

# AN ANALYSIS OF NATIONAL IDEOLOGICAL CONSTRUCTS IN EVOLVING PERSPECTIVES ON DISABILITY IN BUILT ENVIRONMENT DESIGN: A COMPREHENSIVE REVIEW OF THE SOCIAL AND MEDICAL MODELS IN CONTEMPORARY LITERATURE

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Received: 06 March, 2024

Revised: 05 April, 2024

Accepted: 19 April, 2024

Published: 01 May, 2024

## ABSTRACT

The built environment serves as a canvas upon which society's attitudes and perceptions towards disability are reflected and perpetuated. This comprehensive review explores the dynamic interplay between the social and medical models of disability within contemporary literature, particularly in the context of built environment design. Historically, the medical model has dominated discourse, framing disability as a personal deficit requiring medical intervention. However, a paradigm shift towards the social model has progressively gained traction, emphasizing the role of societal barriers in disabling individuals. Within this evolving landscape, the built environment emerges as a critical arena where these models converge and diverge. This review critically examines the implications of these models on the design and accessibility of built environments. It highlights the importance of adopting a holistic approach that acknowledges the socio-cultural dimensions of disability while integrating principles of universal design. Furthermore, it explores emerging trends such as inclusive design, which prioritize the diverse needs and experiences of individuals with disabilities. Through an interdisciplinary lens encompassing architecture, urban planning, sociology, and disability studies, this review elucidates the nuanced nuances of evolving perspectives on disability in built environment design. By synthesizing current literature and identifying key areas for future research and practice, it offers insights to inform inclusive design strategies and promote greater equity and accessibility for all members of society.

**Keywords:** Disability, Built Environment Design, Social Model, Medical Model, Universal Design, Inclusive Design, Accessibility, Equity, Urban Planning, Interdisciplinary Perspective.

## INTRODUCTION

A new understanding of disability and recognition of the accessible built environment emerged in the 1970's. There was a total shift of social perception of disability as a result of civil rights and independent living movements at that time. Most of the initial literature reviewed and explored the barriers in built environment and accessibility for the integration and participation of disabled in society. "This has included design research dedicated to barrier free design, universal design, inclusive design, design-for-all, environmental design and the recent area of sustainable design". (Sanderson, 2006).

Miry and Hall (2001) criticized this approach as the research seemed limited merely to the issues of inaccessibility and its technical solutions. This criticism was supported by some other authors because of lack of solid theory behind the research and context. (Gleeson, 2001).

The researchers of Great Britain have steered toward socially mixed societies after exploring how architects have catered for various disabilities whilst designing space for them within the framework of political, social and ethical relation of practice and architectural theories. Imrie (1999, 2001) did a research on the built environment of the United

Kingdom with respect to design considerations for disabled people were provided for and the detailed examination of the relationship between architects' values and attitudes towards the building needs of people with disabilities by prevailing architectural practices. The results of the research revealed a strong positive relationship between the architect's values and perception of a disabled user and need to build an environment that can meet the need of diverse users with disabilities. It was also identified that there is a need to understand different concepts of disability in urban planning.

### **Conceptualisation of Disability**

Various historical models of disability are popularly given by Oliver (1990) and these models have also been acknowledged in the field of Urban Planning. By disability, Oliver means a person lacking any part of body or failure in the workability of a body mechanism. He describes and imagines disability as a social experience that one gains while moving in the society and performing various daily activities like commuting or working. That experience immediately changes if someone is disabled compared with the one who is normal and healthy living being. The former (with any disability) experience discrimination or oppression that depends on what sort of physical or mental deficiencies the user has. As a result, the subject involuntarily suffers the state of exclusion or marginalization (Oliver, 1990). A Very good example of this is how people with disabilities find it so hard to secure employment in poorly designed or inaccessible buildings designed by the architects which don't cater for their particular special need.

Young (1990) declared that the impact of policies and practices of government further strengthens the dependence of disabled people in society. His philosophy has been given importance in the research carried out in the field of accessibility for disabled people during the planning process.

### **Medical Model of Disability**

The medical model considers disability as a result of an individual's physical and mental health produced by the biological processes and that can be treated and cured. This disability is the result of some damage and not created as a result of any political, socio-cultural or physical environmental impacts. (Imrie, 1996: 28). Therefore, the medical model accepts that disability is caused as a result of any

damage that ultimately turns out to be the focus of attention (Hanson,2001).

The Disability model greatly effects the thinking patterns of disabled people especially what they think about themselves. Some of them start thinking that their bodies are not like normal people, which inculcates the negative thoughts in them. They can even assume and believe that their impairments do not allow them to participate in any social and cultural activities without even trying to experience them. This assumed suppression discourages their participation and results in their marginalization from mainstream society (Manchester City Council, 2005). As a result of these pre-assumed negative thoughts, architects and urban planners started forgetting the consideration for disabled people in their designs and started to see them placed in special care units and institutions only. (Basha,2015)

### **Social Model of Disability**

The social model emphasizes that the disability is produced socially and is shaped and impacted by the broader attitude of society and its environmental factors (Hanson, 2001).Imrie's theory (1996), also relates disability to the built environment in a bigger context. According to his theory if we reproduce the concept of disability, firstly we have to place the subject in the context at first step to better understand the inter relationship between functional conditions and the wider quantifiable situations present. In other words, the need of conceptualization development is more important in order to note and consider the physical and liable conditions of its production and reproduction, to find the connection points between physiological, and socio-cultural variables as part of a conflict (Imrie ,1996, p. 47).

The social model stresses disability as a concept constructed socially, surrounded by the barriers of external world. This change from the medical model, to the social model has been very important in the history of disability activism. Amongst the rest, only the social model of disability claims that the problem is with the barriers, not with the individuals but that it is the barriers, biasness and segregation by the society then it is with the individual.

Comparing both the models, the social model has been accepted and mostly used in urban planning in many countries including the UK. Though, both the models have been criticized by a number of authors for considering only one aspect at a time and neglecting the other one; medical model for not

considering social issues and effects and the social model for denying the incapacitating result people experience because of impairment. (Basha,2015).

### **Built Environment and the Barriers for Disabled**

Full participation of disabled people in the modern urban life often gets effected by the complexities of designed urban environment of cities these days. The role of the media in spreading awareness about the right of disabled citizens has brought all the architects and urban planner onto the same page to be careful in understanding the problems a disabled citizen faces whilst moving around the city. Accessibility to public urban spaces is very important for mobility-impaired citizens.

Oliver (1990) has pointed out that the perception of the disabled is as “dependents” or “different from normal” individuals. To gain access to a particular place holds an important place in their lives. But the contemporary cities offer them many features which obstruct either by physical design, social policies, mobility aids all of which prevent them in participating in urban public life. He notes spatial ties between land use and building designs and the exclusion of the disabled labelling their involvement as “incomplete citizenships”.

The built environment is a complicated and multi-dimensional system (Handy et al., 2002). Research through observation shows the struggles that disabled people face whilst interacting with the built environment around the world. Because of the barriers to participate fully in the urban life of our age results in the stigmatization and social oppression of the disabled community. Although every individual of the society does face barriers in one form or the other whilst experiencing the built environment around them, disabled people clearly experience these barriers in a much more exaggerated and obstructed way. (Golledge, 1993).

Literature has identified a number of these barriers which a disabled person faces in term of mobility and accessibility. These can be divided into two categories; one is physical barriers such as stairs and slopes and absence of ramps etc. The second one is a communicative barrier such as signs and boards, poor lighting and insufficient signalling (Rains &Butland,2012)

Different types of barriers effect people in different ways and it depends upon the type of disability that a person has. Nevertheless, nearly all disabled people face some bad incidents whilst experiencing the

public realm (Imrie, 1996). The most common places where disabled people experience barriers would be in finding their preferred living and working areas. That's why most of the disabled people do not get good job opportunities because of inaccessible workplaces (Imrie and Hall, 2001). It is now clear from all these magnitudes that unreachability and marginalization of the city produces a social space marked by recognized and material barriers which ultimately marginalize the disabled citizens of the city from participating in the of social and economic life of the city. (Gleeson,2001).

Obstacles arise due the poor planning and that plays a major role in non-comfortability of disabled people whilst moving in the society. Lewis (2011) and Peel and Posas (2009) emphasized the insignificant thoughtfulness given to the needs of disabled people in the rules of planning policies and the implementation of those policies which even exits. According to the authors it's the failure of the planning processions who do not have an idea of the needs of disabled citizens. Also, our curriculum of planning should have the provision of the teaching about ethics and needs of planning for the disabled citizens so that professionals can be trained throughout their educational careers as well. With the passage of time the need to improve the accessibility and mobility in the planning have increased due to the increase in the number of the disabled population in the cities and also the awareness spread by the political and social media coverage. (Burns & Gordon, 2010).

The major key to bring the difference is to understand the issues of disabled people by consultation and collaboration instead of just working on assumptions. Walsh (1997) considers that a comprehensive concept forces us to extend human rights to every citizen, to set well-intentioned targets and then to shape up the existing social policies which follow these targets (p.117). However, funding by the government can always be a major issue to improve the built environment issues (Burns & Gordon, 2010). If the program, strategy and services are all together catered for in an appropriate way and then the target outcome has been achieved All the public transport should be equipped with access for disabled people and the staff on the buses need to be trained for that as well. Thus, this very contemporary movement within planning need to be considered and implemented in order to improve accessibility and equality in our cities by strictly

focusing on the needs required by disabled citizens. (Rains & Butland, 2012)

For the greater freedom of pedestrians, the concept of “shared space” has also emerged offering less barriers to its users. The UK guideline on shared spaces in urban street environments defines a shared space as “a street or place designed to improve pedestrian movement and comfort by reducing the dominance of motor vehicles and enabling all users to share the space rather than follow the clearly defined rules implied by more conventional designs”. (DfT, 2011). But due to the increased uncertainty related to the movement of different user groups and traffic, this design concept is partially embraced by the urban townscapes.

**From Accessibility to Inclusive Urban Environment**

The challenges to design urban environments are agreed to be safety, accessibility and social inclusion. This results in a number of issues affecting mobility and participation in daily life activities. (Evans, 2009). In this context, accessibility is the ability to travel from one destination to another like from home to work demanding access to pedestrian and transport systems. “In Britain, however, ‘accessibility’ has largely been limited to removing particular barriers such as to wheel- chair access (although less than 8% of the registered disabled are wheelchair reliant) by providing facilities, for example step-free stations, low-floor buses, dropped kerbs, and ambient factors such as lighting, auditory and visual information and way finding. Inclusive design, on the other hand, is more of a process, with a multiplicity of stakeholders in the public realm and one that should include in the words of Walker: ‘all people regardless of age, gender, race or disability, encompassing management, operation and information and relating to all areas – the built environment, transport, graphics, telecoms and products. This is quite different from some iconic perfect and immutable product or design”. (Walker, 2005, p. 103).

Tanya Titchosky (2011), on the other hand, considers physical environment as “materially organised” to create barriers for some participants. She believes that access is directly linked to social organisation of participation and belongings and cannot withstand exclusion. “She continues, that access not only needs to be sought out and fought for, legally secured, physically measured, and politically protected, it also needs to be understood – as a complex form of

perception that organizes socio-political relations between people in social space (Titchosky, 2011, p.4)”. She even proclaims that combating access signifies the foundation of living more closely with the “interpretive material reality” which has propagated so much exclusion. Therefore, access inherently owns social inclusion. There is a need to answer the question about the meaning of inclusion in urban environment.

In general terms, Inclusive or Universal design as defined by (Mace, Hardie, & Place, 1990) is “the concept of designing all products and the built environment to be aesthetic and usable to the greatest extent possible by everyone, regardless of their age, ability, or status in life”. It is linked to seven principles

Principle	Description
Equitable	the design is useful and marketable to people with a range of abilities
Flexible	it can accommodate a wide range of individual needs and preferences
Intuitive	the design is easy to use
Effective	it works in most situations and for most people
Tolerant	the design can cope with user-errors
Efficient	it does not stress or tire the user
Appropriate	it is ergonomically designed to be acceptable to the majority of users

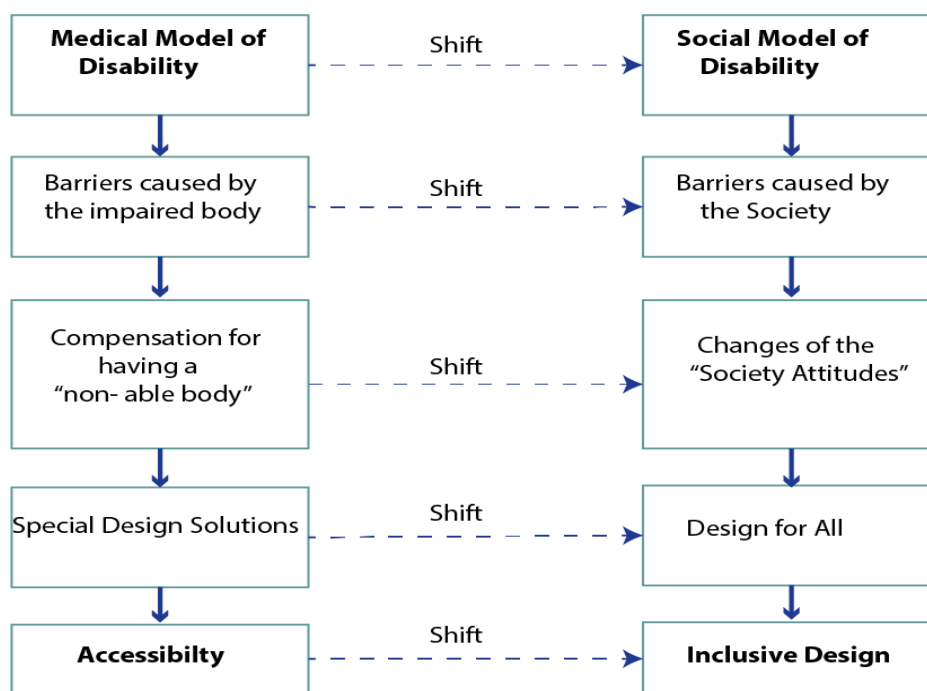
**Table 2.1:** Principles of Inclusive Design [adapted from the Centre for Universal Design, 1995 quoted in Hanson (2011)]

The concept of “Universal Design/ Inclusive design/ Designing for all” is considered valuable for the removal of barriers in the built environment created by design and negative attitudes of people, through creation of accessible built environment suitable for all.

The development of an inclusive city encourages equality and justice during planning and these two should be basic principles for the creation of cities. Ali Madanipour (2013) also considers the city as an

accessible entity, shaped and managed through inclusive and self-governing methods [4, p.2]. When talking about equality, we are dealing with accessibility for all, as a principle that must be exemplified by an inclusive city. Therefore, the city must be equally accessible to all citizens, regardless of their physical disabilities, age, gender, sexual orientation, ethnicity, income level and social status. There is a continuous attempt in literature to link medical and the social model of disability to different concepts and attitudes (accessibility or inclusiveness) towards designing an urban environment. According to Hanson (2001), depending upon the physical conditions of the user categorized designing into general needs and special needs. At one place, the ‘special needs’ approach seemed a practical way of resolving everyday

problems, by modifying products and buildings to function perfectly for a specific group. This purpose-built approach has produced environments with a lower degree of attraction and a higher degree of stigmatizing. The criticism of this approach has been the division of the design process into “the designers” and “the users”, opposite to the “designing for all” approach. (Sklar and Suri, 2001). Today, there is a complete shift in designing for special needs to the inclusive design as a result of understanding disability conceived by the social model. Another research on inclusive urban spaces by the University of Salford has also concluded an inter-relationship between medical and social models of disability and the accessibility to inclusive design as follows.



**Figure 2.1:** Accessibility to Inclusive Design through a shift in Medical Model To Social Model Of Disability [adapted from:( Reyes et al,2005)]

However, critics of inclusive design argue that in many cases it is impossible to provide a ‘one size fits all’ solution. Some people will always be excluded.

### **Role Technology for Disabled In Urban Environment**

The role of technology in disabled life has developed in the form of assistive technological devices added progressively to their lives. Harris (2010) describes the social model approach to disability which paved the way for “Universal Design” and a focus on “barrier free environments” leading to the use of

assistive technology in a broader way in lifting the barriers in the urban environment for the independent participation of the disabled people.

Historically, the technology available to help people with disabilities has been as complicated as the types and degrees of disabilities themselves. Whether the condition affected is physical, cognitive, hearing or vision, each circumstance had its own expensive gadgets and associated support structure. Now with the advent of the smartphone and tablet a new platform has emerged for the first time which stretches across the scope of all disabilities and also across mainstream services. Designing with all citizens in mind, including the people with disabilities, ultimately makes services more accessible to everyone. A number of Smart Cities are stepping up and making accessibility and inclusion a priority. Making Smart City services accessible to all will increase both the power and reach of the disabled in society. When Smart City services are not accessible, they perpetuate the inequality, exclusion, and isolation of persons they are designed to help, in particular persons with disabilities. (Bates,2017)

“For aging communities and those living with disabilities, these technologies present the prospect of an empowering and more human city that provides a host of economic, health and wellness, quality of life, housing, educational, civic engagement and emergency services benefits. In doing so, smart cities also enhance the resilience of cities and communities”. (BSR,2017). It is believed by the global experts that smart city technologies advancing at a rapid pace are leaving a huge number of disabled people behind. Despite helping them in their daily lives, there is a digital divide being created requiring more inclusive approach to the implementation of technology.

Several barriers have been identified in literature regarding technology for disabled. For example, different technology markets have been developed in isolation with solutions for a specific area and very high cost (Bates,2017). Until now, there is no clear effort to unite different streams of technologies as disabilities themselves. (Bates,2017)

### **Conclusion**

This article has provided a deep understanding of the conceptual basis for disability in a built environment and the emergence of accessibility planning to the concept of inclusive design. Most of the initial literature reviewed and explored the barriers in built

environment and accessibility for the integration and participation of disabled in society. The importance of the shift from the medical model of disability focusing on physical conditions of the disabled to the social model of disability taking the physical environment as the disabling factor has contributed towards a complete change in the planning approach. The disabling barriers were identified and design and policy solutions were adopted for greater accessibility for the disabled in a society. As accessibility was providing the specific design solutions and was ignoring some disabled groups to be taken into account, the concept of “inclusive design” emerged. The design for all approach is also based on the social model of disability (lifting the barriers) but provide inclusion for maximum user groups. The discussion in literature review ends with the role of technology in providing inclusion through smart solutions and its barriers. The concept of inclusive design is based on the social model of disability which focuses on removal of the barriers in an environment rather than the impairment. It has shifted the approach of special provision for disabled people with the designing of the environment in a way that incorporates everybody's needs. By overcoming barriers to the disability inclusion can result in an environment which everybody can use. Many of the common barriers to an inclusive environment as studies are related to the physical obstructions created by the inaccessibility of space. These accessibility needs are often included as an additional requirement towards the end in a project. Our legislative structure promotes not only inclusive design and accessibility but also the disability inclusion in every sphere of life but doesn't set a statutory requirement to fulfil it. The anti-discrimination acts also demand equity and inclusion for the people with disabilities. However, the disabled people continue to face barriers of stigmatising and segregation along with the barriers of accessibility and negative stereotyping, the provision of accessible services for transport, education, and leisure have also been the biggest challenges. Although technology is proving to be the latest tool for inclusion in any environment but has never been prioritised in our cities to improve accessibility.

Based on this research, following broader recommendations are formulated for the maximum inclusion of disabled in our urban societies.

**Recommendation 1: Create accessible environments by removing physical barriers**

By following design standards in providing uncluttered streets, wider pavements with hard, smooth contrasting surfaces, standard layout of the street furniture, controlled crossings with audible signals, proper tactile guidance, soft sand safe segregation of the user groups, access ramps and lifts, maximum audio and visual information, accessible toilets, transport and parking can contribute greatly towards reducing physical barriers for disability inclusion.

**Recommendation 2: Adequate amendments and enforcement of existing accessibility legislation.**

The National Planning Policy Framework does not establish a legal obligation on local authorities to follow inclusive design's principles. It is recommended that the Government should amend the NPPF and the National Planning Practice Guidance to include a particular section on accessibility for disabled people and inclusive design for local planning authorities and decision-takers. More details should be provided on the requirements and procedure to address these issues regarding planning and design of the built environment and public spaces (House of Common,2017). An immediate update in building regulations and standards is also required. The study has shown that lack of implementation of the anti-discrimination acts to the extent required is the main reason for many barriers. So, an effective implementation and monitoring of equity act 2010 towards anti-discrimination should be guaranteed in all respects

**Recommendation 3: Adequate funding, investment in specific programs (technology) and services for disabilities.**

Lack of funding for specific programs and services should be resolved by investing and prioritising such programs. This funding is essential to overcome all types of barriers identified in the research for the disabled individuals. Provision of assistive technology along with funding the smart cities initiatives should be fundamental for future policy guidance. High quality services including accessible transport and facilities at public spaces also require adequate funding.

**Recommendation 4: Increase public awareness and understanding about disability rights and building human resource capacity training of staff and professionals.**

The satisfaction of disabled persons with their accessible environment also depends upon how other users respect their rights and equally treat them. Awareness and education about disability rights and importance of accessibility should be provided to the ordinary people, policy-makers and the staff working on behalf of the disabled community. This education should be a regular component of professional training in architecture, construction, design, informatics, and marketing as suggested in the literature. There is a need to implement extensive training programs as described in the case-studies to equip staff and ordinary people with all the knowledge, experience and awareness to overcome barriers for the disabled community.

**Recommendation 5: involvement of disabled in policy and design.**

The involvement of disabled people in design and policy making can bring a significant shift towards better places and facilities for them. By sharing their daily experiences, their participation in planning the developments and providing new facilities can add positively to the success of any projects.

**Recommendation 6: Strengthen and support research on disability**

There always remains a gap between what has been done and what else should be done to advance accessibility. There is a need to ensure accessible environments by establishing more stable relationships between disability and the built environments. Policy should support and encourage research on different aspects of accessibility for the disabled community. There is a broad range of scope for further research, in the field of disability policy, programs and resources. There is a need of exploring new adaptable solutions to increase accessibility not only in designing places but also providing services and facilities to them. Overcoming barriers in different contexts and the effectiveness of the services need to be explored further at a larger scale. And the potential of technology as major tool and its provision on an equal basis to all the citizens should be considered as the basis of some new research and studies. The aim of the research was to come up with the best approach towards an inclusive environment

for the disabled community. After all the research, this approach can be best concluded as policy led, design and program based and improved with technology to overcome all types of barriers faced by the disabled community.

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