

Accessibility Study for Disables in Public Buildings of South Delhi

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ABSTRACT

People are physically disabled some time in their lives. The individuals who stay fit and without inability for their entire lives are few. In this way, open structures ought to be available and obstruction allowed to both capable and disabled individuals. Disabled individuals think that it is hard to get entrance into and work unreservedly without help with numerous open structures in Delhi. The examination took stock of facilities accessible for disabled individuals out in the open structures in South Zone of Delhi. The stock secured the recognizable proof and discovering the useful condition of the facilities. The example which is considered for the investigation was astoundingly huge and an aggregate of 8 kinds of open spots were viewed as, these are Schools, Hospitals, Dispensaries, Office buildings, community centers, and community toilets/Public toilets, Parks, Parking and Markets of south Delhi. The outcomes demonstrate that significant facilities required by impaired individuals are deficient in numerous open structures. A portion of the facility distinguished in couple of open structures are in extremely poor condition of task. Notwithstanding, nonattendance of these key features confines the exercises of individuals with physical inability. Because of deficit or maybe add up to disregard in arrangement of these facilities, their development, capability and abilities are being limited. These similarly comprise a hindrance in the improvement of their capacities. The general public everywhere is denied of the capacities and gifts in individuals with inabilities.

Keywords : Hindrance Free Building, Facilities, Physically Disabled, Public Buildings.

I. INTRODUCTION

Delhi, the National capital of India is a quickly developing city with populace figure assessed at more than 20 million. This figure included able and disabled people. Clearly individuals with physical handicaps are a piece of each network. The acknowledgment and reconciliation of the physically disabled individuals into the general public so as to take a functioning part in the general public and carry on with an ordinary life is imperative. Open

structures ought to be available and obstruction allowed to able and disabled individuals. It ought to likewise be adjusted to satisfy the requirements surprisingly similarly. Disability is never again connected with only a wheelchair; a break, sprain or a pregnancy and so on and can make an interpretation of into lack of ability to get to a building or an administration. On the off chance that our entire condition is planned so that each individual can get to it with no trouble or prerequisite of adjustment, we will have the capacity to consider it a boundary free

and all around open condition. Joined Nations Convention on Rights of people with Disabilities (UNCRPD), 2008 has determined arrangements for a totally open and obstruction free condition for people with handicaps. India has a sensibly decent arrangement structure set up. The Rights of Persons with Disability Bill, 2011 guarantees another beam of expectation. Submitted activity on ground is, be that as it may, important to make an interpretation of honorable expectations into real usable facilities. The targets of the investigation are to distinguish the facilities available for disabled individuals out in the open structures and finding out the useful condition of the facilities. The outcome will be valuable to the neighborhood experts responsible for upholding the Building Regulations and creators in Delhi and whatever remains of the country. In spite of the way that there are much compelling arrangements are indicated for disables to get to structures in the national construction standard, the common and electrical building facilities have demonstrated late advancement for executing the works. Purposes behind such an execution couldn't be found out because of absence of straightforwardness.

II. LITERATURE REVIEW

Throughout the years, a few models of disability have been created. Some of them are the medicinal, singular, social, religious, between social, showcase, moral, monetary, range, rights-based, philanthropy and authenticity models. (Imrie, 2004) in any case, considers disability to be falling into two primary models: the therapeutic and social models. While the previous spotlights on the therapeutic state of a man, the last conceptualizes disability as a collaboration between singular impediments and the earth, concentrating more on boundaries made by society (McClain-Nhlapo, 2006). The social model underscores the evacuation of societal boundaries that reject individuals with handicaps, including natural, institutional and attitudinal obstructions. (Otmani, et al., 2009; Imrie and Kumar, 1998) have found that the

assembled condition, which is by and large not disable-accommodating, victimizes PWDs, by barring them from social life. As (Baris, et al. 2009) portray it, Today, the disabled individuals confront numerous sorts of separations, presenting troubles and weaknesses of various sizes as it was likewise the case before, and hindrances, for example, terrible outlines, lacking information or prejudicial practices, caused disabled individuals' prohibition from social life. At the point when the issues of the disabled are viewed as, the manufactured condition can be appeared as the most remarkable image of disabled individuals' prohibition from social life. (Wellington, 1992) reports that it's anything but a typical practice for disabled individuals to be dynamic clients of open structures and spaces attributable to the conventional origination of the disabled as a man who must be reliant. Human is known with physical disability sooner or later throughout everyday life. The disability might be perpetual or impermanent. In (Ward, 1979) disability intends to have a hindrance that takes away certain capacities that the sufferer would somehow or another have delighted in. The handicapped individuals incorporate, those restricted to wheel seat, individuals with constrained strolling capacities (i.e. just ready to move with the guide of sticks or supports), the blind, the mostly located, downs disorder, the hard of hearing or epileptic. It could be impermanent disability, for example, broken appendages, stressed muscles, pregnancy or seniority (Ward, 1979 and Joined Countries, 2003-04). (Bayes and Franklin, 1971) focused on that the substance of exact meanings of human conditions is to improve understanding the likelihood of assistance. As it were a physical disability turns into a cripple just where it comprises a snag to achievement of determined objectives (Goldsmith, 1976). Public spaces are viewed as hindrance free structures or sustainable structures. Building composes that fall under open structures are among others: places of business, business structures, get together lobbies, healing centers and health facilities, libraries, sports structures, open travel structures, religious structures,

government managerial structures, instructive structures, religious structures, banks and so on. (Joined Nations, 2003-04, and Ghaem 1991). The obstructions could be in type of confined access and limited entryways, steps and staircases (Ward, 1979). Engineering and urban hindrances have averted individuals with incapacities to share in social exercises and this similarly has negative impact on the general public everywhere (Ghaem, 1991). It is basic to coordinate individuals with disabilities into society so they can assume dynamic part in the general public (United Nations 2003-04). A few records have set out rules for availability to spots of open convenience and business facilities by the disabled individuals. The facilities canvassed in the archives are significant and it incorporates the accompanying: ramps, stairs, lifts, stage lifts, windows, entryways, passages water fountains, signage and so forth. (Code of Federal Regulations 1994, Neufert, 1984 and United Nations, 2003-04). As per Robin Paul Malloy, present day networks have many arranging needs, and it is critical to think as far as getting ready for versatility in the more extensive setting of tending to an extensive variety of different needs, for example, those identified with lodging reasonableness, neediness, supportability, instruction, transportation, medicinal services, and money related steadiness (Malloy, 2015). Social Inclusion exhibits a specific. Availability can be disclosed as the chance to get from home to various goals (social, instructive, recreational and work). It additionally means having great access to passerby and transportation framework (Basha, 2014).

III. METHODOLOGY

On the basis of literature a form was designed to get the information about facilities for disables in public buildings to know whether these public places are functional for disables or not. The information form covers facilities such as ramps, elevators/lifts

restrooms, signage, corridors, entrances, stairs, public telephone, water fountains etc. Functional requirements of the facilities were also drawn up for the purpose of the study. A total of 8 types of public buildings were observed. The study covered public buildings such as Schools, Hospitals, Dispensaries, Office buildings, community centers, and community toilets/Public toilets, Parks, Parking and Markets of south Delhi.

A. Sample size off Public Buildings Observed:

A total of 8 types of public buildings/places were observed. Table 1 shows number of buildings observed in each category.

TABLE 1
TYPES OF BUILDINGS OBSERVED

Type of Building	Number of Building
Schools	401
Hospitals, Dispensaries	73
Office buildings	68
Community Centers	94
Community toilets/ Public toilets	468
Parks	1096
Parking	13
Markets	84

B. Characteristics of Public Buildings Observed and findings:

Whether surface of the passage from entrance gate to the entry of the building is smooth/ uniform or not. It is observed from table 2, that most of the buildings have skid resistant surface for entrance, which is quit helpful for disable persons.

TABLE 2. SURFACE CHARACTERISTIC OF ENTRANCE PASSAGE IN DIFFERENT BUILDINGS

Characteristic	Schools (In Nos.)		Hospitals, Dispensaries (In Nos.)		Office buildings (In Nos.)		Community Centers (In Nos.)		CT/PTs (In Nos.)		Parks		Parking		Market	
	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Whether surface of the passage from entrance gate to the entry of the building is smooth/uniform or not.	371	30	68	5	58	10	85	9	514	81	1069	-	-	13	54	30

Whether a ramp of width 1500 mm and Max slope of 1:12 with anti-slippery surface and railing on both sides is provided or not.

It was observed from table 3, that most of the buildings are equipped with ramps but not as per the standards specified for disabled people. Standard dimensions of ramps for disables is shown in figure 1.

Characteristic	Schools (In Nos.)		Hospitals, Dispensaries (In Nos.)		Office buildings (In Nos.)		Community Centers (In Nos.)		CT/PTs (In Nos.)		Parks		Parking		Market	
	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Whether a ramp of width 1500 mm and Max slope of 1:12 with anti-slippery surface and railing on both sides is provided or not.	350	51	58	18	48	14	11	22	366	153	1069	-	-	13	54	30

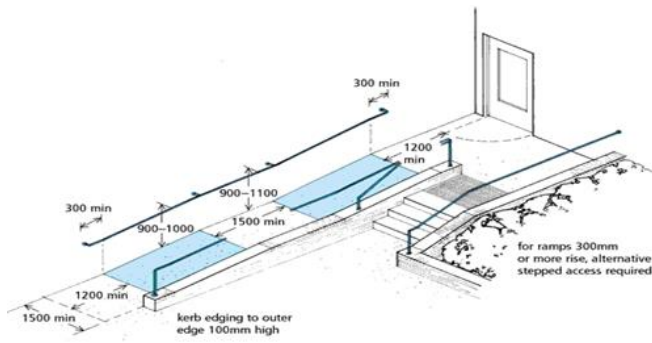


Figure 1: Design standards for ramps for disabled (Source: Complink designs)

Whether any surface parking is provided within 30 meters of the building entrance is provided or not & whether signage for this provided or not.

From table 4, it was found that most of the public facilities have parking facilities but not equipped with proper signage for disabled. Figure 2 shows the design standard for parking facility for disabled and showing proper signage for the same

TABLE 4
PARKING FACILITY

Characteristic	Schools (In Nos.)		Hospitals, Dispensaries (In Nos.)		Office building s. (In Nos.)		Communi ty Centers. (In Nos.)		CT/PTs (In Nos.)		Parks		Parking		Market	
	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Whether any surface parking is provided within 30 meter. of the building entrance is provided or not & whether signage for this provided or not.	339	62	58	15	53	15	78	16	395	200	948	121	-	13	43	41

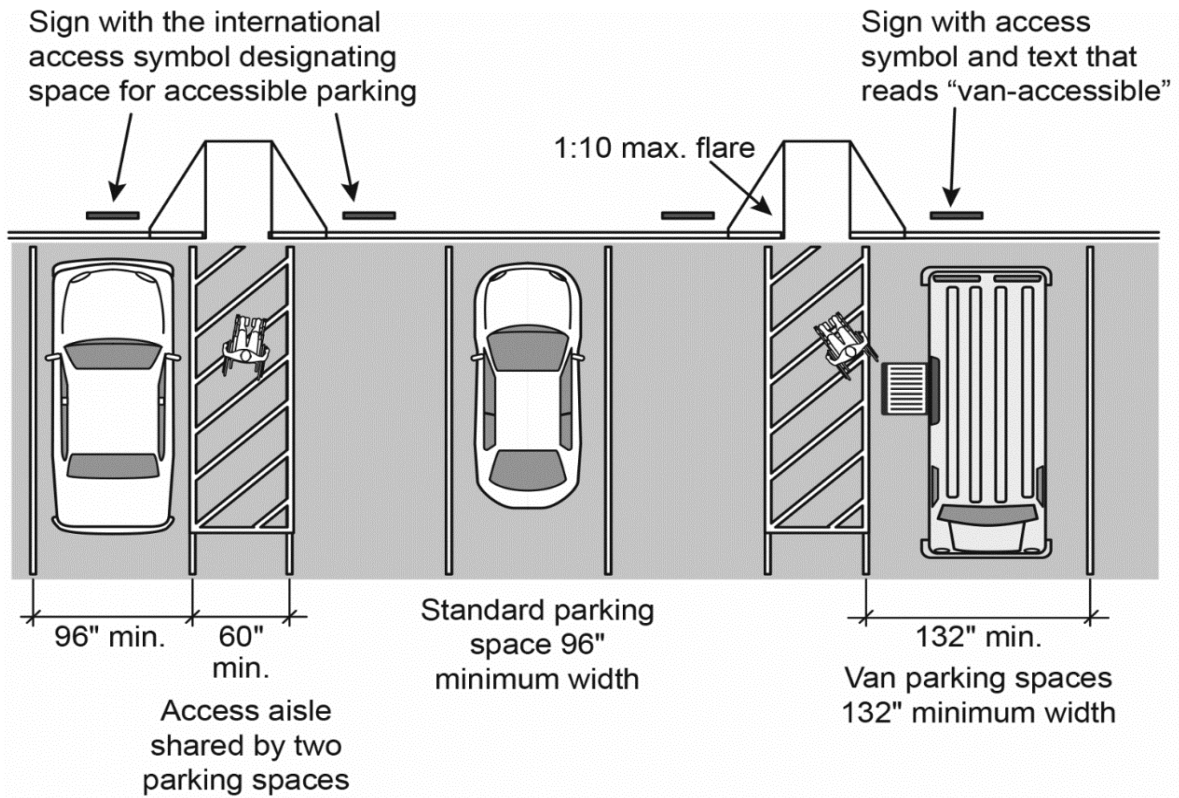


Figure 2 : Parking facility for disables (Source: adata.org)

Whether a separate toilet for disabled person is provided or not.

Table 5 shows that most of the buildings are equipped with separate toilets for disables but there are only toilet seats and there is no provision of grab bars and proper guiding signs in toilets. On the other hands parking, parks and markets showing absence of separate toilets for disables. Figure 3 shows the design standards of toilets for disables and these standards are missing in public toilets.

TABLE 5
SEPARATE TOILETS FOR DISABLE PERSONS.

Characteristic	Schools (In Nos.)		Hospital s, Dispensaries (In Nos.)		Office building s. (In Nos.)		Commu nity Centers. (In Nos.)		CT/PTs (In Nos.)		Parks		Parking		Market	
	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Whether a separate toilet for disabled person is provided or not.	279	12	38	35	20	48	50	63	374	221	-	1069	-	13	7	78

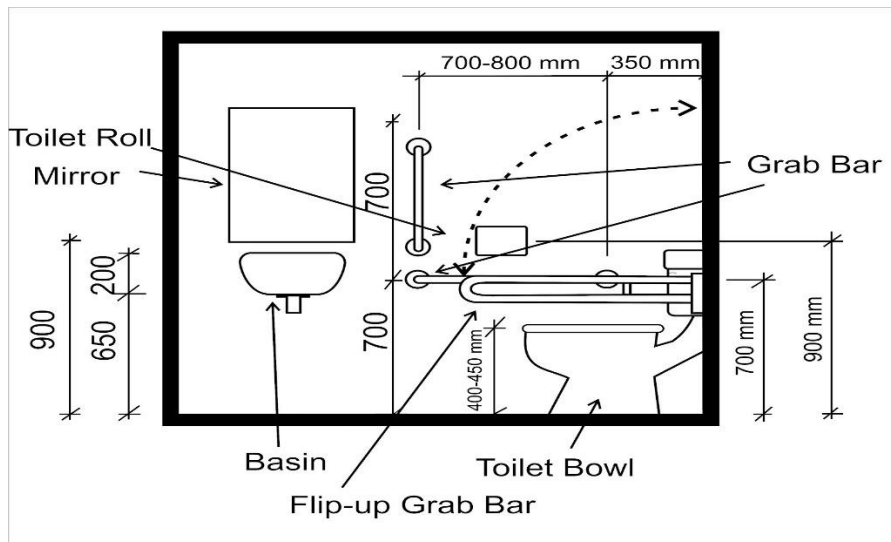


Figure 3 : Design standards of toilets for disabled (Source: Wheelchair access penang)

Whether the main staircase has railing on both sides or not.

It was observed from table 6 that stair cases do have railing on both or single side as per the design of stair case but there is no ramp provided for disabled to proceed to upper floors of the buildings. Figure 4 shows the design standards for railings on steps on both or single side.

TABLE 6
PROVISION OF RAILING ON STAIR CASE

Characteristic	Schools (In Nos.)		Hospitals, Dispensaries (In Nos.)		Office buildings (In Nos.)		Community Centers (In Nos.)		CT/PTs (In Nos.)		Parks		Parking		Market	
	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Whether the main staircase has railing on both sides or not.	340	61	54	19	33	35	70	24	220	248	-	-	-	13	7	43

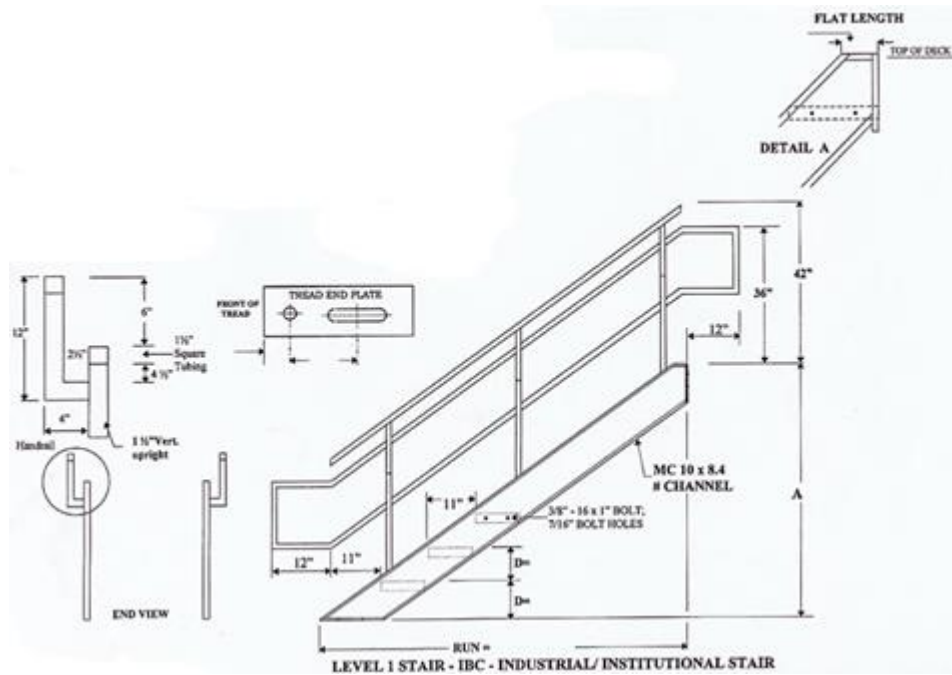


Figure 4 : Design standard for railings on steps (Source: fixproject.com)

Whether the common facilities (if provided) has easy access for wheelchair person. Table 7 shows that most of the buildings observed have only ground floor that is why survey results shows wheel chair facility available due to availability of ramps. Figure 5 shows accessibility features to common facilities for disables.

TABLE 7
ACCESSIBILITY FOR WHEEL CHAIRS TO COMMON FACILITIES.

Characteristic	Schools (In Nos.)		Hospitals , Dispensaries (In Nos.)		Office building s. (In Nos.)		Communi ty Centers. (In Nos.)		CT/PTs (In Nos.)		Parks		Parking		Market	
	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Whether the common facilities (if provided) has easy access for wheelchair person.	366	35	60	13	51	17	75	19	414	174	948	14	-	13	38	46

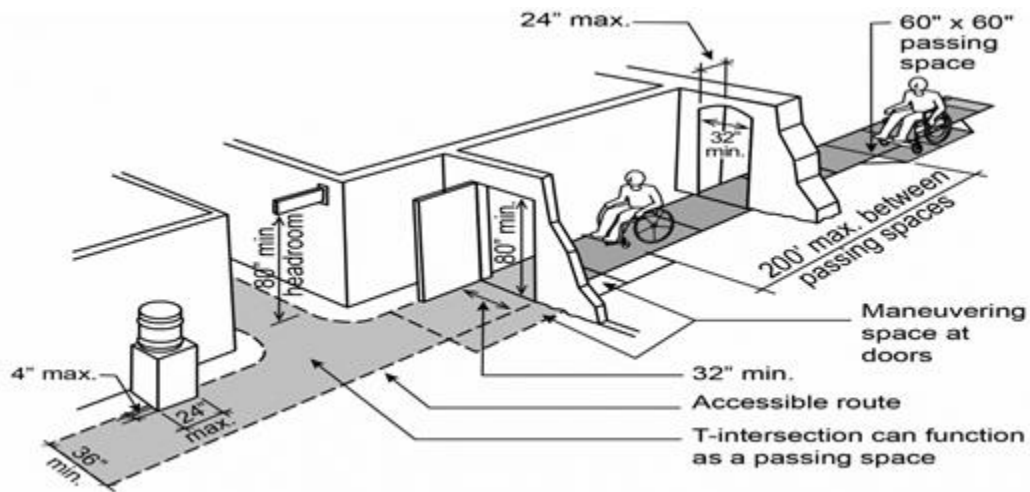


Figure 5 : Basic features of a facility accessibility (Source: adata.org)

Whether all the door of the various rooms have minimum width of 1000 mm. Almost every public building have door width of 1000 mm which is quit beneficial for disables as shown in table 8.

TABLE 8
MINIMUM WIDTH OF DOORS IN BUILDING

Characteristic	Schools (In Nos.)		Hospitals, Dispensaries (In Nos.)		Office buildings (In Nos.)		Community Centers (In Nos.)		CT/PTs (In Nos.)		Parks		Parking		Market	
	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Whether all the door of the various rooms have minimum width of 1000 mm.	384	17	65	8	64	4	87	7	494	101	-	-	13	-	7	1

Anti-skid flooring.

Table 9 below shows that there is almost every building is facilitated with anti- skid flooring which is quit safe for able and disabled persons.

TABLE 9
ANTI- SKID FLOORING

Characteristic	Schools (In Nos.)		Hospitals , Dispensaries (In Nos.)		Office building s. (In Nos.)		Communi ty Centers. (In Nos.)		CT/PTs (In Nos.)		Parks		Parking		Market	
	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Anti-skid flooring.	362	39	66	7	55	13	76	14	452	143	948	121	-	13	43	41

Signage supplemented with Braille & pictographs. It was observed from Table 10 that almost every building missed the signage for disabled people specifically blind ones. Figure 6 shows the standard types of signage must be installed in public spaces.

TABLE 10
SIGNAGE FOR DISABLES IN PUBLIC BUILDINGS

Characteristic	Schools (In Nos.)		Hospitals, Dispensaries (In Nos.)		Office buildings (In Nos.)		Communi ty Centers. (In Nos.)		CT/PTs (In Nos.)		Parks		Parking		Market	
	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Signage supplemented with Braille & pictographs.	15	27	20	53	22	46	16	78	89	508	-	1069	-	13	1	83



Figure 6 : Different signage for disables (Source: adata.org)

Accessible drinking water unit : Most of the public building have accessible drinking water facility but not as friendly for disables. Table 11 shows drinking water facility available but there is a contradiction that these facilities are not disabled friendly.

TABLE 11
FACILITY FOR ACCESSIBLE DRINKING WATER

Characteristic	Schools (In Nos.)		Hospitals , Dispensaries (In Nos.)		Office building s. (In Nos.)		Communi ty Centers. (In Nos.)		CT/PTs (In Nos.)		Parks		Parking		Market	
	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Accessible drinking water unit.	347	54	40	18	35	15	64	18	33	324	-	1069	-	13	7	77

Whether lift provided for upper floors : Most of the buildings have only ground floor so this facility is not applicable to those with only ground floor, but there is provision of lifts in public buildings with more than 2 floors as shown in Table 12.

TABLE 12
PROVISION OF LIFTS IN PUBLIC BUILDINGS

Characteristic	Schools (In Nos.)		Hospitals , Dispensaries (In Nos.)		Office building s. (In Nos.)		Commu nity Centers. (In Nos.)		CT/PTs (In Nos.)		Parks		Parking		Market	
	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Whether lift provided for upper floors.	18	-	-	-	18	-	11	1	31	45	-	-	-	-	-	11

IV. OBSERVATION

Fundamental boundaries that deter autonomous living of people with disability are social and physical ones. Social boundaries are extremely hard to destroy contrasted with physical ones. To recognize alternate paying little mind to physical, sex or social contrasts a mindfulness raising stage should be produced which will offer kids from a beginning period of instruction vital information and awareness through curricular substance. Comprehensive training and comprehensive classrooms are as of now gave and controlled by laws on instruction in Delhi City. Be that as it may, they once in a while work all things considered. Because of absence of essential openness foundation in school structures, many disabled youngsters are not able to go to classes. What's more, school administrations and separate region directorates are hesitant to contribute to give the base expected access to wheelchair clients (ramps and available toilets) in schools. Public transports of urban and provincial transport are unsuitable for use by wheelchair and other assistive gadget clients, incorporating guardians with youngsters in carriages. Absence of open toilets for people with handicaps at open transport terminals. All walkways in the city are

unsuitable for use by people who utilize electric wheelchairs. Urban activity signs and power shafts set amidst restricted walkways hinder the development of people with wheelchairs, supports, sticks, and so on. Thin and unpleasant asphalt surfaces non level surface, steep and harmed for ordinary use by people with wheelchairs, supports and walkers. Sidewalk slopes at person on foot intersections in a few spots are excessively steep, or at the base they end in metallic grilles for expulsion of environmental water. The tallness of push-catches on the movement lights is unfit for use by people with incapacities and youngsters. Service premises blocked off and without sufficient toilets for individuals with handicaps. Pedestrian intersections contain posts on walkways ramps, along these lines obstructing the section with a wheelchair. – The walkway controls are high and at unseemly point to move/climb them. Many ramps are limited, with the harmed surfaces, with a slant that don't meet the standard. The length of the incline is unfit for utilize and in a few spots they need satisfactory wall and railings. Lack of open toilets for individuals with disabilities. A can recognized at the underpass, is empty and is utilized by the underpass premises as a distribution center. Ramps in broad daylight structures with slants that don't meet the

standard. A significant number of these ramps are difficult to reach for wheelchair clients, yet in addition for moms with kids in carriages. The width of the island between the activity belts is little. The tallness of ATMs unseemly for people with handicaps. Lack of material surfaces (material demonstrating/cautioning strips) for development in stages in and outside the transport station. Lack of material strips/clearing cautioning before passerby crossing. Lack of material strips/clearing cautioning for open stairs. Lack of sound flags and catches with Braille writing in broad daylight lifts. – Lack of shading contrast improvement on stairs and other street surfaces for outwardly debilitated people. Lack of shading contrast improvement on shafts and other vertical components for outwardly debilitated people. The stature of activity signs on walkways forestalls development of visually impaired people.

V. CONCLUSION

The study discoveries embody the wide cluster of openness issues networks all through Delhi stand up to today. As of not long ago, the openness issue was talked about just at the level of enhancing open facilities' doors, toilets and giving various parking garages for the disabled inside the scope of these open facilities. In this soul the arrangements in the Administrative Instruction concern more on the issues of building access. Albeit, specialized parts of making open spaces more available are incorporated into the record too, dialog around getting to and exploring open spaces by disabled people was missing. What's more, the majority of the general population spaces are deficient with regards to get to. The significance of obstruction free structures can't be overemphasized as it ensures rise to access to able and the disabled individuals. The inventories accumulated on open structures uncovered that most open structures are "shut" to the disabled individuals. Among the inadequacies related to open structures are unavailability and resistance of the supporting facilities to rules identifying with the outline and

development. Absence of key facilities in broad daylight structures significantly limits the exercises of the disabled individuals. The antagonistic impact of the pattern on the economy considering the number of inhabitants in individuals with inabilities is terrible. Add up to disregard in making open structures available for all comprises an obstruction in the improvement of their capacities. The general public everywhere is similarly denied of capacities and abilities of the disabled individuals. The accompanying pertinent inquiries could address the issue: Are the partners (proprietors, originators, contractual workers and administrative organizations in the development division) mindful of the open rules for the disabled individuals out in the open structures? Is there built up instrument by the Local Authorities to see that affirmed outlines fulfill the base prerequisites required by the disabled individuals in broad daylight structures? Are the general population living with incapacities mindful of their rights in the entirety of its implications? Arrangement of answers to the inquiries would help with creating estimates required to have a sustainable assembled condition. There are proposed thinks about went for tending to the inquiries. The targets of the proposed examines will be: to explore how open (i.e. obstruction free) open structures are to the disabled individuals (proprietors', originators', temporary workers, neighborhood specialists' and disabled individuals' perspectives), to explore the level of familiarity with the outline and development rules for availability to open structures by the disabled individuals (proprietors', fashioners', contractual workers, nearby experts' and disabled individuals' perspectives) and to recognize the variables blocking the execution of the openness rules (proprietors', architects', contract based workers and nearby experts' perspectives).

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