Designing Inclusive and Sustainable Cities: an urban future for All

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Abstract
Social inclusion, sustainability and the management of urban spaces are central themes in modern urban development policies, in a global context marked by increasingly complex economic, environmental and social challenges. With the process of urbanization, cities face the delicate task of ensuring equal opportunities for all citizens, without discrimination based on socio-economic, cultural or physical factors. Social inclusion, in this context, becomes essential to avoid the risk of marginalization of specific social groups, such as people with disabilities or the most vulnerable sections of the population. The aim of the article is to highlight the close connection between social inclusion and sustainability and how these two aspects can reinforce each other in achieving the Sustainable Development Goals.

Key words: Social inclusion, sustainability, disability, tactical urbanism, design, community

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Introduction

Designing inclusive and sustainable cities is a complex challenge, but one that is fundamental to building a more just and livable society. In a world facing rapid social, economic and environmental transformations, urban design must evolve to meet the new needs of people and urban settings. Cities, now home to more than half of the world's population, are the centers of social, economic, and cultural interaction, but also places where

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inequality, physical barriers, and social exclusions may be most evident (Chen et al., 2022). In this scenario, inclusiveness and sustainability become two indispensable pillars for urbanization that is not only functional but also equitable and environmentally friendly. Urban inclusiveness implies that every individual, regardless of his or her physical, mental, sensory or economic condition, has access to the same rights and opportunities in urban life. This means that the city must be designed to break down physical and social barriers, providing opportunities for all its inhabitants to actively participate in social, economic and cultural life (Kohon, 2018).

An inclusiveness that is not limited to mobility or accessibility, but also embraces political participation, access to health, education and services, as well as the opportunity to live and work in an environment that promotes the mental and physical well-being of all citizens. Integrating the concepts of inclusiveness and sustainability is, therefore, the key to designing cities that are able to respond to the social, economic and environmental challenges of our time. The evolution of sustainable cities from the perspective of inclusiveness represents a challenge and an extraordinary opportunity to transform the way we conceive of the urban environment (Carnemolla et al., 2021; Mirzoev et al., 2022). Traditionally, urban development has focused primarily on economic and infrastructural aspects, often neglecting social inequalities and the needs of vulnerable communities.

However, in recent decades, growing awareness of social, economic and environmental problems has led to the emergence of a new model of cities, where sustainability and inclusiveness are seen as two sides of the same coin. Today's sustainable cities must respond not only to the need to reduce environmental impact and improve quality of life, but also ensure that the benefits of these improvements are distributed equitably among all social groups. A key aspect of this evolution concerns the conception of urban space as a common good, accessible to all. To succeed in building inclusive and sustainable cities requires a radical change not only in urban design, but above all, in the educational system so that it can educate for a healthy relationship with the environment and with others. An integrated approach that combines inclusiveness, education, environmental sustainability, and intelligent design of urban spaces can help address the challenges of the present and anticipate future ones (Losasso, 2017).

In this context, integrated and holistic urban design that respects the principles of inclusiveness and sustainability is the only way forward to ensure that our cities are livable, resilient, and just for present and future generations. The aim of this article is to explore the link between disability, inclusiveness, and sustainability, highlighting how these three concepts are

interconnected and how they can be integrated into everyday policies and practices.

Disability and sustainable cities

The issue of disability in sustainable cities is a crucial aspect that reflects a community's commitment to building an inclusive, equitable, and accessible urban environment for all. Sustainable cities, to be truly sustainable, cannot be limited to managing natural resources or promoting sustainable mobility, but must also address the needs of all citizens, including people with disabilities, who make up a significant part of the population (Daszkiewicz, 2023). Integrating disability into urban design means adopting an approach that ensures equal opportunities and accessibility, removing physical, social, and cultural barriers that limit the participation of these people in city life (Di Palma & Tafuri, 2016). Several elements intervene and must be considered in a kind of circular relationship that can allow the creation of an urban model that aims to be inclusive for all (Fig. 1).

Fig. 1 - Inclusive circular model

Source: own elaboration.

- **Physical accessibility and mobility**

A sustainable city must first and foremost be accessible. Physical accessibility is one of the most obvious aspects when it comes to urban disability, and it involves all aspects that affect the use of public spaces, transportation, and buildings. Public facilities and transportation must be designed to ensure that people with disabilities can move freely and safely.

This means, for example, that handicap ramps and accessible elevators should be a norm, not an exception, and that public transportation services should be easily accessible to those with reduced mobility, through buses, streetcars, and trains with dedicated and accessible spaces.

- **Technology and innovation**

Assistive technologies are another key tool for ensuring inclusion in sustainable cities. From home automation that makes homes more accessible to those with mobility disabilities, to mobile applications that provide information on accessible routes or the accessibility conditions of public transportation and buildings, technology can make cities more inclusive.

- **Social inclusion and participation**

Participatory democracy is an essential element of an inclusive city, enabling all people, including those with disabilities, to be heard and to help create an environment that meets the needs of all. Sustainable cities must also provide opportunities for social and cultural participation, ensuring that people with disabilities have access to cultural, sporting and recreational events. This means designing public spaces and facilities that enable everyone to participate in and enjoy the social life of the city without barriers.

- **Inclusive housing and housing policies**

Another crucial issue concerns housing accessibility. Housing must be designed so that it is suitable for the needs of people with disabilities, without creating a separation between “normal” homes and homes for people with disabilities.

- **Inclusive cities and social justice**

Designing sustainable cities from a disability perspective is not only about taking technical or infrastructural measures, but also about recognizing the right to inclusion as a fundamental part of human rights. An inclusive city is one that not only welcomes people with disabilities, but does everything to ensure that every person can enjoy civil, social and cultural rights without discrimination.

Only through planning that considers the needs of people with disabilities and ensures universal access to urban goods, services and opportunities can cities become truly sustainable and just places where every citizen has an equal opportunity to live, grow and participate.

Tactical urbanism, disability and sustainability

Tactical urbanism is an innovative and dynamic response to the challenges of disability in urban settings, offering temporary but highly effective solutions that can immediately improve the accessibility of public spaces. It involves rapid and low-cost interventions that aim to transform city spaces through simple but meaningful modifications (Bazzu P., 2019). Unlike traditional urban planning, which often requires years of study and implementation, tactical urbanism allows for the testing of temporary and adaptable solutions that can quickly respond to the daily needs of citizens with disabilities. These interventions not only improve physical accessibility, but also create greater collective awareness about the importance of an inclusive city (Cabe, 2006; Marcus & Colding, 2014). The changes introduced, although often temporary, can be used as experiments that, if they prove to be effective, can later be integrated into long-term urban planning projects. In this sense, tactical urbanism not only responds to an urgent need for accessibility, but also becomes a catalyst for broader reflection on urban policies, pushing administrations and citizens to consider disability as a condition that affects all of society and not just a part of it.

Tactical urbanism, in addition to fostering accessibility for people with disabilities, also aligns with the principles of sustainability, creating urban spaces that are more inclusive, but also ecologically responsible and economically beneficial (Dempsey & Burton, 2012). Indeed, tactical urbanism interventions are usually temporary, low-cost, and low environmental impact, but they have the potential to generate lasting changes in the way we think about and design cities. Adopting simple solutions, such as converting parking lots to pedestrian areas, installing accessible benches, or creating temporary urban gardens, not only improves the quality of life for people with disabilities, but also promotes environmental sustainability by reducing soil sealing, improving air quality, and increasing urban biodiversity. In addition, tactical urbanism interventions often promote sustainable mobility, encouraging the use of bicycles and public transportation, and limiting the use of private cars (Monno & Sibley, 2015). For example, creating safe and accessible bicycle lanes, as well as protected pedestrian zones, not only makes the city more usable for people with disabilities, but also reduces air and noise pollution, promoting a healthier lifestyle that is less dependent on private vehicle use. In this way, tactical urbanism contributes to smarter management of urban space, which integrates accessibility and sustainability in a complementary way. Social sustainability is another key aspect of tactical urbanism, which results in

improved integration of people with disabilities into daily life in the city (Haarstad, 2015).

Public spaces designed with an eye toward accessibility are more livable and safer for all, reducing isolation and promoting social cohesion (Eukn, 2014). The inclusion of people with disabilities in social and economic dynamics thus becomes a central element in the creation of sustainable cities that are not only concerned with the environment, but also with the well-being and participation of all citizens (Milani & Raimondo, 2017). Tactical urbanism, in this sense, becomes a tool for building more resilient communities, capable of addressing the challenges of climate change and social inequality through practical, collaborative, and sustainable solutions.

Can tactical urbanism improve the situation of disabled people?

Tactical urbanism, as noted above, offers numerous examples of how accessibility for people with disabilities can be improved quickly, cheaply, and effectively (McLaren & Agyeman, 2018; Liu & Plail, 2024). These interventions, although often temporary, can have a significant impact on people's daily lives, transforming urban spaces into more inclusive and functional environments.

Here are some examples of tactical urbanism applied to disability:

1. **Creation of temporary sidewalks and ramps**: Tactical urbanism interventions can involve the rapid installation of mobile ramps or the modification of the pavement in order to ensure a smooth and easily walkable surface. These interventions can be done with inexpensive materials, such as non-slip rubber strips or mobile platforms, which improve the mobility of people in wheelchairs or with other mobility difficulties.
2. **Temporary and accessible parking spaces for the disabled**: During public events or in high-traffic areas, it is possible to temporarily transform parking spaces into areas reserved for people with disabilities, ensuring immediate accessibility. In addition, larger and more well-marked parking spaces can be adopted, with a design that provides for the minimum distance necessary to allow easy and safe mobility.
3. **Safe and secure pedestrian areas:** Tactical urbanism can include the creation of temporary pedestrian zones or areas protected by traffic barriers, improving safety and accessibility for people with visual or motor impairments. For example, installing temporary traffic separators

or protective barriers can create safe walking spaces, reducing the risk of accidents and making the city more welcoming.

4. **Accessible bike lanes and paths:** Cycle paths can be designed to ensure access for people with motor disabilities, creating paths on smooth pavements free of obstacles. In addition, installing tactile or audible signs along these routes can help people with visual impairments find their way around the city better while promoting sustainable mobility.
5. **Visual and tactile signage systems:** Tactical urbanism can include the installation of tactile and visual cues to orient people with sensory disabilities. For example, tactile strips on sidewalks to help blind or visually impaired people find their way around, or the installation of light signals that indicate safe pedestrian crossings. These interventions, which can be easily implemented, can make urban spaces much safer and easier to navigate for people with sensory disabilities.
6. **Temporary public spaces for social inclusion:** Tactical urbanism interventions can include the creation of accessible temporary public spaces where people with disabilities can meet, socialize, and participate in events. These spaces can be furnished with accessible benches, ramps and paths that allow people with mobility difficulties to move freely and participate fully in the social life of the city. In addition, the creation of temporary green areas or urban gardens can help improve the quality of the urban environment for all citizens, promoting inclusivity and sustainability.
7. **Temporary adaptation of public transportation stops:** Bus and metro stops can be adapted with quick interventions, such as adding inclined planes to improve accessibility or installing sound signals for people with visual impairments. These interventions aim to ensure that people with disabilities can access public transport more easily and safely.

In Italy, several projects attributable to tactical urbanism integrate the needs of people with disabilities with the goal of creating sustainable cities. Here are some significant examples (Tab. 1).

Tab. 1 - Italian projects for sustainability and inclusion

IRMA project in Pavia	**Oasi Rossi in Santorso (Vicenza)**	**Sustainable mobility initiatives in Bologna**	**"Accessible cities" project in Milan**
As part of the Horizon 2020 program, the University of Pavia and the City developed IRMA (Integrated Real-time Mobility Assistant), a free Android and Internet application. IRMA optimizes intermodal transportation routes by providing real-time information on traffic, weather, road conditions, and public transportation availability. The app includes interactive maps and multilingual support, with Braille extensions and adapted interfaces for the elderly and people with disabilities, promoting more sustainable and accessible urban mobility.	Oasi Rossi is a historic park managed by the non-profit Nuovi Orizzonti Social Cooperative, which promotes inclusivity through various initiatives. In 2016, an inclusive play area was inaugurated, designed to be accessible to all children, regardless of their abilities. The games, made from PEFC-certified local wood, include slides, swings with baskets, and child-sized tables. This project promotes social inclusion and accessibility, contributing to a more cohesive and sustainable community.	Bologna has implemented several solutions to improve accessibility and urban sustainability. For example, low-impact buses with wheelchair ramps have been introduced, and pedestrian paths with tactile paving have been created for people who are blind or visually impaired. These interventions improve the quality of life for residents and visitors, promoting greener and more inclusive mobility.	Milan has launched the "Accessible Cities" program with the aim of eliminating architectural barriers and improving accessibility of public transportation. Interventions such as the installation of elevators and ramps in subway stations, and the creation of safe and well-marked pedestrian paths have been carried out. These efforts contribute to a more inclusive city that is attentive to the needs of all citizens.

Source: own elaboration.

Participation policies and educational practices

The role of local communities in improving the urban environment is crucial, as the people who live in a given area on a daily basis are the most

aware of the issues and potential of their environment (Ives et al., 2018). Indeed, local communities are not only custodians of the social, cultural, and natural heritage of their cities, but they are also the key players in the transformation process that aims to make the urban environment more livable, sustainable, and inclusive (Tanrikul, 2023; Tuner, Henryks, & Pearson, 2011). Communities can contribute to improving the urban environment in various ways, starting with the management and care of public spaces. These spaces not only provide places for recreation and socialization, but also serve an important ecological function by improving air quality, promoting biodiversity, and helping to reduce the heat island effect. In addition, local communities are key in promoting sustainability practices, such as recycling, waste reduction, and the use of renewable energy, which can have a positive impact on the urban environment globally (Amin & Thrift, 2005). Another key aspect is the ability of communities to raise awareness and educate citizens about the importance of ecologically responsible behaviors through awareness campaigns, events, and educational activities that promote sustainable lifestyles and specific sports activities (Greco et al., 2019; Cataldi et al., 2019; Scamardella et al., 2020). The active participation of communities in improving the urban environment is not only limited to the ecological sphere, but also extends to creating safe and inclusive public spaces, promoting local culture and traditions, and building networks of solidarity and cooperation that strengthen social bonds (Borgogni, 2020). When communities are involved in the design and management of their spaces, greater responsibility and care for the environment is felt, creating a virtuous circle that not only physically improves the city, but also makes it more cohesive, resilient and dynamic. In this awareness-raising scenario, schools represent the ideal place for the formation of individuals educated in sustainable culture (Anderson, 2014). The role of the school in educational and sustainable environmental practices for people with disabilities is crucial, as it represents one of the main spaces where new generations can be trained and made aware of the importance of sustainability, adapting it to the specific needs of individuals (Borgogni & Di Gennaro, 2016). Indeed, school is not only a place of theoretical learning, but can become a laboratory of practical experiences in which people with intellectual and relational disabilities learn to live more consciously and actively about caring for the environment (Healey, 2010; Hestness et al., 2016). By adopting an inclusive approach that takes into account different cognitive, motor, and sensory abilities, schools can design targeted activities that allow each student to participate according to his or her abilities (Li & Monroe, 2019; Buissink-Smith et al., 2011). For example, involving students in school gardening projects, recycling and material recovery activities, or

running small environmental sustainability projects stimulates a sense of responsibility and active participation. These practices not only contribute to the formation of ecological awareness, but also to the self-sufficiency and self-esteem of students with disabilities, fostering social integration and the building of positive relationships within the school community (Galli Laforest, 2017; Kytta, 2018). In addition, the school also has the opportunity to raise awareness among families and communities, promoting cultural change that embraces the principles of environmental sustainability and inclusion, creating a learning environment that is truly inclusive. In this context, the school becomes an agent of change, a place where sustainability is not just a theoretical issue, but a daily practice that involves every aspect of school life and is fundamental to the autonomy and dignity of people with disabilities.

Conclusions

Sustainable cities must be thought of as places of co-creation where citizens, especially those from more disadvantaged groups, can actively participate in the planning of their urban spaces. In this way, cities can become engines of change, where environmental sustainability translates into social and economic benefits for the whole community. Moreover, it is crucial that cities of the future be resilient not only to extreme events, but also to social inequalities and the sensitive issue of disability. An inclusive city must be able to respond effectively to emergencies, protecting vulnerable people and ensuring that every citizen can access vital services in a crisis, such as during times of pandemic or following natural disasters.

Thus, urban resilience also involves building a social safety net that supports the most vulnerable, enabling them to cope with times of hardship without being excluded from basic resources. In sum, the evolution of sustainable cities with a view to inclusion represents a radical and necessary transformation that must address and overcome historical, environmental and economic inequalities.

The cities of the future must be designed to be more equitable, greener, more resilient, and more participatory, where every person, regardless of their economic, social, or physical circumstances, can enjoy equal opportunities. Inclusion is not only a matter of social justice; it is also a key element in achieving lasting sustainability that protects the environment and improves the quality of life for all.

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