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HEALING ARCHITECTURE

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Relevance: the problem of information space, discomfort in a permanent place of residence, and global environmental and social problems cause strong stress in a person. To solve and improve the situation, it is necessary to investigate the situation in the architectural space first.

Objectives: to investigate the levels of influence in the architectural space, to apply elements that need improvement, and have the prospect of becoming targets for the psycho-emotional state of a person.

Architecture and medicine have always had a close connection. An analogy to medical schools' use of casts of the body is the use by architects of casts of historic buildings for teaching. The structure often was demonstrated through the human body, sections of architectural structures appeared next to anatomical drawings.

The term **“healing architecture”** was first used in the 1980s and is part of the scientific direction of “healing environment”, which studies the influence of the environment on the healing process. It was based on a study published in 1984 by architecture professor Roger Ulrich in Sweden. He proved that staying inwards with a view of the park has a positive effect on patients, as a result of which they need less time to recover [1].

After the outbreak of cholera in Europe, in the second quarter of the 19th century, there was an understanding that living conditions, overcrowding, and lack of sunlight affect people's health.

We now know that the view of the city affects our mood and well-being. However, urban architects rarely paid attention to the resident’s perception of their creations. The desire to build a majestic monument overshadowed considerations of the impact on psychology. Now the situation has started to change. Levels of perception are divided into:

1. **Microlevel** – interiors and their fragments; zones, separate premises (rooms), residential unit (apartment).
2. **Mesolevel** – volume-spatial formation; complexes of residential units (houses) with a plot belonging to it.
3. **Macrolevel** – planning systems; a group of objects of various purposes with their territories.

4. **Superlevel (city planning)** – a general urban ensembles and territories system.

The design of the architectural environment is a new type of spatial art, forming a subject-spatial complex of conditions and circumstances of human existence into an art object.

Colin Ellard from the University of Waterloo in Canada conducted a study and found that people's emotions are most influenced by **the facades of buildings**:

− Complex and interesting facades raise the mood;

− Monotonous facades are depressing.

Studies show that green areas not only reduce the effects of stress but also improve **the physical condition of the population**. Research by English scientists in 2008 demonstrated that the risk of cardiovascular diseases is significantly reduced in areas with greenery. A park or forest helps reduce the stress inherent in city life.

The visual complexity of the natural environment has a calming effect on the human psyche, which was confirmed by a study conducted using virtual reality in Iceland. The researchers showed the participants of the experiment residential areas, and the streets with a variety of architecture turned out to be the most attractive [2].

Ergonomics and proportionality play a big role in a person's comfortable well-being in the environment. Examples of large-scale indicators in the residential environment (Fig.):

In the interior: a – “less than a person” − things, household appliances; b – “less than or equal to a person” − furniture, large appliances; c – “more than or equal to a person” − architectural details, dimensions of space.

In the urban environment: d – “greater than or equal to a person” − architectural details, small architectural forms, landscaping elements; e – “much more than a person” − fragments of facades, trees, cars; f − without direct large-scale connections − silhouettes of buildings, large-scale engineering structures, etc.

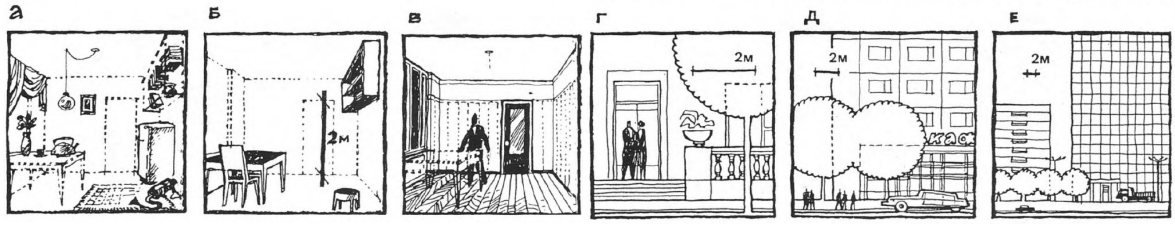

Fig. Ergonomics and proportionality

Psychologists have determined that color directly affects a person's psychological state. The correct color scheme in the environment has a calming effect and contributes to the improvement of people's communication and the

development of creative potential. Research has shown that 80 % of color is "absorbed" by the nervous system, and the remaining 20 % by vision [3].

Examples of the influence of colors on human perception: purple − promotes inspiration, and can cause melancholy; blue − calms, and relaxes; green − calms, and helps to get closer to nature and other people; red – stimulates the nervous system; yellow – improves concentration, etc.

As a rule, city houses are built of concrete. This choice was made due to its properties: strength, waterproofness, and frost resistance. However, few people think that such a choice is non-ecological.

Instead, we can pay attention to such **ecological materials** as straw (has a good insulating effect) and earth, wood (in addition to environmental friendliness, has a presentable appearance and is often used as a cladding or decorative element), bamboo (fast growth), recycled plastic (production reduces the number of emissions, helps to get rid of the problem of excess harmful products of human life), reinforced concrete (stronger than concrete, recycled materials are used in its creation, absorbs carbon dioxide), fly ash concrete (ash is used instead of cement) [4].

Landscaping plays a very important role in embellishment, among many advantages: it reduces dust, affects the formation of the microclimate, and has a decorative function [5].

Among the most common types of landscaping are protective (fortification of banks with water), horizontal (for general use, parks, yards, etc.), and vertical (supports or walls covered with climbing plants).

Conclusions. Good design does not mean that buildings can change our perception. Winston Churchill believed that structure should rather give city dwellers a sense of control over their environment.

Thus, urban development directly affects the quality of human life, and with the correct use of the identified principles, it is possible to create a quality environment that will significantly improve the psychological and physical well-being of citizens.

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