ENVIRONMENTAL UTOPIAS:
ecotopias aiding the transition to an environmentally conscious society

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Abstract
In the midst of industrialisation and simultaneously glimpsing the first sights of globalisation, the 20th was eminent for its many technical successes but also its social and environmental consequences, which created an unprecedented division in society. Wishful utopian thinking arose as a result of this dissatisfaction, and some architects adopted this idea to visualise a 'perfect' world, adhering to their political, social or environmental ideologies. The now clichéd term 'sustainability' was rarely of consideration at that time, but climate-conscious thinking and a desire to transition to a 'greener' lifestyle are evident in some utopian societies envisioned by architects and designers such as Ebenezer Howard and Paolo Soleri. Their ideas were presented to citizens as a model world where ecology, humans and architecture reside in complete harmony, encouraging people to take part in the common good. Images and advertising techniques were used to promote this ideal society to the public by depicting the 'not yet', giving designers the power to make sense of an unforeseen future. This thesis further explores how these environmental utopias, developed with comparatively little knowledge of the climate crisis to today, have influenced so-called independent sustainable communities in the contemporary world, and where, if at all, we can draw a line between utopia and ecological urban design.

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1. INTRODUCTION

1.1 Utopias and environmentalism

Utopian design and environmental science possess seemingly antithetical viewpoints; utopists adopt imaginative ways of thinking and test the limits of their creativity, while scientists follow a set method to draw objective conclusions. The power of environmental utopias thus lies in their abilities to challenge the boundaries of science and focus on the possibilities of the future instead of the constraints of the past and present.[1]

Sensing the denouement of the Industrial Revolution and simultaneously riding the unsteady political waves in Europe and the United States at the beginning of the 20th century, designers and urban planners alike turned to their imaginations to envisage a perfect world, where all current societal issues would be solved.[2] Green and environmentally friendly thinking was not of any concern to the people at the time, but traces of what we call 'sustainable habits' can be seen in both of the utopias explored – Ebezener Howard's Letchworth Garden City (1905) (Figure 1.1) and Arcosanti, founded by Paolo Soleri in 1970 (Figure 1.2).

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[1] Robert Brownstein and Rudolf Moos, *Environment and Utopia: A Synthesis* (New York: Plenum Press, 1977), 241.
[2] Robert Fishman, *Urban utopias in the twentieth century: Ebenezer Howard, Frank Lloyd Wright, and Le Corbusier* (New York: The MIT Press, 1977), 10.

Figure 1.1: Postcard of the Common View, one of Letchworth Garden City's earliest streets (Unknown author, 1912, Garden City Collection)

Figure 1.2: Photograph of construction at Arcosanti (Arizona Office of Tourism, 1980, Arizona State Library, Archives and Public Records)

Despite showing considerations for the climate, however, the two utopian cities present short-sighted ideas of the environment, in total opposition to the eternal nuances we give the definition of 'sustainability' today. In his drawings and lectures, Howard continuously emphasises the connection between the environment and human health, arguing that living with nature is the root of living in peace.[3] With a significant increase in the knowledge of climatic issues in the latter half of the 20th century, Soleri's Arcosanti explicitly highlights the issues of resource use and passive building principles, which Howard took little consideration of. Through the analysis of the projects, the designers' powers to propose a certain image of a perfect society are evident; drawings depicting a world where people and nature live in harmony stood out against the backdrop of an all-too-real industrialising city, propelling society to adopt these revolutionary ideas and thus move to a greener lifestyle.

The topic of utopias has been heavily researched throughout the last half-century from an array of perspectives, evidenced by the range of genres covered by the publications. From fictional narratives inspired by real-life utopian communities, books covering its entire history through to modern times, and

[3] "Notes of the Week." *The Inquirer,* August 31, 1907, 485, https://archive.org/details/inquirer0066unse/page/492/mode/2up?q=letchworth.

academic papers analysing the urban planning theory behind the designs, researchers have taken advantage of the multi-faceted nature of utopias to constantly make new connections to another discipline.

Robert Brownstein and Rudolf Moos' *Environment and Utopia: A Synthesis* (1977) is one of the few publications that draw close parallels to the topic of this thesis.[4] Although its case studies differ from the ones covered in this thesis, the book's concluding chapters on environmental and utopian perspectives shed light on how the seemingly contradictory scientific and imaginative ways of thinking have come together. As it was written almost half a century ago, the authors' understanding of environmental consciousness has changed to what we regard as 'sustainability' now, but its debate on what makes an ecological utopia, and their analysis of elements that are shared between ecological and utopian thoughts still remain relevant today.

This multi-disciplinary nature of the topic is similarly handled in British historian and environmental activist Richard Grove's contribution, *The Origins of Environmentalism,* to the Nature Journal in 1990, covering the history of ecological thinking. It attempts to explain the surge in environmentalists in the mid-1900s, borrowing ideas from political theory, historical events and scientific development, as done in Brownstein and Moos' publication.[5]

On the contrary, Ian Todd and Michael Wheeler's 1978 book *Utopia* takes on a mono-thematic approach to the topic of utopias, where it illustrates the rise of utopian thinking starting from its biblical associations and concluding with American architect Buckminster Fuller's 'Spaceship Earth' in the 1960s.[6] Presented in chronological order, the book highlights the influences that designers had on each other and the subsequent relationships between many utopian ideas. Unlike the works by Brownstein, Moos and Grove, it omits any scientific viewpoint on the topic, and while it discusses the historical origins of these utopias in detail, stops short of examining ecological ideas.

In contrast to the thematic publications, extensive writings focusing on a single utopia with a holistic view, looking at its historical origin, layout, buildings, laws, construction, financial aspects and other key topics, are commonly found as well. In Robert Fishman's *Urban Utopias in the Twentieth Century: Ebenezer Howard, Frank Lloyd Wright, and Le Corbusier* published in 1977, the author dedicates a section to each of the three figures, starting with the background of the designers before recounting the timeline of how their ideas came about and were translated to reality. The section on Ebenezer Howard gives an in-depth description of the Garden City movement, grounding the following subsections on Letchworth in this theoretical framework. The book is thus mostly focused on the historical influences that helped Howard with his idea of the utopia, delving into minute details such as its funding scheme and issues with construction. Instead of an analysis, therefore, the writing describes key facts in sequential order, attempting to draw parallels between the three major utopists in the 20th century. The lack of an 'environmental lens' on Letchworth is thus a gap in the published works – however, the theme of returning to nature is a common theme in many texts on Letchworth, and this thesis will bring about another perspective on this idea through a newfound understanding of 'environmentalism' in the 20th century.

While books are the most common source of secondary sources for Letchworth, many journal articles have been published about Arcosanti, the second utopia explored here, due to its recency and

[4] Brownstein and Moos, *Environment and Utopia.*
[5] Richard Grove, "The Origins of Environmentalism," *Nature* 345, no. 2 (May 1990): 11-14.
[6] Ian Todd and Michael Wheeler, *Utopia* (London: Orbis Publishing, 1978).

continuation of construction to today. *Architecture Meets Ecology at Arcosanti* by Ted Mero, an article in *Sustainability: The Journal of Record* by Mary Ann Liebert Publications (2012), explores the topic of arcologies through site visits and interviews with the residents of the community.[7] Interweaving the authors' first-hand experiences living in the community with explanations of the historical development of the utopia, the author presents a contemporary interpretation of Soleri's work, not dissimilar to the standpoint of the proposed thesis. In comparison to writings about Letchworth, more has been published about the environmental aspects of Arcosanti, but analyses of its ways of advertising, public perceptions, and role in transitioning society to a more environmentally conscious one still remain gaps to be filled.

Within this prominent field of utopian research, it can be seen that the relationship between utopias and environmental thinking is mostly absent. Research into Letchworth has revealed that the number of publications about it has thinned drastically since the late 1900s. In contrast, an increasing number of research papers have been published about Arcosanti, mirroring the collective global rise of ecological concepts. This thesis, therefore, is an attempt to bring the two opposing projects together through the theme of ecology, showing an understanding of the different temporalities and extent of media coverage. Inquiring into the methods of advertisement used to promote these utopias, as well as the public response to the new communities at the time of design and construction, this analysis will bring about a more society-centred perspective than in many published works focusing on the history and ideas of the designers themselves.

Rooted in Brownstein and Moos' ideas of ecological utopias, the research further narrows down the lens of investigation and takes a more architectural-visual approach to the analysis, thereby bridging the gap between the 20th century and modern-day society. Utilising the power of both visual and textual methods of analysis but embraced within the discipline of 'architectural history', the paper aims to bring about a design-strengthened argument on the influence of environmentalism on 20th-century utopias. Concluding with a brief study of contemporary 'sustainable communities', it will thread the historical research together with our modern architectural climate, prompting questions of where we draw the line between utopia, dystopia, and reality.

1.2 Understanding of 'environmentalism' in the 20th century

'Sustainability' and 'circularity' are at the forefront of our society today, but in the 20th century, when people believed that resources were finite and the earth had the infinite capacity to absorb waste,[8] the idea of being 'environmentally conscious' held very different values. In a society where the term 'climate change' was unheard of, people's views of living with the environment were shaped by and evolved with, the changing public opinion and political ideologies of that time.

Writing the article 'The Origins of Environmentalism' for the *Nature Journal* in 1990, Richard Grove argues that the increase of botanical research and the common interest in the natural sciences in the mid-19th century are what led to ideas about environmental protection.[9] The idea of putting nature first proved to be a smooth incorporation into society, as it conformed to many people's traditional religious beliefs that men are subordinate to nature. Learning from their history of colonisation and thus their awareness of different climates and local environments, issues of deforestation, water supply, famine and

[7] Ted Mero, "Architecture Meets Ecology at Arcosanti," *Sustainability: The Journal of Record* 5, no. 2 (2012): 70-74, https://doi.org/10.1089/SUS.2012.9984.
[8] Andrew Feenberg, "Early History of Environmentalism," Simon Fraser University, accessed February 10, 2024, https://www-sfu-ca.tudelft.idm.oclc.org/~andrewf/environment.htm.
[9] Grove, "The Origins of Environmentalism," 11.

disease became a point of discussion for many scientists.[10] Yet the connection to the general public was far-reaching, as their understanding of 'nature' was built upon the more tangible cultural elements of everyday life.

As a result of the widespread Romanticism and the Arts and Crafts movement in Europe, the early decades of the century in England laid emphasis on returning to nature and incorporating physical elements of it into architectural designs.[11] Influential architects such as John Ruskin and William Morris rejected the presence of factories and mass production, turning to self-crafted works and using natural materials such as wood, stone and clay to create designs that blended in with the surrounding landscape. In conjunction with the dwindling momentum of the Industrial Revolution,[12] this new turn to environmental thinking can be argued to be a direct response to the people's confusion with the rapidly changing society and a newly-held optimism for the future. The choice to focus on nature was their way of finding peace and calm after their exposure to a blur of technological advancements in the 1800s. With a growing interest in returning to nature in the general public, the latter decade of the century gave birth to public associations such as the Society for the Protection of Birds and the Natural Trust for Historic Interest of Natural Beauty,[13] attracting nature-enthusiasts across England. As a result, 'environmentalism' in urban planning was measured in the way in which buildings and landscapes incorporated elements of nature, embedded in the historical significance of nature.

As the 20th century progressed, the number of utopia proposals decreased,[14] reflecting the loss of hope and confidence in society after a turbulent series of decades. There was a simultaneous increase in antiutopian thinking, as people feared the unpredictable consequences of such a large societal change, following the devastation of global events such as the two World Wars. Yet with the 1960s counterculture that flourished in the US, experimental communities increased, many seeking simplicity and the desire to live harmoniously with nature.[15]

While environmentalism was rooted in the historic influences of nature-inspired ways of living in England, the same idea developed through the dominant start of the Progressive Era in the late 19th century in the United States.[16] Reformers protested that the unprecedented economic development in the country was depleting natural resources, highlighting the negative health impacts of overcrowding in cities, as well as the worsening air and water pollution due to industrial waste. As in the UK, groups started to form, most notably the Sierra Club in 1892, which fought to preserve America's wilderness and wildlife.[17] These started to gain political support such as by President Woodrow Wilson, who actively encouraged environmental ideas by creating National Parks across the country to protect the ecosystem.[18] As the supporters of conservationists grew, the concept of 'ecology' also spread,[19] many coming to realise

[10] Grove, "The Origins of Environmentalism," 13.
[11] Moid Ali, "Change-Making: the Origins of Environmentalism," The American Institute of Architecture Students, published March 28, 2021, https://www.aias.org/change-making-the-origins-of-environmentalism/.
[12] Ali, "Change-Making."
[13] Ali, "Change-Making."
[14] Brownstein and Moos, *Environment and Utopia,* 35.
[15] Brownstein and Moos, *Environment and Utopia,* 41.
[16] "Origins of the Environmental Movement," Michigan in the World and the Environmental Justice History Lab, accessed 10 February, 2024, https://michiganintheworld.history.lsa.umich.edu/environmentalism/exhibits/show/main_exhibit/origins.
[17] Lauren Lassleben, Xiuzhi Zhou, Karen Gracy and Dennis Scott, "Guide to the Sierra Club Records, 1891-," Online Archive of California, accessed 15 February 2024, https://oac.cdlib.org/findaid/ark:/13030/tf4x0nb0qs/entire_text/.
[18] Ali, "Change-Making."
[19] Michigan in the World, "Origins of the Environmental Movement."

that it is not only about how the environment shapes human life, but is also about the negative consequences of people on the natural environment.

Capitalism in the US was blamed to be the culprit for this 'competition' between humans and nature,[20] as people fought for their share of natural resources without considering the environmental impacts. The publication of Rachel Carson's *Silent Spring* in 1962, exposing the horrific implications of chemicals on the ecosystem, collided with the growing concerns of smog above major cities and the use of pesticides in agricultural products, acting as a major trigger in the country to take environmental politics more seriously.[21] The chain of environmentalist books and publications that followed shocked society, although they were seen as a temporary 'counter-culture'[22] deviating from the norm. It can hence be argued that environmental thinking in the 60s US society was a symbol of rebellion, rather than a true understanding of climate concerns. The path to environmental understanding was thus never one single line but oftentimes was a rocky opposition to the political climate and the need for more deviation from conventional society.

2. LETCHWORTH GARDEN CITY: ENVIRONMENTALISM AS BACK TO NATURE

2.1 Background

Arguing that humans and nature can live harmoniously in contrast to the effects of mass urban migration in the late 19th century,[23] Ebenezer Howard proposed the idea of a Garden City, where people can enjoy the benefits of a town and country in one area. His 'Three Magnets Diagram' presents his findings by categorising the advantages and disadvantages of a town and country separately, before combining the positives of both into a final 'Town-Country Magnet' (Figure 2.1).

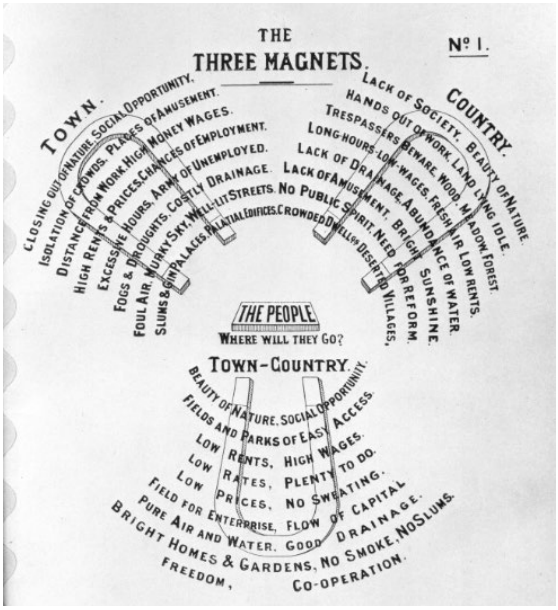

Figure 2.1: The Three Magnets, as proposed by Ebenezer Howard (Ebenezer Howard, 1902, Royal Institute of British Architects)

[20] Michigan in the World, "Origins of the Environmental Movement."
[21] Feenberg, "Early History of Environmentalism."
[22] Timothy Cooper, "British Environmental History," *Making History,* accessed February 10, 2024, https://archives.history.ac.uk/makinghistory/resources/articles/environmental_history.html.
[23] Fishman, *Urban utopias*, 38.

Envisioned to be 'a utopia of clean, pure air, flowers and perpetual sunshine,'[24] Howard's proposal for a Garden City in 1902 consisted of a series of satellite garden cities connected to the central city (Figure 2.2). Public buildings such as the town hall, hospital and theatres are located in the central ring, and residential buildings are spread out into six equal wards with their own neighbourhood centres. The idea was that each ward acts as its own ecosystem, each having a Grand Avenue with a school, library and church.[25] Industries are located on the outermost ring of the urban structure, surrounded by large farms that prevent the city from growing out any further. Accessibility is key in the scheme, where everywhere in the individual wards is accessible by foot or bicycle, and a railway system efficiently connects all the centres together.

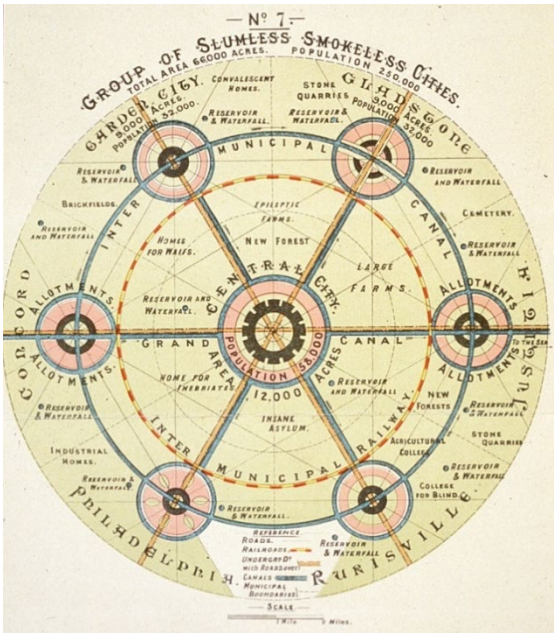

Figure 2.2: Diagram of a Garden City (Ebenezer Howard, 1898, Hertfordshire City Council)

In the Spring of 1903, an empty plot of land in Hertfordshire, England was selected for the 'experiment',[26] and the first Garden City was registered. Howard, who was not an architect, hired Parker and Unwin Architects to work on the detailed design of his conceptual idea.[27] Although they shared Howard's vision for a town-country hybrid community, they rejected his rigid and geometric approach to urban planning, and instead sought to follow the natural curves of nature to achieve 'organic unity'.[28] With the passing of ideas from the inventor himself, to the architects, builders and ultimately the citizens, Letchworth Garden City developed as a model for a 'healthy',[29] 'organic'[30] city, outside the smoke and grime of other English towns.

[24] Todd and Wheeler, *Utopia,* 123.
[25] Fishman, *Urban utopias*, 43.
[26] Fishman, *Urban utopias*, 63.
[27] Fishman, *Urban utopias*, 68.
[28] Fishman, *Urban utopias*, 68.
[29] "Miscellaneous," *The Illustrated London News,* December 5, 1908, 816, https://archive.org/details/sim_illustrated-london-news_1908-12-05_133_3633/page/816/mode/2up?q=letchworth.
[30] "Garden Suburbs and Garden Cities," *The Lancet*, June 8, 1907, 1582, https://archive.org/details/sim_the-lancet_1907-06-08_1_4371/page/1582/mode/2up?q=letchworth.

2.2 Integration of 'green' thinking

For Howard, whose main aim was to make Letchworth a place for 'getting more of [society] back to the land',[31] his idea of environmentalism was presented as a way of connecting with the landscape and the earth's natural resources. 'Garden City in the Making', published by the Garden City Press at the year of construction and outlining the numerous policies of the new community, displays traces of environmentally-conscious design choices: 'respect for what already exists, and in accord with the contour of the land […] without the destruction of any of the standing trees'.[32]

The Agricultural Belt surrounding the urban centre is a key element of Howard's ideas on natural integration, with the 5,000 acres of land being dedicated to a peaceful countryside retreat for citizens, and for farmers to supply food for the community (Figure 2.3).[33] The belt also acts as a boundary for the city,[34] meaning that it cannot be built upon and let the city to expand, avoiding overcrowding and the spread of diseases – issues that gave rise to the fundamental idea of a Garden City. This further responds to the discontent with the uncontrollable growth of large cities such as London located fifty kilometres away, as Bremner expresses in his contribution to *The Fortnightly Review:* '…there must never be more than twelve cottages to an acre of land; it should be remembered that London often houses 1,000, 2,000 and even more…'[35]

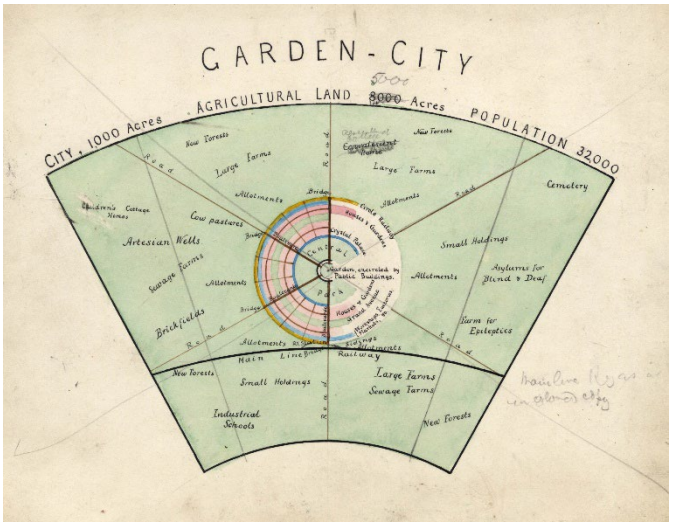

Figure 2.3: The Green Belt surrounding the nucleus of the Garden City, serving as a space for agriculture and recreation (Ebenezer Howard, 1898, Hertfordshire Archives and Local Studies)

Influences from the Arts and Crafts movement and thus the rejection of technology and mass production are evident in the ways buildings are designed, such as those exhibited at the Cheap Cottages Exhibition in 1905, an event held to showcase some of the buildings that will be constructed in the new city (Figure 2.4). Traditional building techniques and natural materials were used, with local tiles and stone cladding the steeply-pitched roofs.[36] Although monochrome, it is evident that newspaper articles showing off the

[31] Todd and Wheeler, *Utopia,* 119.
[32] *Garden City in the Making* (Hitchin: Garden City Press Limited Printers, 1905), 10.
[33] Fishman, *Urban utopias*, 45.
[34] "Garden Suburbs and Garden Cities," 1582.
[35] C.S Bremner, "Garden City, the Housing Experiment at Letchworth," *The Fortnightly Review,* September 1, 1910, 515, https://archive.org/details/sim_fortnightly_1910-09-01_88_525/page/518/mode/2up?q=letchworth.
[36] "Houses for the Working Classes," *The Builder,* October 14, 1905, 387, https://archive.org/details/sim_building-uk_1905-10-14_89_3271/page/386/mode/2up?q=direction.

newly built cottages present them against a backdrop of greenery, with trees, bushes and climbers engulfing the buildings into the landscape. The presence of scenic views and country buildings are described as 'add[ing] so much to the charm of the town',[37] and street corners are 'attractively laid out with flower beds, and all the streets are planted with trees, carefully chosen for the beauty of their foliage',[38] showing a superficial, aesthetic-centred view of the environment, highly characteristic of the Arts and Crafts period.

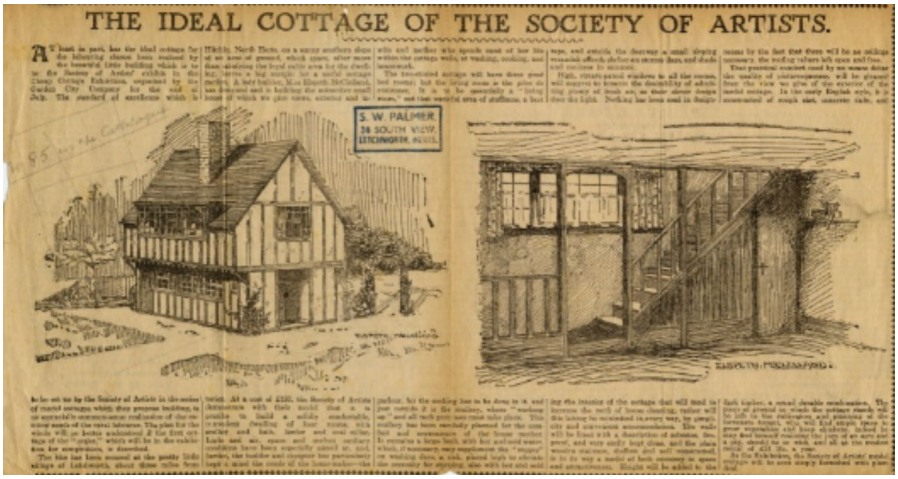
THE IDEAL COTTAGE OF THE SOCIETY OF ARTISTS.

Figure 2.4: Article published showcasing a Cottage for the Cheap Cottages Exhibition (Unknown source, 1905, Garden City Collection)

The design of individual buildings in Letchworth was also meant to be environmentally conscious, with most dwellings facing the sun.[39] Factories turn away from the prevailing winds so that the smoke and dust will be carried away from the centre, and electricity will be priced low to be able to compete with the dominance of fuel.[40] Similarly, an electric current generation station is placed alongside its independent gas and water supplies, making sure the community is self-sufficient. [41]

On a larger scale, Howard's image of the town centre of his Garden City is yet another way his idea was shown off to the public as a green city. An aerial image of the town square was published in an issue of *The Builder* magazine in 1913 (Figure 2.5).[42] In the foreground is a large square with a central fountain and perfectly aligned rows of trees, emphasised against the vastness of the empty square. The main visual attraction of the image is a grand wall that spans almost entirely from one end of the image to the other – the façade is adorned with a series of regular columns and pediments, with two small towers on either side. Behind this wall is presumably the city church, assumed from its tall steeple splitting the skyline. Contrary to the main buildings, the background of the drawing is given very little detail and is covered mostly by trees, depicting a natural backdrop for the cityscape. The deliberate sandwiching of the important buildings between a fore-and background of greenery is a silent reminder of people's subordinance to nature, and that society must be harmoniously integrated into the landscape.

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[37] *Garden City in the Making,* 10.
[38] Bremner, "Garden City," 515.
[39] "Notes of the Week," *The Inquirer,* August 3, 1907, 492, https://archive.org/details/inquirer0066unse/page/492/mode/2up?q=letchworth.
[40] Frederic C. Howe, "The Garden Cities of England," *Scribner's Magazine,* July 1912, 3, https://archive.org/details/sim_scribners-magazine_1912-07_52_7/page/4/mode/2up?q=letchworth.
[41] Howe, "The Garden Cities of England," 3.
[42] "Letchworth Garden City," *The Builder,* June 6, 1913, 653, https://archive.org/details/sim_building-uk_1913-06-06_104_3670/page/n23/mode/2up?q=letchworth.

Figure 2.5: Aerial view of the Central Square in Letchworth (Ebenezer Howard, 1913, The Builder)

Despite the multiple scales and ideas of environmental thinking Howard possessed, the principal argument for why people should move to a Garden City ultimately boiled down to its health benefits. Numerous newspaper articles highlight the lack of noise, dust and smoke in the town,[43,44,45,46] with the Garden City Press describing it as possessing 'exceptional advantages from a health point of view'.[47] Newspapers argued for the 'removal'[48] of people to areas of fresh, pure air and quiet rural surroundings, objectifying the people to suggest their urgency. Thus, design choices such as the integration of greenery, use of local materials and walkability, which tend to be considered as 'environmentally friendly' in contemporary times, were more of a short-sighted solution to curb societal issues instead of a long-term investment in the environment.

2.3 Advertising and public responses

Letchworth Garden City was advertised as a green, healthy city through multiple media using oral conferences, texts and visual aids. In 1893, Howard made his theories public for the first time at a meeting organised by the Nationalisation of Labour Society, choosing the followers of American utopist Edward Bellamy as his audience in hopes of gaining supporters to make his drawings a reality.[49] After multiple attempts at publishing his book, *Tomorrow: a Peaceful Path to Real Reform,* in the proceeding years, Howard turned to land reformers who wanted to save English agriculture from its 1800s depression period, exploiting the concept of his Agricultural Belt to win them over.[50] The fact that Letchworth's first approval was based on it being a solution to agricultural rather than urban problems[51] suggests a turn in Howard's approach to the Garden City as a more environment-centred concept.

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[43] Bremner, "Garden City," 522.
[44] "Garden City and Garden Suburbs," *The Edinburgh Review: Critical Journal* 202, Issue 414 (October 1905): 508, https://archive.org/details/sim_edinburgh-review-critical-journal_1905-10_202_414_0/page/506/mode/2up?q=letchworth.
[45] Hollis Godfrey, *The Health of the City* (California: Houghton Muffin Company, 1910), 286, https://archive.org/details/healthcity03godfgoog/page/n307/mode/2up?q=letchworth.
[46] Howe, "The Garden Cities of England," 3.
[47] *Garden City in the Making,* 5.
[48] Bremner, "Garden City," 512.
[49] Fishman, *Urban utopias*, 54.
[50] Fishman, *Urban utopias*, 56.
[51] Fishman, *Urban utopias*, 56.

Nevertheless, in newspaper entries from the period of inauguration, the understanding of 'living with nature' comes off as literal and quite superficial, with several articles simply boasting about the variety of trees and shrubs gown and the decorative gardens lined with flowers.[52] Authors paint a colourful picture of the town through a series of words with positive natural connotations, such as 'healthy',[53] 'pleasant',[54] 'attractive',[55] 'harmonious',[56] and 'natural',[57] without going into depth about the specific elements that make it this way.

For many members of the general public, their first encounters with the concept of a Gaden City were through the Cheap Cottage Exhibition held from July to September 1905, designed to showcase some of the houses in Letchworth. The event, bridging the gap between Howard's fictional drawings and the reality of a utopia, was an opportunity for him to gain the trust of the people in the hopes of gaining more supporters. A small section of The Inquirer newspaper in June of the same year publicises the event in a positive light: 'The development of Letchworth (Garden City) is being promoted with energy and success […] there is a large increase in the number of applications for sites.'[58] The exhibition was met with positive coverage by newspapers, showing the general support for this back-to-nature style of living. Correspondingly, Bennett and Bidwell's collection of written reviews of the cottages for The Builder's Journal exhibit them surrounded by bushes of flowers and a large garden, with forests and hills adorning the background (Figure 2.6).

Figure 2.6: Drawing of a house at the Cheap Cottage Exhibition (Unknown author, 1906, The Builder's Journal)

In their issue on the 22nd of July, The Spectator concluded their article on the Cheap Cottages Exhibition as follows:

> 'If any one supposes that a cheap cottage must necessarily be ugly, let him go down to Letchworth and find out his mistake […] each cottage with its strip of garden, bright with hollyhocks and green

[52] F.J. Cole, "Progress at the Garden City," *The Journal of Horticulture and Home Farmer,* April 30, 1906, 403, https://archive.org/details/journalhorticul19unkngoog/page/402/mode/2up?q=letchworth.
[53] "Notes of the Week," 485.
[54] Godfrey, *The Health of the City*, 286.
[55] "Letchworth Garden City," 653.
[56] "Notes of the Week," 492.
[57] Howe, "The Garden Cities of England," 4.
[58] "Notes of the Week," *The Inquirer,* June 3, 1905, 341, https://archive.org/details/inquirer0064unse/page/340/mode/2up?q=letchworth.

> with simple fruits; the cottage kitchens brightened by men and women with children to send into the fields after their fathers. In that picture he sees, or thinks he sees, the solution of one of the greatest, if not the greatest, of the problems affecting the health and the population of the essentially agricultural people to whom he belongs. The short way with physical deterioration is to live in the country […]'[59]

Here again, the focus is on the health and well-being of the citizens, utilising pathos to appeal to people's emotions rather than revealing the reality of creating this utopia. By similarly highlighting the significance of Garden Cities to the medical profession due to their fresh air, sunshine, and open spaces,[60] *The Lancet* newspaper creates a sense of legitimacy, giving the impression that the scheme was backed up by medical evidence. Writers further directly encourage readers to support the movement: 'One immediate way of assisting this very practical method of reform would be to join the Garden City Association',[61] subsequently quoting their full address.

As the construction of the city continued, promotional posters were also passed around as a means of resident recruitment. A poster by Letchworth depicts a large traditional English house, settled among a hill, a forest of trees and a series of bushes in the foreground (Figure 2.7). A young girl dressed in white and holding a tennis racket stands on the grass spread out in front of the house, suggesting the wealth and happiness moving to the city can provide. The advertisement encompasses journalist Godfrey's description of Letchworth: '…pleasant and healthful surroundings, and that these houses shall be placed among greenswards where children may play and old people dream.'[62] Including a child on the poster and text emphasises the future-oriented view of the scheme, encouraging families to make a decision for the benefit of the future generation.

Figure 2.7: A promotional poster for Letchworth (Unknown author, n.d., World Garden Cities)

[59] "Cheap Cottages Exhibition," *The Spectator,* July 22, 1905, 113, http://archive.spectator.co.uk/article/22nd-july-1905/8/the-cheap-cottages-exhibition.
[60] "Garden Suburbs and Garden Cities," 1582.
[61] "Garden Suburbs and Garden Cities," 1582.
[62] Godfrey, *The Health of the City*, 286.

As a primary source of local and national communication, numerous newspaper articles about the construction of Letchworth were also published from 1905 onwards. Although many simply summarised Howard's ideas and the development of the city thus far, indications of persuasive arguments rooted in the idea of environmentalism are not uncommon. An article in 1909 celebrates the number of trees that have been planted in Letchworth, setting an afforestation goal for the next eighty years.[63] Written 4 years after the city's construction, this is one of the only pieces of evidence of the people planning ahead into the future for environmental concerns, reflecting their development in the understanding of ecology and preservation closer towards what we know today.

2.4 Transitioning to a 'greener' society

The rise of factories and pollution through the Industrial Revolution brought about a period of rebellion, where people sought the opposite of what they had experienced in the last decades: peace and harmony with nature. This somewhat impulsive and short-sighted vision created an aesthetic-focused idea of the environment, as people wanted to be able to see the results immediately with their own eyes. Fictional images on posters and newspapers, as well as media coverage reporting on the success of the new experimental town, showered the audience with positive images of residents living in a sunny, rural town, thereby encouraging more people to leave their current city lifestyles behind. Through media, Howard thus used the power of a utopia, an *unimagined* community, to convince the audience of the unbuilt and what for them, was unattainable.

Whether Letchworth's ecological vision had direct consequences on how people perceived the environment after its construction remains unanswered, but its success is evident in the fact that Howard founded another Garden City in Welwyn, England in 1920 with several architects imitating his ideas in other countries.[64] With the Second World War and a grapple for survival, however, people's attention no longer reached the environment, leading to a decline in ecological utopian thinking.[65] The vastly changed political climate that appeared after the war gave rise to a very different interpretation of 'environmentalism' – a dominant counter-attack on a society built on technology and innovation as opposed to the delicacy of the Letchworth period.

[63] "Arbor Day," *The Builder,* March 13, 1909, 320, https://archive.org/details/sim_building-uk_1909-03-13_96_3449/page/320/mode/2up?q=letchworth.
[64] "Garden Cities," World Garden Cities, accessed March 4, 2024, https://www.worldgardencities.com/garden-cities.
[65] Brownstein and Moos, *Environment and Utopia,* 38.

3. ARCOSANTI: CONSCIOUS ENVIRONMENTALISM

3.1 Background

Concerned with the uncontrollable growth of cities and the detachment of people from the natural landscape, Italian-born architect Paolo Soleri proposed the idea of an 'arcology', derived from the merging of the words *architecture* and *ecology.*[66] The concept was presented as an alternative to the sprawling American cities by reorganising settlements into a compact, organised system that will put an end to 'irresponsible consumerism'.[67] His fascination with city planning can be traced back to his time as an apprentice of Frank Lloyd Wright, who designed the utopian Broadacre City in 1932.[68] Soleri, however, strongly criticised the ideas of his master, rebelling against it with a completely opposing idea – a vertical, miniaturised community instead of Wright's organic cities that relied on the automobile.[69] Despite his radical ideas that seemed unattainable to many, Soleri never classified his ideas as 'utopian',[70] but rather presented it simply as an alternative approach to urban design.

Figure 3.1: Contemporary view of Arcosanti (Vittoria Traverso, 2020, Maize)

Figure 3.2: View of the ceramics apse (Jil Studio, 2011, GQ)

In 1965, Soleri founded the nonprofit foundation Cosanti – another amalgamation of the Italian words *cosa* and *anti*, meaning 'against things' – and began the construction of Arcosanti, the first arcology to be tested in full scale, five years later.[71] This timing collided perfectly with the sudden alarm over environmental pollution partly due to the widespread of media in the 1970s,[72] and Arcosanti was publicised as America's 'chance for a piece of faith and, for that matter, the future'.[73] With a more profound understanding of 'environmentalism' compared to Howard 70 years earlier, Soleri dedicated his life to creating an ideal community where nature was at the forefront of all decisions, which he believed would enhance the livelihood of all.

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[66] Elizabeth Dissin, "Arcosanti: An Urban Laboratory," *Beyond Earth Day,* May 1990, 8, https://archive.org/details/sftp-beyond-earth-day-1990-05/page/8/mode/2up?q=arcosanti.
[67] Dissin, "Arcosanti," 8.
[68] Henry Millard, "Paolo Soleri and Arcology: An Analytical Comparison to Frank Lloyd Wright and Louis Kahn," (Thesis, University of Arkansas, 2018), 11.
[69] Fishman, *Urban utopias*, 123.
[70] Sarah Hughes, "Arcological City Now Under Construction," *HUD Challenge,* May 1978, 7, https://archive.org/details/sim_challenge-gov_1977-05_9_5/page/n7/mode/2up?q=arcosanti.
[71] "History of Arcosanti," Cosanti Foundation, accessed March 22, 2024, https://www.arcosanti.org/history/.
[72] Sherwood Davidson Khon, "Paolo Soleri Thinks Very Big," *The New York Times Magazine,* July 2, 1970.
[73] William Marlin, "Contemplation of Our Urban Destiny," *Chicago Tribune,* December 21, 1970.

3.2 Integration of 'green' thinking

Soleri's profound understanding of environmentalism, the significance of ecology in urban life and the dangers of machinery on biological systems were the catalysts for designing a deliberate eco-community rooted in the scientific ideas he had developed as a researcher.[74] His arcologies were an attempt to eliminate pollution and conserve national resources by building vertically upwards, a 'reaction against the probability of a future earth with no wilderness areas.'[75]

Arcosanti was thus Soleri's way of experimenting with the idea of an architectural organism, where a city gradually evolves into a complex system over time, [76] similar to how organic life develops in nature. Comparing the city to a human brain, which when stretched out covers tens of square miles but is sculpted into a compact three-dimensional entity,[77] he argued that contemporary cities should follow the path of complexity-miniaturisation-duration (CMD).[78] A network of social relationships ties together the different functions within the building, the densification allowing for more efficient use of energy, time and resources (Figure 3.3). In contrast to Ebenezer Howard's Letchworth Garden City, which integrated greenery into its urban design in a literal sense almost as an afterthought, this suggests that Arcosanti's fundamental ideas were rooted in this notion of ecological thinking from the start, developed through the designer's understanding of scientific principles.

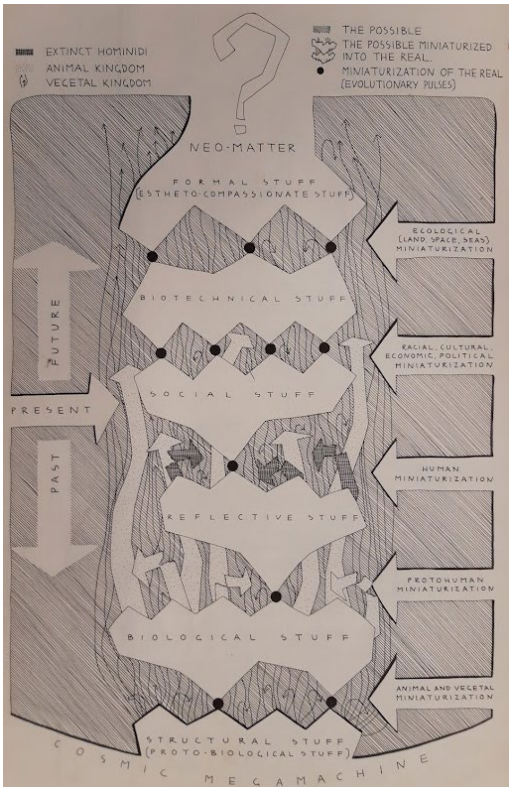

Figure 3.3: Soleri's sketch of the CMD principle – elements of society are miniaturised gradually against a timescale into a single system (Paolo Soleri, 1969, MIT Press)

[74] John Gruen, "High Life in the Future," *New York,* August 3, 1970.
[75] Hughes, "Arcological City," 7.
[76] David Grierson, "The Architecture of Communal Living: Lessons from Arcosanti in Arizona," *Proceedings of the Seventh International Communal Studies Conference* (June 2001): 219, https://strathprints.strath.ac.uk/5613/1/strathprints005613.pdf.
[77] Paolo Soleri, *The Urban Ideal Conversations with Paolo Soleri* (Berkeley: Berkeley Hills Books, 2001), 35.
[78] Grierson, "*The Architecture of Communal Living,"* 219.

As in Letchworth, Soleri strongly advocated for the need for greenery in the city, arguing that it was crucial in stopping uncontrollable urban sprawl.[79] Unlike Ebenezer Howard, however, who attempted to spread out the city for the integration of greenery into the city, Soleri's idea was to concentrate society into one area as much as possible and create a three-dimensional city, thereby leaving more than 98% of the land for parks and gardens.[80] The main reason behind this configuration was to be able to cluster work areas so that the by-products of small industries could be recycled or disposed of efficiently[81] – an example of circular thinking. Additionally, the compact layout would completely remove the need for cars, cutting down on the automobile exhausts that were recognised to be harmful to human health.[82] Instead of cars, a complex system of walkways, lifts, escalators and walking platforms connect the vertical buildings,[83] making travel between home, work and leisure efficient.[84] In line with his effort to reduce pollution, Soleri's design for Arcosanti uses nuclear reactors in the foundation of the building to power the city rather than non-renewable fuels.[85]

Evidence of environmental thinking is present in Soleri's building designs as well. In his publication, *Technology and Cosmogenesis* published in 1985, Soleri outlines the five environmental 'effects' crucial to his designs: greenhouse, chimney, horticultural, aspe, and heat sink,[86] and evidence of these in practice can be seen at Arcosanti. A four-acre greenhouse on the south-facing slope of the city will collect heat, where the warm air is channelled through a chimney to provide heating (Figure 3.4).[87] Crops will be grown in the greenhouse for the community with minimal use of water and taking into consideration the seasonal cycles.[88] The south-facing apse further acts as a sun collector in the winter, providing shading in the summer, using passive solar strategies to reduce the need for any mechanical heating or cooling devices.[89] In a similar manner, the heavy materialisation of concrete and bricks creates a 'heat sink', where the warmth from the sun captured during the day is stored in the mass, releasing it when the outdoor temperature lowers below its own.[90] Integration of what we now call 'passive design strategies', maximising the use of natural energy sources with limited mechanical interventions, is thus clearly evident at Arcosanti. His ability to also think in a trans-disciplinary manner, such as through his greenhouse design, draws parallels with what designers call 'nexus thinking' today, where elements such as water, food, and energy are integrated into one complete system. Despite the technological advancements that had taken place in this period, Soleri's conscious deviation away from efficient mechanical systems is evidence of his environmentally-centred thinking and desire to return to nature.

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[79] "Soleri's Cities on Display," *Progressive Architecture,* April 1970, 29, https://usmodernist.org/PA/PA-1970-04.pdf.
[80] "Future Discovers Arizona Desert, Step Ahead in Time," *San Antonio Express News,* December 26, 1979, 8, https://archive.org/details/san-antonio-express-news-1976-12-26/page/n157/mode/2up?q=arcosanti.
[81] "Future Discovers Arizona Desert," 8.
[82] Hughes, "Arcological City," 11.
[83] Gary E. Squier, "Arcosanti: The Shapes of Things to Come," *Desert Magazine,* March 1980, 23, https://archive.org/details/Desert-Magazine-1980-03/page/n23/mode/2up?q=arcosanti.
[84] Gregory Dennis, "Arcosanti: A New Dream Out on the Desert," *MIT Technology Review,* August/September 1979, 16.
[85] "Soleri's Cities on Display," 29.
[86] Paolo Soleri, *Technology and Cosmogenesis* (New York: Paragon House, 1985), 137-138.
[87] Dennis, "Arcosanti," 16, https://archive.org/details/MIT-Technology-Review-1979-08/mode/2up?q=arcosanti.
[88] "Futuristic City Being Constructed in Arizona," *Pomona Progress Bulletin,* May 15, 1977, 22. https://archive.org/details/pomona-progress-bulletin-1977-05-15/page/n21/mode/2up?q=arcosanti.
[89] Hughes, "Arcological City," 9.
[90] Hughes, "Arcological City," 8.

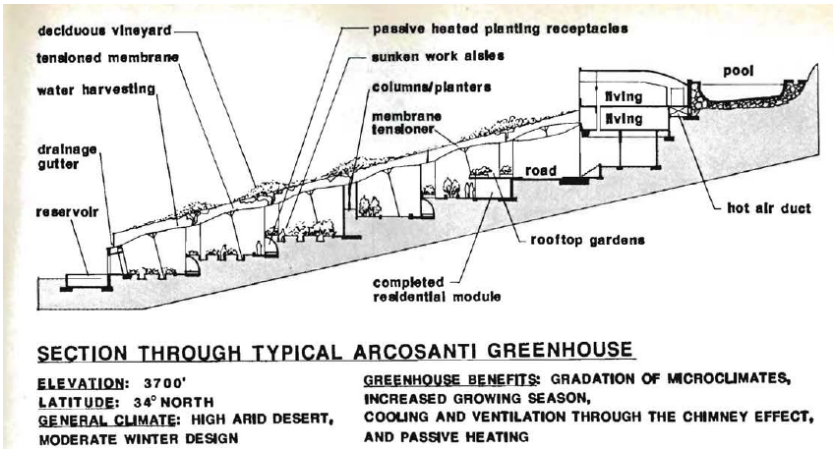

Figure 3.4: Diagram of the greenhouse as a passive design technique (Bill Ford, 1986, Solar Earthbuilder International)

Contradictory to his passive approach to his overall building design, a complex system of air snorkels and light tunnels provide mechanical ventilation and lighting inside the building.[91] These are managed through a computer, with the aim of them being adjustable and multi-functional.[92] This supports Soleri's ideas of the city being designed as 'plug-in units'[93] that can be flexibly moved, believing that cities must be adaptable according to their changing societal functions.[94] His design for Arcosanti strikes a balance between natural and mechanical depending on the specific functional needs of the building element, an integral characteristic of 'sustainability' as we define today.

Integration of 'green' thinking in Arcosanti was, therefore, a holistic approach for Paolo Soleri, stemming from his theories of an organism, and extending to include site-specific passive design principles and technologies. His idea of 'going back to nature' by utilising local materials, construction techniques and greenery[95] can also be seen in Howard's scheme, but Soleri considers the sustainability of the city during the operational phase as well, instead of simply its preliminary design. Arcosanti therefore manifests a more long-term perspective on the environment, starting to gain attention in a society where 'ecology [was] now suddenly relevant and somewhat understood'.[96]

3.3 Advertising and public responses

'Imagine a city without cars, thus without pollution, a city without grime, soot, urban spread and ugliness; no telephone poles, no smoke-belching factories, and none of the other practicalities that turned our cities into killers [...]'[97] So starts John Gruen's contribution to the *New York* magazine in August 1970, reporting on the exhibition *The Architectural Vision of Paolo Soleri* at the Whitney Museum. Arcosanti was introduced in many newspapers and magazines as a revolutionary idea conceptualised by a 'genius madman',[98] taking advantage of both science and 'old-fashioned humanism'.[99]

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[91] "Soleri's Cities on Display," 29.
[92] "Soleri's Cities on Display," 29.
[93] "Soleri's Cities on Display," 29.
[94] Hughes, "Arcological City," 10.
[95] Dennis, "Arcosanti," 19.
[96] Harold Haydon, "Paolo Soleri's amazing cities: 'He would transform the world to save it'," *Chicago Sun Times,* December 20, 1970, 2.
[97] Gruen, "High Life in the Future," 1970.
[98] Dennis, "Arcosanti," 20.
[99] Gruen, "High Life in the Future," 1970.

Soleri's ideas were first made public in 1969 through his publication *Arcology: The City in the Image of Man*,[100] published by the MIT Press. In it, he dedicated roughly a third to explaining his theories of Arcology, before presenting his drawings of thirty projects. Combining his initial hand-drawn sketches with detailed plans, sections and axonometric drawings, Arcosanti, the last project in the book, caught public attention as the only project Soleri mentioned would potentially be realised.[101]

The most eye-catching drawing out of all is the axonometric section, as it is the only three-dimensional one within the Arcosanti chapter (Figure 3.5). It depicts one long half of the entire scheme overground and the other half underground, showing the inside of the building with captions of their different functions. In the front of the drawing is a cut-away apse, designed as a sphere with the bottom half buried underground. The 'overground' section depicts another apse and a cylindrical tower nearby, and two further groups of three cylinders described as 'housing towers'. A flat slab creates a roof-like structure up until the apse, where it is peeled away to showcase the construction details. Looking at the plan on the next page, which is entirely symmetrical (Figure 3.6), the same thing presumably happens on the right side of the drawing, which shows the two apses and the towers cut off at ground level. The whole scheme rests on a rectangular piece of land without any context around it, reflecting the fact that Arcosanti will be erected in a desert, as an independent community away from civilisation.[102]

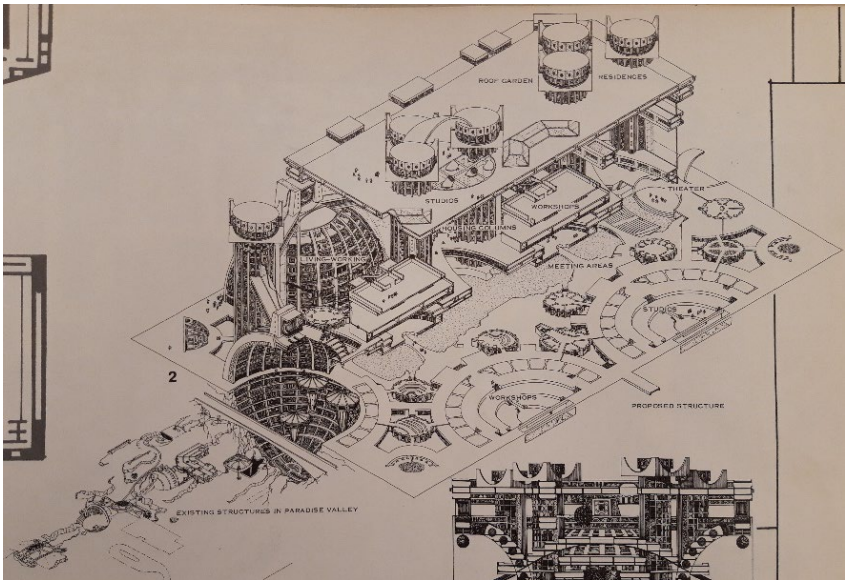


Figure 3.5: Axonometric projection of Arcosanti, presented in Soleri's book (Paolo Soleri, 1969, MIT Press)

[100] Lin Staten, "Architect via Telelecture," *Free Fall,* September 22, 1972, https://archive.org/details/freefall31stud/mode/2up?q=arcosanti.
[101] Paolo Soleri, *Arcology: The City in the Image of Man* (Massachusetts: MIT Press, 1969), 119.
[102] Jan Nordheimer, "A Desert Vision Takes on Shape as Builder Seeks New Society," *New York Times,* November 20, 1975, 43, https://www.nytimes.com/1975/11/20/archives/a-desert-vision-takes-on-shape-as-builder-seeks-new-society.html?searchResultPosition=21.

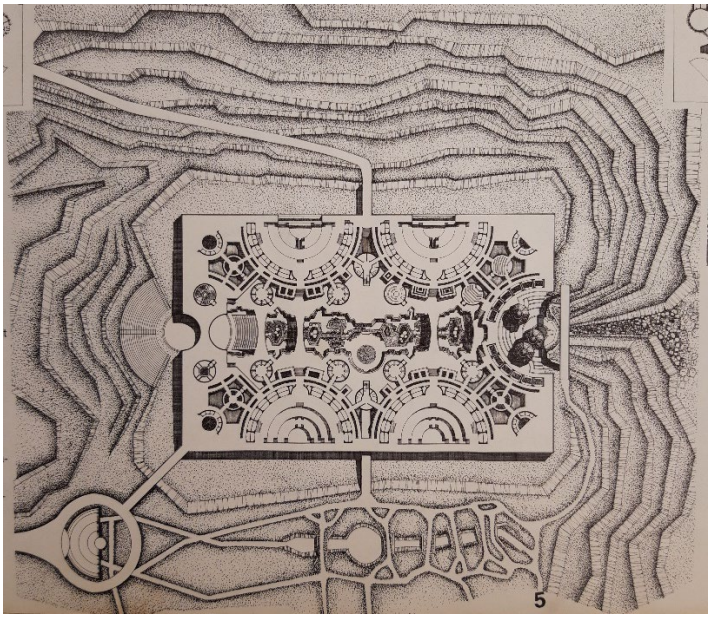


Figure 3.6: Ground floor plan of Arcosanti, original scale 1:2000 (Paolo Soleri, 1969, MIT Press)

Soleri's buildings are often described in media as 'organic'[103] or 'grown'[104] from the earth, and evidence of this is visible in the image – a series of roots anchors down the central apse to the ground, supporting the architect's vision that Arcosanti is a settlement stemming from the natural landscape. This juxtaposes the bold geometric forms Soleri used in his other two-dimensional drawings, which show that the scheme is a result of holistic ecological thinking.

Interestingly, Soleri did not publish any drawings of how he imagined Arcosanti to be inhabited by people. All drawings are in black and white and are either architectural plans, sections or this single axonometric drawing. Most of these drawings also lack any people for scale, and the simple outlines of figures in the axonometry are the only evidence of Soleri imagining the human use of spaces. Whether deliberate or not, this encourages viewers to develop their imagination of what the community would be like and create their own ideal utopias in their minds.

This book, *Arcology: The City in the Image of Man,* along with his models of Arcosanti were displayed at major exhibitions at the Corcoran Gallery of Art (Spring 1970), the Whitney Museum of American Art (Summer 1970), Museum of Contemporary Art Chicago (Winter 1970-71), among other locations around the U.S.[105]

Media flocked to review the exhibitions that covered such an alien topic to most of society, describing it as 'exciting',[106] 'a mindopener and a signpost for the future,'[107] and 'of such originality that new words are needed to express it'.[108] The issues of pollution and degradation of human health were at the forefront of the articles, publicising Arcosanti as the long-awaited solution to environmental issues and thus shining an optimistic light on the future. For those less convinced, newspapers used bandwagon techniques such as

[103] Hughes, "Arcological City," 10.
[104] Robert B Kaiser, "Paolo Soleri: Urban Prophet in the Arizona Desert," in *Urban Studies: A Research Paper Casebook,* ed. Richard Peck and Stephen N. Judy (New York: Random House Inc, 1974), 95.
[105] Staten, "Architect via Telelecture."
[106] Barbara Ettoree, "Architect Soleri designs future in high rise cities," *Chicago Today,* February 7, 1970.
[107] "Paolo Soleri's 'arcologies'," *Chicago Sun Times,* January 10, 1971.
[108] "Paolo Soleri's 'arcologies'," 1971.

'it has become fashionable to regard him as a visionary architect'[109] and 'people are beginning to listen; "ecology" and "environment" are current vocabulary'[110] to convince the audience to follow the trend and visit the exhibition. Many also attributed Soleri's ideas to his master Frank Lloyd Wright in order to gain trust and authority, as he would have been more familiar to the public at that time. The *Chicago Daily News* reports the public reception of their local exhibition to be mixed in December 1970, writing that the younger generation was generally more enthusiastic about Soleri's adventurous ideas.[111] It concludes, however, that all visitors left the exhibition with either 'high exhilaration, uneasiness bordering on woolgathering gloom, or utter bafflement […] surely no boredom',[112] encouraging readers to test their responses to the show for themselves.

Figure 3.7: Model of Arcosanti at the opening of the Corcoran exhibition (Ivan Pintar, 1970, Cosanti Foundation)

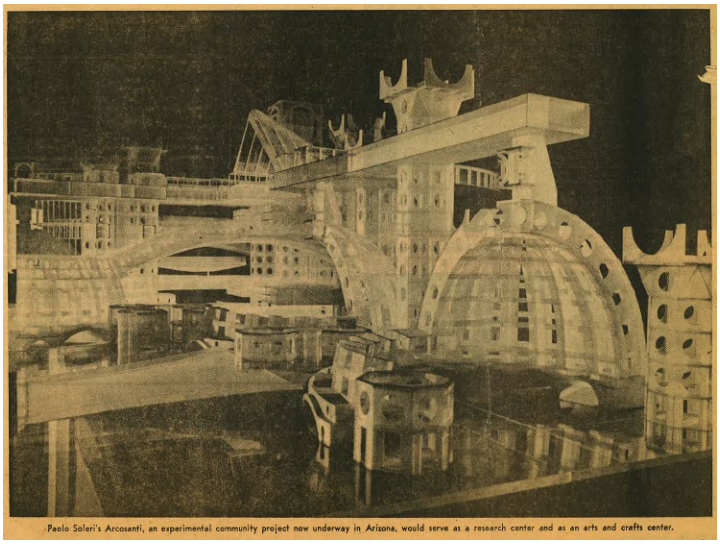
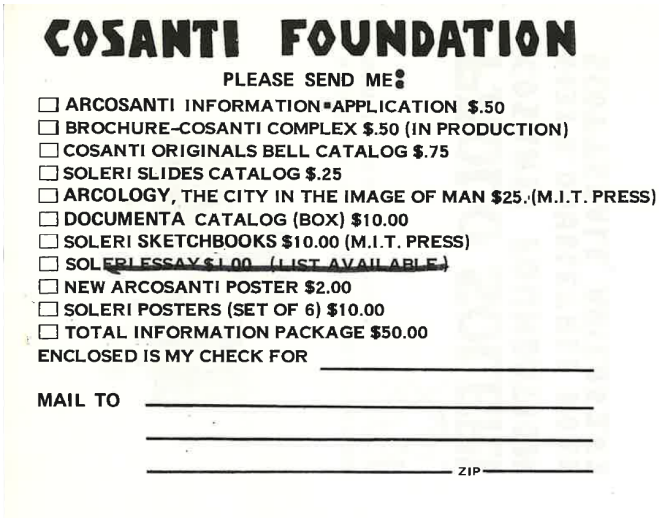


Figure 3.8: Photograph of the Arcosanti model at the exhibition (Thomas Willis, 1970, Chicago Tribune)

[109] Haydon, "Paolo Soleri's amazing cities," 2.
[110] Jaqueline Lejuene, "Paolo Soleri's Arcology," *The Chicago Guide* 20, no. 1 (January 1971): 7.
[111] Franz Schulze, "Paolo Soleri's stunning look at tomorrow," *Chicago Daily News,* December 26-27, 1970.
[112] Schulze, "Paolo Soleri's stunning look at tomorrow."

Soleri took advantage of these exhibitions to look for donations, sponsors, commissions, and membership interests, and used them as grounds for advertising his workshops at Arcosanti, a five-to-six-week programme designed mainly for students to live in the community and help with construction.[113] Posters and leaflets detailed the works that will be carried out, the rules and regulations of the workshops, its participant fees, and included a formal slip at the end[114] for easy application. Close to the model of Arcosanti itself, a sign saying 'This summer we are starting to build Arcosanti in the Arizona desert, come join us'[115] was mounted, making sure the invitation was visible to all.


COSANTI FOUNDATION

PLEASE SEND ME:

☐ ARCOSANTI INFORMATION-APPLICATION $.50
☐ BROCHURE-COSANTI COMPLEX $.50 (IN PRODUCTION)
☐ COSANTI ORIGINALS BELL CATALOG $.75
☐ SOLERI SLIDES CATALOG $.25
☐ ARCOLOGY, THE CITY IN THE IMAGE OF MAN $25. (M.I.T. PRESS)
☐ DOCUMENTA CATALOG (BOX) $10.00
☐ SOLERI SKETCHBOOKS $10.00 (M.I.T. PRESS)
☐ SOLERI ESSAY $1.00 (LIST AVAILABLE)
☐ NEW ARCOSANTI POSTER $2.00
☐ SOLERI POSTERS (SET OF 6) $10.00
☐ TOTAL INFORMATION PACKAGE $50.00

ENCLOSED IS MY CHECK FOR _____

MAIL TO _____

_____

_____ ZIP _____

Figure 3.9: Copy of the Cosanti Foundation interest form circulated at one of the exhibitions (Paolo Soleri, 1970, Cosanti Foundation)

Beyond their advertisement through the exhibitions, the Arcosanti workshops were covered greatly by the press, publicising it as a way of learning superior to a formal classroom setting.[116] Newspapers contrasted the tough living conditions of these 'workshoppers' against the reward of meeting Soleri himself, participating in his discussions and attending field trips and lectures by scientists.[117] Some journalists took part in the workshops themselves, [118] reflecting on their experiences and describing the satisfaction of working on a communal project for the common good. *Desert Magazine* published interviews with nine people working or living at Arcosanti in 1980, all only providing positive outlooks on their lives: '…this is the most beautiful place I've ever been,' '…the work is gratifying, the people are stimulating…' '…helps give meaning to the lives of its inhabitants.'[119] The wide range of interviewees in age, gender, occupation, and hometowns made sure that the reader is relatable to at least one character and thus able to share their views on the new settlement. Similarly, explaining the typical day in the life of a student worker at Arcosanti, an article for *The Daily Freeman* in 1972 highlights the benefits to personal development and communication skills the workshops have taught them through multiple interviews,[120] displaying the all-rounded experience it brings beyond the themes of the environment and construction.

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[113] Paolo Soleri, *The Corcoran Gallery of Art Exhibit, February 20 through April 5, 1970: The Architectural Vision of Paolo Soleri* (Washington D.C.: the Corcoran Gallery of Art, 1970), 2.
[114] Paolo Soleri, *Arcosanti 4* (Scottsdale: Cosanti Foundation, 1972), 3.
[115] Cosanti Foundation, "Exhibition History – Corcoran," published July 16, 2016, https://web.archive.org/web/20170426033827/https://arcosanti.org/node/15152.
[116] Nordheimer, "A Desert Vision," 43.
[117] Hughes, "Arcological City," 10.
[118] Hughes, "Arcological City," 10.
[119] Squier, "Arcosanti," 18.
[120] "Tomorrow City… A Vision Coming Through," *The Daily Freeman,* July 5, 1972, 51, https://archive.org/details/kingston-daily-freeman-1972-07-05/page/n49/mode/2up?q=arcosanti.

Participation in Soleri's workshops was also promoted as a prestigious accomplishment in the media, calling the workers 'persistent pioneers'[121] and commending their commitment to the future of America. Multiple local newspapers published the names of students who received scholarships to attend the programme, one of them listing them next to names of top athletes.[122] Highlighting the students' contributions to the environmental sciences, the articles paint a positive picture of Arcosanti, thereby persuading more people to hold an interest in Soleri's utopia and the values that it encompasses.

3.4 Transitioning to a 'greener society'

Although designed more than half a century ago, Arcosanti shares many similarities with what is widely considered as 'sustainability' today – the absence of fuel, use of passive solar design strategies and efficient management of waste are just some examples of this. Soleri's on ecology have led the way in environmental thinking, evidenced by the development of energy-efficient building systems in the 80s, the introduction of the world's first green building standard in 1990, and the founding of the US Green Building Council in 1993.[123] The Leadership in Energy and Environmental Design (LEED) building classification system was developed later in 1998,[124] still used to this day to rate buildings based on their green practices.

In 2024, Arcosanti is still an unfinished piece of work – while some claim that 20% of Soleri's original design has been completed,[125] many argue that this number is as low as 3%.[126] Unlike Howard who went on to design another Garden City, Soleri did not attempt to construct another arcology,[127] suggesting that the experiment is still ongoing and its ultimate goal has not yet been achieved.

[121] Dennis, "Arcosanti," 21.
[122] "People in the News," *The Upland News,* December 4, 1975, https://archive.org/details/cupl_005429/page/n3/mode/2up?q=arcosanti.
[123] "Green Buildings," Pacific Northwest National Library, accessed March 22, 2024, https://www.pnnl.gov/explainer-articles/green-buildings#:~:text=In%201980%2C%20the%20concept%20of,Green%20Building%20Council%20in%201993.
[124] "LEED," Agentschap NL Energie en Klimaat, published June 2010, https://www.rvo.nl/sites/default/files/bijlagen/LEED.pdf.
[125] "Paolo Soleri: Artist and Architect," Cosanti Originals, accessed March 22, 2024, https://cosanti.com/pages/paolo-soleri.
[126] Oliver Wainwright, "Story of cities #35: Arcosanti – the unfinished answer to suburban sprawl," The Guardian, published May 4, 2016, https://www.theguardian.com/cities/2016/may/04/story-cities-35-arcosanti-paolo-soleri-desert.
[127] Cathy Smith, "Living Histories: Engaging Paolo Soleri's Arcosanti Project through the Notion of 'History/Becoming,'" in *Proceedings of the Society of Architectural Historians, Australia and New Zealand: 30, Open*, ed. Alexandra Brown and Andrew Leach (Gold Coast, Queensland: SAHANZ, 2013), 436.

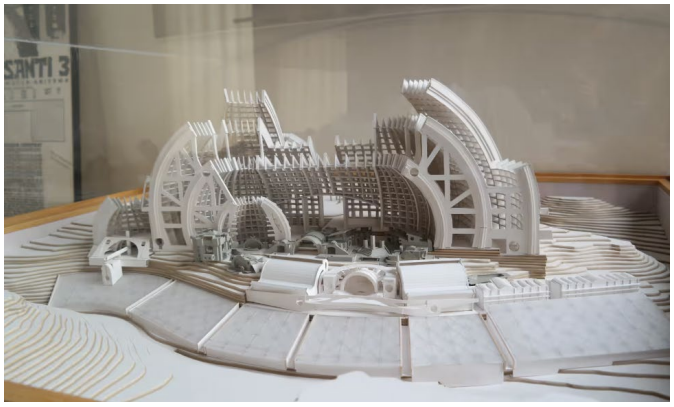

Figure 3.10: Model of Arcosanti – the grey buildings in the centre are the ones that have been completed as of 2016 (Oliver Wainwright, 2016, The Guardian)

The Cosanti Foundation lists the design principles of the community on their current webpage, among which are 'Embodied Efficiency' and 'Creative Resourcefulness'[128] – while evolved to meet the stricter demands of the 21st-century climate, it also shows that the original ideas behind arcology have not been lost 60 years on. Hence, while Soleri's attempt at a perfectly miniaturised and self-sufficient way of living may not have been a total success in terms of feasibility, it has doubtlessly been a catalyst for the reconsideration of ecological ideas in the built environment.

4. CONCLUSION

4.1 Environmentalism in Letchworth and Arcosanti

'Utopists enter areas inaccessible to environmental science, attempt to explore actively a future that has broken with past trends, a future that cannot be predictably plotted…'[129] Brownstein and Moos, in their publication *Environment and Utopia: A Synthesis,* frame the idea of utopias as something arbitrary, disconnected from the reality of everyday life. What Ebenezer Howard and Paolo Soleri attempted with their respective city designs, however, seems to defy this definition of environmental utopias by actively learning from history and incorporating logic-based thinking. The analyses of the two projects from an ecological perspective have shown that the vast differences between the temporal, social and political climates have led to varied interpretations of the idea and thus different degrees of incorporation of climate concepts. It can be argued, therefore, that utopian planning, despite its alleged detachment from the world of its creation, is another measure of scientific development.

Analogous to how the development of the designers' understanding of 'environmentalism' can be seen through the comparison of Howard and Soleri's utopias, the way they were received by the public demonstrates the gradual normalisation of the new ideas by society. Both were advertised primarily through newspapers and exhibitions, which made sure the topic reached a wider audience beyond the planning industry.

Although using similar media, the differences in advertising techniques are evident – Letchworth takes a more passive approach, while Arcosanti is more powerful. Soleri himself actively approaches the audience, handing out leaflets for sponsors, and using imperative commands such as 'come join us' in his

[128] "Design Principles," The Cosanti Foundation, accessed March 22, 2024, https://www.arcosanti.org/arcology/.
[129] Brownstein and Moos, *Environment and Utopia,* 241.

advertisements.[130] Howard, on the other hand, simply *lets* his work be covered by the media and have it comment freely on its pros and cons from a third party. Instead of directly recruiting residents, one of the newspapers writes '…it is stated that many applications have already been received,'[131] a roundabout way of persuasion. As opposed to Letchworth which gained attention simply as a new city scheme designed to improve the health of the people and the environment, analysis of media coverage leads to the conclusion that there was significantly more focus on Soleri as the designer himself and the values that he symbolised, instead of his work. His ideas being 'revolutionary and controversial'[132] was their best selling point; conversely, Letchworth was advertised as a 'convenient'[133] upgrade to their current lifestyle.

From Howard's primarily aesthetic-focused interpretation of 'environmentalism' seen through his drawings to Soleri, who neglected any typical suggestions of a 'green' community in his visuals but backed his ideas with scientific theories, the concept of what people called 'environmentally friendly' changed rapidly through the 20th century. Despite this, traces of what we may consider 'sustainable' urban planning strategies today are prevalent in both projects, with many of the designers' ideas being relevant to planners nowadays. For instance, many contemporary cities such as the Superblocks in Barcelona are planned to be walkable to minimise traffic,[134] stemming from Howard's idea of the 20-minute city[135] and Soleri's miniaturised community. Arcosanti's strategies that embrace natural energy from the sun resemble the concepts behind *Passive House,* developed in the late 1980s and still considered a rigorous building standard to this day.[136] Letchworth and Arosanti, owing to the unlimited capacities of a utopia, were therefore key players in the green movement, opening the path to more aspirations for an ecological built environment.

4.2 Green communities in the 21st century: a modern utopia?

As the current concern for the climate increases rapidly, architects and planners continue to visualise urban communities that promote a more sustainable way of living. Photo-realistic renders of prototype self-sufficient communities built in timber and covered in greenery decorate the headings of online journals and magazines, not dissimilar to how Howard and Soleri's utopias were portrayed in their respective periods.

In 2019, a Copenhagen-based architecture firm EFFEKT teamed with a local research and design lab Space10 to design a shared sustainable community, where residents would find their daily necessities in one place.[137] Named the Urban Village, it was presented as a design that responds to the challenges of urbanisation, lack of housing and social inequality,[138] drawing clear parallels with both the starting points

[130] Cosanti, "Exhibition History."
[131] "Miscellaneous," *The Builder,* October 12, 1907, 393, https://archive.org/details/sim_building-uk_1907-10-12_93_3375/page/392/mode/2up?q=letchworth.
[132] "Future Discovers Arizona Desert," 8.
[133] "Garden City and Garden Suburbs," 507.
[134] Ronika Postaria, "Superblock (Superilla) Barcelona – A City Redefined," Cities Forum, published May 31, 2021, https://www.citiesforum.org/news/superblock-superilla-barcelona-a-city-redefined/.
[135] Brett Clark, "Ebenezer Howard and the Marriage of Town and Country: An Introduction to Howard's 'Garden Cities of To-morrow'," *Organization & Environment* 16, no.1 (March 2003), 87-97, https://doi.org/10.1177/1086026602250258.
[136] Sara Tanigawa, "The History of Passive House: A Global Movement with North American Roots," Environmental and Energy Study Institute, published June 23, 2017, https://www.eesi.org/articles/view/the-history-of-passive-house-a-global-movement-with-north-american-roots.
[137] "The Urban Village Project: Re-envisioning Our Homes," Space10, accessed March 27, 2024, https://space10.com/projects/urban-village.
[138] "The Urban Village Project."

of Letchworth Garden City and Arcosanti. Environmentally-conscious strategies play key roles in the scheme, with water harvesting, local food and renewable energy production completing the environmental nexus.

Figure 4.1: Visualisation of Urban Village (EFFEKT and Space10, 2019, EFFEKT Architects)

Figure 4.2: Visualisation of ReGen Villages (EFFEKT, 2016, EFFEKT Architects)

In line with Howard and Soleri who both borrowed from their most current understanding of technology, ReGen Villages, also developed by EFFEKT, use artificial intelligence and software simulations to design and visualise so-called 'eco-villages' in nine different locations in Europe and the US. [139] It takes a holistic approach to sustainable design, combining passive building techniques with energy production and a waste management system.[140] In many ways, it is a composite of Howard's concentric rings in his Garden City and Soleri's idea of 'miniaturisation', where housing units are laid out in a compact central circle to ensure maximum space for biodiversity.[141] The architects further mimic Soleri's first publications of his arcologies by similarly describing the current issues with the environment and proposing their solutions in a diagrammatic format. The smiling figures animating the green panorama of the slick renderings are a contemporary reference to Howard's posters promoting Letchworth, showcasing the perfect life that one could lead by joining the community. ReGen Villages' website also calls for patrons and future residents,[142] mirroring Arcosanti's active approach to gaining public interest.

What sets these contemporary examples apart from the two 20th-century utopias is the surge in society's collective understanding of environmentalism and technology. Howard and Soleri's designs, although not labelled as utopias by the designers themselves, were considered one by the public as they diverged away from what people understood as realistic at that time. With artificial intelligence, space travel and virtual reality becoming a mundane scene in our daily lives today, it begs the question of whether ecological urban planning schemes will ever be 'utopian', or will always simply be regarded as an ambitious project with a completion date set three decades into an unpredictable future.

[139] "ReGen Villages,"ReGen Villages, accessed March 27, 2024, https://www.regenvillages.com/.
[140] "ReGen Villages," Architizer, accessed March 27, 2024, https://architizer.com/projects/regen-villages/.
[141] "ReGen Villages."
[142] "ReGen Villages."

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Figure 3.3: The first section of Soleri's book was devoted to his explanation of Arcology using his sketches. One of the first pages is this sketch of the CMD principle – elements of society are miniaturised gradually against a timescale into a single system. This forms the foundation for understanding the ideas behind Arcology, as many of his latter pages are based on this principle (Paolo Soleri, 1969, MIT Press).

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Figure 3.8: Newspapers covered the exhibition widely, often inserting photographs such as this picture of the Arcosanti model published in the Chicago Tribune. The caption reads: 'Paolo Soleri's Arcosanti, an experimental community project now underway in Arizona, would serve as a research center and an arts and crafts center' (Thomas Willis, 1970, Chicago Tribune).

Figure 3.9: Copy of the Cosanti Foundation interest form circulated at one of the exhibitions. Attached in the same document were the rules and regulations for the summer workshop programme, as well as an application form (Paolo Soleri, 1970, Cosanti Foundation).

Figure 3.10: Model of Arcosanti, showing the completed buildings in grey. As can be seen, only a very small central section has been finished, while the majority of the outer shell has not yet been touched (Oliver Wainwright, 2016, The Guardian).

Figure 4.1: Visualisation of Urban Village, promoted as a shared living community with a strong emphasis on sustainability and solutions to housing affordability (EFFEKT and Space10, 2019, EFFEKT Architects).

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