

THE DESIGN OF THE FUTURE. GREEN ARCHITECTURE*

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The focus of the article is on the design of the future, with a particular emphasis on the trend towards green architecture. We explore the evolution of green design, its impact on society, and its relevance in our urban reality. The article also examines the connection between design, architecture, science, and technology, and highlights the importance of interdisciplinary collaboration to address the challenges of modern design.

Key words: Green, Architecture, Bio, Eco, Design, Urban, Planning, garden.

Introduction

Designers and professionals alike often express interest in predicting the future of design. However, due to the rapid pace of evolution in design trends, it is challenging to forecast which type of design will dominate or emerge as a new trend. The emergence and development of new design trends are complex and multifaceted, making it difficult to predict the trajectory of future design.

Considering that art movements tend to repeat themselves every few decades, it is reasonable to hypothesise that future design will be a reinterpreted or modified version of previous or current design directions.

The concept of the future has been present since the beginning of time, yet it remains largely unfulfilled, awaiting its full potential to be realised. Today, many modern designers seek to innovate by looking towards the future. However, it is equally important to examine the past and present in order to identify unresolved issues and unexplored opportunities that are seemingly endless. By taking a comprehensive approach that integrates insights from the past and present with future-forward thinking, designers can unlock new dimensions of creativity and develop solutions that are truly transformative. The reality for designers is that the vast majority of their creations, whether they be art projects or planning initiatives, are ultimately intended to be sold in the future. This preoccupation with commercial viability can drive designers to explore new ideas across different realms, delving

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into the past and present to create something fresh and innovative. Yet when it comes to designing for the future, many designers find themselves grappling with a unique set of challenges that can leave them feeling uncertain and overwhelmed.

The beauty of a designer's creative life lies in its boundlessness. Free from the constraints of style, direction, and time, designers are empowered to craft without limit, to explore infinite possibilities, and to transcend both past and present. Such is the gift of the designer: the ability to breathe life into new visions and ideas, unencumbered by convention or conventionality. This is a world of pure imagination, where creativity knows no bounds and every stroke of the pen or brush opens up a new universe of possibility.

For the designer, the canvas is endless, and the palette is forever expanding. It is a life of infinite potential, and the only limit is the designer's own imagination. In contemporary times, design has become a hybrid field, blending together various disciplines such as natural sciences, psychology, philosophy, ecology, and the latest advancements in information technology and artificial intelligence. The diverse range of design types available has grown exponentially in recent years, expanding at an almost unquantifiable pace. As we speak, new and innovative design approaches are emerging, making it increasingly difficult to classify or categorise the vast array of design types or directions. The design world is constantly evolving, branching out in exciting new directions and exploring uncharted territory. From cutting-edge technological advancements to artistic interpretations of natural phenomena, the scope of design is truly limitless. It is a field that continues to deepen and broaden with each passing day, continually pushing the boundaries of what is possible and inspiring us to see the world in new and unexpected ways.

As we delve deeper into the world of modern design, exploring a multitude of works and projects, we cannot help but notice the growing influence of green architecture. This revolutionary approach to design, also known as eco design, bio design, breathing design, and other such monikers, has taken the design world by storm, with its emphasis on environmentally sustainable practices and materials. However, it is important to recognize that this movement is not entirely new; in fact, the roots of green architecture can be traced back to the Middle Ages.

Throughout history, architects and urban planners have long recognized the importance of designing buildings and cities in harmony with nature, utilising materials and techniques that are environmentally friendly and sustainable. This approach, which was prevalent in ancient civilizations such as Greece and Rome, continued to evolve over time, with the rise of the Gothic style in the Middle Ages emphasising the use of natural light and ventilation in architectural design.

Today, the principles of green architecture have been refined and expanded upon, incorporating the latest advancements in technology and materials to create structures that are not only aesthetically stunning but also environmentally responsible. From the use of solar panels and green roofs to the incorporation of

natural ventilation systems, green architecture is paving the way towards a more sustainable and eco-conscious future.

Examining the latest developments in green design, we can observe their evolution, impact on society, psychological and colour impact, and their relevance in our reality [2].

Design and Green Architecture

Although the terms eco/green design and green architecture may appear to be contemporary design directions of the 21st century, a closer examination of literature related to the art of the Soviet Union reveals that this design direction shares similarities with technical aesthetics and design projects of the past [6], and green architecture - landscaping, urban landscape, etc. While technical aesthetics and design projects of the past share similarities with green architecture, it is worth noting that the latter is a more complex and multifaceted field, as it encompasses a range of disciplines such as information technology, biology, environmental protection, and psychology, among others.

As previously mentioned, the practice of creating green spaces or landscape design dates back centuries, with numerous books, articles, and research studies on the subject. One of the best-preserved examples is the Prague Castle, which features an engraving that depicts the well-maintained and organised landscape of the castle garden. This engraving has remained largely unchanged, with only minor modifications, to this day (fig. 1, 2) [10].



Fig. 1, 2. Prague Castle (Source: Wilfried Rogasch, *Castles and Gardens in Bohemia and Moravia*, h.f.ullmann, Cambridge, 2007, ISBN 978-3-8331-4135-5, p. 144-154, English)

Another notable example in Europe is the Gardens of the Palace of Versailles in France, which are well-documented through various materials. Of particular significance is the painting by Pierre Patel from 1668, which vividly portrays the appearance of the gardens that were located adjacent to the Palace at that time (fig. 3).



Fig. 3. Perspective view of the Chateau, Gardens and Park of Versailles seen from the Avenue de Paris, Author: Pierre Patel, Canvas (Source: <https://slavneobrazy.cz/patel-pierre-perspective-view-of-the-chateau-gardens-and-park-of-versailles-seen-from-the-avenue-de-paris-ido-20324>, 26.03.2023)

Despite being considered a relatively modern branch of design, landscape design has a rich history dating back to the Middle Ages. A study of European and Asian royal palaces or castles belonging to affluent families reveals that these estates featured meticulously maintained gardens that were not only green areas but also included thoughtful compositional solutions adapted to the architectural environment, area, and the aesthetic preferences of the owners or residents. France is particularly noteworthy for its impressive collection of urban and royal gardens. Throughout history, almost every city in France has had numerous gardens designed with high aesthetic standards and preserved with great care, including those from the Middle Ages that still exist today (fig. 4, 5) [7].



Fig. 4. Luxembourg Garden in Paris (Source: <https://misadventureswithandi.com/luxembourg-gardens-in-paris/>, 26.03.2023)



Fig. 5. Tete d'or park in Lyon (Source: <https://francedigitale.com/randonnee/afficher/93>, 26.03.2023)

The fields of design, architecture, science, and technology are now more interrelated and interdependent than ever before, with their joint development and collaboration solving many modern challenges. This synergy is visible in developed megacities, where smart buildings, bio-buildings, private houses, and offices are being built with green and cutting-edge technologies. Today, design and architectural design are not just about creating projects. Environmentalists, ecologists, psychologists, and aestheticians must also collaborate to create sustainable solutions that take into account the rapidly developing environment. Unfortunately, construction often encroaches on green areas, which the world needs more than ever. We firmly believe that green architecture or green design is particularly relevant today and has significant potential for filling this gap.

One of the best European examples of green architecture is the two residential towers in Milan. Two residential towers in the business district of Milan in Italy were the first example of a “Vertical Forest”, or Bosco Verticale. The tallest of the two towers is 111 metres in height with 26 floors, and the shorter tower is 76 metres in height, with 18 floors. Growing on the terrace of both towers are 480 large and medium trees, 300 small trees, 11.000 perennial and covering plants, and 5000 shrubs. The buildings were designed by Italian architects Stefano Boeri, Gianandrea Barreca and Giovanni La Varra from Stefano Boeri Architetti, along with horticulturists and botanists, with the intention of reducing smog, absorbing carbon dioxide and producing oxygen in a built-up part of the city. It is an architectural concept that aims to increase biodiversity and promote an urban ecosystem, as the plants are inhabited by an estimated 1600 birds and butterflies.

By improving the air quality of Milan in an efficient and cost-effective way, the towers are seen by many as being an important architectural step forward. The plants moderate temperatures in the building in the summer and winter by shading the interiors from the sun and blocking harsh winds. They also protect the interior spaces from noise pollution and dust from street-level traffic, and the buildings are

self-sufficient as they use renewable energy from solar panels and filter waste water (fig. 6) [9].



Fig. 6. Milan Towers (Source: <https://www.euronews.com/green/2021/10/19/welcome-to-the-milan-apartments-where-300-humans-live-in-harmony-with-21-000-trees>, 26.03.2023)

Green architecture has expanded and diversified so significantly in several countries that it has integrated into agriculture, giving rise to various projects that blend urban planning with agriculture within urban environments. Apart from green design and green architecture, green space designs incorporating fruits, vegetables, and agricultural plants are also utilised in building interiors [3].

In numerous cities, the demand for green architecture has become so pressing that innovative solutions have emerged, such as a remarkable project in Vietnam where elevated platforms with designated spaces for trees have been constructed adjacent to buildings, located directly in front of windows. Due to rapid urbanisation, cities in Vietnam have diverged far away from their origins as rampant tropical forests. In Ho Chi Minh City, as an example, only 0.25% area of the entire city is covered by greenery. Over-abundance of motorbikes causes daily traffic congestion as well as serious air pollution. As a result, new generations in urban areas are losing their connections with nature. House for Trees, a prototypical house with a tight budget of 155.000 USD, is an effort to change this situation. Five concrete boxes, each housing a different program, were designed as “pots” to plant trees on their tops. With thick soil layers, these “pots” also function as storm-water basins for detention and retention, therefore contributing to reduce the risk of flooding in the city when the idea is multiplied in the future to include a large number of houses (fig: 7, 8) [8].

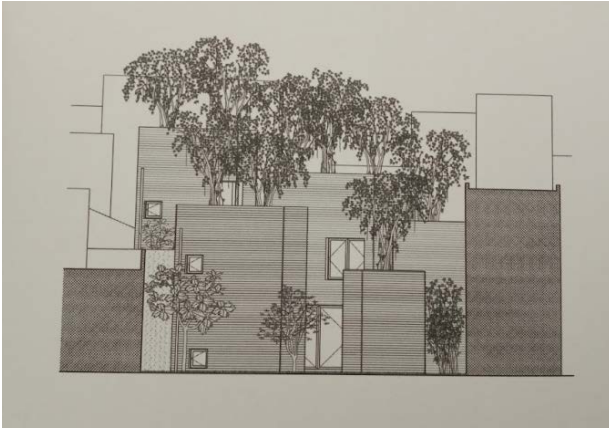


Fig. 7, 8. Buildings with Green areas in Ho Chi Minh City (Source: Sibylle Kramer, Design Solutions for Urban Densification, Braun Publishing AG, Salenstain, Switzerland, 2008, ISBN 978-3-03768-228-9, p. 44-49)

Contemporary architecture is evolving alongside green architecture, as modern designs often incorporate elements of eco or bio design. Rather than standing alone, these two concepts complement each other and have become integral parts of contemporary architecture. Today's modern architecture features green spaces on surfaces that were previously deemed impossible, such as on terraces, basements, and open-air balconies at significant heights, and even in living areas such as dining rooms and bedrooms [1].

Colour Impact and Green Architecture

Green architecture symbolises the colour green, which conveys a sense of purity, tranquillity, and harmony with nature. However, as in any field of design or architecture, the use of colour and its effects have a powerful and unique impact on the environment and the potential for its application in current and future projects. The use of colour is one of the most complex tasks in any artistic discipline, as it not only serves a decorative purpose but also conveys intention and aesthetic effects. Additionally, the psychological factor is important, as colour, even shades of a colour, can trigger specific emotions and have a decisive impact on how a person perceives a space or object. The psychology of colour analyses and demonstrates the relationship between colour and the emotions it evokes and the moods it creates. Each colour has its own effects, which are analysed and discussed by various psychologists.

Colour is used in different ways across all design disciplines. Industrial design often utilises eye-catching and bold colours. In interior design, although the colour palette is becoming increasingly varied, neutral tones are still the preferred choice. In graphic design, especially in signage, colour and typography are decisive factors. For example, the use of two contrasting colours can make a poster or sign easier to read and see.

Green is the most commonly used colour in Green Architecture, Eco, or Bio Design projects because it evokes a sense of calm, tranquillity, serenity, and well-being. It is frequently used in spaces associated with health and well-being, such as hospitals and relaxation centres. This is precisely why it is used in modern architecture today, as our environment needs these positive feelings. Several shades of green are often used simultaneously, which may not appear contrasting at first glance and could interfere with each other. However, the human psyche or the inner state of mind of a modern person is soothed by the colour green itself, as if our inner world craves it.

Indeed, in green architecture or eco design, the use of contrasting colours is not necessary as it is more about creating a natural and harmonious environment. The focus is on creating a sense of calmness and relaxation, which can be achieved through the use of different shades of green. Green colour, being a natural colour, blends well with the surroundings and creates a sense of continuity with nature. Therefore, using multiple shades of green in green architecture is a common practice, as it helps to create a serene and relaxing environment without the need for contrasting colours [4].

Ecology, Green Architecture and Urban Planning

Yes, green architecture is a vital part of ecology as it aims to create sustainable and environmentally friendly buildings that not only reduce the negative impact of construction on the environment but also promote a healthy and comfortable living environment for people. In urban planning, green architecture is becoming increasingly important as cities are expanding and the need for sustainable and energy-efficient buildings is growing. Green buildings help to reduce energy consumption and greenhouse gas emissions, conserve water, and promote the use of renewable energy sources. Furthermore, green architecture also takes into account the overall impact of the building on the environment, including the materials used in construction, the building's lifespan, and its eventual disposal or recycling. It is a holistic approach that considers the entire lifecycle of a building, from design to demolition. In recent years, there has been a growing interest in green architecture, and many architects, designers, and developers are embracing this approach in their projects. As a result, we are seeing more and more green buildings being constructed in urban areas, promoting a sustainable and eco-friendly way of living.

Let us begin by clarifying the concept of green architecture and green urban planning.

Green urbanism is sustainable urban design that creates eco-friendly cities that cut waste and emissions, use sustainable construction materials, and promote electrified mobility. Green urbanism makes every effort to minimise the use of energy, water and materials at each stage of the city's life cycle. Green urban planning is slightly different from green architecture. The Green architecture is a

philosophy of architecture that advocates sustainable energy sources, the conservation of energy, the reuse and safety of building materials, and the siting of a building with consideration of its impact on the environment. However, in the context of ecology or alongside ecology, green architecture or eco/bio design is expressed in a more environmental context. While the field lacks comprehensive research, it can be affirmed that green architecture and urban planning are manifested through various factors such as location and transportation, sustainable site development, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, design innovation, and regional priority. These elements are paramount to creating an eco-friendly and sustainable environment that caters to the unique demands of green architecture, including the careful selection and utilisation of materials to ensure optimal outcomes.

In the present-day environment, particularly in post-Soviet cities, where comprehensive studies are required, the significance of green architecture in the context of environment, green spaces, and utilisation of appropriate materials cannot be overemphasised. It can serve as the foundation for the proper functioning of the green ecosystem, leading to a harmonious and appropriate development of the environment, ecological systems, psychological influence, and art, as well as the inner world of humans and bio/eco design.

Conclusion

1. Eco-Architecture: a movement more than a style, Eco-Architecture maintains as its focus a moral imperative to design buildings that will have minimal impact on the environment during their construction process and while in use. Through their design, these buildings hold sustainability as their core value and implement an efficient system of energy use and production, promoting the responsible stewardship architecture can take in support of our environment [5].

2. In addition to green architecture, there is also a growing trend towards bio-architecture, also known as urban agriculture or urban agro-design. It is worth noting that green architecture has evolved to include bio-architecture, which involves the use of green surfaces in interiors or exteriors for agricultural purposes, combining green architecture with organic products.

3. As the development of green architecture progresses, it is crucial for city authorities, society, and specialists to address the key issue of decreasing or eliminating open land layers in urban environments or cities as a whole. Implementing landscape designs and greening these areas is essential, as open soil layers contribute significantly to reduced air quality and ecological damage.

4. Green architecture has great prospects for development. This is one of those areas that parallelly develops not only people's lifestyle, culture, environment, but also has a great positive impact on ecology.

5. Green architecture has the potential to not only benefit the environment, but also to positively impact the health and well-being of building occupants.

Research has shown that buildings designed with sustainability in mind can improve indoor air quality, reduce the use of harmful chemicals, and increase access to natural light and views of nature. As such, green architecture can contribute to creating healthier and more enjoyable living and working environments.

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ԱՊԱԳԱՅԻ ԴԻՋԱՅՆԸ: ԿԱՆԱՋ ՃԱՐՏԱՐԱՊԵՏՈՒԹՅՈՒՆ*

ՄԱՐՏԻՆ ՀԱՐՈՒԹՅՈՒՆՅԱՆ*

Հղման համար. Հարությունյան, Մարտին: «Ապագայի դիզայնը: Կանաչ ճարտարապետություն»: *Արվեստագիտական հանդես*, N 1 (2023): 165-175. DOI:10.54503/2579-2830-2023.1(9)-165

Հետազոտությունն ընդգրկում է ապագայի դիզայնի զարգացման միտումներն ու դրանց շեշտադրումները դեպի կանաչ ճարտարապետություն: Ուսումնասիրել ենք կանաչ դիզայնի էվոլյուցիան, դրա ազդեցությունը հասարակության վրա և դրա արդիականությունը մեր քաղաքային պլանավորման մեջ:

* Հետազոտությունն իրականացվել է ՀՀ գիտության կոմիտեի ֆինանսական աջակցությամբ՝ 22YR-6E004 ծածկագրով գիտական թեմայի շրջանակներում:

* ՀՀ ԳԱԱ արվեստի ինստիտուտի սփյուռքահայ արվեստի և միջազգային կապերի բաժնի ավագ գիտաշխատող, արվեստագիտության թեկնածու, դոցենտ, martinharutyunyan@hotmail.com, հոդվածը ներկայացնելու օրը՝ 03.05.2023, գրախոսելու օրը՝ 17.05.2023, տպագրության ընդունելու օրը՝ 01.06.2023:

Ուշադրության է արժանի հատկապես դիզայնի, ճարտարապետության, գիտության և տեխնոլոգիայի միջև կապը և միջմասնագիտական համագործակցության կարևորությունը ժամանակակից դիզայնի մարտահրավերներին դիմակայելու համար:

Բանալի բաներ՝ կանաչ, ճարտարապետություն, բիո, էկո, դիզայն, քաղաքաշինություն, պլանավորում, այգի:

ДИЗАЙН БУДУЩЕГО: ЗЕЛЕНАЯ АРХИТЕКТУРА *

МАРТИН АРУТЮНЯН *

Для цитирования: Арутюнян, Мартин: “Дизайн будущего. Зеленая архитектура”. *Искусствоведческий журнал*, N 1 (2023): 165-175. DOI:10.54503/2579-2830-2023.1(9)-165

Исследование охватывает тенденции развития дизайна будущего и их акцентированную направленность на зеленую архитектуру. Рассмотрена эволюция зеленого дизайна, его воздействие на общество и актуальность в нашем городском планировании. В частности, уделяется внимание связи между дизайном, архитектурой, наукой и технологиями, а также важности междисциплинарного сотрудничества в целях противостояния вызовам, стоящим перед современным дизайном.

Ключевые слова: зеленый, архитектура, био, эко, дизайн, градостроительство, планирование, парк.

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