



ECOLOGICAL DESIGN OF OFFICE SPACES

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Annotation:

The article deals with the issues of introducing elements of nature to ensure the environmental friendliness of the interiors of office buildings, in particular in recreational spaces.

Keywords: business centers, phytodesign, recreational spaces, aquadesign, office, interior, phytocompositions.

Environmental issues are currently of concern to many specialists. Ecological trends that have already become trendy can be traced at different levels of environmental design: urban greening, the use of alternative energy sources, the creation of energy-efficient "green" buildings, vertical gardening, the introduction of plants into interiors.

Currently, the tasks of designing and designing modern offices are very relevant. While many processes have become automated, more and more people are connected with the process of intellectual and creative activity. People spend quite a lot of time in offices, so the design of the office space is of great importance both for the success of the company and for its image. The theme of "green office" and ecological house is becoming more and more popular and in demand.

A person who works in normal mode (not remotely) spends the most time in the office and experiences heavy workloads. Psychologists from different countries have confirmed that with great mental stress, workers need rest. Currently, work in the office is no longer the only possible option, an increasing number of employees are striving for a remote form of work. So, "according to Regus, 43% of employees would like to work remotely in free schedule mode" [1].

Modern offices and business centers operate at a busy pace. However, for productive work, it is very important to create comfortable conditions. This is the observance of functional requirements, ergonomic, aesthetic and environmental. Researchers have proven that the presence of a recreation area in the office space positively affects the well-being, working capacity and psychological state of employees. Having free time during the day allows employees to mentally and emotionally recover, which can contribute to increased productivity. Paying



attention to employees and implementing health promotion programs have been found to result in fewer health complaints, greater productivity, reduced absenteeism, and a higher return on investment [2]. The possibility of physical activity in the workplace reduced sick leave by 32%, health care costs by 50% and productivity by 52% [3].

To mitigate the negative impact on a person, offices in many countries are designed with recreational areas. This trend can also be seen in large business complexes. Recreational zones, rooms for communication and relaxation are becoming an integral part of modern office spaces. This contributes to greater efficiency of employees, has a beneficial effect on productivity and productivity. For example, companies such as Google, Facebook even provide employees with sleeping spaces during the working day. According to a study in the US, workers who sleep an hour longer during the week earn an average of 4.9% more than other workers. [4]

According to a study on the features of office space zoning in 2018-2019, "most employees demand improved air quality and comfortable lighting for work. Poor air quality puts workers to sleep and causes them to lose about an hour a day. The overall effect of microclimate and light has been found to affect the productivity, well-being and mood of employees. Good workplace ecology can reduce 4 days of sick leave per year per employee[5].

When creating recreational spaces in offices, the environmental aspect is of great importance. Strengthening your connection with nature is known to reduce stress and improve health. However, due to their activities, people are forced to spend a lot of time inside the building. Therefore, the application of an ecological approach to the design of office spaces, and in particular, in recreation areas, is of particular importance.

More and more designers around the world are using open spaces, natural materials, warm colors, natural sunlight, living plants in interior design. From the point of view of video ecology, even a simple image of nature, waterfalls, plants improves people's mood. Thus, the virtual "natural" indoor environment has almost the same positive effect as the real one, for example, artificial lighting in the roof or technologies that replace daylight have a positive effect on mood even in the absence of windows. [6]. However, exposure to real sunlight is paramount to human health. Therefore, simulation cannot replace natural elements, since connection with nature is a biological and psychological need of people.



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A classic example of an eco-friendly office is the Amazon headquarters in Seattle. The complex consists of three glass spheres containing more than 40,000 plants of different species. [7] In a modern interior, aquariums are used as tools for psychological relief and decoration. Various aquariums, green walls, glass waterfalls, string waterfalls become indispensable elements.

So, the office of "Pionen White Mountain", the Swedish Internet provider located in Stockholm, is located in a former bunker. The center of the headquarters is a giant aquarium in which sea fish live. The aquarium is surrounded by waterfalls and greenhouses with hundreds of species of flowers. The building is equipped with fluorescent lamps, living plants, artificial waterfalls, an aquarium, and a "floating" conference room.

However, phytodesign, a currently popular trend, as a science arose almost half a century ago, although the desire of people to decorate their homes with plants arose in antiquity. There is information about the creation of greenhouses and winter gardens in Europe in the 17th century. However, now, due to the deterioration of the ecological situation, the introduction of elements of phytodesign is considered not only as an artistic technique, but as a manifestation of compensatory measures in relation to the natural environment.

Phytodesign and aquadesign in the interior contributes to solving a number of problems that arise in closed spaces. Of course, one of the important functions of phyto- and aqua design is ecological. This is the sanitation of the premises, reducing the number of microorganisms in the air, cleaning the air from dust, humidification. From a psychological point of view, it has been proven that being in a natural environment has a very beneficial effect on the nervous system. A person can feel oneness with nature. Elements of phytodesign and aquadesign contribute to the harmony of man with nature. Green color calms, and warm color shades of green have a positive effect, soothe.

From an artistic point of view, plants contribute to the formation of a comfortable visual environment. So, in industrial interiors, so-called homogeneous fields are often created - smooth surfaces on which there are practically no visible elements



or, on the contrary, an aggressive visible environment with a large number of identical elements.

When forming a composition, the choice of plants may depend on many factors, including the purpose of the room, the style of interior design, the possible location of plants, and the desired effect. In addition, when selecting plants, they proceed from their functional purpose. It can be as a therapeutic and health-improving one - with a pronounced antimicrobial activity and a therapeutic effect; protective - sanitizing the air and reducing the noise level; aesthetic effect - decorative and beautifully flowering [8].

So in atriums, as well as in front rooms with high ceilings and large windows, it is advisable to place large-sized plants, and in production-type rooms - plants with high gas absorption activity. In the process of creating interiors, you can use types of plants that differ in their role in the overall composition: accent - the most spectacular and beautifully flowering; background - ground cover, creating a green background; structure-forming - the basis of the compositional group, usually plants of medium or large size; filling - plants that play a supporting role.

In small recreational areas, vertical gardening can be used, which will not occupy the area of horizontal surfaces, but at the same time will perform a soundproofing task and the function of air purification. Common types of vertical gardening include lianas, vertical modules, phytowalls, panels of succulents or moss.

Often in the recreational spaces of offices, business centers, plant compositions are designed in the form of living walls that form the space, zone the room, create the feeling of a park, and have a beneficial effect on the microclimate. This is achieved by planting plants in a special design, which, with the right automatic watering system and backlighting with phytolamps, may require minimal maintenance.

In addition, plants are also placed: on ceiling structures (ampel plants), on the floor (large tapeworms), on the wall (climbing plants), in window openings (plants that can withstand temperature changes).



pic. 1 An example of the design of office spaces by means of landscape design



Also, one of the modern trends in interior design is the so-called flower paintings, which harmoniously combine green plants and mosses, flowers, as well as a variety of decorative elements. For the design of such paintings, stabilized plants are used, which have undergone a special treatment that artificially slows down the withering process. However, such floral compositions no longer have a healing effect, although they look very aesthetically pleasing.

The elements of aqua design in the interior, such as fountains, waterfalls, aquariums, which create the effect of relaxation, which is especially important during high intellectual loads, have an equally strong impact on the psychological state of a person.

Thus, the analysis of the influence of phytodesign elements on the interiors of office buildings shows that plants help to achieve a high mental concentration of employees and reveal their creative potential, increase the artistic expression of the interior space, become an accent of the architectural composition of the interior, making it unique, environmentally friendly and comfortable for people's life.

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