

Research Article

From Modern Ideas-Theories, and Pandemic, Garden-Cities of To-Morrow, and Today

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Abstract

This research delves into the come-back of the garden-cities in the wake of recent pandemic changed urban dynamics and reshaping cities, particularly Istanbul. At the onset of the 20th century, E. Howard's book on Garden-cities of To-morrow and his idealized garden-city models gained global prominence. The Pandemic led to people to rethink their living and working conditions and patterns in a way that had not been considered before. Thus, with the regulations imposed by the pandemic, the people began to look for an airier, and greener lifestyle in nature. Initially in the popularized cities in the late-20th century, first innovative housing models resurfaced on the urban agenda in the context of climate-change concerns, green architecture, and sustainable design. While architectural and urban planning changes have historically revolved around innovative housing models driven by sustainability, the impact of COVID-19 prompted a renewed focus on these old models. The pandemic's effects surpassed initial expectations, became nearly permanent leading people to question old planning theories and the metropolitan life model imposed throughout the 20th century. Presently, with growing awareness of green architecture and renewed interest in historical concepts, E. Howard's garden-city model was the previous century's phenomenal idea have recently come-back and unexpectedly regained attention following the recent pandemic. These models, widely recognized as English garden-city models in Europe, also found prevalence under different terms like *cit é jardins* in France and *Garten-stadts* in Germany. In Istanbul, the model was introduced by European, French, and Italian architects, adapting creating unique model for city, *cit é parc*, (park-city) Bosphorus-Heights by French architect-urbanist Henri Prost. According to the findings of case-study focused specifically in Istanbul, it is achieved that another unique model a healthy-city concept emerged during the pandemic as a novel derivative of E. Howard's old garden-city model originally. Consequently, this study proves that not only come-back of the old garden-city models, but also it is possible to their adaptability within contemporary urban agendas, considering such as sustainability and pandemics.

Keywords

Architecture, COVID-19, City Planning, Garden-Cities, Sustainability, Urban Theories

1. Introduction

In the second decade of 21st century, with the COVID-19, the world witnessed an accelerated shifts in urban design and housing models. Long held doctrines and discourses evolved,

with some older theories also come-back. In this period, marked by the possibility of future pandemics, and heightened the climate-change concerns, placed sustainability, and health

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at the forefront of urban planning. The Climate-change issues and sustainability considered main problematic for many years; later pandemic played significant role cities' transformation. The restrictions led people to re-evaluate their work and living environments. Also, there is growing demand for airier, greener, more spacious, and healthier living spaces. Unexpectedly, the pandemic acted as a catalyst for rethinking city planning, emphasizing flexibility, resilience, and sustainability in urban design. This transformation aligns with the ongoing global shift toward addressing climate-change challenges while preparing cities for future uncertainties first appears temporary now permanent. (Figures 2-3)

This article aims to highlight the effects of the pandemic in the 2020s thought to temporary, its effects are still reverberating, and the fundamental changes in housing design and urban planning. In the pandemic period the renovation of Welwyn Garden city in England, which was a phenomenon, has become a hot topic very short time. (Figures 1-4) Thus, it focuses on the garden city model, an early 20th century concept that has come-back and gained popularity all over the world with the COVID-19. (Figure 4)

In this context, a case study is also given on garden-cities in Istanbul also including their evolution during the pandemic. The research aims to offer innovative perspectives on long-standing housing problems by revisiting and reinterpreting past urban theories and doctrines. It argues that lessons learned from the garden-city model can inform modern responses to pandemics and other urban health crises. These ideas can contribute to healthier, more sustainable living environments. This study is intended to serve as a resource for future research and provide valuable insights for policy makers, architects, planners, and researchers working on urban planning and housing.

In the ongoing climate issues and environment debates since 1992, people confronted an unexpected situation occurred in 2020, the COVID-19. The idea of designing a more livable environment with sustainable settlements focused on human, and housing concerns was first stated at the Rio, in 1992, and later in Istanbul, in 1996 and finally in Paris Agreement, 2016 [1]. The pandemic this phenomenon was considered as a temporary and their effects was first underestimated and later its influences became radical and transformative consequences the people's living and working norms and patterns also housing ideas and models. This situation also, reflected the housing models and typologies, and including real estate market [2]. The global warming and recent pandemic have forced cities new and urgent measures some major cities like New York, London, Paris, also Istanbul the pandemic to forge ahead with urgent urban plannings. The recent pandemic brings the question of infectious diseases on the center and raises inquiries for future plannings, and the development of healthy environments must be central to architecture and urbanism in the imminent [3]. The infectious diseases changed living and working norms and conditions in cities that we know since the modern architecture and plan-

ning. Indeed, the "urban" has been defined as "a place of encounter, assembly, simultaneity" [4]. The popular idea once living in the city centers which also known as socialization area for crowd was about the change after the COVID-19. The implications social distance and isolation affected the people who clustered in their homes long days which enhanced to effects of pandemic. The COVID-19, new alternatives of living and working like; hybrid, and remote working, brought the end of metropolitan life and accelerated the idea living in the countryside or close small towns and villages as well as the living like garden-cities settlements in the out of the cities. In these period people witnessed the decreased vast population of America's biggest cities and their moved to out of the city or small towns [5]. This newly developed circumstance in has driven escape from big cities to the less-density suburbia or vicinity of small towns [6]. The searching new lifestyle, after the COVID-19 led people lived in the big cities re-think the living in garden-cities, as a new living possibility, and housing models presented as modern, airy, sunny, and greener outside the city at the beginning of the 20th century.

The garden-cities, as first introduced in England by E. Howard, was considered nearly a century along the 20th century one of the most significant housing models of architecture and urban planning. The garden-cities, this old idea thought should be an integral part of the discipline of architecture has not been brought up many years. Indeed, specifically, no historian or architect before systematically explored the impact of environmental engineering [7, 8]. This garden-city model with the growing interest in green urbanism the first version of this model was available Ebenezer Howard, with the book, 1902, entitled *Garden Cities of To-morrow*, his political, and social agenda has recently made a come-back [9]. Since the early 20th century E. Howard's English garden-cities continued to be planned in the out of the cities, in green-areas considered ideal houses that were beneficial for human life, and health, with gardens and sunlight [8, 10]. (Figure 1) Since their first appearance, garden-cities have been widely used in many cities around the world, from England to Australia and America.

This is the urban dynamic of the old garden-city idea also coincided with COVID-19 measures and guidelines, such as social distance and living in neighborhood, in close quarters, and the new spatial requirements of living and working patterns that emerged during the pandemic. The garden-cities introduced an idea a satellite form of living developed outside the city. In the beginning of the suburbanization of London was an increasing problem which E. Howard endeavored to solve with his garden-city model, which to end urban sprawl by the vertical inhibition of land speculation due to the land being held in trust, and the inclusion of agricultural areas on the city outskirts. These satellite communities a spatially independent and symbolized a greener and sunny life in nature surrounding the central city with greenbelts escape from the congested urban form of the city. These living spaces are aimed to environmentally and "nature" friendly settlements

with greener and sunnier living outside the crowded centers, with its own core independently. Also, pandemic oriented model, it is not the only reason a radical change to search for new housing and living models in the green, sunny areas, also car-free, zero carbon emission, quiet neighborhoods. Aimed to new and healthy living styles led to return houses like E. Howard's garden-city models, and car-free urban arrangements with new pedestrian, and bicycle ways reminiscent of the ideas of the old garden-cities were reinstated.

However, this model has always maintained its place, despite periodic planning changes over the years. Before the pandemic, there has been an interest among researchers in investigating syntactic relationships between nature and humans [11-13]. By the 1990s, when the climate concerns first

emerged this idea already also aligned with the sustainable principles had an ecological background in the history of architectural design world. E. Howard's new, and innovative ideas and garden-cities along the last centuries explained in ecology social with his liberalist municipalism described as *utopie fronti ère* (frontier utopia) [14].

During the pandemic, new demand to live in airier and green-areas, live and work in shorter distances due to restrictions, among the people confined to their homes for long periods after the pandemic. This a multi-centered urban model that connected to each other with transportation network. The garden-cities in the past, which offered an ideal model and perfectly adapting to today's pandemic conditions or any future circumstances again.

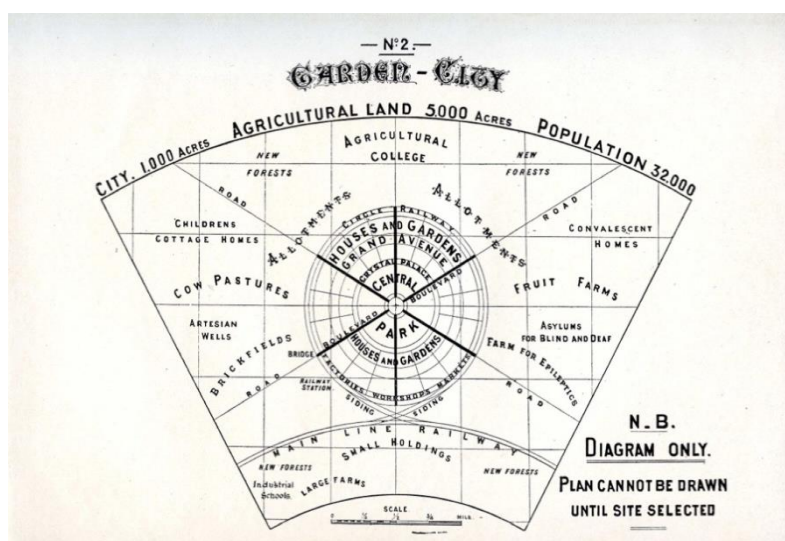
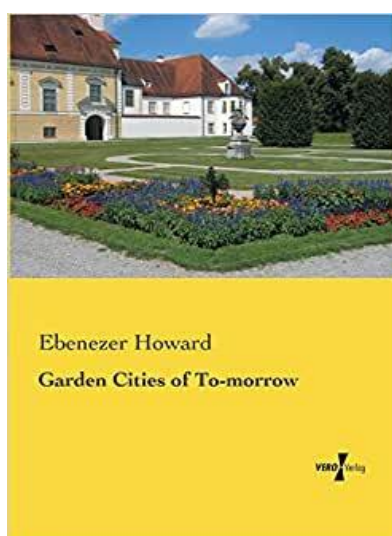


Figure 1. E. Howard's Book Garden-Cities To-Morrow, and right a Garden-City Model. Photos, www.gardencitymovement.com.

2. The Research Gap and Literature Review

As a Literature Review; the research on Garden-cities, British planner Ebenezer Howard, first introduced the garden-cities in the early 20th century with his phenomenal book *Garden-cities To-Morrow*. In the 1950s-1970s, versions of E. Howard's original model like, *Sunlight City* an Australian garden-city model, French *Cit és-jardins*, planner Henri Sellier's book in France or *Gartenstads*, Germany, etc. published. In the 1980s-1990s, new research like Hall, P 2002, *Cities of Tomorrow* Malden, Massachusetts: Blackwell. or *Garden-cities US*, *Redburn Experience* are seen. After the 1990s-2000s, the research in this period is more focused on climate and sustainability like Ross, P; Cabannes, Y., 2012, *21st Century Garden Cities of To-morrow - How to become a Garden City*. After the 2020s, in the COVID-19 period, an article published by M. Smith in *Hertlife Magazine*, England,

in 2021; *Transformation of Weywyn Garden-city, Come-Back of the Garden-cities* signified resurgence of garden-cities. This article draws attention the renewal of Welwyn city for pandemic, and sustainability. This will be a turning point for the garden-cities concept considered a significant for future pandemic and sustainable Model. (Table 1)

The Research Gap; E. Howard's, and R. Unwin's garden-city models have been referenced in many studies so far, there were few research on specifically included in post-pandemic period and reappearance of this model as an innovative housing model for future. This study addressed this research gap and presented updated research including the post-pandemic era by evolution of the garden-cities and Istanbul as case-study of this research.

3. The Methodology

The focus of the research is the garden cities, which emerged as an British model in the first half of the 20th century known in Welwyn, Letchworth cities, etc., in England,

Europe and later in America and Australia, in the process that since the 20th century and after E. Howard and its transformation into a sustainable model with climate concerns from

the 1990s onwards was examined. As a turning point in the 2020s, the renewal of Welwyn city, with COVID-19, signified the garden-city's come-back to planning world.

Table 1. The Cronological Literature Review.

The Chronological Literature Review of Garden-Cities	
The Early 20 th Century, 1898-1902	Ebenezer Howard, planner of the garden-cities, first introduced it in the early 20th century with his phenomenal book <i>Garden-cities To-Morrow</i> .
1920-1970s, New Version Garden-Cities, Europe, etc.	Publication new version of E. Howards Garden-City Model, <i>Sunlight City</i> an Australian garden-city model, French <i>Cit��-jardins</i> , planner Henri Sellier's book in France or <i>Gartenstads</i> , Germany, etc.
1980s-2000s, New Version Garden-Cities, US., etc.	The new research like Hall, P (2002), <i>Cities of Tomorrow</i> Malden, Massachusetts: Blackwell. or <i>Garden-cities US, Redburn Experience</i> are seen.
2000s-2020s, Focused on Climate-Change and Sustainability	Research in this period is focused on Climate-Change, and sustainability, Ross, P; Cabannes, Y (2012), <i>21st Century Garden Cities of To-morrow - How to become a Garden City</i> New Garden-City Movement. Stern, Robert A. M., David Fishman, Jacob Tilove, (2013), <i>Paradise planned: the garden suburb and the modern city</i> .
After the 2020s--- COVID-19, Come Back of the Garden-Cities	After the 2020s, in the COVID-19 period, an article published by M. Smith in Hertlife Magazine, England, in (2021); <i>Transformation of Weywyn Garden-city, Come-Back of the Garden-cities</i>

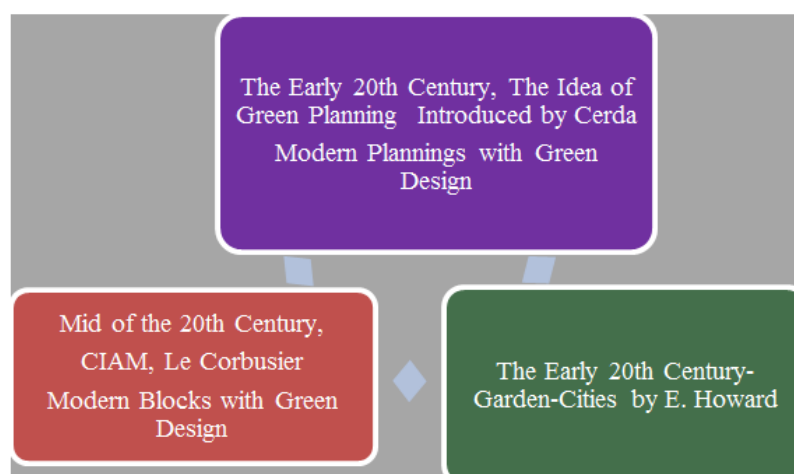


Figure 2. The Evolution of the Early Green Planning Ideas and Theories As Well As the Garden-Cities. Table by Autor.

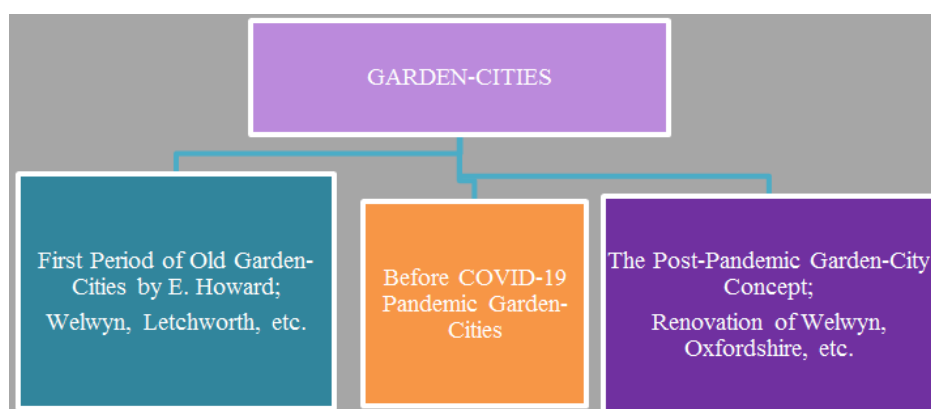


Figure 3. The Garden-Cities and Their Diviison According to Periods which they implemented. Table by Autor.

The methodology used, in this research, the transformation of garden-cities over the years was shed light on in general and the process it went through was examined. In the context of the case-study, adding originality and depth to the research, the example of Istanbul city and the transformation of the garden-cities which adapted from French *cit é-jardins* (garden-cities) and developed unique model for Istanbul such as *cit é-parc*, (park-city) by French architect-planner Henri Prost. These models examined as they reconsidered today, during the pandemic period and sustainability. Furthermore, the healthy-city concept which emerged during the pandemic period as a very specific model for Istanbul were examined.



Figure 4. Welwyn, garden-city, England the first garden-city planned by E. Howard at the beginning of the 20th century. Photo, www.gardencitymovement.com.



Figure 5. Garden-Cities, United States, Redburn, New Jersey, Green Hills, Ohio on the right. Photo, Photo, www.gardencitymovement.com.

E. Howard founded the Garden-City Association on (later known as the Town and Country Planning Association or TCPA), planned first garden-city, the Letchworth, 1889 [15].

4. The Garden-City Models and Its Evolution in Years

4.1. The Planning of Settlement Out of the City the Early-Period of Garden-City Models

It is possible to divide this model, which has remained valid almost a century and has re-emerged as popular in different periods. The garden-cities are very popular in approximately along the three different periods;

- 1) The beginning of the 20th century, when it was first planned in England by E. Howard cities, like, Welwyn, Letchworth, etc. in England.
- 2) In the late 20th century, almost a century after it was first planned it is spread and became known in the worldwide and planned in various cities and countries.
- 3) The last period is in the first two decades of the 21st century when it came to fore again with the recent pandemic.

The garden-cities, introduced at the beginning of the 20th century, in England by E. Howard, and they became a significant model nearly a century. The garden-city model and planning idea creating independent housing settlements like satellite-cities form developed outside the city center with its specific form of living with green-belts. During the suburbanization of London out of the city center, E. Howard endeavored to solve with an innovative idea the garden-city emerged as original model. These spatially planned independent satellite communities symbolized a greener and sunny life in “nature” surrounding with green-belts. They are vastly symbolizing a living aimed to “environmentally” friendly settlements, abandoned the old congested urban form. This idea supporting the decentralize living, out of the city center, in green-areas.

In 1904, Raymond Unwin, alongside with his partner Barry Parker, won the competition to design the first original garden city, Letchworth, located 34 miles outside London [16]. R.

Unwin and B. Parker planned the town at the center of the Letchworth, surrounded by greenbelts with E. Howard's concept. R. Unwin and B. Parker shared E. Howard's novel social ideas, emphasizing the people deserved more affordable housing. The garden-cities were spatially independent connected to the city's transport network through railroads, streetcars, and later automobiles. These villages were self-sufficient, featuring a central area with numerous facilities, shops, and civic buildings. In contrast, garden enclaves were residential, emphasizing natural surroundings and private spaces rather than public. The enclaves were regulated by early land-use controls, resembled modern zoning practices. These regulations included controlled setbacks, landscaping, and building materials [17].

The decentralized garden-cities were not originally part of Howard's plan [18]. In fact, they were the antithesis of what Howard sought to prevent. Howard's garden-city model was a solution to the growing suburbanization of London to mitigate his innovative planning. His approach sought to curb urban sprawl by inhibiting land speculation, through the mechanism of holding land in trust and the incorporation of agricultural areas on the city's periphery. Raymond Unwin, as E. Howard's collaborator planned the pioneering Letchworth project in 1907, played a key role the garden-city model on a global scale. Unwin's contributions, with Barry Parker, led to the development of new planning principles: An Introduction to the Art of Designing Cities and Suburbs [14, 16] significant influence on urban planning. This book contributed to the Housing and Town Planning Act of 1909, granted municipalities to develop plans for new suburban communities. [17].

By the end of the 20th century, new and innovative ideas in architecture and urban planning were first significantly pioneered by Reyner Banham in 1969. Banham proposed a concept where technology, human needs, and environmental responsiveness were considered essential to addressing the challenges of environmental degradation. Before Banham, no architect or historian had systematically examined how environmental engineering and services impacted building design [7, 8]. This shift towards green urbanism revived earlier models such as Ebenezer Howard's *Garden-Cities of To-Morrow* 1902, which had a strong political and social agenda that has seen a resurgence in modern urban planning [9]. The principles of these early garden cities now align with contemporary efforts to develop sustainable and resilient urban environments.

The idea of the garden-city also became influential in the countries, Australia, and United States globally. Examples; Residence Park in New Rochelle, New York; Woodbourne in Boston; Garden City, New York; Sunnyside, Queens; Jackson Heights, Queens; Forest Hills Gardens, in the borough of

Queens, New York; Radburn, New Jersey; (Figure 5); GreenHills, Ohio (Figure 5); Baldwin Hills Village in Los Angeles. In Australia, the town of Sunshine which is now a suburb of Melbourne in Victoria.

French and German Version of Garden-City Model

During the interwar period of the 20th century, the garden-city models of Ebenezer Howard and Raymond Unwin became a widely adopted urban planning concept across Europe, notably in France and Germany. Although originally an English model, the garden-cities spread throughout Europe and across the globe. These developments took on different regional identities, the garden-cities referred to as *cit é-jardins* in France and *garten-stads* in Germany [19]. It is also mentioned that British planner E. Howard visited Germany, where he collaborated with Hermann Muthesius, a key figure in the planning of garden cities in Germany and the founder of the *German Werkbund* [20].

From the early 20th century to the mid-century, Howard's English garden-cities continued to be planned on the outskirts of urban areas, where green-areas considered beneficial for human health, with gardens and sunlight [7]. These sunny, airy settlements from the early 20th century can be regarded as early examples of today's green, and sustainable architecture and planning.

The British urban planning theories and principles first entered the French architecture and planning literature via Léon Jaussely's translation. L. Jaussely was the first French planner transfer British urban planning principles to the France and his colleague H. Prost was known founders of the urbanism [14]. L. Jaussely first transferred Adshead's planning techniques from London to Paris with the translation of the book *Town Planning Practice* by S. D. Adshead knowledge the theory and practices of European cities like; Berlin, London, and Paris, [14]. E. Howard's garden-city model, initially developed in Britain, was later adapted in the suburbs of Paris as *cit é-jardins* (garden-cities) following the prohibition of new housing construction in *p ériph érie* (city walls of Paris) [21]. In 1919, Léon Jaussely, and Henri Sellier, alongside Henry Expert and Louis Sellier, designed several *cit é-jardins* in Paris and won first prize for their project *L'Extension et l'Am é-nagement de la Région Parisienne* (The Extension and Planning of the Paris Region). These garden-cities, planned for the outskirts of Paris, followed the principles of Howard's original garden-city model, and were executed by French architects, including H. Sellier [22].

Indeed, at the first the French versions of *cit é-jardins* were not favored by government and they were not allowed in *Le Musée-Sociale* (Social Museum) known as a think tank organization [23], primary institution in urban planning regulatory and controlling mechanism in Paris city planning [24].

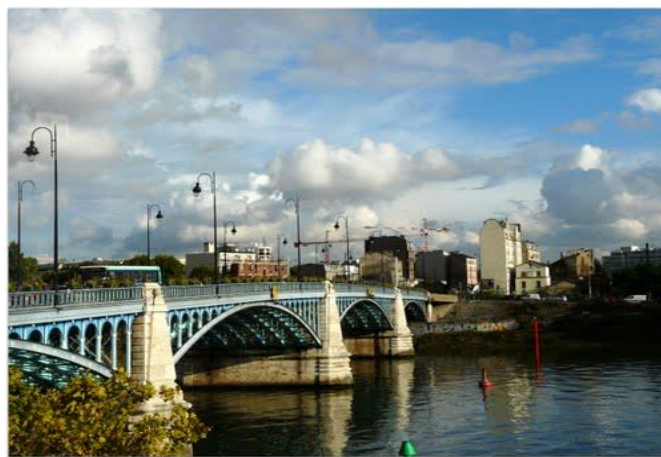
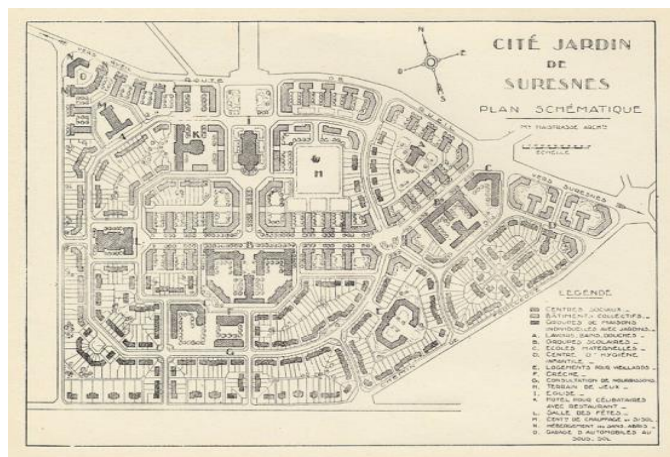


Figure 6. French cite-jardins, (garden-cities), Suresnes and St. Denis. Photos, H. Sellier.

However, this housing model later gained approval from *La Fondation de l'Association des Cités-Jardins* (The Foundation of the Garden Cities Association), supported by French architects Benoit Lévy and Georges Riesler. These architects played a pivotal role in the implementation of modern *cités-jardins* on the outskirts of Paris, beyond the *périphérie* (periphery) [25]. Architect and urban planner Henri Sellier designed several *cités-jardins* outside Paris, most notably is large-scale project in Suresnes. (Figure 6)

Although garden-city models became widespread across Europe, particularly in France and Germany, other models were also adopted by numerous architects, including Le Corbusier's CIAM model, by Henri Sellier and Eugène Beaudouin, who designed suburban areas in Paris for low-income families [19]. In the 1950s, Paris underwent significant urban development through large-scale projects known as *grands ensembles* (large-scale housing complexes), commonly referred to as HLM, *Habitat à Loyer Modéré* (Moderate Rent Housing) [26]. This period some competitions organized for the construction of newly developed housing [27]. During the 1950s, in the aftermath of World War II, *grands ensembles* and HLMs were planned around the suburbs of Paris, with financial resources partly from charitable organizations and foundations [28]. Henri Prost's period, Paris expanded transportation network connect the surrounding *cités-jardins* (garden cities). [29].

During this period, the suburbs of Paris were divided into regions that reflected the socio-economic class of the residents. The *cités-jardins* (garden cities) were established in the east-west and north-south suburbs, with distinct differences in their planning. While the north-south settlements were designed for lower-income residents, the east-west suburbs catered to wealthier, designed by architects Le Corbusier and André Lurçat. According to Le Corbusier, the garden-cities provided an ideal living environment for working-class families, featuring gardens and plots of land ranging from 300-400 m² to 500 m². He described the residents of these areas as *les banlieusards* (suburban dwellers), who lived in housing types, from villas and *pavillons* (residences with gardens) to *ci-*

tés-ouvrières (worker dwellings), depending on their socio-economic status [30].

Furthermore, planning the houses with gardens originated from Kropotkin's old notion depended on social and economic ideas low-income people, and workers would cultivate their vegetables, to supply fresh food, and clean environment since the beginning of the 20th century [31].



Figure 7. Recent examples on garden-cities, Oxfordshire, in England. Photo, www.gardencitymovement.com.

4.2. Transformation of Garden-City Models, After E. Howard

Until 2000s, and pandemic numerous garden cities keep their existence globally. Though many have transformed on inconsiderable and undesirable change and devolved into dormitory suburbs, diverging significantly from Ebenezer Howard's original social based ideas and vision [7]. Since their inception, garden-cities have been widely implemented in various parts of the world, including first in cities in England, Welwyn and Letchworth, then in Europe, France, Germany, in Australia and finally the United States. However,

many of these cities remain significant examples for heritage both architectural and urban planning, they will continue to be inspirational examples with transfer to their innovative ideas for future. Recently, many of them transformed to museum or tourism purposes which this situation protects them destruction and keeping this garden-city notion and E. Howard's ideas live [32].

Since the early 20th century, this old notion the garden-city concept has not been forgotten. Some people, institutions, and local governments try to keep alive this idea with various events or social efforts. Thus, the garden-city ideas remained on the agenda until the 2000s. In 2007, the Town and Country Planning Association (TCPA) celebrated its 108th anniversary by advocating for the application of Garden City and Garden Suburb principles to contemporary New Towns, and "Eco-towns" in the United Kingdom [33]. This initiative continued in 2013 with the release of the guide "Creating Garden Cities and Suburbs Today: A Guide for Councils," which aimed to support local governments in the implementation of garden-city principles [34].

In the 2010s, some institutional efforts for future of garden-cities were continued. In 2014, The Letchworth Declaration [34] was published, advocating for the creation of an accreditation organization for future garden-cities in the UK. The declaration emphasized both visible elements—such as architecture and layout—including social structures, ownership, and governance. Consequently, the New Garden Cities Alliance was formed as a community interest company. Its mission is to promote the development of future garden cities, complementing organizations like the Town and Country Planning Association (TCPA). This newly adapted garden-city models and principles, as well as ideas from other sources, such as Cabannes and Ross's 21st Century Garden Cities of Tomorrow [35].

In early 2014, 2015 is a considered a new period in the garden-city developments considered some sustainable transformation efforts have been initiated. Indeed, these are very different from their previous social based garden-city notion by E. Howard. Some social based initiators come to fore and started works on garden-cities. Some plans for a new garden-city at Ebbsfleet Valley in Kent, with another expansion in Bicester, Oxfordshire [36, 37]. The UK government extended these efforts in 2015, supporting the development of new communities in North Essex and promoting sustainable, environmentally friendly town development in Didcot, Oxfordshire. [38]. (Figure 7)

In 2017, with a new garden-city planning approach a new project prepared for new garden villages, each with between 1,500 and 10,000 homes, and garden towns each with more than 10,000 houses were declared by the government [39]. These smaller projects have been proposed due to opposition of "urban sprawl" in the garden city projects, as well as such quick expansion to small communities. The first wave of villages to be approved by ministers are to be in.

4.3. After 1990s, Garden-Cities as an Innovative Sustainable Housing Model

By the late 20th century, urban areas and their residents began confronting new challenges, initially linked to global warming and climate-change issues. Indeed, the trajectory of urban planning shifted significantly after the 1990s, with the discipline moving away from older models that proved inadequate in addressing contemporary challenges [14]. The urban planning and architectural dynamics of cities have since undergone rapid evolution, generating new design paradigms focused on innovative urban and housing solutions [40].

By the end of the 1990s, climate change and global warming became the central environmental concerns globally, spurred by the advocacy of environmental activists. The first Earth-Summit, held in Rio de Janeiro, 1992 by the United Nations, marked a pivotal moment in addressing these issues, leading to the formulation of Agenda 21 [41]. This summit catalyzed a shift in how urban living was perceived, sparking debates on sustainable planning, and prompting a re-examination of urban living standards, with a growing emphasis on green architectural designs. Additionally, since the 1990s, there has been a trend of populations moving away from city centers, seeking greener, more livable environments outside urban cores. As early as 2008, it was predicted that the global urban population would surpass the rural population. Projections suggest that by 2025, nearly two-thirds of the world's population will be living in urban areas, a trend driven by migration from rural to urban environments as people seek better living standards and job opportunities [42]. This shift underscores the urgency of implementing sustainable urban planning solutions to address the environmental and social challenges associated with rapid urbanization.

In the context of recent sustainable developments, urban and housing planning, along with lifestyle choices, have become significant factors contributing to the growth of urban populations and the phenomenon of urban sprawl. These issues, such as increased vehicle traffic, pollution, and the destruction of green spaces which made many cities increasingly uninhabitable, posing serious risks to human health. In response, international organizations like Habitat have addressed these concerns, acknowledging that most of the global population now resides in mega-cities, particularly in densely populated city centers, due to employment opportunities. Meanwhile, many suburban areas have seen rapid expansion as urban centers become less desirable living environments.

According to garden-cities considered as a sustainable model, this concept gained renewed attention long before, particularly after the 1990s. This models as innovative housing design began to re-focus within the broader context of green and sustainable architecture. If considered the garden-cities of the early 20th century—there have been both explicit and implicit mandates for green-cities aimed at reducing the environmental impact of urban environments. These principles have become integral to urban policies

worldwide [43, 44]. Recently referred that the new innovative settlements will be re-planned in the context of garden-cities, some renewing's soon. This recent resurgence of interest in garden-city models reflects the importance of sustainable urban planning in contemporary government policy, echoing E. Howard's advocacy for airier, greener, and community-oriented neighborhoods [45]. His ideas, which have endured for over a century, are now discussed in future planning ideas terms of social ecology and liberal municipalism, often referred to as *utopie fronti ère* (frontier utopia) [14].



Figure 8. The garden-city of Welwyn, the recent come-back of the garden-cities, after the pandemic.

4.4. The COVID-19, and the Pandemic Period Come-Back of the Garden-Cities as a Sustainable and Healthier Model

Garden cities, once considered valuable but largely forgotten housing models of the early 20th century, have seen a resurgence in interest due to the Covid-19 pandemic. The pandemic has triggered a rapid shift in awareness toward these innovative ideas, which are also influenced by ongoing climate-crisis issues. After the strict health measurements and long-term closure in the cities the people began to seek to escape from the cities living airier, greener living environments surrounded by nature. They also started to question the suitability of their densely populated urban settings. While the direct impact of the pandemic may not be considered highly significant, its influence on sustainability and housing trends is becoming increasingly important. This situation led to the reconsideration of the new and innovative ideas which have been experiencing since the last century. Thus, during the pandemic the problems experienced in the cities like heavily urbanization, destruction of green-areas, pollution, and deterioration of air quality that make cities inhabitable places have forced the city planners and administrators to take some urgent precautions. Addressing the ongoing problems experienced in cities, international community of nations, the mayors of prominent cities Paris, Sydney, Tokyo, and Cape

Town taken some measures even boasted in the *Financial Times* in January 2020 with the boldest ideas, and crucial plans for a sustainable future of the low carbon city and Covid-19 [46]. However, making implementations practically with some significant decisions in cities having such a population as substantial issues was still seen as problematic.

In the awareness of the coronavirus pandemic period, housing priorities have shifted toward airier, greener, and healthy living environments also aligned with sustainable principles. Garden-city models, with their emphasis on residences surrounded by gardens, have seen a resurgence in popularity, reflecting a growing desire for sustainable urban planning spaces [47].

This renewed interest in garden-city model and principles is not just about sustainability but also about fostering a healthier relationship between urban dwellers and their environment. In recent years, architects and planners have reevaluated city planning and housing models. The old urban planning and architectural doctrines now far from the sustainable with now well-known negative impacts of urban environments, and cities where the designed for cars rather than people. This have prompted a reaction against the overly technical and modernist approaches of the 1960s, particularly those associated with CIAM, and modern architectural doctrines.

4.5. The Come-Back of the Welwyn City in the Post-Pandemic Period

As a well-known garden-city model Welwyn city which was designed originally by E. Howard at the beginning of the 20th century, in England, has become the center of the point of during the pandemic period. Although Welwyn garden-city is intended to be renewed by emphasizing its more sustainable features such as green areas, parks, pedestrian ways, and bicycle paths, the fact that this coincides with the pandemic period is of particular importance in this context. The issue of renewal of the old town has come to the agenda recently due to the improvement of the environment to create more livable places, made it vibrant to everyone and a much-improved environment for humans, pedestrians, and cyclists with the awareness of the recent COVID-19 [48].

The revival of Ebenezer Howard's Garden-city concept, particularly Welwyn in England, has become emblematic of a renewed focus on sustainable urban development. A recent article in England emphasized that Welwyn, initially designed as a garden-city model by Howard, is slated for renewal as a focal point post-COVID-19 [49]. (Figure 8) Welwyn Garden City, once an experimental town in community planning, was described by British Newspaper *The Times* as a world-famous modern town that led to the New Towns Act, emphasizing the importance of well-planned urban spaces [50]. In contrast, Hatfield example, which developed more sporadically, underscored the necessity of such legislation. During the pandemic period this resurgence has drawn attention once again to the importance of garden-cities and has led to their evaluation as a new and innovative model for the future.

4.6. A Case-Study, Istanbul Old Garden-Cities, Transformed to a New Concept Healthy-City

The garden-city concept, an innovative housing model originally developed by E. Howard in England, spread throughout Europe, France, Germany, and Italy, and finally was introduced to Istanbul, Türkiye, by French and Italian architects in the early 20th century. French architect-planner Henri Prost developed some derivatives of old E. Howard's garden-city model and French *cités-jardins* (garden-cities). These earliest garden-city models in Istanbul, developed first in the Kadıköy, Kosuyolu region, were inspired originally by the French *cités-jardins* [19]. Also, a unique model known as the *cités-parc* (park-city), specifically designed for the groves of Istanbul in the Bosphorus Heights [51, 19]. These models, which were derived from early garden-city settlements, continue to serve as valuable examples in shaping urban planning, particularly during crises such as the pandemic. Since their inception in the early 20th century, Henri Prost's designs, along with other garden-city models, have played a critical role in Istanbul's urban landscape.



Figure 9. The Healthy-city model after the COVID-19 developed as a unique model for Istanbul a garden-city derivative inspired from E. Howard, in Anatolian Side, Sancaktepe. Photo, DAPYapwebsite.

The impact of COVID-19 on the global real-estate market, including in Türkiye, was profound, particularly concerning housing models and typologies. The post-pandemic period has seen a notable shift in housing preferences, from high-rise buildings to low-rise with gardens located in green-areas out of the city centers, largely implemented by private developers. Furthermore, in response, the Turkish Builders Association emphasized sustainable and environmentally friendly projects, aimed at meeting the evolving demands of society [52]. Housing models featuring low-storey structures with gardens, spacious terraces or balconies, and additional office spaces for hybrid working emerged as ideal solutions during the COVID-19 period [53]. During the pandemic, as a derivative of the old model the new garden-city settlements developed, symbolizing a healthier way of living under pandemic conditions [53]. The "healthy-city" concept has since been adopted and developed in regions such as Levent on the European side of Istanbul, and Pendik and Sancaktepe on the Anatolian side

in the outside of the city center as airier and greener areas. (Figure 9) This idea also used in urban planning terminology accepted by WHO, as a laboratory for the lifestyle targets agreed for Europe, right to support integrated approaches to health promotion at the city level. [54]. This is also considered to be a concept that can be evaluated in the context of newly developed models of old garden-cities.

5. Conclusion

Garden-cities, which have been implemented in settlements outside cities for nearly a century since the early 20th century in many countries and cities around the world. They have recently come to the fore again with COVID-19. Indeed, when the features of garden-cities, which was presented as a new and innovative planning and housing model at the beginning of the 20th century, were examined. This model having a planning character suitable for the restrictions and implementations imposed the cities during the pandemic for a healthy life in cities. Recently the city of Welwyn has quietly made a come-back to the fore in the context of COVID-19, and the city has again become a main model both a pandemic and a sustainable city, arranged with new green-areas, parks, pedestrian paths, and cycle paths etc. It started to be renovated by highlighting its features as a garden-city model. This renovation project may be present the ideal life that people are looking for in cities after COVID-19; They discovered that it offers airier, greener, sunnier, and healthier most importantly emphasized the healthy living standards, being same principles of sustainability. Thus, the old garden-city concept, which emerged as an new and innovative settlement a century ago, became popular again a century later as a sought-after city and residential settlement during the pandemic period. According to the founding of case-study searched specifically in this study Istanbul city, it is achieved that a unique model of healthy-city concept emerged during the pandemic as a very new version of the E. Howard's old garden-city model. Consequently, the pandemic, which lasted nearly two years between 2020-2022 and was initially thought to be temporary, permanently affected cities and houses and left permanent effects changed and transformed the cities and houses and housing models and typologies. Although it is not known whether such an epidemic will occur again in the future, some people point out that this is not a very remote possibility and that such an epidemic can occur at any day and at any time in soon. In this case, it seems that garden-cities will always maintain their importance on the world urban planning agenda and will continue to sustain a popular housing model in the future.

Abbreviations

TCPA	Town and Country Planning Association
CIAM	Congrès Internationaux d'Architecture Moderne,

(International Congress of Modern Architecture)
HLM An Habitation à Loyer Modéré (A Low-Rent Housing), known in France Housing Sytem

Author Contributions

Hülya Coskun is the sole author. The author read and approved the final manuscript.

Conflicts of Interest

The author declares no conflicts of interest.

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