

Universal Design in Order to Reach the Inclusive City

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Abstract—Over the past decades in the design of architecture and urbanization, the lack of use of the Viewpoint of the people as the Main users, has caused the various locations to be built, Not responding to the needs of all people in the community. In other words, the spaces available to all people are not Functional, and many people are not comfortable in existing spaces. Apart from the identity debate and the sense of belonging to the place, the power of use and the ease of access to that location are posed. To achieve greater accountability, there are Challenges that the needs of people in the community can be answered with respect to social justice. Today, attention is paid to diversity in society in the knowledge-based architecture and urbanization are important. But the problem here is how can universal design in general be able to respond scientifically to the needs of all people in society? This article tries to develop through an analytical-descriptive approach, introducing its Universal design and its objectives, We can see architectural effects in cities that are suitable for all people. The results indicate that the design, regardless of the existence of population diversity in the community, can lead to deprivation of the presence of groups in society.

Index Terms— universal design, inclusive cities, social justice

I. INTRODUCTION

Today, the access of all people in the community to the created environment, as well as the possession of everyone from the same rights is important, and this issue is discussed in various societies. Different thinkers trying in all sciences for human equality; In the meantime, architects and urban designers as constructors of environments play an important role in enabling the

public to benefit from urban amenities. One of the approaches that architecture can provide is a tool for achieving this; Universal Design or Inclusive Design. In order to realize this type of design, we can refer to the criteria of social justice. Many designers use social justice criteria to raise social welfare. Meanwhile, social inclusion approaches have policies that are based on justice. Social inclusion is a term commonly seen as the opposite of social deprivation. Social inclusion is usually seen as the opposite of social exclusion. Exclusion discourse originated in the 1960s in France, where it resonated with the national ideology of Republicanism [1]. Exclusion social refers to a rupture of the 'social bond' or 'solidarity'. In France, the 'social contract' does not leave individuals to fend for themselves. Society owes its citizens the means to a livelihood, and reciprocally, citizens have obligations to the larger society. The French long disfavored the term 'poverty' as an 'Anglo- Saxon' or liberal term unbecoming a country where 'the people' were guaranteed equal citizenship. Republicans and Social Catholics, especially the ATD- Fourth World movement headed by Father Joseph Wresinski, preferred to speak of the extremely poor and slum- dwellers as 'the excluded' [2]. In the 1970s, René Lenoir (1974) used the term 'the excluded' to refer to the handicapped, substance abusers, juvenile delinquents, and deviant groups whose conditions excluded them from the then incomplete social insurance coverage. As the welfare state expanded, paradoxically so did the meaning of social exclusion. Over time, the idea encompassed more and more social problems and disadvantaged groups. In the 1980s after the Oil Shocks, the term applied to high, long- term unemployment of youth and older unskilled workers whom deindustrialization had displaced and who

were excluded from new jobs and the benefits of economic growth [2].

First, the definitions of social inclusion and universal design are described in detail. Also, the definitions presented will address this issue; how can universal design be able to meet the needs of all people in the community? Especially in architecture design, urban planning and urban design, industrial design and This paper tries to introduce social inclusion and its goals through the use of descriptive-analytic approach through library studies and reviewing the opinions of scholars. And examine how to achieve social justice in order to uphold the rights of every person in the community.

II. CONCEPTS AND DEFINITIONS OF SOCIAL INCLUSION

The definition of the social inclusion is expressed in various books and articles; the most common ones are the following definitions; A socially inclusive society is defined as one where all people feel valued, their differences are respected, and their basic needs are met so they can live in dignity [3]. In a socially inclusive community, residents have opportunities to participate fully in the social, economic and cultural life of their community. Social inclusion policies facilitate access to employment, education, health, housing and democratic processes. These socially inclusive policies create health and wellbeing for individuals by creating a supportive community [4]. Communities that enable all citizens to play a full and useful role in the social, economic and cultural life of their community are likely to be healthier than those where people face insecurity, exclusion and deprivation [5]. There is general agreement among New Urbanists, smart-growth advocates, sustainability theorists and other urban scholars that we must design places that are diverse and inclusive – economically, socially, ethnically, culturally and functionally [6]. In other words, social inclusion can be seen as a way to ensure the long-term viability of projects, which is itself essential to preserve the social fabric that the underprivileged are part of and depend on [6]. Given the definitions of social inclusion, architecture as a tool for expanding social justice can create environments that are inclusive. Steinfeld and Maisel (2012) are designers who have done a lot of research in this regard. In their book, they refer to the concept of inclusive; Equality of access to the environment has always been an issue in civil rights [7].

Also, they define the universal design and they see it as a tool for accessing the environment. Universal design, A human-centered approach to design and business practices focuses on creating a more comfortable, healthier, and safer environment for everyone. Not only does this increase social integration, but it will reduce the cost of providing special services to disabled users. The concept of inclusive design is trying to make the world more accessible to a wide range of people, including people with disabilities, and other often overlooked groups. To advance these programs, they need the necessary resources and expertise in the field of technical

and architectural design, product design, facility management, and social and behavioral sciences [7]. Therefore, inclusive design can be considered an inclusive approach that can serve everyone. To further understand this issue, we first discuss different definitions.

III. UNIVERSAL DESIGN

Universal design emerged out of the disability rights movement, which began in the late 1960s, although there are earlier precedents. Its goal is to bring people with disabilities into the mainstream of society by ensuring equal opportunity and eliminating discrimination based on disability [7]. The most common definition of universal design 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 [8].

Other terms have been used for the same concept. For example, the term “design for all” is

used in Europe: [7]

... design for human diversity, social inclusion, and equality [9].

In the United Kingdom, the term “inclusive design” is popular:

The design of mainstream products and/or services that is accessible to, and usable by, as many people as reasonably possible ... without the need for special adaptation or specialized design [10].

Clearly, we are still in a time of transition regarding the definition of universal design, but there seems to be a developing consensus. The similarity in concepts is clear from the definitions. Some definitions are explicit about the outcomes for universal design practice that helps to clarify its purpose: social inclusion, equality, and independence. Others explicitly mention the concept of diversity beyond design for disability. An essential idea incorporated in all the definitions is that it will benefit a broader population than conventional practices— inclusion is the ultimate goal and design for inclusion results in benefits for all [7].

This seems contradictory, a sort of cop-out [11], in criticizing the Mace definition of universal design, argue that the concept is too utopian and does not reflect the political nature of the process of inclusion. They point out that presenting design for inclusion in this way raises false hopes with an emphasis on technical solutions rather than process and leads to solutions that, in practice, do not really address all the needs of the population, particularly people with disabilities [12]. also reflect on the pitfalls of utopian thinking, particularly with respect to encouraging adoption by contemporary design educators who dismiss utopian and reformist ideas as a vestige of modernist thought that misled people into thinking that design alone could change the world. They point out, however, that idealism is not necessarily a bad thing and is attractive to both students and educators alike. According to Steinfeld and Tauke, the term “universal designing” may characterize the concept better than the noun form, as it reflects a constant evolutionary process leading to more and more inclusion over time.

In light of these critiques, we propose this improved definition:

Universal design is a process that enables and empowers a diverse population by improving human performance, health and wellness, and social participation [7].

A. Theory of Universal Design

The term 'disability' is in need of a revision and a re-definition. Considering 'diversity' instead of 'disability' may be a good starting point for this revision. Besides, in many other situations like senility, infancy, childhood and pregnancy; social and physical requirements, anthropometrics and strength levels are far more different than the general expectations (Ergenoglu, 2014) [13].



Figure 1. The presence of people with different abilities in society [14].

So, if only a group of people are involved in the design, it will deprive the rest of the community.

As the effect of physical environment on people is undeniable, physical spaces- when designed for all- have a considerable effect on participation in educational life and workforce [13].

The social responsibility of architect appears as an important tool when it comes to create awareness to these issues in the society. Designing the everyday-living environments to be inclusive is one of the fundamental factors for awareness rising in society. However, architects who are aware of their 'social responsibility' are required for this purpose. Sensitivity and awareness of responsibilities cannot be expected to exist in human nature from birth. These qualities can be developed with the right kind of education and approach [13].

Universal Design is a design philosophy that aims to create an inclusive, sustainable society, where every person can participate to the greatest extent possible [15].

Supporting this goal and its implementation promotes greater equity in work and living. Therefore, the goal of inclusive design is to extend user groups in a designed environment. In addition, everyone should have an understanding of how to design for user groups¹. (Fig. 2)

Universal design is based on Barrier Free Design. That is to create spaces that are accessible to everyone at any age and to the extent possible. The main purpose of this theory is to: endeavor to meet the needs of the majority of users [16]. Comprehensive design has 7 key principles: 1- Simple and intuitive use 2- Fair use 3-Intelligible information 4- Consideration of the limit for errors 5- Flexibility in operation 6- Physical effort at least 7- Size and area for access and Performance [11]. From a perspective other than the attention of architects and designers to the inability of humans to inclusive design,

we can focus on human abilities. Each of us is unique in terms of age, size, ability and preferences; Understanding human diversity is important for effective design. Human abilities can be grouped into the following subdivisions: cognitive, visual, auditory and speech of the body, performance with hands and arms. The performance of any of these can affect the ability of the design [17]. According to the above, it is sometimes possible to design, focusing on the ability of individuals, to cover their disability. For example, considering the conditions of blind people in the inclusive design, one can use their other abilities, such as hearing, touch, or even olfaction, and understand the environment for them. Hence, the cognitive abilities of humans are discussed, which we describe.

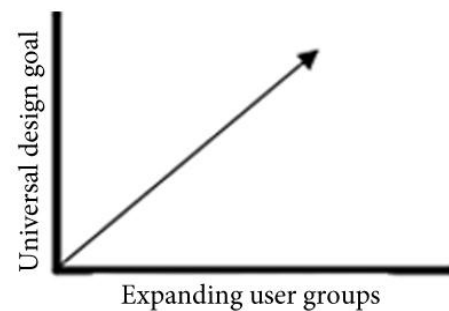


Figure 2. The development of user groups in the design of the environment leads to the approach to the goal of inclusive design. / Source: authors

B. Inclusive Design and Cognitive Abilities

The cognitive ability of each of us is characterized by many internal symptoms. Inclusive design for cognitive impairments means paying attention to the human's ability to receive, understand, interpret and interpret, remember, or act on the basis of information, including concentration, visual information, and so on. Includes groups of ages and abilities that include: young children with limited vocabulary, rules and skills - low literacy or illiteracy - people unfamiliar with local language with foreign cultures - elderly people with memory disorders - Individuals with limited abilities in understanding, memory and concentration. The inclusive design environments and products for the individuals listed above can take into account their cognitive abilities [18]. If we are careful about humans, we can understand the different cognitive abilities of each individual.

C. The Ideas Presented for Inclusive Design

Perhaps one of the most well-known examples of inclusive design is the Lifetime Homes concept. The concept was developed by the Joseph Rowntree Foundation in 1991², because of concern about the quality of British housing and lack of accessibility for older people, disabled people and those with young children [19]. Lifetime Homes are homes that meet the needs of most households and the changing needs of households as they grow older. The Joseph Rowntree

¹. Scottish Executive Development Department, 2006.

². see; www.jrf.org.uk/housingandcare/lifetimehomes.

Foundation identified 16 design features that should be included in new housing³: [20]

1. Parking space capable of widening to 3300mm.
2. Distance from the car parking space to front door kept to a minimum.
3. Level or gently sloping approach to the Lifetime Home.
4. Accessible threshold, covered and lit.
5. Communal stairs provide easy access and, where homes are reached by a lift, it is fully wheelchair accessible.
6. Width of doors and hall allow wheelchair access.
7. Turning circles for wheelchair in ground floor living rooms.
8. Living (or family) room at entrance level.
9. Identified space for temporary entrance level bed.
10. Accessible entrance level WC plus opportunity for shower later.
11. Walls able to take adaptation.
12. Provision for a future stair lift.
13. Easy route for a hoist from bedroom to bathroom.
14. Bathroom planned to give side access to bath and WC.
15. Low window-sills.
16. Sockets, controls, etc. at a convenient height.

IV. DISCUSS

“In universal design, we need to know how best to support human performance through the design of the environment and products. Four of the Goals of Universal Design are directly related to human performance: Body Fit, Comfort, Awareness, and Understanding. However, there is a strong relationship between these four Goals and the other four, Wellness, Social Integration, Personalization, and Cultural Appropriateness. For example, if a product or environment is not designed to fit the body or be easy to understand, it cannot support the social participation goals. Imagine a suit of clothes that is too big and makes the wearer look awkward and bizarre in social situations, or a music player with an extremely complex method of operation that makes its owner seem not smart enough to comprehend how it works. Poor design for human performance can also subvert achievement of Wellness. For example, a neighborhood filled with dangerous street crossings, bad lighting, and broken pavement can reduce physical activity and contribute to obesity and loss of bone density” [7].

“Each of the human performance goals represents a class of activities and tasks, but each also represents a distinct body of scientific knowledge that can be applied in design” [7]. There are four key bodies of knowledge that come into play:

1. Anthropometry. The characteristics and abilities of the human body at rest and in motion (Body Fit);
2. Biomechanics. The forces on the body at rest and in motion (Comfort);

3. Perception. The reception and interpretation of information from the world around the body (Awareness);

4. Cognition. Thinking, memory, and learning processes, including the mental representations we construct of the world and objects (Understanding); [7].

Anthropometry is very important in building design, for safety and comfort. In the building regulations, the minimum width of emergency exit paths and corridors is set. These regulations are based on people's moves. Failure to provide adequate space can cause damage to people in case of emergency. Like exits during a fire.

Design to balance / design in order to prevent collapse relates to bio-mechanical issues. However, physical environments may be effective in collapse, such as the unevenness of the pavement surfaces, the inadequate height of the stairs, the inadequacy of the foot depth for the foot, the surfaces that do not have enough friction, and so on. To maintain balance, you can use bars and fences⁴.

V. CONCLUSION

Thus, by examining a social inclusion, we find that design without regard for the entire population can lead to depriving a group or group of people in the community. And, It results in deprivation of social participation and non-utilization of social services, which are the rights of every individual in the community. Accordingly, a variety of justice-centered design is considered; inclusive design and universal design. What distinguishes the inclusive design from other terms is the sociality of this approach, and that inclusive design seeks to provide opportunities for all individuals.

Thus, in the design of everything, such as the building or products or other space, if the various groups of the society with each level of ability to take into account and facilitate the conditions for everyone to access the facilities and services, in principle, We respect the rights of everyone in the community.

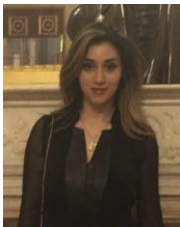
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