

UNIVERSAL DESIGN IN PUBLIC SPACES.
A CASE OF INCLUSIVE PARKS IN TIRANA

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ABSTRACT

UNIVERSAL DESIGN IN PUBLIC SPACES, A CASE OF INCLUSIVE PARKS IN TIRANA

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Albania, demanding to be part of the European Union, ought to fulfill the main conditions needed to affiliate. Among the conditions defined within the urban planning is the Universal Design issue. Universal design as a concept has a global significance. This is due to the great importance that is given to the human rights by offering equal opportunity for all. People with disabilities have full right to participate. Physical barriers of the public spaces and the built environment urban and design issues that should be taken into consideration. This research is seeking to bring standards to the design of public spaces specifically on parks. As a case study is the study of design guidelines for "The hole of Hajdin Sejdia" in Tirana notion of the principles of universal design. Such a research will lay some ground for developing solutions to enable everybody to use Tirana's main public spaces by promoting an inclusive park.

This research is a qualitative and quantitative case study approach with surveying, interviews, and observations.

Furthermore, the research is going to compare strategies that Albanian government has declared to standards defined by European countries

Results expected are about bringing all users' view in comprehending the city situation to be a source for future possible improvements.

Keywords: Universal Design, Public Space, Human Rights, Universalism, Inclusive Parks.

ABSTRAKT

DIZAJNI UNIVERSAL NE HAPSIRAT PUBLIKE NJE RAST I PARQEV E GJITHPERFSHIRESE

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Shqipëria, duke kërkuar të jetë pjesë e Bashkimit Evropian, duhet të plotësojnë kushtet kryesore të nevojshme për të bërë pjesë të saj. Në mesin e kushteve të përcaktuara në kuadër të planifikimit urban është çështja e Projektimit Universal. Dizajni Universal si koncept ka një rëndësi globale. Kjo është për shkak të rëndësisë së madhe që i është dhënë për të drejtat e njeriut duke ofruar mundësi të barabarta për të gjithë. Njerëzit me aftësi të kufizuara gëzojnë të drejtën e plotë për të marrë pjesë dhe për të qenë të përfshirë në çdo hapësirë publike dhe jo publike. Barrierat fizike në hapësirave publike, mjedisi i ndërtuar urban dhe çështjet e projektimit duhet të merren në konsideratë për të promovuar dizajnin universal. Ky hulumtim është duke kërkuar për të sjellë standardet në projektimin e hapësirave publike dhe në mënyrë specifike në parqe. Si rast studimi

është studimi për parkun "Gropa e Hajdin Sejdia", në Tiranë, nën nocionin e parimeve të projektimit universal. një hulumtim i tillë do të vë një bazë për zhvillimin e zgjidhjeve për të mundësuar të gjithë përdoruesit e dobët të përdorin hapësirat kryesore publike të Tiranës duke nxitur një park gjithëpërfshirës.

Ky hulumtim është një qasje cilësore rast studimor me anketimet, intervistat, dhe vëzhgimet.

Për më tepër, hulumtimi do të krahasohet strategjitë që qeveria shqiptare ka deklaruar duke i krahasuar me standardet e përcaktuara nga vendet evropiane.

Rezultatet që priten të arrihen synojnë orientimin dhe pikpamjen e përdoruesve drejt identifikimit të situatës, për të kuptuar kuptuarit gjendjen e qytetit si dhe të jetë një burim për përmirësimet e mundshme në të ardhmen.

Fjalet kyçe: Dizajn Universal, Hapësirë publik, të drejtat e njeriut, universalizmi, gjithëpërfshirës Parks

Dedicated to my family

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LIST OF ABBREVIATIONS

NDA - Centre of excellence of universal design

ADA - Americans with Disabilities Act

WHO - The World Health Organization

IDEA - Center for Inclusive Design and Environmental Access

CDC - Central Disease Control and Prevention

DDA - Disability Discrimination Act 1995

ADAAG - American with disabilities Act accessibility guideline

COE - The Council of Europe

MTDC - Manual on Uniform Control Devices

CPSC - Consumer Product Safety Commission

CHAPTER 1

INTRODUCTION

1.1 Objectives

Many people with disabilities are unable to take part in important activities. They are treated in an unequal manner, merely because policies, societies, and environments are not designed to meet their requirements. Thinking of urban plan of Tirana city center, through years was never built in terms of universal design principles. It does not offer any basic standards of accessibility. Apart from that, public parks do not meet all the needs of the community. ‘Weak users’ are left without the right of having a normal social life.

The aim of this research is to raise awareness of the existing physical and psychological barriers created in society, by proposing standards in the environment. Moreover, it will discuss the positive advantages of having ‘the same public space for all’. In addition, it tends to provide basic information about the present condition of the public parks here in Albania, and how then can be transformed following principles of universal design. It also makes an evaluation of the Tirana’s public parks.

This case study tends to show the positive effects of implementing basic standards of Universal Design as a strategy, to ensure equal and democratic rights in society for all individuals, regardless of age, abilities or cultural background, including persons with disabilities. The process will be focused on a micro scale, analyzing a segment from Tirana city. General information about the situation on Parks in Tirana will be provided in photos and plans.

This study will serve as a guide to all architects, local government, urban planners, and landscape architects. The pilot project for the park selected tends to promote the full participation of people with disabilities in the community, by ensuring facilities in access and usability to the community.

1.2 Motivation

Almost all of us in different ways experience a type of disability at least once in our lives. According to the United Nations, 10% of the world's population, or 650 million people today have some kind of disability, which may be of a large or small scale.” In addition, one-quarter of all citizens in developed countries is 60 or older and, by 2050, most developing countries will have caught up” [Denis, 2010]. The facts show that disabilities and problems that follow them are parts of the society in different ways. The biggest problem is that disabled people are excluded from public places and the activities as they do not find the appropriate conditions. Because of the isolation from the other part of the society, many of them decide to stay away from public spaces, suffering a physical and psychological barrier.

Public spaces in Tirana city center are inadequate to welcome ‘weak users’ into such spaces and do not provide ‘social inclusion’ and an equitable society. “Public spaces uphold a happy and healthy community. Streets and their sidewalks, the main public places of a city, are its most vital organs. Think of a city and what comes to mind? It's streets. If a city's streets look interesting, the city looks interesting; if they look dull, the city looks dull” [Ryan, 2006]. People with disabilities need to be part of this community; despite that even people without disabilities here in Albania are suffering from physical barriers in public spaces and the lack of parks. “Well-designed urban public space should aim to address the need of city dwellers to rebalance their lives, offering a refuge from the hustle and bustle or a place in which they can develop through learning and new experiences” [Ryan, 2006]. Following Ryan, in a park designed properly, people can feel comfortable and have a feeling of belonging which brings the sense of a good life.

Universal design is the main concept which tends to eliminate barriers which do not allow different people of different groups and disabled to be integrated into the society. It is a design which has as a main goal to eliminate and minimize psychological, cultural, physical and social barriers in public areas. “Universal Design thus has the potential to help define a coherent European policy of integrating people with disabilities,

strengthening the European goal of enhancing the autonomy of people and making them self-supporting” [Ginnerup, 2009]. Thus, this thesis was motivated by above-mentioned issues trying to give a solution. People with disabilities are the largest minority group. It is a group that anyone can join at any time. “The number of people with disabilities in the world is nearly 15% of the world’s population experience very significant difficulties” [World Health Organization, 2010]. The increasing number of this category of people brings the demand for the creation of areas in which they can feel comfortable and have a social interaction with the other part of the society. Mostly the attention is brought also on the design of the playgrounds for disabled children, as the younger part of the society, but also the older ones.

In the United Nations Convention on the Rights of the Child, 1989, States Parties brings the attention to the equality of the children and their rights in participating in the cultural, artistic and social activities. It tends to promote equal opportunities for creating welcoming play environments for the disabled children and their families, in order to contribute to their positive growth. [Convention on the Rights of the Child, 1998].

Also, a surveying is done by [Landscape Structures, 2014] in the USA that 7 out to 10 parents strongly agree that playground equipment should be designed so all children can play together. In addition, 74% of parents believe it’s important for their children to play with a variety of kids, including those with disabilities [Landscape Structures, 2014]. From the facts, the number of disabilities in adults increases with age, 10% for ages 21 to 64; 27% for ages 65 to 74; 52 % for ages 75 and over. [Erickson, et.al, 2014].

Moreover, 1 from 700 children has Down syndrome. [Frieden, 2009]. Furthermore, Reports also shows the result that 1 in 300 children has cerebral palsy, 1 to 45 children has Autism Spectrum Disorder. These key facts are important to take a further step and to find a solution to the problem for the creation of public spaces for all people. According to the statics in Albania, the persons with disabilities can be classified in people with permanent and temporary disabilities. People with permanent disabilities are persons in a

wheelchair, problems with walkability, the inability of hearing and visually impaired. Temporary disability includes illnesses or injuries during the pregnancy (*Tab. 1*).

Table 1. Categorization of people with permanent and temporary disabilities

<i>With Permanent disabilities</i>	<i>With Temporary disabilities</i>
<ul style="list-style-type: none"> • Persons confined to a wheelchair • Unable to walk • Hard of hearing / Hearing-impaired person • Visually impaired person • Ageing 	<ul style="list-style-type: none"> • Pregnancy Illness/injury

The materials which provide information about the disabled people are useful to understand the demands for the universal design of a park. People with disabilities add to the diversity of the community, and that diversity makes everyone’s life richer. If they can mix normally with the rest of the community, they will have more friends and acquaintances, and more people will have the opportunity to know them. Access for people with disabilities improves access for everyone. Making public spaces and facilities physically accessible for people with disabilities also makes them more accessible for people who may have no disabilities, including families with baby strollers, skateboarders, and bicycle riders. Making ramps as a built-in feature of the environment is good for everyone. The main ways for following universal design standards are Signals, Ramps, Lightening, Urban Furniture, Equipment, and Surfacing ground, Materials, Acoustics, Greenery and Water Surfaces.

1.3 Thesis outline

The thesis structure is as follows. The first section is a description of the public spaces as places in which different people of different groups, ages, abilities, and disabilities meet together. In the first section, the public spaces are analyzed as public parks and playgrounds, following specific standards for each of them. The second section is a study

of main principles of universal design [Mace, 2008] from which two of them has been analyzed: mobility, accessibility. Mobility is one of the main principles and it is related to the facilities created for creating space in which different can move through public spaces and permeate different parts. Accessibility is a way in which a public area is accessed universally without social or physical barriers [Ginnerup, 2009]. Walkability is the third principle studied and which has to be followed in universal design. It is related to the universal way of how people can walk easily and without obstacles through public areas. The third section is an analysis of the main standards which are: signals, ramps, lightening, acoustics, surfacing grounds, equipment, greenery and water surfaces according to [Garg, 1996]. The standards are categorized as European and American. The guidelines for following standards create a successful design and transformation of public parks and playgrounds. The fourth section is a study of the methodology used for the research and data collection. The methodology and approach included in the case study selection criteria, urban description of the site and questionnaires. The case study selection criteria is an analysis of the standards taken into consideration for the selection of the zone.

The urban description of the site includes the description of the location of the park and the public institutions and greenery around. It follows a study of the potentials that the site represents, the weaknesses, a detailed study of the standards applied in the existing park. The fifth section includes the interviews and questionnaires developed in the park, in different parts of it and during different hours of the day .It is also an analysis of the results and a discussion on them. The graphs and charts represent the results of the surveys and questionnaires developed in different parts of the site. These results are discussed to make a detailed study of the frequency of the park by different categories of people during different times of the day. The sixth section is the design proposed for the transformation of the existing park to a public area accessed by all the people, following the principles and standards of universal design. After the study of the main principles and standards, it has been developed a comparison of the existing application of them and how it should be to contribute to the creation of a successful universal park. The proposal includes a study of the pathway that a disabled people have to follow from his house to the public park and the guidelines that have to be followed to make the easiest and most proper design for these people to feel comfortable and enjoy the city.

1.4 Past research

Universal design is a very important concept to follow in the design of the public spaces. “The experience and competence of the users, especially people with disabilities, is vital to the accomplishment of true universal design” [Delta Centre, 2013]. In a study of the University of Canterbury for the Christ church pedestrian environment, it has been developed a study of some of the main problems and potentials of the streets [Curry, 2014]. One of the main problems stated are the narrow streets because dining furniture and cafes. “This narrowing resulted in pedestrians having to weave, rather than adopt a straight path” [Curry, 2014]. Some of the potentials noticed in the streets are the decorative texture paving, good and controlled pedestrian crossing. In the design of the Forest Glen Park [Trieglaff, 2014], there are many successful elements of the principles of universal design. One of them is the water feature and the garden bed created to serve to people of different ability levels. Statues of different animals made from metals are designed to be durable and touchable. Another important element is the urban furniture such as picnic tables. The experience and competence of the users, especially people with disabilities, is vital to the accomplishment of true universal design. In 1990, it was created the Americans with Disabilities Act (ADA), which provides civil rights to persons with disabilities for employment and facility of access in public accommodation and telecommunication. The federal statute emphasizes the importance of curb ramps. “If a public entity has responsibility or authority over streets, roads, or walkways, its transition plan shall include a schedule for providing curb ramps or other sloped areas where pedestrian walks cross curbs, giving priority to walkways serving entities covered by the Act, including State and local government offices and facilities, transportation, places of public accommodation, and employers, followed by walkways serving other areas” [Jacobs, 2009].

According to [Cohen, *et.al*, 2006] health project was created in 2003 and it is the Center for Population Health and Health Disparities. It is an organization which describes the role of public parks in physical activity and health [<http://www.rand.org/>, 2003]. It has realized a series of surveying, observation, and questionnaires to understand how people use the park and the intensity of physical activity occurring in them. It enhances the role

of public parks as places in people can be healthier through the contact with nature and physical exercises. Also the organization through the researchers developed gives a perception and a vision of the people about the park. In 2012 the city of Los Angeles has defined a manual for the design guidelines of parks, which serve to develop a common approach for the implementation of sustainable practices. These guidelines will provide information on the subjects such as spatial organization, site layout, building design, circulation, recreation park furnishings, landscaping and storm water usage [Park Design Guidelines and Standards, 2012]

CHAPTER 2

LITERATURE REVIEW

2.1 Public spaces

Several authors have written about the definition of public spaces. According to [Zhu & Min, 2009], a clear definition of public space does not exist yet in the domestic academic field. Many authors have explained it in different ways but each of them states one same thing: public space is the “Common” “open space”. This is related to the fact that public spaces are open spaces used for the gathering of the community with the aim of social interaction.

“Public space is defined as, the common ground where people carry out the functional and ritual activities that bind a community, whether in the normal routines of daily life or in periodic festivities” [Carr, *et.al*, 1993]. American planning association, [APA, 2008] gives more specific information and categorization of what it can be. “A public space may be a gathering spot or part of a neighborhood, downtown, special district, waterfront or another area within the public realm that helps promote social interaction and a sense of community” [APA, 2008]. According to APA, the public spaces can be plazas, squares in the town, parks, marketplaces, public commons and malls, greenery or areas within public buildings. They help to promote the sense of community in different groups of people.

Public welfare is a motivation for creating or refining public space. There are different studies of public spaces that provide easy movement and safety and they provide noble centers for public life [Mumford, 1970]. The main purpose of creating public spaces which provide good quality life justifies the scope of street and plaza improvement. Public

spaces are places which play an important role in people’s life. “The open space would serve as an antidote to the oppressive physical and psychological conditions of city life” [Cranz, *et.al*, 1977]. Unfortunately, nowadays designer, urban planners are faced with the challenge of creating outdoor environment’s fulfilling all the need of the community. Designs for public places, in general, are limited and constrained. They do not provide comfort and improvement of human needs. This means that they do not allow an engagement of all the people in the process of social interaction [Lucas, 1997].

The main question is what are public spaces? As stated in the [Tonnelat, 2010] research. In urban planning, public space has generally been described as "open space", meaning the streets, parks and recreation areas, plazas and other publicly owned and managed outdoor spaces, as opposed to the private domain of housing and work. According to [Tonnelat, 2010] the notion of public space is better explained by social science. According to Urban sociology, public space is restrained according to its accessibility, both physical and psychological [Tonnelat, 2010]. In political philosophy, the concept of the public has tired an important motivation from the concepts of the Greek agora and the Roman forum, taken as supreme models of public areas where the public affairs of the city are argued among an assembly of equal citizens [Tonnelat, 2010]. In the cited paragraph 'equal citizens' is important since Universal design endorses this concept as the main key to the problem, achieving “equality” and “universality”. According to [Carr F. R., 1993], the public spaces, based on their characteristics can be alienated into some categories as shown in the (*Tab.2*):

Table 2 . Park division according to theirs characteristics and categories

Categories of public places	Subcategories
Public Parks	Public/Central Park, Downtown Parks, Commons, Neighborhood Park, and Mini/Vest A pocket Park
Squares and Plazas	Central Square
Memorials, Markets	Farmers Markets

Streets	Pedestrian Sidewalks, Pedestrian Mall, Transit Mall Traffic Restricted, Streets, Town Trails
Playground	Playground, Schoolyard
Community Open Spaces	Community Garden/Park
Greenways and Linear Parkways	
Urban Wilderness,	Atrium, Marketplace/Downtown
Atrium/Indoor/Marketplaces	Shopping Center
Found/Neighborhood Spaces	Everyday Spaces, Neighborhood Spaces
Waterfronts	Waterfronts, Harbors, Beaches, Riverfronts, Piers, Lakefronts

Visitors with special needs still seems to face difficulties in being social inclusive or excluded in public spaces especially in green spaces this is a matter of how they are perceived by the general public, which is feared to substitute conventional structures and standard of non-able-bodied visitors. There is still a divide in the public spaces in accepting weak users into their environment.

2.1.1 Public Parks

“Park improvement is among the most important of the undertakings now before the City. It should have the cordial cooperation of all” [Montes, 2008].

From the Anglo-Norman public /public and French publique: of or concerning to the people as a whole (first half of the 13th C. Old French). Urban parks were firstly created for people to escape from the dirty reality of city life. In the 21st Century, the greatest city parks are multi-use purposes and promoters for community development. In nowadays providing a high quality of public space that offers more than a simply pleasing physical environment is what sets the urban landscape designers in the challenge. Providing a place that will accomplish all the needs of the community demand. Parks are the node point

where all people gathers' in one place. According to [Harnik, 2002] in: Parks are complex elements of a city. They can serve for different uses, and may be specialized in their function, or can simply provide visual appeal for residents. However they work, act to define the shape and feel of a city and its neighborhoods. They also function as a mindful tool for revitalization [Harnik, 2002]. One of the most important issues in this paper are the 10 points discussed by the author on parks. Despite these 10 points, it is important to mention that these parks should provide inclusion, equitable use to all people.

Parks are useful also to the ' Weak Users' it is their right to frequent parks without being excluded from such environments. City parks and open space improve physical and psychological health, strengthen the communities, and nevertheless help people with disabilities getting out of the monotony of the daily life. In many disciplines, there have been concerted attempts to understand the human relationship with nature and how humans might benefit from nature in terms of health and wellbeing. Research indicates that contrary to popular thinking, humans may be dependent on nature for psychological, emotional, and spiritual needs that are difficult to satisfy by other means. Findings so far demonstrate that access to nature plays a vital role in human health, wellbeing, and development that has not been fully recognized [Maller, 2008]. As it is important to people without disabilities, parks are important also to people with disabilities. It promotes a healthier living to them and to all the community. Exclusion into such public spaces starts since in the entrance of the parks. Lack of adequate facilities for such people are not present into this environments. Elements that made a park such as a playground are not accessible from children with disabilities, Inclusion and socializing with different people helps this part of the community to establish self-esteem within them. Ten important issues are listed according to the book in (Tab.3) 'How cities use parks' [Harnik, 2002] and why it is important to the community. Parks are useful for cities because they promote:

Table 3. Why Parks are useful for cities

1-Community revitalization	<ul style="list-style-type: none"> Community gives the shape to a city and its neighborhood also they function as a tool for revitalization.
----------------------------	---

2-Community engagement

- Parks are one of the most effective ways building the sense of community and improving its quality of life.
- Parks ensure places for people to interact and connect with each other at a place
- Parks channel positive group participation by making diverse people work together toward a shared vision

3-Economic development

- Real property values are a great value.
- Municipal incomes are increased
- pensioner are attracted and retained
- Knowledge workers and talent ones are the ones that work and live

4-Create safer neighborhoods

- Having home near a nature environment help people in reducing aggression, and relieving mental fatigue.
 - Green neighborhoods spaces serve as a gathering place where neighbors from social connection that produces stronger, safer neighborhoods.
 - People are more scared to barren spaces because there is more crime prone.
-

5-Green infrastructure

- In order to make the best usage of open space and greenery, it must be confidently included into a community's design
- Designing a solid system of open space and parks is actually more useful than creating parks isolated spaces
- Cities may use parks in preserving the essential ecological functions and to protect biodiversity.
- When they are planned as part of a system of green infrastructure, parks can help in shaping the urban form and to protect incompatible uses
- Cities may use parks in decreasing public costs, for flood control, stormwater management, transportation, and other forms of built infrastructure

6-Help children learn

- City parks offer to the children the straight experience with nature—the enthusiasm to discover, explores, and captivates about their world and to engage in health-promoting, physical activity.
- City parks offer children a sense of place, self-identity, and belonging as a way of eliminating, vandalism, and violence inside them.

7-Improve public health

- City parks involve children in, experiential, informal learning through games and common experiences with companions, laying ground for effective formal education
- City parks provide a valuable resource for lodging the gap in educational attainment in the community.
- Parks provide people being in contact with nature, in promoting certain health benefits and enrich well-being.
- Physical activity in parks helps to diminish obesity and upturn fitness.
- Parks resources can moderate climate, air, and water pollution impacts on public health
- Cities need to provide all types of parks, to provide to its inhabitants a range of health benefits

8-Arts and cultural program

- Cities today use parks for a wide variety of artistic events and activities.
- Parks can provide a setting for considered and long-term partnerships among communities and artists.

9-Promote tourism

- Arts activity can play an essential role in the regeneration of a park.
- Arts and cultural programs in parks can help arts groups develop new audiences and can offer appropriate preparation and performance space
- Parks provide locations for special events and festivals that fascinate tourists.
- Parks provide places for sports tournaments, which can be major sources of tourism and economic welfares, particularly for smaller cities.
- Large urban parks with zoos, memorials, museums, cultural and heritage artifacts and historical sites can draw the tourist's attention.
- Parks with landscape planting and design that are known as "living works of art" can invite tourist

10-Smart growth

- Parks have elector funding to direct public funds concerning growth management strategies
 - Parks upturn mixed development and redevelopment strategies, refunding higher density fears with accessibility to green space.
-

-
- Parks can both stimulating the urban core and protect the outlying from over-development.
-

In (Tab. 4) according to Association, American planning in the book “How Cities use Parks for” trying to make a comparison to which category does the park taken as a case study, belongs.

Division of parks

Table 4. Division of the parks according to Association American Planning

Regional parks	They are designed, developed and built by local communities to serve a large population and provide a variety of recreational activities and facilities.
Environmental Park	<p>The City defines an Environmental Park as a park that preserves the natural ecological systems of a specific area. Features included within the park like</p> <ul style="list-style-type: none"> • accessible trails • Boardwalks, enhanced by native landscaping for shade. <p>Seating will include :</p> <ul style="list-style-type: none"> • benches for resting • Picnic tables to encourage family and neighborhood gatherings. <p>Materials: Has to</p> <ul style="list-style-type: none"> • remain sensitive to the area • Be natural materials like shell, wood, and rock. <p>Interpretive panels, guideposts, and kiosks may be incorporated to provide information. Parking has to be designed in order to have a minimum impact on the</p>

Waterfront Park	<p>surrounding environment with energy efficient lighting utilizing full cut-off fixtures.</p> <p>The primary goal of waterfront parks is</p> <ul style="list-style-type: none"> • To maximize the connection of citizens and visitors to the water (Visually and physically). <p>Enhancement features include:</p> <ul style="list-style-type: none"> • Native & drought tolerant landscaping for sustainability and shade • Flowering trees & plants for visual interest. • Seating will include benches and tables for eating and resting.
Neighborhood Park	<p>Features such as :</p> <ul style="list-style-type: none"> • walkways <p>Are needed to connect pedestrians and activity nodes.</p> <p>Activity areas include</p> <ul style="list-style-type: none"> • a pavilion for small, gatherings, • a community garden or • a playground or fitness station <p>Plazas or small open green space may be included to provide neighborhood event space landscaped with native trees and plants for shade and sustainability,</p> <p>Seating to include</p> <ul style="list-style-type: none"> • benches, • seat walls • Fixed seating with tables. <p>Special components of the Neighborhood Park should incorporate specific features to depict the surrounding area. Such as:</p> <ul style="list-style-type: none"> • water features for sound and beauty; • play surfaces for tots or older children,

-
- signage for identification or distinction,
 - small scale parking and pedestrian scale
 - lighting
-

According to the (*Tab. 4*) the taken site ‘Gropa e Hajdin Sejdis’ does not belong to any category due to its design. Because of its form and urban features, it was designed to be park only for resting it does not offer any activity despite resting and sightseeing, and due to its bad playground condition children do not frequent the playground. The material used in the play zone is not natural materials but hard material. Universal Designed parks are for everyone. Having an inclusive park help the community to have more social interaction despite that it helps people with disability to go out of the daily shell. Older people will move freely without facing hazards and physical barriers. Wider sidewalks have to be provided in order to promote safer walking and also signing for the Deaf community has to be implemented. Meanwhile, voice-activated intersections and variations in pathway surfaces should be used for the visually impaired; shorter distances with curving sidewalks, benches, and public restrooms should be provided to promote a comfortable environment for older adults and for children.

2.1.2 Playgrounds

Playgrounds are necessary parts of the public parks. They serve as an attraction for children and create a happy environment for them to be raised. Playgrounds are spaces and structures which encourage the participants to have a healthy interaction, in the fresh air and developing physical activity. Children like to spend time in these areas because they help them in developing their creativity and confidence in themselves.

As a universal design for parks tends to include all the people, the main principles for playgrounds can be a healthier and happier environment for all the children, especially for them with disabilities. The guidelines for playgrounds do not intend to create standards for the creation of great and good-looking parks, but mostly for making them accessible

and safe for all the participants. Children with disabilities need to feel equal and they are the ones which can be more spiritually connected to these areas, for a better quality life.

According to [Adler, et.al, 2015], the main principles for designing a playground are:

- Accessibility
- Age separation
- Conflicting activities
- Sightlines
- Signage and/or labeling
- Supervision

Through the selection of protective surfaces, adapted equipment parts and location are the main elements for defining the accessibility of all children in a public park, including also the disabled people. Age separation can be realized through a usage of the buffer zone, which can be trees or bushes, tending to divide the younger children to minimize the injury from the older ones .The different zones can be defined by creating zones of different layout of pathways and landscaping. The signage that can be put in a public playground can help the parents in choosing the right area for their children to go, based on their ability and age group.

Some recommendations for the location of the equipment in playgrounds are:

- Moving and heavy equipment should be located in the corners or sides of the area, because of the large area they occupy while moving. Equipment's such as swings or merry-go-rounds need to be at the edges and the area around them properly maintained.
- Slide exits are put in an uncongested and empty surface of the playground.
- Composite structures should be put in a way to allow accessibility and proper use of the playground, without letting structures to interphase with each other, such as an access component should not be placed in a slide exit zone, for safety and easy accessibility.
- Clear sightlines refer to the minimization of visual barriers so that different playing areas can be visible from different parts. This is important in terms of safety and

supervision of the children from the parents .In playgrounds with areas for different ages, the site should allow the caregivers to supervise the children which can be playing in different parts and the bushes should let the equipment be visible.

In the (Fig.1) it is shown the appropriate play for disabled children in order to be involved in the play, with the aim of socialization.



Figure 1. A concept design by Pia Balducci for an equipment to be accessed with a wheelchair, [https://www.pinterest.com/pin/176695985354915502/, 2012].

For the design of a playground two important factors are taken into consideration:

i. Selection of equipment

Equipment should meet the requirements of BS EN 1176. This may be proved mainly by British Standard Kitemark and TÜV mark. [Association of Play Industries, 2009]. The layout for the design of playground can be organized in such a way that through the usage of equipment and their positioning makes the area usable by all the categories of people and children. The equipment is chosen based on the children sizes, abilities and mental development. Also, there are some standards for the layout of equipment in a playground.

According to [Adler, *et.al*, 2015]: Some recommendations are given on playground-related injuries and mechanical mechanisms of injury; it is stated by to [Adler, *et.al*, 2015]: that playground equipment has remained the largest single hazard pattern associated with playground use: A categorization of play games according to the age are given in (*Tab.5*):

Table 5. The selection of equipment for children of different ages.

EXAMPLE OF AGE-APPROPRIATE EQUIPMENT		
Toddler- Ages 6 -23 Months	Preschool – 2- 5 Years	Grade schools- 5-12 Years
<ul style="list-style-type: none"> • Climbing equipment's under 80 cm • Ramps • Single file steps ladders • Slides • Spiral slides less than 360° • Spring rockers • Stairways • Swings with full buckets seats 	<ul style="list-style-type: none"> • Certain climbers • Horizontal ladders less than or equal to 152 cm high for ages 4 and 5 • Merry-go-rounds • Ramps • Rung ladders • Single file steps ladders • Slides • Spiral slides up to 360° • Spring rockers • Stairways • Swings-belt, full bucket seats(2-4) and rotating tire 	<ul style="list-style-type: none"> • Arch climbers • Chain or cable walks • Free standing climbing events with flexible parts • Fulcrum seesaws • Ladders-horizontal, run and step • Overhead rings • Merry-go-rounds • Ramps • Ring treks • Slides • Spiral slides more than one 360° turn • Stairways • Swings- belts and rotating tire • Track rides • Vertical sliding poles

ii. Surfaces

Suppliers have to make available surfacing that has been independently tested to BS EN 1177 and BS 7188. It should have the required Critical Fall Height properties for the height of fall prerequisite by the equipment or recommend by the supplier [Adler, et.al, 2015].

Field and laboratory test methods are described in ASTM F1292 [Dudley, 1989]. Testing using the methods described in ASTM F1292 will provide a “critical height” rating of the surface, [Adler, et.al, 2015]. This height is calculated as the distance from the highest point of equipment and the surface below it. This height is calculated to prevent damage and injuries in case of incidents in the playground. The protecting surfacing is chosen to take into consideration the critical height rate.

For equipment which requires for a child to be standing or sitting, such as sandboxes, playhouses or activity walls, according to [Adler, et.al, 2015], there are some type of surfaces allowed and some not illustrated in (Tab.6):

Table 6. Table of Appropriate and Inappropriate Surfacing for ground

Appropriate and Inappropriate Surfacing for ground	
Appropriate surfacing	Inappropriate surfacing
<ul style="list-style-type: none"> • Any material tested to ASTM F1292, including unitary surfaces, engineered wood fiber, etc. • Pea gravel • Sand • Shredded/recycled rubber mulch • Wood mulch(not CCA-treated) • Wood chips 	<ul style="list-style-type: none"> • Asphalt • Carpet not tested to ASTM F1292 • Concrete • Dirt • Grass • CCA treated wood mulch

2.2 Universal design

The aim of the universal design is to develop theory, principles and solutions to enable everybody to use the same physical solutions to the greatest extent possible, whether it can be buildings, outdoor areas, and means of communication or household goods. Universal design opposes, ideologically and politically, all unnecessary and stigmatizing specialized solutions, whether they are intended for people with disabilities or other groups of the population. Equal status, equal treatment, and equal merit are key concepts [Aslaksen, 1997]. It is generally agreed that the term universal design first entered into usage in the mid-1980s by United States (US) architect Ronald L. Mace [Duncan, 2007]. Mace wrote Universal Design is a “commonsense approach to making everything we design and produce, usable by everyone to the greatest extent possible” [Mace, 2008]. The Center for Universal Design published seven principles applicable to environmental accessibility. Equitable Use, Flexibility in Use, Simple and Intuitive Use, Perceptible Information, Tolerance for Error, Low Physical Effort, Size and Space for Approach and Use.

It can be concluded that a definition of Universal Design is present in Europe and that there is a clear belief in the need for Universal Design to enable people with disabilities to reach full democracy and economic advantages. Europe now sees the adoption of an increasing number of national disability action plans and intends to give them their proper place, acknowledging that concrete actions are needed, good intentions not being enough [Ginnerup, 2009].

Several authors have written about Universal design as a concept being applied to urban areas, and its beneficial impacts on indoor and outdoor environments. It is quite challenging to define universal design principles that would fit for all the public spaces in the world. On the other hand, it is possible to identify some basics that would help designers and planners through the design process [Memluk, 2013]. The planning of a city is important to its community, because are they who live in it. Public spaces are not carrying the significance as a space of freedom. Physical barriers are being worried not

only about the disabled people but also to people without disabilities. The council of Europe (COE) has published a guideline and principle for accessibility by defining physical barriers as an obstacle. Ongoing your voyage in the open, you may come crosswise a number of obstacles. Narrow pavements and footpaths are challenging for people who need extra space for moving. Uneven streets and/or streets with smooth surfaces are problematic or even dangerous to cross, for most people. If the curbs are interrupted, the unsighted or partially blind people that use the curbs as guiding lines may become disorientated [Europe Council, 1993].

Universal design is a worldwide concept that influenced and joined concepts such as *Design for all*, *Lifespan Design*, *And Inclusive design*. In US universal design has slowly gained approval but has seen a ruttled embracing. Universal design still has remained a strategy that has been executed by different sectors of the private and public domains, selectively and for honestly barely enclosed purposes. On or after the perspective of more usable and supportive environments, the US remains mainly concentrated on accessibility: developing regulations, codes, standards, policies and procedures to provide societal inclusion to people with disabilities [Duncan, 2007].

The main problem in all other countries and in Albania too is lack of accessibility, comfortability, and safety of people with/without disabilities. People of diverse abilities should be able to use buildings and places comfortably and safely, as far as possible without special assistance. People should be able to find their way easily, understand how to use building facilities such as intercoms or lifts, and know what is a pedestrian facility, and know where they may encounter traffic [National disability authority, 2005]. The most common feature that 'Weak users' faces are 'barriers'. The World Health Organization (WHO) describes barriers as being more than just physical obstacles [World Health Organization, 2010]. The (WHO) organization defines barriers as: "Factors in a person's environment that, through their absence or presence, limits functioning and creates disability. These include aspects such as:

- i. a physical environment that is not accessible,
- ii. lack of relevant assistive technology (assistive, adaptive, and rehabilitative devices),

- iii. negative attitudes of people towards disability,
- iv. Services, systems, and policies that are also nonexistent or that delay the involvement of all people with a health condition in all areas of life.

Accessibility is a crucial point in Universal design, and barriers should be avoided. The Central Disease Control and Prevention (CDC) have done a classification on 'Barriers' by dividing it into seven most common barriers. *Attitudinal barriers, Communication Barriers, Physical barriers, Policy Barriers, Programmatic Barriers, Social Barriers*. To these people it is important to have communication with the different people, that's why public spaces can be a good key to the problem. In Albania, public spaces do not offer a comfortable accessibility, a well universally designed public space, where people can sit, meet and socialize, in a safe, comfortable place. Universal Design became a relevant theme in Albania after the 1990s. In 1950s Universal Design began to be considered in Europe, Japan, and the United States, hereafter, in 1970 evolved gradually from removing physical barriers to people with disabilities to the integration of all people within all environments.

2.2.1 Accessibility

All designed spaces, environment's, buildings, services, etc. have to be accessible. It is important that accessibility as a feature is assembled into solutions in a way that promotes integration, and not just a provisional solution. Accessibility in Universal design is canned in different ways not only as a pass way but takes place into different fields. Universal Design – under different headings – and accessibility are on the agenda in many countries, translating human rights, anti-discrimination, and democratic values into concrete policies. Issues within health care, integration, accessibility, education or employment often bear the characteristics of Universal Design approaches [Ginnerup, 2009].

According to [Steinfeld, 2010], social and physical environment is a qualifying context that has a great influence on the experience of disability and the process of rehabilitation. It also identifies that the process of disablement is actually universal and exceedingly adjustable. Environment, as in the case of any child who has no way of reaching a school,

can generate limitations on activity and participation, even without the existence of impairment. Besides, the impact on two people with the same impairment can be very different, reliant on personal factors.

The street should be easily accessed by all people, especially, by older people and disabled people (*Fig.3*).

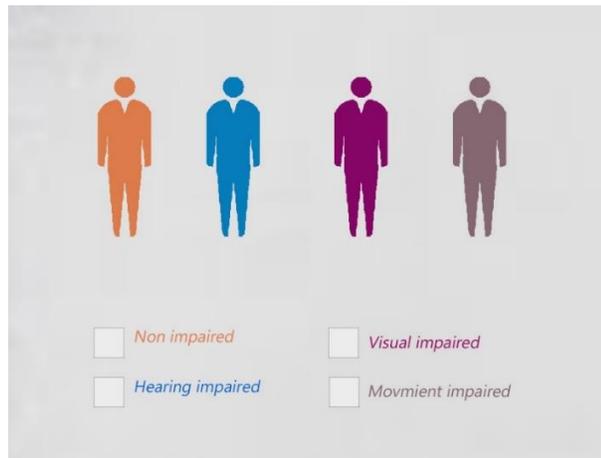


Figure 2. Disability categorization

It is mentioned in the article of [Steinfeld, 2010], that some design interventions that reduce barriers for one group of people will be counterproductive to another. Moreover, the provision of curb ramps may produce a hazard for people who have visual impairments. According to [Steinfeld, 2010], universal design goes beyond the specification of solutions to solve problems of specific groups to holistic solutions that address a broad range of disabilities, given examples of how to treat paths and sidewalks in order to be easily accessed : curb ramps can be treated with materials and colors that make them detectable to people with visual impairments and supported by other technologies like audible and visual walk/don't walk signals to make intersections safer for everyone.



Figure 3. Curb ramp program in San Francisco [Source: <http://sfdpw.org/curb-ramp-program>, 2016].

Universal design should promote Accessibility not only for wheelchair people. Has to serve the needs of a broader population in order to be a more successful approach. This leads to the idea that wheelchairs are simply another form of wheeled mobility like bicycles, handcars, baby carriages and other wheeled devices. The aging of the population worldwide is another important issue, particularly, in the high-income countries, so universal design helps in the accessibility issue for all people in order to access every possible public space.

2.2.2 Mobility

The greater challenge today for the urban planner is mobility, how to have inclusive mobility for all people. The Government is, assigned to inclusive civil rights for disabled people. Is fundamentally important the integration of transport policy, which includes

accessible public transport, public transport infrastructure, and a barrier-free pedestrian environment.

Part III of the Disability Discrimination Act 1995 (DDA) gives disabled people a right of access to goods, facilities, services and premises. In 1996, people with disabilities were less favorably than other people for a reason related to their disability. But that was changed in October 1999 where service providers took steps in changing, policies practices and procedures which make it impossible and difficult for disabled people to use a service; and to overcome physical features.

These requirements are being applied to facilities and services in the pedestrian environment and in transport related infrastructure: bus stations and stops, airports and rail stations (*Fig.4*).

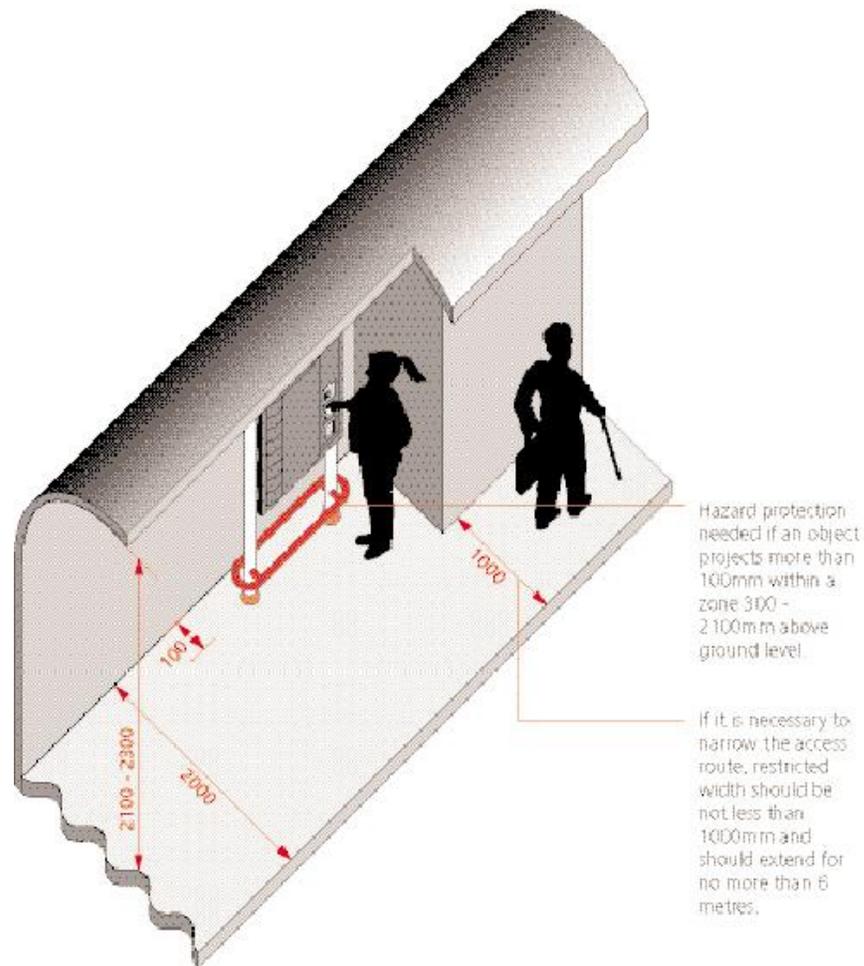


Figure 4. Access to transport sites and building:

passageways[https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/3695/inve-mobility.pdf, 2005].

According to UK government for inclusive- mobility a person that does not use a walking aid prerequisite a space not less than 700 mm, but people that are using a walking stick necessitates greater width than 700 mm, minimum 750 mm. A person who uses two sticks or crutches, or a walking frame necessities a minimum of 900mm, a blind person using a long cane or with backing dog requests 1100mm. A visually impaired person who is being guided requires a width of 1200mm. A wheelchair user and an ambulant person side-by-side need 1500mm width. Unobstructed height above a pedestrian way is also essential, especially for visually impaired people. Commonly, this should be a minimum of 2300mm

except on sub-surface station platforms where it should be 3000 mm. Where a sign is suspended over a footway or pedestrian area, for example in a railway station a minimum allowance of 2100mm is tolerable (2300mm on cycleways). Wherever trees ledge a footway it is desirable to cut them back to at least 3000mm clear height to allow room for regrowth (*Fig.5*).

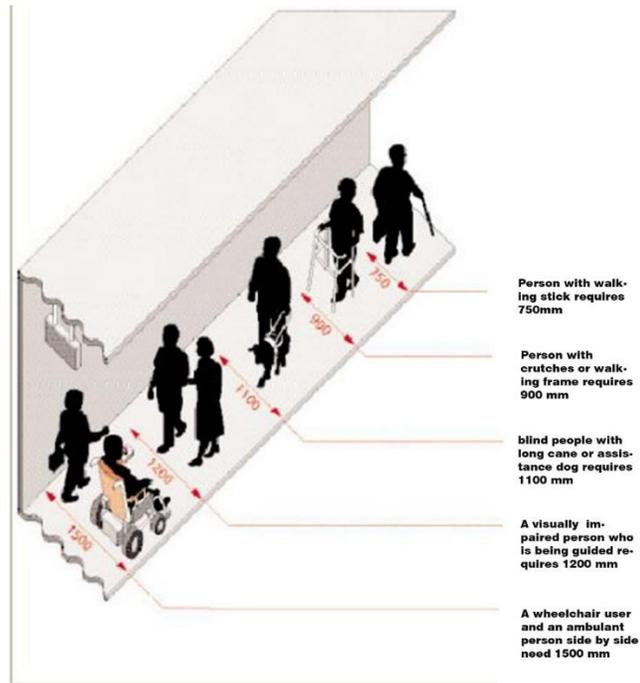


Figure 5. A comprehensive set of measurements for wheelchair visitors [Source: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/3695/inclusive-mobility.pdf, 2005].

It about to be mentioned also the importance of the distance without a rest for impaired people [UK.Government, 1995].

Table 7. Recommended distance limit without a rest

Impaired group	Recommended distance limit without a rest
Wheelchair users	150m
Visually impaired	150m

Mobility impaired using stick	50m
Mobility impaired without walking aid	100m

According to (Tab. 7) recommended distance limit without a rest are shown [UK. The government, 1995], which are essential in designing a park, and its distribution on urban furniture as point stops.

2.2.3 International case studies

An international case study is taken into consideration to show similar project on universal design in public spaces, especially on parks. This case study is an implemented project that takes place in Woodridge Illinois. The case study was done by Mark [Trieglaff] on ‘Universal design on the park and recreational settings’. The park is a good example that not only meets the requirements of [Reiskin, 2008] and 2010 ADA accessibility guidelines but surpass them in incorporating universal design principles. The process is explained from planning to implementation.

According to [TRIEGLAFF, 2014] universal design is a concept that is not used in recreational settings. A program was developed by Kellogg foundation located in Battle Creek, Michigan called “Access to Recreational” step taken regarding in making recreational areas accessed but the main aim was to collect funds with the aim of creating future universally designed recreational areas. The study makes the analysis of parks elements how these elements overcome the American with disabilities Act accessibility guideline (ADAAG) standards and how and why certain universal design products are chosen.

In 1.1 paragraphs it is explained the list of mandatory requirements of (ADAAG) to understand the achievements of the Forest Glen Park design.

In paragraph 2 Parks a playground universal design features are analyzed the six parks elements that embody Universal Design principles

- Walkways
- Playgrounds
- Playgrounds surfaces
- Swings
- Raised water features and garden bed
- Picnic tables and shelters
- Overall ground design

In the (Fig.6) is illustrated the gentle slope in playgrounds that is less than 5 %. In this case, the [TRIEGLAFF, 2014] criticizes the (ADAAG) slope standards in saying that slopes above 5% and up to 8.3% are considered ramps. Also, a ramp requires handrails on both sides and must not surpass a certain length without providing a resting area.



Figure 6. Walkways incorporate UD gentle slope, [http://actservicesconsulting.com/images/FGPCaseStudyws.pdf, 2014].

Playgrounds also are an important element emphasizes the author, in his paragraph for playgrounds. It is challengeable to make them inclusive for all children. According to the 2010 recreational standards play games have ramps that make playground by disabled children 50% accessible but according to the [TRIEGLAFF, 2014], this is done once or twice by an impaired child to bump up or to transfer off by a game platform. In the second time the child is tired and by this playgrounds are not inclusive. In order to have an

inclusive playground, the author installed a ramp system that allows 90 % access in the playground (*Fig.7*).



Figure 7. Playground ramps system connecting 90% of play elements, [http://actservicesconsulting.com/images/FGPCaseStudyws.pdf, 2014].

Playgrounds surfaces according to [ADA 2010] playgrounds standards the appropriate material to be used in a playground is engineered wood fiber, the author is critique to the used material due to the reason of, after being used daily the material does not maintain a stable state and quickly it becomes inaccessible by the weak user. So it was proposed for the Illinois Park a material that would spare the cost of maintaining and also would be accessible by wheelchair people. It was chosen and installed a rubberized surface for the playground that does not require constant maintain. See (*Fig 8*) by offering a smooth transition and easy access to the playgrounds.



Figure 8. Rubberized playground, poured in place,
[<http://actservicesconsulting.com/images/FGPCaseStudyws.pdf>, 2014].

Plays like swings according to [TRIEGLAFF, 2014] should be in a separate place from the playground due to the fact that children may harm each other while running in front of swings. Moreover, the swing is designed in order to give the possibility to the children with a physical disability such as additional back and neck supports. This is beyond the national standard for recreational see (*Fig 9*).



Figure 9. Universally designed play, (Swings),
[<http://actservicesconsulting.com/images/FGPCaseStudyws.pdf>, 2014]

Water features are implemented in the park according to the universal design principle two three and six in order to have '*equitable use, flexible use*'. By playing with the height of the water basement, making raised the garden bed to be reached by wheelchair people, small child, and people with back support etc. also designing an accessible space around water to be easily precepted by low vision people by incorporating different elements, (Fig10).



Figure 10. Raised water features incorporating several UD aspects, [http://actservicesconsulting.com/images/FGPCaseStudyws.pdf, 2014]

Picnic shelters are located near the water feature and at the end of the playground. (Fig11) The recreational standard requires only one accessible table but according to the [TRIEGLAFF, 2014] there should be three positioned table The first one should be inside the shelter, in order to be out of the sun, the second one has to be located in the sun in order to fulfill the principle one (Appendix A). And the other one should be approximately near the water feature and playground in order for a parent to check their children.

CHAPTER 3

GUIDELINES FOR UNIVERSAL DESIGN IN PARKS

3.1 Overview

Design for All is design for human diversity, social inclusion and equality [EIDD Stockholm Declaration, 2004].

The materials which provide information about the disabled people are useful to understand the demands for the universal design of a park. People with disabilities add to the diversity of the community, and that diversity makes everyone's life richer. If they can mix normally with the rest of the community, they will have more friends and acquaintances, and more people will have the opportunity to know them. Access for people with disabilities improves access for everyone. Making public spaces and facilities physically accessible for people with disabilities also makes them more accessible for people who may have no disabilities, including families with baby strollers, skateboarders, and bicycle riders. Making ramps as a built-in feature of the environment is good for everyone. There are certain standards by [Reiskin, 2008] and (ADAAG) on different elements for designing an inclusive park. The following standards on Signals, Ramps, Lightening, Urban Furniture, Equipment, and Surfacing ground, Materials, Acoustics, Greenery and Water Surfaces are going to be listed.

3.2 Signals

Signals are important to direct people in need to a certain place in a safer way. Also, it helps people with disability to reach a place easily. It is stated by the MUTCD Section 4E.0 9: "If a particular signalized location presents difficulties for pedestrians who have visual disabilities to cross the roadway, an engineering study should be conducted that

considers the needs of pedestrians in general, as well as the information needs of pedestrians with visual disabilities. For this certain issue, standard is introduced by American Compilation 1: Americans with Disabilities Act (ADA) Accessibility Guidelines (ADAAG). "Accessibility Guidelines for Buildings and Facilities" for signage (Appendix B).

According to [Central public works department, 199], visually impaired persons make use of other senses such as hearing and touch to recoup for the lack of vision. Whereas from visual signals benefit those with hearing disabilities. A list of standards is done according to [Garg, 1996]:

- A. Signs should be designed and located (not less than 20 mm. high).
- B. For visually impaired persons, an information board in braille should be installed on the wall at a suitable height.
- C. To ensure safe walking there should not be any protruding sign which creates an obstruction in walking.
- D. The symbols/information's should be in contrasting color and properly illuminated for people with limited vision, due to the fact that they are to be able to differentiate amongst primary colors.
- E. International symbol mark for wheelchair as shown below be installed at the lift, toilet, staircase, parking areas etc. that have been provided for the handicapped.
- F. A person in a wheelchair is less than 1200 mm high.
- G. A person who is partially sighted needs contrasting texture alongside walkways and audible signs for dangerous areas,
- H. Signs should be useful to everyone, easily seen from eye level, readable by moving the fingers and well lighted for nighttime identification.
- I. To reach the desired place. Signs shall indicate the direction and name of the accessible facility and incorporate the symbol of access. The size, type, and layout of lettering on signs shall be clear and legible.

Signal must be provided inroads, some examples are shown in (*Fig. 12*):

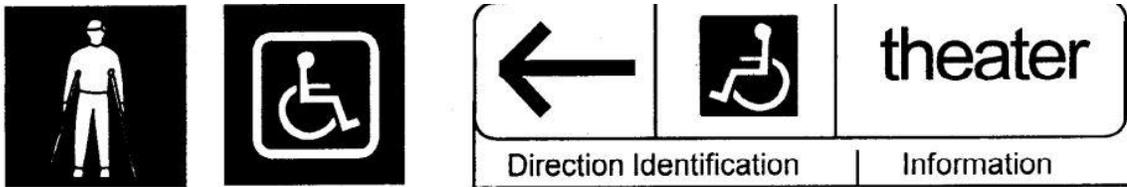


Figure 11. Signage examples for disabled people

3.3 Play Areas and Ramps

According to [ADA Standards Guidelines, 2010], guidelines are cited in both titles II AND III regarding the **240.2 Play Components**.

Advisory 240.2.1 Ground Level Play Components: Ground level play components accessed by children with disabilities must be integrated into the play area. Designers should consider the optimal layout of ground level play components accessed by children with disabilities to foster interaction and socialization among all children. Grouping all ground level play components accessed by children with disabilities in one location is not considered integrated

Ramps are preferred over transfer systems since not all children who use wheelchairs or other mobility devices may be able to use, or may choose not to use, transfer systems. Where ramps connect elevated play components, the maximum rise of any ramp run is limited to (305 mm). Where possible, designers and operators are encouraged to provide ramps with a slope less than the 1:12 maximum. Berms or sculpted dirt may be used to provide elevation and may be part of an accessible route to composite play structures.

- A. **1008.2.5.1** Ground Level. Ramp runs connecting ground level play components shall have a running slope not steeper than 1:16.
- B. **1008.2.5.2** Elevated. The rise for any ramp run connecting elevated play components shall be (305 mm) maximum.
- C. **1008.2.5.3** Handrails. Where required on ramps serving play components, the handrails shall comply with 505 except as modified by 1008.2.5.3.
- D. **EXCEPTIONS:** 1. Handrails shall not be required on ramps located within ground level use zones.

- E. Information on handrails diameter height is found in Appendix B

According to [ADA Standards Guidelines, 2010] is cited in both title II AND III regarding the **406 Curb Ramps**

- A. 406.1 General. Curb ramps on accessible routes shall comply with 406, 405.2 through 405.5, and 405.10.
- B. 406.2 Counter Slope. Counter slopes of adjoining gutters and road surfaces immediately adjacent to the curb ramp shall not be steeper than 1:20. The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level. See (fig) in (Appendix B)
- C. 406.3 Sides of Curb Ramps. Where provided, curb ramp flares shall not be steeper than 1:10. See (fig) in (Appendix B)
- D. 406.4 Landings. Landings shall be provided at the tops of curb ramps. The landing clear length shall be 36 inches (915 mm) minimum. The landing clear width shall be at least as wide as the curb ramp, excluding flared sides, leading to the landing. See fig in (Appendix B)
- E. EXCEPTION: In alterations, where there is no landing at the top of curb ramps, curb ramp flares shall be provided and shall not be steeper than 1:12.

3.4 Bus zone and Parking's

According to ADA guidelines standards on bus zone:

209 Passenger Loading Zones and Bus Stops

- A. 209.2.2 Bus Loading Zones. In bus loading zones restricted to use by designated or specified public transportation vehicles, each bus bay, bus stop, or other area designated for lift or ramp deployment shall comply with 810.2.2 : *see (fig13)*
- B. 810.2.2 Dimensions. Bus stop boarding and alighting areas shall provide a clear length of (2440 mm) minimum, measured perpendicular to the curb or vehicle

roadway edge, and a clear width of (1525 mm) minimum, measured parallel to the vehicle roadway.

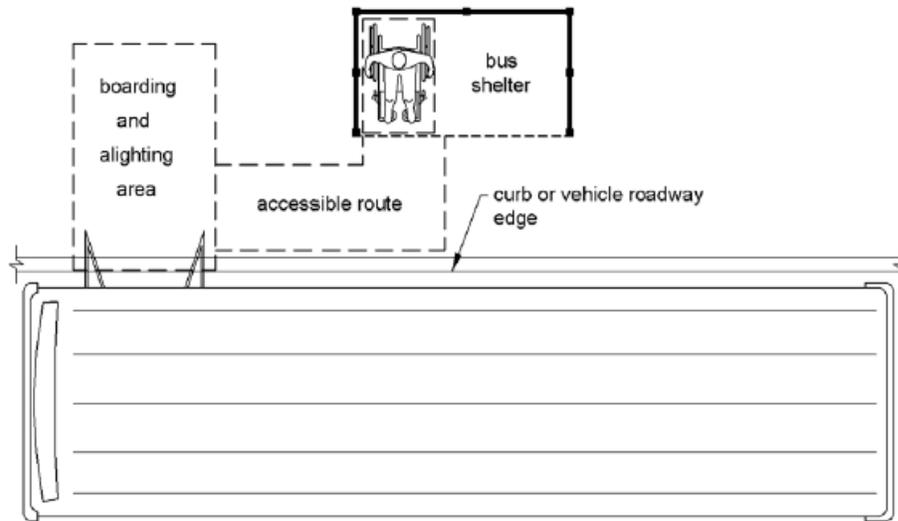


Figure 12. 810.2.2 Dimensions of Bus Boarding and Alighting Areas, [https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/183-ada-standards/1406-ada-standards-for-transportation-facilities, 2010].

The width of parking bay shall be minimum 3.6 meters guiding floor materials shall be provided or a device which guides visually impaired persons with audible signals or other devices which serves the same purpose shall be provided.

3.5 Lightning

According to [Park facility lightning standards, 2008], all exterior lighting shall have horizontal shields to reduce vertical light above the fixture Exterior lighting shall conform to the following standards.

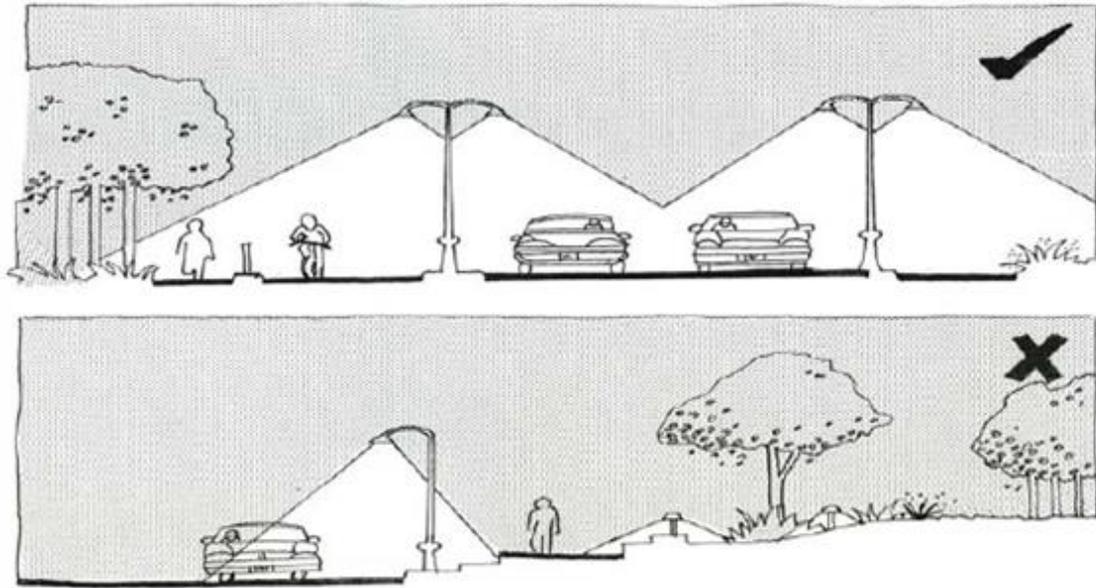


Figure 13. Lighting designed according to provide safety in public spaces [Sunshine Coast Council, 2013].

- A. All types of exterior doors shall be illuminated during the hours of darkness with a minimum maintained one (1) foot-candle of light at ground level, measured within a five (5) foot radius from the center of the door.
- B. Parking lots and walkways accessing buildings and parking areas shall be illuminated with a minimum maintained one (1) foot-candle (maximum eight (8) foot-candles) of light on the driving or walking surface during the hours of operation and a minimum of one hour thereafter.
- C. Lighted bike and multi-use trails not incorporated in the roadway shall be illuminated with a minimum maintained twenty-five one hundredths (0.25) foot-candles of light at ground level during the hours of darkness.
- D. Paved walkways in open space areas, not directly serving buildings or parking areas, shall be illuminated with a minimum maintained 5.38 lumen/m² light on the walking surface during the hours of operation and a minimum one hour thereafter. After hours illumination may be reduced 50%. Therefore, the lighting of these areas shall be designed utilizing two circuits or more, alternating power to fixtures.

3.6 Colors as warning elements

According to [Garg, 1996]:

- A. Persons with limited vision may be able to distinguish between dark and bright shades and variance in primary colors.
- B. For persons with limited vision use of contrasting color, arrangements are vital.
- C. At locations where there is a difference in level, such as stairs, the surface material should be changed using a color contrast scheme and guiding blocks.
- D. 705.1.3 Contrast. Detectable warning surfaces shall contrast visually with adjacent walking surfaces either light-on-dark or dark-on-light.

3.7 Grounds Surfaces

According to American Compilation 1: Americans with Disabilities Act (ADA) Accessibility Guidelines (ADAAG). "Accessibility Guidelines for Buildings and Facilities" Surface material appropriate for disabled people in different environments. Surface Textures. The surface of an accessible route shall comply with 4.5.

- A. A4.5.1 General. People who have difficulty walking or maintaining balance or who use crutches, canes, or walkers and those with restricted gaits are particularly sensitive to slipping and tripping hazards. For such people, a stable and regular surface is necessary for safe walking, particularly on stairs. Wheelchairs can be propelled most easily on surfaces that are hard, stable, and regular. Soft loose surfaces such as shag carpet, loose sand or gravel, wet clay, and irregular surfaces such as cobblestones can significantly impede wheelchair movement.
- B. The Occupational Safety and Health Administration acclaims that walking surfaces have a static coefficient of friction of 0.5. A research project supported

by the Architectural and Transportation Barriers Compliance Board (Access Board) conducted tests with persons with disabilities and concluded that a higher coefficient of friction was required by such persons. A fixed coefficient of friction of 0.6 is recommended for accessible routes and 0.8 for ramps.

- C. Cross slopes on walks and ground or floor surfaces can cause considerable difficulty in driving a wheelchair in a straight line.

Ground surfaces must be stable, firm, and slip-resistant. Stable surfaces resist movement, whereas firm surfaces resist deformation by applied forces. Accessible surfaces remain unchanged by external forces, objects, or materials (*Fig.15*), [Hanebrink, et.al, 2010]. Avoid materials or construction methods that create bumpy and uneven surfaces in areas and along routes required to be accessible.



Figure 14. Hardened materials such as concrete, asphalt, tile, and wood are sufficiently firm and stable for accessibility [<https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/guide-to-the-ada-standards/chapter-3-floor-and-ground-surfaces>, 2010].

3.8 Equipment

According to [Zeller, *et.al*, 2006] on accesible by disabled funitures such as picnic tables and benches on parks.

- A. 1008.4.3 Play Tables. Where tables play are provided, knee clearance (610 mm) high minimum, (430 mm) minimum, and (760 mm) wide minimum shall be provided. The tops of rims, curbs, or other obstructions shall be (785 mm) high maximum.
- B. EXCEPTION: Play tables designed and constructed primarily for children 5 years and younger shall not be required to provide knee clearance where the clear floor or ground space required by 1008.4.2 is arranged for a parallel approach.
- C. 1008.4.4 Entry Points and Seats. Where play components require transfer to entry points or seats, the entry points or seats shall be (280 mm) minimum and (610 mm) maximum from the clear floor or ground space.
- D. 1008.4.5 Transfer Supports. Where play components require transfer to entry points or seats, at least one means of support for transferring shall be provided.

3.9 Water Surfaces

According to [Garg, 1996] Water Fountains (Drinking) permit enough space around the water fountain to make it easily accessible for wheelchair users. Depending on the kind of water fountain tolerate a space about 700 mm high and 350 mm deep under the fountain. According to [Hanebrink, et.al, 2010] on water play, in Chapter 10, Section 1008 Play Areas:

- A. **Advisory 1008.2.3** Water Play Components. Personal wheelchairs and mobility devices may not be appropriate for submerging in water when using play components in water. Some may have batteries, motors, and electrical systems that when submerged in water may cause damage to the personal mobility device or wheelchair or may contaminate the water. Providing an aquatic wheelchair made

of non-corrosive materials and designed for access into the water will protect the water from contamination and avoid damage to personal wheelchairs.

3.10 Urban furniture

According to [Accessibility Guidebook for Outdoor Recreation and Trails, 2013] urban features are imperative to be universally designed in order not to promote social exclusion. Standards prevent social exclusion and promote happy social interaction between communities. Some standards are listed below for possible urban furnitures in public spaces urban furniture. The number of wheelchair seating spaces that must be provided at each table is based on the length of the picnic table (*Fig.16*). For larger tables, one wheelchair seating space is required for each 7.32 meters of usable space around the perimeter of the table. Practically speaking, tables up to 2.74 meters long generally require one space. Tables between 3.05 meters and 6 meters long usually require two wheelchair spaces, and so on for longer tables, such as four spaces for tables that are 12 meters long.

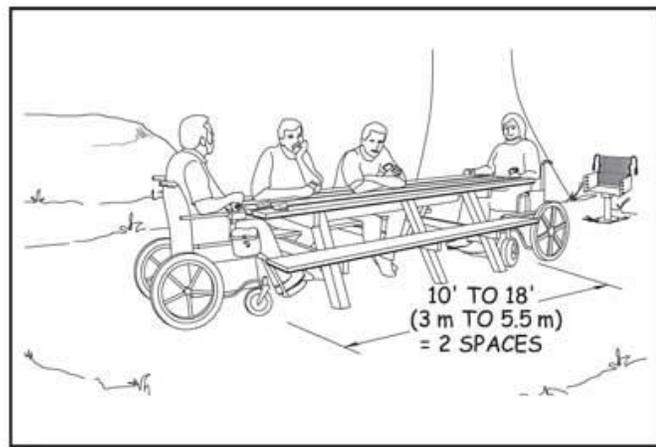


Figure 15. At least two spaces must be accessible at a (3- to 5.5-meter) -long picnic table[<http://www.fs.fed.us/t-d/pubs/htmlpubs/htm06232801/page13.htm>, 2013].

According to [Garg, 1996] some guidelines for benches, dustbins, and drinking fountain are given below.

- i. Benches, dustbins and drinking fountains should be mounted with adequate space around them for wheelchair users to maneuver.
- ii. Benches should be fixed along the side of park roads.
- iii. Space should be provided for wheelchair users at tables.
- iv. Space should be provided for wheelchair user for access to and from the tables.

Additionally, some guidelines for public toilets are given below from [Garg, 1996].

The toilet bowl had better be a stool type. Nevertheless, one of the toilet bowls is required to have a handrail installed (*Fig.17*). The door should, as a rule, be outward-opening (*Fig.18*). The door lock must be easily operable. Likewise, an indication must be provided on the outside of the stall to show that the toilet is unavailable.

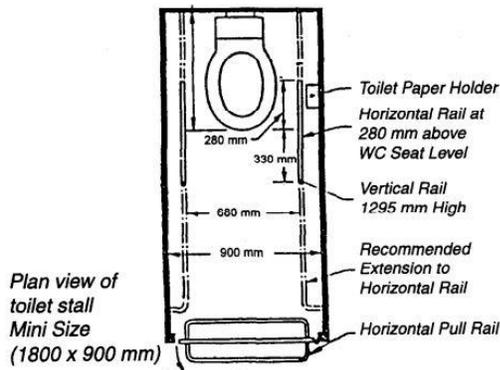
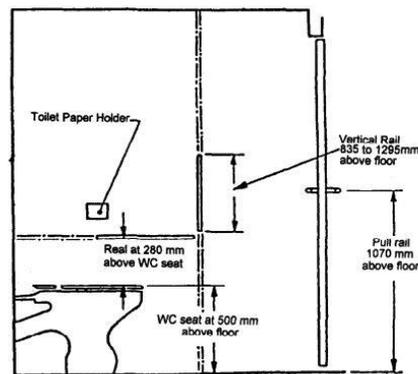


Figure 16. Public toilet plan, [Garg, 1996].



Side elevation of toilet stall

Figure 17. Public toilet elevation [Garg, 1996].

CHAPTER 4

METHODOLOGY

4.1 Overview

This is a qualitative case study approach with a study of the facts, surveying, interviews, and observations. Additionally, a pilot project is going to be developed in terms of universal design principles. Also based on web research on public spaces, squares, and trying to give a solution in a universal way. Furthermore, the research is going to compare strategies that Albanian government has compared to European countries. Detailed research on play environments will be done, how colors, acoustic, lightening, contrast, textures effects on people with disabilities and how inclusive playground can be implemented in Public spaces of Tirana, by promoting a healthy environment and an inclusive design space. The implementation of principles for the universal design of parks is a necessity as many disabled people are part of the society, without being excluded. Results expected are about bringing all users' view in comprehending the city situation to be a source for future possible improvements. The methodology of the thesis is based on:

1. Data collection, which includes the online research and data sources
2. The Park Selection and a description of it, making a comparison of the potential that the park represents and the missing fulfillment of European standards of Universal Design
3. Surveys and Questionnaires, through systematic observations and study of the interaction of the people with the public park. Through the visit of the park in different periods of the day has been collected social data about its standards.

4.2 Case study selection criteria

The selected park was as a result of being an important park in the interior of the city center but not offering any standards according to the universal design as all other parks in Albania. Additionally, it is not frequented by any disable user. The selected park is very important to the citizens due to its closeness to the city center. It does not promote socialization among people; also do not promote physical activities and healthy living. The most important issue is that parks serve as a gathering node for all inhabitants of a city so they have to be accessed by all people. The park does not offer any proper infrastructure in making it a spaces easily accessible from all people. Weak user is a part of the community too, but the design of the park does not meet their requirements for making this public spaces frequented by disabled people. Due to the lack of the proper infrastructure even the people without disability such as old people, young mothers with strollers, suffer from not accessing easily the park.

The idea of having a universal designed park is raised due to the impossibility of weak users not having the right of being part of public spaces and especially, not being let free from their parents to socialize and to show themselves in public spaces. Parks should be designed to be accessible for all people (*Tab. 8*). Universal design is not only for disabled people, it the design for all.

Table 8. Disability categories

<i>With Permanent disabilities</i>	<i>With Temporary disabilities</i>
<ul style="list-style-type: none"> • Persons confined to a wheelchair • Unable to walk • Hard of hearing / Hearing-impaired person • Visually impaired person • Ageing 	<ul style="list-style-type: none"> • Pregnancy Illness/injury

4.3 General description of selected site

The zone selected is located in the center of Tirana city. The municipality of Tirana has initiated the urban redevelopment for the public spaces around Tirana in the year 2012; one of them is the selected zone by the author, park behind Culture Palace. It was designed to have 66 benches and 150 trees around the park also they have surrounded the ‘Cult Monument’ “Halvetian masjid nr.61” with railings and in the project was mentioned to have two drinking sources and playgrounds for children to play. Today the park is frequented by people, mostly old people with the aim of relaxing, playing, and sightseeing. The park is called “The hole of Hajdin Sejdia”, who was presented as a businessman in 1991. He is the creator of the hole, which was created after communism excavated by bulldozers and today transformed into a park. The hole remained opened till recently (*Fig.19*) after Sejdia got away with his large vehicles and left the interrupted the works in the park. Later the green local park was created by the crews, even that today the park does not provide safety also because of the prostitution scenes. There has been a competition for the creation of a religious complex in the zone near the park, from which the winner was the proposal of BIG Architects. Even that the competition was important for the reflection of the potential of the park, the project did not get realized. [<https://albanianpyramids.wordpress.com/>, 2012]



Figure 18. A view of the "Hole of Hajdin Sejdia"
[<https://albanianpyramids.wordpress.com/>, 2012].

The selection and study have been developed through the comparison of the potential near it and the weaknesses that it represents in the terms of the implementation of universal design principles. This part of the methodology includes the information from the geographic map of Tirana online and the digital map taken from the Municipality. The park is located in the center near many important institutions and green areas. The area near it has been in the attention of the Albanian government for the development of many important architectural projects. In the park, there are already some existing green areas, equipment, playgrounds, but this public area can be improved by following standards and principles of universal design so that it can welcome all the categories of people.

Through the visit of the site, observation and photos have been a description of the existing structures, greenery pavements and architectural elements of the site. What it can be seen are some “barrier” and elements that can be minimized or regulated to make the public area easily accessible and friendly for all the people of different ages, mental development, and physical abilities. The lack of Standards in streets, playground urban furniture, water features is also presented in the following analysis.

In (*Tab. 9*) potential of the park are illustrated in points in order to be easily understood.

Table 9. Potential of the park

Potential of the park	Description of the park
Location in the center of Tirana	The location in the center of the city makes it frequented by a large number of people for relaxing purpose
Location near many important institutions	The public buildings near it sign the park to be an important landmark in the city
Many green areas and parks near it	The green parks provide a healthy life and relaxing spaces. As green areas are points of attraction especially in the center of Tirana, the pilot project for them can be

useful to transform the public areas for universal use.

Location in the main axes of the city	The park is located in between the intersection of some important roads, as an important node for passing of people and vehicles, such as cars and bicycles.
The park has already well-defined paths, green areas benches, and some playground equipment	The park is already in use by people of different ages, as it offers some of the minimal conditions.

The weakness of the park are presented in (Tab. 10), such as barriers, lack of trees, hazards elements in the walking street, paths, lack of signals and lack of appropriate material in the playground, lack of appropriate games for different age children, lack of maintenance, and security safeness.

Table 10. Weaknesses of the design of the park

Weaknesses of the design of the park	Description of the park
Existing structural concrete barriers between the paths and the green fields	These barriers make it difficult for disabled people of children to access the green surfaces in the park
Lack of trees	As the park is located at the intersection of main roads the air is polluted and it does not have a calming atmosphere. The surrounding with trees would make the isolation of noise and create a more relaxing area
Usage of hard hazards for the pavements	The usage of hard materials in the park does not make it easily accessible
Bad maintenance of the condition of the park	The surfaces, the existing water features, and greenery are not well preserved in the park.

Lack of signals	The usage of signals can stimulate all the people to enter and visit the park.
Lack of adequate urban furniture and materials	The usage of proper materials and structures can help in the universal design of the park
Lack of the proper lighting of the park	The street lighting is not adequate for the standards of a public area to provide safety.

The master plan of Tirana city center is illustrated in (*Fig.20*) showing the location of selected site. Tirana is the capital city of Albania situated in the heart of the country. The park is located in the center near the Skanderbeg square and occupies a significant area for the inhabitants of Tirana. The site has a strategic position near the Kavaja and Durresi Street, Myslym Shyri. It is the intersection of three important roads such as Dibra Street, Luigj Gurakuqi and Qemal Stafa Street.

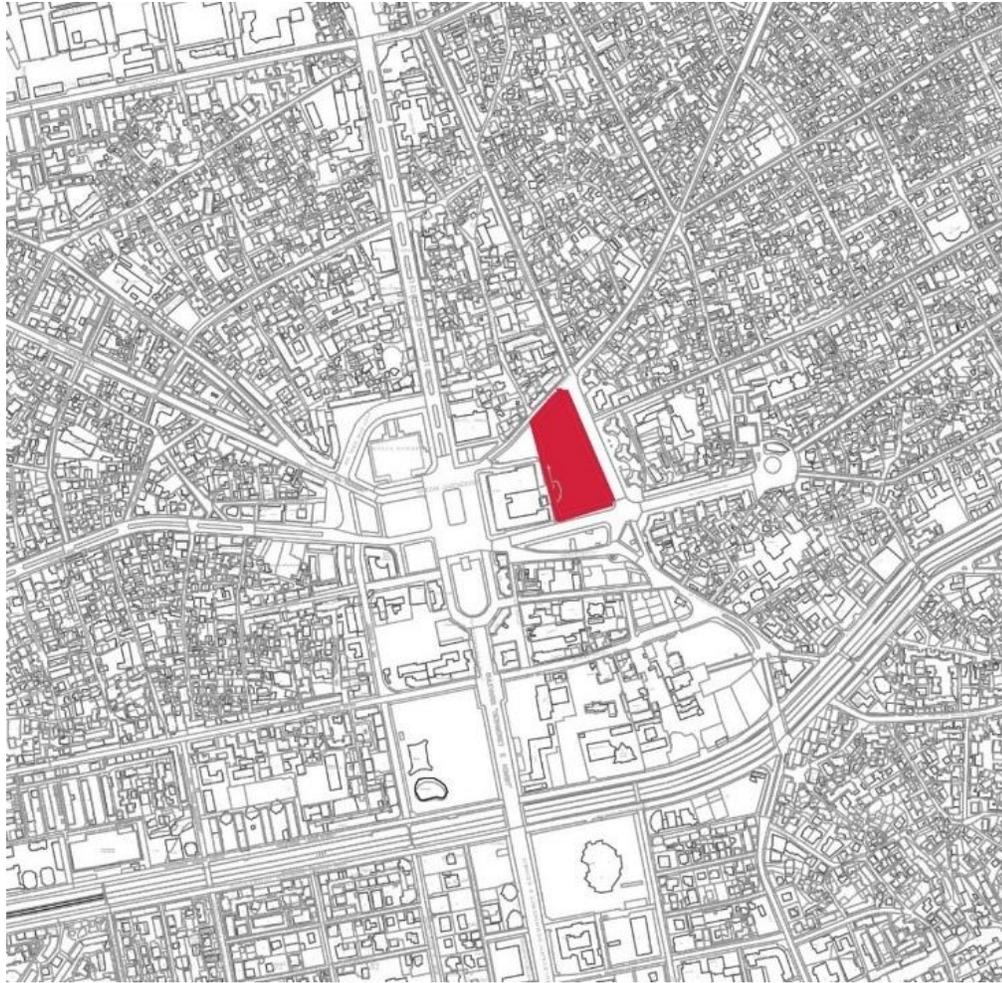


Figure 19. Tirana Map Location of the selected area

The green parks in Tirana occupy large areas in the city (*Fig. 21*) and represent relaxing spaces and places of cultural and commercial activities. The park has been created spontaneously, as a necessity for the community, especially in the center in which there are many public institutions. The main axis of the location of the green parks is the main boulevard of the city, projected by the Italians. Most of them are located near important public and cultural buildings and the main one is the National Park of the Artificial Lake. An important public space is also the Rinia Park. The other ones are smaller and local.



Figure 20. Green areas in Tirana

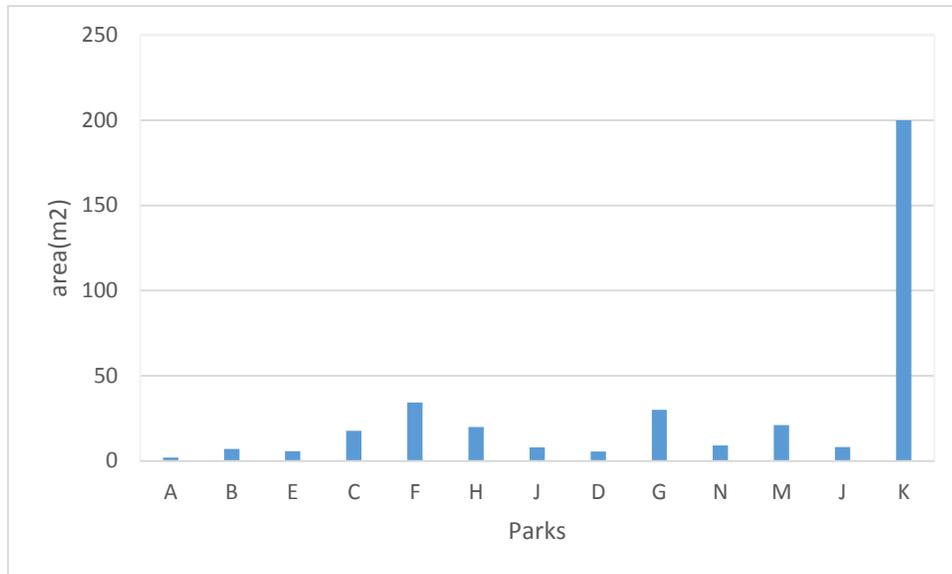


Figure 21. Parks along Main Boulevard, according to area in m²

According to (Fig. 22), main green spots along the boulevard of Tirana are illustrated according to m² with their respective letters. They are green spaces that can be devolved in future, becoming inclusive parks, for all people. As the graph shows the lowest value is 1.956 m² located at the center (Fig. 22). Lake Park is the biggest among the parks. There are open areas that can be utilized from people to socialize also the main problem in all these open spaces is that are not easily accessed by all people.

According to (Fig.23) the height of the floor is shown, and a near urban plan of the site location. Heights differ from 17 floors the highest to one floor the lowest, also the main idea is to show the location and the surrounding near the site. According to the map shown it is demonstrated that there is no height building close to the zone, the site provides clear vistas from the selected area. Also, it is near the city Centre and important intuitional building, such as municipality, library operas museums theaters, and mosque.

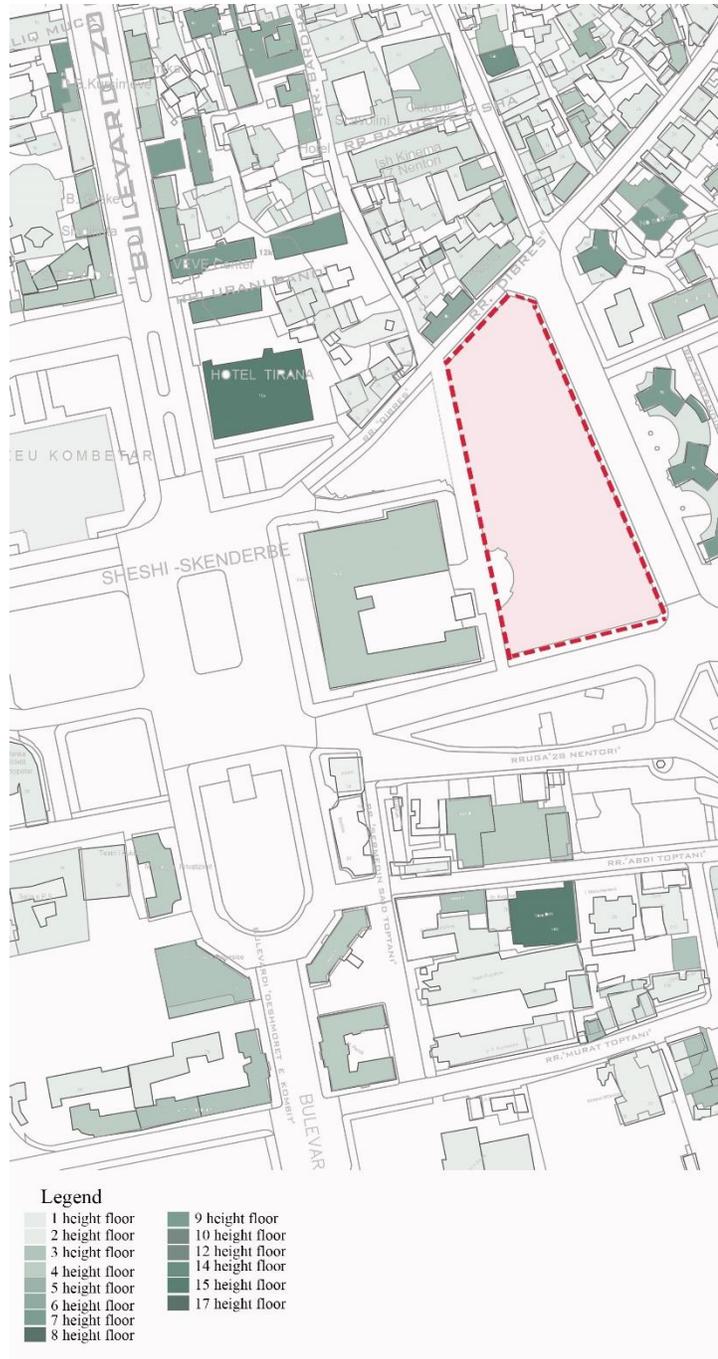


Figure 22. Tirana City, Floor heights map and location map 1/1000 scale.

According to (Fig. 24) the land use of the zone, it is illustrated as we can see it is a mixed use zone with the commercial, cultural, residential, and religious building. Moreover, it is presented the transitional pathways of the site and around site. As it can be seen the site

serves as a connection point between the zones. This is problematic due to the flux of people passing per day and except cars bus, all types of vehicles enter the park and use it as a transitional way.

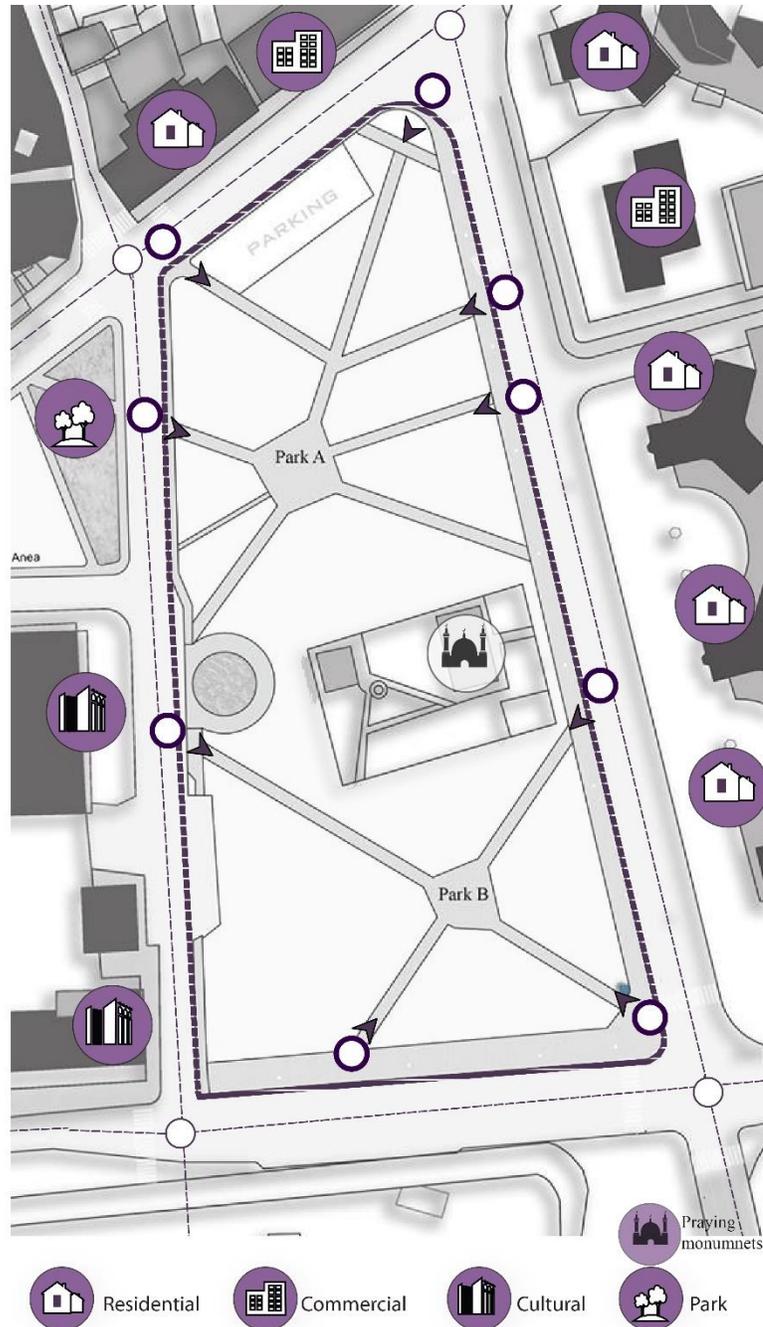
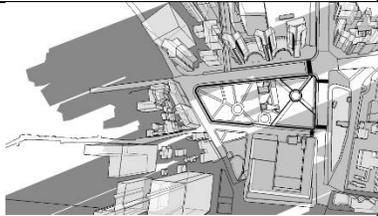
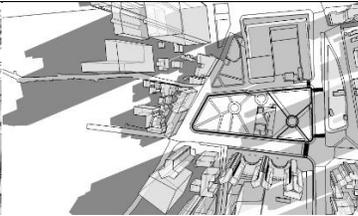
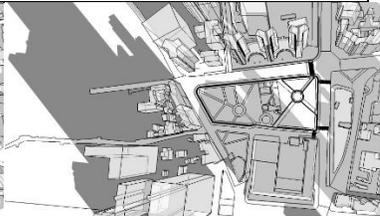
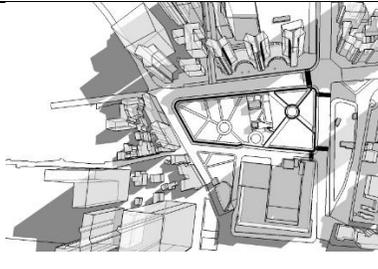
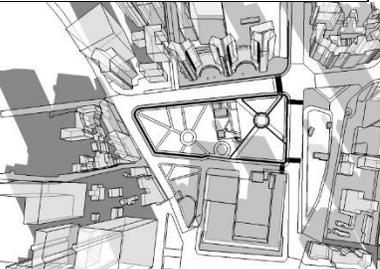
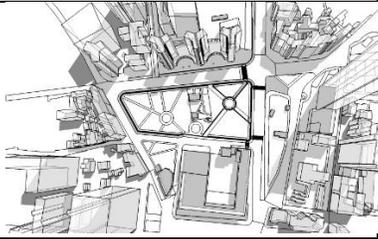
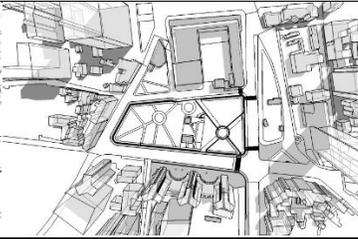
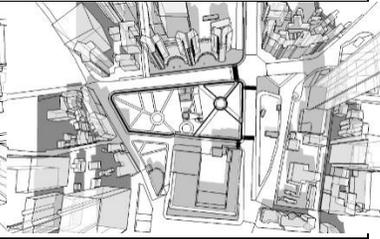
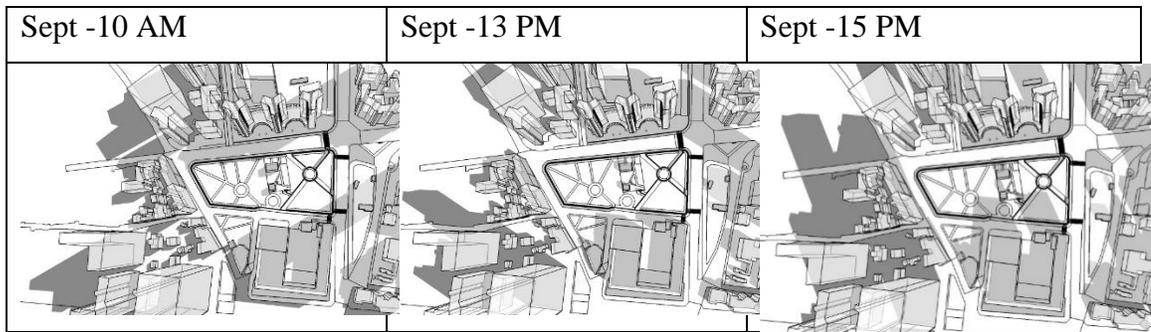


Figure 23. Land use map of selected site and the transitional paths of the site.

In the (Tab. 11) a shading analysis of the park in a different period of the year (December, March, June, September) and different time (10 a clock, 13 a clock, 15 a clock). The analysis shows which parts a. As it can be seen from the figure, in summer the sun it is problematic, relating to the existing situation of the park, of not providing shading elements, this makes the park not to be frequented during the summer period.

Table 11. The shading analysis in a different period of year and time.

Dec -10 AM	Dec -13 PM	Dec -15 PM
		
March -10 AM	March -13 PM	March -15 PM
		
June -10 AM	June -13 PM	June -15 PM
		



The Site is divided into two areas according to the site surveying (*fig. 25*), due to not being able to control the movement of the people at the same time in both areas. The site is physically divided by a cult monument, ‘Halvetian masjid’. Park A is 8.500 m², and Park B is 6.400m², and the entire site, it is 17.600m². In order to show the difficulties that people face in moving from point A to C, (*Fig. 26*). Moreover an analysis of the segment A, B, C is going to be studied in terms of accessibility and universal design. Segment A, starts with the entrance of ‘9-te kateshet’ building apartment, continuing with segment B, the road, and segment C the park (*Fig 27*).

The study will be focused on the comfort of disabled people on how they move from ‘point A’ (*Fig 27*) to point ‘B’ (*Fig 29*) and point ‘C’ (*Fig30*), by showing physical barriers, inappropriately used material, lack of urban furnitures.

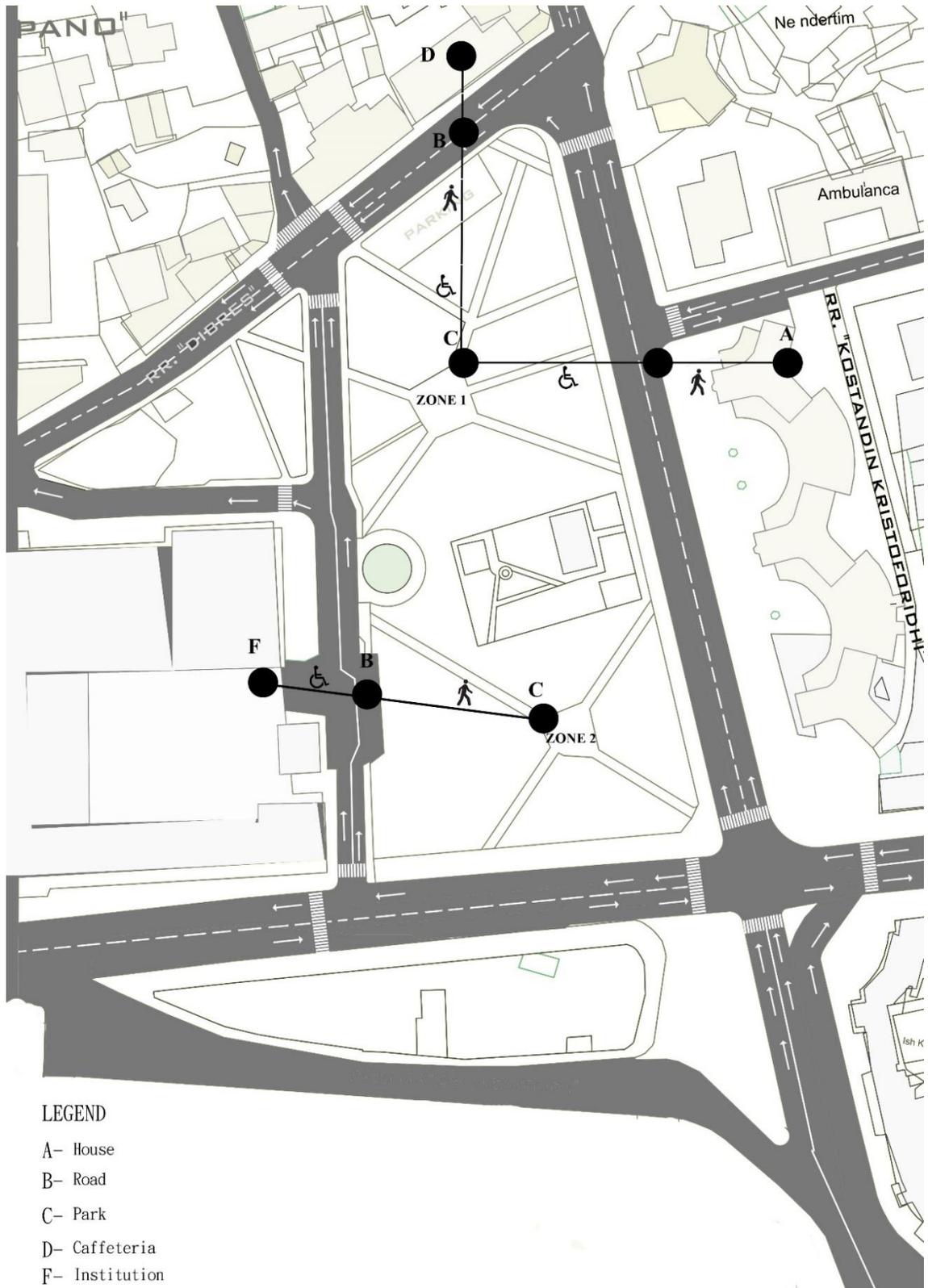


Figure 24. Park division and analyzing segment.

In (Fig26) it is shown the barriers that disabled people face while passing from point A to C

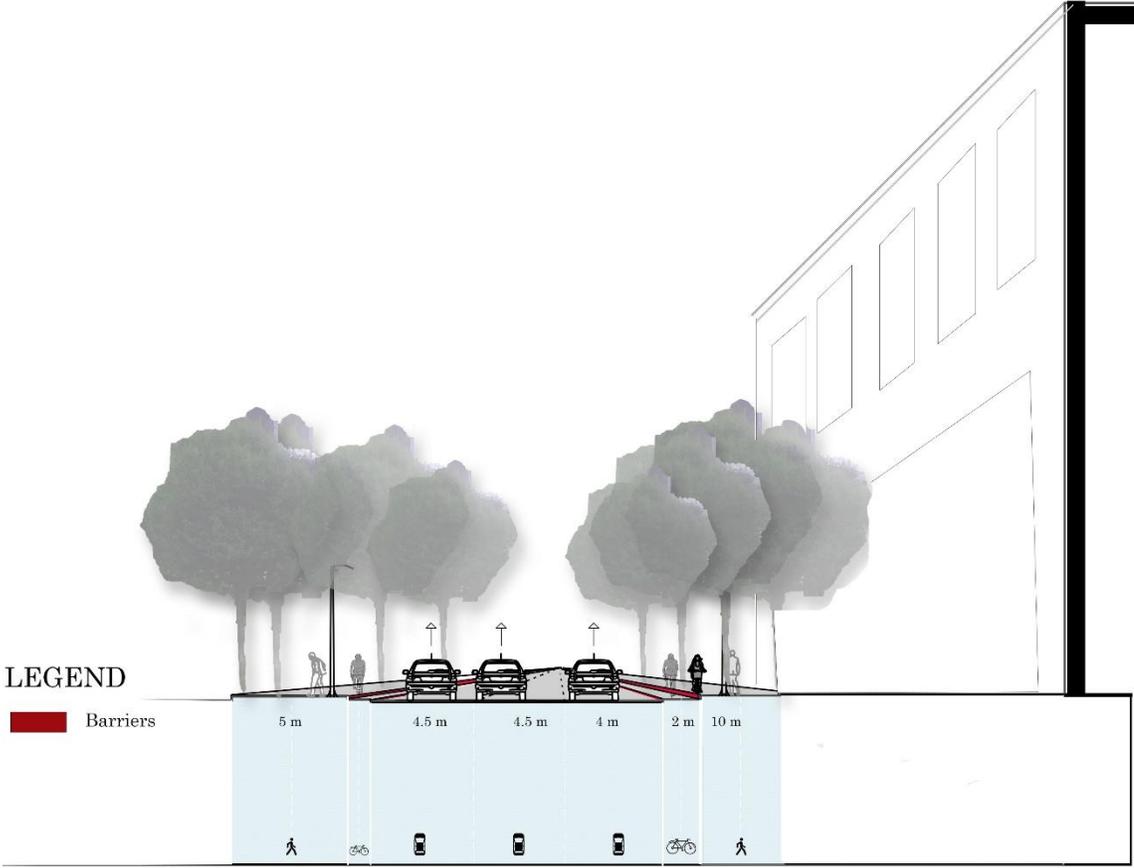


Figure 25. Section showing the barriers



Figure 26. Segment A-B-C



Figure 27. Location of '9 height floor' building entrance (Segment A).



Figure 28. Segment B, (the road).



Figure 29. Segment C, (the Park).

Greenery is an important element to the city because it promotes a healthy living, helps people in being in contact with nature. According to (Fig.31) greenery is placed aligned the main roads and new trees are planted in the park. Greenery is more concentrated in Park 'B' than park 'A', due to this people frequent mostly park B.



Figure 30. Existing Greenery Map.

According to surveying's done in site people frequent more Park B, due to the more possession of green spaces that has, meanwhile due to shading element not found in the park, people use trees as a shading element, see (Fig. 32). Regarding the greenery typology bushes trees are present in the site, what is missing is different typology of flowers and trees.



Figure 31. After shadow. Lack of shading elements, Authors courtesy.

In the short photos sequence, it is shown the lack of shading elements and how people use trees protecting from the sun. Lack of the shelter makes people not to stay in the park. They use the space as a transitional space due to the lack of the inappropriate urban furnitures. Since the park does not fulfill the main requirements of people without disability, how can the park be frequented by weak users?

An analysis of existing urban furniture in the site is done by author as shown in the (Fig.33)

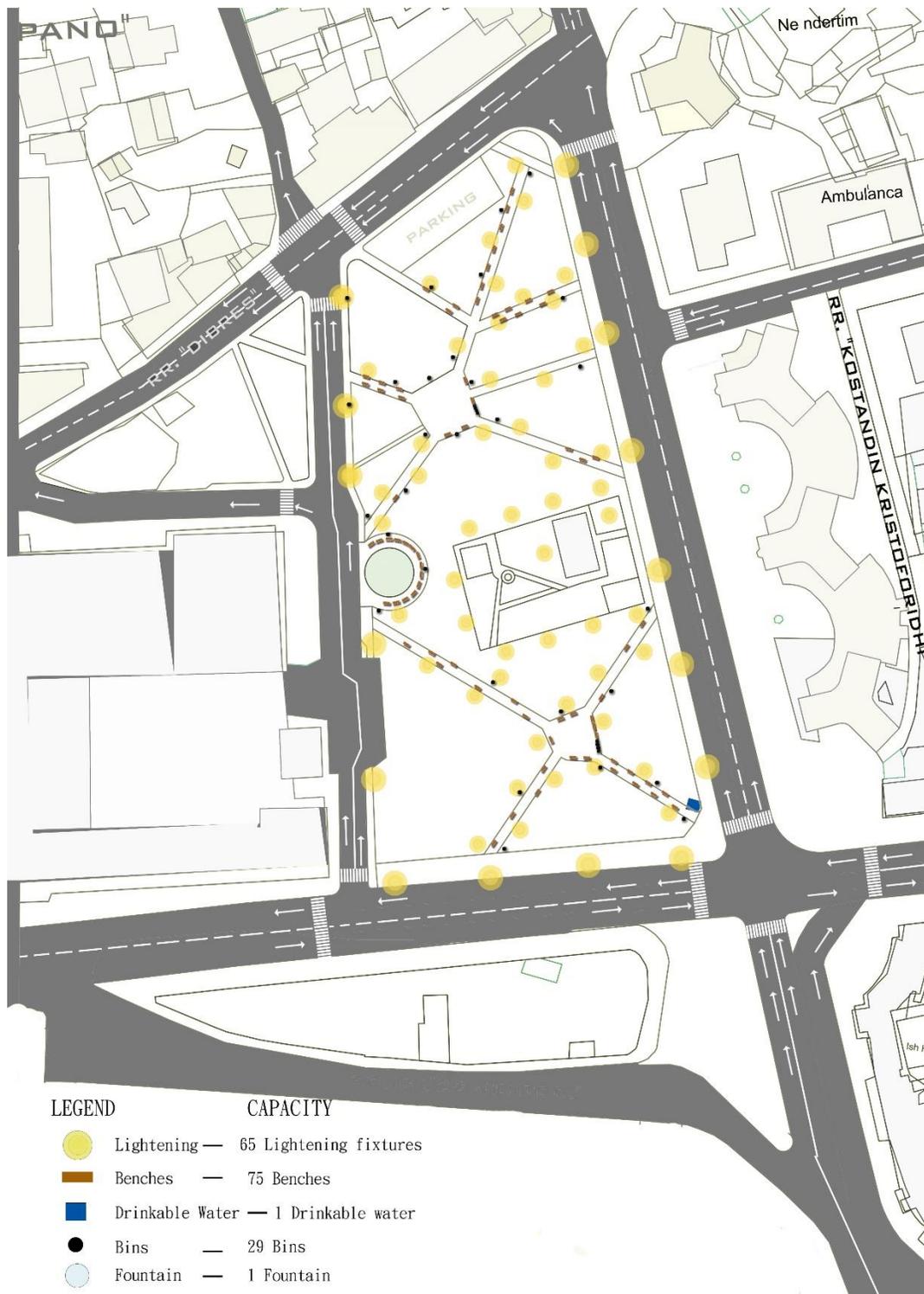


Figure 32. Existing Urban furniture map.

In the existing map of urban furniture, elements present in the site like benches, bins, drinking water, and fountain are shown in the (Fig. 34), and (Fig. 35) shows some view of the furnitures in the park.



Figure 33. Bins, existing elements in the site, Authors courtesy.

The (Fig. 34) indicates the urban furniture elements present in the site. Bins are positioned without any order, and they are not easily accessed by disabled people due to their height. It is crucial for bins to be visible but not too invasive or close and they should not be put between seats and a sight or an activity. Bins must be positioned downwind in summer conditions of seats or spaces where pedestrians gather.

Street furniture prerequisites to display high resistance to vandalism [19 Street and Park Furniture and Barbecues 19-1 EDITION 1 REVISION 0 Design Standards for Urban Infrastructure] have to be long-lasting against weathering and deterioration, to be suitable for use by people with a wide range of needs including children, the aged and people with disabilities, have a low whole-of-life cost.

It is demonstrated in (Fig 35) the existing benches which make the park unusable by all people. Moreover, in the (Fig 35, 37) it's revealed the existing water furnitures such as drinking furnitures and the main fountain, positioned near the bus station. Water features according to ADA standard should be positioned near the playground and also the height of it should be appropriate for people with disability to be near it to reach water.

Street furniture had better be selected and established to reduce visual confusion. Rational layout contributes that visually impaired people in using the space safely. Street furniture

works best when the modules have common design elements and are located in systematic arrangements. Line up street furniture with curbs, walls and buildings may be a way of forming patterns. Arrangement in sitting improves rhythm and afterward the visual coherence of a streetscape. Placing seats next to walls or fences, bins next to poles or lights additionally contributes in decreasing visual disorder. It is difficult the way how benches are positioned in the park in consequence of, a wheelchair person, cannot place his chair in line with it acquaintance.

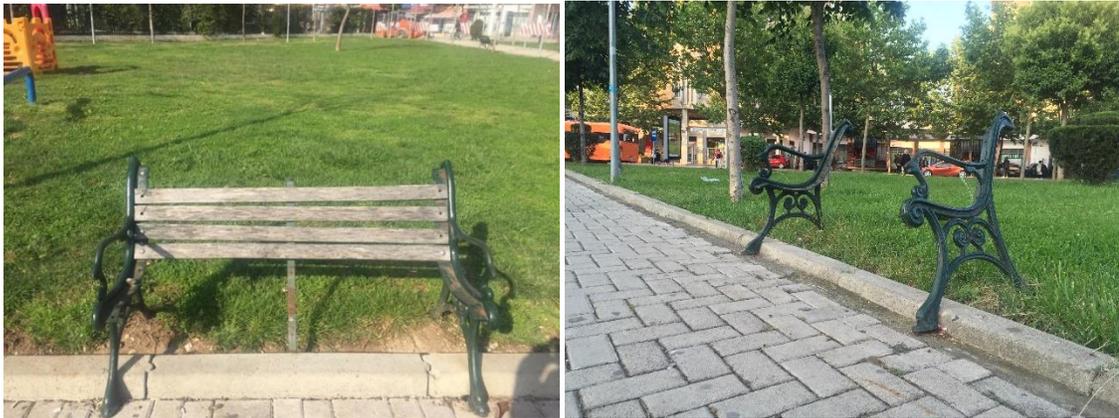


Figure 34. Existing urban furniture, Benches Authors courtesy.

The fountain is surrounded by static benches (Fig. 36), and shadow is provided because of the tree nearby. People use the space as a waiting station for the bus as a result of not having a bus station for people to wait.



Figure 35. Water element presents on the site.

The only drinking water furniture positioned in Park B is displayed in (fig.37). People with disabilities cannot use easily the drinking furniture because does not offer a place to

put their mobility in order to reach the water source. Meanwhile, there is only one drinking source in total over all area.

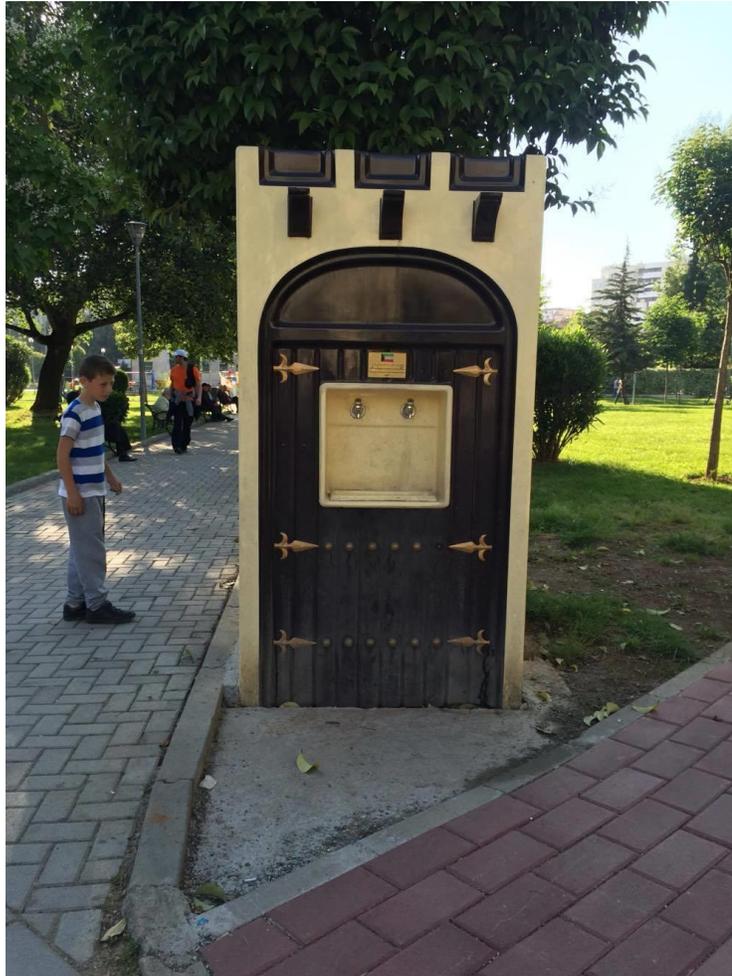


Figure 36. Drinking furniture.

The height and design of drinking fountains have to permit access to people in wheelchairs and children. They necessitate programmed off taps to reduce water waste.

Exact place of lightening fixtures it is showed in (Fig. 38). Lights serve as safety guidance at night for people, unfortunately, in the selected park lights ensures proper function (Fig.39). Owing to this people do not sense safety in the park during night, by this park

permits criminality to develop. According to ADA Guidelines Park should be fully lightened in order not to prevent criminality.

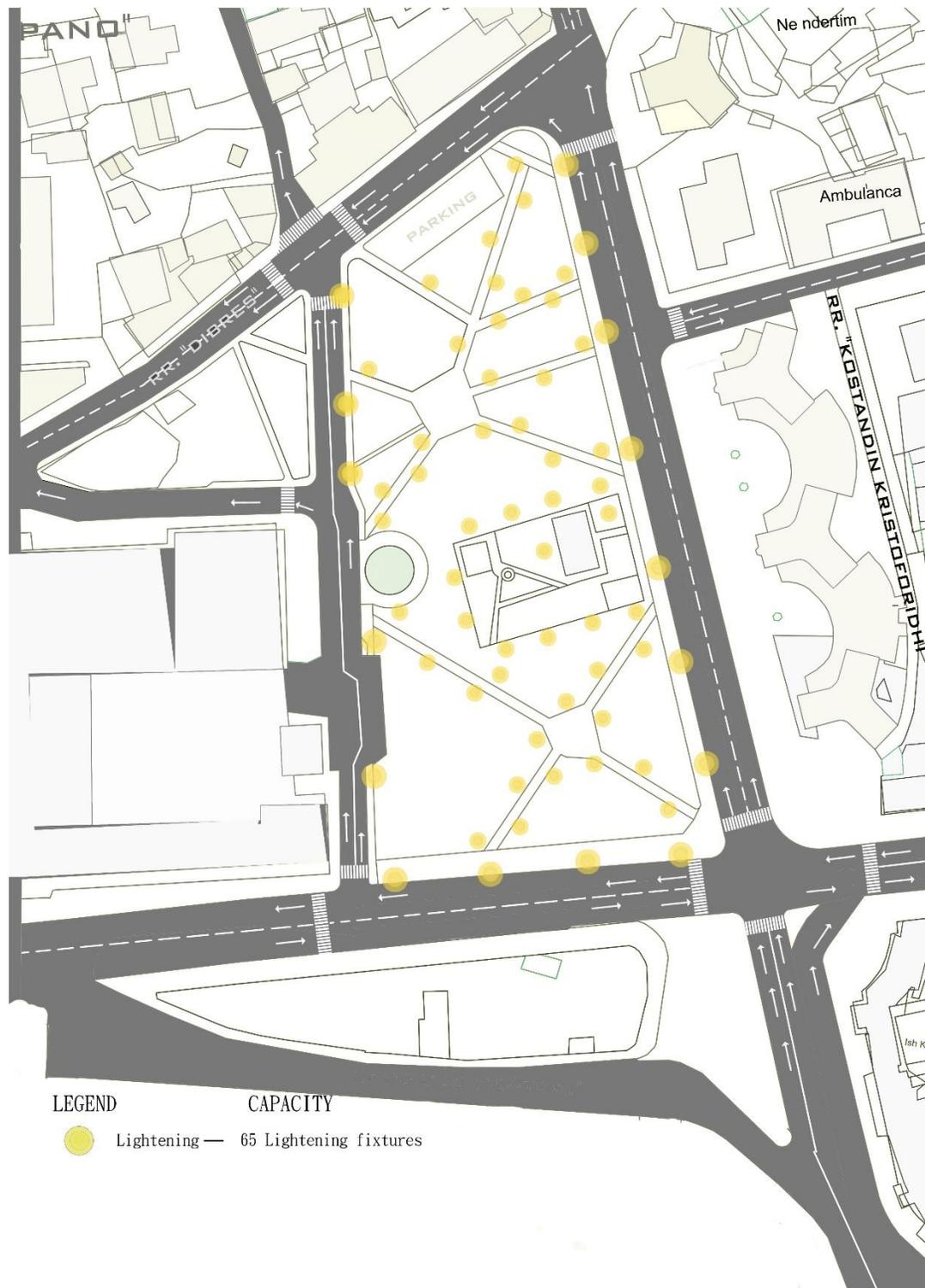


Figure 37. Existing Lightening map.



Figure 38. Existing lightening typology in the park.

In the (Fig. 39) lightening typology are made known, by emphasizing the lack of the proper lightening in the park and their bad preserve, as it is revealed in the (Fig. 39). Additionally, absence of the lightning fixtures in the parking areas are shown in the (Fig. 37). The lightening fixture as stated by [Hanebrink, et.al, 2010] guidelines: Parking lots and walkways accessing buildings and parking areas have to be illuminated with a minimum maintained one (10.7) Lumen/m² (maximum eight (86.1) Lumen/m²) of light on the driving or walking surface during the hours of operation and a minimum of one hour thereafter. Beside this correspondingly: Paved walkways in open space areas, shall be illuminated with a minimum maintained five-tenth (5.38) Lumen/m² of light on the walking surface during the hours of operation and a minimum one hour thereafter. After hours illumination may be reduced 50%. Therefore, the lighting of these areas shall be designed utilizing two circuits or more, alternating power to fixtures.

Movement of the vehicles is shown in the (Fig 40). The site is surrounded by three significant roads, ‘Barrikada Street’, ‘Luigj Gurakuqi Street’, and ‘Dibra Street’.

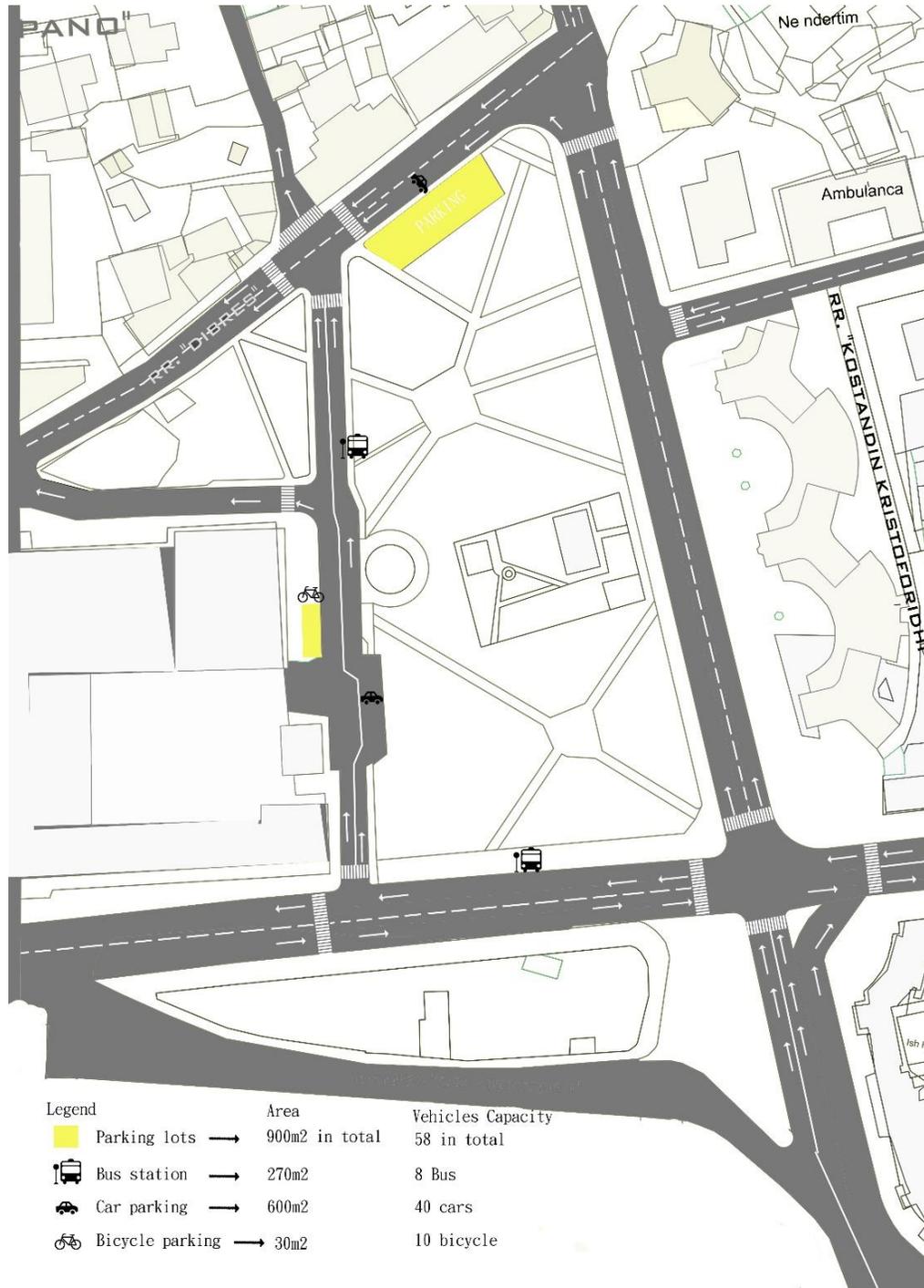


Figure 39. Existing situation of parking and cars movements.

Investigation on the parking lots is displayed into the plan (*Fig. 40*), furthermore the area around the site is unsafe for children because there is no physical barrier in making the division from the main street, and the park.

In the (*Fig. 41*) below it is illustrated the awkward parking spaces of the different typology of vehicles such as bicycle, automobiles, bus etc. furthermore, they do not meet any standard of universally designed parking.

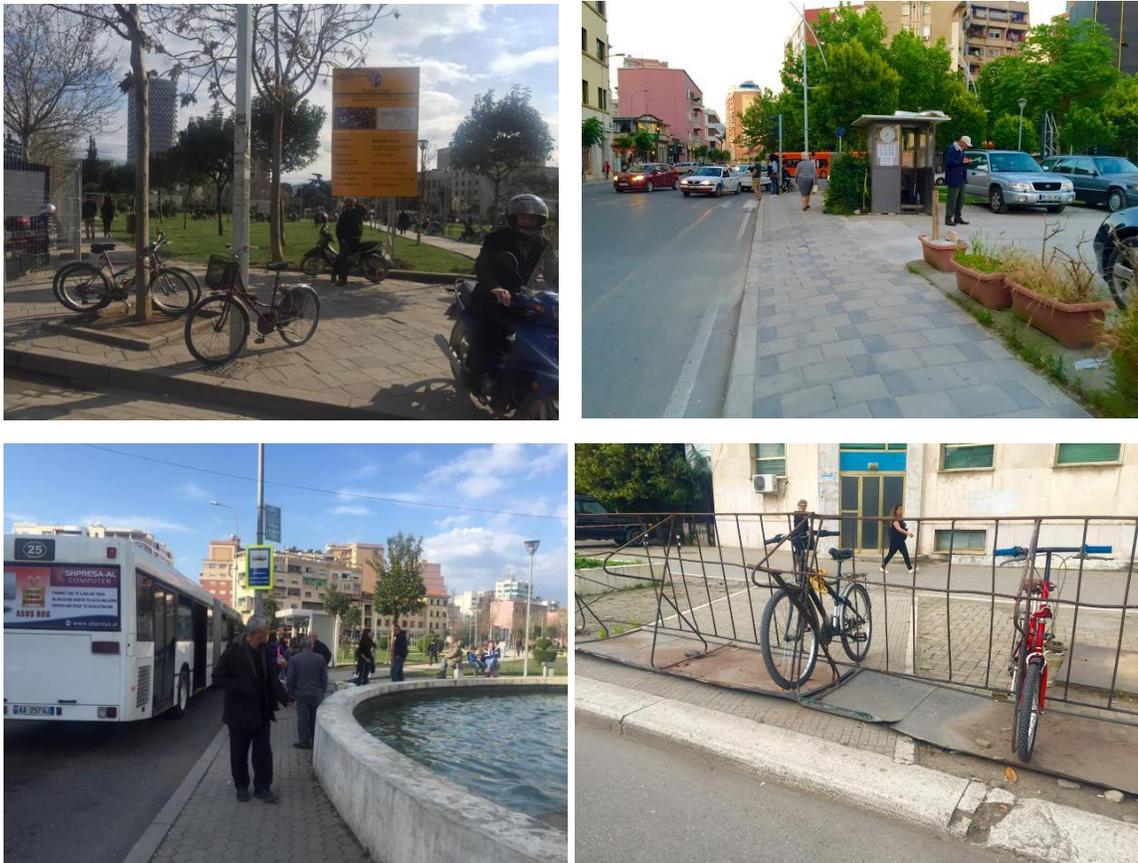


Figure 40. Typology of vehicles around park.

As it is revealed in (*fig.41*) hazards and barriers that create obstacles for people to move freely in the road are exposed, it is most preferably not to have differentiation on the level at all. There is no proper bus station, people wait in the sun, and beside this, there are no ramps on moving freely on your way to the bus, not mentioning that there are no signals or taped acoustical semaphores for people with disability: low vision people. Refer to the (Appendix B) on how a bus stationed should be designed.

4.4 Site Description through photos

This part of the analysis is a demonstration through photos of the problems that people encounter while visiting the case study chosen. The park is covered with a hard material that makes it difficult for wheelchair people to pass through the way. People face problems due to narrow streets and barriers that the park upholds (*Fig. 42*).



Figure 41. Additionally ramps and obstacles on walkways.

No signs for low visually, or impaired people are located in the park at all (*Fig.42*). Hazard warning signs wherever a feature postures a potential threat to the careless people. Warning elements are not present at all in the park. Moreover, park does not offer guiding elements for blind people.

As the (Fig. 43) indicates, people face difficulties in passing from one side of the road to the other and also it is difficult for them to access the park.



Figure 42. Difficulties in passing the barriers.

The physical barriers in the park make the area difficult for people with disability to visit it (Fig. 44). It does not offer any ramp at all, no seats for people with disability no, picnic tables at all, shelter etc.



Figure 43. Trying to pass the road.

An additional major issue is that park do not offer any events for people to gather, moreover the playground are not well maintained and do not offer a variety of plays for different aged children and additionally the playground is not appropriate for children with disability (*Fig.45*).



Figure 44. Existing play games in the park.

During rainy days the playground is flooded (*Fig. 46*) because and is impossible to be accessed. What makes difficult despite the fact there is no inclusion on playground is that wheelchair people cannot access the playground also because of the barriers (*Fig. 42*)



Figure 45. Existing playground, flooded.

No standards are taken into consideration while designing the playground, material is hard and lead to harm and put to risk children. Despite the materials that are not considerably welcoming the people with disabilities due to the ground surface that makes it impossible to be passed by wheelchair children. This interrupts the social inclusion and makes a place for the social exclusion of the people with disabilities in such environment. Disabled children cannot access play games because of not disposing of any ramps in the play area. According to [Hanebrink, et.al, 2010] guideline playground should include the presence of disabled children also. At least they should be 50% accessed by impaired children.

CHAPTER 5

RESULTS AND DISCUSSION

5.1 Surveying

Surveying and observation is a very important part of the methodology. The field research has been developed in different periods of the day and in different parts of the park. The park surveying has been done to make an analysis of the social interaction that happens in it and to see the people perception about the public space. Moreover to understand if people with disability frequent the park and the level of comfort in moving from one point to another. The park has been divided into two main parts to simplify the study. The collection of the information has been realized through systematic observations and field research. The universal design of the parks intends to create also safe and healthy environments. The surveying and observation of the frequency of the visitors in the park show the perception of the people about the park. Also, different surveying and questionnaires make an analysis of the ways in which the park is used and the accommodations it offers.

Making environments pedestrian friendly and parks more attractive are believed to stimulate walking and routine exercise [Cohen, 2006].

The first part of the surveying includes information about the people passing and walking in the public park to make an analysis of the frequency of the visitors of the park and the movement in it. The second part is a surveying of the people sitting in the park, to see the need that the people have for the relaxing areas of the park and the usage of the urban furniture such as benches of green areas for sitting in the park. The comparison between the people and walking and sitting makes an analysis of the usage of the park and the healthy and sedentary life of the public spaces. The third survey includes a study of the

children playing in the park, as they are the younger part of the society and the most frequent users of the public areas. The study of the number of children gives also some information about the usage of green fields in the park, playgrounds, equipment's and their perception about them. The children are the main part of the society which gives life and regeneration to the public parks.

The questionnaires are part of the social research of the master thesis, showing the way in which people frequent the park and how safe, relaxed or healthy they feel in it. Also, they are used to analyze the implementation of the European standards in the public area.

5.1.1 Park 'A' Surveying

According to (*Tab. 12*) Number of people passing in 'Park A' was higher than that of park B, this was due to its m², a number of roads and to its design. Nevertheless comparing to the park B and its m² Park B was more frequented than Park A, this was as a result of the shadow that was provided by greenery and by reason of that playgrounds were better maintained in this zone. In the (*Tab. 12*) we can see that the highest pick off people passing in 15 minutes was on Monday illustrated by bold text. The lowest rates were on weekend displayed by bold text as well. People do not use the park at the weekend because of the absence of activities within the park. This number also differs from other condition such as weather condition.

Table 12. Number of people passing in 15 minutes

Number of People passing in 15 minutes							
Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
9:00 AM	300	160	200	172	270	135	90
12:00 AM	330	207	220	189	280	193	170
15:00 PM	170	132	120	180	200	146	75
18:00 PM	190	120	110	160	189	112	80

In (*Tab. 13*) it is explained the number of people seated in 15 minutes. What's was perceived by the author during the surveying was that people observed for shadowed

places and the main activity in the park was that of relaxing and sightseeing, mostly the park was visited by older people. The highest rate of number of people seated was on 12 AM on Wednesday, in contrast with the lowest rates on Sunday at 15 PM. People has the tendency to frequent the park mostly around 12AM and 15 PM. This was due to the fact that on weekend people went on closed spaces for the reason that park does not provide any shelter and activities, as well as the bad, maintain ace. Moreover, the number of people sitting differed also from weather condition as well

Table 13. No of people sitting in Park A for 15 minutes.

Number of people sitting in 15 minutes							
Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
9:00 AM	39	14	36	18	16	25	24
12:00 AM	24	30	40	12	36	20	28
15:00 PM	27	36	16	8	16	18	8
18:00 PM	21	20	24	7	21	15	12

In (Tab.14) it is displayed the number of children during the week for 15 minutes. The playing was low during the week except on weekends where children were present in the playground. The values are low due to the reason of bad conditions of the playground as well as the lack of various play games. It was observed that people let their children play for some minutes while waiting for the bus station. The numbers written are from this situation. Mostly the park was neglected because of not disposing any activity within it. While surveying on the park, no disabled children were noticed at all. This for the obvious reason of not having appropriate design playground.

Table 14. A number of Children Playing at Park A.

Number of Children Playing							
Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
9:00 AM	2	0	0	0	0	0	0
12:00 AM	3	1	1	1	0	6	7
15:00 PM	2	1	0	0	1	2	2
18:00 PM	0	0	1	0	1	4	2

5.1.2 Park B surveying

According to the surveys done in the park ‘B’ comparing to Park ‘A’, Park B was more frequented by the community, moreover, the condition of the playground was better than that of the Park A. Another reason of why people frequent more Park B was also to the amount of greenery displayed in the park. Due to the greenery, people has the tendency to go and sit on the benches provided with shadow.

A number of people passing at Park B in 15 minutes it is shown in (Tab. 15). Wednesday it represents the highest number of people passing in 15 minutes. The lowest rate is on Sunday. This means that people want more to spend time in other places than a park, this is due to the main reason that park does not offer any activity in order to attract people. On the time spent in the park was noticed that disabled people are the lowest community spending time in the park. The number of disabled people passing at the park is three in total.

Table 15. A number of people passing at Park B in 15 minutes.

Number of people passing in 15 minutes							
Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
9:00 AM	150	289	237	210	220	204	110
12:00 AM	180	232	317	213	230	200	170
15:00 PM	218	210	200	210	200	192	93
18:00 PM	180	200	180	282	210	174	102

According to (Tab. 16) number of people sitting in a park is demonstrated. Comparing to the number of people passing in 15 minutes, a number of people sitting is higher on weekends. Furthermore, the lowest values are during the week especially on Tuesday. These values are low comparing to the number of people passing this means that the parks are used more as a transitional area, and as a bus station.

Table 16. Number of People sitting at Park B in 15 minutes.

Number of people sitting for 15 minutes							
Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
9:00 AM	8	12	18	20	10	10	23
12:00 AM	14	6	40	30	24	40	38

15 :00 PM	16	13	26	34	32	26	24
18:00 PM	9	21	28	25	22	26	23

The number of children playing every 15 minutes was higher comparing with Park ‘An’ on Sundays. Additionally during week the playground were frequented by children and as it is shown in (Tab. 17) the values are high even during the week comparing to the Park B. there are certain conditions that effect directly on this values, such as the greenery density found in Park B, weather condition also, the maintains of the playground, Park B is better preserved than Park A, and this makes Park B to be more frequented than Park A.

Table 17. A number of children playing at park B in 15 minutes.

	Number of Children Playing						
Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
9:00 AM	0	0	5	2	7	2	5
12:00 AM	3	2	13	11	8	19	11
15:00 PM	11	1	12	14	6	9	7
18:00 PM	6	0	11	10	5	7	3

5.2 Questionnaires Graphs

Questionnaires are an important clue in order to explore more alternatives in how can we improve the quality of life and quality of the environment, moreover in helping people in growing up the level of comfort and by inspiring social interaction through making an accessed placed by all community. The questioner is done to 50 people by exposing different issues affecting people in parks such as the park maintenance, enlightening greenery, urban furniture’s, playground equipment, water features shading elements accessibility etc. All this design equipment’s make the environments complete if they are universally designed.

The first questions are about the diversity of people age frequenting the park is shown in (Fig.46). This questioner is done to understand, the social interaction level, and defining the main categories of people which visit the site. (Y) Axes show the number of people in

(%) and (X) Axes illustrates the age varieties. it is seen that the highest percentage frequenting the park are older people, and the lowest is the younger generation. This shows that park does not offer any activity to the young generation. Senior people frequent the park more because the only activity that they do is just sightseeing and meeting friends (Fig.46).

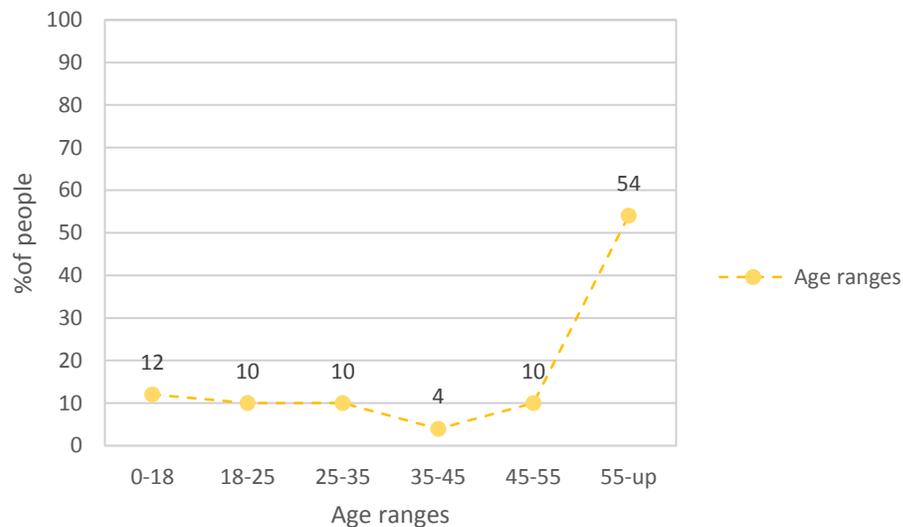


Figure 46. People frequenting park according to age.

As it can be seen from the (Fig. 47) the biggest part of the people that visit the park is male gender. This refers to the fact that the park is not very comfortable and does not provide safety for the different genders of people. The categorization of the disabled and not disabled people visiting the park has been done to make an analysis of the universality in the park. (Fig.48) as it can be seen from the table only 10 percent of the people interviewed were disabled people. This statistical analysis shows that the park does not offer the main conditions to be frequented by all categories of people.

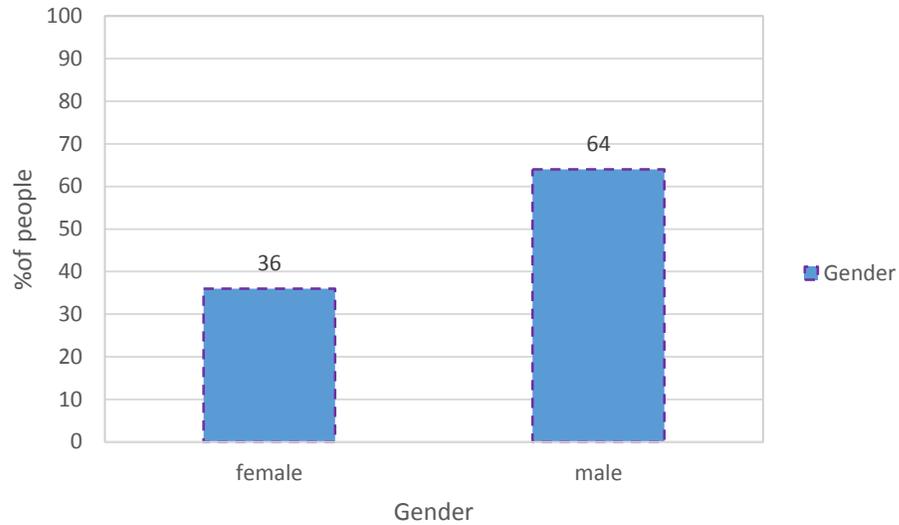


Figure 47. People Frequenting Park according to gender.

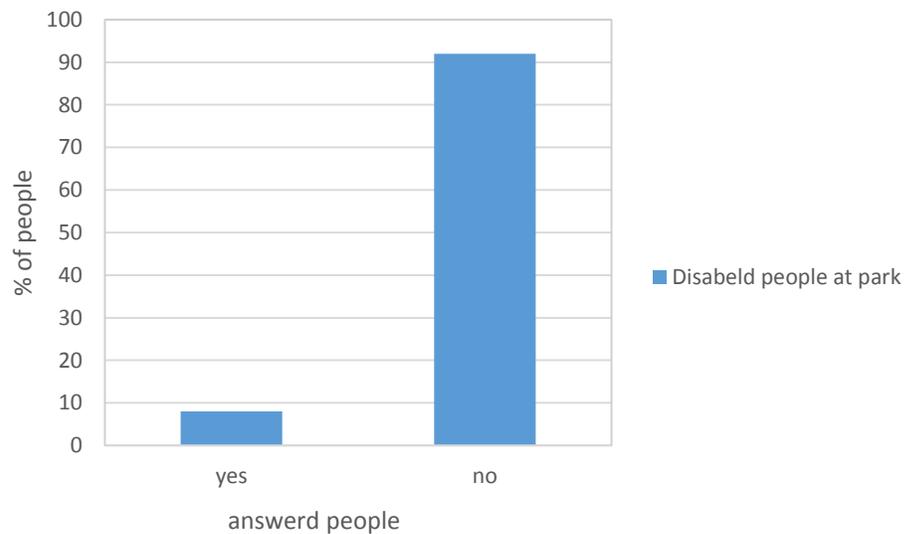


Figure 48. A number of disabled people frequenting the park.

The questionnaires developed have included also an analysis of the time that people visit and stay in the park. Following (Fig.49) most of the people interviewed visit the park normally, not very often and many of them spent less time in the public area. Also, the (Fig.49) shows that the park area does not offer conditions and spaces for the development of different activities. It means that the park is used only as a transitional connecting space

and it does not follow universal principles for its use for different cultural and social interaction.

In (Fig.49) it is illustrated the time spent in the park by the community, how often people frequent park, and if park provides any space for their activities. According to the graph In (Fig.49), time spent by people is mostly one hour, meaning that is enough stay at park, according to the question how often do they visit the park at park, we can see that the graph goes toward the (-1), stating that people do not frequent the park, they only us it as a transitional space. According to the answers, the park provides spaces for activities but is not used by people, for any activity at all.

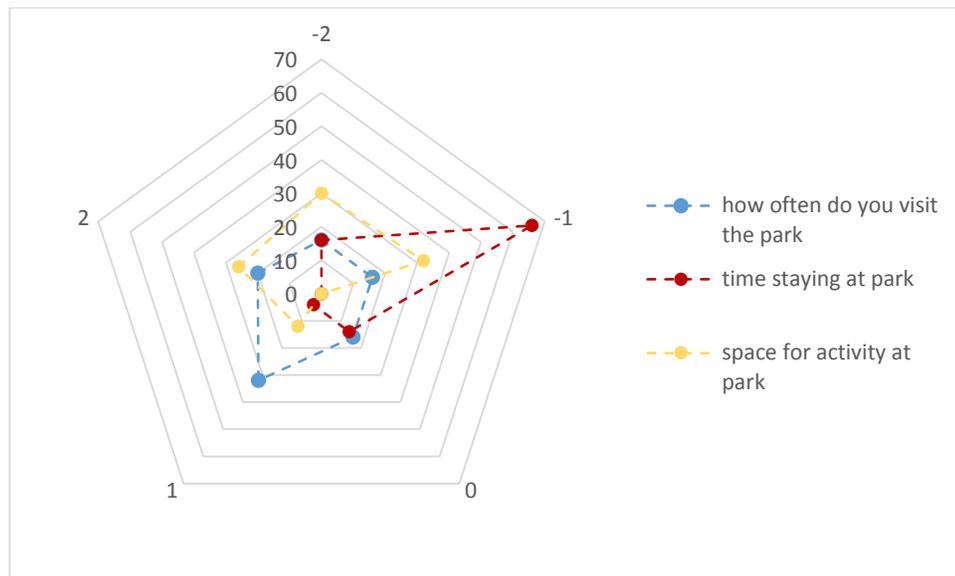


Figure 49. Time spent at park and space for activity in the park.

The park is frequented not only for walking but also for the circulation of different vehicles. The main function of it is the movement and walkability of the people. Also in the roads around the zone bicycles and vehicles of public transport pass through it. (Fig.50) the cars and other vehicles have an influence in the creation of the noise in the around zone. Correspondingly to the surveying walking is the main way approaching the park.

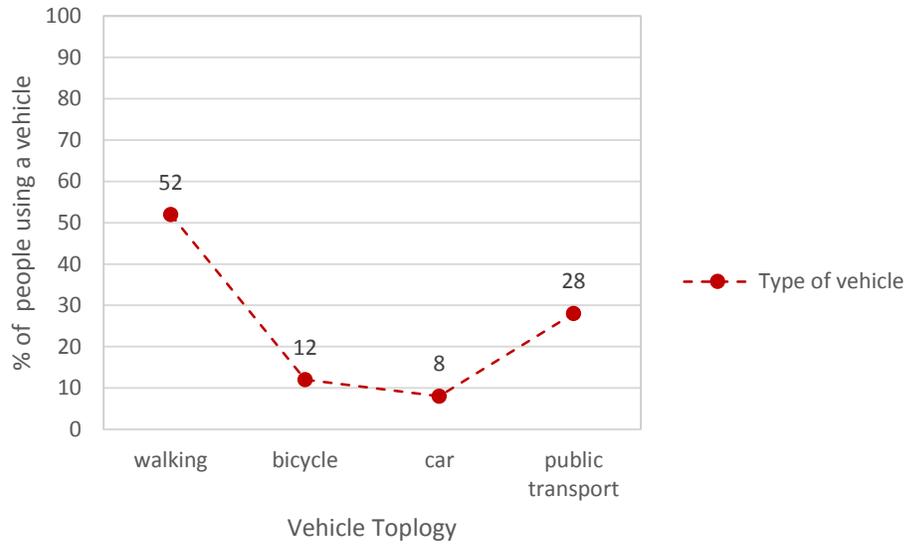


Figure 50. Type of vehicle approaching the park.

An analysis of the park maintains shows that the park clearance is visually normal and clean. The greenery maintained in the park is good and the park safety does not provide the minimum standards for making the area a safe and comfortable place. (Fig.51) the maintained of the park is not in very good conditions and the chairs comfort and light maintained do not represent the standards quality. They are out of usage due to its bad maintenance. Most of the activities developed in the park are meeting people and sitting. Other activities less related with the public area are a picnic, gym, walking and dog passing, playgrounds and other children playing. This emphasizes the usage of the park mostly as transitional spaces rather than an area for holding different types of activities. (Fig.52)

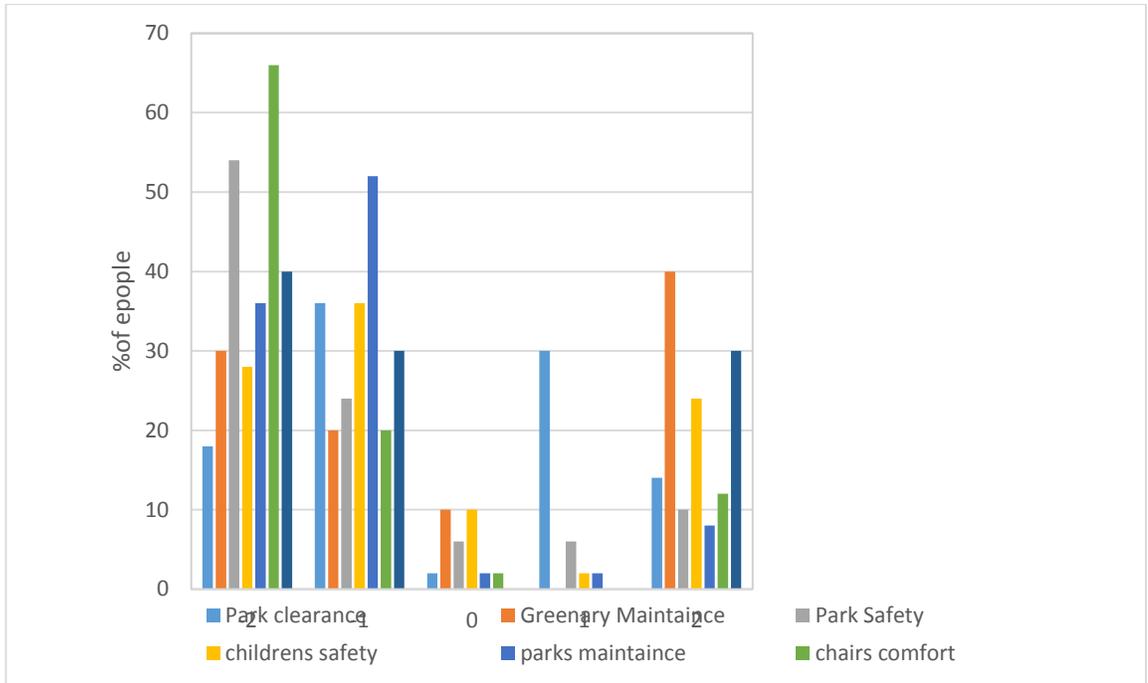


Figure 51. Park maintenance.

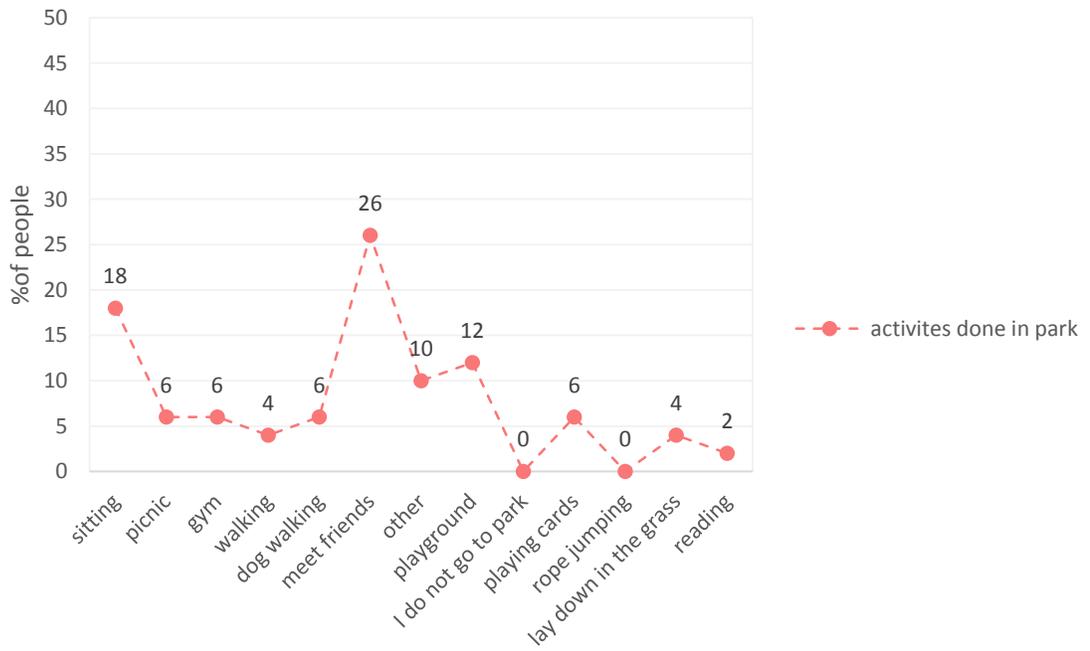


Figure 52. People activities taking place in the park.

Regarding the questionnaire about the activities at the park, as it can be seen from the (Fig.53), mainly the activities do not take place in the park. Most of the people have answered with negative or neutral about the organization of different pursuits. When the interviewed have been asked about the bringing of the disabled relative or friends in the park, many of them answered positively, showing the necessity that the people have for a universal park. Mostly the interviewed people were not disabled, showing the low frequency of the park from the different categories of people. In the park, there is also a playground for children and as it can be seen from the results of the questionnaire, it is not secure and does not provide the minimum standards for a safe playing environment. (Fig.54). People face different difficulties while sending their children to the park. And most of the parents answered with negative quotes toward the safety of their children in the park and the appropriate children’s playground according to age.

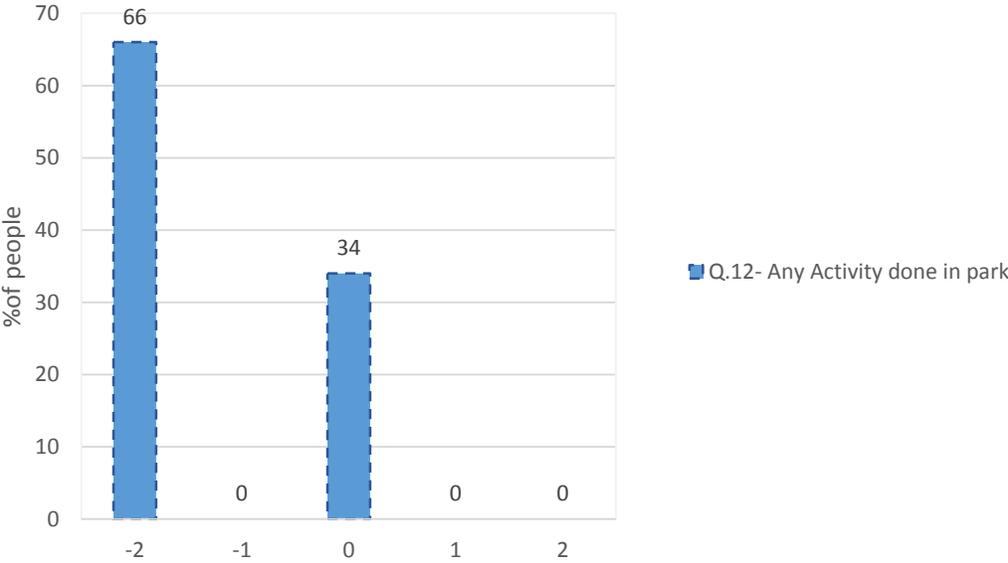


Figure 53. Any activities organized in the park.

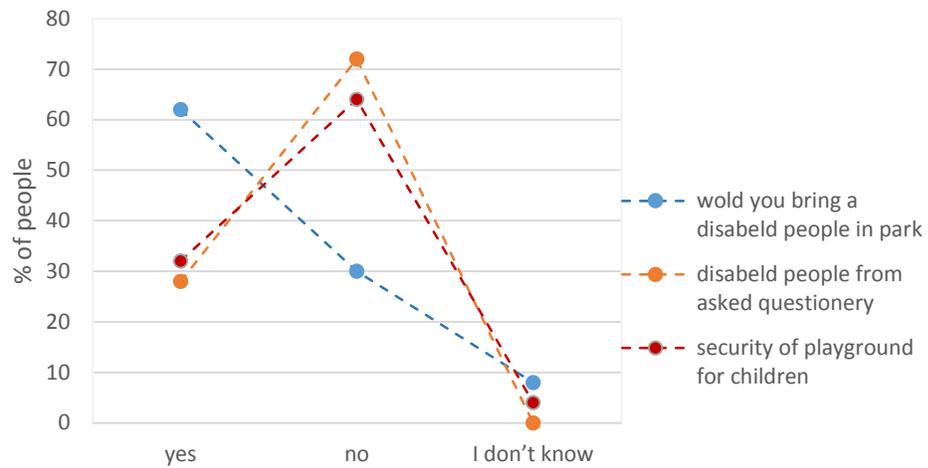


Figure 54. Disabled people frequenting the park.

Regarding the accessibility of the park, (Fig.55) shows that the park is not very difficult to access, providing paths for circulation of people and wide roads around for the passing of vehicles. The main problem that the park represents is its difficult accessibility from the disabled people, showing that absence of universal design in it. The study of the urban furniture and material (Fig.56) comfort shows that there are absences of the main standard features, such as shading elements, suitable materials and standard playgrounds for children. Moreover the lack of warning elements for disabled people, lack of appropriate furniture to integrate weak users.

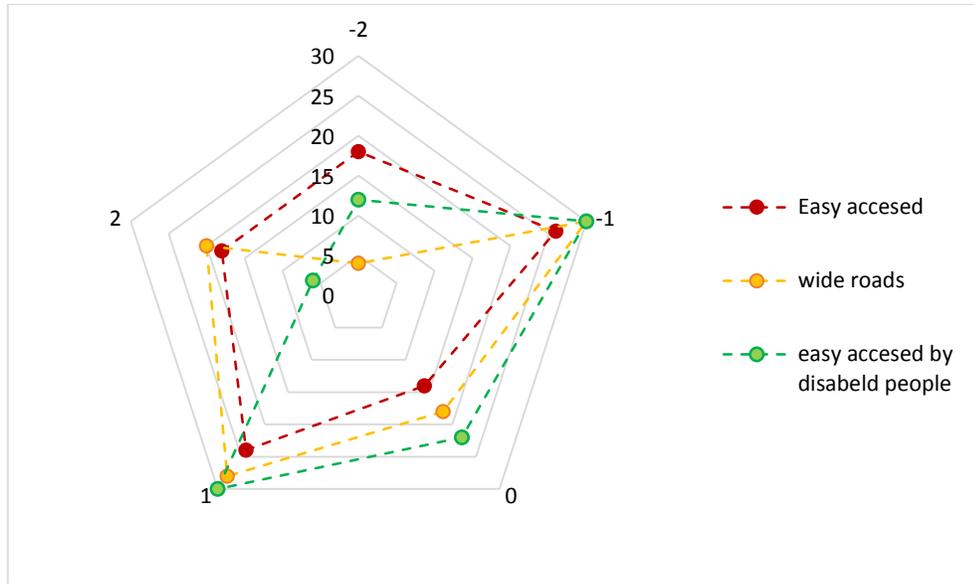


Figure 55. Park Accessibility.

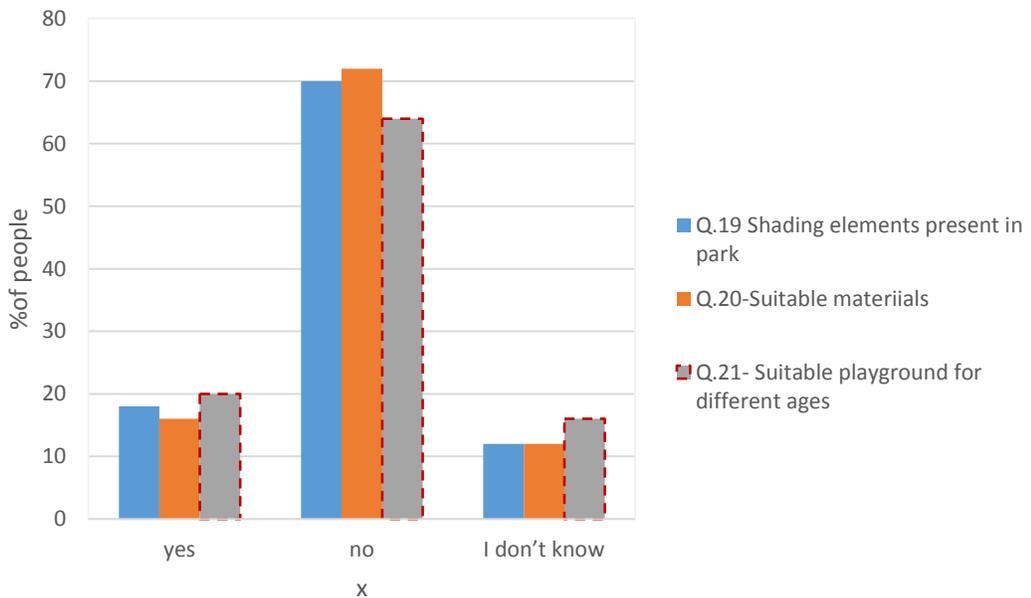


Figure 56. Material and furniture comfort.

A study of the level of the security shows that the park is not safe during the night for most of the interviewed. (Fig.57) During the day the security is not a problem, but the absence of some main standards such as lighting, materials, position makes the park a

dangerous place in the night. The main reasons for the low of safety in the park are the criminality and violence. During the night the park is not enlightened enough and this leaves a place for criminality and violence to happen. Furthermore, there is no security person taking care for park safety at night and during day or cameras at all. (Fig.58) the lighting in the park is absent and not of a good quality during the night and day, making the area a disturbing and not –comfortable place for staying during different hours of the day.

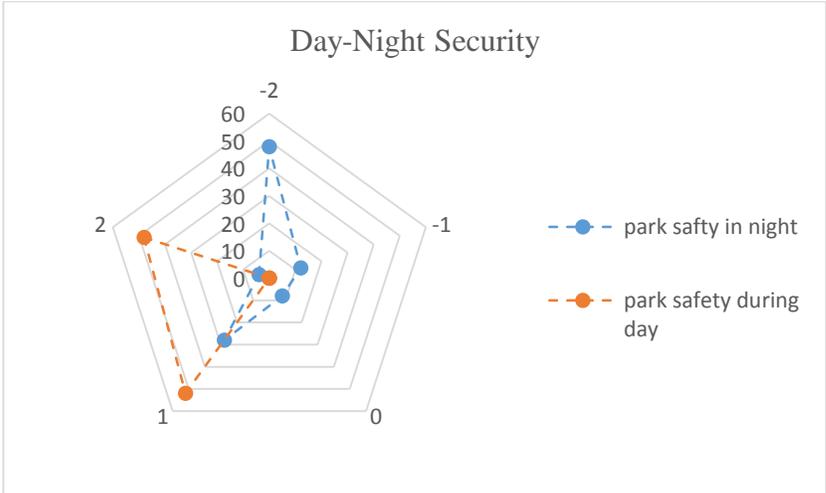


Figure 57. The level of security during Night and Day.

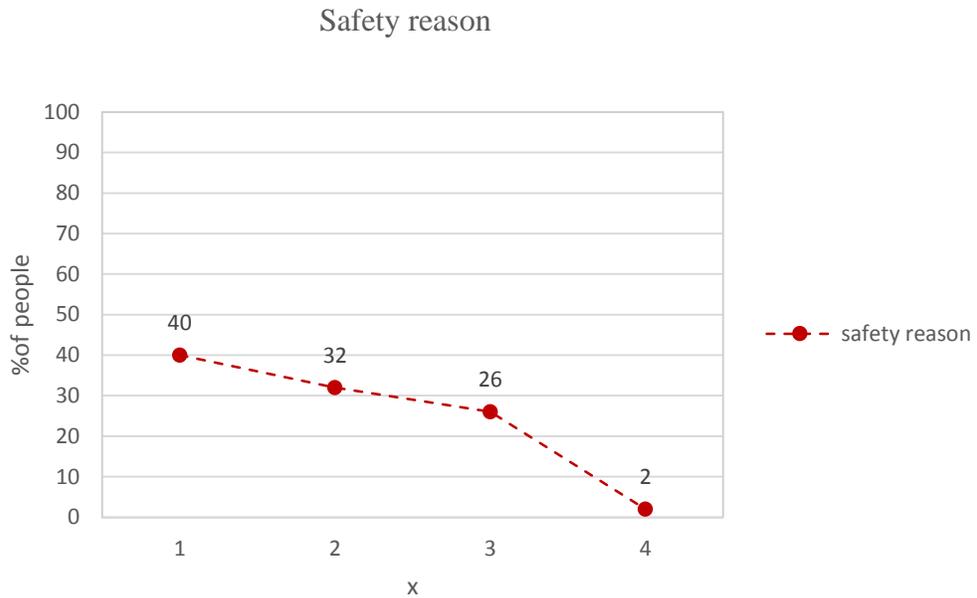


Figure 58. The reason of not frequenting the park at night.

As it is shown in the (Fig.59) enlightenment according to people is not in good condition and not maintained, likewise lightening fixtures does not provide full light during night and this makes the park very dangerous in night times. Owing to this, people do not attend the park during night, even in the surveying done in the previous section, values showing the park frequency by people were low in 18PM. Because of the lack of a proper lightening causing safety reason people are afraid of frequenting the park at night. (Fig.59)

A study of the level of comfort in different segments (Segment ABC), home street park), (segment DBC-restaurant to park), (segments FBC- opera to park) has been done to show the level of difficulty in passing from one point to another of people. According to the graph, the park does not provide any standards for making the park easily accessed for all the different categories of people. (Fig.60). Furthermore, the level of comfort graph shows also that despite the park the difficulty start since in the exit of the home. This emphasizes the lack of a proper mobility and accessibility.

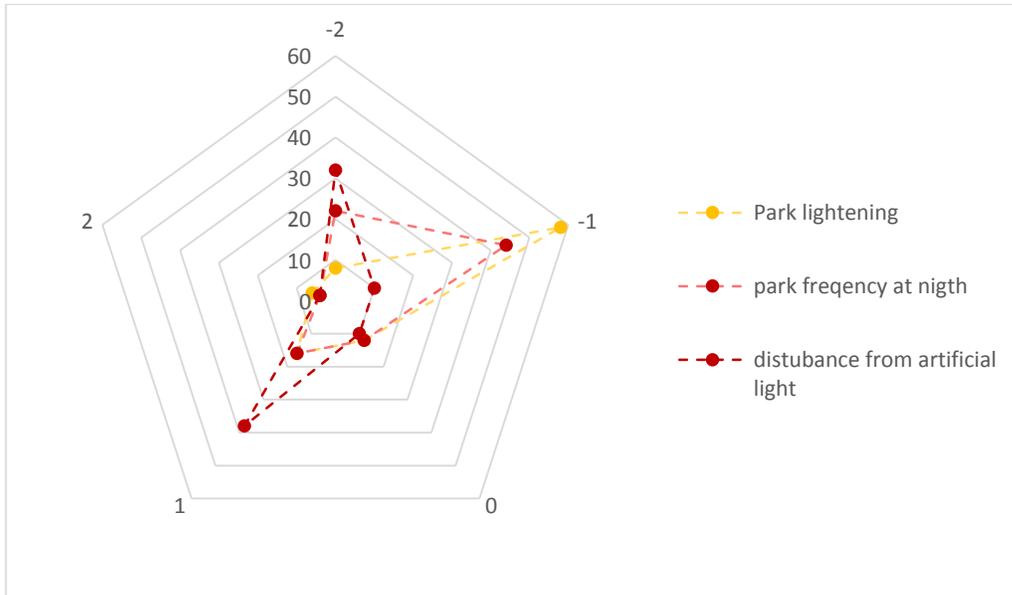


Figure 59. Lightning in the park and its frequency.

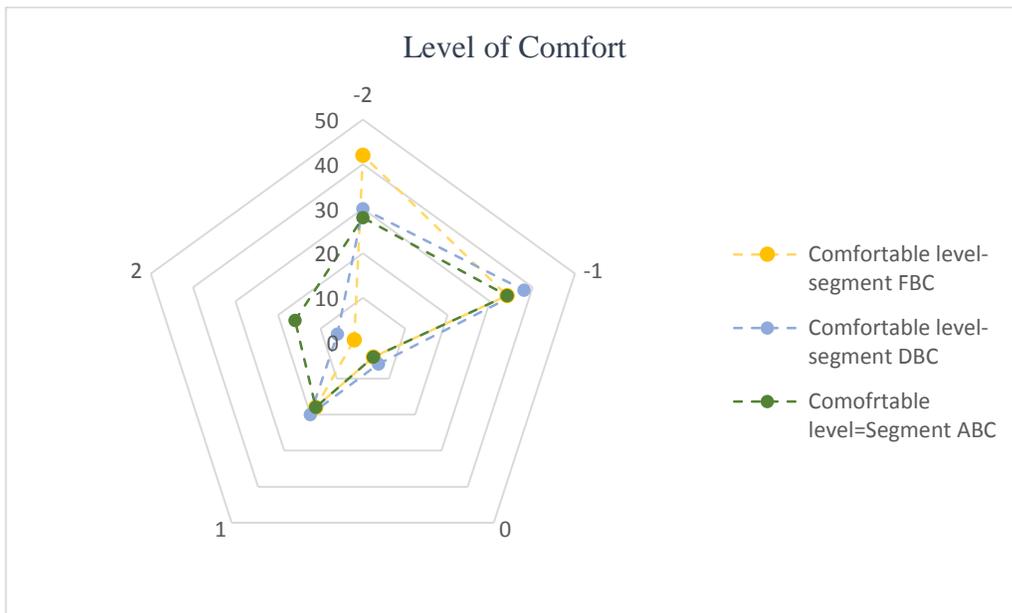


Figure 60. The level of comfort from one certain destination.

The surveying and observation done in the park shows the necessity of having a universally designed park, in order to provide social inclusion. Providing a place for people to have different activities despite relaxing as it is perceived in the results of questionnaires' and surveying. As results of the questionnaires' illustrates, people use the

park as a transitional space for moving to one point into another, this due to the lack of different element and standards that make a park function. Accessibility is one issue affecting in the park being frequented by the community. Moreover, different elements such as benches, greenery, shading elements, lightning miss positioned of urban furniture, and the lack of a proper playground where children can act freely, to run and jump, climb, swing and leap, yell, reign, conjure, create, dream or meditate. Moreover, it is important for disabled children to grow into such environments because they need to come together, to discover the value of play, to learn about each other, to recognize their similarities and differences, to meet physical and social challenges. It is important for the weak user to integrate into such environments. According to the feedback taken by people, the park has good location due to its closeness, it is a clean environment and has the potential to be developed in future, but there is lack of proper infrastructure in making public spaces accessible. Disabled people do not attend the park at all, and the highest category of visiting the park is older generation. Meaning to that the park does not offer any other activity by triggering the young generation not to attend the park at all. People need universally designed spaces and healthy inclusive environments.

CHAPTER 6

PROPOSAL PROJECT OF PARK

The study for the regulation plan of the park is focused on some main elements. The main problem that the people are facing is the absence of ramps in the entrances and exits of the apartment buildings so that the access and circulation can be facilitated and universal. Important elements are the surfaces covered in tactile that are used as guidelines blocks for blind people. They are linear and are used to show the direction to the people through walking by touching the surfaces with their stick or other equipment. Another material for the covering of the paths and roads are the tactile blister used for warning of crossing points. They inform the blind people about the end of the road or a path. In cross-road, the standards for universal design require the placement of interactive semaphore, with a voice guideline for the people when to pass and contrasting colors resistant to light. Also for the passage from the road to the park, it is necessary to use a texture for the white lines for pedestrian passing facilities. The inclusive design for the park includes the regulation and usage of elements for the park entrance, parking lots, playground and urban furniture. In the entrance of the park, it is necessary the placement of signals and braille boards so that the blind people can touch can touch them and guide them to follow the direction they need to pass through. Another present obstacle is the absence of the ramps for the climbing of the disabled people in the bus. An important element is the existence of the connecting ramps so that the people can get to the bus easily. The parking lots for disabled people are necessary to provide the necessary space for the disabled people, which do not appear on the site. The movement of the vehicles in the site is important too, such as the accessible bicycle parking area. The inclusive design for the playgrounds involves the creation of playing environments with an incorporated design through ramps. The usage of the stairs in the playing structures creates a barrier for their usage from the disabled children. The universal design for urban furniture incorporates the provider of the recycle bins in the

proper height to be used by the disabled people. Also, the greenery must be placed near the benches and the structures for drinking water should be designed in a universal way so that they allow all the categories of people to use them. (Fig. 61)

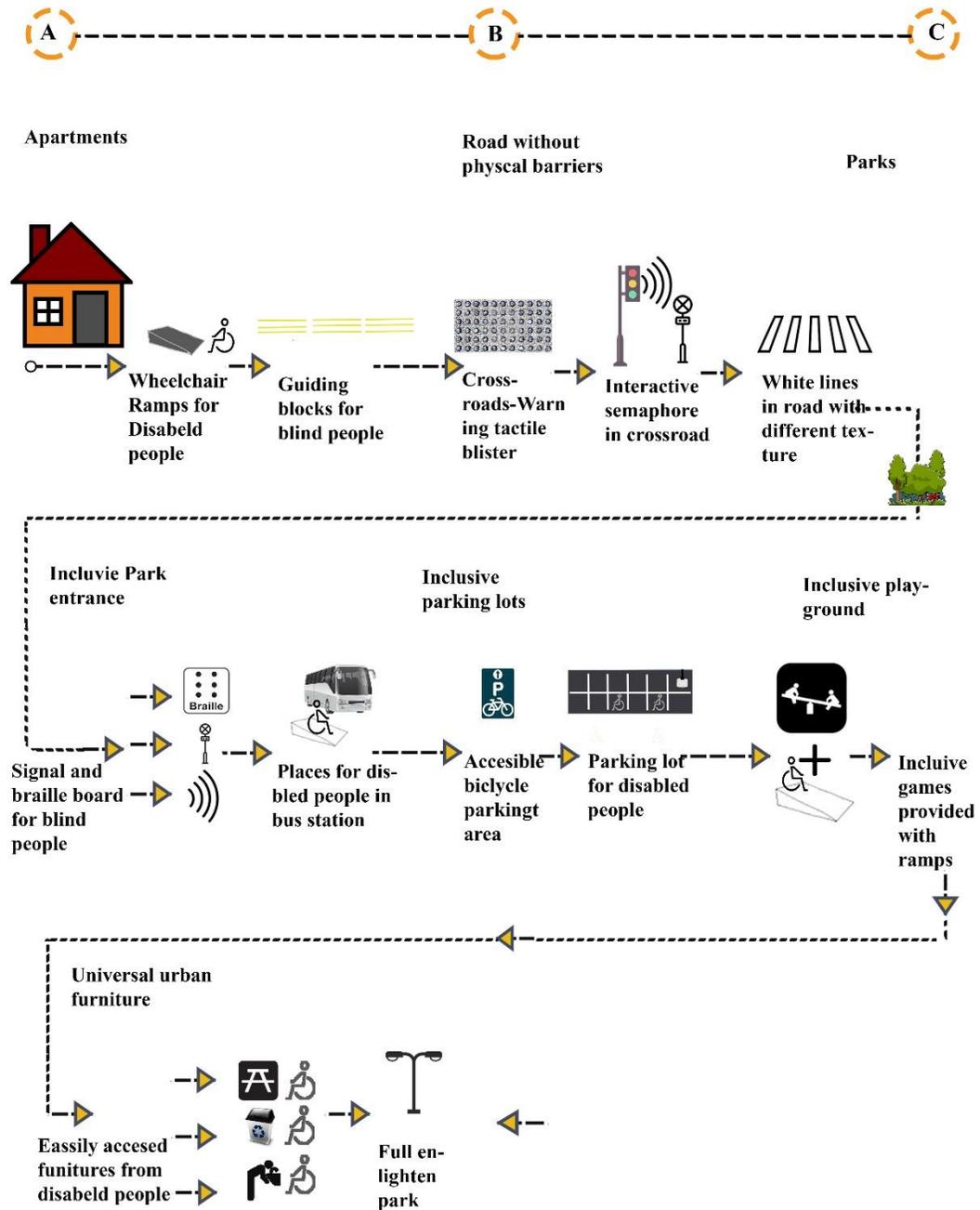


Figure 61. Scheme of the existing pathway from the apartment to the park and the universal design principles guidelines for the transformation of the park.

The design guidelines for accessible outdoor parks include some main factors, such as signage, urban furniture, pathways, ramps, and parking and children playgrounds. The requirements for universal outdoor areas are shown in the (*Appendix B, Table 18*).

The design has started with the parking analysis and the problems it represents. The bicycle parking exists already on the site and but it is not accessible by all the people. The solution is the design of a ramp that can be used to enter the bicycle parking zone from the road. The texture of the pavement in the main road is slippery and it makes it not comfortable to pass through, presenting dangers for the people. The solution is a resistant and non-slippery material. As the park is not isolated from the acoustic noise that comes, from the main roads, it is proposed the creation of a green boundary around the park. Also, the increase of a number of trees makes the cleaning of the air, contributing to the creation of a relaxing and aesthetic space. As the existing playgrounds do not fulfill the requirements for a safe place, it is required the covering of the surface with rubber filling, using colors to make attractive places for the children. Missing structures in the park are a public bathroom and drinking fountain for the people necessities.

During the surveying and questionnaires, many people interviewed have expressed the need to have these areas in the public park. In the middle of the playground, it is proposed the placement of picnic tables in green fields designed universally for the use by the disabled people. To guide the blind people through the movement in the park, the design proposes the usage of the linear tactile blister to show the direction and circular texture tactile for the awareness of the cross finishes. As the shading elements are missing in the park, a structure of colored tents is suggested to be used. The colors are a strong attractive component for the low vision and color-blind people and they can create an interesting and welcoming environment for all the people. An important part to be regulated is the entrance to the park, as it does not fulfill the design requirements for universality. Entering the park, the usage of signals is required as they are a missing part. The existing semaphore is a simple one, which does not comply all the functions for the disabled people.

A proposal is the placement of a traffic light which has acoustic signage to guide also the blind persons on the circulation on the road. The transition from the sidewalks to the white lines may be featured with a warning gentle element to revise the disabled about a road

passing. The warning element includes a ramp design finished with a circular blister tactile. The usage of the braille entering the public zone is a helping feature for blind people. The braille includes a pattern of dots that can be felt and touched by the fingers to guide the blind people about different figures (*Fig. 62*).

Moreover, 3D views are displayed in the (*Fig.63*), and (*Fig.63*) showing the elements used in the plan like signage, ramps, lightening according to [Hanebrink, et.al, 2010].

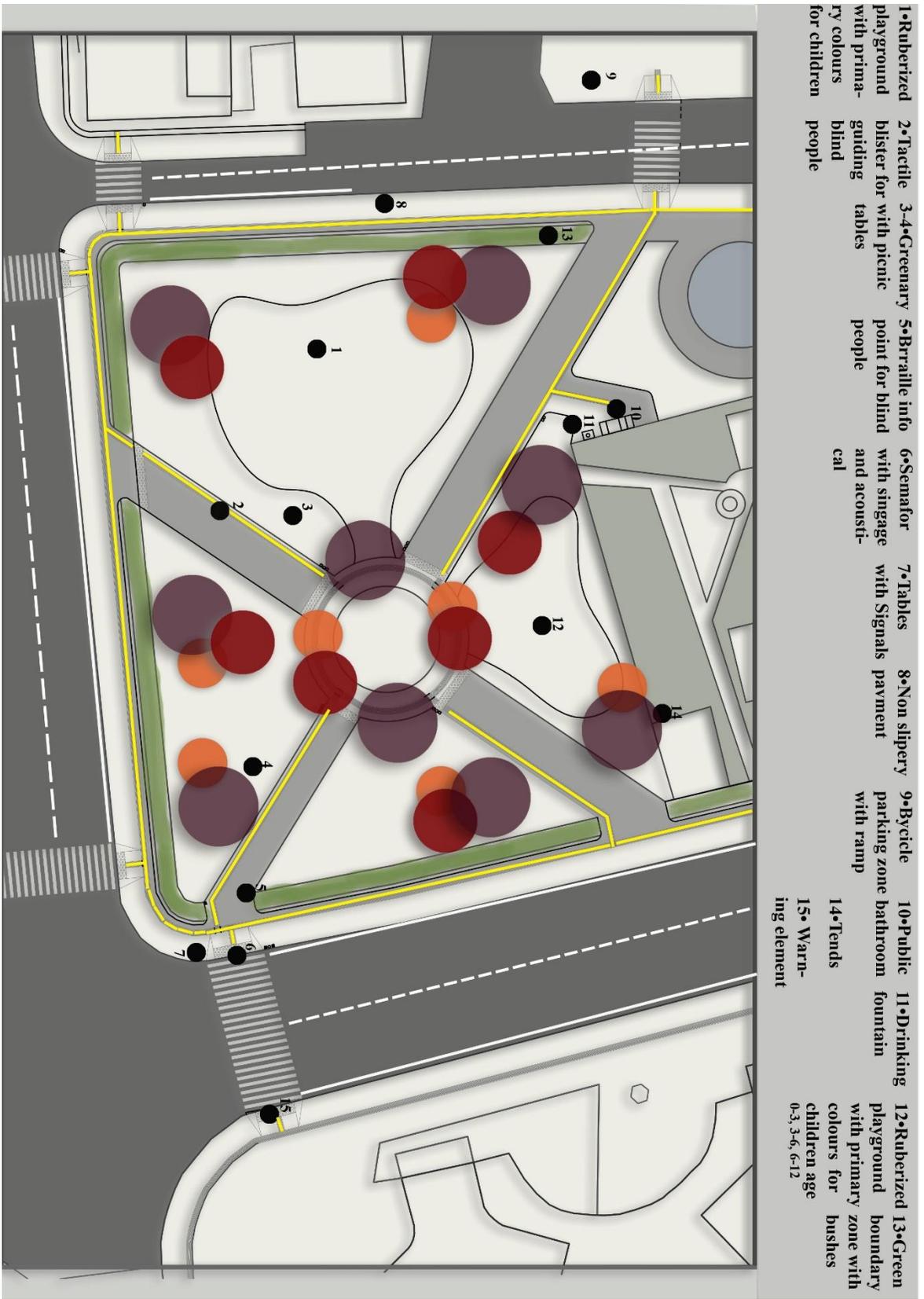


Figure 62. The proposal plans for the park.



Figure 63. Proposed 3D view of the park.

As the (fig. 64) shows, the bus station has to be designed in order to be accessed by all people. tactile blister is used to guide blind people also ramp in accessing the bus, moreover acoustical information point must be placed in order promote inclusiveness and a good access .

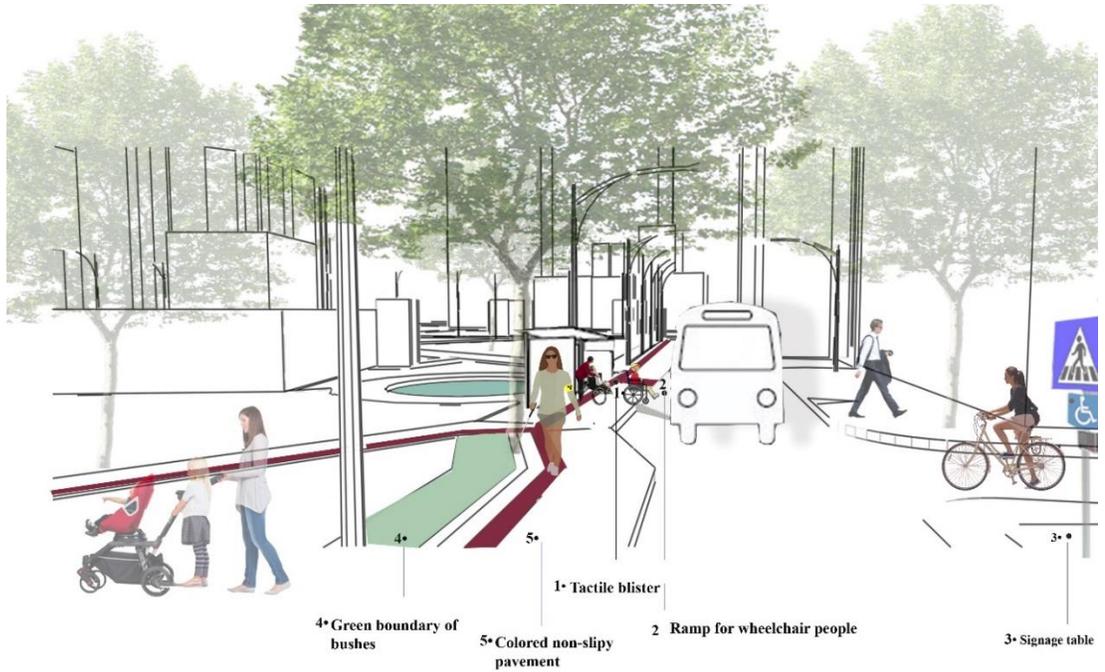


Figure 64. Proposed bus station.

In (Fig 65) it is illustrated the passage from a commercial place to the park how have to be designed in order for weak users to access easily the park.



Figure 65. 3D view of the park showing the accessibility.

CHAPTER 7

CONCLUSION AND FUTURE WORKS

7.1 Conclusion

The number of people with disabilities is increasing during the time and it is a necessary step to create appropriate environments for their social interaction. This master thesis is an analysis of the standards that have to be followed for the transformation of an existing park to a universal area comfortable for all the categories of people. The proposal of methods served to create a model of Universal Park that will serve as a guideline to all architects, urban planners and local government. The pilot project is a further step for the promotion of the participation of all the people with disabilities in the community. The methodology on which is developed the master thesis is the documentary research, which includes the study of the digital information and maps and the social research, which is done through surveying and questionnaires. This part of methodology is very important in defining the problems that the parks in Tirana represent and the limitations they define to the disabled people.

As the results of the questionnaires' done were perceived that people need more accessible spaces in Tirana to socialize, having more activities, and disabled people need an inclusive environment in terms of design. Taking in consideration universal design park in terms of inclusive open spaces, playground, accessibility, mobility, usability, and safety, the case study chosen was a local park in the center of the capital, near the Skanderbeg square. It is named the park of the "Hole of "Hajdin Sejdia" the park have a strategic location, near some main roads such as Durrës and Kavaja Street .Also, the site chosen is positioned in the close to some important residential landmarks and public institutions. An analysis of the potentials and weaknesses of the site shows that the park does not fulfill the necessary requirements for a universal design to provide the social interaction of all the disabled people. The environments were not easily accessed by people, observations have observed

many physical barriers, according to accessibility and playground. As well the results of the surveying and questionnaires demonstrate that the existing situation in the park does not offer good conditions for all the categories of people. The social research has been done. It divided the park into two parts: Park A and Park B, for a facility of study and more detailed conclusions. The results of the surveying and questionnaires show that the park is mainly used as a transition space for passing between different parts rather than as a relaxing and social space. The study is developed through a comparison of the existing conditions in the park zone and the standards, which have been categorized into signals, play areas and ramps, bus zone and parking, colors, surface ground, equipment, water surfaces and urban furniture.

The proposal for the regulation of the park is realized by making an analysis of the way that a person has to pass from the apartment to the park. According to the standards studied this analysis discusses how the implementation of the standard can be applied in the park and how people with disability can be a part of the community too.

Concerning all the problematic illustrated and the studied done, this research seeks out for the attention of the government in fulfilling the disabled people rights, in having the opportunity to be part of the community too, by all means. It is essential for designers concerning the rights of disabled people to design accordingly to the standards.

To end with the governments should pay attention to fund up projects that will promote inclusiveness in all product, services, and open spaces. Weak users are important too for the community and they should not be ignored.

7.2 Future works

The pilot project designed for the transformation of the park chosen is a guideline that can be used successfully for the change of the environment in many parts of the city. As these public and local parks do not meet the standard requirements, it is necessary to take a further step for their design, so that they can be used by all disabled people. The creation of friendly and relaxing environments provides the social and cultural interaction of all the categories of people. Universal design is a necessary change for more comfortable conditions for the disabled people and to make them feel better in the community in which they live.

The study may serve for future works, in designing a better park and playground, in terms of

- i. Accessibility of park by different groups
- ii. Inclusive playgrounds designed 90% accessed and different types of play for different weak user's illness.
- iii. In improving the standards and the legislation related to human rights.
- iv. By removing all the physical barriers to promote a safe access for all people.

It has to start with the surveying on how people use parks and how parks can be a tool where people release all their stress. The proposal of methods served to create a model of Universal Park that will serve as a guideline to all architects, urban planners, and local government. Surveying is a further step for the promotion of the participation of all the people with disabilities in the community.

It is important in teaching young architect the universal design principles in order for them to precede such errors in designing and environments with promotes only exclusion.

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APPENDIX A

QUESTIONNAIRES ON UNIVERSAL DESIGN IN THE SELECTED PARK

According to (*Fig.66*), and (*Fig.67*), the questionnaires format done in the park are illustrated.

A study analysis for the park Understanding the Park-Inclusive Park Analysis.		Questionery				Epoka University	
1	Name						
2	Gender	Female		Male			
3	Age	0-18	18-25	25-35	35-45	45-55	55-older
4	Study Branch						
5	Do you suffer from a disability?	Yes			NO		
6	If Yes , from what?						
7	How often do you visit the park	Rarely	Monthly	no opinion	weekly	Daily	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8	Your time of staying at the park	Mnuta	Hours	Half of the day	All day	Not at all	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9	Does the park provide space for your activities	A lot of space		Yes	No space	No Space at all	
		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10	Your type of vehicle coming to the park	1-In foot	2-Bicycle	3-Car	4-Public transport		
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Park maintainace and safety	never	smetimes	no opinion	yes	often	
11	Is this park normally clean?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12	Does the area feel safe? Is there a security presence?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13	Does the equipment put the child in risk?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14	Is the playground well maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15	Are the sitting comfort?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16	Are the lightenig element well maintained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17	Are they taking care of the greenary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Activities done in park							
18	Your activities in the park are:	1-Sitting in park (relax	2- Celebrations, picnics	3-Gymnasium activity			
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
		4-Walking	5-Walking with dog	6-Meet friends			
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
		7-Other	8-Playground	9-I don't go to the park			
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
		10-Cards	11-jumping (rope, hop scotch	12-lying down			
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
		13-reading					
		<input type="checkbox"/>					
19	Did ever take place any event or program in the park?	Yes	Often	Sometimes	Never	No opinion	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20	Do you have any children in your family that suffers from a disability.				Yes	No	
					<input type="checkbox"/>	<input type="checkbox"/>	
21	If yes do you bring him/her to the park				yes	No	
					<input type="checkbox"/>	<input type="checkbox"/>	
22	If no, why?						
23	Is the playgorund safe for the children ?				yes	No	
					<input type="checkbox"/>	<input type="checkbox"/>	
Accesibility and materials							

Figure 66. Questionnaire did in the park, (first page)

APPENDIX B

GENERAL INFORMATION FOR DESIGNING UNIVERSAL DESIGN PARKS

B.1-Guidines for designing a universal inclusive park.

According to (*Tab. 18*) guidelines for designing a universal park are illustrated according to [AusAID, 2013].

Table 18. Analysis of the main guidelines for the universal design of parks.

Element	Guidelines to consider
<p>1.Obstructions</p> <p>Elements that obstruct the transition space such as :</p> <p>Overhanging obstructions: electric cables, lights, Signs, and vegetation</p> <p>Fixed elements :billboards, bins, and street furniture</p> <p>Unfixed elements: A-frame signs, commercial furniture in the street, retail and food carts</p> <p>Spaces below ramps and stairs</p>	<p>Obstructions need to be relocated .If not the following guidelines have to be followed. The elements must be:</p> <ul style="list-style-type: none"> • a vertical shape • placed on a 100 mm raised platform where possible • tactile markings on the ground around the obstacle with a minimum 30% luminance contrast colors to surrounding surfaces • clear height of 2 m • contrasting durable color marking strips • the distance between bollards should have a minimum of 1 m

	<ul style="list-style-type: none"> • spaces below ramps and stairs should be blocked completely by protective rails or tactile surface
<p>2. Signage</p> <p>The signage includes direction signals, surface and passing warnings, information boards and location signs.</p>	<ul style="list-style-type: none"> • weather-resistant material for sign surfaces and durable for preventing glare • contrasting colors for people with low vision and blindness • right proportion of letters for the reading distance • Appropriate use of the International Symbol of Access symbol (for example, in parking and toilets for people with disability should be used specific signs).
<p>3. Street furniture</p> <p>Street furniture includes bus stops, benches, garbage bins, lamps, mailboxes, public toilets, sign boards, water fountains, and tables.</p>	<ul style="list-style-type: none"> • position to allow accessibility and safety for all people • maintained of sensory equipment for the people with low vision and blindness • location identification by using textural changes in transition surfaces • placement of controls and public equipment , such as public telephones, vending machines and water fountains, 850 mm to 1 m

	<p>above the ground for easy access and use</p> <ul style="list-style-type: none"> • seating at regular distances (100 m to 200 m) and at prominent public facilities, such as bus stops, service areas and toilets, to provide resting places • mount level seating areas outside main pathways, such as spaces for wheelchairs • proper placement of garbage bins
<p>4. Pathways</p> <p>Hazardous pathways may be unpaved With holes, changes in level or not wide enough.</p>	<ul style="list-style-type: none"> • remove of obstructions or barriers • sealing of unpaved surfaces • slopes at maximum with a slope 1:20 • ramps for slopes that exceed 1:20 and create landings with a minimum dimension of 1 m x 1 m every 9 m, to enable rest opportunities • smooth and non-slippery surfaces for pathways • guide pathway with a tactile line in a color with a minimum 30% luminance contrast to adjacent surfaces • blister tactile tiling at pedestrian crossings and around obstructions that are difficult for people with low vision and blind

	<ul style="list-style-type: none"> • curbs avoidance or, if required, ensure they are between 70 mm and 150 mm high • Right, choose a plant, avoiding poisonous plants and plants that drop seeds and leaves.
<p>5. Kerb ramps</p> <p>Kerb ramp is a small ramp into the footpath for an easy transition to the street.</p>	<ul style="list-style-type: none"> • position out of the path of pedestrian circulation • position in car parking areas, at main building entrances, at pathways with a high flow of people and at street intersections • placement away from places where water might be accumulated • minimum width of 1 m and maximum slope of 1:10 (maximum 10 mm lip where the curb contacts the lower pavement) • construction material texture that contrasts ramps from main paths

<p>6. Pedestrian crossing</p>	<ul style="list-style-type: none"> • contrasting color with the road and curbs • tactile markings for curb ramps • installation of traffic control signals that have appropriate push buttons, acoustics, and visual signals • guide strips to direct pedestrians to traffic light push buttons, for safety • same level of raised crossing with the pathway for a facility of use by those with wheelchair • placement of traffic calming elements ,such as speed bumps
<p>7. Parking areas</p> <p>Parking includes parking spaces for people and vehicles. The problems include few or absent parking spaces or not wide enough and location.</p>	<p>Parking spaces</p> <ul style="list-style-type: none"> • location of minimum one disability-reserved parking space for every 50 general parking spaces • the position of a disability-reserved parking space at a maximum 50 m distance from the main building entrance • design parking spaces for people with disability with a minimum width of 3.2 m (preferably 3.6 m) with an adjacent minimum 2.4 m wide shared space for wheelchair movement

	<ul style="list-style-type: none"> • same-level access from disability-reserved parking spaces to curb ramps and pedestrian paths <p>Drop-off zones</p> <ul style="list-style-type: none"> • minimum 3.2 meters of wideness • parking spaces for people with disability wide enough to accommodate two cars • location at bus stops • position in a maximum distance 30 m of accessible building entrances • shelter with seating furniture • provide curb ramps for changes in level from parks to footpaths • clear signage confusion • tactile guide strips • usage of bollards to define zones
<p>8.Playgrounds for children Children’s playgrounds include spaces where children gather to play on the different equipment.</p>	<ul style="list-style-type: none"> • placement of simple social play features to be more accessible • easy circulation network through the playground to allow mobility and accessibility • position seat placement to be accessible and close together for rest and social interaction

B.2-Curbs ramps evaluating factor According (ADAAG)

In (Tab.19) it shows the curb evaluation according to [Americans with Disabilities Act, 2008]

Table 19. Table of curb ramps evaluation factors

CURB RAMPS – EVALUATION FACTORS	
Curb Ramp Slope	Slopes 1:12 (8.33%) or less. Slopes greater than 1:12, but not greater than 1:10 (10%). Slopes greater than 1:10 (10%).
Curb Ramp Cross-Slopes	Max 2% (Americans with Disabilities Act Accessibility Guidelines (ADAAG) and Title 24)
Curb Ramp Width	At least 1.2m in width (excluding flared sides) (Title 24)
Upper Landing	At least 1.2m deep x ramp width; max slope of 2% each way (Title 24 and ADAAG)
Location within Crosswalk	Ramp wholly within the crosswalk markings (Title 24) (Excluding flared sides).
Lip at bottom of ramp/gutter pan	Ramp flushed with the road surface; no bump or lip. Title 24 previously required a 1.3 cm high beveled lip at Bottom of curb ramps. Lip-too-high criteria were collected in 2000 survey. (Lips

Greater than 1.3cm.)

Detectable Warnings	Truncated domes extend 90cm minimum in the direction of travel and the full width of the curb ramp (excluding flared sides)
Curb Ramp contrast with Sidewalk	Curb ramp finish contrasts with the adjacent sidewalk.
Curb Ramp Surface Condition	Acceptable surface condition.
Flared Side Slope	Sides sloped over 1:10 (10%).
Curb Ramp Orientation	Curb ramp aligned parallel with the crosswalk served.

In (Fig.68), (Fig.69) and (Fig.70) the appropriate side curb ramps are illustrated according to [Hanebrink, et.al, 2010].

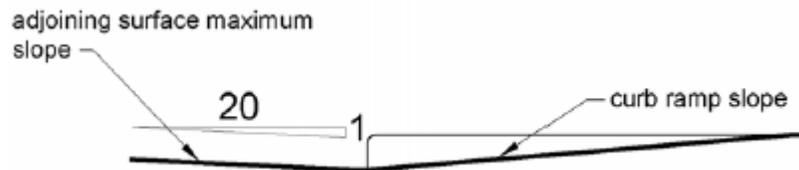


Figure 68. 406.2 Counter Slope of Surfaces Adjacent to Curb Ramps, [https://www.ada.gov/2010ADAstandards_index.htm, 2010].

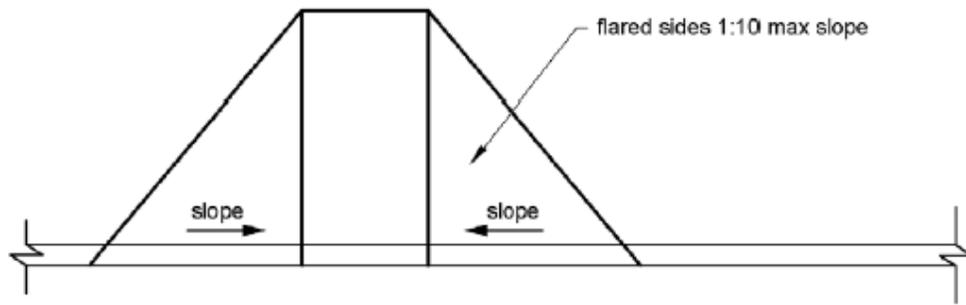


Figure 69. 406.3 Sides of Curb Ramps,

[https://www.ada.gov/2010ADAstandards_index.htm, 2010].

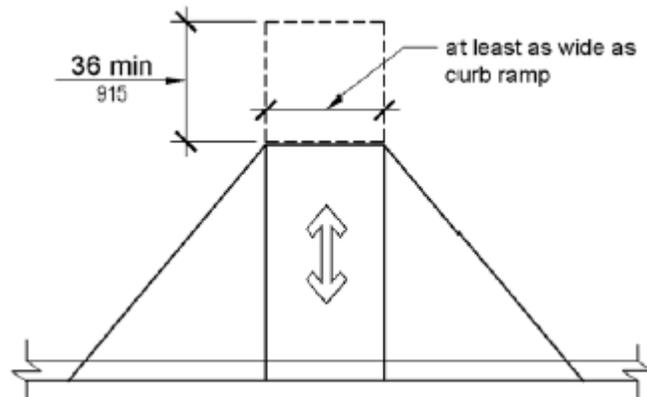


Figure 70. 406.4 Landings at the Top of Curb Ramps

[https://www.ada.gov/2010ADAstandards_index.htm, 2010].

Conferring to (*Fig. 71*) the forward reach without obstruction it is illustrated [Central Public Works Departments, 1998].

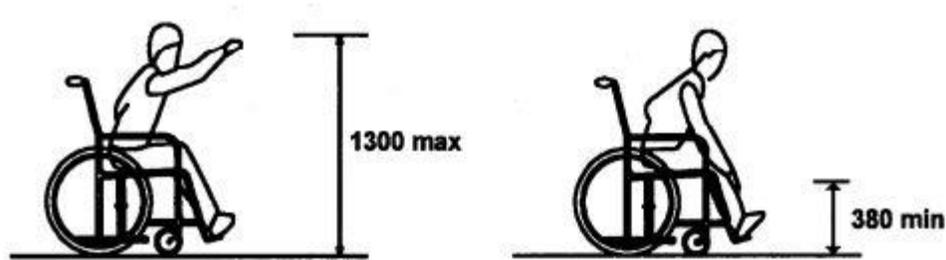


Figure 71. Forward reach without obstruction[<http://cpwd.gov.in/Publication/aged&disabled.PDF>, 1998].

B.3-Surface ground information

According to [Central Public Works Departments, 1998], the floor material to guide or to warn the visually impaired persons with a change of color or material with noticeably different texture and easily distinguishable from the rest of the surrounding floor materials is called guiding or warning floor material. The material with different texture provides audible signals with a sensory warning when a person moves on this surface with walking stick. The warning floor material gives the directional effect or warn a person at critical places.

- The access path to the building and to the parking area.
- The landing lobby towards the information board, reception, lifts, staircases and toilets. At the beginning/end of the walkway where there is a vehicular traffic. At the location abruptly changing in level or beginning/end of a ramp.
- Immediately in front of an entrance/exit and the landing.

B.4-Surface Ground Material

According to [Hanebrink, et.al, 2010] compiling with the low (*705 Detectable Warnings*):

705.1 General. Detectable warnings shall consist of a surface of truncated domes and shall comply with 705.

705.1.1 Dome Size. Truncated domes in a detectable warning surface shall have a base diameter of (23 mm) minimum and (36 mm) maximum, a top diameter of 50 percent of the base diameter minimum to 65 percent of the base diameter maximum, and a height of (5.1 mm).

705.1.2 Dome Spacing. Truncated domes in a detectable warning surface shall have a center-to-center spacing of (41 mm) minimum and (61 mm) maximum, and a base-to-base spacing of (17 mm) minimum, measured between the most adjacent domes on a square grid.

705.1.3 Contrast. Detectable warning surfaces shall contrast visually with adjacent walking surfaces either light-on-dark or dark-on-light.

In (*Fig.72*), warning surface elements are shown used in crossroads to guide visually impaired people.

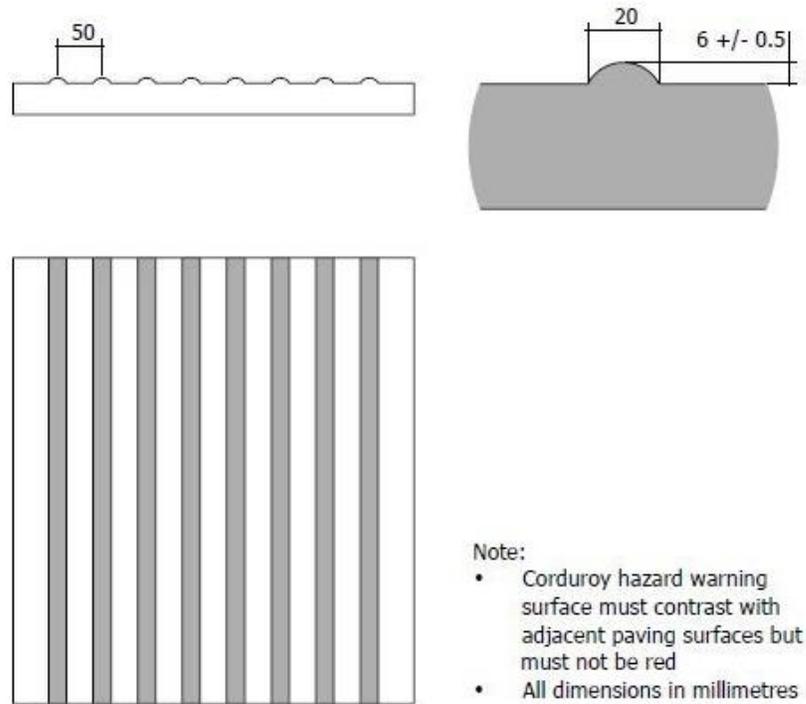


Figure 72. Size and Spacing of Truncated Domes [Hanebrink, et.al, 2010].

B.5-Bus station design and Parking

Another important issue is the appropriate design for the bus stop in order to help disabled people. According to [Garg, 1996] some guidelines are listed:

- A. Bus Stops for persons with impaired vision should be provided 300 mm. away from the bus stop pole on the sidewalk.
- B. The bus stop pole should be clearly visible after dark.
- C. The bus stop area should be equipped with a roof and bench.
- D. Information on the names of all stops along a bus route should be indicated inside the bus by displaying text in a suitable position.
- E. Preferably, this information should also be announced verbally.

- F. Information on a route and its final destination should be displayed outside the bus in large text, especially on its front and side. This information should be illuminated by an internal light to make it readable in the dark.

As illustrated in (Fig.73) by [Central public works department, 1998] how a bus station have to be designed is shown

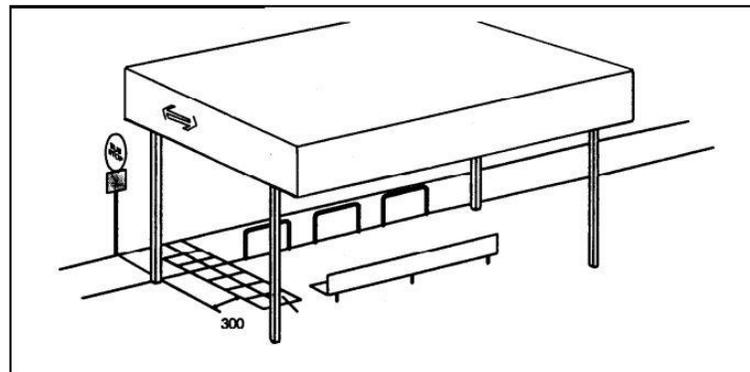


Figure 73. Bus Station [Central public works department, 1998].

In (Fig.74) how parking space should be designed in order to promote social inclusion.

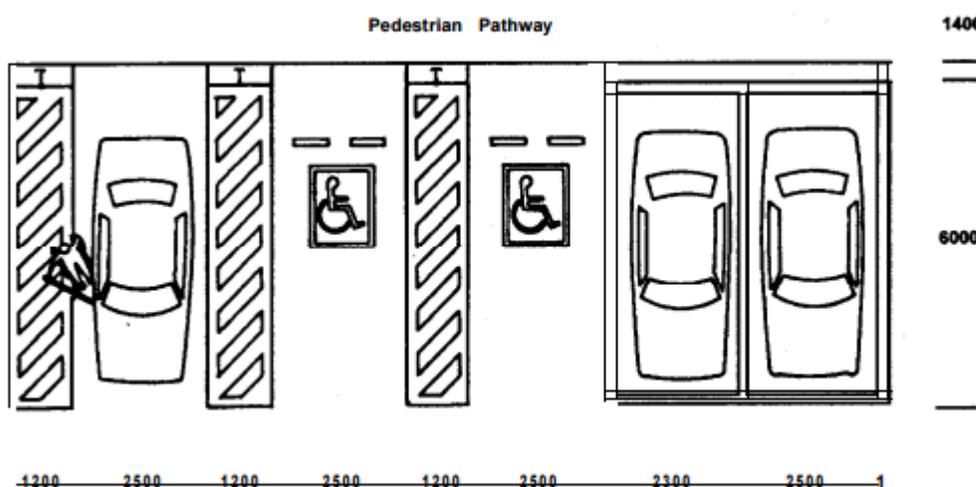


Figure 74. Parking lot displaying places for disabled people, [http://cpwd.gov.in/Publication/aged&disabled.PDF, 1998].

According to [Hanebrink, et.al, 2010] Elements to be considered in design are:

- A. Tactile dots and bars on consumer products (ISO 24503)
- B. Communication aids for blind persons (ISO/TR 11548)
- C. Tactile danger warnings on packaging (ISO 11683)
- D. Application of braille on signage, equipment, and appliances (ISO 17049)
- E. Tactile walking surface indicators (ISO 23599)
- F. Acoustic and tactile signals for pedestrian traffic lights (ISO 23600).