

Architectural Depictions of Utopia/Dystopia with DALL-E

DALL-E ile Ütopyanın/Distopyanın Mimari Temsilleri

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Abstract

This study investigates how utopian architectural designs can be transformed into photorealistic images using artificial intelligence, and how this transformation influences the perceived applicability of utopian visions. Focusing on six iconic modernist utopias—La Città Nuova (Antonio Sant'Elia, 1914), Broadacre City (Frank Lloyd Wright, 1932), Radiant City (Le Corbusier, 1933), Plug-in City (Peter Cook, 1964), Walking City (Ron Herron, 1966), and Hexahedron Arcology (Paolo Soleri, 1969)—the study reinterprets each vision through structured prompts using the visual AI tool DALL-E. It examines the impact of AI-generated photorealistic representations on the interpretation and conceptualization of architectural utopias. Methodologically, the research combines qualitative content analysis with expert evaluations, supported by a structured approach to ensure reproducibility. According to expert assessments, the AI-generated representations were positively rated in terms of functionality and realism but were considered limited in creativity and aesthetic appeal. The findings suggest that while artificial intelligence holds transformative potential for architectural thought, it cannot substitute human creativity and should be approached with a critical perspective.

Keywords: Utopia, Architecture, Artificial intelligence, DALL-E, Photorealistic.

Özet

Bu çalışma, ütopik mimari tasarımların yapay zekâ kullanılarak nasıl fotogerçekçi görüntülere dönüştürülebileceğini ve bu dönüşümün ütopyaların uygulanabilirliğini nasıl etkileyeceğini araştırmaktadır. Araştırma, altı ünlü modernist ütopyaya odaklanmaktadır: La Citta Nuova (Antonio Sant'Elia, 1914), Broadacre City (Frank Lloyd Wright, 1932), Radiant City (Le Corbusier, 1933), Plug-in City (Peter Cook, 1964), Walking City (Ron Herron, 1966) ve Hexahedron Arcology (Paolo Soleri, 1969). Her bir ütopya, görsel yapay zekâ aracı DALL-E aracılığıyla yapılandırılmış istemler kullanılarak yeniden üretilmiştir. Bu çalışma, yapay zekâ tarafından üretilen fotogerçekçi temsillerin, ütopik mimarinin yorumlanması ve kavramsallaştırılması üzerindeki etkisini incelemektedir. Metodolojik olarak çalışma, tekrarlanabilirliği sağlamak için yapılandırılmış bir yaklaşımla desteklenen nitel içerik analizi ve uzman değerlendirmelerini içermektedir. Uzman değerlendirmelerine göre DALL-E ile üretilen mimari ütopya/distopya temsilleri, işlevsellik ve gerçekçilik açısından olumlu bulunurken; yaratıcılık ve estetik çekicilik açısından sınırlı değerlendirilmiştir. Sonuç olarak yapay zekânın, mimari düşünceyi dönüştürme potansiyeli taşımakla birlikte, insan yaratıcılığının yerini alamayacağı ve eleştirel bir perspektifle ele alınmasının gerekliliği anlaşılmıştır.

Anahtar Kelimeler: Ütopya, Mimari, Yapay zekâ, DALL-E, Fotogerçekçilik.

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Extended Abstract

Introduction: The concept of utopia has historically emerged as a comprehensive intellectual framework that not only envisions an ideal society but also proposes a fundamental reorganization of architectural, spatial, and social structures. Since Thomas More's seminal work *Utopia* (1516), utopias have represented imaginary yet desirable social orders, finding strong expression in the field of architecture through spatial and structural projections. With the rise of modernism, utopian ideals were transformed into architectural proposals, drawing upon the technological advancements of the Industrial Revolution and the principles of modern urban planning. Notable projects such as Le Corbusier's Radiant City, Frank Lloyd Wright's Broadacre City, and Antonio Sant'Elia's *La Città Nuova* exemplify this trajectory. In the second half of the 20th century, dystopias also entered the architectural discourse as dark reflections of utopian ideals. Projects like Walking City (Ron Herron), Plug-in City (Peter Cook), and Hexahedron Arcology (Paolo Soleri) can be interpreted as speculative responses to the limitations and failures of utopian visions. Today, artificial intelligence technologies present novel tools with the capacity to transform the representation of both utopias and dystopias. This study explores the creative, functional, and conceptual implications of such transformation by generating photorealistic reinterpretations of six iconic architectural projects using the AI-based visual tool DALL-E.

Aim: The primary aim of this study is to reconstruct six historically significant utopian and dystopian architectural projects using the AI-powered visualization tool DALL-E, and to analyze the resulting photorealistic images through expert evaluations. The research seeks to examine how such AI-generated representations impact architectural conceptualization and to what extent they contribute to or challenge creative design processes. It also aims to identify the spatial, formal, and functional limitations of these representations. Ultimately, the study positions AI-generated visualizations not merely as technical outputs, but as objects of critical inquiry within architectural and design discourse.

Method: The study adopts a qualitative content analysis approach. The sample includes three utopian (*La Città Nuova*, Radiant City, Broadacre City) and three dystopian (Plug-in City, Walking City, Hexahedron Arcology) projects, selected for their prominence in architectural theory and history. Original sketches of these projects were obtained from relevant literature and reimagined using the DALL-E 3 model. Each image underwent three iteration rounds, with the most compositionally and contextually suitable version selected for expert evaluation. Ten architectural scholars holding PhDs participated in the evaluation process. Each AI-generated image was assessed across four criteria—creativity, attractiveness, functionality, and realism—using a five-point Likert scale. The data were analyzed using SPSS software, with descriptive statistics (means and standard deviations) and Pearson correlation tests applied to explore relationships between evaluation criteria.

Results: According to expert evaluations, the images generated by DALL-E scored higher on functionality and realism, but lower and more varied on creativity and attractiveness. These results suggest that while the images were perceived as practically plausible and contextually grounded, they lacked innovation and aesthetic appeal. A strong positive correlation was found between creativity and attractiveness, while weak negative correlations were identified between creativity and both functionality and realism. This implies that the more creative the image, the more likely it is to diverge from practical or realistic expectations. The most creative and visually appealing image was based on Ron Herron's Walking City (Image 13), while the most functional design was attributed to Le Corbusier's Radiant City (Image 5). The most realistic output was derived from Peter Cook's Plug-in City (Image 16). These findings indicate that DALL-E performs better in reproducing the rational, structured nature of modernist architecture, while offering greater creative flexibility with postmodern and experimental projects—albeit with diminished functional coherence.

Conclusion: This study highlights both the possibilities and limitations of AI-based visualization tools in architectural representation. Tools such as DALL-E offer the potential to render previously conceptual or speculative projects into tangible and visually rich formats, thereby broadening the scope of architectural imagination. However, the findings also underscore the limitations of such tools in terms of originality, contextual sensitivity, and spatial coherence. Accordingly, AI-generated outputs should be understood not simply as technical renderings, but as critical artifacts that demand reflective engagement. Designers using these tools must remain mindful of ethical considerations, authorship, and the central role of human creativity in design. For future research, it is recommended that prompts given to AI models be based on abstract characteristics rather than explicit names or project titles, in order to more accurately assess the model's capacity for genuine creative synthesis. In doing so, AI can be more effectively integrated into architectural thinking—not as a replacement for human creativity, but as a complementary instrument within an evolving, critically informed design paradigm.

Keywords: Utopia, Architecture, Artificial intelligence, DALL-E, Photorealistic.

INTRODUCTION

Utopia refers to an ideal society or a perfect way of life. The concept of utopia is an idealized vision of a perfect society. It encompasses not only spatial and architectural aspects but also social, economic, and political dimensions (Mannheim, 1936). Utopias are manifestations of a revolutionary concept against the existing order (Mannheim, 1936). Utopias, which come to the forefront with their ideas and views contrary to their era, are also visual representations of a new social order. They express a situation that is unrealistic, exaggerated, and does not give importance to details and reality (Zahrani et al, 2022). The concept of Utopia was first used in Thomas More's 'Utopia', written in 1516. It is a combination of the Greek words 'ou' and 'topos' (non-existent place) (More, 1949). According to Thomas More, utopia is both a non-existent place and an imaginary paradise. Reflecting a more fair and perfect social order, utopias express the ideal society and alternative space fiction (Contandriopoulos, 2013). Thomas More's concept of utopia was shaped by the influence of Renaissance Humanism and proposed an imaginary community model (Rephorn, 1976). In the Age of Enlightenment, utopias evolved into more logical designs in line with rationality and scientific advances (Johns, 2003). With the impact of the Industrial Revolution and Modernism, technological developments and planned urbanisation approaches began to shape utopias. In this process, utopias started to come to the fore in architecture and urban planning. Especially the modernist movements of the 20th century were inspired by utopias (Cherry, 1988). Le Corbusier's Radiant City and Frank Lloyd Wright's Broadacre City embody the ideal social order of Thomas More's utopia. Utopias, which express the effort to create a better quality of living space in architecture, have formed the basis of modern urbanism. On the other hand, in contrast to the utopian vision of an ideal and flawless society, dystopias began to emerge in the 20th century under the influence of technological advancements, wars, and totalitarian regimes. The term 'dystopia' is derived from the Greek words 'dys' (bad) and 'topos' (bad place) (Bagchi, 2015). Dystopias typically focus on themes such as the suppression of individual freedoms, totalitarian control, and environmental issues (Mannheim, 1936). Antonio Sant'Elia's Città Nuova project stands as one of the early visual representations of dystopia, depicting a cityscape dominated by massive industrial machinery and alienating spatial structures. Dystopias can be seen as failed or inverted versions of utopias. While utopias nurture visions of an ideal future, dystopias critically examine the limitations and potential dangers of such aspirations. Both are significant: utopias offer hopeful trajectories for societal progress, whereas dystopias highlight the risks that may undermine these aspirations, thereby contributing to the intellectual and moral development of the modern individual (Claeys, 2013).

The traditional forms of representation of utopias/dystopias are sketches and collages. Sketches and collages are subjective experiences that reflect the inner world of the designer. The productions made with these tools are very fast, instant, and imaginary (Yıldırım and Kavut, 2024). Since they are fast and easy to express in the initial idea stages of the design process, they constitute an effective thinking tool. Throughout the process, which includes feedback loops, sketches reconstruct ideas and ideas reconstruct sketches (Ching, 2010). With the developments in computer technologies, the forms of representation have undergone a radical change (Turan, 2011). Technological developments have influenced design practices by developing new methods of representation. Design ideas, which are expressed quickly and practically with sketches and collages, can be produced in seconds with the possibilities of technology and offer visual diversity like never before. Thus, the phenomenon of sketching has gained a different meaning. Sketches are now transformed into photorealistic visuals produced through word prompts (Clear, 2013). The image formed in the mind through paper and pen is now transformed into algorithms, and the boundaries of physical space are redefined by cyberspace. The development of artificial intelligence tools has created an inflection point in this transformation.

Artificial intelligence is a technology with human cognitive characteristics such as understanding, judgment, interpretation, and creativity. This technology is based on outputs produced through learning. In other words, AI is the ability to process large amounts of data to achieve specific goals and objectives (Kaplan and Haenlein, 2019). AI has different tools for generating text, images, and videos. Tools such as Midjourney, Stable Diffusion, and DALL-E generate visuals based on textual commands and easily mimic human imagination. They develop unlimited designs in seconds. These visual tools offer a new medium of representation for utopias/dystopias that, in the past, were produced with sketches and collages. The variables of physical creation are now detached from the design object. The image is detached from its functional context (Yıldırım and Kavut, 2024). The practice of functioning is adapted to the way of thinking suggested by the artificial intelligence tool. The designer's perspective expands, and new possibilities and potentials are established. Randomly generated images with word prompts can offer inspiring ideas, form a coherent composition, and create different styles and images (Ploennigs and Berger, 2023). In this context, the representation of utopias/dystopias through artificial intelligence tools offers new potentials and possibilities that transcend traditional design methods. The acceleration of the visual production process grants designers intellectual freedom while enabling diverse formal and conceptual explorations. AI-assisted creations allow utopias/dystopias to be reinterpreted not only as aesthetic images but also as critical instruments of thought. Thus, artificial intelligence fosters a transformation in both the production and representation of architectural utopias/dystopias, providing a creative foundation for contemporary design practices.

In recent years, there has been a notable increase in scholarly studies exploring the relationship between dystopia, utopia, and artificial intelligence. In his 2023 study, Chan addressed the ethical dimensions of artificial intelligence language models, discussing the cause-and-effect relationships inherent in both utopian and dystopian narratives. In Radhakrishnan's 2023 study, images created by architecture students based on emotions were compared with those generated by the Midjourney artificial intelligence tool. The emotions of curiosity, joy, need for comfort, shyness, and fear were explored in both artistic and architectural expressions. The results indicated that while AI outperformed students in artistic experience, it lagged behind in architectural experience (Radhakrishnan, 2023). Sağlam and Çelik (2023) reinterpreted the utopian concepts of different eras through AI tools, focusing on Etienne-Louis Boullée's Newton Monument and Paolo Soleri's Arcosanti projects. Zhang et al. (2023), made a comparison between Antonio Gaudi and designs produced by an artificial intelligence system according to the variables of attractiveness, authenticity, creativity, adaptability, and desirability. While AI-generated designs were found to be more attractive and creative, Gaudi's designs were found to be more successful in terms of authenticity and harmony. According to Zhang et al., AI has difficulties in reproducing authentic design styles (Zhang et al., 2023). Carroll et al. (2024) evaluated the societal impacts of artificial intelligence from the perspectives of utopia and dystopia. Alexeeva (2024) argued that artificial intelligence is an integral part of modern utopian thought. In their 2024 study, Avcı and Kavut investigated the potential of AI tools in generating architectural sketches. Yıldırım and Kavut (2024) analyzed the impact of artificial intelligence on design imagery through the phenomenon of sketching. In Yıldırım and Kavut's study in 2024, the transformation of sketching with artificial intelligence tools is examined. According to the findings of the study, processes such as creativity and mind-eye coordination are negatively affected by artificial intelligence (Yıldırım and Kavut, 2024). Li et al. (2024) examined the effects of AI tools on the design process from utopian and dystopian perspectives. The study concluded that while AI can make design processes more efficient, sustainable, and user-centered, it may also marginalize human creativity and lead to a homogenization of design. Oswald (2025) examined the potential of AI-assisted simulations in generating artificial utopias. Campbell (2025) explored the potential of artificial intelligence in the advertising industry, investigating how it could lead to both utopian and dystopian outcomes from different perspectives. These studies reveal that AI functions not merely as a technical tool, but as an intellectual framework that shapes spatial

and societal imaginaries of the future. Particularly within the fields of architecture and design, representations of utopia and dystopia generated through AI are examined in conjunction with the ethical, aesthetic, and political dimensions of technology. In this context, artificial intelligence emerges as a critical agent in the content-based and formal reconstruction of utopian and dystopian narratives.

In light of the data obtained from literature, the research problem of the study is the transformations and potentials created by artificial intelligence tools in the representations of utopias/dystopias. The research aim of the study is to create a discussion environment by transforming utopias/dystopias into photorealistic images with artificial intelligence tools. It is to re-question utopias/dystopias today with artificial intelligence tools. This study aims to encourage architects and designers to experiment with artificial intelligence and improve their design practices. In line with this goal, the hypothesis of the study has been determined as follows: AI-based visualization tools like DALL-E can enhance the exploratory process of utopian/dystopian architectural design by offering new interpretations. However, their limitations in spatial organization, scale, and structural feasibility constrain their integration into architectural designs. In this context, the study analyzes the famous dystopias of the Postmodern era—Arcology (Paolo Soleri, 1969), Walking City (Ron Herron, 1966), and Plug-in City (Archigram, 1964)—and the well-known utopias of the Modern/Avant-garde era—La Città Nuova (Antonio Sant'Elia, 1914), Radiant City (Le Corbusier, 1933), and Broadacre City (Frank Lloyd Wright, 1932). Sketches related to these utopias were obtained from the relevant literature. These sketches were transformed into photorealistic images using the artificial intelligence tool DALL-E, and the potential of these images in today's context was evaluated in terms of creativity, attractiveness, functionality, and realism (Zhang et al., 2023). The evaluations were conducted by ten (10) expert academics holding doctoral degrees in architecture. The obtained data emphasize the potential for reinterpreting these utopias in the present day and highlight their potential as a mode of creation.

METHOD

This study examines the transformation introduced by the AI-based visualization tool DALL-E in the representation of utopias and dystopias within the architectural context. It investigates how the reinterpretation of selected utopian and dystopian examples through artificial intelligence influences architectural thinking. Employing a qualitative research methodology, the study integrates data collection, visualization, and expert evaluation. The sample consists of three utopias and three dystopias that have had a transformative impact on the history of architecture and are frequently cited in scholarly literature. The utopias analyzed include La Città Nuova (Antonio Sant'Elia, 1914), Radiant City (Le Corbusier, 1933), and Broadacre City (Frank Lloyd Wright, 1932). The dystopias examined are Plug-in City (Archigram, 1964), Walking City (Ron Herron, 1966), and Arcology (Paolo Soleri, 1969). These projects were selected due to their representation of modern, avant-garde, and postmodern paradigms, respectively. During the visual data collection phase, original sketches of the projects were obtained through literature review and served as the input for the study. Each visual was accompanied by descriptive information regarding its spatial, structural, and visual characteristics. Based on these characteristics, the images were transformed into photorealistic representations using DALL-E. Each prompt was executed with 3 iteration rounds, and the most contextually relevant and compositionally successful result was selected for expert evaluation. The generation was performed using the DALL-E 3 model as integrated within the OpenAI platform, with default parameters unless otherwise stated. Prompts were reworded slightly if initial iterations failed to produce recognizable or context-consistent results.

For each image, the following prompt was provided to the AI tool (OpenAI, 2024): Generate a photorealistic architectural visualization inspired by [Utopia/dystopia Name] designed by [Architect Name] in [Year]

While the primary prompt structure was based on the name and author of each utopia, additional characteristic attributes (such as verticality, modularity, integration with nature, or machine aesthetics) were also included in alternative iterations. However, in this study, only the base-name prompts were ultimately used to evaluate how well the model recognized and interpreted well-known utopian visions without auxiliary input.

For each architectural project, three distinct AI-generated visualizations were produced, and detailed information was provided regarding their resemblance to the original designs and how DALL·E transformed them. The photorealistic images generated through the AI tool were evaluated by ten (10) experts, all of whom hold doctoral degrees in architecture and are currently active in academia. The expert evaluations were collected via email using Google Forms. Experts assessed the DALL·E-generated images based on four criteria: creativity, attractiveness, functionality, and realism. Each criterion was rated on a 5-point Likert scale (1 = very low, 5 = very high). The Likert-scale data were analyzed using SPSS. Descriptive statistics (mean and standard deviation) were employed to reveal general trends across each criterion and to identify variations among expert evaluations. Additionally, Pearson correlation analysis was conducted to determine the direction and strength of the relationships between the assessed criteria. These statistical methods were selected to examine the internal consistency of expert evaluations and to explore potential contradictions or overlaps between conceptual dimensions.

It is important to acknowledge that the training dataset of DALL·E is not publicly disclosed in full detail by its developers. As such, there is no definitive way to confirm whether the model had prior exposure to the architectural concepts referenced in this study. This opacity presents a potential limitation, as recognition rather than generative interpretation may shape the outcomes.

RESULTS

The following section summarizes the architectural data of the six (6) utopias selected within the scope of the study and produces photorealistic representations of the utopias with DALL·E.

La Città Nuova

Designed by Italian architect Antonio Sant'Elia in 1914, La Città Nuova imagined a modern city in the form of a machine (Figure 1). As a manifestation of avant-garde urban idealism within the Futurist movement, the project is defined by a continuous sense of flow, mobility, and speed. In this multi-layered city, buildings are connected by bridges, elevators, and tunnels. Developing a highly functional and visionary design, Sant'Elia proposes an ideal city rooted in both aesthetic and spiritual experience. The buildings have no clear boundaries; instead, they are shaped by dynamic transitions and fluid connections. Verticality and structural expression dominate the drawings of La Città Nuova. Through the integration of balconies, terraces, and glass surfaces, Sant'Elia establishes a strong dialogue between interior and exterior spaces. La Città Nuova represents a self-sufficient machine-city that aspires to carry the modern architectural ideals of the early 20th century into the future (Cuito & Montes, 2003).

Although La Città Nuova is referred to as a city design, it is actually drawings of individual buildings. Designed in 1914, the drawings became a symbol of modernity in the years leading up to World War I (Budzynski, 2016). Due to the increasing population and urbanization, density and building costs made vertical development inevitable. La Città Nuova proposed a modernist idea of the future against the changing living conditions of the period.

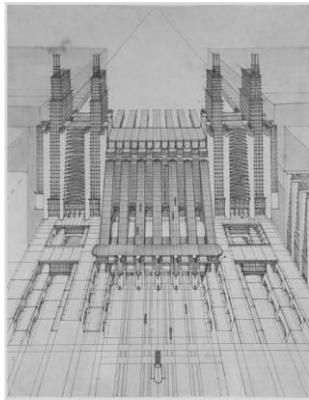


Figure 1. A view from La Citta Nuova (Cuito & Montes, 2003)

La Citta Nuova is a mechanical and geometric megacity connected by complex industrial structures, bridges, tunnels, and passageways. DALL-E has preserved this original image and reproduced La Citta Nuova with a modern approach (Figure 2). DALL-E's designs are characterized by concrete and steel structures, elevated roads, trains, subway lines, passageways, and industrial details. The AI images maintain the original mechanical and industrial aesthetic but introduce contemporary material applications such as glass facades and steel frameworks.



Figure 2. Representations of La Citta Nuova with DALL-E (Image 1-3)

Radiant City

First presented in 1924 and published in 1933, Radiant City is the unrealized urban design proposal of architect Le Corbusier (Figure 3). Conceived as a solution to replace traditional European cities devastated by war, the project reflects a conscious shift from early Avant-garde urban visions—such as the Futurist ideals of La Città Nuova—toward a rational, ordered, and standardized model rooted in the Modern ethos and the International Style. Central to Le Corbusier's design are the principles of standardization, (multi)functionality, and flexibility. The city is organized according to a strict grid plan with efficient transportation routes, green open spaces, and optimal access to daylight, promising an improved quality of life for its inhabitants. The layout is hierarchical and symmetrical, with a clear spatial order that separates areas of production and administration from zones dedicated to leisure and domestic life (Fishman, 2021). Residential units are designed as small, modular spaces measuring 14 square meters, yet they are multifunctional and adaptable. Each 50-meter-high skyscraper is designed to accommodate up to 2,700 people (Singh et al., 2020), and the entire city is envisioned to house between 500,000 and 800,000 inhabitants. Despite the compactness of interior spaces, the exteriors are characterized by openness and strong integration with nature, further underscoring the project's modernist ideals.

Although Le Corbusier's Radiant City design was not realized, it became an important source of inspiration for his successors in the development of high-density housing typologies (Curtis, 1986). Radiant City is also

an important urban design with its egalitarian and democratic organization. Living spaces were organized according to functional requirements, not class and hierarchical positions (Le Corbusier, 1939).



Figure 3. A view from Radiant City (Singh et al, 2020)

Radiant City is a functional city characterized by high-rise blocks, large green spaces, and a modern transportation system. The buildings are symmetrical, with simple geometric forms and clear lines. DALL-E preserved the original image of Radiant City and developed design proposals suitable for today's conditions (Figure 4). Functional units, wide roads, green spaces, high-rise blocks, simple geometric forms, and modern transportation systems are also maintained in DALL-E's designs. While retaining the functionalist layout, AI interpretations emphasize greenery and open spaces, reflecting contemporary sustainability trends.



Figure 4. Representations of Radiant City with DALL-E (Image 4-6)

Broadacre City

In 1932, Frank Lloyd Wright's *The Disappearing City* was introduced to the public (Figure 5). Within this publication, Broadacre City was proposed as a visionary urban settlement synthesizing rural and urban life. Envisioned to cover an area of approximately 1,000 hectares and accommodate 5,000 people in 1,400 dwellings (Johnson, 1990), the design aimed to create a self-sufficient and decentralized society. Each household was to receive 1,000 square meters of land, free of charge, for cultivation and food production (Nelson, 1995). Unlike the dense and vertical arrangements of traditional cities, Wright advocated for dispersed development, asserting that tall buildings were acceptable only if spatially isolated and integrated with green surroundings. Accordingly, skyscrapers in Broadacre City were strategically distributed based on land use analysis to preserve open space and environmental harmony.

This planning model reflects Wright's democratic and libertarian ideals, where land distribution and autonomy underpin the social structure (Stankiewicz, 2015). In Wright's view, Broadacre City symbolized American values of freedom, individual agency, and decentralization (Singh et al., 2020). At the same time, despite remaining unbuilt, the project carries strong realistic connotations and has had a lasting impact on contemporary urban and architectural discourse. Its utopian dimension lies in Wright's aspiration to extend

this model across vast—potentially national or global—territories, aligning with the International Style's broader ambitions to reshape cities at a universal scale. Thus, Broadacre City stands as both a critique of and a contribution to modern urbanism, offering a low-density, expansive alternative grounded in modernist design while engaging deeply with ideals of nature, democracy, and futurism.



Figure 5. A view from Broadacre City (Johnson, 1990)

DALL-E preserved the existing features of Broadacre City and developed an architectural design that is appropriate for today's conditions (Figure 6). In DALL-E's design, the city is spread over large areas, and the buildings are modern and low-rise. The low-density settlement retains agricultural areas, large open and green spaces, highways, farmlands, and a minimalist design approach. The AI-generated images reinforce decentralization and integration with nature, yet lack precise spatial configurations of transportation and utilities.



Figure 6. Representations of Broadacre City with DALL-E (Image 7-9)

Hexahedron Arcology

Developed in 1969 by Paolo Soleri, the Hexahedron Arcology was envisioned as a massive urban structure designed to accommodate 170,000 people within an area of 2,964 hectares (Figure 7). With a height of 1.1 km and a width of 1 km, the arcology functions as a colossal 'super-organism', embodying Soleri's radical vision of merging architecture with ecology (Soleri, 1969). Central to Soleri's concept of arcology is the belief that urban form can supersede traditional social, economic, and political institutions, using design itself as a means to create a new social order. In the Hexahedron, the boundaries between building and environment dissolve, and interior and exterior spaces are intricately interwoven, reflecting an integrated and immersive spatial philosophy (Stodolka, 2020). At the heart of the structure lies a dense urban core where cultural and artistic activities converge with essential urban services (Luke, 1997). However, despite its utopian ambitions, the Hexahedron Arcology—like all arcological visions—carries an underlying dystopian tone, reflective of the Postmodern era's skepticism toward grand narratives and centralized systems. This dystopian backdrop emerges from the arcology's totalizing spatial control, self-containment, and the erasure of conventional institutions, raising questions about individuality, governance, and autonomy within hyper-structured environments.

At the outermost periphery are residential buildings. In the layer below it are schools, offices, and cultural buildings. In the inner layer, factories and heavy industrial activities digest the system. All this structure is carried by giant columns resembling human legs. Thus, the Hexahedron functions like a living organism. With his Hexahedron design, Soleri also takes a stance against the disorganized construction in cities. Against large, formless, and disorganized cities, Hexahedron is a compact, systematic, and integrated urban design (Busbea, 2013).

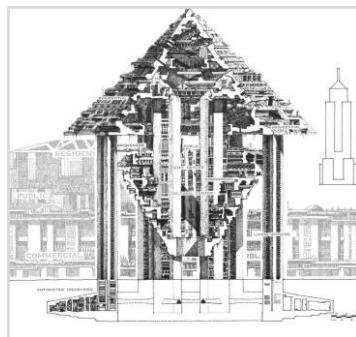


Figure 7. A view from Hexahedron Arcology (Luke, 1997)

Hexahedron Arcology is a compact hexagonal ecosystem of densely organized, vertical living spaces within a large building complex. DALL-E offers a modern approach by preserving the existing features of Hexahedron Arcology (Figure 8). Vertical dense construction, agricultural areas, green areas, socialization areas, natural ventilation, and lighting are the prominent design features in the designs dominated by hexagonal and polygonal buildings. DALL-E's proposals integrate sustainability and modern living, in line with Soleri's vision. The giant columns of Soleri's design have been eliminated in DALL-E and replaced with more realistic structures that stand firmly on the ground. DALL-E's renderings eliminate the original design's elevated structure, replacing it with more grounded, realistic urban forms.



Figure 8. Representations of Hexahedron Arcology with DALL-E (Image 10-12)

Walking City

Designed in 1966 by Ron Herron, a member of the experimental architectural collective Archigram, Walking City envisions a futuristic urban environment composed of massive, mobile robotic structures (Figure 9). These robotic cities are capable of moving autonomously across both land and sea, forming temporary or permanent communities as needed. Herron's concept arose from the idea of creating a resilient, adaptable shelter in response to the existential threat of nuclear warfare (McQuaid, 2002). As a technological response to potential urban annihilation, Walking City represents a mechanized survival apparatus—an urban machine designed to endure and adapt to post-catastrophic conditions. However, despite its visionary and mobile qualities, Walking City also embodies a distinctly dystopian undercurrent reflective of the Postmodern age. Its imagery of isolated, nomadic mega-structures speaks to a fragmented, post-

apocalyptic world devoid of stable social structures or fixed geographies. The very need for mobility and detachment underscores a crisis of place, identity, and permanence—key themes within Postmodern architectural critique. In this sense, Walking City offers a speculative but cautionary vision of the future, where technological ingenuity coexists with societal disintegration and existential uncertainty.

Walking City's design is inspired by submarines and insect exoskeletons. The urban design is not only walkable but also flexible to adapt to infinite change. Each independent living unit, called a 'pod', includes residential and urban spaces. Pods are connected by retractable corridors to become one-off, flexible metropolises. Unlike traditional static cities, Walking City proposes a city that is constantly changing and adaptable to needs (Cline and Carlo, 2002).

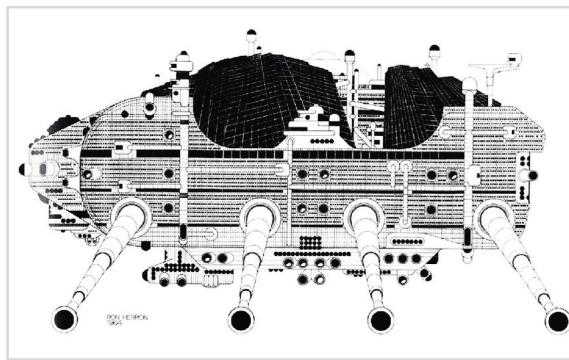


Figure 9. A view from Walking City (McQuaid, 2002)

Walking City is a gigantic and mechanized megastructure. Walking with robotic legs, this design represents a futuristic city. DALL-E preserved the existing features of Walking City and developed an architectural design suitable for today's conditions (Figure 10). The robotic legs of the walking city are preserved, and living spaces are emphasized with modular units. Metal and steel materials are used in the design, and complex mechanical details draw attention. The AI images retain the robotic mobility concept but struggle with the realistic articulation of modular units.



Figure 10. Representations of Walking City with DALL-E (Image 13-15)

Plug-in City

Published in 1964 in Archigram magazine, Plug-in City is a visionary proposal for a detachable megastructure designed by Peter Cook (Figure 11). At the heart of the concept lies the ambition to create an urban system that is adaptable to the continual evolution of technology and capable of serving future generations (Cook, 1991). Diverging from the static nature of traditional cities, Plug-in City features a linear construction system that ensures equitable accessibility and functional efficiency for all inhabitants. Through a dynamic infrastructure supported by cranes and modular components, the city is envisioned as a constantly evolving environment, capable of renewing itself like an assemblage of interchangeable puzzle

pieces. Its flexibility allows for the seamless integration of technological advancements and shifting programmatic needs. Residential spaces in Plug-in City are composed of standardized cubic units, offering equal living conditions and emphasizing affordability and mass production. These units, constructed from industrial materials such as plastic and metal, are mobile and demountable, reflecting the transient and nomadic lifestyle envisioned for 21st-century urban dwellers (Sadler, 2005).

However, beneath its futuristic and adaptive framework, Plug-in City also embodies a distinctly dystopian spirit characteristic of the Postmodern age. Its portrayal of a city in perpetual flux, stripped of historical continuity and grounded identity, suggests an impersonal and mechanized urban existence. The design's emphasis on modular uniformity and constant change critiques the alienation and loss of permanence that can arise in hyper-industrialized and technology-driven societies, positioning Plug-in City as both a utopian dream and a dystopian warning.

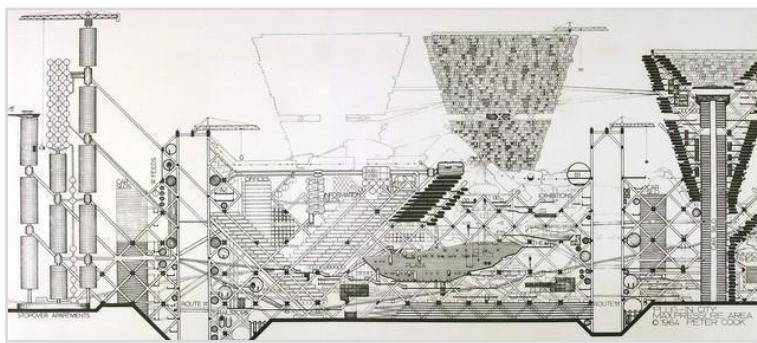


Figure 11. A view from Plug-in City (Cook, 1991)

Plug-in City represents a city that constantly renews itself within a gigantic megastructure. In the city of modular units, functional living spaces can be assembled and disassembled into frames. The most striking features of Plug-in City are the gigantic cranes, tunnels, tall cylindrical structures, and modular units. DALL-E has developed an architectural design that is appropriate for today's conditions by maintaining the existing form of Plug-in City (Figure 12). In DALL-E's design, Plug-in City preserves its industrial appearance. Huge mechanical structures, modular units, cranes, and tunnels are elements that are maintained in the new designs. The AI introduces new spatial configurations, enhancing modular adaptability while preserving the original megastructure concept.



Figure 12. Representations of Plug-in City with DALL-E (Image 16-18)

EXPERT EVALUATIONS

Within the scope of this study, representations of utopias and dystopias generated using DALL·E were evaluated based on expert opinions. Ten (10) experts holding doctoral degrees in the field of architecture assessed eighteen (18) visual representations using four criteria: creativity, attractiveness, functionality, and realism. The data obtained were statistically analyzed using the SPSS software.

The visuals received relatively high average scores in terms of functionality and realism, suggesting that they were perceived positively in terms of applicability and proximity to real-world conditions (Table 1). In contrast, the lower average scores in the creativity criterion indicate that the visuals were found to lack innovative and original qualities. Moreover, the high standard deviations observed in the creativity and attractiveness criteria reflect considerable divergence in expert opinions, suggesting that these dimensions are more subjectively perceived. The low standard deviation in the functionality criterion, on the other hand, indicates a higher level of agreement among the experts, pointing to a more objective basis in evaluations of this dimension. Overall, the visuals appear to demonstrate strong applicability but limited impact in terms of aesthetic appeal and creativity.

Table 1. Mean and Standard Deviation (Cohen, 1988; Dancey&Reidy, 2004)

Criteria	Mean (μ)	Standard Deviation (σ)
Creativity	2,82	1,38
Attractiveness	3,04	1,36
Functionality	3,34	1,24
Realism	3,17	1,28

According to the results of the Pearson correlation analysis (Table 2), a strong positive relationship was found between creativity and attractiveness; a negligible negative relationship between creativity and functionality; and a weak negative relationship between creativity and realism. Additionally, a moderate negative correlation was observed between attractiveness and functionality, and a weak negative correlation between attractiveness and realism. In contrast, a moderate positive correlation was identified between functionality and realism. These findings suggest that aesthetic appeal and creativity are generally perceived in conjunction by the experts; however, these qualities do not necessarily align with functionality and realism. In particular, the weak and inverse correlations between creativity and functionality/realism may indicate that innovative designs tend to deviate from practical applicability. Conversely, the positive relationship between functionality and realism reveals that the evaluators tend to perceive designs they find functionally viable as also realistic. This indicates a marked distinction in expert perceptions between the conceptual dimensions of the visuals and their technical adequacy.

Table 2. Pearson Correlations between criteria (Cohen, 1988; Dancey&Reidy, 2004)

Criteria	Creativity	Attractiveness	Functionality	Realism
Creativity	1.00	0.76	-0.08	-0.15
Attractiveness	0.76	1.00	-0.045	-0.18
Functionality	-0.08	-0.045	1.00	0,69
Realism	-0.15	-0.18	0,69	1.00

According to expert evaluations, the DALL-E-generated images were assessed based on specific criteria to identify those receiving the highest and lowest scores. Image 13, based on Ron Herron's Walking City (1966) sketch, was rated as the most creative and visually appealing, yet also the least realistic. Another image derived from the same concept, Image 14, was identified as the least functional. In contrast, among the images generated from Le Corbusier's Radiant City (1933), Image 6 was considered the least creative, while Image 4 was the least attractive. Image 5, however, received the highest score for functionality. Additionally, Image 16, inspired by Peter Cook's Plug-in City (1964), was evaluated as the most realistic. The Walking City images, perceived as highly creative and appealing but lacking realism, align with the speculative and experimental nature of postmodernism. On the other hand, the Radiant City visuals, which scored high in functionality but low in creativity, reflect the rational and restrictive qualities of the International Style. These results suggest that AI tools are more capable of reproducing the structured logic of modernist visions, while offering greater creative potential in representing postmodern concepts.

Table 3. Mean values of the images

Means	Creativity	Attractiveness	Functionality	Realism
Highest Mean				
	Image 13	Image 13	Image 5	Image 16
Lowest Mean				
	Image 6	Image 4	Image 14	Image 13

CONCLUSION AND DISCUSSION

Each utopia examined in this study represents a distinct architectural paradigm and reflects varying interpretations of urban idealism across different eras. La Città Nuova (Sant'Elia, 1914) embodies the Futurist and Avant-garde vision of an industrialized, mechanized city celebrating technological progress. Radiant City (Le Corbusier, 1933) exemplifies the Modernist utopia through its standardized, efficient, and hierarchical urban layout aimed at rational post-war reconstruction. In contrast, Broadacre City (Wright, 1932) represents a Luddite vision of a decentralized, car-oriented suburban utopia.

1932) proposes a decentralized, low-density model rooted in democratic and agrarian values, reflecting a modern vision of freedom and individual autonomy. Hexahedron Arcology (Soleri, 1969) introduces a self-sufficient ecological megastructure, blending sustainability with dystopian overtones through its radical social reorganization. Walking City (Herron, 1966) and Plug-in City (Cook, 1964) envision mobile and modular urban forms, respectively, both reflecting Postmodern concerns about instability, technological dominance, and the fragility of urban life. Collectively, these visionary proposals illuminate the evolving tensions between utopian aspirations and dystopian realities in architectural thought. Despite their conceptual significance, the realization of these utopian/dystopian visions remains challenging due to technological, economic, and societal constraints. However, they continue to influence contemporary urban discourse, inspiring innovative approaches to architecture and urban planning. The integration of AI-based tools like DALL-E introduces new dimensions to the representation and reinterpretation of these utopian/dystopian ideas. By transforming abstract and futuristic concepts into photorealistic visualizations, DALL-E enables architects and designers to engage with utopian ideation in novel ways. This AI-driven visualization process bridges past speculative visions with contemporary digital methodologies, expanding the possibilities for architectural experimentation.

This study examined the role of AI-assisted visualization tools—particularly DALL-E—in the reinterpretation of architectural representations of utopia and dystopia, based on expert evaluations and current literature. Visuals assessed by ten experts were rated relatively high in terms of functionality and realism, yet received lower and more divergent scores for creativity and aesthetic appeal. Pearson correlation analyses revealed weak and negative relationships between creativity and both functionality and realism, suggesting that innovative ideas may tend to diverge from practical applicability and perceived realism.

These findings align with Jaruga-Rozdolska (2022), who emphasized the inspirational rather than directly applicable nature of AI-generated visuals. Similarly, Sağlam and Çelik (2023) underscored that AI-generated representations contribute more to conceptual architectural thinking than to immediate practice. Radhakrishnan (2023) noted that while artificial intelligence demonstrated superiority in artistic expression, it fell short in conveying architectural intent when compared to human-generated outputs. The study by Zhang et al. (2023) found that while AI-generated designs were considered more attractive and creative, those of Gaudí were superior in terms of authenticity and contextual harmony. Furthermore, Yıldırım and Kavut (2024) demonstrated that AI may negatively affect mental-visual coordination and creativity in design processes. Li et al. (2024) highlighted the dual nature of AI in design: while enhancing efficiency, sustainability, and user-centeredness, it may also lead to design homogenization and the marginalization of human creativity.

In conclusion, artificial intelligence emerges as both an opportunity and a site of contention in the reproduction of architectural utopias and dystopias. AI-based visualization tools provide a novel medium for conceptual exploration and offer the potential to reimagine utopian visions through contemporary digital means. However, these tools also raise critical concerns related to creativity, authenticity, and the future role of human agency in design. Notably, the use of proper names as prompts may have biased the model towards outputs already encountered in its training corpus. Thus, the results may reflect latent recognition patterns rather than novel generative capacity. This limitation suggests that future studies should structure prompts by abstracting utopian characteristics instead of using iconic names to allow a purer test of creative synthesis. As such, AI should not merely be regarded as a technical instrument, but as an intellectual framework that shapes spatial and societal imaginaries of the future. A critical, human-centered approach is therefore essential to fully harness the transformative potential of AI while mitigating its limitations. Additionally, the use of proper names and project titles in AI-generated prompts may raise ethical or copyright-related concerns, especially if the visual outputs closely resemble protected original

works. Future studies should critically consider these legal dimensions and explore alternative prompt structures that abstract rather than reproduce named intellectual properties.

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* Write the number(s) corresponding to the relevant explanation in the contribution section.

1. Designing the study
 2. Collecting the data
 3. Analysis and interpretation of the data
 4. Writing the article
 5. Critical revision

Conflict of Interest

There is no personal and/or financial conflict of interest within the scope of this work.

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