European Online Journal of Natural and Social Sciences 2015; www.european-science.com
Vol.3, No.3 Special Issue on New Trends in Architecture, Civil Engineering, and Urban Studies
ISSN 1805-3602

Tailoring Coastal Park for the Use of Veterans and People with Physical-Motion Disabilities (Case study: Noshahr Beach Park)

Shabnam Najmeddin[1], Mojtaba Ahmadi[2]
[1]Department of Environmental Design Engineering, Science and Research Branch, Islamic Azad University, Chalous, Iran; [2]Chalous Branch, Islamic Azad University, Chalous, Iran

Abstract

Many physical barriers in most parks not only have minimized, in practice, the effective use of these spaces for the disabled, but also are impossible in many cases. This exclusion leaves negative results in the society. This research tries to step in to create safe and attractive spaces, according to the needs of disabled people on the fringes of the coastal strip and place equal opportunities for them to make use of these spaces. Studies of Noshahr Beach Park, as a busy urban park, show that this park, in both design and construction or the use of appropriate materials and elements designed lacks favorable conditions for and people with physical-motion disabilities. In order to achieve the main objective, cross-sectional research methods in the context of library studies using face to face interviews, and questionnaire are used to analyze the problems of people with physical-motion disabilities while being in Beach Park. Finally, with an emphasis on the results of the analysis of questionnaires and interviews in person, by setting urban and architectural regulations as criteria for people with physical-motion disabilities, using environment design principles ,and sustainable urban development suitable models in order to tailor coastal parks with the needs of veterans and people with physical-motion disabilities are provided. These models enable veterans and people with physical-motion disabilities to enjoy coastal parks without the help of a person and independently.

Keywords: playground, children with limited movement, access barriers, manufacturers of playground, playground users

Introduction

Iran has the highest per capita number of people with disabilities in the world, a large group of whom are veterans of Iran-Iraq war. In addition, Iran has a record of traffic accidents in the world and has the highest rate of mortality (400 per week) due to it. The statistics of disability caused by other accidents are not so low that if the elderly and low power add population is added, a significant percentage of the population suffers from motor disability (Faghfourian, M., 2012).

The existence of many physical defects in the present city has not only virtually minimized the beneficial use of urban space but in many cases possible. What has made this critical is that the part of the society that due to physical-motor disabilities is practically deprived of the use of urban space searches the reason in “defect of city” but in “their own disability” and do not get close to these spaces (Ghaem, 1998: 8).

Abdi Daneshpur (2006) writes, “The results of studying cities of the country reflect the fact that not only medium, small, and remote towns and villages (and underserved areas of the country), but also the largest city or the capital Tehran also has physical barriers and factors that in general have caused lack of full participation of people with disabilities in usual urban activities. Barriers and limiting factors of the disabled motion can be seen in actions taken without attention to appropriate purposes and principles of the urban environment for the movement - not only for people with disabilities but for all people.

Healthy city is the one that all citizens can benefit from its services. The urban environment should provide better services to the most vulnerable groups of the society so that they are not forgotten. The main approach to good, creative and effective design is an approach that offers democratic and equal service to all (Baris, 2009: p. 2).

People with physical-motion constraints due to a lot of free time compare to normal people have a particular need to have sports and recreational spaces. Disabled needs of every type and social status to the parks to role the parks, the role of parks in development of social interaction between society and people with disabilities, psychological impact of parks and recreation in the spirit of people with disabilities, neglected civil rights of disabled people in benefiting from leisure facilities of the parks shows the necessity of the establishment of the parks in accordance with the needs of the disabled.

If technical criteria are considered when designing buildings and structures, far less expenses will be used compared to later rebuilding or renovation of a building. Therefore, attention to two key points is essential in making the environment suitable: 1. many of the features that make streets, buildings, and urban spaces accessible for the disabled and veterans, make using them more consistent and compatible not only for the disabled and veterans, but for others, including the elderly, pregnant women, people who carry their children in strollers. 2. Unfortunately, in our country, not observing technical standards in the construction of roads and buildings and lack of attention to public use of educational, recreational, employment environment and so on have made not only the disabled and veterans, but even some healthy people to be confined to home and be away from others and become isolated (Zandiyeh, 2006).

Studies of Noshahr Beach Park, as a busy urban park, show that this park, both in design and in the field of construction or the use of appropriate materials and design elements is without favorable conditions for the people with physical-motion disabilities. Therefore, it is tried to set regulations of building and architecture as criteria for people with physical-motion disabilities (Act dated December 27, 1999 of the Supreme Council for Planning and Architecture) and redesign this park, with the aim of creating the right conditions for the disabled, with the following approaches:

1. Using equipment, furniture, and suitable materials for urban parks with an emphasis on standards of urban construction considering people with disabilities, especially physical-motor and environmental concerns associated with it.
2. Making passageways, entrances, and access to public places in the parks suitable
3. Making parks suitable by establishing a network of signs for the disabled
4. The creation of recreational facilities for people with disabilities, especially for people with physical-motor disabilities

Overall, in this study, by collecting information on service and welfare spaces, and access routes in the park from various sources, it is tried to take a step in addressing the needs and problems of people with physical-motion disabilities, and in form of a case study make Noshahr Beach Park suitable for the disabled in the Caspian Sea coast.

Research Methodology

Given that in our community there are many people who, because of disabilities that can be due to a variety of reasons including war, by birth, accident and the like, are isolated from society, while it is possible to take advantage of their presence in different social areas, what is important here is designing a space for these specific individuals.

This study is a descriptive-analytic one in survey method. Information needed for research is collected through documents and library studies, with an emphasis on people with disabilities, especially physical-motion. In addition to these studies, the sample parks made appropriate within

and outside the country were discussed. Using interviews and giving the questionnaire to people with disabilities visitor of the site (Table 1), their needs, and deficiencies were identified, and taking into account site analysis maps, restriction, and facilities of the suitable place for the intended applications were determined.

Table 1: Results of the questionnaire provided to persons with disabilities visitor of the site. (Najmaldin, 2012, 158)

Questions raised		Answers given	Percent
1	Reason for going to the beach park	Picnic and camping in the site	60%
		Walking on the beach	30%
		Swimming	10%
2	Number of visits to beach park	every week	35.6%
		Once a year	35.4%
		Once in a few years	30%
3	How to reach to beach park	personal vehicle	73.4%
		Wheelchair	15.6%
		On foot	11%
4	The most common deficiencies and defects in park	Many ups and downs in the park	36.6%
		Lack of sports and leisure facilities onshore and offshore	28.2%
		Traffic and excessive number of cars and lack of safety	35.2%
5	The satisfaction of Beach Park	Great	25%
		Average	34%
		Low	41%
6	The desire to create cultural spaces such as libraries, theaters, and ...	Yes	47.3%
		No	52.7%
7	The desire to create safe places to swim for disabled	Yes	88.9%
		No	11.1%
8	The desire to create suitable conditions for sports for people with disabilities such as horseback riding, beach volleyball, fishing, and ...	Yes	95.1%
		No	4.9%
9	The desire to create spaces for children and adolescents with disabilities	Yes	100%
		No	-
10	The desire to create conditions for disabled to access the beach, with special beach wheelchairs	Yes	100%
		No	-

Review of literature

How to spend leisure time is an issue, which has long preoccupied social science researchers mind. People in their daily life, with great or less sorrow and joy, are working and involved in their environment economic and social development. In this way, they return home with physical and mental fatigue to make themselves ready to go back to work for another day. It is obvious that such a life cannot be recommended as a solution to ideal healthy society. For people who live a machine

like life, just to produce and consume cannot enjoy the natural gift of “living in a healthy community.”

People tired of working and living need recreation centers to be able to reinvigorate the physical and mental faculties and finally go to work with new spirit and force. It is clear that in this case, it is added to his ability to work and his artistic creativity and his becoming a fix component of daily activity machine is prevented.

The inability of persons with disabilities in easy access to facilities and urban spaces, in fact, is not because of their disability, but due to the disability of the community in meeting the needs of the disabled in urban areas. Our community must seriously address this important issue and think out logical and practical measures to solve the problems of urban spaces and their precise implementation for the benefit of persons with disabilities whose talents have not revealed.

Tailoring

Generally, tailoring of urban space for the disabled is checked from two aspects:

1. Tailoring of buildings and public places, sidewalks, roads and streets, stations and the total urban spaces

2. Tailoring the urban transport system (Lahoutifar, 2012)

Tailoring is providing the appropriate the ground to equal use of facilities by individuals with physical and psychological conditions and in accordance with the individuals' needs such as welfare, social, economic, cultural and natural resources (Taghvayi, et al., 2010).

Physical-motion disability is divided into two large groups: semi-mobile disabled people and people with disabilities using a wheelchair. People with mobility have the most problems with wheelchair, and it is the most troublesome aid regarding size, weight and space occupied (Sorensen, 70).

Important design pre-assumptions

Inclusive design and the people using the space

“Inclusive design” is a kind of design that needs of all users are considered. Inclusive design is based on barrier free design that is the creation of spaces accessible to everyone, at any age and any ability. Nowadays, having access is known as a necessity for everyone and for the realization of this a lot of effort is done around the world. Despite the interest that some government agencies show towards “Access” and “livability” of areas, so far the design meeting the needs of the majority is not set in our country. In most cases, access is a factor to the test the design and not a factor of environmental design project. Unfortunately, access is not considered during the design and choice of design. For this reason, it is important to explain the appropriate methods of dealing with the issue of accessibility known as “Inclusive Design” at the international level. The aim of this thesis is “Trying to meet the needs of the majority of users.”

Inclusive Design has seven key principles as follows:

The first principle- a simple and intuitive use: understanding the use of design by ignoring the experience, knowledge, speech skills, or concentration of use is easy.

The second principle - fair use: design for people with different abilities is useful and marketable, and does not exclude any group of users.

The third principle - understandable information: designing the necessary information regardless of condition or sensory abilities or limited use are effectively transferred to him.

The fourth principle - taking into account the limit for error: designing minimize the risks and consequences of accidental or unintentional fatigue.

The fifth principle - flexibility in the performance: designing match a wide range of individuals' preferences and abilities.

The sixth principle - minimum physical effort: designing can be used efficiently and comfortably with minimum fatigue.

The seventh principle - the size and area of access and performance: size and suitable entry to places, access, adoption, and using it, regardless of physical size, posture or mobility of the user, are provided. Therefore, in inclusive design, in addition to the average person, we should think about people with motion disabilities. (Hosseini. et al., 2008)

It can be said that an inclusive environment is an environment that can be used by everyone, regardless of age, gender, or disability. This environment consists of multiple elements such as personal and social attitudes, and communications product design and environmental design of the building itself. Moreover, it determines and coordinates the differences in a way that people can use the building environment, and it provides solutions that enable us for equal and independent participation in activities of the mainstream.

An inclusive environment considers the diversity of people and overcomes unnecessary obstacles in a way that is for everyone's benefit. This trend is significant, because although society and individuals have invested heavily on these people to effectively manage their personal consequences (e.g., caring of the elderly or helping disabled people), many people still remain as disabled due to severe environments. As a result, many people cannot accept full responsibility and are barred from carrying out roles in the society.

Physical planning and site design process: Noshahr is one of the cities of Mazandaran. Noshahr is on the beach and at 164 kilometers of Saari, and 205 kilometers from Tehran. Due to the special geographical situation of the city, in addition to proximity to the forest and the sea, it is one of the most spectacular cities of the province.

Noshahr is connected to the Caspian Sea from north, to Alborz Mountains from south, from east to Nour, and from west to Chalus. Concerning the situation of the site as well as information derived from the analysis, the following activities and uses have been selected for development and improvement of the site. It should be noted that all uses have been selected by the questions raised by people referring to the park, and especially persons with disabilities.

Vehicle access routes: Disabled people's access to public facilities and transportation network not only results in the beneficial use of their talents and forces, but it is also a form of prevention of further disability (Babaei Ahari, 1994). In the site discussed, vehicle routes are available with width of 12 meters, that has caused the streets to become a place to park the cars, that in addition to causing insecurity for people with disabilities, it has caused the lack of efficient use of spaces available on site as well. Among the measures that should be taken in order to improve the current situation is to reduce the width of the roadway to 6 meters, so that the inappropriate entry of vehicles into the site is prevented, and more space can be allocated to other uses.

Pedestrian access routes: In this site, there are pedestrian access routes with poor conditions for people with disabilities. Among the important measures to improve the existing routes, or to create pedestrian access routes that should be noted creating sidewalk with longitudinal tilt up to 8 percent, and with non-slip flooring, widening of sidewalks, removal of physical barriers on the sidewalk, changing pedestrian steps to ramps or stairs with a maximum height of 2 cm , filling holes in sidewalks, creating spaces for pause and rest areas with suitable vegetation on sidewalks, not using unnecessary maze as much as possible, creation of footpath on the edge of the river and the beach to enjoy the landscape and visual perspective, the use of tactile warning strips at the pavement, edge ramps, stairs and crossing streets, etc. can be mentioned. One can also offer beach wheelchairs for people with physical-motion disability to provide access to the edge of the beach.

Parking: One of the important uses that should be created in parks is parking. Noshahr Park Branch has no specific parking, and wide street located in the site are used as parking. This issue

besides addition to bringing about insecurity for the people, especially the disabled, has caused visual pollution and unpleasant view in the park as well. So with the construction of off-site parking and beside the entrance, it is tried to prevent excessive car entrance to the site. Then for the welfare of people with physical-motion disability, some scattered car parks have been built in all areas of the site and based on urban and architectural regulations people with physical-motion disability. The use of this parking is only for these people, and only they have the right to enter cars into the site. The parking space allocated to each of these parking lots is 12 square meters. The site has canopies, and is marked by special signs for disabled people parking. The location of the parking is marked by one on the plan.

Men and women swimming place, and swimming pools: In the northern part of the site and inside the sea, there are two specific areas for men and women to swim. At the entrance to this area, it is tried to create flooring using wood, so that people who use wheelchairs can easily reach into the desired range. Within these limits, there are 1-meter deep puddles so that people with disabilities can easily take advantage of them. In addition to that, there are places for sunbathing on the beach with special chairs, bathrooms, and spa showers within this range. In creating this area, it is tried to provide a quiet place and a good vision towards the sea to answer the needs of users by providing perfect conditions.

The bike path: Preliminary space for cycling, depending on the width of the bike (0.6 meters) and the height needed to move and enough space to maneuver in certain situations are provided. Although the minimum width required for cycling band is one meter, it is preferred to increase it to 1.40-1.60 meters, especially in places where cyclists can move at high speeds. When there is two-way traffic, the ideal width is 1.60 to 2.00 meters, to provide the possibility of cyclists passing each other and to allow them to overtake slower moving bicyclists. In creating bicycle parking area enough space for certain bike types like low bike with 2.35 meters length, tandem bike with 2.60 meters, trailers bike (with pipe) about 1.60 meters length and 1.00 meter width and bikes designed for the disabled must be noted. Standing stops must have 1.20 meters distance from each other and wide path must be 1.50 to 1.80 meters wide. Bicycle parking place where there is no possibility of locking the bike are only suitable for indoor spaces under control and protection. To park for a long time, use of ceiling and light should be considered (Noifert, 2011, p. 326). In this park, a path is considered for cycling, which is without slope and linear from the East to the West of the site. Width of the track is 3.60 meters divided with rubber rods into two tracks with 1.60 width for disabled people and 2.00 meters for the ordinary people. One of the special bike paths is for cyclists with disabilities, and the other is for special use of other people.

Creating places for fishing: The west part of the site and over the east side of the river, a place is considered for fishing of all people including people with disabilities. In this place, there are places for welfare of people with physical-motion disabilities on wheelchairs, when fishing with a length of 2 m and a width of 1.5 meters. These special places provide safety, security and convenience to people with disabilities when fishing. Levels of fishing sites should be strong, resistant, and its transverse slope should not be higher than 3% in any direction. Moreover, providing special fishing equipment, especially to persons with disabilities, can help them control fishing line with one hand, and freely move around with the fishing rods. Using this tool is fantastic for people who can use only one hand or those whose hands have limited performance. It is also useful for people who use a wheelchair.

Waterfront: In the eastern and western part of the sea, two waterfronts with a length of 60 meters and a width of 3 meters are considered. In these waterfronts, ramps with slope up to 3 percent are used instead of stairs, so that people who use wheelchairs can easily have access to this

location. After entering these waterfronts, people can enter the boat through a special platform at the end of the path, and go sailing in the sea.

Sailing: Ride in a boat, especially if the boat is floating and small will be difficult. Fences are strictly necessary and must continue to the edge or bottom of the harbor and provide the protection for individuals until boarding the boat. Means for keeping the boat still until the people with disabilities get onto the boats are of great help.

Place for healthy and disabled children to play: Playing has an important role in personality development of children. Generally, it is through the game that kids become compatible with their surroundings. Play areas should be varied, joyful and transformable. Play areas should have sunny conditions, be safe from traffic and pollution, and be above groundwater levels. For designing playgrounds following assumptions should be considered: group age, space used for each person, the size of the playground, and so on (Noifert, 2011, p. 218). Forecasting accessible playgrounds available spaces as places where all children can have the opportunity to interact and play with each other is an inevitable and necessary issue. For this reason, it is recommended not separate spaces for people with disabilities and healthy ones. The equipment does not fully translate into a playground, and development of accessible playground space is not achieved only by providing playground equipment. Attention to the fact that the quality of designing spaces enable people to use them in different ways matters. Therefore, in designing these playgrounds urban and architectural regulations for people with physical-motion disabilities should be taken into account, and it should be applied for all its components like access routes, desk, bench, etc.

In designing and using equipment and toys, it should be noted that some children and teenagers with disabilities use playground equipment given to healthy people. However, children with complex disabilities and disorders do not have the ability to have access to playground equipment, and instead enjoy spending time in the playground and attention to texture and materials used in floors and play equipment. This attention is often to sounds, color or texture and the materials used.

Use of natural resources can greatly enhance the quality of gaming experience of the children with disabilities. Equipment should play an important role in children's play areas, and should enhance the creativity of children, especially children with disabilities. For this purpose, assigning locations to play with sand, or use the table for sand play of children with disabilities can be used.

Moreover, by establishing pools with a depth of 0.5 meter, the sense of exposure to seawater and swimming for these children can be conjured up. The total area of gaming space is 3400 square meters. Around the playground, some spaces are considered for parents to sit, so that they can easily monitor and protect their children. Moreover, easy and quick access to the location of water fountain and sanitation services is provided to users of the space. These access routes have a maximum slope of 1-2 percent, and along it, there are handle bars, and touch warning tapes.

Horse riding track: One way to enhance the ability of people with disabilities is therapeutic riding or horseback riding. Horseback riding strengthens the cervical vertebrae and the spine of disabled people. Love hidden in horse along with coordination of muscle movements and muscle coordination required help the person to maintain his balance while riding the horse and this is part of the therapeutic riding program. In the southwest of the site, there is a circular space area of 4000 square meters intended for horse riding. This space is for people with disabilities and healthy ones, but special arrangements should be made for the presence of a special riding instructor for people with disabilities in that location.

Rest areas, picnic and camping: Surface in rest areas, picnic and camping should be relatively flat, unobstructed and from both the level and size be built as suitable and designed for wheelchair. As large number of people refers to the site with the purpose of temporary

accommodation, it is tried to set up a tent space by creating pages with concrete at 2.5 × 3 dimension. These places are located in the western and eastern parts of the site, and in choosing these sites attention is paid to the surrounding landscape and visual. It also tried to select appropriate native plants compatible with the area around this place, so that the plants are used to provide shade and windbreaks. Near to each of these places barbecues, fountains, sinks, trash and toilets have been placed. To meet height needs for the location, for building fire leggy fixed barbecue with cooking surface of 750-900 mm above the ground, and barbecue stands with adjustable height and rotation of 360 degrees are used, to allow the user to adjust the height and direction according to the wind position.

Beach volleyball: The site intended for beach volleyball for disabled people in the eastern part of the site is near the sea and in combination with the surrounding environment, and players can easily have access to health services. Floor dedicated to the sport has been covered with beach sand, with a length of 16 meters, and a width of 8 meters. It should be noted that with regard to the appropriate area of land to be used for healthy people is possible, but people with disabilities have priority.

Sports complexes: The complex is located in the southwestern part of the site, and has an area of 2357 square meters. The complex is dedicated to sports such as bowling, billiards and table tennis, and using it is permitted for everyone especially people with disabilities. But the point that should be noted in the construction of this part is respecting rules and regulations of the Urban Development and Architecture for people with physical-motion disabilities in all parts of the complex such as slope of access road, the width of the openings, placing at least one bathroom for the disabled within the complex, and so on. Notably, in the sports mentioned height of table tennis and billiards, as well as creating the right place to put the wheelchair in the sport of billiards should be considered.

Drinking fountains: Drinking fountains should be less than 75-80 cm height from the floor and installed in various parts of the park, and next to the space for a wheelchair. In the site under study, there are some water fountains in the site that in addition to not being enough for people referring to the site, because of the large difference in level with the ground, there is no possibility of its use for people with disabilities. By creating the right atmosphere around the area of water fountain and using water fountain with lower elevation, the possibility of its use for people with disabilities who use wheelchairs as well as children should be provided.

Restrooms: One of the specific areas needed by disabled people is restroom in the park. Providing restroom for people with disabilities is required in parks. Restrooms of parks and recreation centers should be in a way that disabled can use. Unfortunately, this type of equipment is not properly common in our country. The most fundamental problems of disabled people in the park include:

Lack of restrooms for the disabled (sitting style), narrow entries and high altitude threshold, small bathroom space for wheelchair. To resolve these problems, some actions must be taken as follows:

Removing barriers at the entry, using ramp next to the stairs of the main entrance gate and recognizable entry for the blind, determining the location of the toilet for the disabled with international symbols of disability, sitting style toilet installation, installation of helping rods on both sides of sitting style toilet, creating restrooms with an area of 170 × 150 cm so that the wheelchair can turn.

Benches and furniture in the park: Sitting places in the area are often incomplete to meet the needs of a wide group of users. For example, most often when people sit on a bench need a handle to stand up. Proper design of seat is necessary to facilitate standing. Wheelchair users often prefer

places where they can stop and rest, and there is space for their belongings (Organization of parks and green spaces Shiraz Municipality, 2009 a 1388).

Unfortunately, most benches and furniture in Noshahr Beach Park lack standards for the use by disabled, while at least 5 percent of bench space and tables of the park should be appropriate for the access of people with disabilities.

Of the measures taken to cope with their problems, selecting the appropriate location for the placement of furniture, allocating space for wheelchair beside furniture, carving the history of the park and park map on the side or behind the seats for disabled with embossed alphabet (Braille) and putting seats with 70 to 85 cm from the floor can be pointed.

Vegetation: Plants with colorful leaves and fragrant compatible with the area should be considered, so that they are useful for people with visual or hearing problems. The use of these plants is often described as shading, windbreaker, or creates beauty, and are around pause and rest areas, trails and rocky gardens. In rock garden, fragrant plants are used and there is a space to sit down with alcove. In addition, vegetation used around the playground, native and adapted to the region, and often have colorful leaves without thorns.

Lighting of the area: Proper lighting in the space could have a great role in creating prosperity, especially for people who are half sighted. Among the measures that should be taken in this context, creating visual warnings along with audible alarm systems in places where necessary, lighting in the area, especially in places that have potential risk without reflection, high brightness, shadows and large variations due to the loss of sight of half sighted, lack of basic standing out of lights stands towards access routes and placing lamp base away from vision line due to high shine, reflections and posing problems for semi-sighted can be noted.

Trash cans: Trash cans should be at more than 102 cm from the ground, and the upper part of the trash can there should be a fixed handle for the disabled to rely on and put garbage into garbage cans. Garbage cans should in no way be placed in the sidewalk. In other words, freedom of movement for the disabled should not be taken as an excuse for trash boxes.

Other uses: Of other uses considered for this coastal park craft market, children's painting workshops, restaurants, coffee shops and traditional café, theater, hotel and prayer room can be noted, in all of which rules and regulations of urbanism and architecture for people with physical-motion disability motion criteria have been placed.

For example, ramp or access with a slope of up to 3 percent, specifying the path of people with disabilities by signs with good lighting, adequate tables for drawing, and dining room for use by people with disabilities, using rods with touch handles and bars along the path, choosing the right flooring in the area, creating a ramp beside entrance stairs and so on can be noted. Disabled person must be able to pass easily from the other people, and get to the appropriate place.

Figure 1: Plan designed in Noshahr Beach Park (Source: Najmaldin, 2012)

Conclusion and suggestions

Considering the above, it can be concluded that human beings refer to recreation centers, parks and urban promenade in order to achieve these objectives:

- Breathing clean air, away from pollution
- Dealing with the other fellows, and talking with them
- Walking in solitude and relaxation
- Spending leisure time with their loved ones
- Work out

Unfortunately, urban entertainment centers and parks, as well as other community facilities, are not capable of hosting disabled and they do no benefit enough. Recreation centers and parks should be constructed in a way that can be used by the disabled as well. Dividing interior spaces of these buildings should be selected whereby the fixed or moving objects inside them do not pose the smallest hurdle for the blind to cross and their wheelchairs. Persons with disabilities should be able to easily reach the leisure center and walk within it, without the help of others. This is true for all people with disabilities (from the blind to people with a disability). To achieve this goal, they need space not to interfere with other people and others are not difficult with them.

In other words:

- All symbols and bookmarks should be recognizable for the blind.
- As far as possible, different paths should be composed of different building materials (non-slippery) so that by recognizing the change of footstep sound be aware of change of passages.
- Final limit between the local trails and beside gardens where grass, flowers and trees are planted should be determined with curb margins to prevent the visitors from stepping to the grass and make blind people easily recognize the limit.
- All sidewalks should be accessible for people with disabilities who are sitting in a wheelchair.
- Disabled should be able to use services and equipment.
- Restrooms should be usable for all people with disabilities.
- Tracking panels must be used for the blind with Braille texts.

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