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

Suitable Urban Space for Disable People (Ajodanieh)

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Abstract

Growth and prosperity of any society depends on how to use the existing talents and abilities in the community. One of the certain solutions in the realization of the growth is to provide the area for collective activities for all talents. Undoubtedly, a part of the active forces in our society refers to individuals who have less physical and mobility ability who can demonstrate their own ability in the service to the homeland in different areas. In general, many citizens daily pass through different routes that sometimes for various reasons are encountered to event and accident and incur damages while veterans and people with physical and mobility disabilities face with problems more than others because of their own disabilities and suffer from the poor design of the passages. This study tries to explain the characteristics of suitable passage for veterans and disabled individuals and in this regard, they are considered as one of the vulnerable groups of society.

Keywords: urban space, disability, mobility comfort, Ajodanieh.

Introduction

Review of disability history shows that in every period of history there have been people that act lower than normal limit in terms of social activity. Although, they have needed more special attention, not only their desires and social and comfort affairs have been ignored until the nineteenth century but also history shows that most of the communities have behaved without any social justice and humanistic behavior with these people (Majidi, Timuri, 2011). Unlike the mentioned societies, religious communities have had more humane behavior with disabled people and fortunately, in the present era scientists and researchers as Aytard, Steichen, Montessori who have carried out the valuable service in educating the disabled people and have tried these people to be accepted in society. Therefore, although having humanistic dimension and scale is prerequisite of urban space creation, the condition is insufficient. Given that disabled individuals in their social life are encountered to several architectural and urban barriers thus, creating a suitable atmosphere for disabled individuals' mobility based on their motional capabilities and adjustment of the urban environment to the needs of the physically disabled individuals are vital.

According to the World Health Organization, 10% of the world's population suffers from physical disability and in our country after the Islamic Revolution and imposed war disability has been increased. In Iran since 1941 various institutions were gradually established to support the people with disabilities that most of their services refer to the education and welfare aspects. About the formation of proper adjustment process in Iran, the meeting of officials and experts of Building and Housing Research Center in 1977 about urban environment adjustment can be regarded as a turning point in the beginning of the process in the country (Majidi, Timurid, 2011).

Significance of study

Due to the diversity of human societies and their life style it should be stated that increasing problems in social areas and problems that disabled people are concerned with them are directly associated with technical and industrial advances. Although, the International Act about the rights of the disabled people is issued in the same form, what is necessary for our country is to pay attention to the Act. According to the criteria approved by the Supreme Council of Urbanism and Architecture, adjustment is essential for the people with disabilities for example, equipping

passageways' lights to sound symptoms, highlighting the surfaces of near the intersection sidewalks for the blinds and equipping buses with a platform for rising.

Purpose of study

The study tries to provide appropriate solutions to adjust the urban environment with minimum cost and simple technology in the shortest time and based on the overall situation in the country.

Objectives of adjustment

The development of active participation of disabled people in different parts of society:

a. Improving self-esteem, motivation, effort and love of life among this group of people to build better future

b. Increasing the level of social centers of the disabled people by taking more effective role in society

c. The use of the hidden creativities and capabilities of disabled people in facilitating the social development process

d. The integration of different aspects of individual's life with other people and avoiding their isolation from other segments of society.

"Handicap per se does not lead to disability, but imbalance of social facilities provides the causes of this inability." Therefore, the urban spaces should be properly designed for the use of everyone and should be available for all disabled people.

Research questions

What is the status of disabled individuals in urban space building?

Do the disabled individuals can use their social and recreational rights in urban space?

Research hypothesis

In this study, it is assumed that the major problem of disabiled people is the existing slope in the Ajodanieh street.

Methodology

According to the results of basic research that has already been done to improve the environment for individuals with disabilities and develop the society for their welfare, peace and prosperity in coexistence with the public, this study is applied. In addition to the library studies and utilizing articles, publications, websites and conferences held in this regard, field perceives are necessary (photograph, etc.).

Data collection tools: Inventory, tables, image, graphs, maps

In this study, questionnaire is used and SPSS software is utilized to analyze the results and final conclusion is obtained by classifying the contents and perceived notes, photographs, tables, diagrams, etc.

Definition of disability

Loss or reduction of opportunities to participate in social life on an equal level with others that prevent disabled people to play a full role which is recognized for natural human beings.

Disability

Different definitions and interpretations have been provided for the word disability and various characteristics are regarded for disabled people. But according to the latest definition that is provided by the World Health Organization (WHO) "physical, mental, social factors or a combination of those in a way that have adverse effect on individual's life and prevent his normal life." such a person in term is called disabile. Since disability as an inevitable reality is a social

phenomenon therefore, the responsibility of rehabilitation team is primarily to reply the disability and offer services. In general, the social, political, and economic characteristic of individuals with physical limitations can be summarized as follows:

- They economically belong to the downstairs and low-income.
- They have the highest percentage of unemployment.
- A large percentage of them live in poor physical environment.
- The majority of them live in social isolation.
- A large percentage of them need others' help in daily life (Aboutorabi, 2006)

Urban spaces

Urban spaces are where most social activities take place overthere and behaviorial customs of the people appear in these places. Urban spaces are divided into three types which including public spaces, semi-public spaces, and private spaces. Public spaces include streets, squares and parks. Semi-public spaces are the malls, culture houses and private spaces refer to in private ownership. In every classification it is necessary to consider disabled people as a group of society who uses these spaces.

Standard rules of United Nations Organization are regarded as a human rights for disabled people which are created to provide access to the public and passing spaces for everyone especially for thoes with motional disability. To achieve this purpose, initially, all of the obstacles that lead to the mobility disorder of disabled people should be deleted and then spaces should be suitable and available (Wennberg, 2010:17). The criterion for the movement of disabled people in a region refers to the relevance of the environment with the mobility needs and its usability for these people.

Passages designing regulations for mobility of disabled people

Side walk

Network is an access that is used in the city for on foot people and is usually separated from the roadway through green spaces, stream, tables, bridges, etc. Actually, sidewalk is not a defined place and every open space that is used for the hike can be considered as the sidewalk. In many cases, on foot people are seen in busy streets and crowded urban centers more than sidewalk and in some cases the street is used as a sidewalk (Saeednia, 2000).

Regulations and standards

- There should be the level difference or table for safety between the sidewalk and the roadway.
- The table of sidewalk and roadway in the communicative locations should be converted to the slope to establish relationship between two levels.
- The usful width of sidewalk for the movement of two wheelchairs should be 2 meters.
- The longitudinal slope of the sidewalk for the movement of wheelchair should be 8%.
- The maximum latitudinal slope of the sidewalk should be 2% (Saeednia, 2000).

Alley

The alleies are a part of the urban communication network that are primarily pedestrian passages and usually are narrow and winding. Such alleies do not have separate sidewalk. Enterance of cars to these alleies is created the traffic problems for pedestrians and cars in the old places. The problems and dangers that threaten pedestrian in such situation are clear. If a disabled person who uses a wheelchair passes this pedestrian, it is clear that he is at risk more.

Regulations and standards

• The non-slippery and hard materials such as concrete and asphalt should be used for covering of floor of pedestrian and streets.
• The width of the sidewalk of alleies should be at least 1.2 meters.
• The connection between roadway and sidewalk of alley should be considered to prevent the cars' enterance such as chains or cement blocks, and should have at least 90 cm distance from the sides for the passage of a wheelchair (Urbanism and architectural regulations for people with physical and motor disability, 1999).

The link bridges between the sidewalk and the street

Bridges installed over streams connect sidewalks and roadway together. Link bridges should have characteristics that provide a comfortable transition and do not have a danger to passers-by as well (Urbanism and architectural regulations for people with physical and motor disability, 1999).

Parking

Cars' parking should have the necessary facilities where the healthy and disabled people getting on and off. Absolutely, the required facilities should be carefully considered for disabled drivers or for cars with disabled passengers.

Regulations and standards

• The width of car parking for disabled people with cane should be at least 280 cm and a maximum of 300 cm.

• The width of car parking for disabled people with wheelchair should be at least 320 cm and a maximum of 360 cm.

• In public parking space, 2% parking space should be allocated to people with physical and motor disability.

• The car parking space for people with physical and motor disability should be in the same level with street and close to the entrance of parking.

• There should be link ramp with suitable slope between the beside street parking that has been allocated for the disabled people and on the sidewalks. The slope of the link ramps should be a maximum of 8% (Saeednia, 1999).

Statement of the problem

The statement of the problem refers to the description of dimensions, the limit of the problem and its exact introduction, expressing the unknown and obscure aspects and variables related to the research question and the aim of study.

Disabled people now are encountered to many problems that should be considered such as:

- Lack of equipment of the urban intersection with the warning signs.
- Uneven passages and streets.
- Avulsion of cobblestone of sidewalks

Case Study

The case study of this research in Tehran is district 1 of municipality and Shemiranat area which includes four districts. These districts include Ajodanieh, Sahebgharanieh, Niavaran and Kashank and among them Pasdaran street is selected as a case study in order to be investigated in terms of space building.

Introducing case studies

Streets of this area are a new concept of the urban space which are created by their physical and functional concept. Although, streets are not old, they contain both traditional and modern structure and could acquire a good position compared to the surrounding streets.

Pasdaran street is one of the main streets of district 1 where has following features

- It is two-way, except for the distance between three ways of Aghdasiyeh until the Nobonyad square where is one-way towards the south.
- The street has 16 meters width.
- It is a route with more traffic.
- Its around area has more commercial and entertainment function.
- It constitutes a four-way with traffic lights at the intersection with Street Dolat (Pasdaran four-way).

Poor Ebtehaj street (Darabad)

- It is two-way street.
- It has intermediate traffic.
- It extends from Niyavaran square to Darabad square.
- The body of the street contains the traditional place however, there are a number of new and high-rise buildings around it.
- The street is 16 meters.

Shahid Mehdi Sabari Street (Ajodanieh)

- It is two-way street.
- The width of the street is 24 meters.
- It has 4 movement bands, 2 speedy bands and 2 slow bands
- It extends from Poor Ebtehaj street to the intersection of Aghdasiyeh street.
- It is modern and beautiful.

Shahid Baradaran Movahed Danesh Street (Aghdasiyeh)

- This street from Ajodanieh street to Firouz Bakhsh intersection is two-way and after there is one-way.
- High traffic route
- The street width is 16 m.

Analysis of streets from the perspective of motor behavior of disabled people

Considering the behaviorial patterns indicates that the crisis status is occured when there is no reasonable relationship between space form and function. Here some examples of crisis status and transition flaws are considered in the case studies:

• Building the number of stairs on the pavement of street and lack of improvising the ramp near it for disabled people's passage

• Non-standard slope of sidewalks without installation of handel in both sides

• Creating the crossing barrier in enterance of bridges and alleys and preventing the wheelchair's entry into there

• Lack of urban furniture for rest

• The existance of inequality and broken material on passages

• The existance of stairs, tables and stream between cars parking location and sidewalks prevent on wheelchair disabled people's access to the pavement after getting off the car

• Low width of the bridge

Ideas for suitable design of the under study passages for veterans and physical - motor disabled people's utilization

• Establishing urban furniture without creating barriers for the disabled people
• Having good quality and width of passages based on the needs and traffic of disabled people
• Considering the ramp with maximum slope of 8%
• Creating spaces for rest and placing the wheelchair over the pavement
• Installation of rods and handles around the ramps
• Repairment of floor of carpets, tables, fences, etc.

Suggestions and case study

Sidewalks

The criterion for residence of disabled individuals in the neighborhood refers to the suitability of surrounding environment with mobility needs and its usability for these individuals.

Sidewalks and on foot communicative ways should have a width of at least 150 cm. However, the width of 180 cm is better and the width of the sidewalks should not be blocked by trees, traffic signs and other objects. The sidewalks with more than 6% slope should be equipped with suitable handrails. The construction of the pavement with a slope of 8% should be ignored. For pedestrians' passing from wide streets with more than 3 rows for vehicles moving, it is recommended to construct a pedestrian island to stop between the vehicles movement's rows.

To cross the busy streets, traffic lights adjusted by pedestrians should be installed in the suitable places (Key of lights should be installed at a height of 105 cm, in order to be controlled by on wheelchair disabled individual). It is recommended to use the audible alarm around the residential neighborhoods of disabled people and nursing homes. The sound of the audible alarm should be differentiated from each other. To help blind people to pass the street, a place where the pedestrians pass the street (pedestrian's passing ramp) should be constructed in the corner of 90 degrees of sidewalks and street with perpendicular angle to the sidewalk.

Figure 1. Urbanism and architectural regulations for people with physical and motor d disability

Figure 2. Urbanism and architectural regulations for people with physical and motor disability

Figure 3. Urbanism and architectural regulations for people with physical and motor disability

Figure 4. Urbanism and architectural regulations for people with physical and motor disability

Figure 5. Urbanism and architectural regulations for people with physical and motor disability

Ramps and escalators

Level difference on the streets should be resolved by both stairs and ramp, the ramps should have at least 165 cm wide and a slope of more than 6% and with railings or fences on both sides of the ramps. Electric ramps can assist the on wheelchair disabled people and mothers who carry the carriage of their children from one surface to the other. There are problems when placing on the ramp and moving from fixed to mobile surface and vice versa. Investment and maintenance of these facilities are not affordable. Electric ramp slope and its speed should match the needs of the disabled people.

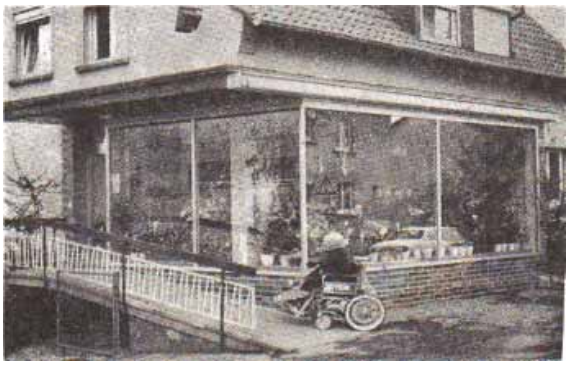

Figure 6. Urbanism and architectural regulations for people with physical and motor disability

Figure 7. Urbanism and architectural regulations for people with physical and motor disability

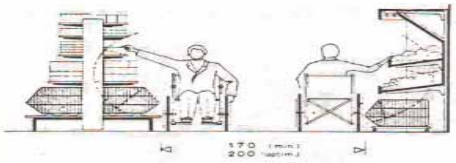

Figure 8. Urbanism and architectural regulations for people with physical and motor disability

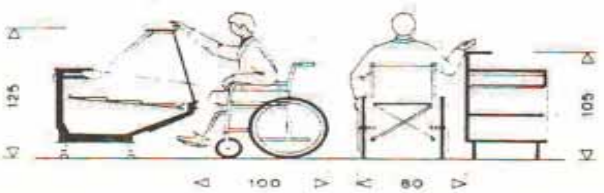

Figure 9. Urbanism and architectural regulations for people with physical and motor disability

Pedestrian's passage area

Overpasses and underground should be constructed for pedestrians' crossing. They should be equippted to the ramp or lifting and lowering mechanical devices. Ramps should have 8% slope. The long ramps should be built to access the aerial bridges with high distance from the street. This issue should be designed according to the structure and place of the city. Ramps should have handrail on both sides. If we have to use the ramp with steeper slope, the other handrail should be installed at a height of 75 cm for people with disabilities who use wheelchairs.

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