Design for All:
Employing Local Standards to Empower the Disabled People in the City Spaces of Abu-Nuwas Garden, Baghdad, Iraq

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Abstract

Nowadays, cities are faced with the challenge of making their urban environments safe, equitable and inclusive for all. Design for all as a concept has emerged as a key solution to this challenge. It incorporates principles of universal design, accessibility and usability as approaches to ensure that people of different ages and abilities can access, use and enjoy city spaces safely and comfortably. By creating an inclusive urban environment through design for all, cities can ensure that everyone has access to the same opportunities regardless of their background or physical ability. Design for all (DFA) creates and improves participation of disabled people in urban public spaces by employing solutions that offer dignity, while responding to their abilities, needs and expectations.

One way to implement DFA is to establish a local standard for accessibility and inclusion within the spaces of a city. This could be developed through a participatory process that involves inputs from people with disabilities, disability rights organizations, urban planners, architects, and other stakeholders.

This paper examines this issue, a set of mixed-method is used including employing local standards as data technique and detailed data on local standards analysis as a spread-sheet with international standards, as well as site observation and analysis by taking Abu Nuwas Garden as a case study, then a comparison the data between the local standard and case as a research methodology.

It concludes that local standards do not meet the minimum standards for public urban spaces in comparison with international standards, and there is a clear gap between what is applied from local standards for accessible cities currently offered for disabled people The local standard would serve as a guide for the urban planners and architects in designing accessible and inclusive urban spaces. It would also provide a framework for evaluating the accessibility and inclusiveness of existing urban spaces, and for identifying areas where improvements are needed.By establishing a local standard for accessibility and inclusion, cities can promote the empowerment of disabled people by ensuring that their needs and perspectives are considered in the design of urban environments. This can lead to greater social inclusion, economic empowerment, and improved quality of life for people with disabilities, as well as a more accessible and inclusive city for everyone.

Keywords: inclusive city planning, urban infrastructure for disabled people, urban empowerment for people with disabilities, disability friendly cities, urban design for disabled people, accessibility in cities.

Introduction

In recent years, inclusive city planning has become a priority for cities looking to empower their disabled citizens. Through urban infrastructure designed to support accessibility, people with disabilities can access public spaces and services on an equal footing with the rest of the population. Such design strategies are crucial in enabling people with disabilities to gain the same level of autonomy and independence they would have without any disabilities. The aim should be an urban landscape that naturally incorporates and considers the needs of the disabled individuals, allowing them to feel empowered by their presence in society. From improved wheelchair ramps and access points to braille signs – all of these can make an immense difference in providing equal access for disabled citizens in our towns and cities.

Following is an example of inclusive city planning design. Inclusive urban design strategies include a range of features, such as improved wheelchair ramps and access points, braille signs, accessible public spaces and services, and more. These strategies can help people with disabilities feel empowered by their presence in the society. Inclusive city planning has become a priority for cities looking to empower their disabled citizens.

According to the report of the World Health Organization (WHO) and the World Bank, the proportion of 'Disabled People' is estimated at one billion, or approximately 15% of the world's population (WHO, 2011). The World Health Organization has also indicated that the number of people with special needs is on the rise. This is due to demographic changes, in addition to other factors and causes. Thus, people with disabilities face widespread lack of accessibility to build environments, from roads and housing, to public buildings and spaces and to basic urban services such as sanitation and water, health, education, transportation, and emergency response and resilience programs. Barriers to information and communications, including relevant technologies and cultural attitudes including negative stereotyping and stigma also contribute to the exclusion and marginalization of persons with disabilities in urban environments (Melillo *et al.*, 2019).

Disability is an umbrella term covering impairments (of bodily function), activity limitations (difficulties in carrying out a task), and participation restrictions which curtail a person's involvement in society (WHO, 2002). In the Iraqi context, neither the Central nor the State Governments have reliable data on people with disabilities. Iraq is one of the countries in which people with special needs are increasing most, due to the wars it waged since 1980 to the present day, in addition to war remnants, sectarian conflicts, violence, terrorist organizations and other factors (Al-azzawi, 2018). The Iraqi Central Statistical Organization (CSO) has estimated that the number of people with special needs for the year 2016 is more than 1,357,063 people. Among them, the number of males is 776,721, or 5.2% of the population, and the females are 580,342, or 5.9% of the total population for 13 governorates, except for the governorates of the region of Kurdistan, Nineveh and Anbar. According to the numbers, 28,561,946 people out of 36,169,123 for the year 2016, or 5% of the total number of people are with special needs. As for the governorate level, the prevalence rate of people with special needs ranges from the highest rate in the Karbala governorate at 8.7% to the lowest rate in the Maysan governorate at 3.6% (Central statistics Organisation, 2020).

Majority of the disabled people fall within the age group of 15-65 years. With regard to the types of disability, movement disabilities, comprehension and perception, sight, and hearing are the most prevalent at rates of 42.4%, 21%, 14.8%, and 9.2%, respectively. Communication and self-care are the least common types of special needs, with their rates standing at 6.8% and 5.8%, respectively.

The situation of disabled people in Iraq, as is the case in most developing countries is dire. They are considered a marginalized population and face many problems in terms of health, education and work, as a result of social, economic and cultural biases (Ingstad & Grut, 2007). They are excluded from the administrative, military and service professions as they are economically dependent and unable to work without the presence of those who direct them. The integration of people with special needs into wholesale and retail trade, vehicle repair and personal goods does not happen. Moreover, their ability to engage in normal life is restricted due to the difficulty of access and movement within the urban environments (Al-azzawi, 2018).

The concept of empowerment is directly related to the people with disability in an attempt to integrate them with society and the environment and achieve well-being for them. The United Nations Convention on the Rights of Person with Disability (UNCRPD) has called for the empowerment of people with disability (Gowda *et al.*, 2019), where empowerment is an important measure. It is an attempt to remove the barriers and obstacles that disabled people suffer from and prevent them from participating in their lives (Devandas, 2013). Moreover, people with disabilities rights have not been taken advantage of, to a sufficient extent in governance processes related to urban planning and city management.

It is the primary responsibility of local authorities to consider the differences between citizens and to design services and structures so that all can use them. They must promote opportunities for the disadvantaged by organizing the provision of accessible spaces, thus addressing their social exclusion and promoting equality. In doing so, they are encouraged to create participatory mechanisms whereby multiple actors, including people with disabilities as well, are given the opportunity to shape the local services. In addition, they have the right to equal opportunity as recognized citizens in a pluralistic society that respects the difference and diversity of the individuals who make them up. In addition, they have the right to participate in the social affairs of their community without restrictions and enjoy the welfare that the development that community may generate in the Çankaya Municipality.

In this context, this study aims to examine local standards in Iraq, in order to empower people with disabilities and revitalize the city spaces through the concept of design for all. It assesses the extent to which the local standards in Iraq are activated to design inclusive cities that include disabled people.

Its objectives are as follows.
1. Explore the approach to design for all and its ability to empower disabled people.
2. Clarify the local standards (building requirements for people with special needs) and   determine their suitability in designing public spaces, and finding failures in the local standard.
3. Developing technical requirements that were not taken into account in the local standards, and
4. Examine the standards in the case study area (Abu Nawas Garden), their applicability, and their effectiveness.

Theoretical Basis
People with Disabilities
The World Health Organization (WHO) states that the concept of People with Disabilities is 'complex, dynamic, multidimensional and contested', as it is linked to two aspects: one medical and the other social. There is a balance of different aspects that surround this group such as health, context, environment and personal conditions (Melillo *et al.*, 2019). United Nations Convention on people with disabilities has also "recognized that disability is an evolving concept and affirms that special needs are the result of interaction between people of this category and the behavioral and environmental barriers to participation and interaction in society in a way that guarantees their right to equality" (UN-Habitat, 2007:1). For example, it is possible to improve social participation by addressing the barriers that hinder people with special needs in their daily lives, a decision "meaning that special needs are not a characteristic of a person" (Melillo *et al.*, 2019). Social participation can be achieved by addressing barriers, not only physical barriers, but also behavioral and social barriers (Wolbring, 2006).

Exclusion of Disabled People
The term exclusion is defined as a set of dynamic, multi-dimensional processes that are driven by relationships of unequal dimensional forces that interact across four main dimensions: economic, political, social and cultural, and at different levels including the individual, the family, the group, the community, the country and the global levels. It leads to a continuum of inclusion/exclusion characterized by unequal access to resources, capabilities and rights leading to health disparities (Popay, 2010). The concept of social exclusion defines a complex and

multi-dimensional process. It involves a lack of resources, rights, goods and services, and the inability to participate in the normal relationships and activities available to the majority of people in a society, whether in the economic, social, cultural or political spheres. It affects the quality of life of individuals and the justice and cohesion of society as a whole (Lloyd and Patsios, 2007). Alternatively, social exclusion occurs as a result of many factors that people or neighborhoods suffer from a combination of interrelated problems such as unemployment, poor skills, low-income, poor housing or homelessness, high crime, poor accessibility, health inequalities, and family breakdown (Bradshaw and Bennett, 2005).

Social exclusion describes a process by which certain groups are systematically disadvantaged because of discrimination against them on the basis of race, ethnicity, religion, sexual orientation, caste, ancestry, gender, or age disability, HIV status, immigrant status, or where they live. Discrimination occurs in public institutions, such as the legal system or education and health services, as well as the social institutions such as the family (DFID, 2005).

Such social exclusion challenges are great. People are excluded from many spheres of life – social, economic, political, civic and spatial – and the prominence of each sphere depends greatly on the country and local contexts as well as on the stage of a person's life trajectory.

This means concepts of social inclusion and social exclusion are multi-dimensional and context-dependent.

Inclusion of Disabled People

The concept of social inclusion has been defined by the World Bank as "the process of improving the conditions for participation of individuals and groups in society" and "the process of improving the ability, opportunities and dignity of people who are disadvantaged on the basis of their identity, to participate in society" (Cuesta and Niño-zarazúa, 2022) .

Social inclusion is a broad concept that encompasses differences between people including, but not limited to, language, birthplace, ancestry, ethnicity, cultural traditions, societal structures, and religion. The act human rights commission advocates inclusion and promotes understanding of human rights and discrimination law, as well as being a public authority with its own human rights obligations particularly the right to equality (Social Inclusion Plan, 2019).

Collins (2022) defines social inclusion as a process with four inter locking dimensions in which everyone feels valued and has the opportunity to participate; for example, through performances, programmers or events, whether or not they have a disability, to understanding barriers to social inclusion from the social model framework access, participation, representation and empowerment referred to as APRE (Collins *et al.*, 2022).
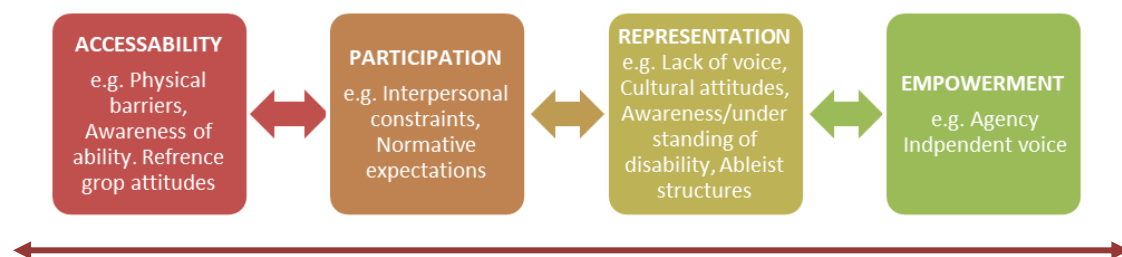

ACCESSABILITY
e.g. Physical barriers, Awareness of ability. Refrence grop attitudes

PARTICIPATION
e.g. Interpersonal constraints, Normative expectations

REPRESENTATION
e.g. Lack of voice, Cultural attitudes, Awareness/under standing of disability, Ableist structures

EMPOWERMENT
e.g. Agency Indpendent voice

Fig. 1: Access, participation, representation and empowerment (APRE) framework to understanding barriers to social inclusion.
Source : Collins et al., 2022

Urban Empowerment within the City

The phrase 'urban empowerment' has many different interpretations. For some, it's about empowering poor communities by building both public participation and sustainability from the ground up. For others, it's about inclusive urban planning and broad grassroot efforts. However, the urban empowerment has more to do with co-opting such efforts to policies to 'revitalize' or 'fix' 'distressed' urban areas; it requires developing strategic plans according to

three key programmatic principles: (a) community partnerships (b) economic opportunities and (c) sustainable community development (Oakley, 2019).

Empowerment is considered a force that can release energy when residents are seen as one of the essential players in the governance processes meant to develop the city (Mistral Urban Futures). Empowerment is a process where the inhabitants of the city become co-actors in urban governance and development, i.e. that they become producers rather than only consumers of the urban fabric (Stenberg and Fryk, 2012). Urban empowerment focuses on socially participatory environments to support people with special needs, reshaping routines and behavioral patterns in dense urban areas, intelligent sensing of the outdoors to change modes of mobility, and promoting environmentally friendly behaviors through social norms. Cities are places that provide opportunities for society, in terms of housing, employment, living, and means of luxury. They are attractive places to obtain those opportunities and services. Therefore, it is important that these opportunities are available and distributed in a socially just manner, so that everyone can reach their fullest potential (Al-Suleiman,2019). Empowerment architecture is not only limited to improving existing urban conditions, but also plays a vital role in creating new settlements (Serageldin, 1997).

Design for All: An Approach for Empowerment of Disabled People

Cities for all refers to the equal use and enjoyment of cities and human settlements and seeks to promote inclusivity and ensure that all city dwellers, present and future generations, without discrimination of any kind, are able to live and produce in fair, safe, healthy and accessible cities and human settlements affordable, resilient and sustainable resources to enhance prosperity and quality of life for all (UN-Habitat, 2018: 8).

Cities for all are cities that work to enable physical access to urban spaces and public services for all people. These cities are often neglected under unrealistic arguments (such as high costs and building requirements that demand higher spaces and standards). Cities that are bound by the United Nations Convention on Persons with Disabilities that has been signed are ignored, and endorsed by most Latin American and Caribbean countries. In addition, the World Health Organization, the Age-Friendly Cities Framework, the Sustainable Development Goals, the New Urban Agenda, and the Sendai Framework for Disaster Risk Reduction all point to leaving no one behind. Moreover, the Housing and Urban Development Sector Framework and the Diversity Action Plan of the Inter-American Development Bank called for more comprehensive urban systems and public spaces. This normative background provides a strong mandate for cities to shape a more inclusive and accessible urban future for all (Disabilities, 2021:20-22).

There are many experiences about designing cities for all, which can be explained as shown in the Fig. 2
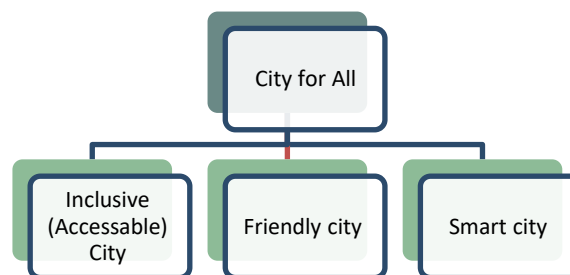

Fig. 2: Design for all experiences for Empowerment Disabled People within city design
Source: Author

1. Inclusive (Accessible) city

"Accessible, inclusive cities allow everyone to participate equally. Cities often burden people who have difficulties walking, hearing, seeing or remembering, [and prevent them] from participating equally in public life. The problem is not with the person, but with the way the environment is designed. Planners must engage with a diverse set of people with disabilities –

and there should be a strong commitment to universal design as well as robust enforcement and monitoring mechanisms." (Kamuzhanje, 2021: 5-6). An inclusive city has been defined by the UN-Habitat as one that promotes growth with equity. It is defined as a place where everyone, regardless of their economic means, gender, race, ethnicity, or religion, is empowered to participate fully in the social, economic, and political opportunities that cities provide. Participatory planning and decision making are at the heart of the inclusive city (United Nations Human Settlements Programme., 2002). The Asian Development Bank publication "Enabling Inclusive Cities: Inclusive Urban Development Toolkit" (2017) defines an inclusive city as "a safe and livable environment with affordable and equitable access to urban services, social services and livelihood opportunities for all city residents and other city users to promote optimal development human capital and ensuring respect for human dignity and equality" (ADB, 2022:xiii). In fact it has adopted the slogan "Livable cities are inclusive cities" (ADB, 2017).

'Inclusive cities' are a major policy focus to achieve Goal-10-9-311 of the Sustainable Development Goals (Agenda SDGs, 2030). Inclusive cities support urban residents by creating more welcoming and intuitive places that help increase the quality of life and create a more meaningful experience. They are positive for the built environment and public spaces for everyone. This is particularly important in supporting a vibrant tourism industry, as inclusive cities meet the needs of people with disabilities and ensure equal access to all the urban services. Developing Asian Development Bank member countries (DMCs) should be increasingly aware of the needs of persons with disabilities and older persons. The comprehensive metropolitan area guidelines will help create a barrier-free, accessible and inclusive city with a better quality of life for all its residents, including people with disabilities, the elderly, women and the children. Broader DMCs are moving towards creating inclusive cities by adopting and implementing inclusive design practices (ADB, 2022:1). An inclusive and accessible city is a place where everyone, regardless of their economic means, gender, race, disability, age, gender identity, immigration status, or religion, is enabled and empowered to participate fully in the social, economic, cultural, and political opportunities that cities offer.

By breaking down unnecessary barriers and adopting comprehensive urban development policies, investments, and programs, cities can improve social and economic outcomes for all people. Some of the initiatives that cities can adopt are policies that promote accessibility, inclusive design and improved access in urban areas, affordable housing and transportation, improved mobility, safe public spaces, and social inclusion programs that include minorities and welcome newcomers. Access to it require informality; gender equality; the right to the city and sustainable urban development (UCLG, 2019). Improving accessibility for the elderly and people with disabilities makes getting around easier and safer for many others, too, including families with young children, people carrying heavy loads and those with temporary injuries. For example, applying universal design principles or improved route designation results in built environments that are more usable by all, not just those with a mobility impairment ('Official Community Plans', no date). greater with the social protection strategy through lack of access to investments and a barrier-free environment, gender-inclusive programs, and capacity development of community organizations that enable poor urban communities to implement community development projects. The critical areas for investment to address environmental poverty are through targeted investments in sectors such as water and sanitation, solid waste management, energy, transportation, land management and housing. They are not only necessary for creating inclusive cities but also effective in creating green cities that are competitive, resilient and sustainable (ADB, 2017) .

2. Friendly City

The age-friendly/disability-friendly city concept has been initiated for the first time in Sri Lanka, where it is in line with the WHO concept of age-friendly primary health care as well as WHO age-friendly cities. The age-friendly city encourages aging to improve opportunities for health, participation and security in order to improve quality of life as people get older. In practice, the age-friendly city adapts its structures and services to be accessible to the elderly

and people with different needs and abilities, as the relationship between aging and special need is increasingly being explored, especially in relation to the implementation of the Convention on the Rights of Persons with Disabilities. This is something being emphasized globally, especially in relation to the post-2015 development agenda. An age-friendly society must also be disability-friendly which will ultimately lead to a 'person-centered' atmosphere where activities are carried out in order to respond to the needs of the individuals (Cuesta and Niño-zarazúa, 2022).

Friendly cities improve opportunities for health, participation and security to improve quality of life as people age. The Age Friendly Cities Framework assesses eight evidence-based areas, including: outdoor spaces and buildings; transportation; housing; social sharing; respect and social inclusion; civic engagement and employment; contact and information; community support and health services (Cuesta and Niño-zarazúa, 2022). Friendly cities contribute to the safety, wellness, and empowerment of older people and people with disabilities (DeLange et.al., 2020). Following are the most important principles to make the city friendly to the elderly and people with special needs to achieve accessible and inclusive societies as much as possible according to the 'Official Community Plans' (no date), as shown in the Fig. 3.

Fig. 3: The main principles to make a city friendly to the elderly and disabled people
Source: Ministry of Community, Sport & Cultural Development & Responsible for Translink

Disability-friendly and elderly-friendly cities represent making the city accessible and easy to use. 'Inclusive design features' that focus on disability-friendly standards in products and spaces designed within the built environment affect the independence of the elderly/disabled people to a large extent. In addition, city-wide barrier-free 'exclusive' mobility options (such as ramps and Braille signs) improve the quality of life for the elderly/disabled. Goldsmith (2000) proposes a model called the 'holistic design pyramid' which is based on a bottom-up approach. The 'holistic design pyramid' indicates that inclusive designs help both able-bodied and disabled people, as the implementation of inclusive design depends on National or regional scale on the pattern in which UX-based inputs are implemented.

Similarly, Universal Design solutions are socially and financially rewarding because they make spaces easier to use for everyone. Inclusive design standards focus on a set of guidelines and criteria for designing barrier-free built environments for people with special needs and the elderly (Mahapatra, Mori and Nomura, 2021). Main principles mentioned to

make the city friendly to people with special needs include: accessible public infrastructure, regular support services, improving service quality, access to institutions, and accessible public transportation. Smart city concepts work to provide initiatives to reduce the information technology gap that currently exists among some groups of people with special needs. In fact, adopting a holistic approach helps to make the city accessible and inclusive for all (Europe, 2020). Improving accessibility in order to create more age-friendly and disability-sensitive communities often leads to improved livelihoods and overall sustainability, and *vice versa*. Many of the measures already promoted by the local and county governments, aiming to achieve living and sustainability goals such as climate action, smart planning, sustainable infrastructure and transportation options, integrated and compact communities are exactly the ones that facilitate access ('Official Community Plans', no date) .

3. Smart City for All

Initial idea of a smart city is to improve the quality of the city to be innovative and scalable (Wibowo, et al., 2020). Giffinger et al. (2008) define a smart city as a vision of the future that takes into account issues such as awareness, flexibility, addressability, synergy, uniqueness, and strategic behavior (Hernández et al., 2018). A city can become 'smart' when the investment being developed in the city focuses on modern transportation, information and communication technology, human capital aspects and social capital to create sustainable economic growth and quality - a high standard of living, with good management of natural resources through participatory governance and to achieve and increase participation of the community and social inclusion. An approach that focuses on prioritizing soft infrastructure should be adopted before moving on to a complex infrastructure approach (Supriyanto *et al.*, 2022). This means that a smart and sustainable city is one that invests in people and social capital wisely, has citizens who participate in managing the city, and has traditional and modern infrastructure that supports economic growth and a high quality of life for its residents (Gracia and García, 2018).

The smart city focused on smart access creates an inclusive environment for people with disabilities, where they can integrate into society and enjoy their city's cultural, political, social and economic rights and entitlements. Therefore, smart cities are an integrated approach to ensure that people with special needs are not left alone, as the main characteristics of potential smart cities in the future are: smart citizens, smart energy, smart buildings, smart mobility, smart technology, smart healthcare, and smart infrastructure, smart governance, education, and finally smart security as basic pillars in achieving inclusion and participation of people with special needs within the city (Salha *et al.*, 2020).

Disability, the Law and the UNCRDP
1. The 2030 Agenda, SDGs and disability

The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), adopted by all the Member States of the United Nations in September 2015, provide a visionary roadmap for all countries and actors to strive for a world of sustainable prosperity, social inclusion, and equality while at the same time, protecting the planet resources from inefficient and unfair usage to save them for the coming generations. The SDGs (Sustainable Development Goals) aim as an action plan for the joint implementation of countries to include disabled people, which organizations can use as a guiding tool to define their strategies and measure the impact of their activities related to the disabled people. Given the importance of the 2030 Agenda at the European and international levels, linking the organization's activity related to the disabled people with the Sustainable Development Goals could also be a way to enhance the value of the contribution, as the United Nations adopted the 2030 Agenda for Sustainable Development, "a global call to action for the eradication of poverty, protecting the planet and improving the lives and prospects of everyone, everywhere."

The 2030 Agenda represents a human rights-based approach. It is based on the guiding principles of the United Nations Charter, international law, including the Universal Declaration of Human Rights, and international human rights treaties such as the United Nations Convention on the Rights of Persons with Disabilities. The inclusion of disabled persons is at the heart of the 2030 Agenda with the demand and commitment to leave no one behind and to reach those left behind first. It is mentioned that the 2030 Agenda is an action plan "where people should be allowed to flourish, people should have a voice and people should have effective opportunities to shape the path of development," and therefore the 2030 Agenda and the Sustainable Development Goals are considered a milestone in the development of human rights.

4 QUALITY EDUCATION	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
8 DECENT WORK AND ECONOMIC GROWTH	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
10 REDUCED INEQUALITIES	Reduce inequality within and among countries.
11 SUSTAINABLE CITIES AND COMMUNITIES	Make cities and human settlements inclusive, safe, resilient and sustainable.
17 PARTNERSHIPS FOR THE GOALS	Strengthen the means of implementation and revitalize the global partnership for sustainable development.

Fig. 4: Five of the 17 Sustainable Development Goals specifically refer to disabled people.
Source : https://sdgs.un.org/goals

While disabled people have been implicitly considered in many other goals and indicators, terms included in the Sustainable Development Goals such as 'for all'; 'weak'; 'the most disadvantaged'; 'non-discriminatory'; 'equal opportunity'; and 'universal access' mean that disability should not be forgotten in the measures developed to achieve the SDGs.

The International Development Association (IDA) and IDDC, in consultation with the United Nations agencies have identified 32 critical indicators that must be disaggregated by disability in order to obtain data on the condition of people with disabilities around the world. There are other goals in which they referred to disability implicitly in the sustainable development goals, as shown in Fig.5
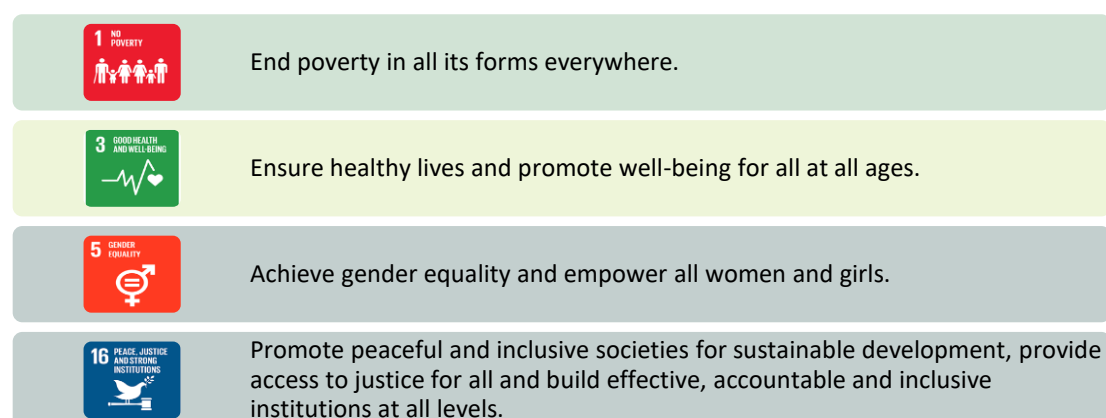
1 NO POVERTY	End poverty in all its forms everywhere.
3 GOOD HEALTH AND WELL-BEING	Ensure healthy lives and promote well-being for all at all ages.
5 GENDER EQUALITY	Achieve gender equality and empower all women and girls.
16 PEACE, JUSTICE AND STRONG INSTITUTIONS	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

Fig. 5: Four of the 17 Sustainable Development Goals that implicitly referred to disabled people
Source : https://sdgs.un.org/goals

2. The Iraq Law for Disabled People
Iraq Vision 2030

The Iraq Vision "empowered people in a safe country, a unified society with diversified economy, sustainable environment, justice, and good governance" is based on the sustainable development dimensions which meet our aspirations for empowered people in a safe and unified country, a society in which all have equal rights, an economic system with diversified social market orientation and highly stable macro-economic indicators creating a clean, safe and sustainable entertainment for the current and coming generations. The aim is to achieve sustainable improvement in the quality of life, ensure sustainable production and consumption patterns, reduce the repercussions of pollution and climate change and enhance the biodiversity protection through governmental institutions which guarantee the respect of political, civil and human rights of people to reach the required tracks and achieve equality for all the citizens.
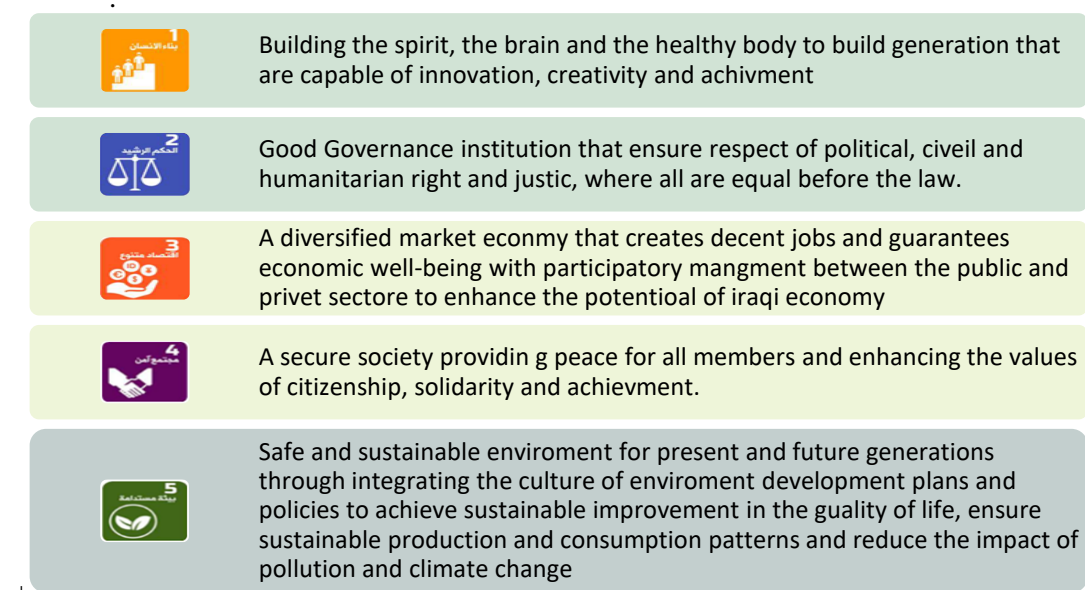

Fig. 6: The Iraq vision 2030 to empowerment people in secure county, a unified society with diversified economy, sustainable environment, justice, and good governance.
Source: First National Voluntary Review on SDGs, 2019.

The vision embraces a new social contract between the state and its citizens to enhance their trust in the government and provide opportunities for self-development, work and generating income. The state seeks to develop the economic activities and pave the way of reforms which tackle the past challenges and provide the needed development strategies and plans which are capable of solving the past and the present problems and the expected future risks in light of the national capacities while ensuring strong development mechanisms which positively impact the achievement percentage of the global SDGs. Iraq's promising success story will be translated on the ground during the coming decade supported by its strengths including resilience, determination, a strong will, and liveliness (Iraq Goverment, 2019).

The international community's interest in disabled people has increased in the last quarter of the twentieth century resulting in the Declaration of the Rights of the Mentally Retarded in 1971 AD, and the Declaration of the Rights of the Disabled in 1975 AD, followed by international declarations and covenants that have included recognition of their rights and required their care. The international effort in this regard have ended with an agreement on Rights of Persons with Disabilities for the year 2006 and the Optional Protocol attached thereto. Iraq has taken steps towards integrating and empowering people with disabilities and their special needs and enhancing their participation in society, paying attention to people with special needs through its permanent constitution of 2005 AD. It has joined the Convention on the Rights of the Disabled of 2006 AD and has ratified it in 2012 AD. It has enacted the Persons

with Disabilities and Special Needs Law No. 38 of 2013 AD, as well as the scattered texts in the texts of the other relevant laws (Mohammed, 2017).
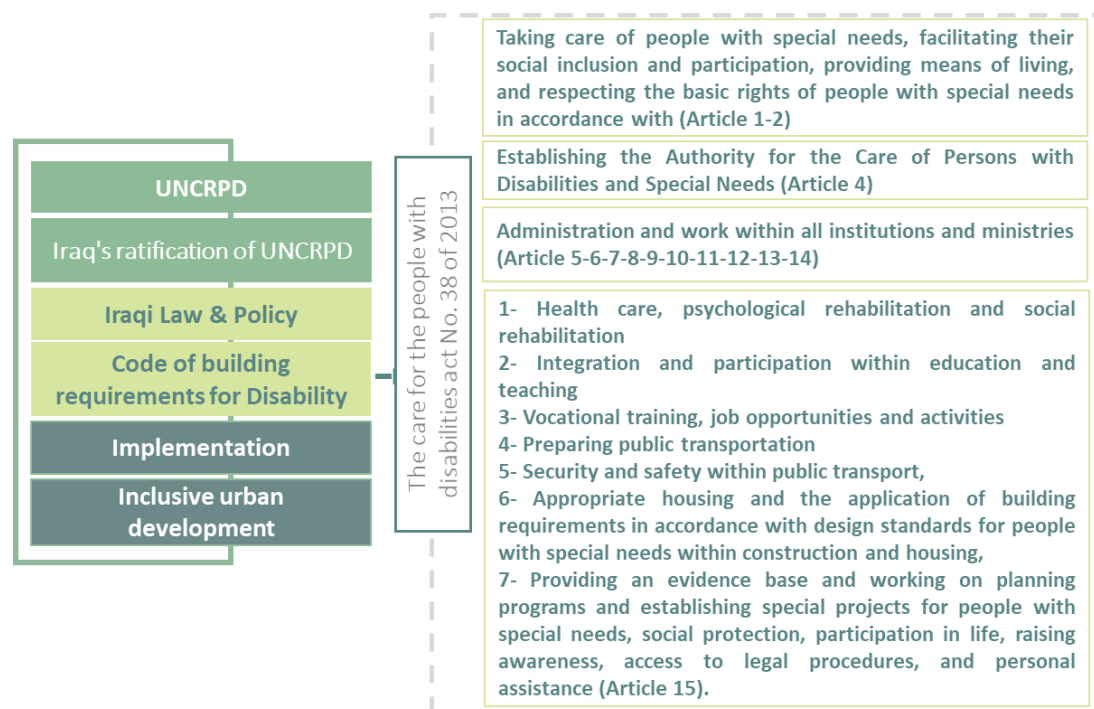

Fig. 7: Inclusive development approaches - international and national frameworks and legislation
Source: Author based on Ministry of justice- Official gazette of Iraq People with Disability and Special needs Care Law No. (38) of 2013

IOM Iraqi Strategies for Disabled People

IOM Iraq has launched the IOM Iraq Disability Inclusion Strategy 2019-2021, which has proposed recommendations for mapping and collaboration with organizations of persons with disabilities. It works to make IOM Community Centers available and develop contextual guidance for staff to implement comprehensive programs for the disabled people.

The goals of the International Organization for Migration (IOM) focus on:
- Identifying concrete actions to be taken by stakeholders such as the Government of Iraq, UN agencies, national and international NGOs.
- Addressing the barriers faced by people with disabilities by civil society organizations, including responses to the priorities of the organizations that represent them.
- Promoting a rights-based approach to the provision of humanitarian and development assistance.
- Ensuring the participation of people with special needs in decision-making processes
- Ensuring equality with others (https://iraq.un.org).

Strategy Development
The general objective of this strategy is to contribute to removing barriers and supporting the capabilities of persons with disabilities to meet their needs and uphold their rights through the programs of the International Organization for Migration in Iraq. The strategy is designed to be implemented over two years and will focus on four key areas of action:
(1) leadership,
(2) inclusive projects and programmers,
(3) consultation with persons with disabilities and
(4) capacity building of IOM staff in mainstreaming disability inclusion
(Heera and Maini, 2018).

Iraq code for Outdoor Spaces and Buildings Design for PWDs Analyzing:
(Code of building requirements for disabled people ،2015)

The Ministry of Construction and Housing issued a set of codes in 2015, including the Code of Building Requirements for disabled People, with the aim of overcoming obstacles in front of those people and providing their requirements and requirements in their homes and in all types of buildings that they can visit for any purpose within traditional life activities. The Code includes eight chapters It included internal and external spaces, services, establishments, and facilities that help disabled people in residential, health, educational, commercial, administrative, industrial, recreational, religious, and other buildings.

Entrances to building

- Provide a ramp connecting the street and the sidewalk to the entrance to facilitate the ascent of disabled people who use wheelchair

Walkways and sidewalks

- It shall be free of obstacles and protrusions, and its floor shall be made of anti-slip materials, and shall be equipped with the necessary slopes and guiding boards.
- Using warning tectile surface in front of the entrances to the buildings and before going down to the street
- Drainage covers and extensions must not be placed on the floors of corridors and sidewalks. If it is necessary to place them, their openings shall be in accordance the space between grating cover maximum 13 mm
- The sidewalks must be equipped with sound traffic signals in addition to the regular instructions in order to warn the blind when crossing and using the street.
- Sidewalks, roads and sidewalks
- The sides of the roads at the intersection of the pedestrian paths with the sidewalk must be of a height not exceeding (30 mm) from the level of the road surface.
- the minimum width of the sidewalk be (1500mm), and it is preferable that there be color distinction between the sidewalk slope and the surfaces surrounding it.
- The surfaces of the pavement slopes should be solid, stable and slip-resistant and contain warning coating materials placed on the ground. And thanks to the placement of ground warning surfaces at the sidewalk slopes at a distance of (150-200mm) from the sidewalk, and it is preferable that the transition be between the sidewalk slopes and the adjacent walkway at a height of (100-150mm).

Outdoor walkways/ Paths

- Provide resting areas on an easy-to-reach road, with a maximum distance of (50 mm).
- resting areas include a long seat or any of the fixed seats with a flat, firm and solid surface, the dimensions of which are not less than (900 mm) wide and (1500 mm) deep so that the wheelchair can move directly near one of the sides of the seat.
- fixed seats and long seats include a seating surface with a minimum width of (1100 mm) and a minimum depth of (500-600 mm). It is preferable to place the seating surface at a height of (450-500 mm) above the ground.
- The total slope ratio of the paths designated for wheelchair users and crutches users should not exceed (1:20).
- The width of the external corridor for the passage of wheelchairs must not be less than (920 mm) for the passage of one chair, and not less than (1800) for the passage of two chairs or a chair and a baby carriage at the same time.

Passenger boarding areas

- There must be special areas to assist them in the process of entering the means of transport designated for their transport, while covering these areas with umbrellas, and the height of these special areas must not be less than (620 mm) from the floor of the street in which the means of transport stands

Taxi parking areas

- Provide parking spaces for vehicles near the main roads and be free of obstacles
- The Path/ walkway width leading to the boarding not be less than 1200 mm
- Railing (handrail), it is equipped with a height 800-900 mm.
- If the accommodation area for taxis is not at the level of the road, a ramp must be made
- Seats must be installed in the taxi accommodation area for people with special needs who do not use wheelchairs

Ramp

- The maximum slope of any ramp is 1:12 with minimum width 1500 mm.
- Handrail ahold be extending 50 mm from the finished ramp. In addition, it is possible to make a stone protection wall with minimum height 75 mm.
- Ramp landing contains a door, the minimum width 2440 mm x 2440 mm
- (U) shape ramp, the minimum width 1670mm and the length no less than 2440mm, and it is possible to reduce the width of landing to 1100mm.
- (L) shape ramp, the length and width of landing 1500 mm
- A protection wall or barrier shall be placed on both sides of ramp, at a height not exceeding (75 mm).
- Designing slopes so that water does not accumulate on their surfaces.

Review of Literature

The study reviewed the literature of international and local studies according to chronological order.

In his 2011 article, Barnes discusses how the physical (infrastructure) and cultural environment can contribute to the rise in disabilities. He suggests that even the most technologically advanced societies can become more vulnerable and handicapped. To address these problems, a group of countries formulated regulations and legislation by removing

physical barriers that affect the people with special needs, including development plans. He has pointed out that these regulations and legislations contribute to improving the environment and accessibility to outdoor and indoor urban spaces, especially recreational places, as indicated by Barnes (2011). Achieving access for all is an essential element for a more just and equitable society, through three levels. The first level includes understanding disability through its medical, social and psychological model, and the second discusses the concept of universal design to reach more appropriate, equitable and usable environments and products for people with special needs. At the global level, the struggle for a more equitable, just and sustainable world order is increasingly urgent. In addition, one of the main components of this endeavor is the development and production of barrier-free infrastructure, artifacts and cultures at the local, national and international levels.

On the other hand, Meshur (2013) cites the limited access of persons with disabilities to services provided in urban spaces, due to architectural barriers resulting from the built environment, as the main problem. Issues such as the accessibility of physical space for persons with disabilities, use of space and leaving space, limitations in terms of accessibility and problems encountered within urban spaces are illustrated. The application of accessibility standards in urban space has been tested. Visually impaired and orthopedic people who could be considered to have more obstacles in using urban spaces compared to other disability groups formed the field study cohort. It comes to the conclusion that people with disabilities are disabled by designs. The goal of making urban spaces suitable for people with disabilities is to provide for their participation in social life, their freedom of movement outside, their alignment with urban life, and especially to increase their self-confidence. Therefore, the aim is to balance their physical and mental health, to provide for their participation in social activities and to enable them to continue their lives in the same living conditions as the other citizens.

Mahmoudi et al. (2014) state that a good city for all is a city in which all facilities and opportunities for a better life are within everyone's reach. The study suggests some simple urban design methods and solutions to increase the comfort and frequency of people with disabilities who use urban spaces and facilities. Getting to urban areas, being associated with or being in the community, being active and dynamic, and safety are very important to people with disabilities.

Boucherit (2017) also summarizes some of the ways in which cities that can become inclusive. Inclusive design (ID) is one of the innovative strategies that contribute to the understanding of public spaces designed for the diversity of its occupants and their needs. It can be applied in different contexts or conditions because of these basic principles of the concept of inclusive design. However, architects, designers, researchers and decision-makers must increase their efforts to explain how to make the built environment more inclusive.

Esfandfard (2018) summarizes how to increase the interaction of people with special needs in urban spaces by adopting the application of the Universal Design approach, and the main goal of the Universal Design concept is to make urban spaces suitable for use and meet the needs of people with special needs The research has derived a set of design recommendations that make the roads safe, easy to access, and comfortable for people with special needs, represented by sidewalks, passages, removal of physical barriers, road crossings, traffic lights, and guiding signs. The study indicates that comprehensive design standards are essential in achieving accessibility and comprehensive design of the urban areas.

Souza & Martins (2019) say that the elements of the aesthetic, cultural and dynamic environments affect positively or negatively on the spatial behavior of the users when the environment information is well designed and effective in the complexity of spaces and humanizing them and thus helping users such as those with special needs and their inclusion within the urban space. The study indicates that effective design and social inclusion can only be achieved when urban spaces, equipment and services are designed within a broad and comprehensive framework in order to provide safety and independence for people with special needs. The spatial definition—couched in body perception and knowledge of multisensory stimuli—represents one of the ways in determining the way and the place of people. On the

other hand, the study concludes that it is necessary to design the urban environment in accordance with the principles of comprehensive design (Universal Design).

Petríková, (2020) argues that smart cities for all or a city for all approaches support sustainable urban development goals that can be understood through public space. We understand spaces in urban infrastructure that are open and accessible to all citizens regardless of their physical and mental capabilities, age, gender, race or ethnicity, or socio-economic level. In fact, high-quality public space is able to meet a variety of different user needs.

It has adopted the most important principles that deal with a wide range of quality features in public urban spaces as follows:

- Social interaction: The urban environment should reflect the diversity of people who use it and provide a place for social interaction.
- Safety and Security: Urban safety is one of the most important features of space quality. Urban safety relates to any type of user safety in relation to urban space, especially in the public areas. It covers a wide range of issues related to the integrity of the physical environment such as barrier-free access, crime prevention and universality.
- Accessibility: To meet accessibility requirements for all users, it is necessary to implement standards that treat everyone equally. Accessibility of a place is determined by visual and physical connections to its surroundings. Accessible public spaces are easily accessible by public transportation, cycling or walking. Ease of access to public spaces also depends on parking options for people with disabilities, accessibility of a venue, distance from public building entrances and barrier-free access options.
- Mobility: Smart cities also need to recognize the problems of people with learning disabilities, mental illness, and visual and hearing impairments when it comes to comprehensive and accessible mobility in space. Mobility consisting of a well-designed, barrier-free, walkable public transport system is intuitive and easy-to-navigate urban areas.

Fernandez, et al. (2021) show how to integrate universal design standards into infrastructure design that generates a better connection between public spaces and the urban environment in a way that is more accessible and sustainable. The effect of removing or reducing barriers within public spaces was positive, as it enables people with special needs to move efficiently and safely and identify the main characteristics such as shape and frequent problems that users are constantly exposed to within the urban spaces. The study has concluded that this approach helps to reduce mobility barriers, allowing for people to move efficiently, safely and independently. In addition, this proposal includes holistic accessibility standards and resources from the wayfinding spatial orientation system, making the urban environment adapt to the needs of all people without any kind of discrimination.

Jamei, et al. (2021) mentions the concept of applying modern planning models in cities to manage urban expansions, through Frank Lawrence's adoption of the "objectively measured urban model (density, connectivity, accessibility, and mixed-use development) as a basis for clarifying the link between urban form, public places, and accessibility". The study refers to the ability to walk, which represents the most form of physical activity and its connection to health, as it enhances the ability to walk to support the environment described and encourage and thus improve social justice, sustainability and public participation. It has focused on defining the relationship between the ability to walk and urban design, through understanding the concepts, and the main components of the form urban. It has thus concluded that there are various factors that affect walkability. It says that the principles of comprehensive design must be integrated to create a comprehensive, barrier-free environment accessible to all to meet the needs of vulnerable and marginalized groups, including disabled people and the elderly.

Further, Lavtizar (2022) discusses how to plan urban spaces according to the principle of inclusion so that public urban spaces can be adapted and used by everyone, including people with special needs. A comprehensive solution provides making and testing solutions that are more effective, more adaptive, and provide immediate and more comprehensive spaces with quality.

The Iraqi literature offer how these ideas manifest in its society. Al-Rubaye (2019) for example, discusses the importance of design and its contribution to providing flexible solutions to transform the urban environment into an environment that enables the integration of people with special needs within the urban environment and provides sufficient flexibility in ease of access, to help develop their mental and physical abilities sequentially and appropriately and their integration into Iraqi society. The study shows the lack of application of design standards for disabled people at the level of architectural buildings and the urban level in Iraqi cities, which has led to a negative impact on how people with special needs adapt within society and their integration. It indicates the need to use an integrated information system to take care of people with different needs and know their place, and where do they go to move easily and safely through the development of the components of the urban environment and the use of modular facilities and elements of urban furniture suitable for the disabled people.

Ismael (2021) reviews how to provide a livable environment characterized by raising the level of well-being and health of the population. In addition, it also emphasizes on creating social spaces in which the community interacts and creating a walking-friendly environment within the integration of economic activities with social activities. It proposes to create a sustainable environment that takes into account the environmental, social, and economic dimensions, based on the foundations of sustainability, including social, environmental, and economic dimensions, in addition to cultural, recreational, and religious dimensions.

This literature review discussed the importance of empowering disabled people within public urban spaces by adopting standards that help increase the interaction and integration of disabled people within public urban spaces by increasing the possibility of ease of access, mobility, transportation, and urban safety to increase the comfort and well-being of users. However, there is an absence of knowledge about the appropriateness and application of local standards in empowering people with special needs and revitalizing urban space.

Research Methodology

The paper employs a mixed-method approach of which the greater part produces quantitative data. The research gathered information from the standards and codes of building requirements for disabled people for analysis, comparing with universal design standards and ISO 2021. It discovered deficiencies in requirements of design and then developed it. On the other hand, it studyied the strengths and weaknesses based on on-site observations, measurement, and photography, and evaluating them through a case study of the Abu Nawas Garden in Baghdad, Iraq to determine the usability and accessibility of the design elements.

The Local Standards

The study presents the findings of the data analysis, in the form of a spread sheet where the collected data of the Iraq building requirement for disabled people, and the codes and building requirements for the external built environment are verified under the same disciplines used by international built environment. It compares the local standards with the international standards ISO/21542:2021 and universal standard guideline for outdoor spaces 2010 in order to identify the gaps in Iraqi code of building requirements for disabled people to build accessible environments.

Each discipline was given one of the three assessments as follows:

C: Covered (Code and requirements are specific with dimensions and information covering the discipline).

P: Partially covered Code and requirements are either limited not covering the whole discipline or not specific).

N: Not covered (The Code and requirements did not mention the discipline)

Table 1: Iraqi code of building requirements for the disabled people in line with the international standards ISO/21542:2021 and universal standard guideline for outdoor spaces 2010
Source: Author

Type of space	ISO/21542:2021	Universal standard guideline for outdoor spaces 2010	Code of building requirements for people with special needs
Approaching and entering	C	C	P
Parking	C	C	C
Drop-Off & Pick-Up Areas	P	C	P
Bus stop/ accessible vans	P	P	P
Walkway and paths	C	C	P
stepped path and stair	C	N	N
Boardwalk – Waterfront	N	C	N
Crosswalk	P	C	N
Wayfinding, guided path and other physical information	C	C	N
ground and hanging Obstacles	C	P	P
Ramp	C	C	P
Kerbs Ramp	P	P	P
Protection along paths and ramps	C	P	P
Stairs	C	C	P
Stramp	N	C	N
Handrails	C	C	C
Draining	C	P	P
External Lifts	P	P	C
Equipment, controls and switches	C	C	C
Intercoms and telephones	C	C	C
Card and vending machines	C	N	N
Drinking fountains	C	C	P
Waste disposals and containers	C	C	P
Street Furnishing (Seating in waiting areas)	C	C	P
Public toilet room	C	C	C
Surface Finishes	P	C	C
Rest areas	C	C	P
Guide Dogs facilities	C	C	N
Signage (audible)	C	C	C
Signage (tactile)	C	C	C
Signage (visual)	C	C	C
Balconies, terraces and outdoor spaces	P	C	N
Children's Play Areas	N	C	P
Boat Launch and Fixed Dock Facility	N	C	N
Eating and picnic area	N	C	N
Outdoor Light	C	C	P

The Case Study

The Mayoralty of Baghdad has completed a project of developing and rehabilitating a distance of 2500 meters from the river edge of Abu-Nuwas Street in Baghdad, as part of the campaign 'Baghdad is more beautiful' launched by the Prime Minister to advance the service and aesthetic reality of the capital. The project for the development of Abu-Nuwas Gardens and the river edge was presented by the staff of the center and its designs are affiliated with the Iraqi Ministry of Construction and Housing. The river edge and gardens benefit thousands of people living in the municipality, providing activities for different ages and for persons including disabled people. It is comprised of the following.

- A playground for children;
- Bikes and walk paths;
- A seating area and dancing fountain for families and communities to gather and socialize, including people with limited mobility.

The Ministry of Construction, Housing, Municipalities, and Public Works of Iraq was the implementing agency.

Background

The Abu-Nuwas Gardens and the river edge extend on the Eastern bank of the Tigris River, specifically the area confined between the two bridges of the Republic in the Bab Al-Sharqi area and the Hanging Bridge in the Eastern Al-Karada district.

Urban development took a longitudinal form along the riverbank North and South of Old Rusafa. In 1929, Al-Saadoun Street was developed to be a commercial backbone for the Abu Nawas site, thus expanding the commercial area of the Baghdad city center. At that time, it was called the Abu Nawas Street in Darb Al-Shatt. In 1964, the Municipality of Baghdad divided the land located on the shore of the Tigris River within the site of Abu Nawas in the form of squares, in the areas of one-piece (30 x 30) meters, to establish cafes on it on modern foundations.

In 1977, large areas of public gardens and landscaping were added, and a number of fish restaurants were established on the banks of the river. In 1982, the Abu Nawas Street gardens were developed, beautified, and gardened, in addition to rebuilding, planting, and improving the Corniche wall. In 2006, the Municipality of Baghdad developed the Abu Nawas site, by reorganizing gardens and green spaces, as well as paying attention to the cultural scenes within the site. The Municipality of Baghdad has added some services and entertainment and tourism activities to the site. The area was named after the Abbasid poet Abu Nawas. The Abu Nawas Parks are located along the Tigris River from the city of Baghdad, as it extends on the Eastern bank of the river and is 3.5 km long (Jameel and Hussien, 2023).
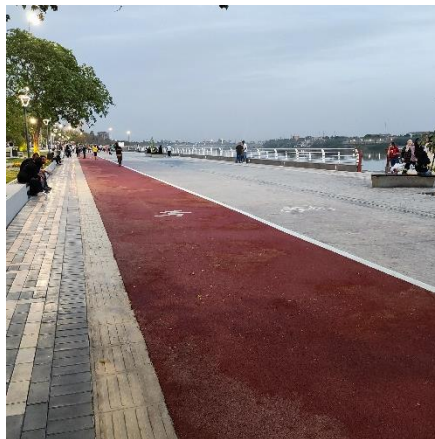

Fig. 8: Abu-Nuwas after Redevelopment
Source: Author

The objectives of the project are as follows.
1. To redevelop the neglected land of the river's edge through the construction of the Abu-Nuwas River's edge in Baghdad City.
2. To add activities to promote recreation, culture, social interaction, and fun. The integration of users is sought through activities that define four areas that highlight and enhance a space with a contemporary design creating a friendly space for each activity.
- To provide seating areas.
- To create a plaza (a central square to host celebrations).
- To increase vegetation by planting more perennial trees.
- To construct a 2.5 km river walkway with seating areas.
- To create a path for bicycles and a track for jogging.
- To complete cleaning and rehabilitation of the river bank.
- To establish an integrated lighting system for the new river's edge and the gardens.
- To rehabilitate and develop the car parks.
- To secure children's play area with play components.

Fig. 9: Clear paths inside the garden allows for full visibility of the surrounding space
Source: Author

Fig. :10 Rest area inside the garden allows for full visibility of the surrounding spaces
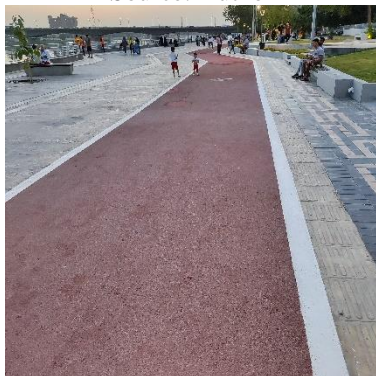Source: Author

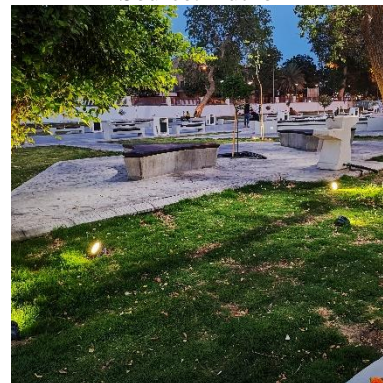**Fig. 11:** Walkway width 3000mm
Source: Author

Fig. 12: Seating and rest area with bench height 440 mm
Source: Author

3. To provide visibility for safety: The Abu-Nuwas is designed in such a way that any standing point inside the park allows for full visibility of the surrounding space as shown in the Figs. 9 and10. In addition, lighting was designed to fully illuminate the open space at night as shown in the Figs. 11 and 12

Fig. 13: Secondary entrance with ramp without tactile surface or construct warning strip
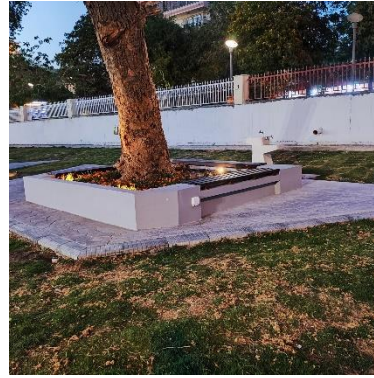Source: Author

Fig. 14: An automatic irrigation system has been installed to provide watering to the green areas
Source: Author.

4. To use the code of building requirements for disability and the principle of universal design for the design of the built elements for the landscape features. For example, the pedestrian ramp into secondary entrances of the garden Fig. 13, has the tactile walking surface indicators as shown in Fig. 9. Visual contrast for different elements in size and color, and handrails have all been installed.
5. To enhance environmental sustainability: trees have been planted in green areas to increase vegetation. An automatic irrigation system has been installed to provide watering to the green areas of the garden with minimal use of water as shown in the Fig.14.
6. To promote the concept of participation supporting the community needs in the process of rehabilitation of the gardens and waterfront. Since the beginning of the process, it was suggested that the waterfront should be inclusive to all people and that a program should be established considering the different community needs in one space.

The project has achieved the following outcomes:
1. Awareness was raised among different stakeholders that making inclusive spaces is in the best interest of everyone.
2. Spending money on accessibility features benefitted different users, and that this experience may inspire others in future projects to be inclusive. The urban and landscape designers became familiar with the universal design principles and gained knowledge of the local products and materials available for accessibility features.

Deficiencies and Persistent Challenges Identified
1. Tactile-visual maps were not used for orientation or guidelines and signs inside the park.
2. The walkway surface tactile indicator has not been used in the TOP landing and bottom landing of the ramps as shown in the Fig. 13, or near the steps. The treads and risers should be in different colors. The non-slippery border should be put on the end of the tread with 2.5 cm width. The coating material must be plane with the surface of the tread in order to prevent tripping for warning disabled people with visual disabilities as shown in the Fig.15.
3. There are two different levels in the river's edge in many cases. Thus, a ramp should be used. However, the existing structures are difficult to be used by wheelchairs (Fig. 15).

Fig. 15: There is no tactile surface to warning visually disabled people about the step, or a ramp to make connections between the different levels.
Source: Author

4. The Draining channel should be covered by a grating to keep the disabled people safe. The grating cover used in the plant should be designed according to the standard to ensure that the grater opening does not allow passage of an object that has a diameter greater than 13 mm (Fig.16)
5. The ramp to WC. must be indicated with a contrast strip line at the beginning of the ramp and the end and the indicator surface must be on the top and bottom landings of the ramp (Fig. 17).
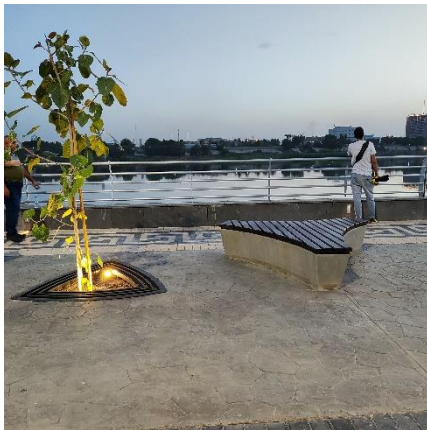

Fig. 16: Grating covering the plant with openings more than 13 mm
Source: Author

Fig. 17: The ramp to the WC.
Source: Author

Findings

Analyzing the code of development and the case study related to the main requirements in the Iraqi code of building requirement, involves a comparison of 3 spaces: entrances, routes inside the park and accessible services, as shown in the Table 2.

Regarding the local standard, some of the described types of spaces were considered covered in the building requirements for the disabled people code of Iraq, which are: parking, handrail, external lift, equipment, controls and switches, intercoms and telephones, public toilet room, surface finishes, signage-audible, tactile and visual. While other types of space were partially covered with missing information or not having specific details. They are: approaching and entering, drop-off & pick-up areas, bus stops/ accessible vans, walkways and paths, ground and hanging obstacles and ramps, kerbs, protection along paths and ramps, stairs, drainage, drinking fountains, waste disposals and containers, street furnishing such as seating in waiting areas and outdoor spaces.

Table 2: Iraq code of building requirements for the disabled people and the case study of Abu Nuwas
Source: Authors

		Code of Building Requirements	Source: Author. **Abu Nuwas Gardens**
Approach to Urban spaces and building	**Accessible route to main entrance**	-	Accessible main rout not valid without stairs or ramp
	Bus stop/ accessible vans	Areas must not be less than (620 mm) from the floor of the street in which the means of transport stands	accessible buses not valid
	Drop-Off & Pick-Up Areas	The Path/ walkway width leading to the boarding not be less than 1200 mm, with handrail minimum height 800-900 mm	accessible drop-off points not valid
	Parking	Provide accessible parking spaces in all public car garages and in suitable places near the main entrances and exits. Dimensions not less than (2400-4800 mm). In addition, provide a side passage with a width of (1200 mm) to the parking spaces. In addition, area passage with a width of 1200 mm for cars with a rear lowering.	not valid accessible parking
	Stair	Stair with minimum with 900 mm , Trade width 300 mm minimum and maximum riser 150 mm, A handrail should be at height 840-900 mm	stairs (Main Entrance)
	Ramps	Ramp is 1:12 with minimum width 1500 mm	Secondary Entrance
Accessibility inside the park	**Accessible walkway**	Walkway width must not be less than (920 mm) for the passage of one chair, and not less than (1800) for the passage of two chairs or a chair and a baby carriage at the same time. With slop not exceed 1:20	Min width 700 mm; Max. Slope 2%-3%. A solid, stable and slip-resistant surface. Some kinetic tracks use polished stone, concrete, or rubber surfaces
	Accessible steps	-	Step with 16 mm height of risers help PWDs to interact safely, also there are ramps beside the steps
	Accessible Toilets	Separate public toilets for both sexes, with an accessible toilet with dimensions of 1500 mm x 1750 mm, with an accessible washbasin installed at a height of 800-840 mm	There are two sets of public toilets, divided into 3 men's and 3 women's toilets, and 1 out of 3 is an accessible toile for PWDs.
	Accessible Elements	Resting areas include a long seat or any of the fixed seats with a flat, firm and solid surface, the dimensions of which are not less than (900 mm) wide and (1500 mm) deep so that the wheelchair can move directly near one of the sides of the seat. Fixed seats include a seating surface with a minimum width of (1100 mm) and a minimum depth of 500-600 mm.	The seating areas are all at a height of 440 mm, and they are suitable for all PWDs, separated from other elements such as water drinking and opining for garbage containers, as they are all easily accessible.
	Inclusive playground	-	The playground is not accessible for PWDs
	Way finding	Adding tactile surface guidance surfaces at the kerbs ramp and the landing of stairs and stairs	The tactile surface was not considered according the requirement Way finding sign was also not valid

However, some disciplines were not at all covered by the building requirements for disabled people code of Iraq. They involved the stepped path and stair, boardwalk – waterfront, crosswalk, wayfinding, guided path and other physical information, stramp, card and vending machines, balconies, terraces, children's play areas, boat launch and fixed dock facility and eating and picnic area.

Throughout the study, it was noticed that accessibility is treated as a rubber band saying that building or development are accessible, as most of the components are accessible but stand alone. Moreover, the playground area, ramps and stair between the deferent level of garden was not all within the specifications.

As a general summary of the results of design for all, the findings show that the local standards related to people with special needs in Iraq did not cover all the public urban spaces. As for the case study, the findings show that some spaces were designed within local standards such as motor paths and pedestrian paths, but the slopes were designed partially within the standards. Spatial guidance signals are absent in all parts of the garden, or despite their status, they did not conform to the technical specifications.

Recommendations

Given this, the paper recommends the instruction of building requirements for the disabled people's code as per the findings of this study:

A stronger more defined accessibility codes and requirement must be developed based on a defined universal standard and ISO 2021 specific as shown in the table 3. This should be mandatory as a part of the building permit process for urban development.

Table 3. Iraq code of building requirements for disabled people
Source: Author

		Code Development
Accessible Entrance	**Accessible rout to main entrance**	Provide safe and unobstructed access to the entrances to public and private spaces, it is preferable to enter without stairs.
		Provide a corridor or entry area to buildings and entrances to public spaces so that the area is separate from the corridor or road designated for pedestrians and urban furniture corridors, and that it is not less than 1500 mm to allow maneuvering or 18.
	Drop-Off & Pick-Up Areas	Passenger drop-off area and vehicle drop-off areas must be at least 9000 mm long, 3000 mm wide and serviced by a ramp.
	stair	Stair clear width without handrail should be not less than 1500 mm. The maximum height of riser should be 180 mm. However, the riser 160 mm is recommended. Tactile warning should be installed in the down-top landing along with the width of stairs and minimum width from 600 with depth from the end to step 300-500 maximum.
	Ramps	Ramp not less than 1:20 or 5% with maximum length 10000 mm and maximum 1:12 or 8% with maximum length 2260 mm The ramp with slop 1:16 or 6.25% with maximum length 6000 is recommended The width of the ramp landing 2200 mm to allow the largest size of assistive devices for people with mobility needs , and not less than 1700 mm The top and bottom of the ramp landing provide with the warning surface tactile an contrast step warning installed in the beginning and the end of the ramp
Accessibility inside	**Accessible walkway**	Walk way width minimum 1200 mm for one way and 2200 mm for two (recommended because the Iraq disabled people are preferred using the scoter aide type)
		Avoid using draining or groove in case using it the maximum with 150 mm and depth 50 mm maximum the slop of walkway from 2%-4% maximum- In the event that the ramp slope ratio is 5%, it is undergo to the ramp design standards

Accessible Elements	In the case of using seating in public spaces, its height should be between 400-480 mm, taking into account the provision of space next to the seat for at least one person using a wheelchair or scooter for people with special needs, with a width of 1000 mm and a depth of 1390 mm	
	Install bike parking on one side of the signal road or movement lanes and be outside the bike parking area outside the net pedestrian area so as not to hinder the movement of users.	
	Use contrasting colors with the surroundings to alert disabled people.	
	Provision of a one-way lane for amateurs with minimum width 1500 mm.	
Inclusive playground	Providing an accessible path to the playground area with minimum width 1800 mm allowing passage of two wheelchair users.	
	Ensure that the maximum slope of an accessible road connecting play components at ground level within the boundaries of the play space is 1:16 (6.25%).	
	Ensure the playground area is linked with the paths/ walkway and passages surrounding the playground area.	
	Floor cladding: Types of materials that can be used to cover floors could be sawdust - also known as wood fibers or sawdust, which are pressed to obtain firm, stable and safe floors for children, rubber tiles, wood chips, also known as engineering wood fibers, molded rubber floors in the form of Granules of rubber are poured on site, as they are considered impractical due to their high material cost and natural grass floors.	
	It is preferable that the floor of the playing area be at one level with its surroundings In the event that the floor of the playing area is on a platform higher than the level of the perimeter, protection edges of not less than 150 mm in height must be added, or tactile warning surfaces must be added with a width of 600-900 mm and a depth of 300-500 mm from the edge of the platform Color contrast tape is used at the edges of the play area, 50 mm, or plastic edges of 4 inches in height, to protect children from injuries and reduce shocks. Using ramps with a slope ratio of no more than 1:16	
	Play components for disabled people: Provide 50% of the games containing transport systems, ramps, stairs and platforms. Inclusive games should contain platforms to accommodate the size of one chair or scooter of not less than 1,500 mm in length and 1,000 mm in width to accommodate the largest size of chairs for PWDs. The games shall be in contrasting colors with the perimeter of the area designated for the games.	
Way finding	Tactile warning surfaces must be used at building entrances, as well as when there are stairs and ramps.	
	Indicator tactile surface should be provided in the center of walkway.	

Moreover, it should require architects and urban planners to adopt design standards for people with special needs to design urban spaces. Finally, all urban spaces that are being developed be subject to quality control within the technical specifications before receiving approval for them from the executive construction.

Finally, Governments should make "Design for all" as a law that sets out a process for developing and enforcing accessibility standards in urban development and supporting specialized architects in empowering city design with the participation of disabled people work together with the government to develop the standards and cities.

Conclusions

The study concludes that the local standards did not meet only the minimum standards for the urban spaces standard design, as most of the requirements included were general observations or non-specific criteria referred to. The Code of Building Requirements for Persons with Disabilities is not sufficient and is treated as an additional feature rather than a

mandatory regulation, at the same time the city spaces aim to be more empowering for disabled people and to have the same level of access to infrastructure as anyone.

The local standards not only serve to empower disabled people, but also represents the achievement of the goals of Iraqi law for the purpose of eliminating all forms of discrimination due to disability or special need, respecting disability, and accepting disability as part of human diversity and human nature. It ensures equal rights for them under the provisions of Iraqi law, as the government agencies (including the Mayoralty of Baghdad) and the Iraqi law for disabled people have focused on the importance of providing care by providing comprehensive services for disabled people and to help those people and empowering them within the urban and social environment through social interaction - integration - public participation - social protection - security and safety in transportation.

On the other hand, the local standards for empowering disabled people within a city's spaces can provide technical solutions and political decisions that will make it easier for those with disabilities to access services, transportation, and other amenities. This approach helps create an inclusive environment where those with disabilities are not treated as second-class citizens by allowing for greater participation in the local economy and providing support.

Finally, the study proposed a set of recommendations for the development of the local norm and developing this approach as a central goal of disabled people accessing not only physical spaces but above all facilitating the recognition of rights, economic participation, education, cultural integration and employment.

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