

# A Planning Proposal to Create More Accessible Public Spaces for Specially Challenged People – A Case Study of South West Zone, Surat City

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**Abstract** - Public spaces act like a living space of the cities where different urban activities being carried out. But specially challenged people couldn't able to use much of this public space as compare to other citizens. This is because specially challenged people need special provisions for performing their activities. Lack of this provisions make public space inaccessible. As per Census 2001, 21 million people in India are suffering from one or the other kind of disability. The Accessible India campaign, Person with Disability Act, 2016 and Harmonised Guidelines, 2016 are some steps taken by India to provide accessible environment, but still lacking in its implementation and maintenance. This thesis aims to create more accessible public spaces in Surat City, in which South West Zone is selected as study area. The main objective of the work is to take the review of specially challenged people on existing provisions provided for them and their other needs. Followed by study of existing scenario of that provisions at different public spaces. At the end a planning proposal will be prepared to create more accessible public using standard guideline, considering needs and gaps resulted from the study.

**Key Words:** Accessibility, Public spaces, Specially challenged people, Surat city

## 1. INTRODUCTION

Urban public spaces play an important role in all cities. Public spaces have various functions and uses with the aim to meet the needs of the public. Public spaces are multi-functional areas for social interaction, economic exchange and cultural expression among a wide diversity of people. Safety and security are important dimensions to be considered in designing public space, together with vital infrastructure. So, especially the public spaces have to be planned according to the access and the usage of everybody, but the provision of this depends on the accessibility of our urbanized environments.

But usually, the public spaces are designed according to the young, healthy, athletic and dynamic people who can climb the 40 cm pedestrian curbs, go up from the stairs and can manage to come over every kind of obstacles. In all societies, besides young people there are old people, pregnant, wheel

chair users, visually despaired, hearing impairment and the other different positioned people. As per Census 2011, in India, out of the 121 Cr population, about 2.68 Cr persons are 'disabled' which is 2.21% of the total population. When accessibility is used with reference to specially challenged people, it is any place, space, item or service, whether physical or virtual, that is easily approached, reached, entered, exited, interacted with, understood or otherwise used by persons of varying disabilities, is determined to be accessible. There is still some discrimination against specially challenged people, with the unavailability of special facilities and access for them in the public area. The 'Specially challenged people discrimination' takes in the form of: (1) Physical barriers to the movement of Specially challenged people, including broken surfaces on thoroughfares, streets, gutters, paving and so on, all of which reduce or annul the effectiveness of mobility aids such as wheelchairs or walking frames.

(2) Building architecture that excludes the entry of anyone unable to use stairs or hand-opened doors.

(3) Public transport modes which assume that passengers have a common level of walking ability.

### 1.1. CONCEPT OF PUBLIC SPACE:

The statement by John Ruskin "The measure of a great civilization is in its cities and the measure of a city's greatness is to be found in the quality of its public spaces, its parks, and its squares." is clearly highlighting the importance of public spaces for any city. The quality of public spaces should be able to improve the quality of life for its citizens. According to UNESCO "A public space refers to an area or place that is open and accessible to all peoples, regardless of gender, race, ethnicity, age or socio-economic level. In a broader sense, it is a space in which people can choose to be at, regardless of their ethnicity, age, ideologies and gender. It is a space that allows and facilitates a coexistence of different categories of people. The different types of public spaces may fulfill different types of need such as parks for health and recreation, commercial spaces for shopping activities as well social interaction, religious spaces for peace and harmony, exhibition spaces for different types of knowledge, etc. The safety and security of people in public spaces have

become very important aspect due to different types of fear in an urban environment such higher crime rate, terrorism and fast-moving vehicles. The safety of old age, women, children and physically challenged could be considered even more challenging in these public spaces.

## **1.2 CONCEPT OF ACCESSIBILITY IN TERMS OF SPECIALLY CHALLENGED PEOPLE:**

Accessibility is defined as “the freedom or ability of people to achieve their basic needs in order to sustain their quality of life”. Accessibility can be viewed as the “ability to access” and benefit from some system or entity. The concept focuses on enabling access for people with disabilities, or special needs, or enabling access through the use of assistive technology; however, research and development in accessibility brings benefits to everyone. The concept varies among different professions, cultures and interest groups. Design for all, universal access and inclusive design are all different names of approaches that largely focus on increasing the accessibility of the interactive system for the widest possible range of use. Accessibility is strongly related to universal design which is the process of creating products that are usable by people with the widest possible range of abilities, operating within the widest possible range of situations. The universal design definition is “The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design”. Today, the concept of design for all is much more applied and related to than other concepts. Design for all aims to enable all people to have equal opportunities to participate in every aspect of society. To achieve this, the built environment, everyday objects, services, culture and information – in short, everything that is designed and made by people to be used by people – must be accessible, convenient for everyone in society to use and responsive to evolving human diversity. Inclusive design can be defined as - “inclusive design” is not a fixed set of design criteria, but a constantly evolving philosophy. The goal of creating beautiful and functional environments that can be used equally by everyone, irrespective of age, gender or disability requires that the design process must be constantly expanding to accommodate a diverse range of users, as we develop greater understanding of their requirements, desires and expectations.

## **1.3 BASICS SPECIALLY CHALLENGED PEOPLE:**

A person with disability or specially challenged people means any person who as a result of any deficiency in his physical or mental capacities, whether congenital or not, is unable by himself to ensure for himself, wholly or partly, the necessities of life (Ministry of Social Services, 2005). The World Health Organization proposes the following definition of disabilities: “Disabilities is an umbrella term, covering impairments, activity limitations, and participation restrictions. An impairment is a problem in body function or

structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations. Disability is thus not just a health problem. It is a complex phenomenon, reflecting the interaction between features of a person’s body and features of the society in which he or she lives.” Disability is thus not just a health problem. It is a complex phenomenon, reflecting the interaction between features of a person’s body and features of the society in which he or she lives. Overcoming the difficulties faced by people with disabilities requires interventions to remove environmental and social barriers.

## **1.3.1 SCENARIO OF SPECIALLY CHALLENGED PEOPLE IN INDIA:**

The National Policy for Persons with Disabilities (2006) recognizes that Persons with Disabilities are valuable human resource for the country and seeks to create an environment that provides equal opportunities, protection of their rights and full participation in society. As per Census 2011, in India, out of the 121 Cr population, about 2.68 Cr persons are ‘disabled’ which is 2.21% of the total population. Types of disability according to census 2011 are disability in seeing, hearing, speech, movement, Mental Retardation, Mental Illness, and Multiple Disability.

## **2. PROBLEM DEFINITION**

Every city is consisting of the people, including specially challenged people who want to live their life as an independent individual and want to live in a society where they get respect, equal opportunity, safety and healthy environment. Though all the citizens of the cities including specially challenged people have the equal rights of using that public space, specially challenged people needs for accessibility and safety like standard size ramp, handrail, guiding blocks and likely other provisions are not paid much attention. If they constantly meet with such barriers and obstacles across the city, that can increase the burden their physical disabilities. This makes specially challenged people feel dependent, ignored, discriminated and unsafe. Different Guidelines, act, policies and missions are made in India for the welfare of the specially challenged people, but still public space are not made sufficiently enough to provide usability for all.

### **2.1 AIM:**

To give Planning Proposal to Create More Accessible Public Space for specially Challenged People in Southwest Zone of Surat City.

**2.2 OBJECTIVE:**

- 1) Take review of specially challenged people for knowing their needs and views on existing infrastructure at different public space of Southwest Zone of Surat city.
- 2) To find the gap by studying existing scenario of infrastructure provided for specially challenged people.
- 3) To give planning proposal to create more accessible public spaces using standard guideline that improves the existing condition and full fill needs of specially challenged people.



Fig-1 Location of Study Area

**2.3 SCOPE OF STUDY**

- The study is limited up to selected public spaces and area of South West Zone of Surat City.
- The study is limited to the vision impairment and mobility impairment people.

**3. STUDY AREA PROFILE**

Surat city, lies near the mouth of the Tapi River at the Gulf of Khambhat (Cambay). The Surat city is divided into 8 zones. Study area is situated in the southwest zone of Surat city. South-west zone is the largest in terms of area among eight zones with the area 111.912 sq.km. and 11 wards. The zone has population of 347447 and density of 3105. The zone consist of huge shopping malls, theatres, cafe's, restaurants, etc. for recreation & enjoyment. The major roads, Dumas Magdala road are well designed and hence it is a major attraction for people of Surat city, also has major attractive corridor of Piplod to dumas road. In Surat city as per census 2011 total population is 44,66,826 out of which 11,817 are movement disable and 13328 are seeing disable.

**4. DATA COLLECTION**

For data collection 3 surveys were conducted i.e. survey of vision impairment people, mobility impairment people and survey of infrastructure facilities at different public space. In survey of disable people, their review were taken for the different infrastructure facilities at public spaces. In infrastructure survey availability of different facilities like ramps, entrance, guiding blocks and so on for disabled people were checked. Sample size was counted on the bases on population of disable as per census 2011. Surveys were taken by filling the google forms.

Table 1. Public Space Facilities in South West Zone

Facilities	Numbers
Auditorium/ Amphitheater	1
Civic Centre	2
Health Care Center	4
Community Halls	8
Library / Reading Rooms	15
Garden	20

Source: Surat Municipal Corporation.



**Fig-2** Inaccessible ramp facility at Jawaharlal Nehru garden



**Fig-3** Ramp without handrail facility at Rahulraj mall



**Fig-4** Absence of ramp facility at Icchanath Temple

## 5. DATA ANALYSIS

After doing the survey of the vision impairment:

- 75% people were dissatisfied with Braille information
- 67% people were dissatisfied with guiding blocks
- 97% says yes for absence of Braille information at every place.

After doing the survey of the mobility impairment people:

- 45% people were dissatisfied with entrance facilities
- 47% people were dissatisfied with ramp facilities
- 73% people were dissatisfied with toilet facilities

In infrastructure survey 30 different public spaces were visited out of which :

- 34% of the public space does not have ramp facilities .
- 93% of the public space needed but does not have parking facilities for disable.
- 95% of the lift facilities does not have Braille/raised numbers on the control panel.
- 93% of the step edges does not have different colour or texture.
- 97% of the stairs does not have warning blocks installed at the beginning and end of all flights
- 77% of the public space does not have toilet facilities for disable.
- 80% of the public space are not identified by the international symbol

## 6. RECOMMENDATIONS FOR PROPOSAL AS PER HARMONIZED GUIDELINES :

Ramp facilities:

- The minimum clear width of a ramp should be 1200 mm.
- Ramps and landing surfaces should be slip resistant
- Ramps should have a level landing at the top and bottom of each run and also where the run changes direction
- Landings should:- - Be provided at regular intervals of not more than 9000 mm of every horizontal run and have a level platform of not less than 1500 mm
- A ramp run with a vertical rise greater than 150 mm should have handrails that are on both the sides, are placed at a height of between 760 mm and 900 mm above the floor level and handrails must be continuous on both sides & even at landings.
- Handrail Extend horizontally for a distance of not less than 300 mm beyond the top and bottom of the

ramp to provide support for persons who may need help to negotiate the ramp.

#### Stairs facilities:

- Warning blocks should be installed 300 mm before the beginning and 300 mm after the end of each flight of steps.
- There should be colour contrast between landings, and the steps.
- Step edges must contrast in colour to the risers and the treads. Contrast colour bands 50 mm wide should be provided on edge of the tread.

#### Lift facilities :

- Have buttons with Braille/ raised letters and in sharp contrast from the background to aid people with visual impairments.
- Grab Bars should be placed at a height of 900 mm from the floor level and be fixed on both sides and at the rear of the lift.
- The lift should have a voice announcement system along with a visual display to indicate the floor level and also the information that the door of the cage is open or closed for entrance or exit. The announcement system should be clearly audible i.e. the announcement should be 50 decibel.

#### Toilet facilities :

- Signage at accessible toilet entrance should be clearly visible and should comply with the International Symbol of Accessibility
- Unisex accessible toilet allows Persons with Disabilities to be assisted by carers of the same or opposite gender. In all public buildings, one unisex accessible toilet should be provided in each toilet block on each floor. Apart from this all toilet blocks must have one cubicle suitable for use by persons with ambulatory disabilities.
- Minimum internal dimensions of 2200 X 2000 mm minimum.
- The layout of the fixtures in the toilet should be such that there is a clear maneuvering space of 1800mm x 1800mm in front of the water closet and wash basin in the accessible toilet unit.
- All fixtures and utilities should provide a clear space of 900mm x 1200 mm for wheelchair users to access them.
- Have clear space of not less than 900 mm wide next to the water close.
- The toilet door should be either an outward opening door or two-way opening door or a sliding type and should provide a clear opening width of at least 900 mm.

- Water closets should be provided with grab bars, be mounted at a height between 200 mm and 250 mm from the water closet seat.
- For the benefit of the persons with vision impairment, all general toilets should have male pictogram in triangle or female pictogram in circle, marked on plates with raised alphabets and Braille put on wall next to door latch. Additional signage can be provided on the door as well.

#### Parking facilities:

- International symbol of accessibility (wheelchair sign) should be displayed at approaches and entrances to car parks to indicate the provision of accessible parking lot for Persons with Disabilities within the vicinity.
- Accessible parking lot should be identifiable by the International Symbol of Accessibility. The signs should not be obscured by a vehicle parked in the designated lot.
- The Symbol painted on the designated lot should comply with: - A square with dimensions of at least 1000 mm but not exceeding 1500 mm in length; - Be located at the centre of the lot; and the colour of the symbol should be white on a blue background.
- Have minimum dimensions 5000 mm x 3600 mm
- Two accessible parking lot should be provided for every 25 car parking spaces.

#### Signage facilities:

- According to the purposes signage facilities should be provided.
- Contrasting colours should be used to differentiate the figures from the background on the signboard.
- Signs should be located where they are clearly visible. A person with low vision may be able to read a sign if they can approach the sign for close up viewing.
- Embossed letters, raised pictograms and raised arrows are tactile features that can be incorporated into signs. It is important to provide both Braille and audio inputs to signage for persons with visual impairments.
- A tactile map or model is a useful way of providing information to visually impaired people and people with hearing impairments who wish to navigate around a building.

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