

Urban Resilience as a Mitigating Mechanism of Urban Change: Insights from Two Case Studies

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Abstract

Urban change is inevitable and happens in cities and urban centers. Their land use is continuously modernized because of economic, social, political and demographic factors. However, urban resilience can provide opportunities for social interactions and plays a key role in the development of urban spaces and access to high-quality urban spaces. The link between the urban and regional aspects and social, economic, cultural, and political systems is that their characteristics are interconnected with those of urban resilience, and outer urban space can play a role in resilience through its ability to reconstruct a balanced environmental state after human intervention. Thus, urban resilience is one of the most appropriate ways to control the processes of urban change and absorb its consequences.

This research examines urban resilience and its role in urban change. Its aim is to study urban resilience and its positive role in urban change, which affects the organization of a city and the lives of the people. The research is based on the premise that urban resilience has a positive and effective role in achieving a balance between continuity and change in space by dispensing some functions and replacing them with others. It examines how urban resilience can help improve the efficiency of urban space and meet the changing needs and desires of residents without significantly changing the urban fabric. The research also examines the external and internal factors that affect the city and strategies for urban resilience and improving urban space.

It employs a descriptive and analytical method to review and discuss urban change and urban resilience and deduce the most important indicators. It then applies these indicators of urban resilience to two case studies: the Tempelhof Airport in Berlin and the Ataturk Airport in Istanbul.

The research substantiated the premise that urban resilience has a positive and effective role in balancing continuity and change in space by dispensing one function and replacing it with another.

Keywords: Urban resilience, Urban change, Tempelhof Airport, Ataturk Airport.

Introduction

A master plan produced to guide a development is a dynamic scheme that changes with the economic, social and technological aspects and the change of human behavior. Urban

change is an urban phenomenon to which all the urban systems are continuously exposed to, due to external and internal factors. It appears through the manifestations of urban growth of the elements of the systems and their relations, as it is considered a basic concept of continuity and survival.

This research thus problematizes that urban land uses are generally determined by development plans and designs which are subject to change in most cities. Change in the pattern of urban land uses is one of the most important phenomena in the city, and this stems from the fact that land uses are in constant development.

In this context, this research aims to study urban resilience and its positive role in urban change to discover the relationship of urban change with urban flexibility in cities. It examines their role in raising their urban efficiency to be places capable of accommodating the changing needs and desires of the population without significant changes in the urban fabric. Flexible elements have the ability to combine different functions and uses to be available for various environmental and spatial options without major disruptions in the structure of this space to balance continuity and change in space by dispensing with one function and replacing it with another function.

The research is based on the premise that urban resilience has a positive and effective role in achieving a balance between continuity and change in space by dispensing one function and replacing it with another.

Its objectives are:

To construct a theoretical understanding of the notions of flexibility, resilience and urban change.

To locate evidence to show that urban resilience has a positive role in urban change, which affects the organization of a city and the lives of its residents.

The Theoretical Framework

Urban change

To understand urban change, it is necessary to define the concept of change in general. "Change" is the transition from one state to another, which is a constant feature in the universe. Everything is subject to change, and is considered the main reason for the formation of relationships", as stillness does not create a relationship of change and relationships change to correspond to the stage of change, its conditions, variables, and requirements to resist collapse and deterioration. Stability on something is temporary and relative and the phenomenon remains true and real until you discover a phenomenon that rejects it, modifies it, changes it, or even reassembles it. Change occurs cumulatively. Its occurrence is relative and is estimated by following methods and advanced data collection tools from the reality. The changes that occur in the reality of urban communities, some of which are subject to natural laws have their stages and cycles, including what is subject to the laws of origin and development and the external influences of the surrounding environment and its variables.

Urban change derives its meaning from its continuous change to help the city to adapt development with the pattern of life. Cities are a product of several natural, social, demographic, technical, and economic variables that grow and flourish with the prosperity of their variables. The situation is reversed when their variables deteriorate. Urban structure is affected by the intellectual and ideological trends, interests, and various forces that push life. A city periodically or continuously reveals positive or negative changes.

Urban change can be defined as the degree of transformation in the characteristics of cities between two or more periods, whether the transformation is positive 'cohesion and advancement' or negative 'collapse', or 'deterioration and decay', which is thus different from the concept of urbanization. It expresses the concepts of the people by moving the inhabitants of villages to cities and may take some characteristics from them. It also differs from the concept of urban growth, which is concerned with the urban expansion of cities, as well as urban development because it includes all the dynamics and factors of administrative, social, economic and physical change (Ghazanfar and Suzan, 2014). Urban change processes are the

mechanism through which the growth and interaction of cities continue, which is reflected in their general form (Ahmed and Mustafa, 1995)

Many concepts are related to urban change, which constitutes a synonym for this concept, the most prominent of which are:

- **Land use change:** It is the result of direct and indirect human actions to obtain useful and essential resources. Population growth is considered as the most active driver of land use changes (Dale et al. 2000). Functional change is a transformation and change in one of the aspects of land uses in a way that violates what is planned in the master plan and leaves uncalculated effects that affect the population and may create conditions that are not compatible with the prevalent quality of life.
- **Overreach:** It is the change in the patterns of urban land use through the seizure of publicly-owned land by citizens or state institutions and its exploitation without the right or with official approval or legal justification contrary to what was stated in the master plan
- **Transformation:** Urban transformation is one of the most important concepts that put the urban context, which affects the shape of the city, its nature, features, and pattern of uses. This is a concept close to urban functional change, and urban transformation takes several patterns (Fadel and Shaimaa, 2019).

Causes of Urban Change and Changing Patterns of Land Use

Use of land is an outcome of social and economic relations within a city reflected in the form of events and activities. If these relations change, there will be a need to change these activities and events. They change the patterns of land use, and that functional changes and change patterns of land uses is a natural process. This is because the master plan is a dynamic scheme that changes with the change of economic, social and technological aspects and the change of human behavior. These changes may be random that affect human comfort and activities. They may be a planned changes aimed at achieving well-being This stems from the role of the state in controlling the distribution and planning of land uses by preventing abuses and preventing property owners from changing land uses according to their desires and preferences to obtain profits (Obaid and Jinan, 2013). Cities and urban centers are subject to continuous change in land use patterns as a result of the new requirements generated by economic, social, political and demographic factors and variables for city dwellers, in order to keep pace with the new developments.

These factors and variables interact with each other depending on the change in the morphological and architectural appearance of cities. This affects the patterns of urban land uses in cities and their internal compositions as well as the change of the classes or patterns of urban functions (Abdali and Hassan, 2021). Cities are subject to a constant change in land use patterns for natural, social, economic, administrative, technological, and intellectual or ideological trends.

The Concept of Flexibility

It is the ease of changing something to suit new circumstances (Oxford English Dictionary, 2016). The word 'flexible' means something that can be shaped and adapted to the will of Man and to what he serves. Clay is elastic and therefore is flexible in terms of making forms. Similarly, wax is also elastic and is flexible. Flexibility as a general concept is the 'possibility of orderly change' that first starts from directed thought, then crystallizes into a characteristic in the perceived product or in the method of achieving it.

According to Manakhi and Bayan (2015), adaptability to any situation and environment indicates the true and precise meaning of flexibility. In terms of physical properties, it means elasticity, compression yield, and physical form reconstruction (Kaluza and Blecker, 2005). Elasticity refers to 'the strength of relationships in the system' (Barnett, 2001). The definition

of flexibility, in general, is the ability to bend, contrast, sensitivity to modifications, readiness, and ability to adapt to different purposes or conditions (Schneider and Till, 2005).

Flexibility of Urban Space

Urban space is defined as a physical space and social relations that determine the use of this space within the non-private sphere of cities (Brown, 2006). Urban public spaces play key roles in real city life, from socio-economic issues to cultural and environmental issues (Khodadad and Sanei, 2016). Places can provide opportunities for social interaction, socialization, and social inclusion, and can facilitate the development of communities. In landscape architecture and urban planning (Thompson, 2002), the social value of a public space is extensive and lies in the contribution it makes to people's connection to their area and opportunities to socialize with others, and to their memories of places (Dines et al., 2006).

The role of flexibility in the process of change in urban outer space is linked to what triggers the cycles of resilience. These are the stages that determine that change or transformation as flexible urban outdoor spaces which are characterized by being self-regulating, dynamic, and evolving (and retrospective) as well as being multi-scale, incremental and cumulative. They also have a multiplicity of social and environmental functions such as being adaptive, qualitative and recyclable, contributing to create ecologically flexible and multi-functional outdoor spaces (Verde, 2013). That is flexibility which has the main and pivotal role in developing urban spaces to reach a high-quality giving them clear personalities and possibility of reuse.

Urban Resilience and Adaptation to Change

Urban resilience involves a wide range of ways in which cities can absorb disruptions and adapt to change. Urban resilience studies tend to be divided between those that focus on a radical change in the form of sudden shocks such as earthquakes, hurricanes, or terrorist attacks (Coaffee, 2009).

Studies specializing in urban resilience typically seek to identify characteristics of urban systems that show the least 'vulnerability' to highlight lessons in 'how cities can survive future shocks and how planning is within contexts of current uncertainty and unpredictability'. Many of the propositions have focused on looking at the characteristics of the most gradual transformations that enable cities to maintain or (re)stabilize in the long term, to determine how cities are managed through a relationship between change and stability as a dynamic process. Change can create impacts across a variety of spatial scales and social organizations, and the impact can be at the level of neighborhoods, cities, regions, or regions of the world. Some often extend to several levels due to the existence of complex relationships and overlaps between them. There is a profound complexity in the connection of the urban and regional aspects with social, economic, cultural, and political systems that make their characteristics interconnected with those of urban resilience across different scales, where urban resilience unfolds in the context of complex and dynamic networks of interaction (Müller, 2010).

Urban spaces as spaces for daily life in cities must provide appropriate responses to such changes, and prepare for any exceptional extent as urban tools that support city resilience (Khodadad and Sanei, 2017). Barnett refers to flexibility as the continuity of relationships within the system.

In architecture and environmental design, the goal of resilience is to organize and change a man-made space to achieve new conditions, needs, and functions (Einifar, 2003). However, the ability of urban outer space to perform resilience is the ability of ecosystems of outer spaces to reconstruct in a balanced environmental state after human intervention. Therefore, resilience is the most appropriate way to control urban change processes and absorb the results of urban change.

Determinants of Urban Resilience

Bentley et al. (2003) determines the achievement of flexibility in urban spaces. He stressed the availability of three basic determinants, which can allow the provision of many options for the requirements of the needs of citizens, including accessibility, diversity, and

clarity, which are the preconceived factors that must be available to achieve a flexible urban space.

Permeability

Only places available to citizens give the right to choose people. Accessibility explains accessibility and reduces access barriers as much as possible and is the central factor in achieving flexible urban spaces.

Diversity

Mixed-use urban spaces are those that guide the proposed options and diverse events and also allow for the possibility of changing uses at the same time or over time.

Clarity

When users have the opportunity to take advantage of characteristics that provide quality, they will be able to realize the organization of the place and what is happening there. Clarity is the quality that helps to understand the components of urban space (Bentley et al., 2003). Baher (1999) confirms that these determinants are within the standards of urban design (Najm and Ghosoun, 2016). These determinants are social criteria and in addition to these determinants, it is necessary to refer to the elements of space and its characteristics that are undoubtedly necessary for the creation of flexible urban spaces.

Types of Resilience in Urban Space

Urban spaces emerge in urban contexts in different periods that sought to meet people's needs and expectations such as public squares, paths, mosques and markets. According to Pena and Parshall (2012), three types of flexibility can be found. This classification was adopted from the views of flexibility, which includes a multifunctional urban space, convertibility and scalability (Pena & Parshall, 2012) emphasize that these three types together can achieve flexibility in its full sense. None of the types can be replaced by the concept of flexibility alone.

Multifunctionality

Spaces that can be used for different purposes provide their users with more options than places that are designed only for one fixed use. Spaces that benefit from these capabilities are known for their quality as multifunctional. Multifunctionality or versatility of performance is an important feature of flexible urban spaces that seek to create different choices in the use of spaces. Flexible spaces can be used for several uses simultaneously and also for one performance at different times and in different places by people of different ages, races and cultures. The versatility of urban spaces is the most effective and essential way to increase the resilience of urban spaces (Bentley et al., 2003).

Convertibility

Convertibility in urban spaces occurs when these spaces can embed different offerings against changes and adapt to new conditions. The changes that occur in this type of space are created by spatial elements and occur without a change in the overall dimensions of urban spaces such as changes in properties, structure, micro-elements and mix of spaces.

Scalability

In the design of scalable urban spaces, the expansion feature attempts to consider external changes in urban spaces, causing them to expand according to performance, structure, and space, thus helping citizens get more choices. The expansion that occurs in an urban space can be achieved both horizontally and vertically (Ardeshiri et al., 2016). In defining urban social spaces, Jean-Gilles emphasizes the calling of space more than other features, and gives meaning to the city according to its attractiveness and the huge crowds that gather in public spaces and wherever they spend their time.

As Gehl (2011) says, an attractive urban space is a space where we can meet with our citizens face to face and experience directly with our senses. Lang (1987) describes social spaces as 'welcoming places', and believes that these spaces are environments that can improve

human experiences. Social spaces should have a human scope and be a platform for a variety of behaviors and activities, and it must have the ability to accept the desired behaviors of citizens. According to Lang (1987), social spaces, which are the source of daily life, are multi-purpose and flexible spaces that provide many activities and uses for users and provide coordination between the users (Lennard et al.,1993). In fact, the physical quality of urban spaces is the primary factor for the social revitalization of these spaces.

Urban spaces find their meaning with the presence of people and their activities, and more than their physical roles, they are important for creating social interactions between citizens (Gemzøe and Gehl, 2004). On a very general scale, emphasizing flexibility in the design of urban spaces, Ascher (2001) points out that the 'new urban' must be urban, flexible, aesthetically open, and reflective with active participation, preparing for organs capable of formulating and negotiating solutions that must not draw up specific plans.

The potential for diversity and change in public space makes people more involved. Flexible spaces with such changes are more efficient and dynamic than normally designed spaces and will directly affect society's motivation to create its existence.

Several functions can be influential in increasing spatial quality, collective satisfaction, people-to-people communication, and social interactions, the life span of the space, and a sense of vitality.

Therefore, one of the criteria for increasing social sustainability is the multifunctionality of space. Multiple design criteria must be taken into account to make spaces flexible. Flexible design of urban spaces can significantly impact the lifestyles of citizens and expand their social quality of life, by allowing the community to participate more in joint social activities and have more effective social connections and interactions.

As shown, resilience is one of the factors that can affect the quality of the physical environment and promote social benefits. Having people in a more resilient environment will increase social sustainability by increasing communications between people and social and cultural interactions. In today's societies where interactions between people are low, paying attention to resilience in the general can lead to more vitality in the area.

People want to stay in a place that meets his needs; therefore, it is possible to cause his presence in an environment by making him feel free to organize that place, according to his needs. Using the right solutions can help public spaces become more flexible and adaptable, and as a result, become more socially and architecturally attractive and sustainable (Sanei et al.,2018). Needless to say, as Friedman (1997) emphasizes, urban development plans should set out a clear development vision, that promote flexibility and resilience.

These demonstrate that resilience of urban spaces is an integral part of the resilience of the city. Resilient urban planning is based on three main aspects of prevention, response and finally post-disaster measures (Fallah, et al., 2014). In other words, in line with the same concept designing flexible public spaces for disaster resilience focuses on three main domains to the extraordinary events; emergency, response, recovery and mitigation (Jayakody, et al., 2016). Batty (2001) also allows single modular units to maintain functionalit ,thus achieving the flexibility of architecture and city network.

Walker and Salt (2006) put forward two other concepts of urban form flexibility that reinforce each other: the presence of social capital and feedback ,which are linked to enhance adaptive responses.

Tight feedback is associated with adaptability and self-regulation (Walker and Salt,2006). The use of flexible public spaces as a strategy for urban resilience in a city and to act as a second city during extraordinary events needs to be designed on the scale of the entire city. In other words, it is necessary to deal with flexible public spaces as a network and not as individual cases (Fuentes and Tastes, 2015;Allan and Bryant, 2010). The design process of these spaces needs to be through a participatory approach in which the society participates. The spatial urban intervention can provide a participatory approach that helps in providing a flexible dynamic public space that can easily be adapted to a variety of functions that contribute to the sustainability and resilience of the city. A flexible public space for urban resilience must be permeable.

This means more than just being accessible to the public, but to be available to public users in terms of giving them the rights of selection. Moreover, to be well-connected physically and functionally with its urban context (Fallah et al., 2014). When users can take advantage of that provide quality, they will be able to realize the organization of the place and what is happening there. Clarity is the quality that helps to understand the components of urban space. This type of space needs to be smartly designed to be easily adapted to new spatial arrangements during extraordinary events; for instance, the possibility to expand more open space during an emergency and to hold any unexpected use (Sanei et al., 2018).

Based on the theoretical framework, the research identified the key indicators of urban resilience, which are presented in Table 1.

Indicators of urban resilience			
	Indicators	authors	Description of indicators
1	Redundancy backup	(Fuentes and Tastes, 2015)	Use of flexible public spaces as a strategy for urban resilience in a city and to act as a second city during extraordinary events needs to be designed on the scale of the entire city. In other words, it is necessary to deal with flexible public spaces as a network and not as individual cases.
2	User Engagement	(Allan and Bryant, 2010)	The design process of these spaces needs to be through a participatory approach in which society participates.
3	Diversity	(Bentley et al.,2003)	Spaces that can be used for different purposes provide users with more options than places designed only for one fixed use. Spaces that benefit from these capabilities are known for their quality as multifunctional. Multifunctionality or versatility of performance is an important feature of flexible urban spaces that seek to create different choices in using spaces. Flexible spaces can be used for several uses simultaneously and also for one performance at different times and in different places by people of different ages, races, and cultures. The versatility of urban spaces is the most effective and essential way to increase the resilience of urban spaces
4	Permeability	(Fallah et al., 2014)	A flexible public space for urban resilience must be permeable. This means more than just being accessible to the public, but to be available to public users in terms of giving them the rights of selection; moreover to be well-connected physically and functionally with its urban context
5	Clarity	(Bentley et al., 2003)	When users can take advantage of the characteristics that provide quality, they will realize the organization of the place and what is happening there. Clarity is the quality that helps to understand the components of urban space.
6	Scalability	(Sanei et al., 2018)	This type of space needs to be smartly designed in order to be easily adapted to new spatial arrangements during extraordinary events; for instance, the possibility to expand more open spaces during an emergency and to hold any unexpected use.

Research Methods

The research examines the role of resilience in mitigating urban change. It is based on the premise that urban change can be mitigated by appropriate means. For this purpose, it employs a case study method. It investigates deep into two case studies that are similar in terms

of ideas and their difference in the mechanism of work. They are Tempelhof airport in Berlin and the Ataturk Airport in Istanbul. These case studies were selected on the basis of similarities and means of change.

Like many cities, Berlin has started to give attention to the need for urban resilience and sustainability in the context of specific locations such as the former airport of Tempelhof, which can contribute to both urban resilience and sustainability as a flexible public space. Flexibility, in this case, is generated as the parkland was designed as an open and accessible public space that hosts various functions and activities, meanwhile, the green open spaces areas that were left without any modifications have the capacity to respond and adapt to any extraordinary event, moreover, the community participation with the governmental authorities in the decision making represents collective management of the public green space which contributes to urban resilience by promoting citizens' capacity for learning and adaptation, and strengthen their interest and involvement in urban planning and decision making. The case clarified that minimal spatial intervention that promotes the conservation of green open spaces contributes to the enhancement of the recreation activities for the residents. It shows one way of contributing to urban resilience, meanwhile, it improves the well-being and health of the community in Berlin (. Indeed, the parkland of Tempelhof as an exceptionally vast flexible public space (with its large open public space of 909 acres) represents a good example of design through spatial intervention for urban resilience and sustainability.(The URBES project, 2014).

The second case study was chosen because the "People's Park" project is one of the largest parks and services projects in Turkey, with a total area of approximately 8.5 million square meters, and it is planned that 30% of it will be used for general air navigation purposes. And 9% of it will be areas used for military purposes, and the rest of the project land is 5.2 million square meters, which is scheduled to consist of recreational areas, in addition to a youth center, a museum, an exhibition city, and a residence area for visitors, in addition to a social center, and a meeting arena in cases The occurrence of disasters, in addition to many other extensions. It is planned to modify the parking buildings and the buildings of the external airlines at the airport while maintaining its general structure to become an exhibition city, considering securing easy access to public transportation to it. As for the section located near the High Trade Center, it will be converted into a center For guests to stay, it will be affiliated with the exhibition city, the museum, and other facilities. The park will also include a temporary shelter center and a mosque that can accommodate approximately 18,000 worshippers. There will also be a center for elderly care, in addition to offices for the General Directorate of Forests.<https://www.imtilak.net/ar/turkey/articles/ataturk-airport-park-project>

Data for these case studies were obtained by employing the following data gathering techniques.

It used the indicators developed earlier to evaluate these case studies. Evaluation was done by the authors based on the relationship between urban resilience and urban change.

Findings and the Discussion

Case Study 01: Tempelhof Airport, Berlin, Germany.

This case examines a former airport turned into vast flexible urban spaces in the heart of Berlin, the capital of Germany. Tempelhof Square was an airport in Berlin until it was closed in 2008 (Dumiak, 2014). The former airport was located 5 km South of the city, with an elliptical area of 909 acres as shown in the Fig. 1 (The URBES project, 2014).



Fig. 1: Aerial view of the Tempelhof Airport
Source: Google Earth, 2022

This vast open space within the Berlin urban context has given a variety of opportunities and possibilities to use the site as a city park that can contribute to both urban resilience and sustainability. According to the Senate Department of Urban Development and Environment (SDUDE), the closure of Berlin's Tempelhof Airport has offered a unique opportunity to develop city parks of exceptional proportions (Fig. 2) (SDUDE, 2012).

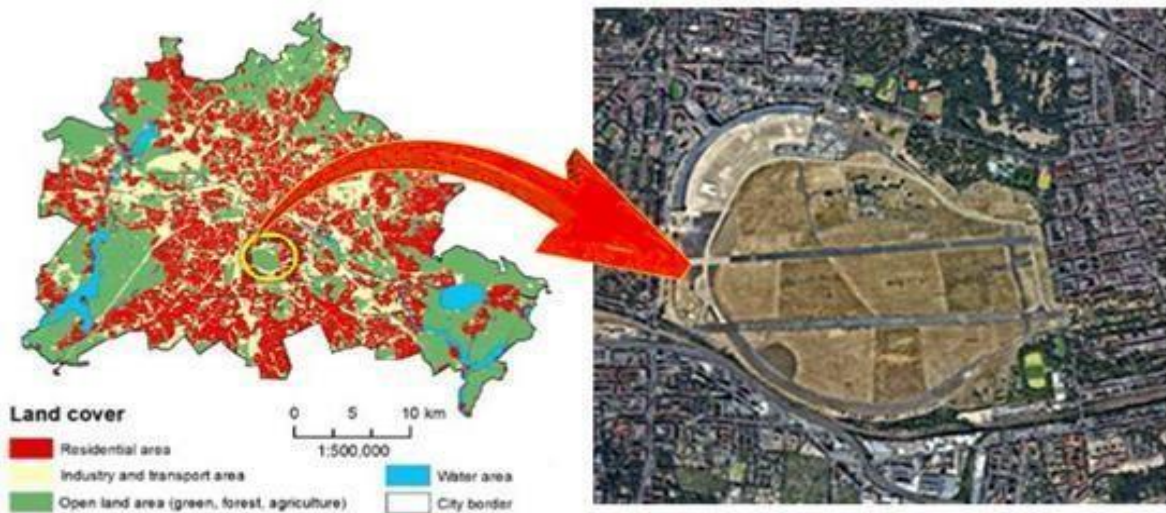


Fig. 2: Location of the former Tempelhof Airport in the residential urban context of Berlin
Source: URBES project

In March 2010, SDUDE held an international competition aimed at landscape design and realization of Tempelhof, and the decision to complete was a response to the Berlin community. From the beginning, Berliners were closely involved in the development process (SDUDE, 2012), which was to keep Tempelhof without any major changes because it is now a public park with minimal design and without development (Dumiak, 2014). In August 2010, SDUDE invited community stakeholders to discuss the selected schemes and participate in the final decision to design gardens.

Berlin, like many cities, has begun to pay attention to the need for urban resilience in the context of specific locations such as the case of the former Tempelhof Airport which can contribute to both urban resilience and resilient urban spaces. Flexibility is generated, in this case, as the gardens are designed as accessible urban spaces that host various functions and activities. At the same time, urban spaces left unmodified have the ability to respond and adapt

to any exceptional event. Moreover, community engagement with government authorities in decision-making represents collective management of urban spaces that contribute to urban resilience by enhancing citizens' ability to learn and learn how, and enhance their interest and participation in urban planning and decision-making.

Furthermore, the concept of using limited spatial interventions in the design of Parks and minor changes to urban spaces indirectly supports the achievement of urban resilience. The parks offer many activities and functions. These include many sports and recreational facilities. Enclosed areas such as the former runways are used for running and cycling, while some areas have been designed for picnics and barbecues. As mentioned before, most of the area has been left as large lawns for Nature conservation. However, the park also houses some pilot areas based on a one-year contract for residents as urban spaces for urban agriculture and environmental education. These leading functions promote public participation and have a long-term perspective as shown in the Fig. 3 (The URBES project, 2014).



Fig. 3: Social activities in the Berlin Gardens

Source <https://www.berlin.de/en/events/7419359-2842498-kultursommer-berlin-2023.en.html>

The case of the Burleigh-n-Tempelhof Gardens illustrates how resilient urban spaces can respond and adapt to changes. Urban resilience is very popular in public spaces which are arenas for urban resilience and sustainability in cities. Furthermore, the case showed that minimal spatial intervention can efficiently contribute to urban resilience. Due to the permeability and accessibility in the design of urban spaces, Tempelhof is easily accessible via Berlin's rapid transit system for more than 25,000 inhabitants living within 500 meters of the park's entrances and for more than 180,000 residents living within 1,500 meters. This means that about 5% of the city's population can directly benefit from the environmental and recreational services provided by Tempelhof as shown in the Fig. 4. (The URBES project, 2014)

Case Study 02: Ataturk Airport, Istanbul Turning the airport into a park

After the construction of Istanbul Airport in 2019, the Turkish government decided to convert Ataturk Airport with all its buildings and squares into one of the major parks in Turkey and the world as shown in the Fig. 6.

In October 2017, Turkish citizen Abu Bakr Bacakci was traveling through Istanbul's Ataturk International Airport, and he tweeted that day with a wish to see "the airport as an outlet for Istanbul", in a comment that seems to have come in response to what was reported in the local media, at the time, about the government's desire to maintain the airport after the opening of a third airport, to secure air cargo flights. Shortly after the tweet was posted, it began to

interact with it and it was circulated for whole days, only to turn into a time. It was a topic of public controversy before it reached the country's government, and became the subject of many discussions involving ministers and officials; the tweet was also widely popular in the country, where it received about 4.5 million views, as well as tens of thousands of retweets B. Fig. 5



Fig. 5: Tweet of Abu Bakr Bacakci

Turkish citizen

Source:(Muhammed Shekh Yusuf. 2021)

"I lived in New York for 4 years, and for a short time in both Tokyo and London," he said. He added, in an interview with Anatolia: "During my stay In New York, I would go two or three times a week to Central Park to escape the pressure of the city." An open space that is an escape from the city's traffic, and an outlet that relieves residents of the pressures of daily life, which made Bjakci imagine the existence of a similar park in Istanbul, knowing that the airport is four times the size of the American "Central Park". After just 4 days, watch Tweet 4.5 million people, as well as tens of thousands who retweeted it." The tweet received thousands of comments, and most people agreed that the idea is a great project but that it is difficult to implement, but, despite that, I was happy to bring people's desires out into the open, and I never lost hope" that the idea could be activated. (Muhammed Shekh Yusuf. 2021)



Fig. 6: Aerial photo Ataturk for Airport

Source: Google Earth 2022

On May 29, 2022, Turkish President Recep Tayyip Erdogan placed the first seedlings in Ataturk Park, or People's Park. It is **planned** to be the largest park in Turkey and the fifth around the world, and the People's Park in Istanbul extends over an area of 8.5 million square meters divided as follows:

- 9% of them are areas designated for military purposes
- 30% of them will be used for general air navigation purposes
- The remaining 61% which is estimated at 5.2 million square meters is dedicated to recreational areas such as the youth center, museum, and exhibition city, as well as a community center and a gathering square in the case of Disasters.

Project officials **intend to** keep the park green throughout the year and to achieve this, **it is expected** that 145,300 trees will be planted and **will be** of the needle family in addition to broad-leaved trees, through which a spring of water passes that will extend over the entire garden. Part of the park has been allocated for hiking and walking, in addition to another section dedicated to events and activities with a giant screen, as well as a section dedicated to children, which has a tobacco area of ten thousand square meters, which will embrace 7 forms Different from games and amusement parks. A sports arena with a capacity of 300 people and equipped with an amphitheater for attendees that can receive two thousand spectators, in addition to an adventure section with an area of 145,000 square meters, with a ski slope with a length of 650 meters. Artists and creators can exhibit their work in the garden museum in addition to a library, lecture hall, workshops, and public reading rooms. The park also contains a restaurant, a café, and a mosque that will receive 18,000 worshipers, in addition to a temporary shelter center to receive and care for the elderly, not forgetting the offices of the General Directorate of Forestry. It is expected that internal modifications will be made in the parking buildings and the external airline buildings at the airport while maintaining the external structure and turning it into an exhibition city, and the project manager seeks to make this a lifeline park and a haven in the event of natural disasters <https://bayti-properties.com/peoples-park-in-istanbul-is-another-giant-project/>

The "People's Park" project **to be built on the land of Ataturk Airport** is one of the largest garden and service projects in Turkey, with a total area of 8.5 million meters The main entrance to Haditha Al-Shaa B is located near the 5-E highway, known for its heavy traffic, and the project aims to achieve profitable returns for the vehicles coming to the park with room for bicycles, and the entrance will be at the intersection of Yesilkoy with Ataturk Airport Street. The city of Maarâd, the Scientific Center, and the Sheba Center will provide B and visitor accommodation with special side roads to alleviate traffic congestion, the project **will be connected** to existing metro stations in addition to stations that will be established later as in Fig. 7.



Fig. 7: Access Methods atAtaturk Airport
Source: Google Earth Source

An entertainment yard **will be prepared**, including planting 25,000 trees, in addition to an amusement park with various activities and a capacity of 28,000 people, and it **will be** attached to the entertainment square at its northern and southern entrance, a lecture hall, workshops, public reading rooms, a restaurant, and a café, and a collective yard **will also be** added for sitting and recreation, and **there will be an** aviation and space museum, a technical museum, an educational center, a department for handmade arts and a cinema hall. Sit M Modifying the terminals and external airlines of the airport while maintaining its general structure to become a city of Maaras D, taking into account ensuring easy access to public transportation, or the Pastor M Almojo D near the World Trade Center **will be converted** into a center G for guest accommodation belonging to the city of Maarat Z and the museum as in Fig. 8. <https://www.tdapartment.com/>

The park **will be dedicated** to hiking and there will be no means of transportation faster than walking, to ensure safe walks for children, mothers, and the elderly. The old facilities of the airport **will be removed** from buildings or restored and allocated to local and international exhibitions and turned into scientific centers for young people to teach programming and robot design. Istanbul's People's Park will also contain museums, where **artists will exhibit** their work. The design of the People's Park **will make it** a haven for the city's residents in the event of an earthquake or disaster (Muhammed Shekh Yusuf. 2021)



Fig. 8: People's Park Airport Ataturk(formerly)

Source: <https://www.iyihabersitesi.com/mustafa-kemal-ataturk-havalimani-millet-bahcesinin-ilk-etabiyarin-aciliyor/>

Urban resilience indicators have used to evaluate the two cases studies as shown in the Tables 1 and 2.

Table 2: Evaluation of changes of urban resilience - Airport Tempelhof, Berlin. Germany

Source: Author

Indicators of urban resilience: Tempelhof Airport, Berlin, Germany		
	Indicator	Act of Transformation
1	Redundancy backup	Flexibility, in this case, is generated as the parkland was designed as an open and accessible public space that host various functions and activities, meanwhile the green open spaces areas that were left without any modifications have the capacity to respond and adapt to any extraordinary event.
2	User Engagement	The community participation with the governmental authorities in the decision making represents a collective management of the public green space which contributes to urban resilience by promoting citizens' capacity for learning and adaptation and strengthen their interest and involvement in urban planning and decision making.

3	Diversity	The parkland provides various activities and functions, these include several sports and recreation facilities, the sealed areas like the former runways are used for running and cycling, some areas were designed for picnics and barbeque, and as mentioned before most of the area was left as large lawns for nature conservation. However, the park as well as includes some pioneer areas based on a one-year contract for the local residents as urban spaces for urban agriculture and environmental education. These pioneer functions foster public participation and have a long-term perspective.
4	Permeability	Due to the permeability and accessibility in designing the parkland, Tempelhof is easily accessible via Berlin's rapid transit system for more than 25,000 inhabitants who live within a 500 m distance from the park entrances and for more than 180,000 inhabitants who live within a distance of 1,500 m. This means that around 5% of the city population can directly benefit from the ecological and recreational services provided by Tempelhof, thus why the parkland can efficiently contribute to urban resilience during extraordinary events.
5	Clarity	
6	scalability	The concept of using a limited spatial intervention in designing the parkland and to make minimal changes to the open public space supports indirectly the achievement of urban flexibility.

Table 3: Evaluation of changes of urban resilience Istanbul Ataturk Airport
Source: Author

Evaluation of urban resilience using the indicators: Istanbul Ataturk Airport		
	Indicator	Act of Transformation
1	Redundancy backup	The exhibition city, the scientific center, the youth center and the visitors' residence will be provided with special side roads in order to reduce traffic congestion.
2	User Engagement	A part of the park has been allocated for hiking and walking, in addition to another section dedicated to events and activities equipped with a giant screen, in addition to the section designated for children, which covers an area of ten thousand square meters, and which will host 7 different forms of games and amusements. A sports arena with a capacity of 300 people has been allocated and is equipped with an amphitheater that can receive 2,000 spectators, in addition to an adventure section with an area of 145,000 square meters, with a 650-meter ski slope. Artists and creators can display their works in the Garden Museum, in addition to a library, lecture hall, and workshops. Work, public rooms for reading. The park also contains a restaurant, a café, and a mosque that will receive 18,000 worshippers, in addition to a temporary shelter center to receive and care for the elderly, not forgetting the offices of the General Directorate of Forests. It is expected that internal modifications will be made in the parking buildings and the buildings of the external airlines at the airport, while preserving the external structure and turning it into an exhibition city.
3	Diversity	"People's Park" project is one of the largest parks and services projects in Turkey, with a total area of approximately 8.5 million square meters, and it is planned that 30% of it will be used for general air navigation purposes. And 9% of it will be areas used for military purposes, and the rest of the project land is 5.2 million square meters, which is scheduled to consist of recreational areas, in addition to a youth center, a museum, an exhibition city, and a residence area for visitors, in addition to a social center, and a meeting arena in cases The occurrence of disasters, in addition to many other extensions

4	Permeability	Although the site was previously an airport, and therefore it must be characterized by clarity, ease of access, and permeability, however, ease of access was taken into account in the new project through public transportation, linking to metro stations, and the construction of side roads aimed at reducing traffic congestion by 40%.
5	Clarity	
6	scalability	Ataturk Airport is considered one of the largest airports in the world in terms of area, and converting it into a public park allows the exploitation of this vast area for the benefit of the public and the provision of green spaces and recreational facilities.

Conclusions

As can be seen, the transformation of the two airports show that urban resilience has a positive and effective role in achieving a balance between continuity and change in space by dispensing one function and replacing it with another function. It therefore argues that the research findings substantiate the initial premise of this research. Following inferences have also been made.

- Although urban change is inevitable, urban resilience makes it a positive change.
- Cities and urban centers are subject to continuous change in land use patterns due to the new economic, social, political, and demographic factors and variables left by the inhabitants of cities.
- Resilient urban spaces can provide opportunities for social interactions and social mixing.
- Flexibility has a pivotal role in the requirements of developing urban space and access to high-quality urban spaces.
- The relevance of the urban and regional aspects with the social, economic, cultural, and political systems that make the interdependence of their characteristics with those of urban resilience and the ability of urban outer space to perform resilience is the ability of ecosystems of outer spaces to reconstruct in a balanced environmental state after human intervention. Urban resilience is the most appropriate way to control the processes of urban change and absorb the results of urban change.

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