

BIOPHYLIA AND BIOPHYLIC DESIGN EFFECTS ON QUALITY OF LIFE

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Abstract. In his book *Biophilia* (1984), Edward O. Wilson, the promoter of the concept of biophilia, defines this concept as "the desire to affiliate with other life forms," suggesting that humans tend to seek connections with nature, with other forms of life, this search being even in the subconscious and characterizing it as a genetic disposition that binds human survival to the valorization of living systems. J. Baird Callicott also argues that human feelings are naturally directed to all living systems and beings, which has evolutionary value. The foundation of this conception is found even in the ethics of Aristotle, who questions the term *philia* (friendship), providing a theory of interspecific obligation. The application of biophilia in interior design is a relatively new concept, but it can have a significant impact on the quality of human life. Biophilic design uses natural elements and patterns to improve the indoor environment, given that people currently spend most of their time indoors. E. Wilson believes that the implementation of biophilia in interior design benefits physically, mentally and socially, influencing well-being, productivity and social relationships.

Keywords: biophilia, biophilic design, nature, human-nature connection, indoor space

INTRODUCTION

Starting from the way in which human settlements appeared and developed, and reaching the compositions and details of historical gardens, we observe a multitude of types of attitudes towards nature, specific forms of behavior, which can be interpreted as either practical, spiritual or cultural, or only as forms of manifestation of sensitivity. Unfortunately, especially in the last two centuries, the way of human intervention in the natural environment reveals an involution of understanding and respect for nature. Basically, it was the lack of understanding of nature that led to disrespect for its laws.

Nature has been practically very close to man since ancient times, in all its forms, and may be mentioned here the graphic representations of animals and plants, for ornamental and decorative purposes, the Alhambra's famous gardens, the manual paintings on the vessels of ancient China, the bonsai in Japanese dwellings, the papyrus ponds in the dwellings of the Egyptian nobles, the hanging gardens of Babylon, the Greek temples adorned with *Acanthus* leaves, or the delicate rococo filigree leaves, are all living evidence that man could never be far from the nature. The coherence of themes in nature, throughout history, suggests that biophilia is not a new phenomenon, but only, acutely necessary today.

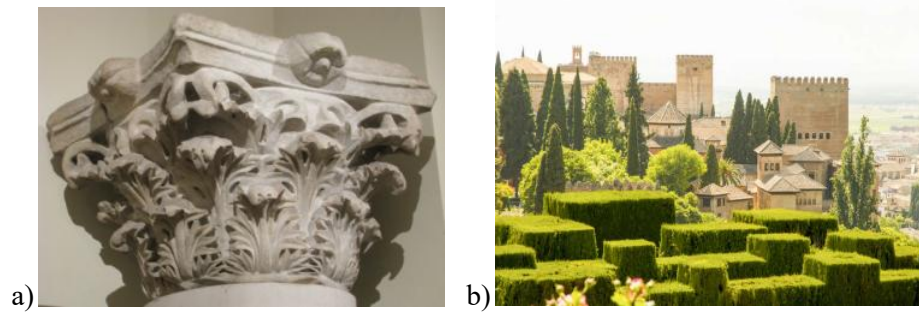


Fig. 1. *Acanthus* leaf column (a), the gardens of the Alhambra (b)

<https://www.metmuseum.org/art/collection/search/453855>

https://www.getyourguide.com/activity/granada-1207/alhambra-premium-small-group-tour-with-official-guide-t160953?utm_force=0

Over the last few decades, a significant effort has been made on various aspects of biophilia. Although this term has not yet been used specifically, experts have launched concepts such as the role of nature in human cognitive and mental development, the biological basis for various values of nature, the evolutionary significance of the human aesthetic response to different landscapes or physical healing.

The symbolic use of nature in ordinary human language, in the form of various expressions, the ubiquitous spiritual veneration of nature in various cultures around the world are also proof that biophilia exists directly and this spiritual connection with nature seems to be rooted in the history of human evolution. From times when man lived his life in much closer contact with nature. To further emphasize the role of nature in human life, it must be emphasized that human history shows that biological development has manifested itself as an adaptive response to the forces of nature and not to the artificial environment or human force. In its beginnings, man existed in full harmony with nature. Over time, pragmatism has left its mark on all its actions, gradually moving away from the essence of nature.

It is expected that by 2050 the Earth's population will increase to 9 billion, and 75% of it will live in urban areas. The expansion of the built surfaces will determine significant losses of the natural environments in the cities, and implicitly the diminution of the connection of the people with the nature.

Spending most of his time in closed, sterile spaces, impoverished by elements of nature, man begins to feel deprived of the restorative effects of nature, which only now begins to understand, this divergence from the natural world seems to have produced with the technological evolution and advances of the nineteenth and twentieth centuries, with a significant impact on human interaction with nature. German-American psychoanalyst Erich Fromm has described biophilia since 1973 as "the passionate love of life and all that is alive."

Recent research shows that biophilia improves health and even well-being, increases productivity, reduces stress, improves learning and accelerates medical recovery (Wilson, 2012), thus inevitably emerged biophilic design, a revolutionary trend that focuses on the human connection between nature and the built environment. It has received increasing attention in recent years as a design philosophy, encouraging the use of natural systems and processes in the design of the built environment and

based on the principle of biophilia which states that exposure to the natural world is important for human well-being. "I can't think of a more important way to apply the naturalistic approach to human behavior than designing the places we live and work." (Edward O. Wilson, 2012).

The first basic dimension of biophilic design is the organic or naturalistic dimension, defined as an accumulation of shapes and figures encountered in the built environment that directly, indirectly, or symbolically reflect the inherent human affinity for nature. The second dimension of biophilic design is the place / locality or vernacular dimension, represented by buildings and landscapes that link to the culture and ecology of a geographical area and include the spirit of the place, emphasizing how buildings and landscapes become integral elements of the identity of an individual or a community. The new trend, to bring and use more and more plants in indoor spaces, such as potted plants or green walls, is very useful, aesthetic and now very fashionable. The demand for redecorating enclosed spaces with the help of living plants, in various forms, is growing, from the desire to transform these amorphous spaces into pleasant, aesthetic and healthy spaces, whether they are living spaces or jobs.

This paper draws attention to the importance of biophilia and biophilic design in enclosed spaces such as homes, offices, commercial spaces, etc.

MATERIAL AND METHODS

Science alone cannot answer all the topical questions in this field, requiring a collaboration between landscape, architecture, urbanism, biology, even medicine, in order to fully understand the elements involved in biophilic design, in order to change of modern life, to be in balance again. Most applications of the biophilic concept are not out of the ordinary, but the result can be significant.



Fig. 2. The effect of biophilic design on health at work

<https://architecturenow.co.nz>

Given that man now spends almost 90% of his time indoors, according to a study by The National Human Activity Pattern in 2001, it is necessary to bring nature inside buildings in a subtle and visible way. . Studies in this area also show that people who spend even just two hours a week interacting with nature, have reported greater satisfaction and better health than those who do not. In adults, spending time in nature

is associated with improved mental and spiritual health, and in children, it encourages physical activity and play, and employees are more productive, hospital stays shorter, patients using shorter medication (Ulrich, 1984); and student absenteeism is reduced when biophilic design is used in these spaces. The data exist and are even convincing, which is why architects and the design community boldly and convincingly embrace biophilic concepts in their future projects, with applications especially in office spaces.

"People need contact with trees and plants and water. In a way that is hard to explain, humans are able to be more whole in the presence of nature, they are able to gain a deeper, more complete self-understanding and somehow manage to extract energy from plants, trees and water." (Christopher Alexander, 1977). A space where shapes and volumes are inspired by nature, where you can follow the movement of shadows and light, or where you can feel the textures, hear the sounds, see the clouds, seems to be a borderless space between inside and outside. Man feels good in nature, and if he tries to introduce a piece of nature into the spaces where he spends about 90% of his time (Matz et al., 2014), he can form a pleasant, healthy habitat, where he feels he is a part of the natural world in which he lives in harmony. For example, empirical studies have reported that experiences in nature provide better emotional state, relaxation, reduced anxiety, anger, fatigue or confusion to a minimum, compared to the urban environment where there are limited characteristics of nature. Human survival is therefore dependent on ecosystems, on the biodiversity they contain (Bastian et al., 2012), due to the fact that the diversity of organisms that populate the planet affects the functions of ecosystems and, therefore, ecosystem services (Norberg et al., 2012; Brook et al., 2013), ie the benefits that humans, but also other species have directly or not, following the functions of systems (Potschin et Haines-Young, 2016).

It can be concluded that it is indeed vital to design, create and manage urban environments that allow the human-nature connection (Turner et al., 2004), and the design that aims to create this relationship intentionally, or even use it for growth. human well-being, which can be called biophilic design (Kellert et al., 2008).

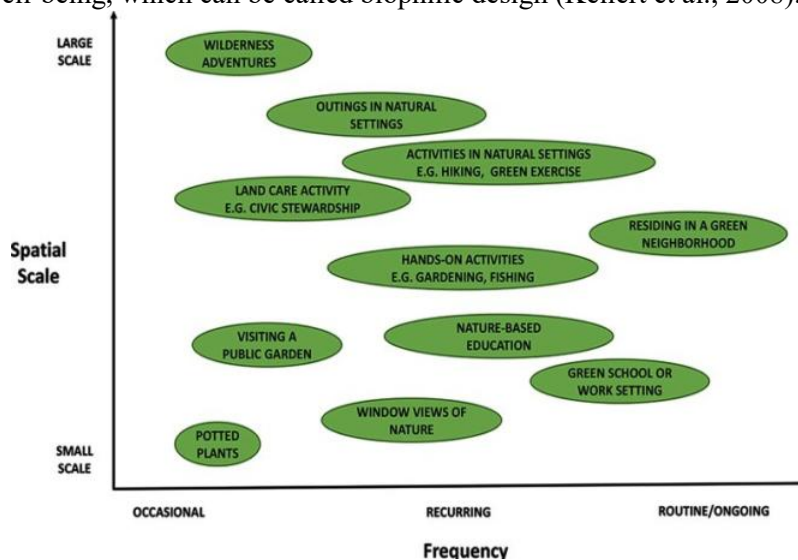


Fig. 3. Forms of nature contact

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5744722/>

There are many forms of contact with nature, which can vary depending on the spatial scale, the sensory path through which nature is perceived (auditory or visual), the activities of the individual or his level of awareness when he is in the middle of nature (Fig.3.) . A necessary starting point would be to define contact with nature, which is generally perceived as forming only areas that contain elements of living systems (Bratman et al., 2012), along with abiotic elements being given several definitions depending on the form contact with nature and how man relates to it.

Browning et al. (2014) demonstrate how human well-being increases which, through the connection to nature, is closely linked to biophilic design strategies, various researchers defining the elements of biophilic design in various treatises on architecture and interior design (Kellert, 2005; Kellert et al., 2008; Rayan et al., 2014), or regarding the urban environment (Beatley, 2011).

Biophilic design is intended for humans as a biological organism, takes into account the mind-body system, as an indicator of well-being or health and aims to create inspirational, restorative, healthy and integrated spaces to the functionality of the place or ecosystem where it is applied, but must also feed the pleasure of using those spaces, biophile design models being flexible, user-friendly strategies. Incorporating nature into cities is of vital importance, with benefits for sustainability, increasing urban biodiversity and providing ecosystem services (Rastandeh et al., 2018), mitigating climate change and its effects (Gill et al., 2007; Pedersen Zari 2018), maintaining cleaner air and lower temperatures (Zupancic et al., 2015) and water depollution (Donovan, 2017; Samson et al., 2017).

Biophilic design models can be applied to the scale of a small space, a room, a building or a neighborhood or city, each of these spaces presenting a different challenge in terms of design, depending on climate, culture, infrastructure the type and dynamics of the users of those spaces. Caperna and Serafini define biophilic design as that type of architecture that is able to provide man's innate need to connect to life and vital processes. According to the same authors, biophilic architecture is characterized by its naturalistic dimension, site integrity and geometric coherence, able to exalt the connections between the human dimension and the built or natural environment.

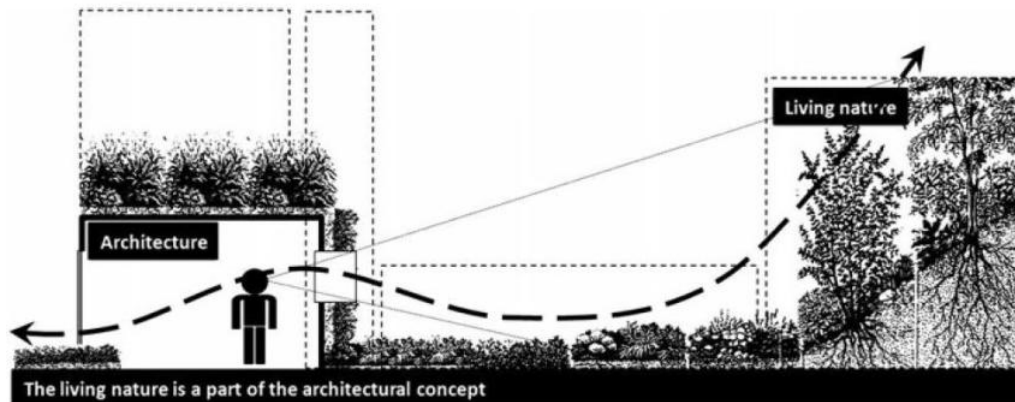


Fig. 3. Architectural model of living nature according to the model of biophilic nature

El-Messelmani A. Biophilia, Humans & the Connections_2018

If we refer to architecture, to green buildings, it can be said that not every green building is designed with biophilic strategies, biophilic architecture being part of an innovative vision where nature and life combine to create a lively home and a building that reflects respect for man and the environment (Al-Musaed, 2011). Another strategy is to bring the elements of nature indoors to improve air quality, with indoor plants provoking a positive response from people (Heerwagen, 2000).



Fig. 4. Green buildings

<https://www.newmoney.ro/totul-despre-constructiile-verzi-care-este-procedura-de-certificare-a-unei-cladiri-eco/>

https://www.go-gba.org/biophilia-design-nature/?utm_content=buffer23d9b&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer

<https://www.edntech.com/blogs/news/biophilic-design-what-it-is-and-why-it-matters>

A green building can be a confusing expression of biophilic architecture, it can be modeled through a renovation process, while biophilic architecture fights the negative effects of local warming and improves human physical and mental comfort for a living, healthy (Al-musaed, 2001); it is dependent on contact with the natural environment, which is a necessity rather than a luxury (Kellert et al, 2008), which should lead architects and landscapers to collaborate and design far beyond the basic functionality of a building.

The biophilic design consists of three pillars, namely *nature in space*, which addresses the direct, physical presence of nature in a space (various plants, animals, smells, aquariums, green walls, ponds), the strongest experiences in this regard by creating direct links with the mentioned natural elements, through diversity, movement

or multi-sensory interactions, the *nature of the space* approaches the spatial configurations in nature and refers to the positioning of the previously mentioned in the closed space, in the building and to the positioning and design in the purpose of creating a comfortable space and *natural analogues* which, in turn, address the organic, non-living and indirect evocations of nature, represented by constructive elements, furniture, lighting fixtures that imitate elements of nature, colors, shapes, sequences or patterns from nature.

We can mention here some ways and elements through which biophilic design can be achieved in any space, for example making a visual connection with nature, through large windows. In this way, natural light can be used to the maximum, given that both man and plants need a lot of light. A space with dynamic and diffused light, for example, can create feelings of drama, intrigue, or, at the opposite side, a feeling of deep calm. Different lighting conditions can cause different psychological responses, the impact of natural light on intellectual performance and mood being widely studied in various types of spaces (Nicklas & Bailey, 1996).

Then the textures and materials used must be as natural as possible, elements such as wood or stone humanizing the space, bringing it back to life. Natural materials appear as fractals and provide interesting organic information enhanced by our ability to touch them (Salingaros, 2015). Fractals, patterns in nature, derived from the biological structures of living things, found everywhere in nature, create emotional pleasure and create a natural balance. For example, trees and ferns are natural fractals that can be easily modeled on a computer using a recursive algorithm (the recursive process is a process that, during execution, generates the appearance of identical processes directly related to the process that generates them). The recursive nature is obvious - a branch of a tree or a leaf of a fern is a miniature copy of the whole: not identical, but similar. Man reacts badly to non-fractal structures (smooth or shiny objects), causing discomfort due to the fact that minimalism contradicts structures and patterns in the natural environment (Salingaros, 2012). Fractal patterns can be identified in classical art and vernacular architecture in ancient Greece and Egypt, ancient Mayan art, Islamic art, in Hindu temples or even the Eiffel Tower and are evident in works by Vincent van Gogh, Botticelli or Jackson Pollock.



Fig. 4. Fractal patterns in nature

<https://ro.livingorganicnews.com/fractal-patterns-nature-362901>

Colors, with recognized benefits on health, must be chosen carefully, because man is strongly influenced by the colors around him, the perception of color being one of the senses of man directly related to emotions. A series of experiments examining the effect of green on the psyche have concluded that exposure to green, before performing an action, a task, facilitates the performance of creativity, but has no

influence on analytical performance (Lichtenfeld et al., 2012) .Man is able to distinguish more shades of green than any other color (Painter, 2014), and yet.

Water, essential for life, has proven to be healing, and man feels good feeling and listening to water in the spaces where he lives; thus, a space where water is present becomes a captivating and convincing space, stimulating and why not, calming. Research on activities in spaces where water is present, this will lead to improvements in self-esteem and will turn the space into a restful and peaceful place (Barton & Pretty, 2010). Taking advantage of the sound of water and the ability to touch it, you can achieve a multisensory experience with beneficial effects.

Last but not least, the plants designed for arranging a space must be pleasing, be able to be properly cared for and fit into the space in which they will be placed, as part of the most successful strategies to bring nature into the built environment.



Fig. 5. Decorative indoor plants trough leaves or flowers

<https://www.flowertime.ro/plante-decorative-prin-frunze/flori-de-apartament/?page/6>

These are just a few examples of indoor plants, decorated with leaves or flowers, which do not need excessive light or do not withstand direct sunlight, which can be used successfully alone, placed in various pots, depending on the interior design or in making interior vertical walls. In fact, vertical gardens have been designed precisely to bring nature closer and to make the most of space, whether it is generous or not. Instead of an empty wall, devoid of personality, a living wall, full of flowers and greenery is a real blessing for the eyes and mind, knowing the effects of green plants on humans.



Fig. 6. Interior vertical walls

<https://povesteacasei.ro/peretii-vegetali-%e2%80%93-solutia-perfecta-pentru-armonizarea-naturii-cu-spatiul-urban/>

<https://vapeviva.ru/en/lampy-lyustry/kak-sdelat-kartiny-iz-zhivyh-cvetov-sozdanie-kartin-iz-rastenii.html>

The maintenance of a plant wall actually involves the maintenance of plants, their timely watering and regular checking to avoid their disease, especially if it is installed in business spaces (receptions, offices, conference rooms); where it may

happen that the plants are not watered in time, which will lead to the need to replace them.

Indirect experiences of connection with nature will also be taken into account by using in the interior design of images with and about nature, paintings, photographs or sculptures, the use of natural materials to furniture or fabrics, the application of biophilic colors, natural colors, favoring -the tones of the earth, of the plants and of the stone. The use or simulation of natural light, the latter being achieved by designing artificial light so as to mimic the spectrum and dynamic qualities of natural light, can be an indirect experience of connection with nature, along with the natural shapes suggested by various decorative objects. On the other hand, the model of non-visual connection with nature has evolved due to research on blood pressure, the impact of sounds on cognitive performance, or even perceived improvements in mental health, research showing that exposure to sounds from nature compared to urban noise, accelerates physical and mental healing by up to 37% (Alvarsson & al., 2010). Likewise, the olfactory system, which is processed directly in the brain, can trigger strong memories, many traditional practices using vegetable oils to induce calm or, on the contrary, to energize, proving that olfactory exposure to plants and phytoncides (essential oils from trees) have a positive effect on immunity (Li et al. 2012; Kim et al., 2007).

Currently, the connection between man, buildings and surroundings is insisted on and no architectural concept is considered completely without green areas, so in the last 35 years, green roofs have become very important elements, their plants performing insulation, filtration, water retention. rain, thus protecting the building, will ensure an environment conducive to insects, birds and will keep cool in summer and warm in winter; all this due to the 4 layers of which it is formed, namely the waterproofing layer, the drainage and filtration layer, the growing and vegetation substrate - the latter being decided according to the area, climate and thickness of the substrate (Al-musaed, 2001).



Fig. 7. Green roofs

<https://cvlpress.ro/04.04.2018/acoperisurile-verzi-sunt-tot-mai-populare-in-romania/>

<https://odu.ro/acoperis-verde-intensiv-tip-gradina/>

The use of biophilic principles in design or arrangement is a growing trend among architects and landscapers, who choose to use more and more natural materials and advocate the use of plant materials in their projects. For example, the design and implementation of green walls, by using moss or lichens in natural colors or various other colors, along with natural elements, especially wood or stone, is highly valued in many ways. First of all, it is about the indisputable aesthetic quality, regardless of whether it is about small paintings or whole spots; then their easy maintenance and

their durability over time, respectively up to 10 years. Thus, it is possible to bring nature into space.

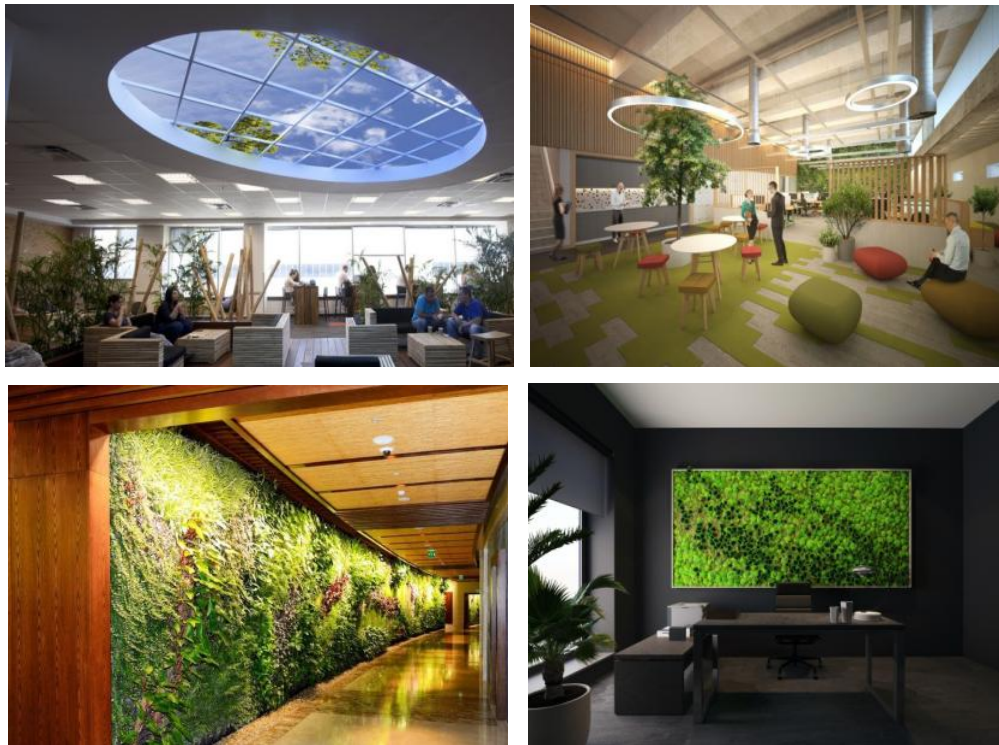


Fig. 8. Interior spaces with biophilic design

<https://officesnapshots.com>

<https://www.scmp.com/lifestyle/article/2057445/buildings-blend-nature-why-singapore-has-the-abundance-and-hong-kong>

<https://www.forbes.ro/3-tendinte-ce-si-fac-tot-mai-mult-loc-designul-interior-pentru-spatiile-de-birou-146546>

RESULTS AND DISCUSSIONS

Given that most residential or office buildings were not designed on the basis of biophilic design, the phenomenon of biophilia can be easily achieved in indoor spaces by successfully using modern methods, namely vertical walls, paintings or decorations.

The walls are architectural elements that help not only to build a space, but also its identity. Vertical gardens are increasingly appreciated in Romania, both in outdoor spaces, but especially indoors. A “living” wall of plants transforms a dull office or a home into a lively, relaxing space, and even a space with a therapeutic role. In traditional Nordic architecture, for example, the contribution of vertical vegetation on physiological comfort has long been exploited from the point of view of thermal comfort, finding beneficial situations in terms of heat transfer, in the hot season reducing heat accumulation. up to 75%, and in the cold season the heat loss is reduced

by 60%. Often, however, the vertical walls, the logic of their location, are based only on aesthetic reasons, the perception of indoor vegetation taking place when integrating it into a coherent compositional ensemble, according to the space and activity that takes place in that space.



Fig. 9. Biophilia achieved with the help of panels with mosses and lichens

<https://www.edntech.com/blogs/news/biophilic-design-what-it-is-and-why-it-matters>

<https://www.artagradinilor.ro/servicii/licheni-decorativi.html>

<https://sound-zero.com/what-are-acoustic-moss-wall-panels-some-faqs/>

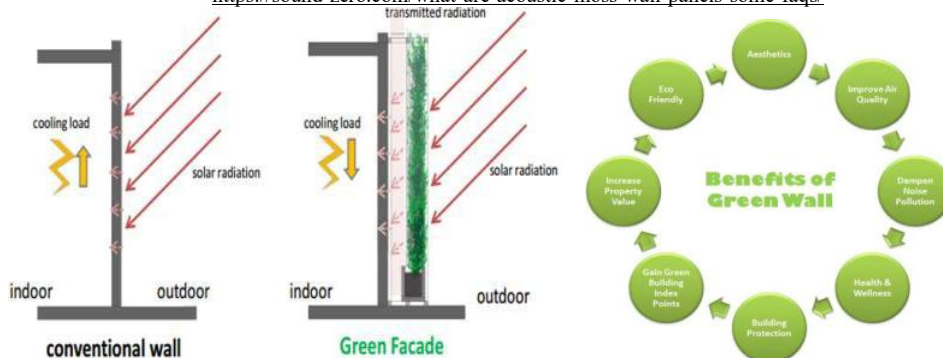


Fig. 10. The benefits of green walls

<https://www.gpplantscape.com/biophilic-office-design/>

<http://article.sciencepublishinggroup.com/html/10.11648/j.ijema.20160401.13.html>

<https://www.ambius.com/green-walls/benefits/>

Pictures of urban lichens or stabilized muscels can radically change even the appearance of a small apartment, which can become a green and chic space, closer to nature. Unlike regular finishes, lichen draping is a quick and spectacular way to change the look of an interior. The process consists in applying lichens by gluing on a vertical, fixed or movable surface, thus being able to cover, in any model, from structural walls to movable panels, sliding doors and movable partitions, all to achieve the desired effect.

Lichens are special organisms due to their symbiotic nature between a fungus and an alga. They are extremely resistant, developing even in the harshest conditions: on the ground, on the bark of trees or on rocks. Their appearance is extremely varied, they are divided into four main categories: gelatinous, crusty, leafy or bushy; for the draping of the walls, the bush type ones are used, because they are easy to harvest, with a very pleasant appearance and texture and can be purchased in a very varied palette of colors.

In addition to the decorative quality given by these plants, they have other advantages: malleability in use on almost any surface, generous cormatic palette,

offering 16 shades, with which you can make patterns, compositions or symbols, as needed; hydro-sensitivity, lichens reacting to environmental conditions, providing clues to the level of humidity; the affinity for moisture, which can alleviate excess moisture, does not require care, only if the humidity in the room drops below 40%, at which time it is sprayed with water; endurance, time up to 10 years. Lichens do not attract insects and do not host any potentially harmful organisms and do not produce allergens or irritants and provide sound protection to rooms, do not grow and should not be cut, being stabilized, do not need light; in conclusion they can be placed in any type of space. So nature can be brought inside with the help of this type of plant, while creating tastefully decorated spaces or decorative objects such as paintings or other types of decorations.



Fig. 11. Lichen paintings and decorative objects
(original)

To emphasize the connection with nature, various natural materials such as tree bark, different textures and colors, branches, other types of lichens or stabilized plants can be used to create plant paintings of plant walls, fruits of different plants, of course dried, so that they do not rot and have the greatest possible durability, stones, etc. They will be used depending on the type of space, the context, the theme of the composition or the requirements of the beneficiary.

Biophilic design is fascinating because, as research and science have shown, humans have a biological need to be in contact with nature physically, mentally and socially and this connection affects personal well-being, health, productivity and social relationships. Biophilic design is an innovative way to capitalize on this affinity to create natural environments in indoor spaces. It is also worth noting that when a person is challenged to describe their favorite place, most of the answers refer to natural spaces such as the seafront, mountains, forest or lake edge. Through the awareness of nature in interior or architectural design there is a reconnection with nature, bringing

the natural exterior world into the built world; so biophilia directly confronts the problem of aesthetics and man's desire for beauty.



Fig. 12. Various spaces arranged with green walls made of stabilized lichens
<https://www.spatiuconstruit.ro/gama-de-produse/pereti-verzi-cu-licheni-si-muschi-decorativi/9400>

When planning biophilic design, questions may arise about the quality of the result: what makes the design excellent? It is obvious that a high quality intervention can be defined by the richness of the content, the accessibility of the users of the space and the diversity of the strategies; and models can be applied to the scale of a micro-space or an entire building, a neighborhood or campus, an entire locality - each representing a challenge depending on the types and dynamics of users, climate, culture or even existing infrastructure. Age and sex are also known to influence biophilic response trends, with women reporting higher levels of stress than men, and yet less likely to use natural spaces (Lottrup, Grahn, Stigsdotter, 2013).

CONCLUSIONS

In a historical context, the various ways of organizing in settlements have often led to isolation from the environment through fortification, in the extreme sense. Urban culture manifested itself almost everywhere, by excluding nature from its built space. However, over time, there have been settlements that have included nature in their structures. Even in the modern period, “garden cities” appeared, which, following the prescriptions of the Athens Charter, included nature to a certain extent through green spaces, even if they did so following more their contribution to the healing of the urban environment.

Unfortunately, today, despite concerns about the nature-city link, urban developments are still on the verge of destroying the natural environment. There are, however, attempts, over time, to keep nature as close as possible to the urban environment; an example is the city of Adelaide, Australia, a green city which, in its process of development, did not widen its hearth but grew in proximity through garden cities in the form of satellite cities; or even the plan of the “ideal city” Buckingham, England, which was made in the nineteenth century and provided for division into three areas: residential, commercial and industrial, paying close attention to planted spaces - intention materialized by designing three circular parks. These are just two

examples of utopian urban models, because they had nothing in common with the real city, being just attempts to find solutions.

One may ask whether human beings have an innate sense of connection with other life forms; and if the answer is yes, then biophilia can increase respect for man and strengthen the so-called obligation to treat other forms of life with care and love. Sustainable psychological damage is currently a major challenge resulting from prolonged exposure to the urban environment. And biophilia is a solution to this challenge of humanity, the biophilic design thus becoming the transposition of the inherent human need of affiliation with nature in the way of designing built spaces; this generating a significant impact on the health and well-being of the human being. Thus, some of the psychological benefits are positive behavior change, in terms of social interaction and reduced violence (Kuo et Sullivan, 2001, Faber Taylor et al., 2002), decreased depression (Berman et al., 2012; Cohen -Cline et al., 2015), increasing the ability to concentrate (Harting et al., 2003) and increasing social interaction (Harting et al., 2014).

Biophilic design is more than just a tool or technique, and its successful application will depend on man's adoption of a new consciousness of nature. Biophilic design, the newest innovative way of arranging the spaces in which man carries out his activity or of the living ones and which rejects the return to the industrial design from the 15th century. XXI, brings nature close, inside these spaces and emphasizes the human-nature relationship by incorporating natural materials and sustainability. These indoor gardens are relatively simple to implement, they are incredibly elegant, requiring minimal maintenance, but with maximum impact. A successful biophilic design is based on health conditions, socio-cultural norms and expectations, various previous experiences, frequency and duration of user experience, perception and processing of user experience, in order to create inspirational, restorative and healthy spaces, but also integrated in the functionality of the place or urban ecosystem to which it applies; that is, it must fuel the attraction to that place or space.

The recent trend, namely green architecture, realizes little by little, the reconnection of man with the natural world, a phenomenon that can be called as the missing piece in the puzzle of sustainable development; and biophile design concepts and biophile cities will be able to offer the opportunity for this reconnection, through a common language between architects, landscapers and urban planners. Models of complexity and order have evolved and it can be said that a complex and orderly space becomes attractive and rich in information and will create an interesting balance between boring and overwhelming,

The future of mankind is in danger if we are not aware of the risks and do not begin to consider the realization of as many sustainable biophilic projects as possible, even if the literature shows that the evaluation of the human-nature relationship differs from one cultural group to another (Chan et al., 2016).

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