

# Disables' accessibility problems on the public facilities within the context of Surabaya, Indonesia

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**Abstract:** Even though the Convention on the Rights of Persons with Disabilities has been signed by all states and by regional integration organization on 2007, in developing countries, providing barrier free environment is still questionable. Indonesia for example, the ratification of this convention has been signed by Indonesian Government on 2011 and the implementation process is ongoing. Surabaya for instance, for the last few years has improved public facilities (such as pedestrian ways and open space) to be more accessible for citizens. Yet those improvements are still misleading and failed to provide friendly environment especially for disabled people and elderly. The aim of this paper is to investigate the realization of accessible design in some public facilities in Surabaya especially in pedestrian ways and public open space (recreational facilities). Observation in field study is conducted as research methods and description analysis is used. This research is also conducted by disabled researcher who has physical impairment and has experienced everyday living in disabling environment of Surabaya. The result shows that even though accessible design in public facilities has been supported by Indonesian law and local government, its implementations are failed and the process of planning and design has not included the participation of disabled people and well informed. Therefore, disabled people are still struggle to do their activities and needs in public facilities.

**Keywords:** Accessible Design, Public Facilities, Disabled People, Indonesia

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## 1. Introduction

For decades free barriers environment has been introduced to facilitate the needs of disabled people with many designs approaches such as accessible design, inclusive design and universal design. Yet, those principals and implementation have not reached broadly and misleading especially in developing countries. Imrie[1] for example identifies that design professionals have not engaged the disabled people and excluded their participation on design process. In result limited knowledge of environmental design for disabled people is experienced mostly by planners and designers. Likewise Gleeson[2] also confirms that there is a missing link between professionals and users in providing easy access in the cities of UK; in term of implementing inclusive environment legislation and guidelines.

In developing countries, some studies of disabling environment have been developed and examined. In Thailand for instance the lived experiences of disabled people in inaccessible environment are importance to be

recognized and understood to promote friendly environment for disabled people[3]. In Indonesia some studies on disability issue have also been conducted which are mostly highlight the physical barriers in inaccessible condition of public facilities for disabled people. In Yogyakarta, the condition of public facilities has been identified not fully facilitated the disabled needs. In result, the disabled people are demanded to use the inaccessible facilities without being feeling inadequate[4]. Also in Surabaya, the implementations of accessibility's regulation for disabled people still exclude the disabled people's involvement that in result some its implementation were misleading and difficult to be used by disabled people [5].

For the last few years, the Surabaya's Government has improved the public facilities especially in the pedestrian's ways and open space (park). Although the design approaches have given positive initiative to provide accessible features for disabled people, yet those are still difficult to be recognized and used by disabled users generally. Therefore this paper investigates the accessibility in public pedestrian and public open space for disabled

people in Surabaya. It also examines the activities of disabled people when using the public features which were designed accessible or inaccessible for them. Five sections are discussed that consist of introduction, theoretical framework, methods, results and discussion, and concluding section.

## 2. Environmental Design for Disabled Needs

### 2.1. Accessible Design toward Universal Design

In daily living, disabled people face and perceive physical and social barriers in built environment differently compared to non-disabled people. Designing friendly environment for disabled people and elderly has been introduced for decades especially in developed countries such as accessible design, barrier free design, inclusive design and universal design. The goals are to accommodate the needs not only for disabled people but also everyone in physical and social environment equally. Environmental design for disabled people is also influenced by different conceptions on disability's term that mainly based on medical model and social model. Medical model sees impairment body as the main problem produces disability, while contrary social model believes that physical and social barriers in built environment create disabled condition on people [6]. Therefore, different design approaches and solutions are employed to eliminate complex problems on disability issues. For instance, medical model proposes that disability can be eliminated by giving medical treatment that people with impairment body can live as normal as possible in daily life. In the other hand, social model argues by removing physical barriers and social exclusion are solutions that disabled people and elderly particularly can be fully participated in their environment and society.

The concept of accessible design and free barrier design are closely linked with universal design and inclusive design. Accessible design is more focused on products that designed to meet the requirement codes of accessibility. Free barrier design was introduced firstly in 1960s while universal design was during 1980s by Ron Mace. Free barrier design is design concept of accessibility for disabled people based on anthropometric for constructing the built environment[7]. Yet, Ron Mace argued that the concept of "barrier-free" was limited as definitions of reality within the scope of abilities and age groups[8]. He states that "removal of barriers" is not the only solution to accommodate the needs of disabled people toward accessible environment sufficiently. But it is more complex and has to be interpreted and experienced qualitatively by designers. Therefore, he proposes universal design that represents "simply designing all products, buildings and exterior spaces to be usable by all people to the greatest extent possible" [8]. It is not only simple to be used but also is economist, adaptable, flexible, safe, and usable by

almost everyone in any age groups.

In the other hand Inclusive design tries to provide environment that can be used easily by all people without any restriction to specific groups or needs. There are seven principles of inclusive design which are equitable, flexible, intuitive, effective, tolerant, efficient, and appropriate. Yet, Hanson states that many critics argue that "*it is impossible to provide a 'one size fits all' solution, in result some people will always be excluded*"[6]. Therefore, it is important to recognize the disabling environment from the disabled people's perspective. Also different capabilities and abilities on broadest range of people's group, age, sex and etc need to be concerned in the process of environmental design.

### 2.2. The Implementation of Accessibility for Disabled People

Cities in developed countries have implemented accessibility especially in public facilities and it moves rapidly. Yet many cases show that cities are characterized by "design apartheid/architectural apartheid" that cannot accommodate the needs of disabled people [6, 9, 10]. Many physical infrastructures and facilities often prevent the participation, the movement and mobility of disabled people in urban environment [6]. Hanson also argues that the failed implementations are not only influenced by disability's models; but also because of excluding the disabled's participation, misleading interpretation and so on.

Therefore, Lefebvre in Lee[11] suggests that the concept of user-centred design approach can be used on design processes of built environment. It means that designing built environment is not determined only by the architect or planners but the interaction with users (especially disabled people) and their participation in design process are also important. Lefebvre explains that during the design process of built environment the relationship between processes and the actors (designer, planner, and users) is sufficiently needed. Here both designers and planners have chances to actively interact with users and to include their participation on their design processes.

Imrie [1] has given good example on research of design and development process of public facilities. In his study, Imrie explores and compares two retail developments based on the interaction process between agent and agency to design needs of disabled people. Result shows that many planners and designers are lack of knowledge of building needs of disabled people and have neglected their advice as information source in design processes. Finding also demonstrates that case study of the retail development which has actively involved the participation of disabled people offers more inclusive design and development to the needs of disabled people.

Therefore, Imrie [12] proposes several tactics to establish the accessibility implementation. First, improve the clients' motives, attitudes, and responses based on inclusivity in seeking to design for the diverse needs of everyone. Second,

emerge positive responses to, and interpret of the building regulations. Third, maximize disabled people's involvement at the crucial stages of the developmental and lastly possible to restructure the regulations which ought to be the focal point for challenges to, and transformations of, contemporary attitudes and practices concerning the design needs of disabled people.

In developing countries, many studies reveal that the implementations of accessible design in public facilities are less considered. In Bangladesh for instance, inaccessible environment both physically and socially have given restriction for disabled people to participate equally in their daily life [13]. Likewise in South Africa, disabled people who live in low-income settlement have to struggle more to do their daily activities because universal design is rarely discussed [14]. The inaccessible condition in built environment merely has to be accepted naturally by disabled people by adapting their condition to the environmental features which were designed insufficiently for the condition of impairment body. Even though barriers in built environment become greater issue in mobility restriction in daily life, the issues of tackling poverty with disabilities in South Africa are more considered to be solved [14]. Therefore, disabled people and organization for disability have important role both in improving accessibility in built environment and also given supports on empowerment and participating actively in environment and society.

### **2.3. The Implementation of Free Barrier Design in Indonesia**

In Indonesia, the government has given positive initiation to provide friendly environment for disabled people and elderly. It was started in 1997 when Law no 4/1997 on Disabled Person was formed in regard to live up equality for disabled people in built environment and society. For example the opportunity of living equally in built environment through accessibility was stipulated on Article 10. Yet, the article 10 of Law No.4/1997 has not yet well implemented and still excludes the participation of disabled people on environmental development. Kasim [15] argues that laws/regulations for disabled people are still more focused on welfare and service oriented approach. Also lack of access to its information also influences the existing and enforcement of its law/regulation in Indonesia. Therefore, there are many misinterpretations of law/regulations to the process of accessibility implementation in built environment.

For example Ikaputra and Sholihah [4] have identified that even though the government has provided accessibility in public facilities, those are failed to be used by disabled people. Also study on accessibility issues and Kampung Improvement Programme (KIP) in three cities (Surabaya, Solo, and Semarang) that was conducted by University of Newcastle in 2006 has similar result as previously. This study identifies that KIP programme has not yet considered disabled people as users in *kampung* environment, even

though the programme has a potential to be bonded to their participation on the processes of its implementation [16]. Therefore, results shows that the quality of *kampung's* infrastructure and service may improve through KIP programme, yet many of them cannot be used effectively by disabled people.

In Surabaya, inaccessible environments are often experienced by disabled people not only in settlements areas but also in the city's infrastructures and public facilities. Wirawan explains that the implementation of accessible design is less considered and sometimes failed. It is because the national budget for urban development is more focused on social rehabilitation while the improvement on physical environment for disabled people is less prioritized compared to others department [5]. Also disabled people's participation in urban development is still limited and society has not yet recognized the important of accessible facilities for disabled people.

Recently Surabaya's Government has given good indication to improve public facilities and infrastructures to meet the needs of disabled people. For example pedestrian area, public open space (city's parks), malls, and government's building have provided accessible facilities such as ramps and toilet. However, many of them have not been recognized and used by disabled people independently.

## **3. Methods**

This study is taken place in Surabaya, Indonesia based on field study's observation. It aims to identify the implementation of accessibility in public facilities especially in pedestrian ways and Public Park. Also in order to get valuable information the researcher has participated in some social activities of disabled people in public area.

The study is started by looking some information and references about the regulation for accessibility in Indonesia. Observation in field study has been done to explore and to investigate how far accessible design for disabled people was implemented. Moreover, how effective the facilities of city's infrastructures (pedestrian) and public facilities (recreation area) are used by disabled people is also examined. Taking notes and photography in field study were also done as sources of evidence and data.

Data is analyzed descriptively and explained on how far accessible design has been implemented and can be used by disabled people. This study is also conducted by disabled person who also has mobility impairment and has experienced in the same real situation and condition. Therefore self sensitivity and self experiences are also shared in research analysis.

## **4. Result and Discussion**

### **4.1. Accessibility in Pedestrian and Roadways**

Studies in accessible design for disabled people have been well developed especially in developed countries.

Guidelines of accessible design have been formed and implemented in buildings and public facilities to provide friendly environment not only for disabled people but also other users; elderly, children, and pregnant women. Yet, many studies expose that the implementations of accessible design in built environment is sometimes missed and lead to another problems and dilemmas. In Surabaya, inaccessible conditions in public facilities and infrastructures can be found and identified especially in roadways and footpaths in settlement areas. In some places, city roads have not yet provided footpath for pedestrian traffic. Pedestrian ways/footpaths, if present, do not have clear demarcation to roadways even though the physical conditions are mostly well maintained (Fig. 1). Therefore, the life safety of pedestrians is questionable and they need to be more aware with the surrounding situation in busy roads especially for disabled people (Fig. 2).



*Figure 1. Unclear separation between footpath and roadways*



*Figure 2. Lack of safety for disabled people in busy roadways*

In informal settlement, some footpaths are covered by paving material and/or even dirt (Fig. 3 and Fig. 4). Paving material is generally used as street cover. However if the path is not maintained well, uneven surfaces may occur and will be difficult to be used by disabled people especially wheelchair users.



*Figure 3. Dirt footpaths in informal settlement.*

Open drains in informal settlement also can be as physical barriers and dangerous especially for wheelchair users and disabled people with visual impairment (Fig. 4).



*Figure 4. Open drain and pavement footpath in informal settlement*

In city center even though accessible design has been slightly considered especially for pedestrian ways, its implementations are merely misleading and only considered minimalist approach that only to meet the regulation requirement. For example some pedestrian ways in main road of city center has been designed with tactile paving and also equipped with dropped kerbs (Fig. 5).



*Figure 5. Pedestrian ways with tactile paving and dropped kerbs.*

However, in some places show that tactile paving has not been designed accordingly to designed guidelines by using



wrong material, colors, and lack of warning textures. The direction of tactile paving are sometime randomly decided in which for some cases, its placement did not consider another street's elements such as trees, crossing bridge, and etc. The color of tactile paving is also grey despite of bright yellow with slippery materials (Fig. 6 and Fig 7).



**Figure 6.** The design of pedestrian ways without considered others street elements.



**Figure 7.** Tactile paving with wrong color, placement, and slippery material

The observation is also found that material of pedestrian ways were not consistent and different from one area to another. In the city center, the material is better compared to footpaths in settlement area. In the city center, footpath's materials are not slippery and well maintained. In the other hand for those in the settlement areas have different materials which are more slippery and less safe during rainy season and many of them have uneven surfaces.

Other pedestrians also do not know the function of tactile paving's installment in pedestrian ways especially who are not visual impairment and is only seen as street's accessories without specific functions. It shows that the information of accessible design and needs for disabled people has not been well informed and understood generally especially by someone who is not disabled.

#### 4.2. Accessibility in Recreation Area (Park)

Recently Surabaya's Government has given an attention to the availability of public spaces for citizens. Some recreation areas were renovated and developed to meet the users' requirements and needs for leisure and outdoor activities. However, many of them are not designed to provide the needs of accessibility for disabled people. For example, some city parks have not yet provided ramps and accessible toilets for disabled people. Steps and high kerbs

commonly can be seen in the entrance area and some park's facilities are difficult to be used for disabled people independently (Fig. 8).



**Figure 8.** Steps and high kerbs in "Taman Bungkul" Park

Public toilets as an important facility in public area are usually designed with narrow door and spaces that disabled people cannot enter easily and use it independently (Fig. 9). For disabled people using toilets independently is an important issue to keep their freedom doing their private activities. Yet in many cases, the accessible toilets are not seen as important facilities not only for disabled people but also other users such as elderly, children, and pregnant woman.



**Figure 9.** public toilets which cannot be used by disabled people.

In the other hand, if the facilities have been equipped with accessible features, those do not meet the disabled people's needs. For example, ramp has been installed in a park (*Taman Bungkul*) that is too steeply and the wheelchair users have to struggle when using it (Fig. 10). It seems that the designer did not calculate and measure the ramp's slope and never imagine on how wheelchair user using it.



**Figure 10.** Ramps that cannot be used independently by wheelchair users.

The absent of accessible design in public facilities especially in pedestrian ways and recreational areas are sometime seen by disabled people as natural situation and condition that cannot be claimed. When disabled people try to assert their right for accessible facilities, the position as minority users always become main reason of neglecting their needs and participation.

Yet, although the recreational area has not been facilitated by accessible features, disabled people are still active in social activities in recreational area without feeling embarrass even though they cannot access its features independently (Fig. 11). The encouragement of disabled people to engage and to participate in social activities is one of ways to show their role in urban development and society. By showing their capability and capacity as person with impairment body in public area not only increases their confident in social life and in disabling environment but also gives lessons and understanding about their situation and problems in inaccessible environment to other people.



**Figure 11.** Doing social activities in public facility although without being independent.

## 5. Conclusion

Problems of accessibility in public facility have been recognized as challenges in everyday mobility of people with disability. Unevaluated and poor implementation of policy and regulation of accessible design in public facilities become reasons of failing the design to accommodate the disabled people's needs[2]. Limited knowledge of building design and engaging with disabled people in order to understand their perspective of accessible needs are also become another reason of inattentive design for disabled people[1]. Moreover in developing countries, participation of disabled people in city's development has not yet been recognized as important aspect in design processes.

This research identifies that even though Surabaya Government has given positive effort to implement accessible design in pedestrian ways and recreational space, yet it has not met the needs of disabled people. Neglecting their participation and lack of information about accessibility for disabled people are reasons that those facilities are failed to be used by disabled people, elderly and could not be recognized by non-disabled people.

For disabled people doing activities in inaccessible facilities are somewhat challenging and embarrassing. However in order to participate and to involve in social activity, disabled people try to overcome the problems of barriers both in physical and social environment. By showing their capability and capacity in public environment and society can be valuable input not only for disabled people but also for non-disabled society.

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