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Review Article

Towards A 21st Century Systematize the Ideas; COVID-19, Sustainability and Discourse of SDG, (Sustainable Development Goals), The Cities and Housing Models

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Abstract

The research creates a theoretical basis for examining the metamorphic changes and transformations in urban and housing planning with the interaction created by the latest epidemic in the world, which is moving towards a period related to climate problems. The first quarter of the 21st century witnessed an unexpected event: Humanity found itself in the middle of a pandemic considered temporary, it would be permanent and change the world dramatically. The post-COVID-19 period has led to significant and permanent changes in our lives, from urban planning to housing typologies. The study aims to understand the changing dynamics in the post-pandemic period that converges on the same goal with SDG, (Sustainable Development Goals), as continuity by updated dialogues, and discourses on literature. This research focuses on the SDG, (Sustainable Development Goals), and the post-pandemic period, analysis of two phenomena separated, analogous paradigms or intertwined. The findings of the public perception are there is a distinction between sustainability and pandemics considered dissimilar processes, they contain similarities. Contrary to common ideas, the pandemic was a catalyst for sustainability, and these two concepts contain analogous ideas and principles. In conclusion, it is revealed that they both concentrated on similar ideas; SDG, (Sustainable Development Goals) is "health", and pandemic is the "healthy city" concept like; clean air, zero carbon, living healthy and safely in airy and green areas, etc.

More Information

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Introduction

Although sustainability and COVID-19 were seen as very different entities that developed at very different times, it was understood after a while that they contain some similar principles and themes that are not very different from each other. It is possible to distinguish these similarities easily with a detailed examination of these different phenomena that basically developed at very divergent times. This research focuses on the basic principles, and applications of these two phenomena on this subject and deals with the analysis of themes that are sometimes perceived as separated from each other, or analogous or intertwined. In this context, it aims to shed light on the basic principles and principles of future urban and housing planning. Even though the world has been anticipating a comprehensive transition toward sustainability since the late 20th century, the first quarter of the 21st century has catapulted humanity into an unpredictable era characterized by a global pandemic. Although the COVID-19 period is considered temporary, it has caused these issues to come to the fore, right in the middle of the debates that started with interoperability. Indeed, when COVID-19 first emerged, it was seen as a clear threat to sustainability. Member States make a statement; As we approach the halfway mark of 2030, with only 12% of Sustainable Development Goals targets on track, Member States must overcome the impact of the COVID-19 pandemic and multiple crises around the world that threaten decades of progress to achieve the Global Goals [1].

In the beginning, it was considered that COVID-19 slowed progress toward achieving the SDGs. (Sustainable Development Goals). At the UN in July 2023, speakers remarked that the pandemic, and multiple worldwide crises such as climate change, threatened decades of progress on the SDGs (Sustainable Development Goals) [1]. In the Secretary-General's report "Progress towards the Sustainable

Development Goals: Towards a Rescue Plan for People and Planet", he warned that, with only seven years left, the 2030 Agenda is in peril, and by 2030 575 million people will remain trapped in extreme poverty. United Nations Secretary-General for Disaster Risk Reduction and Head of the United Nations Office is about how disasters affect the world. "COVID-19, that risk is systemic, and a public health crisis quickly emerged as a problem in every aspect of our life, and everything is connected, thus illustrating the need to invest in resilient infrastructure and early warning systems [1].

These mostly emphasize other subheadings of the SDG, (Sustainable Development Goals), but the issue of cities and housing is also indirectly the main target of this discussion. In this context, when we evaluate the issue in a broad context with the measures taken in the post-COVID-19 period and pandemic and the changes in the city and housing, contrary to popular belief, there are similar parameters in many issues between COVID-19 and sustainability. The issue of sustainability has been put forward as a response to global warming and climate change problems, on the world agenda since the 1980s. The global community first underscored the importance of these summits with a reinforcing function [2]. The later stages of the Istanbul Climate, in 1996, and later Paris Declaration, in 2016 tend to have adverse effects on the environment and cities' ecosystems. The climate summits have consistently highlighted the imperative to plan for human life in cities, giving paramount consideration to the impacts of urbanization, as well as industrialization and associated challenges. Emphasizing the "healthy city" concept sustainability is generally considered by the United Nations; "It aimed for a healthier, livable environment and housing for everyone". It is considered that specifically "health" was a common point rule and a goal for both sustainability and COVID-19 [3] (Figure 1). Although it was not explicitly emphasized in the United Nations declarations, the concept of Healthy city and living was already underlined implicitly. In the United Nations Istanbul Declaration for SDGs, (Sustainable Development Goals) it is highlighted that; sustainable, and livable housing and environment for everybody (United Nation, 1996). COVID-19 was predicted to be a temporary process, but changing urban and housing dynamics led it to become more permanent. So COVID-19 has made the requirement imposed by sustainability almost a necessity.

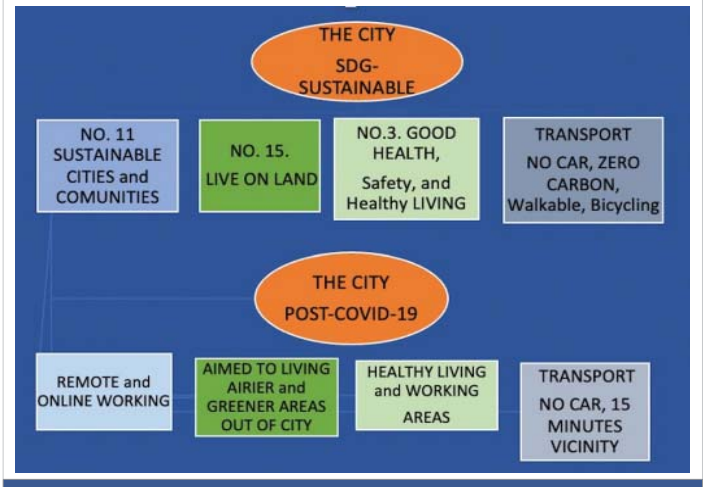

Figure 1: Considering the Sustainability, and SDG related to COVID-19 pandemic.

The measures taken in cities revealed that COVID-19 is also in principle sustainable in terms of some targets and focused on similarities in ideas; such as healthier, more livable cities and housing. Indeed, before the pandemic, United Nation had outlined the main principles of a sustainable life. During the pandemic period it was aimed to take a series of urgent measures with the aim of a healthier life in cities. The restrictions and regulations brought by the epidemic for healthy living as well as the having similarities with sustainability and the living conditions that people want. The common points that were united determined the main goals, and this was built on a healthier and more livable city, housing, and business life, which would be valid for both.

Methodology

The methodology employed in this study focuses on exploring concepts such as sustainability, green design, and the innovations introduced to urban and housing planning due to COVID-19, especially in response to recently planned and unplanned situations. The research offers a perspective by examining urban planning discourse, and methods in the sustainability, SDG, (Sustainable Development Goals), and later post-pandemic era along with investigating new housing models and typologies.

The methodology primarily focuses on a theoretical framework, comparing urban and housing planning responses to climate-related issues since the 1980s with those emerging in response to COVID-19 after the 2020s. This comparative analysis aims to identify differences and similarities in the contributions of these two periods to urban and housing planning. Additionally, the study intends to present and develop a novel perspective, along with new methods and techniques, within this context.

In this context, research was conducted based on past theoretical discourses. This research aims to bring a new perspective to these past theoretical discourses after COVID-19, as well as to make a new and additional discursive contribution to these past discourses.

Towards the new urban planning ideas and introducing climate change to the world

The 1980s and 1990s became a turning point for cities and urban planning. Now, world design and planning have begun to evolve towards a new, innovative, and green world, going beyond the traditional norms known up to that day. A significant phenomenon of this period was the increasing dominance of liberalism worldwide, shaping urban planning

and architectural design dynamics. The 1980s marked the onset of the neoliberal phase, ushering in a dominant urban model focused on structural adjustment, advocating for the alignment of economies and societies with global markets [4].

The 1990s brought forth new and uncharted perspectives in global design, influenced by a different paradigm. A significant milestone occurred with the inaugural Summit held in Rio de Janeiro, Brazil, in 1992 organized by the United Nations. During these deliberations, the concept of "sustainable planning" took center stage, eventually manifesting into Agenda 21 [5]. After the climatic concerns were first addressed, at the Earth Summit, in 1992 the discussions centered around operationalizing sustainable planning for Environment and Development [6].

In the 21st century, a transformative era has emerged, necessitating the creation of innovative city models with novel approaches [7]. This period marked the emergence of the term "sustainability," prompting gradual steps toward a more sustainable future (Figure 2). The urban planning realm in the early 21st century liberated itself from the constraints of old explanatory models [8]. Planning dynamics for cities underwent radical changes, giving rise to new design paradigms. Humanity now faces an uncertain era where essential resources such as energy, water, and food are critical and this reality, shaped by technological advancements, has become increasingly unpredictable [9].

Indeed, these first studies on climate issues had a great impact around the world, would become more common after the first Brazilian Earth Summit, in 1992, and would turn into summit meetings to be held almost every few years. The main topic of these meetings, where the framework of sustainability was gradually determined, was to draw attention to the concept of sustainability in the world and to build a greener, cleaner, and healthier environment.

Eventually, in the early 2000s, the term "Climate change" gained worldwide usage, marking the emergence of "green-urbanism" theories for the 21st century. These theories aimed to transform existing cities from fragmentation to compaction, as outlined [7]. This ecological challenge was

Figure 2: Considering the Sustainability, and SDG related to COVID-19 pandemic.

applicable to cities of all scales, from villages to mega-cities, urging a reevaluation of building practices, transportation, work, consumption, and leisure activities and this new urbanism represents an approach that originated [8]. In the 1980s, initially a place-making initiative to counter suburban sprawl and increase density by promoting compact urban development.

Climate-change, sustainability, the terms and ideas; green-design and green-planning

The first Earth Summit held in Brazil, in 1992 by the United Nations debates started to focus on new urban problems explained that "sustainable planning" would later be formulated as Agenda21. Towards the end of the 20th century, certain world cities, often hosting populations exceeding 10-15 million, expanded significantly beyond their historical boundaries. These cities, exemplified by metropolises such as Tokyo, Sao Paulo, Mexico City, Mumbai, Calcutta, Shanghai, and Beijing, became vast, sprawling urban landscapes, evolving into what the United Nations terms "megacities" for populations surpassing 10 million people [10]. This rapid expansion posed challenges for orderly planning and strategic regulation, leading to complex urban landscapes that defied conventional planning approaches [7].

As a matter of fact, concerns about the problems of cities began to be expressed in the 1990s. These concerns will gradually develop towards the ideal of a more sustainable world. In the early 1990s, in his 1994 essay, Rem Koolhaas rightly asked `What ever happened to urbanism? and later, in 2000, the term `Climate change' has been getting widely introduced [7]. After that a newly emerged and developed terms the sustain and Green Urbanism theories for the 21st century, which aim to transform existing cities from fragmentation to compaction.

This problem is gradually starting to create serious problems in cities and is making cities increasingly uninhabitable in terms of human health. The solution to this condition will be explained as "sustainability" and planning more "sustainable" cities after the 1980s. The overpopulated cities started to develop countryside or outside of the city centers, so new housing planning became a threat to green areas, forests, and urban ecosystems. The solution is the cities should plan innovative residential areas that can be integrated with green areas and existing ecosystems abandoning the traditional housing planning systems and models.

Following the inaugural "Earth Summit", in 1992, a wave of new urban planning concepts and theories emerged, with a particular emphasis on climate-related concerns. This era saw the evolution of urban and housing planning, giving rise to innovative living spaces, novel dwellings, and varied housing models and typologies. The planning of these housing models and settlements drew inspiration from international neighborhoods, serving as practical examples

for implementation [11]. Green design and sustainable design principles have ushered in new city, housing, and transportation models for cities, focusing on efficient traffic circulation. The Charter of New Urbanism advocates for walkable urbanism as a key strategy to minimize environmental impacts in planned environments and foster the development of smart cities that support sustainable transport. In these sustainable cities, the planning of urban transport is considered a fundamental study, serving as a core indicator of the development of advanced planning systems [12].

Indeed, while sustainability and eco-based concepts and innovative planning theories are widely accepted globally, there are still significant challenges in terms of institutional and organizational implementation. Urban development and sustainability remain pressing concerns not only for academics but also for policymakers, practitioners, consultants, think tanks, environmental industries, and non-governmental organizations.

The climate-change, sustainability, the process of discourses of sdg, (sustainable development goals)

The 1980s and 1990s became a turning point for cities and urban planning. Indeed, world design and planning have begun to evolve towards a new, innovative, and green world, going beyond the traditional norms known up to that day. In the 1980s, initially a place-making initiative to counter suburban sprawl and increase density by promoting compact urban development.

Thus, attention drawn to the issues of global warming and climate change in academic circles since the 1980s, with works such as Richard Register's eco-city book [13]. The 1990s brought forth new and uncharted perspectives in global design, influenced by a different paradigm. A significant milestone occurred with the first inaugural "Earth-Summit" in Brazil, in 1992 a pivotal event that continued with relevant issues beginning expressed at many summits [2]. After the climatic concerns were first addressed at this summit, the discussions centered on operationalizing sustainable planning for environment and development [6]. Indeed, at the Earth Summit, a wave of new urban planning concepts and theories emerged, with a particular emphasis on climate-related concerns [14]. The later stages of the Istanbul Climate, in 1996, and after the Paris declaration, in 2016 tend to have adverse effects on the environmental concerns. The climate summits have consistently highlighted the imperative to plan for human life in cities, giving paramount consideration to the impacts of urbanization, urban sprawl as well as the industrialization and associated challenges. In United Nations Istanbul, 1996 Declaration for SDGs, (Sustainable Development Goals) it is emphasized that; sustainable, and livable housing and environment for everybody (United Nations, 1996).

Also, in the Istanbul Declaration, in 1996 the general framework of a more sustainable world and sustainable settlements began to be determined for the first time along with the sustainable "housing" concept. This era considered the evolution of urban and housing planning, giving rise to innovative living spaces, novel dwellings, and varied housing models and typologies.

In the 2000s, the term climate change began to widely permeate discussions [7]. This ecological challenge was applicable to cities of all scales, from villages to mega-cities, urging a reevaluation of building practices, transportation, work, consumption, and leisure activities and this new urbanism represents an approach that originated [8]. After the 2000s, the UN (United Nations) launched eight Millennium Development Goals (United Nations, 2014). Recently, compilations of research on sustainable cities have been published by Satterthwaite, Wheeler, and Beatley, in the meantime, "Sustainability Science" has emerged as a conceptual and theoretical basis for a new planning paradigm [7].

In the United Nations declaration, it is emphasized to the development of more balanced and sustainable human settlements by encouraging productive investments, and social infrastructure development in cities, towns, and villages (United Nations, 1996). The serious problems confronting cities and inhabitants include expansion of squatter settlements, poverty insecurity inadequate and deteriorating building stock, and services, lack of "health" and educational facilities, traffic congestion, pollution, lack of green spaces, water supply, and sanitation (United Nation, 1996). The people worry about human impacts on the environment, uncontrolled urban sprawl, and housing settlement. The planning of housing settlements and models drew inspiration from international neighborhoods, serving as practical examples for implementation [11].

In 2000, the UN, (United Nations) launched eight Millennium Development Goals. The aim was for the global community to achieve them by 2015. Goal 7 was to "ensure environmental sustainability", but this goal did not mention the concepts of social or economic sustainability [15]. During these deliberations, the concept of "sustainable planning" took center stage, eventually manifesting into Agenda 21 [5]. Specific problems often dominate the environmental dimension of sustainability: In the 21st century, these problems have included climate change, biodiversity, and pollution. Other global issues are loss of ecosystem services, land degradation, environmental impacts of agriculture, and air and water pollution, including marine plastic pollution and ocean acidification (UNEP, 2021) [16].

While sustainability and eco-based concepts as well as innovative planning theories are widely accepted globally, there are still significant challenges in terms of institutional and organizational implementation. There are numerous

rewards climatic and green solutions, for the natural world, also economic, social, climatic, and health benefits [17-19]. Also, including one of the significant applications the "Health" during the pandemic period.

The sustainable goals and interaction of the recent pandemic, COVID-19 and the sustainability, city and housing planning regulations

Although the COVID-19 period was considered temporary, it came to the agenda right in the middle of the discussions that started with interoperability. It draws attention as different events at very different times and developed independently of each other, today, that these two phenomena have similar aspects emerges. The common values targeted in both urban and housing planning are living and planning in clean air, and open and green areas (Figure 3). When the pandemic first emerged, it was seen as a clear threat to sustainability. United Nations made a statement; As approach the halfway mark of 2030, 12% of the Sustainable Development Goals targets are on track, Member States must overcome the impact of the COVID-19 pandemic and the many worldwide crises that threaten decades of progress towards achieving the Global Goals [1].

Indeed, it was initially considered that COVID-19 was slowing down progress towards achieving the SDG, (Sustainable Development Goals) Speakers at the UN, (United Nations) in July 2023 noted that the pandemic and multiple worldwide crises, such as climate change, threaten decades of progress on the SDG, (Sustainable Development Goals) [1]. Contrary to popular belief, it turned out that COVID-19 created almost similar effects by accelerating sustainability. After a while, it was determined that in the post-COVID-19 period, SDG, (Sustainable Development Goals) was some common aspects of the pandemic (Figure 2). Like SDG, (Sustainable Development Goals), No. 5, "Live in Good Health", the concepts of a healthy city or healthy house, which are the most significant items of the pandemic. During the COVID-19 lockdown, there are changes to the determinants of health, the diverse range of environmental, economic, and social factors that impact human well-being, compared to the pre-COVID period, thus the current focus of COVID-19-related policy is targeted on human "health" [17]. People want to live outside the city, in green areas, and near towns after the pandemic [20] also SDG, (Sustainable Development Goals) No. 15, "Live on Land" was under the same objective heading as the Land proposal (Figures 2,4).

Before the pandemic affected and shaped the world cities, London, Beijing, Tokyo, Istanbul, etc. struggling with problems, and climate issues were not seen as a primary problem with a population of 10 million [21]. COVID-19 emphasized the necessity of radical change in densely populated and urbanized cities adapting to new pandemic-oriented living conditions to ensure the health and safety of residents such as New York, Singapore, and Hong Kong and these cities bring cultural richness to urban environments, [22]. Also, it is compelling that created the conditions for the change of cities since the 1980s was the rapid development of technology. Although the car-oriented city models of the 1950s left their place in the greener world where cars were not the focal point, perhaps rapidly developing IT technologies since the late 20th century and phenomena such as the metaverse today performed an important transformative role in the planning and development of cities. In previous epidemics at the beginning of the 20th century, industrial societies did not have advanced technologies so, they failed to adapt to today's conditions. Especially in the 2020s, the pandemic unpredictably marked a period in which this transformation accelerated even more and now living and working patterns. The most important advantage of today is the development of IT technologies which affect and lead to more developed and different working conditions such as hybrid or remote working patterns. Thus, advanced technologies have become the driving force in the emergence of new living and working patterns.

Figure 3: The Similarities of Paradigms between Sustainability, SDG, and COVID-19.

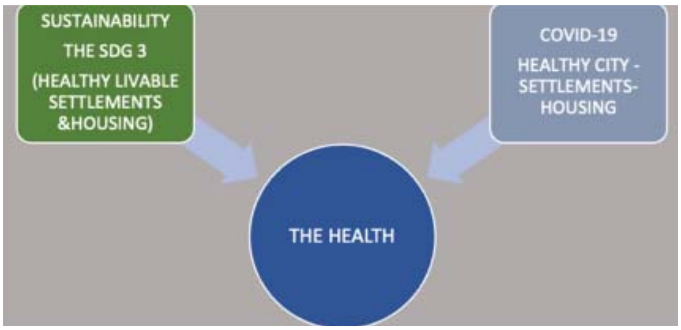

Figure 4: The Post-COVID-19 City in the Context of the SDG and Sustainable City Concept.

Also, during and post-pandemic period the new demand of the people living in the housing and the settlements in the airier and green areas out of the city in the early 20th century, E. Howard's garden-city models forced and re-shaped the cities like de-centralized and liberated them from the traditional mono-centric urban model where the business areas and offices gathered and the residences mostly developed next to next circled around the city center. In this context, the living and working patterns in cities imposed by COVID-19 and the innovations brought by technology played an important role in overcoming the problems of the pandemic. This city model emerged both during the pandemic and post-pandemic periods and became more demanding. This decentralized city model was also pioneered as a sustainable model and in line with the principles of SDG (Sustainable Development Goals). Perhaps the development of technologies such as IT technologies was also important in managing the pandemic process so well. Thus, due to rapidly developing IT technologies today, appropriate solutions could be found to the problems brought by the pandemic, and living and working standards in cities have changed and transformed and become more compatible with today's pandemic conditions and also partly sustainable.

Today, COVID-19 and sustainability emerged with similar goals and aspects. The common values targeted in both urban and housing planning are clean air and planning and living in open and green areas. When examining various sustainable planning initiatives worldwide, particularly those rooted in ecological design principles, similarities with pandemic-responsive strategies become apparent. Examples like Chicago's Urban Rivers organization, Rotterdam's Recycled Park featuring luxury housing, and Amsterdam's artificial floating island suburb of Ijburg all showcase innovative approaches (Designboom, 2019). Indeed, examples from some Asian cities such as Sino-Singaporean, and eco-cities like Tianjin in China exhibit more similar urban and housing design characteristics. as well as some other eco-city projects in various parts of the world. Also, the cities including Masdar in Abu Dhabi, serve as specific models for ecological cities in different climates [23].

The emergence of COVID-19 has unexpectedly become a significant turning point for climate change, attempting to raise global awareness since the 1980s through various worldwide. Notably, the pandemic posed an immediate threat to society, in contrast to the "slow emergency" of climate change (Anderson et al., 2019), Unlike previous efforts, COVID-19 has brought climate change into sharper focus. The pandemic has accelerated certain processes and agendas variously prioritized [24]. COVID-19 created a new level of awareness because it directly impacted human health, necessitating urgent measures. The impact of the pandemic on cities was a very rapid process compared to sustainability. The most important problem was in the beginning that the pandemic would be a temporary process and after 2-3 years between 2020-2023, it turned out that is permanent. The measures taken would turn into a way of life and the main ideas of this policy were also supported by the concept of sustainability. In the post-pandemic period, the cities impacted newly changed living and working patterns, like remote and online working they searched for lifestyles and houses in green areas outside of the cities.

The pandemic has led to significant transformative changes, leading to depopulation in some American cities, [25], (Financial Times, 2022) and numerous measures have been widely implemented in European cities. After these restrictions, migration from the city to the city and nearby towns also triggered sustainability, like the SDGs, (Sustainable Development Goals) "Live in the Land". Similarly, these measurements and changes in work and housing patterns have morphologically altered the cities and affected their suburbs and nearby regional cities [26]. Some pandemic recommendations overlapped with SDG (Sustainable Development Goals) number 5, the "Live Healthy" concept. The measures based on population density and socio-economic and environmental factors that cause air pollution in Italian cities allowed [27,28] (Figures 2-4). The pandemic deeply affects business and social life, and has resulted in new working styles such as remote or hybrid, and new office and housing design have emerged in response to changes (Figures 5,6). These new working systems first emerged during the pandemic period, they later became an indispensable way of life for the masses aiming for a more sustainable life outside the city. COVID-19, just like people can drive, imposes a healthy life in green areas city planning in which the car is not the primary element in the transport system and pedestrian ways is more effective. Work and social mobility witnessed a significant decline and government restrictions became permanent, with other changes in the world cities in India, Spain, and the Netherlands [29].

In Europe, during the pandemic period, a planning approach in which green areas and terraces, which are the main elements of sustainable urban and housing planning, were used extensively in some American, and Canadian cities was developed. Green-based elements such as green areas, gardens, and green roofs have emerged as considerable design

Figure 5: Left A: Sustainable City Settlement and Plan, China, Tianjin; Right B: Sustainable Housing Models, China, Tianjin. Photos, CNN Style.

Figure 6: Left A: The Post-COVID-19 era Housing Settlement, Istanbul, Low-Rise Green Based Plan by Government Emlak Konut; Right B: The Post-COVID-19 era Housing Models, in Istanbul. Photo. https://www.emlakkonut.com.tr/tr-tr/projelerin-hava-

concepts for sustainable cities and have come to the fore as essential planning tools during the pandemic. COVID-19 is considered an opportunity to rethink housing architecture and models for health-based measurements, houses with gardens, private or semi-private, etc. [30]. The rules and regulations applied and the innovations introduced during the pandemic period were observed almost exactly like the main principles of more sustainable urban and housing planning. Like sustainability, adopting a greener-themed planning approach world cities; Chicago, Toronto, Seattle, Paris, and Europe have carried out significant projects at the urban scale, increasing green areas and green roofs to improve the quality of life [31]. This green-design planning draws attention to the striking developments and regulations equivalent to sustainability that emerged during the pandemic period.

Although these measures imposed certain restrictions on human life throughout the city, they were not as ambitious and effective as initially planned because they included less intrusive measures in urban and housing planning. In countries such as Italy, Spain, and the Netherlands, COVID-19 is viewed more positively and considered as an opportunity for development and new regulations in cities and housing models. The pandemic accelerated the process initiated by sustainability in the planning of cities and housing. This momentum has contributed to a transformation that benefits human health by designing greener, airier cities and homes.

These exemplary sustainable city and housing projects share common goals of SDG, (Sustainable Development Goals) creating greener, airier, and healthier urban environments planned for the city, green areas, and less CO. Their planning and housing settlements, along with the principles and tools employed, align with the concept of pandemic-responsive planning, emphasizing adaptable, resilient, and health-oriented urban spaces. The integration of these strategies with sustainable urban planning principles can pave the way for cities to navigate the challenges posed by pandemics effectively. Likewise in Istanbul, a notable development occurred in the 2010s around K. Çekmece Lake's natural ecosystem. While parts of the area had been developed with buildings, a rehabilitation initiative was launched based on an architectural concept competition aimed at preserving the ecosystem. Renowned architect Ken Yeang played a significant role in designing this project [14,32,33-36]. The planning embraced the "eco-city" concept, tailored to the natural

environment of K. Çekmece Lake and Lagoon. However, potential drawbacks might arise if the housing models and typologies do not align seamlessly with the eco-city concept. Like some of the American cities and Canada and Europe, following the onset of COVID-19, significant transformations occurred within Turkey's real estate market, particularly in housing models and typologies [3]. The pandemic prompted a shift in Turkish people's preferences for housing models, leading to changes in demand.

Discussion

The SDG, (Sustainable Development Goals), and sustainability issues have been on the agenda since the last quarter of the 20th century, nearly 30-40 years the issue of a pandemic has been a relatively new research area for a only period of 3-4 years since 2020. It is observed that the study exhibits a unique and pioneering approach and there is not much in this field. It is considered that the study might be a good example of future research. It is significant that this is one of the original studies, specifically in terms of examining changing urban and housing planning by comparing the SDG, (Sustainable Development Goals) and pandemic period on a scientific basis. The research subject focused on addressing the recent changes and transformations in urban and housing planning on a theoretical basis with the interaction created by this latest epidemic. Also, the scope of the research is limited to the period between the last quarter of the 20th century when climate -change and sustainable ideas started and the second decade of the last 21st century, when humanity found itself in the middle of an epidemic that was initially thought to be temporary but within very short period it would become permanent and change the world dramatically. The research also brings a multidisciplinary dimension and examines the subject in the context of houses, housing models, and typologies, both in terms of urbanism and architecture. The study aimed to concentrate on theoretical investigations, it is also based on a more concrete basis, examining the effects of both the SDG, (Sustainable Development Goals) and the last pandemic on cities by comparing them through urban and housing models and typologies in architectural bases. The similarities, and changes observed in housing models and typologies in the post-pandemic period were revealed through examples in the world and Turkey. Initially, considering there was no common goal between the SDG, (Sustainable Development Goals) and the pandemic the study proved that there were some common two phenomena that are separate, have similar paradigms, or are intertwined.

Conclusion

The 21st century, initially anticipated as an era of sustainable progress, took an unforeseen turn in its first quarter when humanity found itself engulfed in a global pandemic. Indeed, when the pandemic first emerged, it was seen as a threat to sustainability. However, during the pandemic and post-pandemic period the new demand of the people living in the housing and the settlements in the airier and green areas out of the city in the early 20th century, E. Howard's garden-city models forced and reshaped the cities like de-centralized and liberated them from the old, traditional mono-centric and car-centric urban model where the business areas centered and the residences developed around the city center. This city model emerged both during the pandemic and post-pandemic periods and became more demanding. This decentralized city model was also pioneered as a sustainable model and in line with the principles of SDG (Sustainable Development Goals).

This research examines the possible dialogical common points and differences between sustainability and SDG, (Sustainable Development Goals). They developed as different events at different times independently of each other, the study revealed that these two phenomena have similar goals and aspects that emerged more than anticipated (Figure 3). If summarize the main findings of the research;

- First considered that there was no common goal between the SDG, (Sustainable Development Goals) and the pandemic. The study proved that there were some common goals. Likewise, the common values targeted in both urban and housing planning are healthy living, clean air, and planning in open and green areas.
- Also, the pandemic has served as a catalyst, propelling sustainable city planning and housing design into the forefront. The findings derived from the theoretical exploration conducted in this research highlight a significant correlation between COVID-19 and sustainability, challenging the initial perception that these were disparate concepts.
- It has been proven in this study that this unprecedented phenomenon radically transformed various aspects of our living styles, introducing concepts such as remote and hybrid working reshaping traditional office spaces, changing housing models, and typologies, marking a profound and lasting impact on our way of life forever.
- It is also revealed that the main idea of the "Healthy City" is the most significant common point between SDG, (Sustainable Development Goals) and the pandemic.
- The "Healthy City" concept is identified as; clean air, zero carbon, living safely in the vicinity, and in green areas, etc (Figures 2,4).
- The renewed interest in traditional urban and housing models, such as the garden-city model, after the pandemic underlines the dynamic changes in urban planning paradigms affected by the climate crisis. This idea is also appeals to and supported by the SDG, (Sustainable Development Goals) (Figure 1).
- As a main finding when comparing the sustainability and, post-pandemic period, considering the changes in cities and housing models, they have almost similar paradigms and models that have emerged in urban planning and architecture (Figures 5,6).

In conclusion, the research reveals that some of the main principles of the SDGs (Sustainable Development Goals) are also compatible with the pandemic. It has been revealed that the phenomenon of "health", one of the principles of the SDG, is significant, and the "healthy" housing model that emerged during the pandemic period is compatible with SDG's (Sustainable Development Goals) sustainable housing models and typologies (Figures 5,6).

References

1. United Nations (2023) Impact of Pandemic, Worldwide Crises Must Be Overcome to Achieve Sustainable Development Goals, Speakers Stress, as High-Level Political Forum Opens | UN Press. Press.un.org.
2. United Nations General Assembly (1992) Report of the United Nations Conference on Environment and Development: Rio de Janeiro, 3–14 June 1992. New York: United Nations.
3. Coskun H. Recent Come-Back of the Old Ideas, and Ideologies, Sustainability, COVID-19, Towards Green, and Healthy-Housing. Journal of International Arts and Architecture. 2023; 9: 81-92. DOI: 10.11648/jija.2023090313.
4. Massiah G. Urban Policies and the Crisis of Globalization., Which Cities for the 21st Century, Under the direction of Francoise Liberherr-Gadiol and German Solinis, Preface by T Paquot, İnfolio, Geneva, 2012.
5. United Nations (2021) Conference Sustainable Development, Rio de Janeiro, Brazil, 20–22 June 2012.
6. Nocca F. The role of Cutlural Heritage in Sustainable Development: Multidimensional Indicators as Decision-making tool. Sustainability. 2017; 9: 1882. DOI:10.3390/su9101882. https://www.researchgate.net/publication/352753043_The_Role_of_Local_Communities_and_Well-Being_in_UNESCO_World_Heritage_Site_Conservation_An_Analysis_of_the_Operational_Guidelines_1994-2019
7. Lehmann S. What is Green Urbanism? Holistic Principles to Transform Cities for Sustainable. University of South Australia Research Centre for Sustainable Design and Behaviour. 240-245. 2011.
8. Paquot T. Introduction Urban Planning is to Think, Rethink Urban Planning, under the direction of Thierry Paquot, İnfolio, Paris, 2013.
9. Beck T, Demirgüç-Kunt A, Levine R. Database on the Structure of the Development. 2000. academic.oup.com, Econpapers. 2000; 14: 597-605. https://econpapers.repec.org/article/oupwbecrv/v_3a14_3ay_3a2000_3ai_3a3_3ap_3a597-605.htm
10. United Nations (2007) UN, Populations Fund State of World Population, 2007, Unleashing the potential of Urban growth. NY.
11. Bott H, Grassi G, Anders S. Sustainable Urban Planning: Vibrant Neighborhoods – Smart Cities – Resilience. 2019; 1.
12. Buzási A, Csete M. Sustainability Indicators in Assessing Urban Transport 1035 Systems. Period Polytech Transp Eng. 2015; 43: 138–145. https://doi.org/10.3311/PPtr.7825
13. Register R. Ecocity Berkeley: Building Cities for a Healthy Future. North Atlantic Books, 2018.
14. Coskun H. Re-Planning of the Future İstanbul In The 21th Century: Green Architecture. ICCAUA, Conference Book Chapter. 2021. DOI: 10.38027/N8ICCAUA2021162 , Chapter 8,
15. Purvis. Digitalisation As A Problem or Solution, Charting the Path for Search Sustainability, 2019.
16. Ripple WJ. World Scientist' Warning to Humanity: A Second Notice. The Viewpoint. 2017.
17. Rice L. After COVID-19: Urban Design As Spatial Medicine, Urban Design International. 2023; 28: 97-102.
18. Kaplan R. The role of nature in the context of the workplace. Landscape & Urban Planning. 1993; 26(1–4): 193– 201.
19. Elmqvist T, Setälä H, Handel SN, Van Der Ploeg N, Aronson J, Blignaut JN, Gómez- Baggethun E. Benefits of restoring ecosystem services in urban Areas. Current Opinion in Environmental Sustainability. 2015; 14: 101–108.
20. Coskun H. Sustainable and Resilient Plannings, Developed Housing Models for Istanbul. RRAU, Resilient&Responsible Architecture and Urbanism, 4th Edition. 2022. 2021, Xiamen University Malaysia, Southwest Jiatotong University China, Malaysia. Published by Axel Springer, Switzerland.
21. Calderon & Stern (2015) The New Climate Economy, Better Growth, Better Climate, for the French translation, Les Petits Matins.
22. Badger E. Density is normally good for us: That will be true after Coronavirus, too. The Upshot – The New York Times. 2020.
23. Müller S, Mattissek A. GREEN CITY: Explorations and Visions of Urban Sustainability. RCC Perspectives, No. 1, 2018. https://www.environmentandsociety.org/sites/default/files/2018_i1_final.pdf
24. Mc Farlane Marvin S, Guma C, Hodson M, Lockhart A, McGuirk P, McMeekin A, Ortiz C, Simone AM, Alan Wiig A, Post-pandemic cities: An Urban Lexicon of Accelerations/Decelerations. Transaction of the British Geography. 2011; 2023. https://doi.org/10.1111/tran.12607 https://rgs-ibg.onlinelibrary.wiley.com/doi/full/10.1111/tran.12607
25. Vox (2022). 2022. https://www.facebook.com/Vox/posts/2131439300376994.
26. Clark G. From the Accidental Demonstrator to the Blended City: Seizing the Opportunities of COVID-19. Committee for Sydney Podcast. 2020.
27. Coccia M. An Index to Quantify Environmental Risk of Exposure to Future Epi- demics of the COVİD-19 and Similar Viral Agents: Theory and practice. Environ Res. 2020; 110155. https://www.sciencedirect.com/science/article/pii/S0013935120310525?casa_token=jo0oKYlvG7AAAAAA:E9OXnzIkryoJQFfIcsa0-zay81ChujqMxahSOxXuRWU3NmIlFI7lJEoXZTSJIng3LJYcHZA26Sc.
28. Bontempi E, Vergalli S, Squazzoni F. Understanding COVID-19 diffusion requires an interdisciplinary, multi-dimensional approach. Environ Res. 2020 Sep;188:109814. doi: 10.1016/j.envres.2020.109814. Epub 2020 Jun 11. PMID: 32544726; PMCID: PMC7289085.
29. Aloi A, Alonso B, Benavente J, Cordera R, Echániz E, González F, Ladisa C, Lezama- Romanelli R, López- Parra A, Mazzei V, Perrucci L, Prieto-Quintana D, Rodríguez A, Sañudo R. Effects of the COVID-19 Lockdown on Urban Mobility: Empirical Evidence from the City of Santander (Spain). Sustainability (Switzerland). 2020; 12 (9).
30. Coskun H. Sustainability, and Post-Covid 19 Era, Changing Housing Design and Models in the Cities and Istanbul, CCSE, Climate Change and Environmental Sustainability,2ndt Edition, 09-ovember, Conquing University, CHINA. Published by Axel Springer, Switzerland. 2022.
31. Buffoli M, Rebecchi A, Gola M, Favotto A, Procopio GP, Capolongo S. SOAP. A calculation model for improving outdoor air quality in urban contexts and evaluating the benefits to the population's health status. In: Mondini G, Fattinnanzi E, Oppio A, Bottero M, Stanghellini S, editors. Integrated Evaluation for the Management of Contemporary Cities. Springer Green Energy and Technology; 2018. 453–467. [Google Scholar], https://doi.org/10.1007/978-, 3-319-78271-3_36.
32. Yeang K. Ecodesign: A Manual for Ecological Design, Wiley Books. 2008.
33. Arkitera Awarded 1st Prize, Istanbul, Küçükçekmece – Avcılar, Public Space, Urban Design Project, Arkitera, April, 07, 2006, https://www.arkitera.com/etiket/kucukcekmece-avcilar-ic-dis-kumsal-alani-kentsel-tasarim-projesi/,
34. United Nation (2018) What is Sustainability. McGill University. https://www.mcgill.ca/sustainability/files/sustainability/what-is-sustainability.pdf
35. Wall Street Journal (2021) Accessed September 20, 2021. https://www.wsj.com/articles/pandemic-supercharged-changes-in-where-americans-live-11619536399.
36. World Bank (2018) Eco-city Definition, What is an Ecocity?, Ecocity Builders.