpler nominal typology and stress the interpenetration of categories and their variation across socio-spatial scales. The typology is constructed around the conceptual tension between form and function accommodating a third dimension of analysis (indicated by a sliding scale across the categories) oriented around Al-Hagla's (2008)² differentiation between "green space" and "grey space."

Form	Scale			
		City	Intermediate	Residence
	Transport Facilities	Harbors, Airport and Train Station Parking	Transit Stations, City Gate Areas	Driveways, Parking Areas
	Streets	Central Boulevards	Street Space	Pedestrian Alleys, Paths
	Plazas	Large Formal Plazas	Smaller Neighborhood Plazas	Interior Courtyards
	Recreational Space	Stadiums, Greenbelts, Beaches	Sports Facilities, Playgrounds	Houseyard Playspace
	Incidental Space	Natural Features and Semi-Wild Areas	Empty Lots, Transit Borders	Marginalized Space Between Buildings
	Parks and Gardens	Major Formal Park and Garden Space	Institutional Gardens, Small Parks, Cemeteries	Household Gardens
	Food Production	Orchards, Agricultural Fields	Grazing Commons, Community Gardens	Kitchen Gardens, Small Horticulture

Grey space

Green space

Grey/Green space

Chart 2.2 A transdisciplinary typology of urban open spaces spanning ancient and modern history.
Source: Stanley (2012, p. 1094)

² In Al-Hagla's scheme (2008, p. 164), green space represents "a subset of open space, consisting of any vegetated land or structure, water, or geological feature within urban areas," and grey space refers to more civic-oriented spaces such as "urban squares, market places and other paved or hard landscaped areas."

2.5. Need of open Space

Public open spaces are the city's living room which could become a "*third place*" besides home and work (Oldenburg, 1989:p.16). "*At different stages of our life we may have access to and use different types of open spaces, all of which enhance our quality of life experiences. As children, gardens and parks may be important; when in hospital the environment there is significant; if working in the city opportunities for lunchtime breaks in plazas, squares or green spaces may help relieve the daily boredom. Transport corridors become increasingly important to those who spend too many hours a day travelling and cemeteries are not only a resting ground at the end of our physical life but may be a place where we can come to terms with our grief for the loss of others*" (Woolley, 2003:p.5).

The urban environment is extremely important in the daily lives of increasing numbers of people in the cities across the world. Urban open spaces are one aspect of the environment that is crucial to urban living. In the debate about architecture and the built form, the importance of urban open spaces is often forgotten. They might be even considered as non-essential. However, the availability of open spaces, their distribution and accessibility towards them are a major concern for cities.

2.5.1. The Benefits and Opportunities of Open Spaces

The importance of urban open spaces lies in the many different benefits and opportunities that they can provide. The existence of open spaces (natural or man-made) in urban areas contributes to the quality of life in many ways. Open spaces are strong and aesthetic element in the architecture of a city which also play vital role on education, ecology, economy, social interaction and in fostering community development (Council of Europe, 1986). These areas provide important environmental benefits, social psychological services, which are critical for the livability of the city and well-being of urbanites (Chiesura, 2004). Thompson (2002) sees open spaces in cities as places to celebrate cultural diversity, to engage with natural processes and to conserve memories. Although the terminologies of different authors vary, there is agreement that open spaces are of benefit in the urban situation.

I try to gather all the Benefits and opportunities of open space and describe them under four categories in following order: Social, health, environmental and ecological, and economic benefits.

Social benefits and opportunities

The social benefits of urban open spaces are many, including opportunities for recreation, community and culture focus and education. Urban open spaces are often appreciated for the recreational opportunities it provides. This include children's play, active recreation (such as organized sports and individual exercise) or passive recreation, which may simply entail being in the open space. Research shows that when open spaces are attractive and accessible, people are more likely to engage in physical activity (Hartig, 2007).

Open spaces also focus for the community or a cultural group. Earlier research in two city parks of Boston and Hartford identified that different groups of people within society exhibited different patterns of use at different times of the day and week. This research not only studied activities undertaken but also revealed that people with different ethnic and socioeconomic status were using the parks tolerating each other. The parks are a neutral ground where people tolerate a wide range of activities and people. It is a place of freedom within the city (Woolley, 2003:p.15-16). Tundikhel, an open field in the heart of Kathmandu in Nepal is also an example for religious tolerance.

The use of open spaces as an opportunity for education can be seen from many examples. Research on 216 students of twelve primary schools identified that the children wanted to have trees, grass and opportunities to develop imaginative play, which address open spaces (Titman, 1994 as cited in Woolley, 2003:p.23). Another research shows that outdoor spaces are the valuable resource for the education of children with special needs such as learning difficulties, autism, visual impairment and blindness, deafness, language impairments and emotional and behavioral disorders (Woolley, 2003:p.24).

Health benefits and opportunities

Everyday urban life with elements such as noise, crowd and pollution can be very stressful. Open spaces in urban areas have been considered to have health benefits, primarily identified as physical and psychological health, with the latter including the restorative effects that nature can have in daily life. Open spaces offer opportunities for jogging, running, exercise or just to observe nature. Research on urban open spaces has recently found a positive link associating a mental health and well-being with increased access to green spaces. Evidence shows that green spaces in urban areas facilitate social interaction, fosters well-being, increases opportunities for exercise,

and contributes to improvement in common mental health problems such as anxiety, depression, and stress (Barton & Rogerson, 2017).

Environmental and Ecological benefits

Environmental benefits are there for everyone, whether they realize it or not. The benefits relate to climate and environmental enhancement and the opportunities for wildlife habitats. All the environmental benefits are related to quality and quantity of urban green spaces and their proximity to each other. Vegetation and green spaces helps in the absorption of pollutants which reduces air and noise pollution. In general, built-up areas are frequently warmer than the surrounding, particularly at night. The urban and rural night-time temperature difference has been measured as 5°C but may reach 11°C. Open spaces can provide a successful building solution in terms of airflow around buildings, ventilation and air movement inside buildings. This is an approach that is suggested not only for individual buildings but also for groupings of buildings and evolving built forms within the urban context (Woolley, 2003:p.36-44). Urban open spaces can play an important role in urban regeneration and addressing the issue of climate change.

Urban open spaces also promote biodiversity and serve as islands of nature by providing home for natural species in environments that are otherwise uninhabitable due to city development. For example, The Central Park of New York city has a high degree of biodiversity. The park currently serves as a popular resting place for many of the bird species that migrate along the East Coast. Many of the park's urban forest ecosystems include trees which are in forested areas such as the Ramble and the North Woods. The presence of trees and other vegetation reduce damage to the park and the city brought up by factors like increases in precipitation and extreme weather events because of climate change (Kennedy, 2014).

Economic Benefits and opportunities

The economic benefits of urban open spaces include the impact on property values, employment opportunities, opportunities for crop production and tourism.

There appears to be significant researches that, the existence of open spaces has an impact on the economy of a city. The proximity to a park or open space increases the value of property. The price of the property having trees over those without trees was identified to increase by 3.5 to 4.5 per cent (Woolley, 2003:p.45, 46). For example, "*Central Park is an important contributor to New York City's economy – as a significant cluster of enterprises in its own right; as a magnet*

for visitors and a venue for major events; through the resources, services and opportunities it provides to New York City residents; through the assistance it provides to parks elsewhere in New York City; by attracting private investment; through its impact on the value of property near the Park; and through its impact on New York City tax revenues” (Appleseed, 2015:p9).

All open spaces in urban areas, whether green or grey, provide opportunities for a variety of employment types; gardeners and park rangers immediately come into mind when considering open spaces such as parks. The open spaces provide opportunity for growing crops for consumption in the urban situation. For example, the concept of allotment gardens was to allow the needy to be able to meet their own demand for garden fruits themselves, instead of receiving financial support. However, the functions of the allotment gardens changed over the course of time. Their economic utility was supplemented by their leisure-time and recreational function.

Some urban open spaces not only provide opportunities for the daily life of local people but can also be used as regional or national attractions for tourists. For example, Kew Gardens in London is one of the famous; and interestingly Highgate Cemetery also plays a role in tourism (Woolley, 2003:p.53).

2.5.2. Open space in Disaster Management

Open spaces in an urban area provide lot of benefits to the inhabitants of the community. The urban design has always valued the open spaces for the benefits it brings to the aesthetics, environment and health for the community. The underlying interest is the well-being of the people. On the other hand, it cannot be neglected that open spaces offer the possibilities for handling disaster and mitigation of all prospective losses due to natural calamities. There are plenty of cases around the world that throws light on how open spaces became portal for humanitarian response. For example: the use and the development of the open spaces into homes for the survivors during 1906 San Francisco earthquake and subsequent fire (Allan & Bryant, 2010); the identification of open areas for humanitarian response in Kathmandu during 2015 earthquake. Tundikhel (an open space in the heart of Kathmandu) including many other open space in Kathmandu sheltered the inhabitants after this earthquake. The references of Wetlands restorations discuss how the restorations and rejuvenation of wet lands could mitigate the chances of floods in the region.

2.6. Open spaces and Democracy

Equitable access to open spaces is also related to democracy and freedom. Over the decades, public open spaces powered democracy in many countries around world. Public open spaces have been at the heart of the civilized urban life since the ancient Greek agora and Roman Forum. Moving from classical Greece to the present, open spaces such as streets, parks and squares provides historical accounts and play a major role in the development of democracy. The democratic uprisings in the Middle East countries are noteworthy where people staged at public squares and avenues which were under the control of the dictators for a long time. In Nepal too, public places such as Khula Manch, Tundikhel and Maitighar Mandala played crucial role in ushering democracy in 1990 and during the 2006 revolution. Open spaces such as chowks, squares and streets have been used to demonstrate and protest.

Public open space serve as the gathering places where citizens, regardless of income or position, could meet, discuss, demonstrate, publicize their causes, and express their solidarity and also dissent. While in non-democratic states public spaces tend to be insignificance of citizens and intimidating to express the power of the ruling regime (for example: Beijing Red Square, Tiananmen Square). *“They are the locations for demonstrations, pamphleteering and soapbox orations; so important for grassroots democracy”* (Shaftoe, 2008:p.15).

Urban spaces play a significant role in helping people to understand today’s globalized society and live positively with the variety of cultural and political positions, together with people who are strangers and different from oneself (Nielsen, 2013:p.178). In the 21st century the democratization of public open space is increasingly influenced by the feature of globalization; the internet is revolutionary in the exchange of ideas, cultural and political activities taking place are quickly spreading across countries.

3. Possibilities for Public open spaces: Study of successful parks and plaza

3.1. Klyde Warren Park - Dallas, Texas

Klyde Warren Park is a public park in Downtown Dallas, Texas. The 5.5-acre park is Dallas's central urban green space, constructed over one of the busiest freeways in Texas, Woodall Rodgers Freeway, between Pearl and St. Paul streets. The design was led by two design firms, landscape architecture by The Office of James Burnett, and structural engineering by the Jacobs Engineering Group, Inc. and opened in 2012 (Wikipedia, 2019c). Since opening the park has seen one million visitors a year, the surrounding blocks have experienced significant real estate investment, and in 2014 it won the Urban Land Institute's award for urban open space (Bonjukian, 2015).



Figure 3.1(Left): Klyde Warren Park in downtown Dallas, Texas.

Photo credit: Marion Brenner Photography

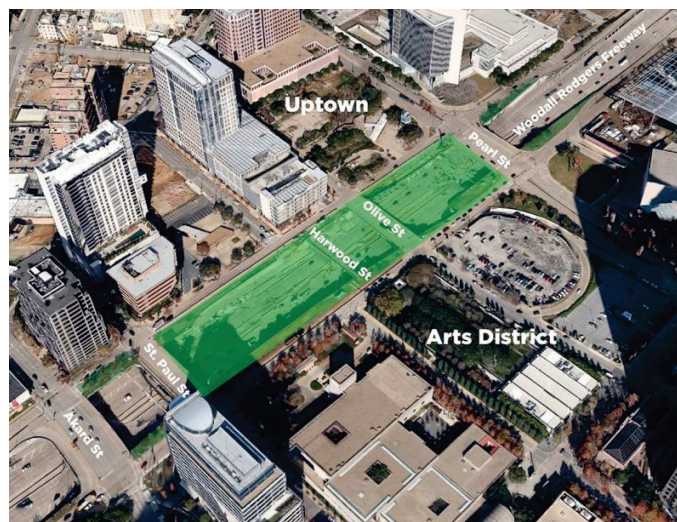
Source: American Society of Landscape Architects (ASLA, 2017)

Figure 3.2(Below): Klyde Warren Park bridges over the sunken eight-lane Woodall Rodgers Freeway.

Photo credit: Office of James Burnett (OJB) Landscape Architecture

Source: ASLA, 2017

The park has bridged the eight-lane Woodall Rodgers Freeway, which had been a barrier between Downtown and Uptown (Figure 3.2). The park reconnects the city's downtown cultural district with the neighborhoods to the north. Restoring the connection has transformed the city by bridging the gap and creating a new heart of downtown that



brings together cultural events and experiences. The park operations, maintenance, and programming, are solely the responsibility of the private non-profit Foundation, made up of Dallas community leaders (American Society of Landscape Architects, 2017).

3.1.1. Analysis: Design Features

The park is designed to reflect the district through its modern design and offer a variety of activity areas that provide interest for all ages. Daily free activities include family activities, fitness classes, educational programs, and musical performances. The park features a flexible, pedestrian-oriented design that arranges 13 programmed spaces designed with ample shade, seating and other amenities, including a carefully planned children's park, a reading room and games area, a restaurant, a great lawn, a performance pavilion, water feature plazas, a dog park and a half-mile of walk able streetscape to encourage year-round use. The linear form of the park has one street, which bisects the park into nearly two halves.

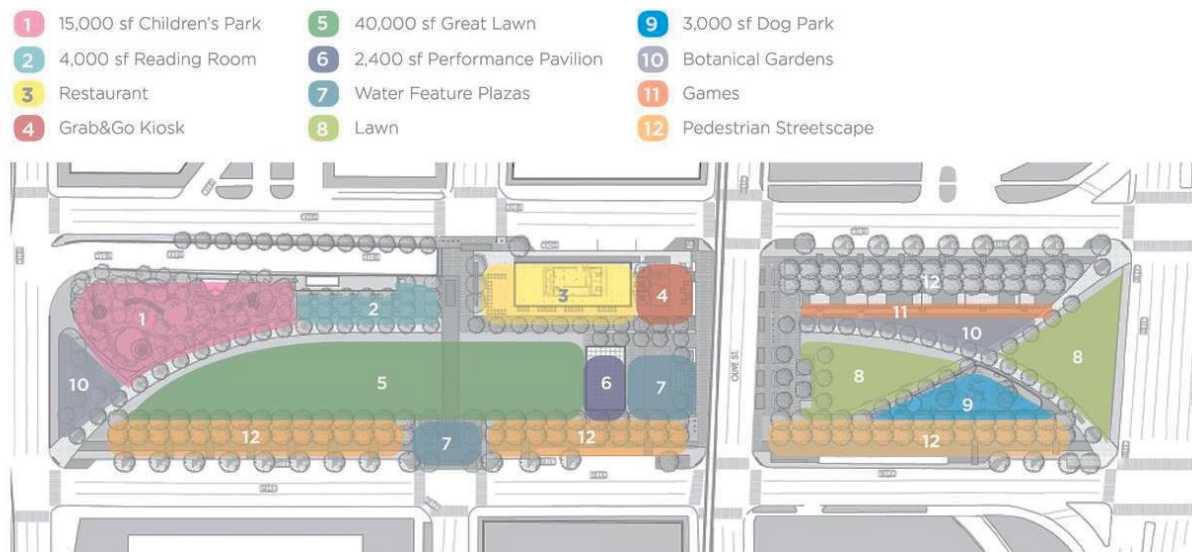


Figure 3.3 Klyde Warren Park Plan (Photo credit: OJB Landscape Architecture, Source: ASLA, 2017)

Reading and games room

Reading room and games room provides a host of amenities such as board games and newspapers for public (Figure 3.4). The room is setup for informal speaking engagements and readings by local authors. It is monitored by docents.



Figure 3.5 Butterfly fountain in Children's Park (Photo credit: Liane Rochelle Photography, Source: ASLA, 2017)



Figure 3.4 People playing chess in the park's reading and games room (Photo credit: Woodall Rodges Park Foundation and Dillon Diers Photography, Source: ASLA, 2017)

Children's park

The Children's Park has areas for all age children. Rolling berms create a fun and safe environment for children to play. The structures were designed to be appropriately scaled and create an environment for discovery and play. The burst of water and mist adds the sense of nature to the park (*Figure 3.5*).

Restaurant and Food trucks

6,000 sq. foot (American Society of Landscape Architects, 2017) restaurant serves the public in the park with food options. Food trucks which were planned as temporary food options while the restaurant was under construction are so popular that they are now a permanent feature, resulting in a slight redesign of the perimeter paving to accommodate their crowds. The food trucks activate the street edge of the park and clear the site lines (*Figure 3.6*).

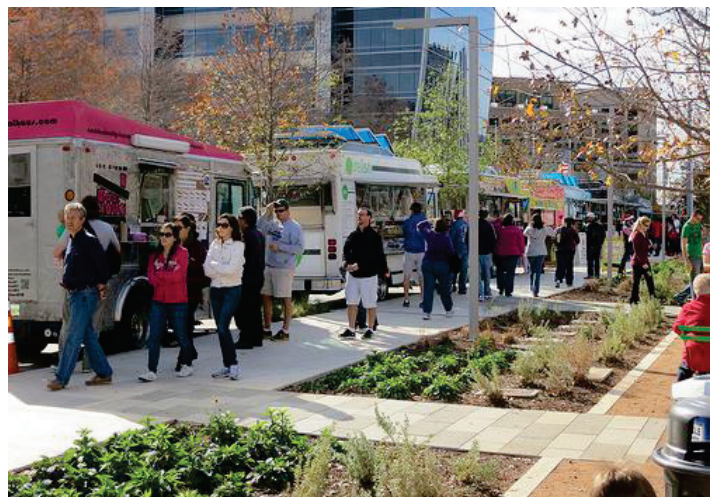


Figure 3.6 Food trucks lined up at Klyde Warren Park (Photo credit: gtceigator on Flickr)

Great Lawn

The Great Lawn is the largest open space in the park, offering a place for 5,000 people to stretch out and relax (*Figure 3.7 & 3.8*) while taking in the beautiful views of the Dallas skyline or watching a performance on the stage. The lawn is host to multiple programmed events that run from dawn until dusk (American Society of Landscape Architects, 2017).



Figure 3.8 The Great Lawn offering a place to relax
(Photo credit: CBRE, Source: ASLA, 2017)



Figure 3.7 (Right) The Great Lawn offering a place to stretch out
(Photo credit: Woodall Rodges Park Foundation and Dillon Diers Photography, Source: ASLA, 2017)

Performance Pavilion

The park's performance pavilion (*Figure 3.9*) serves as a destination for outdoor concerts and events. The pavilion regularly features shows from a plethora of entertainers, including concerts from local musicians, student groups, the symphony, magicians and many others. When the performance pavilion is not in use, it becomes a supersized



Figure 3.9 People enjoying event in the performance pavilion
(Photo credit: Liane Rochelle Photography, Source: ASLA, 2017)

platform for people.

Water feature plazas

The membrane fountain adjacent to the pavilion offers flexibility and spectacle for visitors. Water fountains acts as an interactive design features (*Figure 3.10*). When the fountain is off, this area becomes a place for special events or a tented pre-function space for the pavilion.

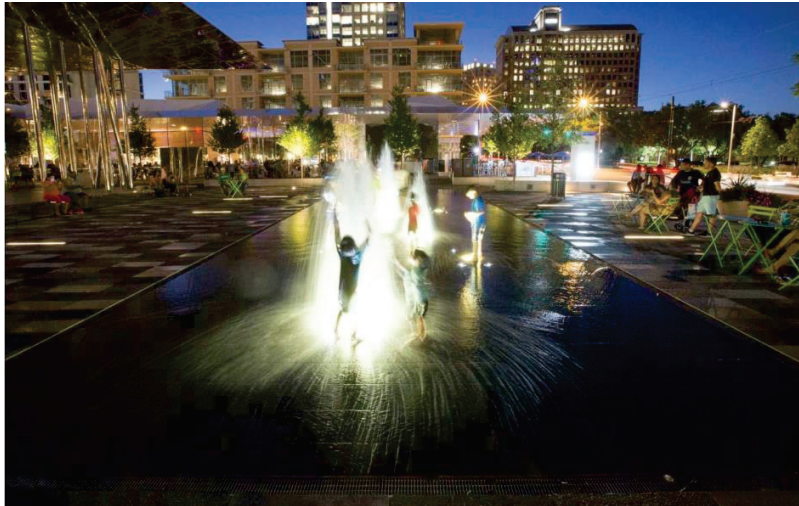


Figure 3.10 Children enjoying the fountain

(Photo credit: Fluidity Design Consultants, Source: ASLA, 2017)

Dog Park

Klyde Warren Park also offers a space for dog lovers.

Green Features

The park features a palette of regionally- appropriate trees, shrubs, and ornamental plantings which are native or adaptive to the North Texas area (*Figure 3.11*). This gives Klyde Warren Park a distinct sense of place in Dallas. The planting connects with the ecological needs of the environment, stimulating species habitation and bridging a divide caused by a highway cor-



Figure 3.11 Plantings along the path

(Photo credit: Marion Brenner Photography, Source: ASLA, 2017)

ridor.

Along both long sides of the park are double rows of trees, or alleys. These alleys have a series of arches spaced along them. The arches support lighting globes. The oak grove and the lights establish a strong architectural rhythm and buffer the interior of the park from the adjacent streets (*Figure 3.12*). The shady grove offers flexibility, allowing people to promenade through the park, socialize, watch around, or have a snack. Moreover, grooves of trees enclose the lawn.



*Figure 3.12 Rows of trees hiding an active freeway with a beautiful urban oasis
(Photo credit: Gary Zonkovic Photography, Source: ASLA, 2017)*

3.1.2. Benefits

Social

The park serves as a central public gathering space and results in many social benefits for Dallas residents and other park users including increased physical activity and reduced stress. The park has also dramatically increased attendance to the adjacent cultural institutions, including: The Dallas Museum of Art, Perot Museum of Nature and Science and Nasher Sculpture Center. It has also boosted ridership on the trolley line adjacent to the park.

Economic

The park has been a catalyst for economic development. Before the freeway deck park, there was little interest in living near the freeway. The park has contributed significantly for rental rate increases in surrounding urban core. In addition to impacting real estate and property values (*Figure 3.13*), the park has provided several other economic benefits, including park operations and

maintenance savings. By using a high-efficiency LED lighting system and fixtures with solar panels, the park saves approximately 94,000 kilowatts of electricity each year as compared to traditional lighting (American Society of Landscape Architects, 2017).

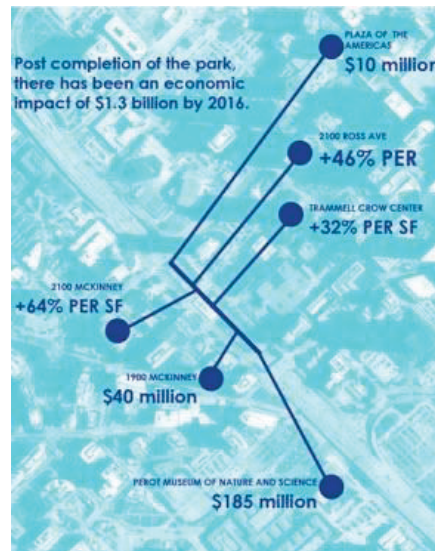


Figure 3.13 Economic impact of the park in surrounding urban core
(Photo credit: OJB Landscape Architecture, Source: ASLA, 2017)

Environmental sustainability

Klyde Warren Park incorporates numerous features intended to improve the environment of the area and increase sustainable practice. According to American Society of Landscape Architects, construction of the park over an existing freeway has numerous environmental benefits, including the sequestration of CO₂ through native planted trees (Figure 3.14), temperature reductions from shade producing trees and canopies (20-45 degrees in shaded areas), controlled air and noise pollution and water conservation through the subgrade reservoir's collection of storm water.

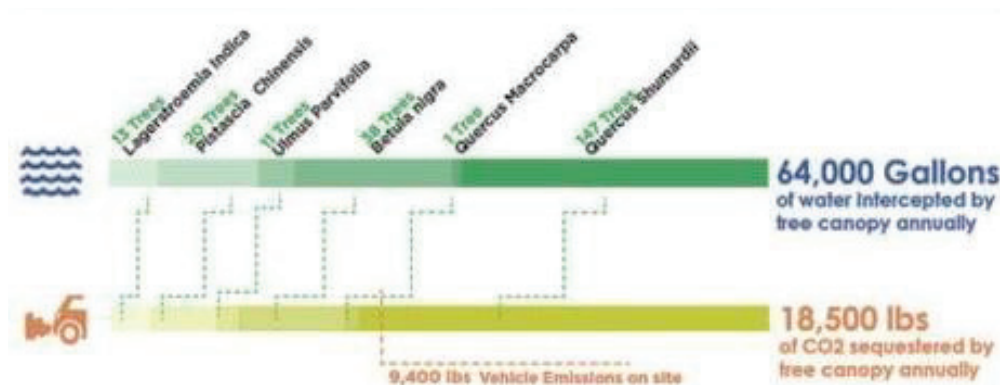


Figure 3.14 New tree canopy effects on water & CO₂
(Photo credit: OJB Landscape Architecture, Source: ASLA, 2017)

The planting beds are irrigated with a subgrade drip line system that reduces surface runoff and the live load of the water on the deck. Altogether, Klyde Warren Park including its lawns, plantings and gravel surfaces is more than 50% permeable, compared to the 100% impermeable free-way it covers. As for water conservation, strategies and activities were put in the place that manages fresh water as a sustainable resource. A subgrade reservoir can collect and store up to 12,000 gallons of grey water from the park's water features for treatment and reuse in irrigation. A drainage mat between the soil and deck infrastructure also stores excess water, helping to maintain soil moisture (American Society of Landscape Architects, 2017). These initiatives have created a new green district with the park at its core.

3.1.3. Findings

The park's design and operations offers many lessons for further public parks design.

- The park is flat and open and visitors can enter it from almost any point along its perimeter. These characteristics play a huge role in enhancing accessibility to the park and encourage casual use at all times of day.
- Open sight lines, widely spaced trees, and well maintained landscaping allow people to see into and across the park, thereby promoting safety and security.
- The park has ongoing family-friendly programming and features. The events are scheduled throughout the year to make good use of the park. Additionally, the park has many features that attract users of all age group ranging from children- youths- elderly.
- Creation of different pockets of activities throughout the park which offers the user the choice to stay in the park.
- The outdoor seating is plentiful and mobile rather than fixed.
- The entire park is wheelchair accessible.
- Environmental sustainability factored into the design with measures taken to decrease air and noise pollution.
- Klyden Warren Park also displays how commercialization of public space works for the benefit of the public. A restaurant and kiosk built onto the park draw visitors all day and generate funding for maintenance and operations.

The success of Klyde Warren Park is not just a clear design strategy; perhaps the most important finding is that a non-profit or a dedicated City office needs to manage public open parks/spaces on a daily basis. The park's visible staffing helps discourage nuisance activities and ensures litter never piles up.

3.2. Renovation of Skanderbeg Square - Tirana, Albania

Skanderbeg Square is the main plaza in the center of Tirana, Albania. The square is named after the Albanian national hero- Gjergj Kastrioti Skënderbeu. The square is the result of a neo-renaissance-style urban regeneration plan carried out in 1939 after the Italian invasion of Albania. The square structures a large urban axis linking together the presidential palace and several embassies. The square is the symbolic site for the whole country which reflects Albania's complex, convulsive history. The feature that makes the square exceptional is the large number of buildings with great diversity of regimes which have ruled the country, including the Tirana International Hotel, the Palace of Culture, the National Opera, the National Library, the National Bank, the Ethem Bey Mosque, the Clock Tower, the City Hall, the Ministry of Infrastructure, the Ministry of Agriculture, the Ministry of Economy, the Ministry of Energy, and the National Historical Museum (Wikipedia, 2019d).

3.2.1. Reforms of Skanderbeg Square

Despite its original civic intent, the former square had been used simply for traffic as a city-scale round about. The square gradually became an exceptional empty area in the densely populated and ill-planned city which has been growing around it for decades. Between 2008 and 2011, Edi Rama, the mayor, planned an ambitious restoration of Skanderbeg Square - to take space from vehicles and create a huge square to attract citizens. The aim was to make it more welcoming, tidy it up and give it a more "European" character without renouncing its symbolic values. Indeed, it was so controversial that, after 2011, the mayor, Lulzim Basha, reversed the project- vehicles once again took over the square, even destroying the green zone surrounding the equestrian statue of Skanderbeg (51N4E, 2018).



Figure 3.16 Skanderbeg Square during communist Albania in 1988.

Photo credit: Flickr/Peter,

Source: Mejdini & Mejdini, 2017



Figure 3.15 The Square during Basha's tenure of Tirana municipality.

Photo credit: Wikipedia/Alban1989

Source: Mejdini & Mejdini, 2017

However, in 2016, the new mayor Erion Veliaj, revived Edi Rama's proposal with a new project and following objectives (51N4E, 2018):

- To create a large area exclusively for pedestrian use, eliminating the traffic and concealing parked vehicles in an underground car park.
- To highlight the value of all the heritage buildings surrounding the square, and to endow them with some kind of unitary order.
- The presence of vegetation in the square was to be substantially increased in the hope of even setting off a new process of bringing nature back to the city center

Finalized in 2017, Skanderbeg Square is reformed into a public space of where more than ten hectares of space is exclusively for the pedestrian use (Figure 3.18). It is the open air living room for Tirana. The intervention has understood the country's diversity and highlighted it. Now the space has a wide range of different uses, from morning prayers to evening concerts. It is even used as an occasional market for local farmers. In addition, work on the square, on a very considerable scale compared to what the country is accustomed to, has turned out to be a driver for economic recovery. For example, to supply the trees and all the paving stones from different regions around the country three tree nurseries were opened and abandoned quarries were reactivated.



*Figure 3.17 The former Skanderbeg Square
(Photo credit: 51N4E/ Filip Dujardin)*



*Figure 3.18 The view of Skanderbeg Square- Present
(Photo credit: Filip Dujardin)*

3.2.2. Analysis

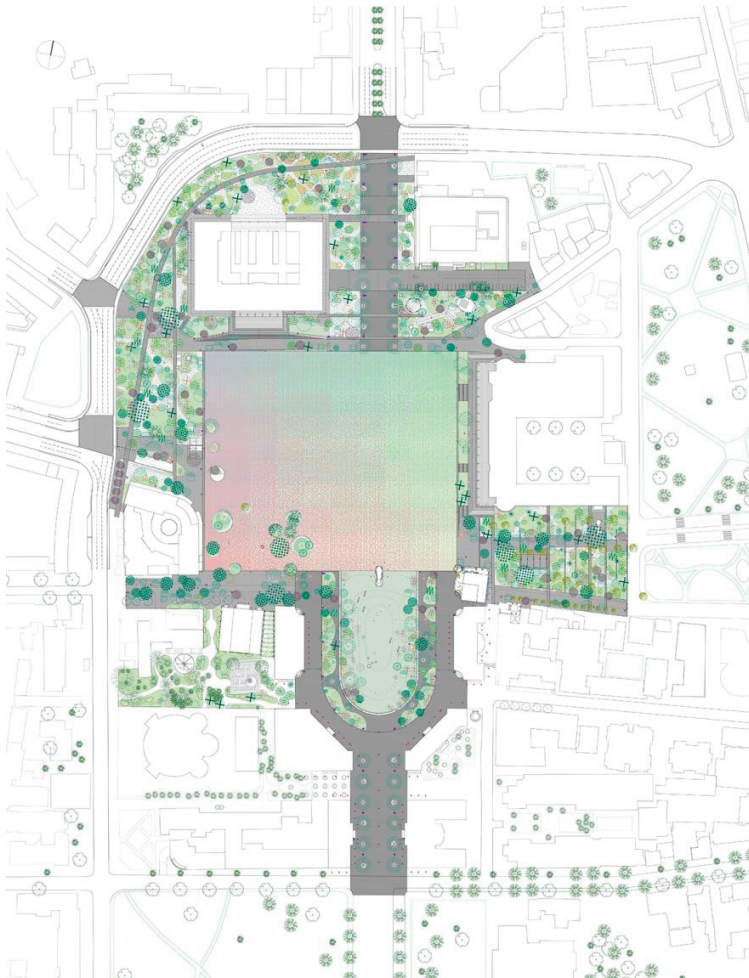
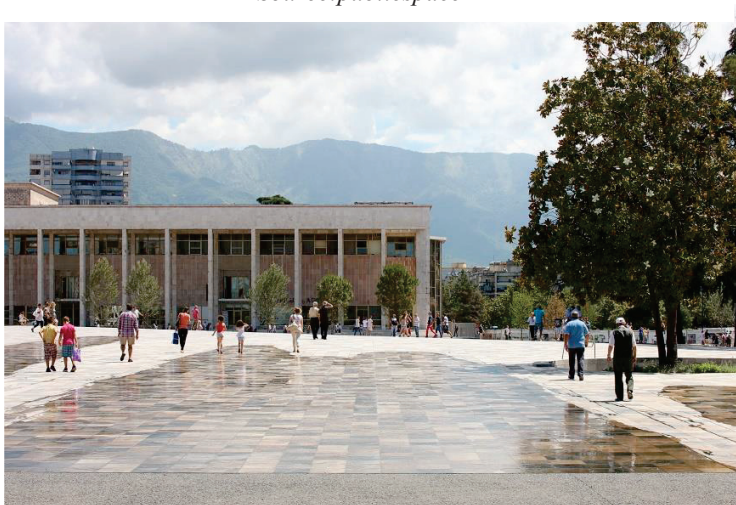


Figure 3.19 Plan of Skanderbeg Square. Credit: 51N4E, Source:publicspace



The large square has a clear esplanade of almost 40,000 square meters in an interesting shape of Roman pyramid that culminates in its very center. The pyramid has a slope of 2.5% and a height of two meters at its tip. A fountain at the top lets water trickle down the sides, thus bringing out the colors



of the mosaic paving which is made from stones from all over Albania. Also a thin flow of water welling up at various spots cools the paving during hot temperature (Figure 3.20). (51N4E, 2018)

Figure 3.20 A tilted plane unsettles the monumentality of the buildings lining the square in a subtle yet powerful way. (Photo credit: Filip Dujardin, Source: publicspace)



Figure 3.21 Fountains, shade and evapotranspiration offer a naturally cool environment.

(Photo credit: Blerta Kambo, Source: Pintos, 2019)

The green belt around the square is made up of 12 gardens, each of them linked to one or more of public or private institutions lining the square. The nature and uses of these gardens were determined in a series of workshops held with users and people responsible for the adjacent buildings. The result is a set of contextualized interventions, inviting public and semi-public neighboring functions to spread into the exterior space.

The twelve gardens unify the heterogeneous buildings around the square, at the same time they soften the oppressive monumentality of some of the architecture and make the central esplanade look more hospitable. The green belt around the park (*Figure 3.22*) also functions as a threshold since it presents a sort of shady antechamber separating the hubbub of the city from the esplanade. (Pintos, 2019)

Local species (*Figure 3.23*) were chosen to increase the system's natural resistance by reacting to ongoing climate change and reduce maintenance needs. Trees, shrubs and perennials were combined to foster urban biodiversity and control the city center's microclimate, allowing public space to assume both recreational and educative functions.



Figure 3.22 The green belt around the park
(Photo credit: Filip Dujardin)



Figure 3.23 Local plants
(Photo credit: Blerta Kambo)

Small additions like shade houses, latticework structures (Figure 3.24), and pieces of moveable street furniture (Figure 3.25) add distinctive touches to the different gardens, conferring intimacy and their own identity. The stairs around the square were redesigned to offer a new amenity (Figure 3.26).



Figure 3.24 A series of latticework structures activates the green belt.

(Phot credit: Filip Dujardin)



Figure 3.25 Movable urban furniture allows people to sit in the desired directions. The size of the seating is such that it is enough for two people who know each other but could be undesired situation for the strangers.

(Photo credit: Blerta Kambo)



Figure 3.26 Redesigned stairs around the square

(Photo credit: Blerta Kambo)

Source: Pintos, 2019

Specific attention is also given to mobility and investments in the immediate and broader context of the square. An underground parking garage (*Figure 3.27*), able to host multiple functions, was developed in collaboration with the city's mobility services. Similarly, pedestrian and bicycle connections and links to the public transportation network were established. (Pintos, 2019)

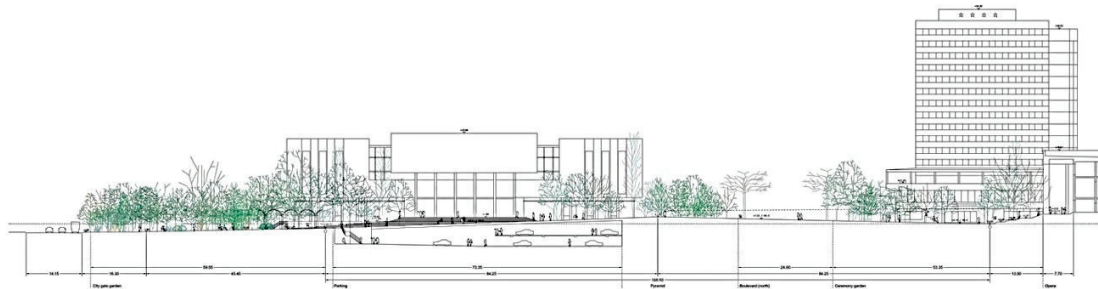


Figure 3.27 Section of the Square showing the underground parking, Source: 51N4E

3.2.3. Findings

Tirana's public space tends to be intensively, spontaneously, and informally used. True to their Mediterranean character, the people tend to spend time in the street and interacting with others. The restoration of Skanderbeg Square has made the most of this quality when taking space away from cars and inviting people to appropriate it as theirs.

Skanderbeg Square is an imposing central civic space using ingenious hard and soft landscaping to create communal respite at the heart of the city, renovated in a simple yet radical way. The square presents itself as a void in the chaos of the city.

Finally, local materials were preferred, both for logistic and symbolic reasons, which led to the reactivation of local stone quarries and turned the project also on this level into a revelator of the richness of the Albanian context and stimulation of its production capacity.

3.3.Parks on Potsdamer Platz

The empty spaces that had surrounded Potsdamer Platz since the end of the war were left clearly marked out between two rows of residential and tertiary buildings, like an isolated, undeveloped yawning gap. With the fall of the Berlin wall, many of the empty spaces that had emerged from oblivion and deterioration recovered a strategic prominence in the city center.

Since German reunification in 1990, Berlin has been the subject of a huge amount of reconstruction, particularly in the former east zone. The Henriette-Herz-Park and the Tilla-Durieux-Park are the examples for a strong attempt made by the concerned authority to bring vitality to the dreary periphery, creating lively and intriguing public spaces. These two parks together form a green spaces admits the urban density and at the same time functions as an urban link.

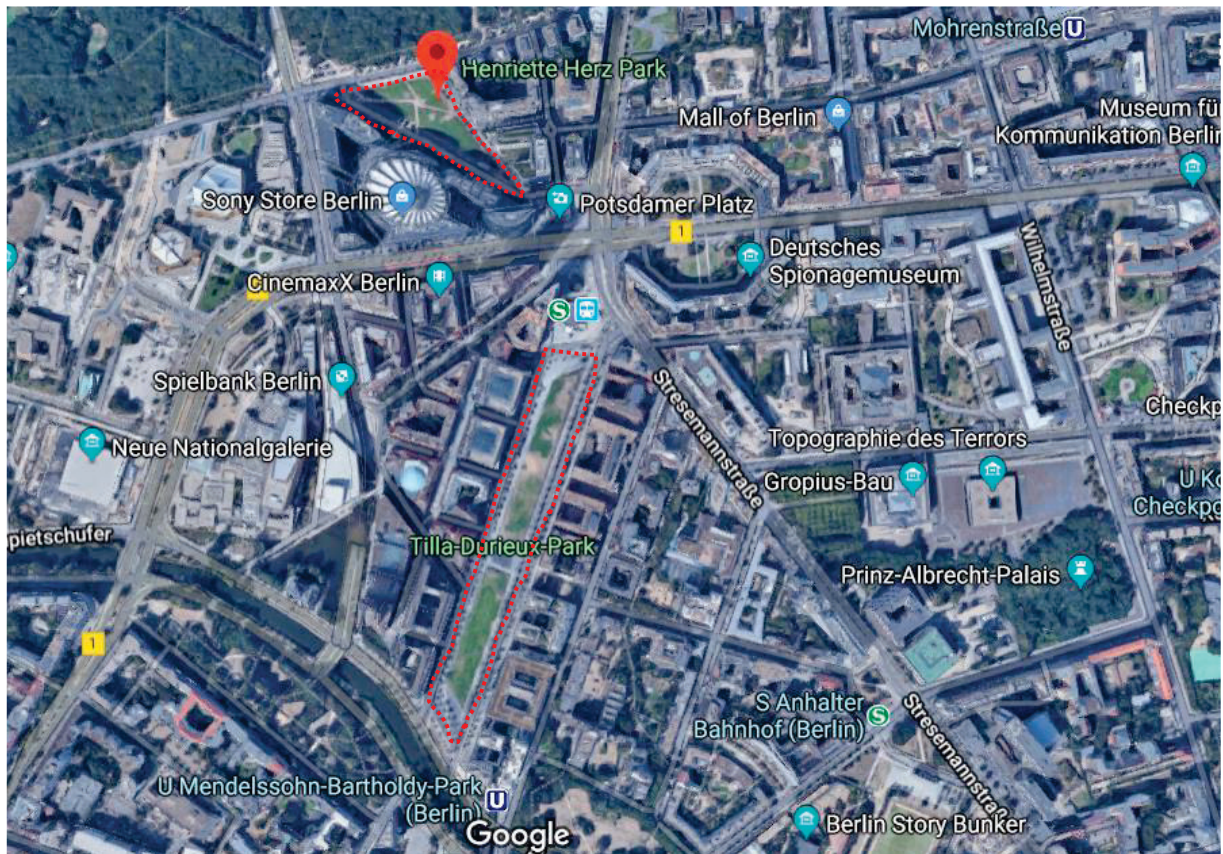


Figure 3.28 Henriette-Herz-Park & Tilla-Durieux-Park, Berlin, Aerial photograph by Google Map

3.3.1. Henriette-Herz-Park

Description

The Henritte-Herz-Park is a park near Potsdamer Platz in Berlin, Germany. The park was created in 2002 as an inner-city recreational park and follows the plans of DS landschapsarchitekten, Amsterdam together with the artist Shlomo Koren.

The park is a triangular land sub-divided into four floes that rise from the edges to the middle (*Figure 3.29*). The concept is based on the association of a broken plate. "Shards as a metaphor for the break between East and West, clods thrown up by subterranean forces, pebbles plowed to the surface" (translated after Senate Department for Urban Development and Housing, Berlin). The sloping lawns are bordered in red Finnish granite. This color is repeated in the paths between the floes. In summer, delicate Scilla³ bloom across the lawn. The surrounding streets are equipped with trees and benches.



Figure 3.29Henriette-Herz-Park near Potsdamer Platz Photo credit: Marcus brandt / ddp; source: der tagesspiegel (left); Philipp eder source:google (right)

Analysis

The green area is surrounded by the modern buildings on Potsdamer Platz and offers peace despite its proximity to the shopping centers and the busy traffic. Many of the people working in the offices spend their lunch break here. The park offers interesting views from Potsdamer Platz to Tiergarten.

The space is functional and an artwork at the same time that slows down the pace and creates a rest area. The sloping lawns make an interesting spatial experience possible, since the height of

³ Scilla is a plant of the lily family, which typically bears small blue star- or bell-shaped flowers and glossy strap like leaves, native to Eurasia and temperate Africa.

the border changes as it passes through. The paths between the floes allow a variety of crossing possibilities for the people to get to the desired direction.

The simple abstract design of the park offers the urban dweller the everyday luxury, to be comfortable on the lawn for a while and let the mind wander.

3.3.2. Tilla-Durieux-Park

Description

The Tilla-Durieux-Park, another park near Potsdamer Platz also designed by DS landschapsarchitekten, Amsterdam, was inaugurated in 2003. It is difficult to speak about this project without situating it in the impressive building euphoria of the early 1990s around the new Potsdamer Platz. A large green space amidst the urban density of the Potsdamer Platz sector, created with the prerequisite of maintaining the streets around it provide the centre of Berlin with a popular green beach, it has recognised the virtues of the empty space which had characterised the zone for so many years.



Figure 3.30 Image before the intervention, Source: Publicspace



Figure 3.31 Image after the intervention.

Source: Publicspace

The major constituent of the park is two large parterres⁴; 30 meters wide and 200 metres long (David Bravo Bordas, 2018) planted with turf and laid out longitudinally on the axis that joins Potsdamer Platz and Landwehrkanal (*Figure 3.31*). Both parterres have a gentle transversal slope that raises them to a height of more than four meters above the ground and then lets them fall down a steep 35 degrees slope on the other side (Ibid.). The slopes are quite steep but the entire project still feels rather flat in the overall context. The highest points at the two ends move from the east side to the west side. Since they fall in opposite directions, they are like two huge green benches with different orientations. The two side alleys planted with tree alignments separate the parterres from the two streets with traffic that run longitudinally through the great gap.

A paved area creates an incision in between the two parterres. This place is equipped with five seesaws made of 20metres long (Ibid.) metal bars resting on a central joint.

Analysis

The Tilla-Durieux-Park is an old void in an enormous newly built mass. Although it seems somewhat crushed by all the built mass that surrounds it, the clear form of the park has the merit of offering a discreet yet soothing pause in the midst of all this upheaval. The Park has become a relaxed place in the midst of this high stress business district. The lineal void of the park offers the necessary calm and orientation to a place that has become furiously urban.

The parterre works as an immense urban sofa made of lawn constantly shifting in gradient, which allow the public choosing their preferred inclination to determine where they will sit (*Figure 3.32*). The huge seesaws are inviting people of different age groups ranging from children to adults (*Figure 3.33*). It stands out as an example for how installations could be playful. When

walking around, these spaces provide a welcome break and arises diversified spatial experiences.



Figure 3.32 People siting or laying on the lawn, in their comfortable way

Source: Publicspace

⁴Parterre is a level space in a garden occupied by an ornamental arrangement of flowerbeds.



Figure 3.34 Huge seesaws in the park

Source: Publicspace



Figure 3.33 Children climbing on the edges of the lawn

Source: Publicspace

There will always be the issue of damages and maintenance in the public spaces. An article, “Two parks on Potsdamer Platz are constantly damaged”, put forward the issues of damages of the green areas in the parks and the complication in the repair of playground equipment (Kurpjuweit, 2015). It is mentioned that seesaws are broken several times. The writer also arise the question about the result if someone would get the ton-heavy device on his foot. Therefore, it is important to take into considerations the safety measures while designing.

This park confirms two facts; first- open spaces are convivial for interaction, culture and relaxation, second- the representation of nature can remain absolutely minimal as long as it is liberating.

4. Influences on the use of Open Spaces

4.1. Physical planning

The extent and character of the activities in the open spaces are greatly influenced by the physical planning. Planning decisions are directly related to user-friendliness of an area. Better or worst conditions of outdoor events are responsible for creating lively or lifeless cities (Gehl, 2011:p.31). For a successful decision making in planning, consideration has to be done on human psychology. We humans have own kind of spatial conditions of senses. It differs from person to person how we see an object, in what condition we feel comfortable and safe. At the same time, as a social being we share some common human behavior.

4.2. Human behavior and Psychology of Public Space

Urban open spaces, when generalized to public spaces, not only serve a number of practical functions, these spaces also have an additional dimension that can affect the behavior or feelings of the people (Shaftoe, 2008:p.51). Many researchers have shown that there is a relationship between environment and behavior. It is necessary to understand how people are likely to respond and relate to the space available and how they make spaces work for them.

Some basic human behavioral characteristics include territoriality, interpersonal distance, distribution and the need for different types of observation and communication (Canter, 1974). Sense of territoriality invites to interpersonal distance. It is the human behavior to sit or occupy a vacant space some distance away from others, rather than sitting right next to a stranger, always when there is a choice. People prefer locations from where they can observe others without being exposed from all sides (Shaftoe, 2008:p.52-53).

Shaftoe (2008) also mentions other responses of people such as interpretation, coherence, legibility, sense of safety, intrigue and curiosity to the psychology of public space (p.54-55). The identification of the space is done through the visual interpretation of indication the built forms and kind of activities offers. A good place should be legible; the parts of the place should be easily recognized and can be organized into a coherent pattern (Lynch, 1960:p.2).

4.3. Accessibility and Movement

The rights to use public space and have a sense of control within it are basic and overarching requirements. A great urban public space is easy to access and move through for the young and elderly, people with walking disabilities, for people with baby prams and cyclists. The accessibility refers to both visual and physical reach to the open space, from a distance and up close.

People look for excuses to be in public environment, and walking provides possibility for being present (Gehl, 2011:p.133). It is well known that whenever people walk, they prefer direct routes and short-cuts (Cooper Marcus, & Francis, 1998:p.37). Organizing pedestrian movement to follow the shortest distance to reach the destination is important for well well-functioning pedestrian system (Gehl, 2011:p.141).

As we move between places within an area, we experience the environment (Shaftoe, 2008:p.59). Here Shaftoe refers to non-aesthetic experiences which include the feeling of surfaces, underfoot, the air or wind against skin, and the effort of passing through a space while climbing or descending. Though the topography of the site is the determinant of levels and inclines, Shaftoe suggests optimizing gradients as people enjoy the three-dimensionality created by slopes and tiers as long as the changes are not too steep (p.60).

4.4. Urban microclimate and human thermal comfort

The microclimate scale is the scale of people's subjective perception and multisensory experiences. At any time of the day in any season, people experience and sense thermal conditions when they walk or spend time outdoors. People perceive thermal conditions differently depending on age or gender of people, and on the specific location within the urban environment. One may feel 'too hot' on a sunny site, whereas another person may feel 'comfortable' at the same place. Thus, both objective and subjective components of the physical environment determine people's thermal experience (*Figure 4.1*), which together have been conceptualized as 'thermal comfort'. (Klemm, 2018:p.20)

The thermal conditions encountered in outdoor urban spaces are a major determinant of the patterns of usage of the spaces. Maximize access to daylight and protection from wind and cold is main concern, generally in Northern Europe while spaces might be designed to encourage cooling breezes to pass through and to provide shade from the baking sun in hotter parts of the world (Shaftoe, 2008:p.60). Similarly, cities closer to the equator also need protection from the harshness of the climate, from the extreme heat rather than cold (Ibid, 70).

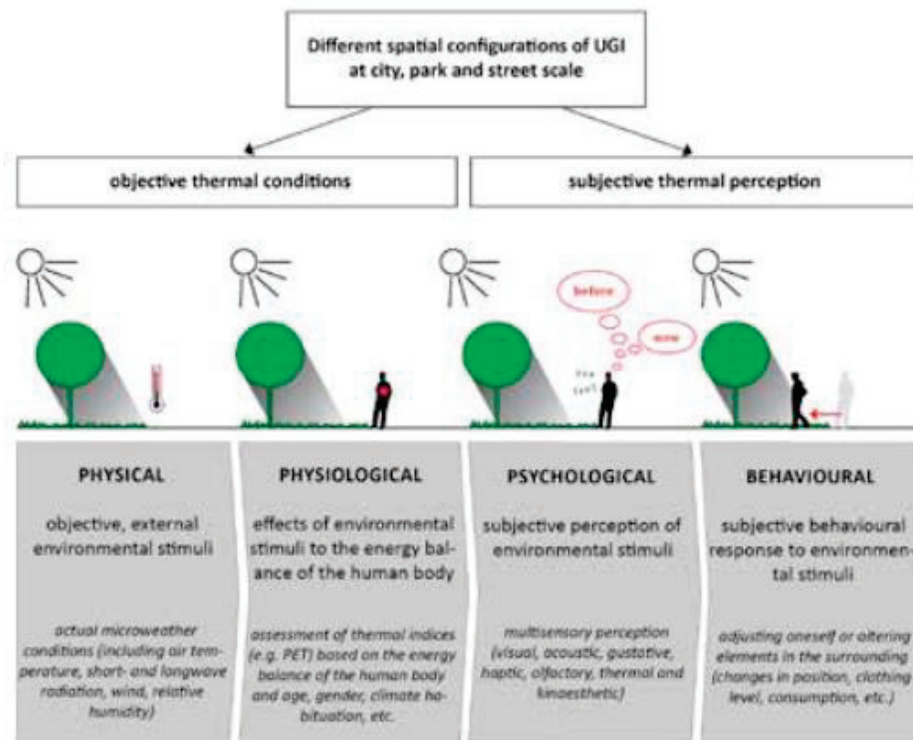


Figure 4.1 Components of thermal comfort in relation to UGI, adapted from Klemm (2018, p.21) after Chen and Ng (2012) and Lenzholzer et al. (2018)

Climate-sensitive open spaces within cities may have a positive effect on social, economic and environmental aspects of the urban environment. Improvement of microclimatic conditions in urban spaces can enable people to spend more time outdoors, with the potential to influence the social cohesion of a space and increase economic activity. In 1962, when the enlightened planners of Copenhagen converted traffic-clogged streets to a pedestrian street and encouraged bars and cafes to put tables and chairs out on the streets, there was a lot of skepticism. Newspapers made statements, “*We are Danes, not Italians*” and “*Using public space is contrary to Nordic mentality*”. However, the pedestrian-only use streets became popular among the people of Copenhagen and outdoor cafe seating and occupancy increased proportionately. (Gehl & Gemzoe, 1996:p.11)

Shaftoe (2008) suggests the use of enclosure rather than exposure, and planting as design considerations for microclimate. Shrubs and trees can be invaluable to create a protective microclimate. Deciduous trees have huge advantage of offering light penetration during the darkness of winter and canopies of shade during the intensity of summer (p.60).

5. Spatial Attributes/Elements of convivial public open spaces

5.1.Furniture

Furniture refers to objects intended to support various human activities such as sitting, sleeping, eating; and also a product of design which can be considered as a form of decorative art. It can be made from many materials, including concrete, stone, metal, plastic, and wood. People have been using natural objects, such as tree stumps and rocks as furniture since the beginning of human civilization. Furniture should enable the space to be used by as many people as possible throughout the year (Cooper Marcus et al., 1998:p.328)

5.1.1. Seating

Sufficient range of opportunities for sitting ensures a successful public space (Shaftoe, 2008:p.92). William Whyte's (1988) research on successful public spaces also concludes that people tend to stay most where there are places to sit (p.110). But, it is important to provide right type of seating opportunities in the right place in order to make effective use of them. Different people require different seating types according to circumstances and given enough choice. Thus, Cooper Marcus et al. (1998) suggest providing variety of seating in different locations with different forms of seating posture (p.41). In many cases, multiple functional horizontal surfaces such as broad steps serves better than custom-designed benches or chairs. Orientation of the seating is crucial factor, in terms of view and, sun and shade (Ibid, 43). People sitting down like to observe rather than to be observed. In northern climates the seating should be south-facing, while the converse in southern climates. Seating will need at least partially protection from cold winds or bright sunshine in some area. As to consider older people, conventional seating arrangements with protection behind may be suitable (Shaftoe, 2008:p.94, 99). Movable seating is one of the possibilities to cope with the circumstances of weather and also the will of people to sit in different ways according to who they are with (Ibid, 102). Figure 5.1, 5.2 and 5.3 are the graphical representations for the possibilities of seating in various conditions.

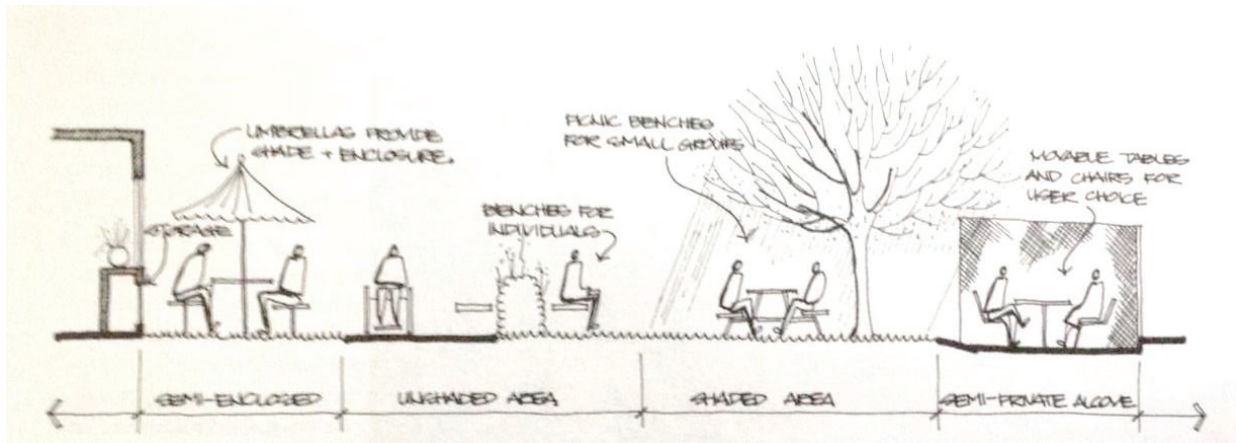


Figure 5.2 A variety of seating options and climatic conditions enables greater use of the outdoor space, adapted from Cooper Marcus et al. (1998)

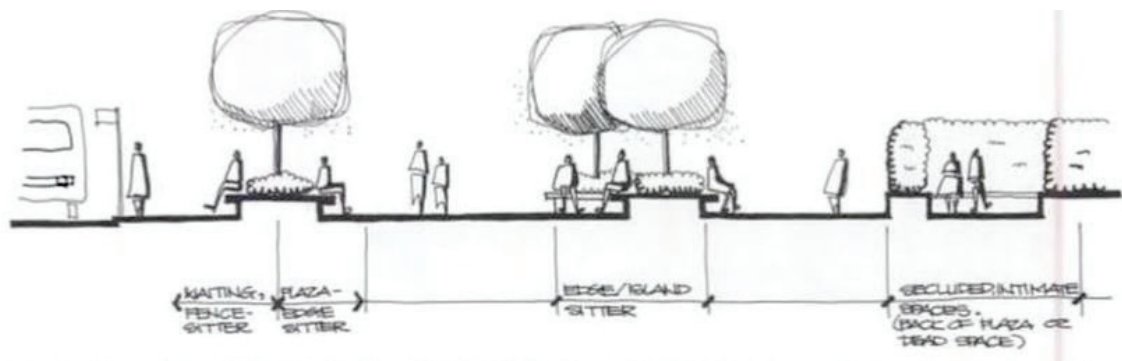


Figure 5.1 People vary in where they want to sit: on the edge looking out, on the edge looking in, around plaza edges, on islands, or in secluded alcoves, adapted from Cooper Marcus et al. (1998)



Figure 5.3 A three-by-six-feet wooden backless bench provides many seating opportunities, adapted from Cooper Marcus et al. (1998, p.42)

5.2. Art fixtures

The desire for spiritual fulfillment through art is inherently human, so is the drive to gather and share experiences. Art fixture is a well-established presence in public space since old time. Historically, this used to be monumental kind usually to mark some great event or famous person. In the last few decades, this has been replaced by a sturdy sculpture or mural. (Shaftoe, 2008:p.115) Art fixtures are not just an object for aesthetic or a mark of honor. They can sometimes be multi-functional and serve as furniture to sit on or lean on. Sometimes when people don't want to go far to sit down or just intend to pause briefly, a piece of public art provide the opportunity for leaning while standing (Ibid, 104).

Art fixtures need to be robust and resilient. Shaftoe (2008) compare the concrete 'seating sculpture' in Edinburgh with his experience to identical structure in Barcelona. *"Concrete is not much fun to lie on in Scotland – it is too cold and damp, whereas an almost identical structure I came across in Barcelona was hugely popular – presumably the weather made it more comfortable to lounge on (p.118)."* Thus, it is essential to make consideration on the material as well to make the art fixtures also functional.

5.3. Comfort Breaks

Adequate provision of suitable public toilets is part of the fundamental infrastructure for successful public spaces (Greed, 2003). However, they are almost always eliminated from the program, as many local authorities seem to regard public toilets as a liability (Shaftoe, 2008:p.105) and also due to the cost of construction and maintenance (Cooper Marcus et al., 1998:p.165). Inadequate toilet provision has a particularly discriminatory effect against older people, those with children and people with disabilities (Holland et al., 2007). There should be the provision of toilets in public spaces in possible conditions (Shaftoe, 2008).

5.4. Food outlets

Sometimes the mere addition of a food outlet and few tables can transform somewhere into a convivial space (Shaftoe, 2008:p.106). Food and drink outlets (ranging from cafes and bars to portable kiosks) can attract people to a public space. These outlets could be within or around the open space so that people can get takeaways to consume in adjacent sitting areas.

5.5.Hard and soft landscaping

The surfacing and cladding materials can have a significant effect on the success of a public space (Shaftoe, 2008:p.111). Plazas are predominantly hard surfaced while parks and playgrounds have more opportunities for soft landscaping. As discussed earlier, it is human nature that people seek to move from one place to another in as direct a line as possible. The major circulation routes must accommodate this principle, or else people will take shortcuts across lawn or even planting (Cooper Marcus et al., 1998:p.51).

Although vast areas of concrete and tarmac do not offer much delight, these are the principle surfacing materials in too many public spaces. Materials need to look good, yet be durable, as a successful public space will get a lot of usage. High quality materials such as marble and granite, although expensive, may prove to be economical in the long term, as they are more resistant to wear and weathering.

Soft landscaping (plants, shrubs and trees) can be a great source of delight, as well as offering health and practical benefits. The variety and quality of textural, color, massing, aural, and olfactory effects created by a well-considered planting can add immeasurably to the use of space (Cooper Marcus et al., 1998:p.44): soften the hardness of surrounding buildings, frame views and vistas, provide boundary treatments, moderate pollution, have a calming effect on users, introduce variety and seasonal difference and offer a more comfortable microclimate (Shaftoe, 2008:p.112). Deciduous trees offer shade from bright sunlight in summer and they shed their leaves to maximize the availability of natural light in winter. They not only help to maintain the sunny and shady area but also make a place interesting. A study of ten downtown plazas in Vancouver reveals that people were attracted to plazas that offered visual variety and complexity, with trees, uncommon shrubs, and colorful annuals (Cooper Marcus et al., 1998:p.44). *“Plants take away some of the anxiety and tension of the immediate now by showing us that there are long, enduring patterns in life. In a world of constant judgement, plants are non-threatening and non-discriminating. They respond to the care that is given them, not to race, age, intellectual, or physical capacities of the gardener.”* (Lewis, 1979:p.334) Trees are the source of visual interest as well as a source of beauty, shade and color (Carpman, Grant, & Simmons, 1986:p.220)⁵.

⁵ As cited in Cooper Marcus et al., 1998:p.328

5.6.Outdoor lighting

Lighting may be used to make an area more prominent or focal point, to define an area or edge, and to provide security. In general, higher levels of illumination are required for aging eyes (Cooper Marcus et al., 1998:p.237).

5.7.Boundaries and Transitions

Cooper Marcus et al. (1998) suggest to avoid high, solid walls and gates that reduce visibility (p.110) and also to eliminate unnecessary fencing to reduce frustration and irritation (p.111). The A clear but subtle spatial subdivision make a person not segregated into a particular area (Cooper Marcus et al., 1998:p.36).

5.8.Managing and Maintaining Public Spaces

The management and maintenance of public open spaces is as crucial as their physical attributes for the success. Good public space management is about more than making places safe and crime free; it should also be proactive in several ways, encouraging or initiating interesting activities, ensuring adequate maintenance and repair of the physical fabric and initiating micro-adjustments in the light of observable use (Shaftoe, 2008:p.127).

Despite of the durability of the materials, it will deteriorate over time resulting in wearing and tearing, and vandalism of spaces, especially in the public areas. Quick repairs not only show that a place is cared for, but will often prevent further deterioration. Emptying litterbins and clearing up strewn rubbish regularly can have a crucial effect on the quality and perception of public spaces. These are relatively simple yet so often neglected.

The way public spaces are managed and maintained is as important as design and location in the creation and maintenance of conviviality in the public realm.

WHAT MAKES A GREAT PLACE?

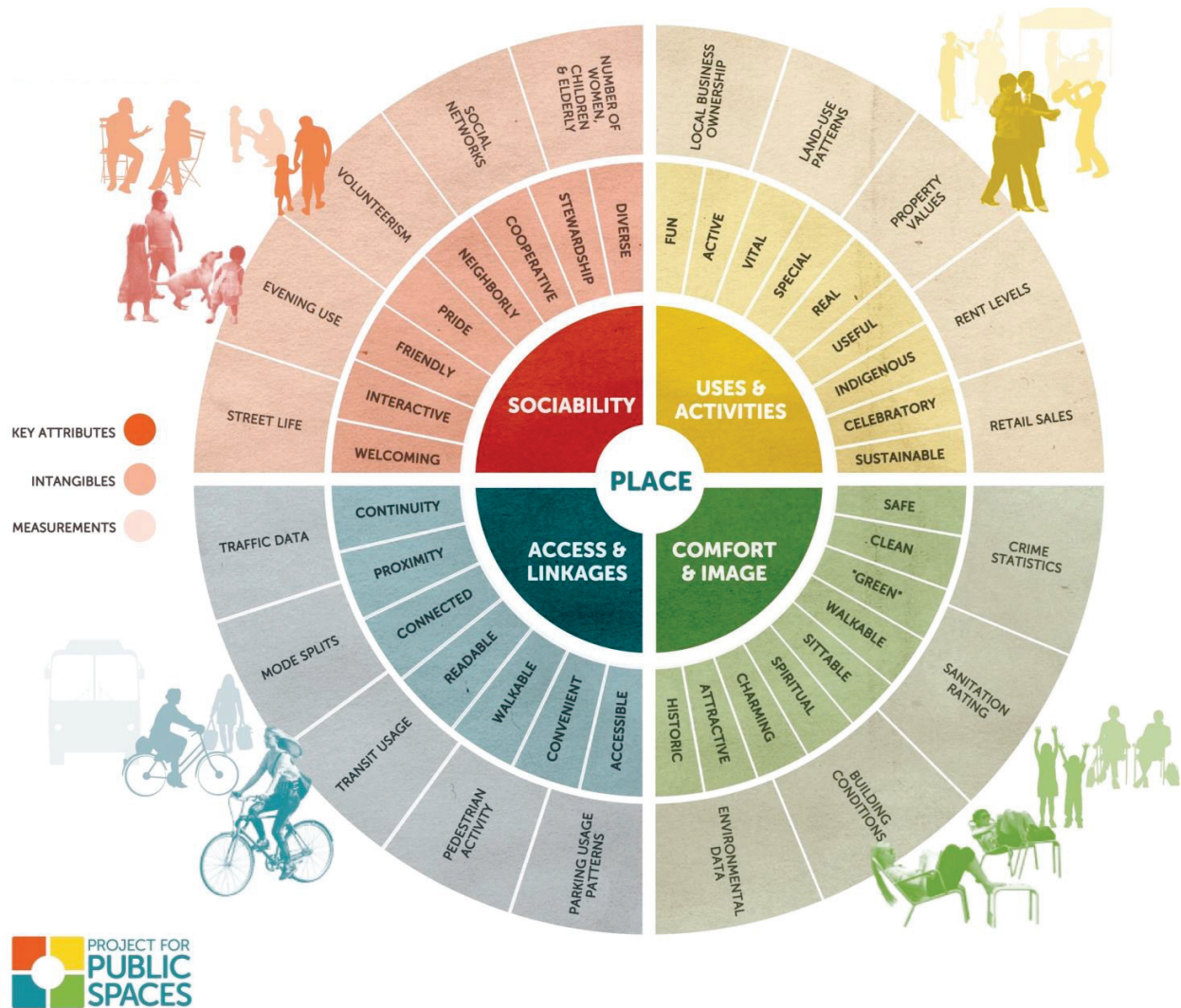


Figure 5.4 Attributes of convivial open spaces, Source: PPS (2009)

6. Learning from the past: Historical open spaces of Kathmandu

6.1. Significance of the study

“We have many examples of successful urban open space – the traditional cities of Europe and Asia offer numerous places that work wonderfully well. Therefore we should not be afraid or ashamed of borrowing principles.....History cannot only inspire and justify design, it can become as effective tool for communication.”

Trancik, 1986⁶

The history of city/town design and planning reveals that the quality in open space design was achieved in past in the form of great city squares both in eastern and western parts of the globe. This is well justified by the open spaces of historic traditional towns of Kathmandu Valley. The remaining open spaces of historical towns of Kathmandu succeed to serve the inhabitants not only in the past but at present as well. The timeless qualities have made them immortal despite the drastic change in socio-cultural context, and they continue to be part of contemporary urban life. On the other hand, the contemporary urban fabric of Kathmandu Valley towns exhibits no or very little appreciable urban design features. Ill-defined urban spaces demonstrates numerous problems starting from lack of open spaces itself to their poor design, improper or lack of use and lack of maintenance. The urban fabric is losing the traditional spatial qualities of open spaces. This could be due to the lack of concern towards the historic precedents. The present urban design and development efforts seem to ignore the significant design features of the cores, and the result is confused urban scenario which is not legible and most importantly, does not suggest a “sense of place” (Chitrakar, 2006:p.1).

The traditional towns of the Kathmandu Valley followed strictly the religious prescriptions of unwritten rules, while it is bitter truth that very few Nepalese towns ever completely benefited from the modern rational planning process (Adhikari, 1998 as cited in Chitrakar, 2006:p.25).

In this context, historic precedents are to be explored for the fact that the traditional urban spaces still serve as the best models for contemporary open space design. The knowledge of urban structure of historical town is important and to understand the context of life and activity of the users.

⁶ As quoted by Chitrakar, R. M. in A study of historic urban squares of Kathmandu valley: defining contemporary public open space design, pp.63

6.2.Relevance of historic open spaces at present

At present, it is observed that the greater Kathmandu or Kathmandu Valley exhibits two distinct scenarios of open space system. On one hand, there is a successful case from past in the historic cores where there are numerous open spaces found in the form of Durbar Squares (Palace squares), market squares, Chowks (courtyards) and Bahals and Bahils (Buddhist monasteries). On the other hand, incompetent open spaces that failed to respond any aspect of human life developed in the newer areas of the valley, in the last few decades (Sharma, B., 2006:p.30-33).

The historic open spaces are relevant to the daily lives of the people even today. Different spaces in the squares flexibly function depending on the contextual change as well as the modern day interventions. Not just being limited as the historic monuments and place for tourists, they still present workable and livable environments for people. The concentration of an array of activities not only includes the major cultural proceedings like festivals but also day to day socializing, worshipping, marketing, just walking or browsing. The richness through diverse functions all year and all day long aid in vitality of the spaces. The multi-leveled raised plinths of the temples allow vertical space flow of audience's realm during festivals. In daily basis, they serve as the seating that provide variety of choices for the users. People of all age group enjoy the spaces without any discordance. In fact, for most of the historic towns, these are still the most happening places as people prefer to go there to spend most of their times (*Figure 6.1*).



Figure 6.1 Spaces used for daily activities in Kathmandu Durbar Square

(Photo credit: Jorge Láscar, Source: flickr)

6.3.Factors defining the viability

The historical squares of Kathmandu have certain qualities, functions and characteristics that present them the image of successful public open spaces. These factors contribute to the significant and never-ending active use of historic urban squares at present. They are explained below:

- Unobstructed visual and physical access form, to and through the spaces.
- Cozy human in scale nooks within the large space are ever inviting with intimate spaces.
- Legible structures and spaces to give a sense of place and direction for movement encourage people to participate.
- Variety and choices of spaces for different degree of activities.
- Amenities for sitting and refuge during rainfall or strong sun.
- Pedestrian friendly.
- They provide a good sense of enclosure.

The squares are the legacy of history, place to commemorate past and representation social and cultural affiliations. Moreover, as already mentioned, the timeless qualities of the historic squares are always the rationale for their acknowledgement.

7. Redefining Tundikhel

This chapter discusses on the study area: Tundikhel. Once the largest parade ground of Asia, Tundikhel now is totally a lost space and need to retain its identity and past glory. The chapter begins with a brief introduction on the contemporary urban scenario of Kathmandu Valley, followed by the historical background of Tundikhel, its cultural and social aspects and the present situations in the urban context. The ultimate goal is to analyze the site in order to identify the problems and missing elements. Many part of this study are based on the review of published literature on the concerned topic. A micro study of perspective of people in urban open space in the case of Tundikhel is done through field survey. A questionnaire survey is taken with the public using the space. The questionnaire survey is carried out with the help of a friend in Nepal.

7.1. Contemporary urban scenario of Kathmandu Valley

Cities have been in a continual state of transition since their evolution. Over, the past century, urban environments around the globe have witnessed a significant level of transformation. Kathmandu, the cultural, economic and political center of Nepal, has not been immune to the global forces of urban change.

The contemporary physical growth exhibits an urban sprawl, expanding radially in all directions from the historic cores of Kathmandu. This growth has reached beyond the Ringroad⁷, consuming the fertile agriculture land. Kathmandu has been experiencing several problems related to the urban living and new environmental challenges in the recent decades, such as traffic congestion, air pollution, declining water table, and loss of open space. At present open spaces cover only 2-5% of the developed area whereas traditionally 10% of open space was dedicated within the city core. As a result, people tend to rely on the spaces converting them into scarred and saturated pockets (Joshi, 2010:p.63). *The serious consequences arise in having lost the continuity with the historic urban fabric and also in its inability to display any “coherent urban character”* (Chitrakar, 2006:p.26).

There are so many spaces in the city that remained under-utilized for years, which awaits the redevelopment to cater the urban functions. Tundikhel is one of them that situates at the urban core area of the city, which is being exploited. Once at the outskirts of the old city, Tundikhel has been now at the centre of the expanded Kathmandu and one of the important public spaces in

⁷ In 1975, the “Ringroad” encircling the two major cites of valley, Kathmandu and Lalitpur was constructed to reduce traffic congestion in the city core as well as to provide better linkages with the hinterland.

Kathmandu Valley. Public spaces have many dimensions. They are defined by the activities that take place, the culture and identity of the communities they support. A great public space, first and foremost, is one that is used by people. Sometimes in many big cities, these urban spaces become the city space, which redefines the image of the city, highlighting the city's characters. Many cities around the world are now developing innovative ideas to shape new urban identity.

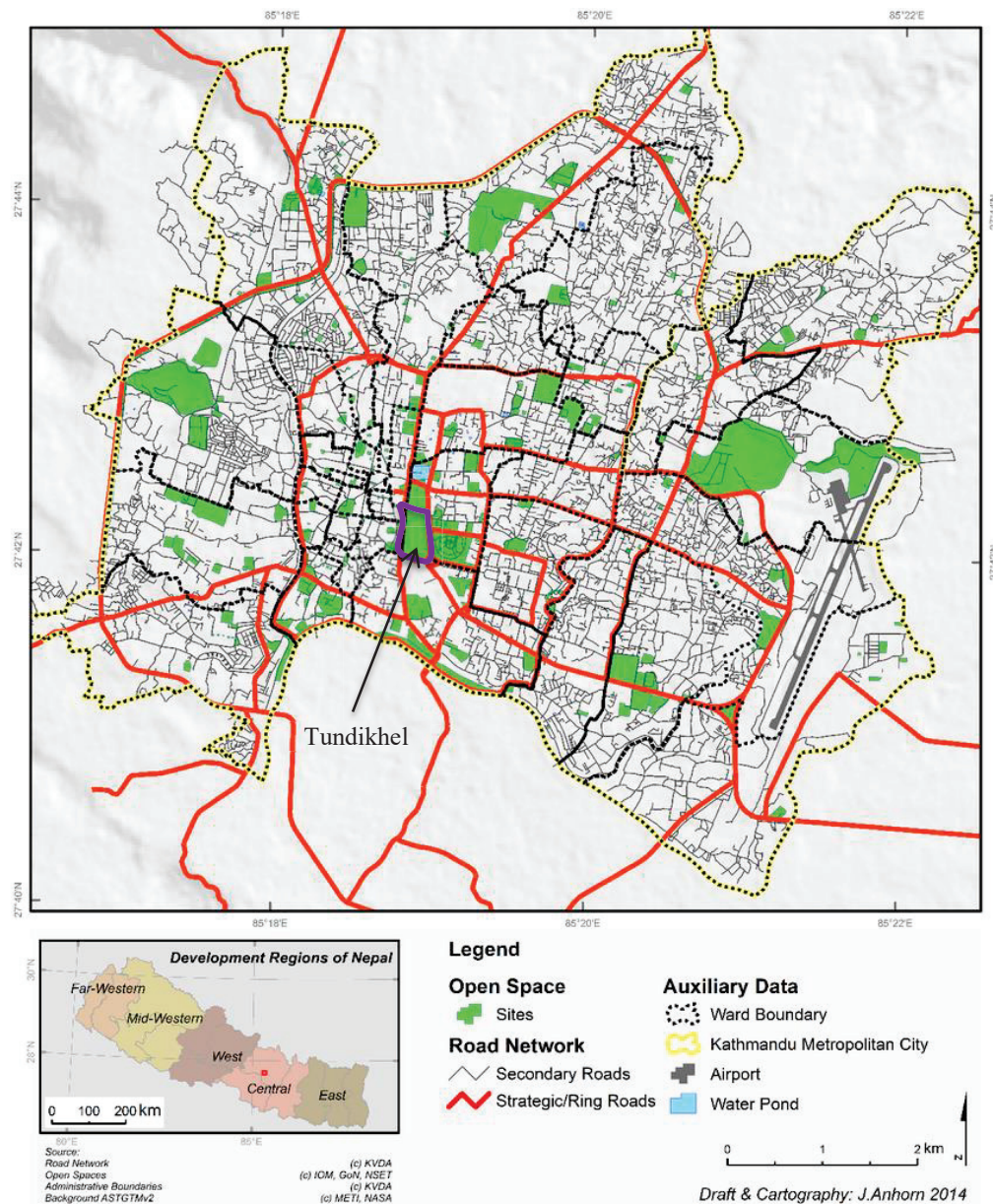


Figure 7.1 Distribution of open spaces in Kathmandu Metropolitan City, adapted from Anhorn & Khazai (2015, p.795)

7.2.Site and surrounding

Tundikhel is a large grass-covered ground in the center of Kathmandu- the capital of Nepal. The north-south oriented rectangular field lies between Ratna Park in the north and Sahid Gate in the south. It is one of the most important landmarks of Kathmandu. Around 520 m x 275 m of huge field flanks the entire side of the old city and serves multiple purposes as a military parade ground, horse race track, spot for religious festivals, conventions, exhibitions, rock concert venue, sports and public-park.



Figure 7.2 Location of Tundikhel (Maps from Google Earth)

Tundikhel is surrounded by different monuments and building of different use-type from different period of the history. Figure 7.3 represents the surrounding buildings and monuments with the date of their construction. Similarly, Figure 7.4 represents the existing condition of the immediate surrounding and Tundikhel.

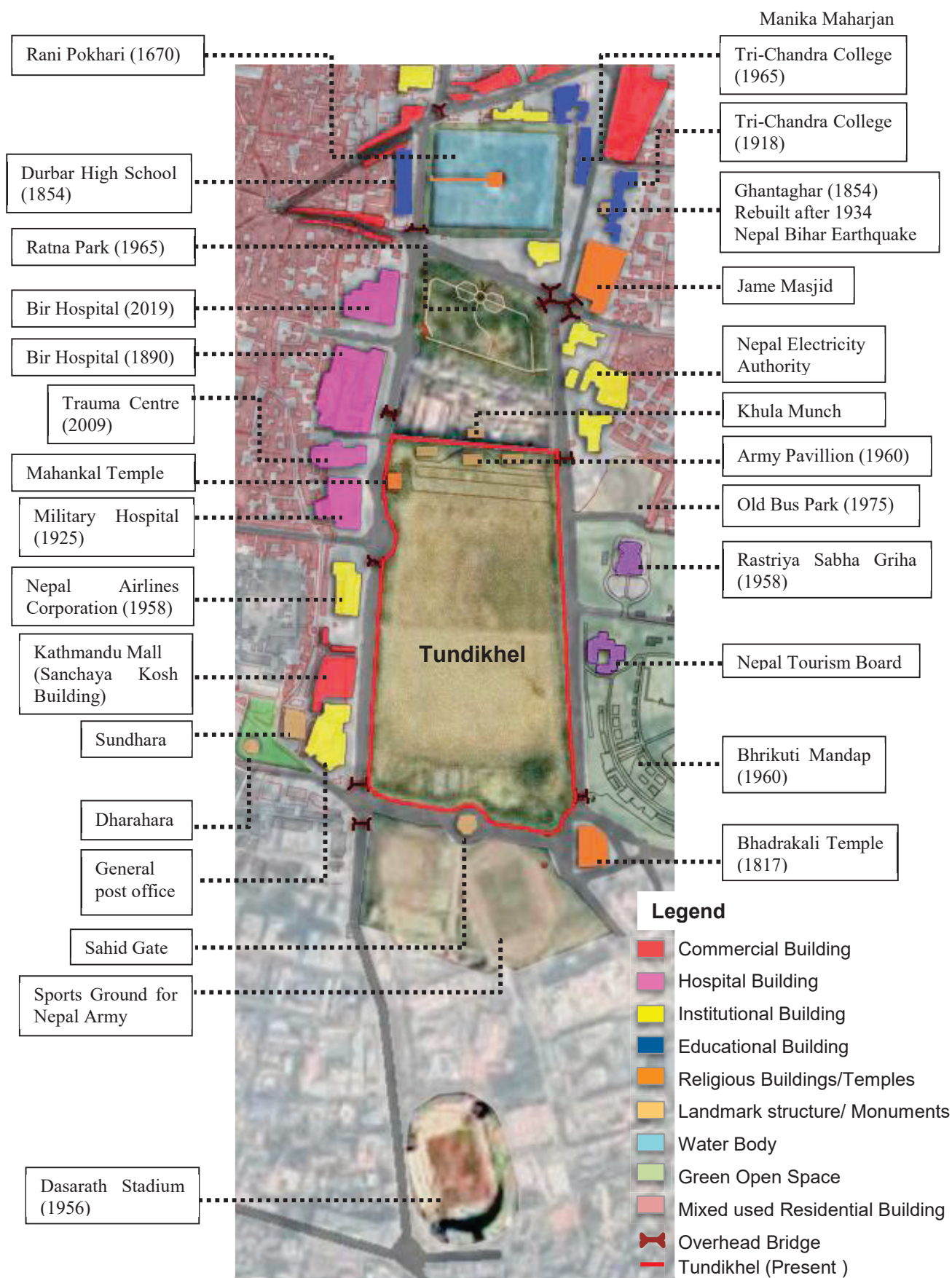


Figure 7.3 Site and surrounding buildings and monuments with their construction date, Author

Urban Open Spaces: A prospect to redefine Tundikhel

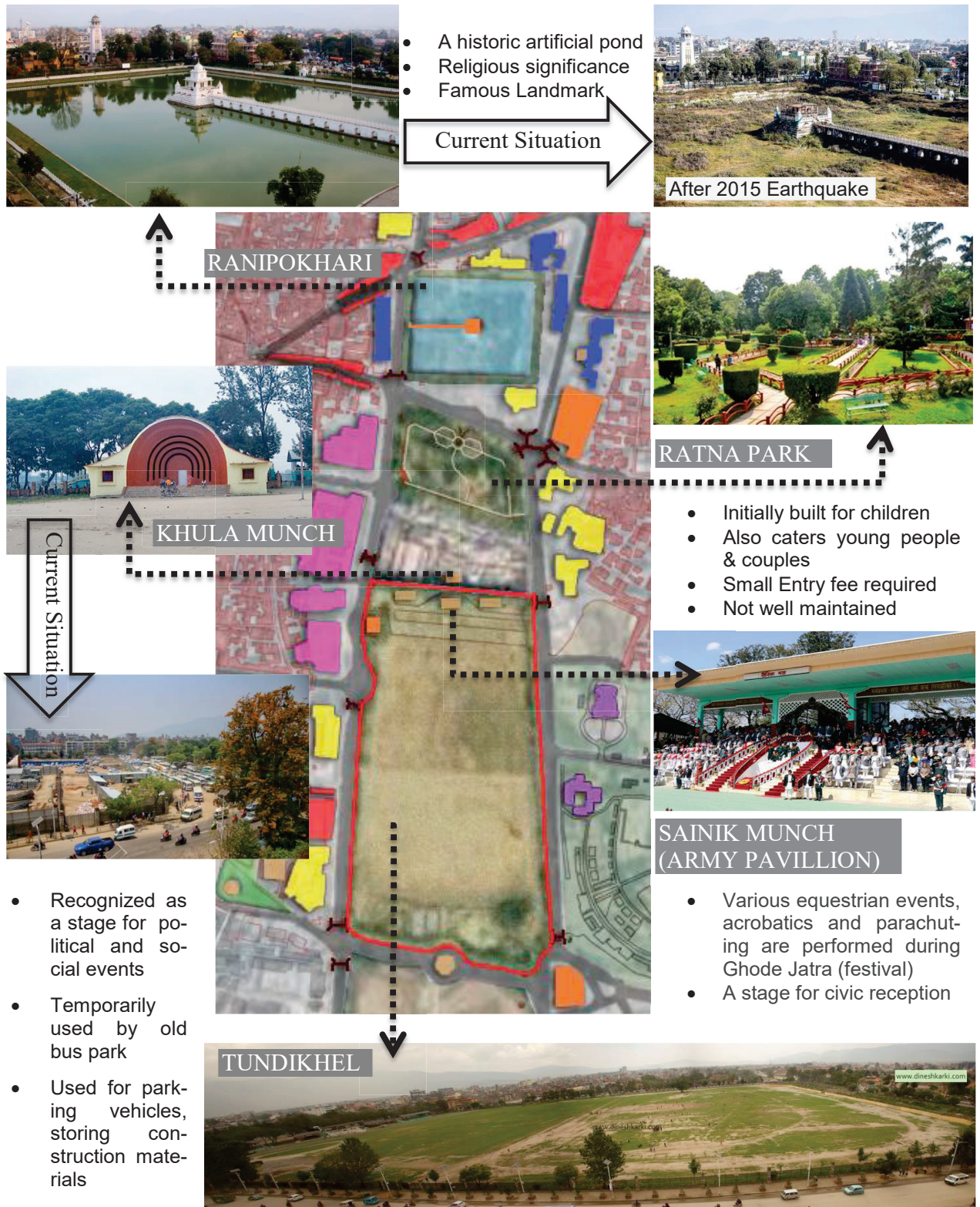


Figure 7.4 Existing scenario of site and surrounding, Author

7.3.Etymology

The name of Tundikhel is formed from Newari words “Tun: khya” (Tunawanyon which means quick sand). In ancient period it was a place from where water of “Kyan chhan Puukhu” (means pond for morning worship which is now known as Khichha Pokhari) was drained out. Later it is called Tundikhel in Nepali. But the originality of the name has been viewed by different people differently. As mentioned in the report of Kayastha, Prof. Sudarshan Raj Tiwari argues that this name has been derived from Tri Ratna Khya: after the name of three devis among the eight goddesses ‘Astamatrika’ of Kathmandu. Khya in Newari means an open area. Therefore, Tri Ratna Khya is an open space outside the traditional Kathmandu city that is used for the dance of Tri Ratna or the three goddesses (Kayastha, 2017). Some people also believe that Tundikhel was a place where a demon named Tundi used to dwell. So, the open space of Khya where the demon Tundi resided was named as Tundikhya, which later converted into Tundikhel.

7.4.Mythology

Tundikhel is also steeped in folklore. Deities and demons are said to have walked here in mythological times. Tundikhel is said to be the place where the giant demon known as Gurumapa was banished, according to one of the most popular folk tales told in Newar society of Kathmandu. The story goes that the man-eating Gurumapa terrorized the town’s people by taking away disobedient children. The people promised for an annual feast and persuaded him to live at Tundikhel. A brass plaque at Itum Bahal (sacred courtyard in Kathmandu) shows a demon taking a child from a woman and eating it. Another plaque shows him sitting under a tree and tucking into a big pot of food (*Figure 7.3*). Every year a feast of boiled rice and buffalo meat is still laid out for him on the open ground in keeping with a deal made in ages past.



*Figure 7.5 Plaque in Itumbahal, Gurumapa eating a child (top);
Gurumapa having feast under the tree at Tundikhel (bottom)
Photo credit:Karrattul Source: Wikimediacommons*

7.5. Land use changes and fragmentation

Tundikhel, once upon a time was one of the largest public spaces in South Asia (Sharma, N., 2011). It originally spread from where Rani Pokhari is today in the north to where the Dasarath Stadium is in the south. Henry Ambrose Oldfield in his 1850s book *Sketches of Nepal* estimated that Tundikhel measured two-three miles in length & about 300 yards in width, making it one of the Asia's biggest parade grounds at that time (Rai, 2002). An Italian Jesuit Ippolito Desideri who visited Kathmandu in 1721 during Malla regime, has mentioned in his travelogue about a two-mile long plain near Rani Pokhari (Desideri, 1995:p.317). Some researchers argue that Tundikhel was an architectural requirement of the Malla era. Vast open spaces were considered essential near any densely populated settlement. As the rest of the Valley expanded to accommodate new, wealthy towns, darbars and shrines, Tundikhel alone remained open. Only one-sixth of Tundikhel is open to the public today (*see Figure 7.6*), while other pockets of Tundikhel remain figurative spaces, under either institutional or military control, or on controlled access.

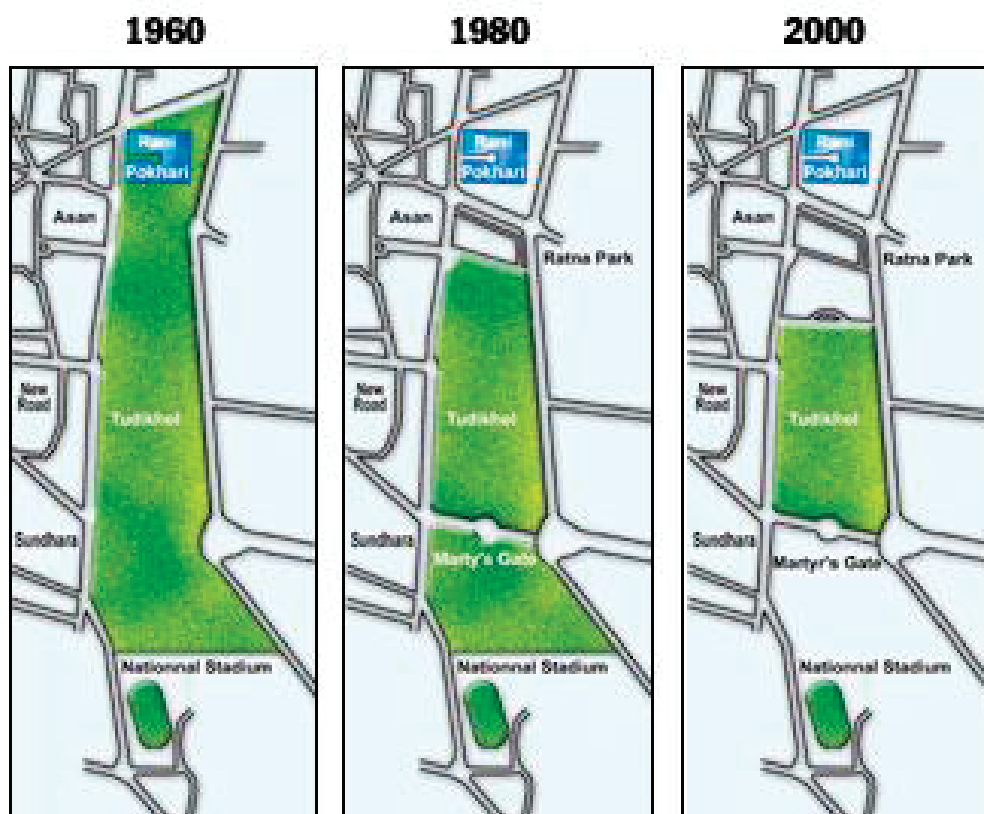


Figure 7.6 Fragmentation and shrinking of Tundikhel, Source: Rai, H. (2002)

The mode of fragmentation and changes in Tundikhel and its surrounding, in interest of the ruling institutions, can be discussed in following periods:

Before Rana regime

The history of Tundikhel dates back to the 16th century (Sharma, N., 2011). In 1671, King Pratap Rana made the first incursion into this space when he directed to build Rani Pokhari (pond in the north to Tundikhel). Tundikhel was first mentioned by its name in 1709, in a scripture engraved in Taleju Bhagawati temple. During Malla period, Tundikhel was a huge open space for social and cultural events under the maintenance of the rulers. The decision of Bhimsen Thapa to build a palace for himself in Lagan Tol, south-west of Tundikhel, in 1813/14 brought soldiers closer to Tundikhel. Barracks were constructed on the area where Karmachari Sanchaya Kosh (now Kathmandu Mall) occupies, between the area between New-road gate and Post office (Rai, 2002). In 1832 AD, Dharahara, which is also known as Bhimsen Tower, was built by the then Prime Minister Bhimsen Thapa under the command of Queen Lalit Tripura Sundari.

During Rana regime (1846 A.D to 1951 A.D)

The Rana Period, which spanned 105 years, further strengthened this spatial expansion. It was in this period when Tundikhel became more prominent in the history with the importance and uprising of armies. After Rana regime started in 1846, Ranas started to build various structures around Tundikhel to display their power to the royal family as well as the people.

In 1885, Tundikhel was fully turned over for military use by Bir Shumsher, which was initially started as a parade ground for the Nepal Army in the early mid-1830s (Rai, 2002). Gurkha soldiers were assembled on the ground before being shipped out to distant battlefields during World Wars I and II (Wikipedia, 2019b).

During Democratic period (1951 A.D to 1960 A.D)

After the end of Rana regime in 1951, the political significance of Tundikhel started to decline and the encroachment over Tundikhel and its surrounding began (Rai, 2002). Until Rana regime, many significant buildings surrounded Tundikhel, which targeted towards the Ranas and the high ranked people of the society. After Rana regime, many buildings were opened for general public as well. This was the start of increasing public flow in the Tundikhel area.

The space of Tundikhel was never felt as the power of display, instead fragmentation eventually started. Such that, in 1956, the southern part of the larger Tundikhel was formally fragmented to form of the stadium. The stadium was constructed for sporting events to be organised for the coronation of the late king Mahendra. Initially called National Stadium, it later became known as Dasarath Stadium (Kc, 2017). Such a sports arena was needed then, even though it meant the beginning of the fragmentation of Tundikhel. Early efforts to institutionalize Tundikhel aimed at adopting the Royals' vision to modernize the city.

The construction and expansion of perimeter roads resulted in Kathmandu's first tree-lined boulevard elite values were enacted and embodied. The Sahid Gate and City Hall were built in 1958 AD. In 1960 AD, Bhrikuti Mandap was established as an exhibition space, Army observation structure (Shahi Sainik Manch) was built at the middle of Tundikhel.

During Panchayat system (1960 A.D to 1990 A.D)

Two trees stood at the center of Tundikhel (KC, 2014). One of them was a large tree known as Khariko Bot or Chakala Sima (Round Tree in Nepal Bhasa) with marble platform (KC, 2014; Rai, 2002). The other tree was known to all in the city as the "yaka sima" or the lone tree which is said to be the abode of "Gurumapa" (KC, 2014). Major proclamations were made by Rana rulers on the platform of Khariko Bot. In 1885, Bir Sumshere proclaimed himself prime minister at that spot. The emancipation of slaves was announced here in 1924 by Chandra Shamsher Jang Bahadur Rana. Similarly, in 1945 the Allies' success against Hitler's Germany was announced and celebrated in the same place (Rai, 2002).

The very significant Khari ko bot (Khari tree) was also felled down during this period. In 1961/62, the then government decided to surround Tundikhel with a fence, with the help of US government's a food for work program. This divided Tundikhel into three separate parts and fenced them off (Rai, 2002). In 1962, construction of Ratna Park was started in the name of Queen Ratna, second wife of King Mahendra and it was completed in 1965. Many institutional buildings were also built around Tundikhel during this period. Similarly, Khula Manch (Open Air Theater) was added in 1973 AD. The city bus park was constructed in 1975 at the east of Tundikhel after which it made easier for people to travel and thus invited even more visitors in the area. To ease the vehicular traffic flow, a pedestrian sub way was constructed at Bhotahiti-Ratnapark cross section in 1980. In 1984, one-way system was enforced for the first time sur-

rounding Tundikhel. In 1990, an overhead bridge was constructed at the north east of Ratnapark and south of Tundikhel to control further traffic and pedestrian flow.

After Democratic system (1990 A.D till date)

In between 1990 to 2000, temporary market also developed at the south and east of Bhrikuti Mandap. Fun Park in Bhrikuti Mandap was also built and Army also seemed to add buildings. Until late 1992, the space adjoining the Khulla Manch was allocated for a flea market (Rai, 2002).

In 2002 AD the peripheral road around Tundikhel started widening and in 2005 AD DUDBC fenced around Tundikhel by a 9 feet high iron fences (Rai, 2002), but four gates were provided for entry in the limited open space, among which only western gate is open for accessible.

During this period, major commercial buildings like Kathmandu Mall, Civil Mall and CTC Mall appeared along the western side of Tundikhel. Kathmandu Mall was established in 2006 AD, Civil Mall in 2010 AD and CTC Mall in 2012 AD. Trauma center completed its construction in 2009 AD, which got in operation only after the 2015 earthquake. Another wing of Bir Hospital is under construction on the northern side, across the road, just opposite of the current main building. The historic Military Hospital is demolished and new building was constructed in 2016 AD. Similarly, the historic Durbar High School is also getting reconstruction.

In 2016, the old bus park was shifted to Khula Manch temporarily to give way for the construction of Kathmandu View Tower in the old bus park premises (*Figure 7.7*). Claimed as a temporary fix to relocate the City Bus Park, Kathmandu Municipality has authorized the use of Khula Manch for parking for at least another 3 years from 2017 until the completion of the construction of a multi-story tower. In addition, southern portion of Tundikhel (*see Figure 7.7*) has been used by the contractor of the Dharahara park as Dharahara premises is getting new life after the tragic fall in the April 2015 earthquake.



Figure 7.7 Encroachment on Tundikhel (Author)

Tundikhel is now pushed into the brink of extinction. Only fragmented pieces of Tundikhel that once stretched from Tripureshwor to Rani Pokhari exists today. The encroachment from all four sides to build various infrastructures has squeezed it to less than half its original size. Tundikhel started shrinking faster even as the world was realising the significance of open spaces and got serious about preserving historical and culturally important spaces.

7.6.Activities in Tundikhel

Tundikhel can be described as the breathing space for Kathmandu city. In the midst of the city congested with houses, the large open space serves as the capital's lungs. A city's urbanism is displayed in Tundikhel representing a myriad of complex socio-cultural, economic and democratic practices of everyday life.

As mentioned in the article, Tundikhel the Capital's lungs (Sharma, N. 2011), study on the pattern of using this space by people of Kathmandu reveals that around 72 percent people visit the site every day for sports and health activities. People from around the city come to Tundikhel. The unavailability of open spaces around their homes could be the main reason for such a huge number of people to visit Tundikhel. Among the respondents, around 28 percent prefer Tundikhel for social, cultural, political and environmental activities. Similarly, the study conducted by Centre for Integrated Urban Development (CIUD) has shown that more than 1500 people spend time at Tundikhel on an average day even when there is no special cultural occasion, even to watch the activities going around. 68percent are in the age group of 20-50 years whereas nearly 10 percent visitors are between 60-80 years of age (Sharma, N. 2011).

Tundikhel has witnessed two civil wars popularly known as Jana Andolans, and the subsequent political upheavals, to emerge as the symbolic meeting point of the city, democracy, and its people.

As being the only largest space in the center of city, Tundikhel has always been a stage for different events and mass gathering. Different events include musical concerts, festivals. These kinds of events may be occasional, once or cultural events that take place yearly. Figure 7.8 is the collection of different activities and events that takes place in Tudikhel; on daily basis, occasional or annually.

SPORTS- Daily Activities		
	People practicing Yoga, Source:www.news.cn	Children playing cricket,Source:videoblcks.com
EVENTS- Occasional		
	Musical Concert, Source:TheHimalayanTimes	Human made National flag of Nepal Source: Punya / Wikimediacommons
FESTIVALS- Annual Activities		
	Lhosar Celebration, Source: MyRepublica	Holi Celebration, Source: onlinekhabar
		
Gigantic feast offered to Gurumapa, Source: Manigal		Horse rider performing on occasion of GhodeJatra Source: TheHimalayanTimes
Other Festivals celebrated in Tundikhel: Gaura Festival and others		

Figure 7.8 Activities and events in Tundikhel (Compiled by Author)

7.6.1. Tundikhel as bus stop and transit hub

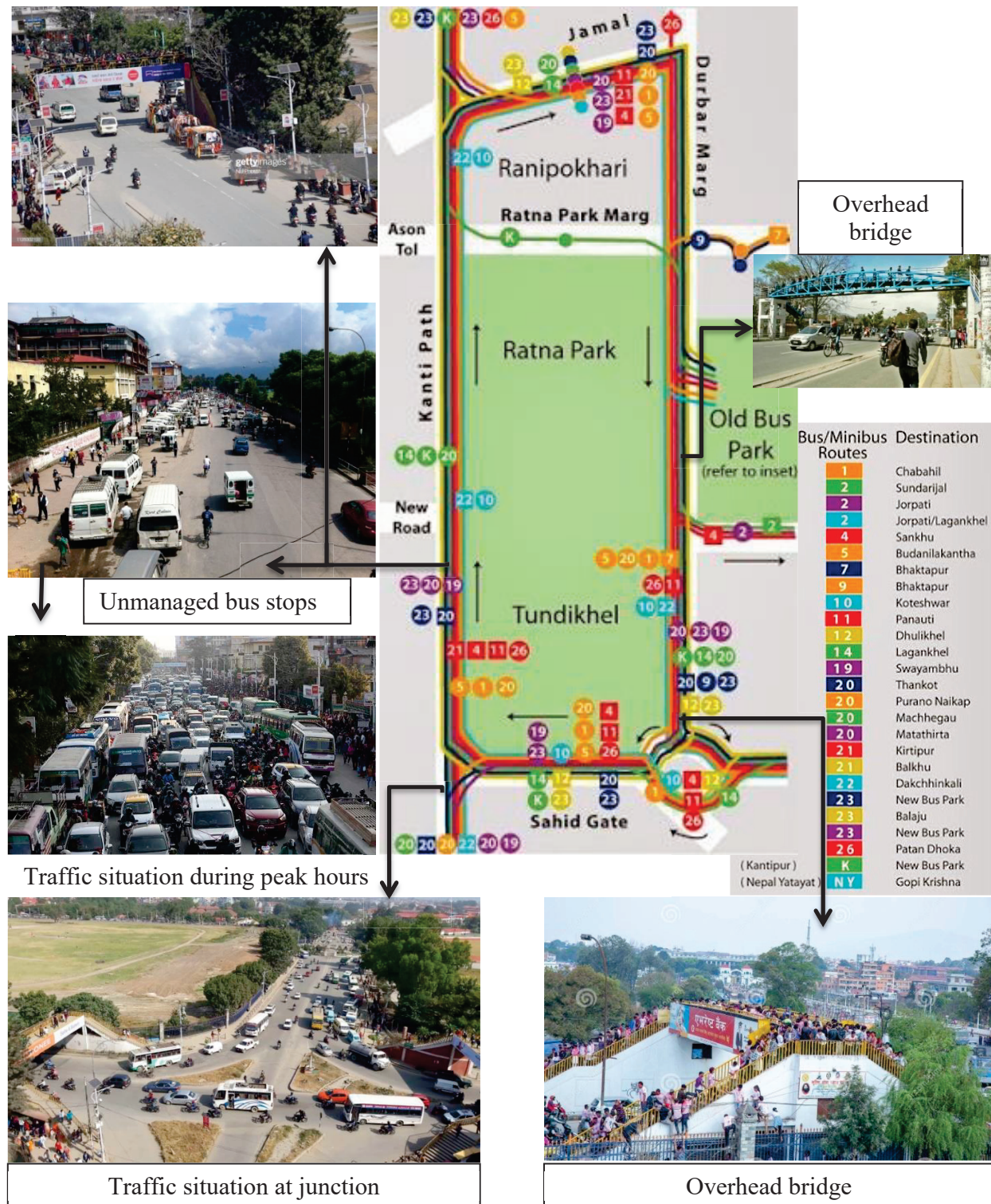


Figure 7.9 Existing Vehicle routes and traffic conditions around Tundikhel. (Vehicle route by Tibet Discovery)

Tundikhel has been a transportation hub from the time when public vehicles plied in Kathmandu. The public transportation routes comprise of tempo, microbus, mini bus and buses. These vehicles running in these routes pass through Tundikhel connects the various parts of Kathmandu as well as maintain linkage between the neighbouring cities. Figure 7.9 shows how public vehicles from different directions pass around Tundikhel and the possible stops they are using. Most of the bus stops are opposite of the open space of Tundikhel and accessing Tundikhel from these stops, people need to cross the busy roads. Moreover, these stops are unmanaged and unscientific, only the familiar person could know the connecting possible routes and transit stops.

7.6.2. Tundikhel as shelter

Since Tundikhel lies in the heart of the city, it has always enabled people to wait for friends, get easy access to local public transport vehicles, a junction for gathering and provide a space for sports and other activities. However, these are not the only benefit. It is also one of the available evacuation spaces in case of disaster in the valley. As per the international standard, open space required for temporary settlement in case of a disaster is 45 square meters. To this account, Tundikhel currently covers 127142.66 square meters; it has the capacity to shelter around 280,000 people at a time (Sharma, N. 2011).

Tundikhel has provided shelter for thousands of people in two major earthquakes. After 1934 AD earthquake, the city was devastated and people took shelter in Tundikhel for more than a month (Kc, 2017; Rai, 2002). People once again took shelter in Tundikhel for months during the Great Gorkha 2015 earthquake (Figure 7.10).



Figure 7.10 Temporary shelters in Tundikhel after 2015 Earthquake

Source: abcnews.go.com

7.7.What do people want?

A micro study of perspective of people in urban open space in the case of Tundikhel was carried out through field survey. A questionnaire survey was done with random public using the space. The public included both male and female of mid-aged, few old-aged people and teenagers.

During the research, respondents said they wanted better management of dustbins, grass on the ground, maintenance of gates and security system. People yearn for a beautiful garden with benches to sit on, a waiting place to escape the rain and a well-managed vehicle parking system near the main entrance.

There is the mixed opinion about the fences around Tundikhel. The public are unhappy about this, as they think everyone should have access to the ground. While environment campaigner and tourism entrepreneur believe, the fence will help stop encroachment and misuse of the space without restricting the cultural activities that take place here, or the access of the public to it.

People claim that Tundikhel is where they discover the value and benefits of public life. Most of the respondents are positive that the authorities in future will initiate to add to the site's greenery and that the space will remain open in future as well. However, some fear that the land will be encroached and used for business and political activities.

7.8.Problems and issues

The problems and issues are listed below:

- The major issue is the encroachment on Tundikhel, which has been explained in detail in the previous section 7.5 of this chapter.
- Accessibility of this site is very poor. Only one entrance is open for public.
- Segregation of Tundikhel- no accessibility to public in Tundikhel Army control area.
- Toilet facility is out of its boundary area.
- The pathways for pedestrian around Tundikhel are narrow.
- Besides all, none of the authority is concerned about the management of waste.

It is essential to analyze the problems of site as well as surrounding. Figure 7.11 illustrates the problems and issues within and around Tundikhel.

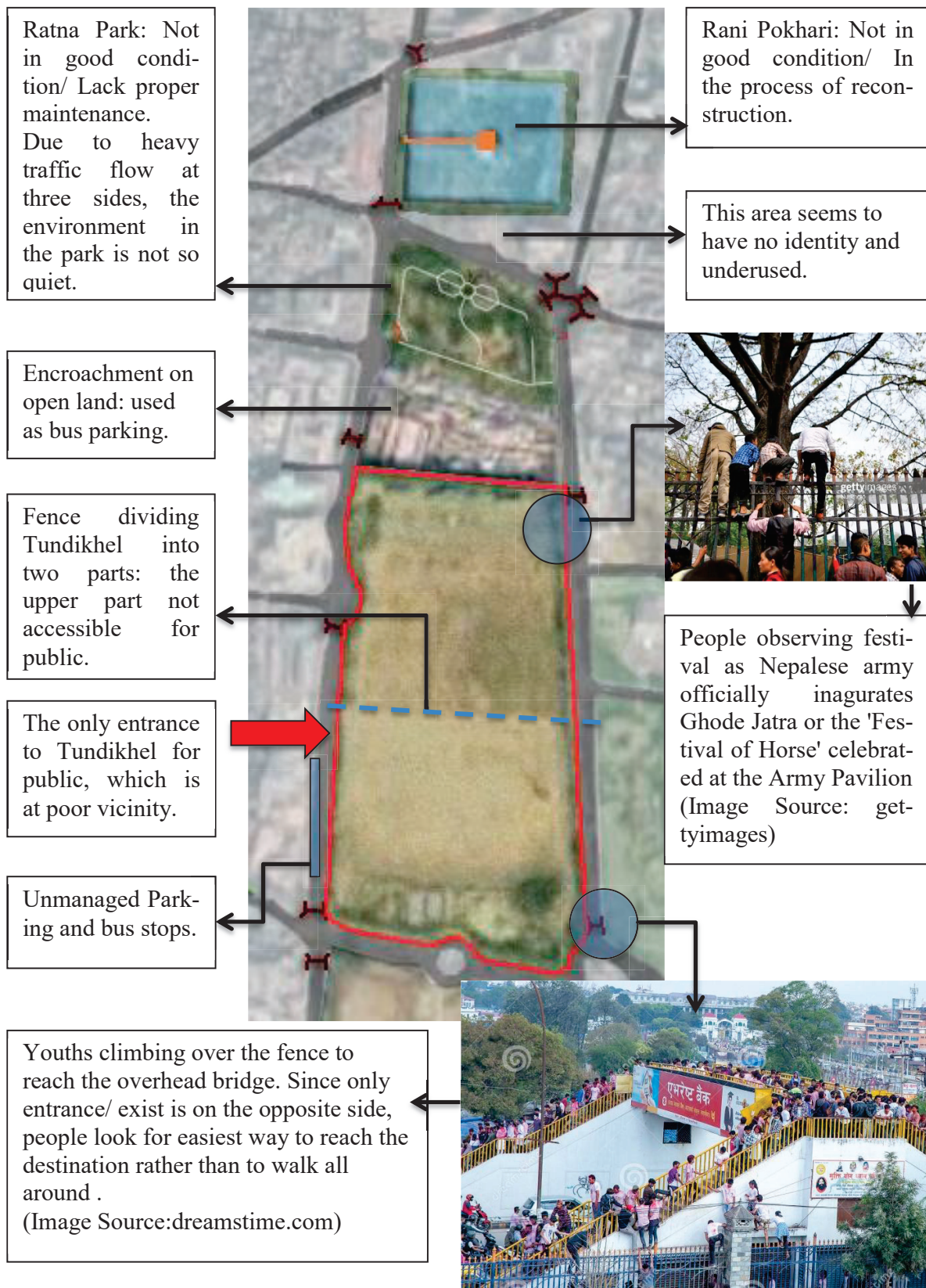


Figure 7.11 Problems and issues in and around Tundikhel (Author)

7.9.The Design Proposal

7.9.1. Justification

Various design ideas were tried out to redefine Tundikhel as a huge city park with the provision of different kinds of activities. Developing Tundikhel as a city park could offer the inhabitants a new space for connecting with nature and improve the environmental condition of surrounding and the livability of the users. However, while doing so, the identity of Tundikhel as a huge open ground that has survived long history seemed to be lost. Meanwhile, the existing park in the immediate surrounding is overshadowed. After all the analysis and brainstorming, conserving Tundikhel as the open ground proved to be logical, which could cater public during different occasions, festivals and earthquakes. This was also the main objective of the study to address the problem of encroachment and fragmentation of Tundikhel.

7.9.2. The Design Process

Rethinking of the existing road situation

The inspiration of the design process was an analysis of the changing traffic situation and the land use condition. The vehicular movement around Tundikhel does not seem to be logical. The long stretch of land about 760 meters in length, including Tundikhel, Khula munch and Ratna Park, marks as the traffic island (Figure 7.12). Due to this long stretch and the one-way traffic system, one should drive more than 2 kilometers to get to the opposing stream of traffic.

Thus, the first attempt for the design was to rethink the proper position of existing road in between Ranipokhari and Ratnapark. The relocation of the road to almost middle of the long stretch exhibits three benefits. First, it reduces the distance between two opposing streams of traffic. The movement of the vehicles is more convenient and logical (Figure 7.13). Secondly, this helped to create two different types of open spaces different in their nature; the northern area including the premises of Ranipokhari, Ratna Park and Khula Munch developed as the park area and the southern area, Tundikhel left as open space for public. Thirdly, this allows for the pedestrianization of the road between Ranipokhari and Ratna park, which made the connectivity between these two spaces.

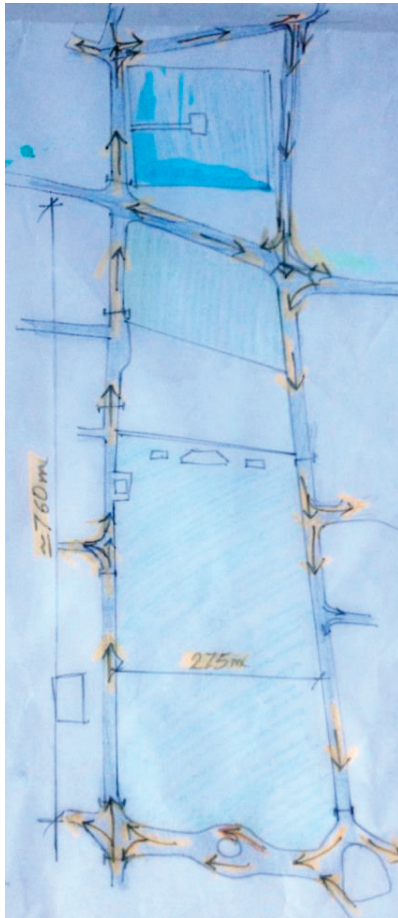


Figure 7.13 The existing vehicular movement
(Author)

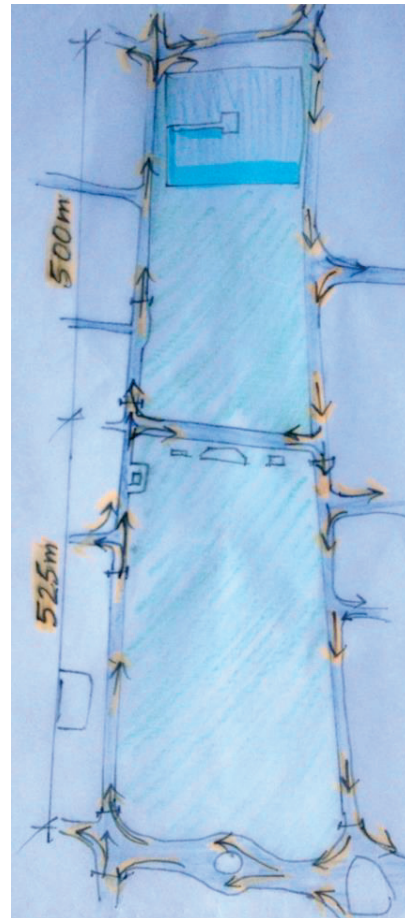


Figure 7.12 The proposed road connection
and the vehicular movement (Author)

Management of parking

At present, Khulamunch has been temporarily used as the parking by old bus park. It is assumed that the space of Khulamunch will be free after the completion of the multistory structure in the old bus park.

Removal of the partition

The proposal integrates land of Tundikhel allocated for public and the area of Sainik Munch as a single open public space without any barrier.

Accessibility

The number of entrances are increased which makes it easier for people to get access to Tundikhel from any direction, entrances being near to overhead bridges.

The main axis and the quadrangle grid

All the monuments starting from the temple in the middle of Ranipokhari, followed by Khula Munch and Sainik Munch in Tundikhel, to Sahid gate at the southern end of Tundikhel are strongly aligned in a vertical axis.

The core idea of connecting the different active points around the study area through shortest possible ways resulted to the quadrangle grid. As people always look for the shortest possible way to reach to the destination, the main focus of creating such pathways was to make the use of overhead bridges which are mostly skipped by people due to lack of vicinity. Connecting different points in the surrounding transformed the rectangular system of the space into a new quadrangle grid but yet functional. This grid system also made Ranipokhari as the main focal point in the design. Figure 7.14 represents the lines initiated during the conceptual design process.

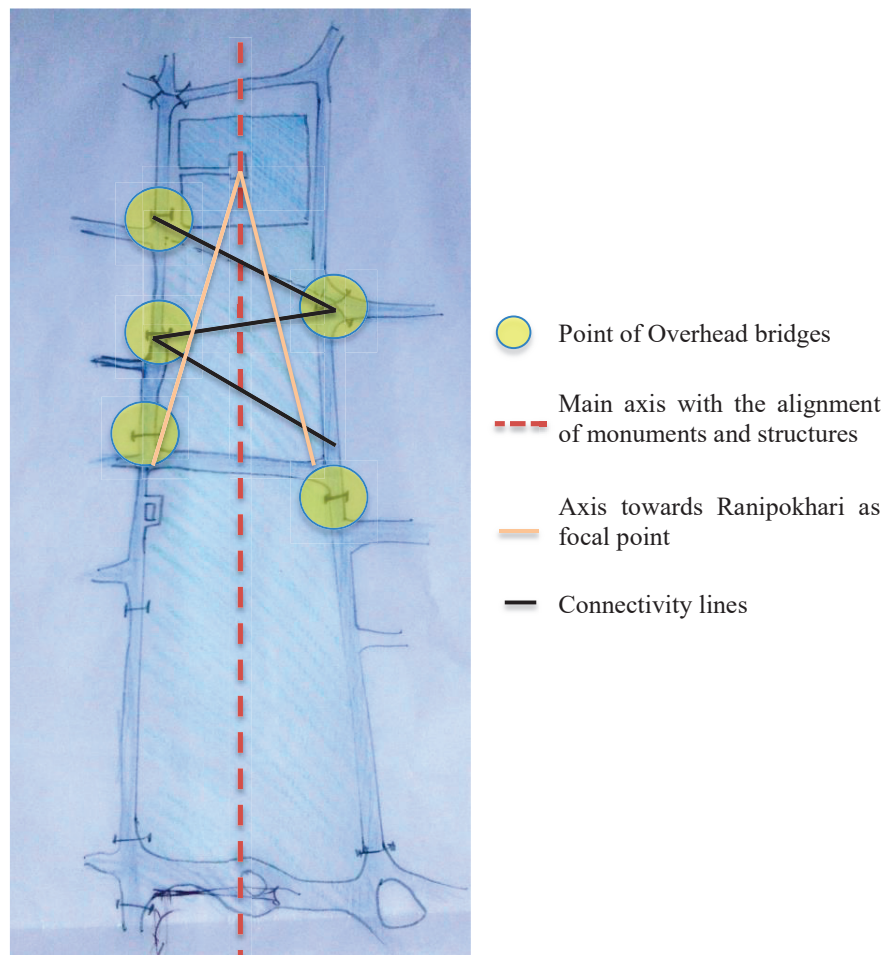


Figure 7.14 Conceptual drawing for the design proposal (Author)



Figure 7.15 Proposed Plan (Author)

7.9.3. Design Description

The following proposal is a result of understanding the feelings and needs that public in an open space require. Meanwhile, the proper planning has a vital role for defining the land use for the quality and convivial space, which ultimately improve the users' quality of life. The design proposal focuses on following key qualities:

- Access and linkage - convenient to use, visible, easy to get to and move within;
- Uses and activities - providing a reason to be there, vital and unique;
- Comfort and image - safe, clean, green, full of character and attractive;
- Sociability - fostering neighborliness, friendship, interaction, diversity, pride.

The design proposal comprises of two distinct spaces: The northern area including the premises of Ranipokhari, Ratna Park and Khula Munch developed as the park area and the southern area, Tundikhel left as open space for public, connected by the overhead bridge (Figure 7.15). The park comprise of open lawn with a pavilion, children play area, pockets of spaces as small squares, structures for shelter during rainfall, provision of toilets and more trees (Refer Figure 7.16). Several seating arrangements facing inwards the park and towards the road provides the user an opportunity to select the desired location. Furthermore, the series of frame at the end of the open lawn creates a gateway towards the archaeological site Ranipokhari, enhances the view and connects two spaces both visually and physically (Figure 7.20).

The design represents versions of simplicity and thoroughness of two distinct yet connected landmarks of history. The design approach of each one of them reflects the values of their historical purpose, which also fits well to the present context. The design responds to the broader interweaving of Ranipokhari's values and its natural, historical and archaeological landscape with the openness of Tundikhel. It emphasizes the spaces' simultaneous independence and interconnection both functionally and emotionally.

The core meaning of paramount importance in each section of the space is experienced by the visitor through the whole ambience of each one of them, while a large open ground, which can be used as needed along with its flowing sections. Proper care has been taken to integrate the existing trees in Tundikhel and the park.

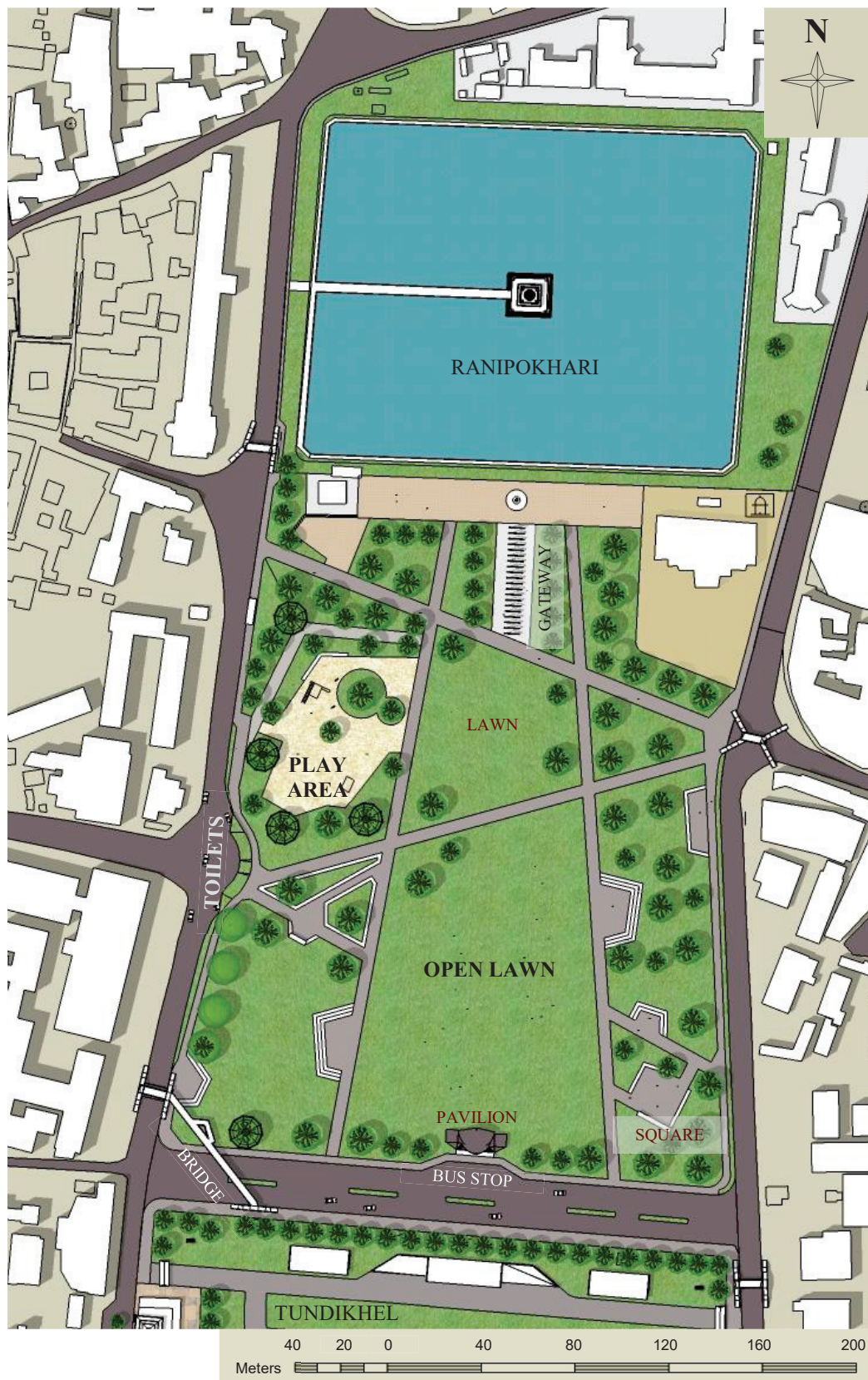


Figure 7.16 Proposed plan for the park at North (Author)



Figure7.17 Removing of barrier in between Tundikhel and integrating the whole ground for Public (Author)



Figure 7.18 Aerial view of the whole stretch of redevelopment from the Southern end (Author)



Figure 7.19 A view of the park and Ranipokhari (Author)



Figure 7.20 A series of frame structures form a gateway towards Ranipokhari (Author)

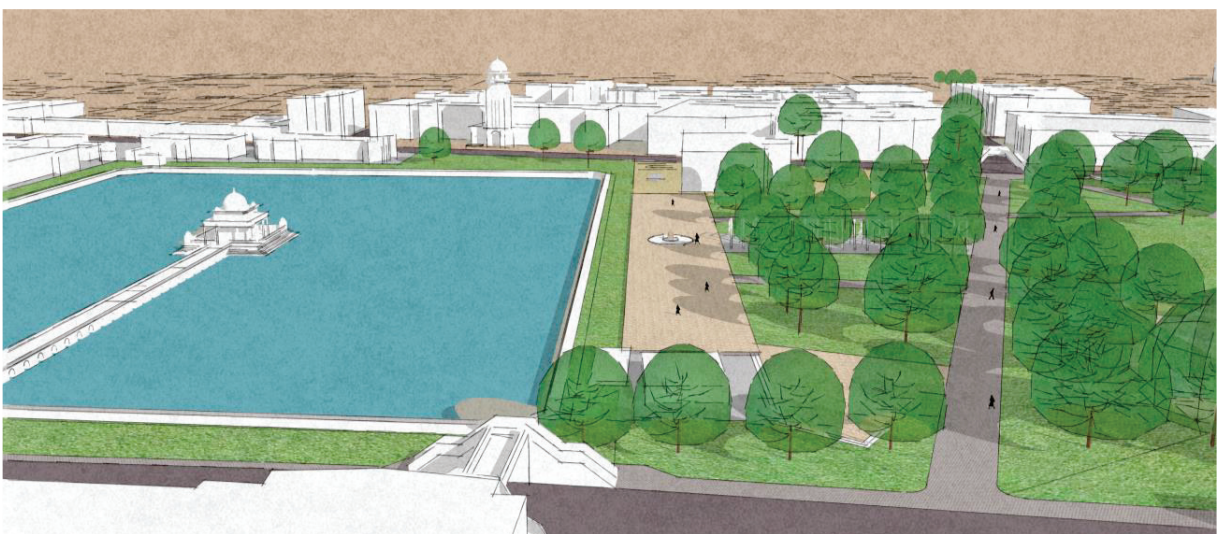


Figure 7.21 Pedestrian friendly road in between park and Ranipokhari premises (Author)



Figure 7.22 A view towards pavilion from open lawn in the park (Author)

Figure 7.23 Siting area with shelter in square (Author)

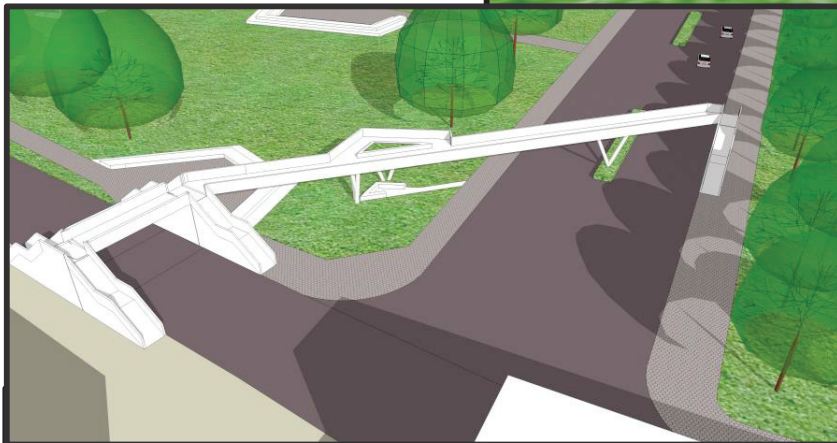


Figure 7.24 Aerial view of the bridge connecting the park with Tundikhel premises (Author)



Figure 7.25 Walking through the nature, an idea to extend the bridge into Tundikhel

8. Conclusion

The conclusion has been derived for two topics: the conviviality of urban open spaces in general and the sustainability of Tundikhel.

The study shows that there is no single blueprint for a convivial space. However, successful spaces do seem to share some common elements. It can be concluded that people are drawn to places that **1)** are generous with inviting options for sitting and just hanging around; **2)** are easily accessible; **3)** offer attractions such as trees, sculptures, food vendors, fountains, etc.; **4)** and finally, What attracts people most, it would appear, is other people.

Great public open spaces should have the qualities that accommodate different users and needs to attract people. Catering to a mix of uses on the other hand leads to a much broader user base that helps to keep the space alive throughout the day. Proper planning is the foremost thing that has to be considered, whether be it the private garden or the whole cityscape. It is more convenient to design the open spaces at the same time when the buildings and other structures are designed, rather than regarding the space as what is left over after the buildings have gone up. Besides all the factors that make a space convivial, managerial part is equally important to make the space sustainable. There should be good policy for urban open spaces.

The solution provided in this thesis is one of the possibility for redefining Tundikhel and its immediate surroundings, while maintaining their original identity. However, without formulation of strong conservation policy the redevelopment would not be possible. Therefore, a strong management body with full authority is necessary for the sound and sustainable open space. This management body should be fair and free from interventions. The time has come when open spaces have to be given priority in the urban planning. Concerned authority should focus on maintaining as well as conserving such valuable spaces. Implementation of policy and management will bring in the maximum benefit for great urban livability in Kathmandu.

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DECLARATION

I hereby declare that this master thesis represents my own work, except where otherwise indicated. I further declare that I have not submitted this thesis, in whole or in part, at any other institution in order to obtain an academic degree or diploma.

Signature:.....

Date:.....