

## THE ROLE OF HUMAN AND SPACE IN THE COMPARATION OF PARTS OF BUILDINGS AND STRUCTURES IN ARCHITECTURE

*S.S. Saydaliev*

Tashkent Institute of Architecture and Construction, Head of the Department of Engineering Graphics and Computer Design, Candidate of Pedagogical Sciences, Associate Professor

*B.V. Nigmanov*

Tashkent Institute of Architecture and Construction, Senior Lecturer of "Engineering Graphics and Computer Design"

**Abstract:** *This article deals with the name of man and space in architecture, the fact that man for himself lives in the realm of architecture, adapts everything used in life to the size and proportions of his body, and these things are only things that belong to man himself. Accordingly, the need to know the dimensions of the human body is justified not only in the design of objects, but also in the description.*

**Key words:** *Man and space, body, size, ratio, space, design, juxtaposition, artist, presentation, architect, proportion, flair, modulator, aesthetic appearance.*

### Introduction

Man adapts the things he has made for himself to the size and proportions of his body. This thing first of all applies only to the things that belong to man himself. Knowing the dimensions of the human body is necessary not only in the design of objects, but also in the description. The best way to get an idea of the size of any item is to compare it to the person standing next to it. From ancient Egypt, artists and architects were interested in the laws of proportions of the human body.

The French architect Le Corbusier developed a system called the Modular. The modulus is a measuring scale (system of proportions). In the twentieth century, from 1942 to 1948, the French Swiss architect Le Corbusier recommended the use of architectural forms as a means of balanced construction and used it in the buildings he designed (Figure 1).

### Main part

How many people pass through these places during a certain period of time when a person is moving is built taking into account their modes of movement (whether the person is carrying something with him, giving way to another person coming in front of him, etc.) (Figure 2).

The comparison of parts of buildings and structures, their conformity to the proportions of nature and the relative dimensions of man, his perception and perception of being, will be an important factor for the normal functioning of the human body. It has been noted in the scientific literature that constructions adapted to the proportions of the law of gold cutting have a positive effect on human activity.

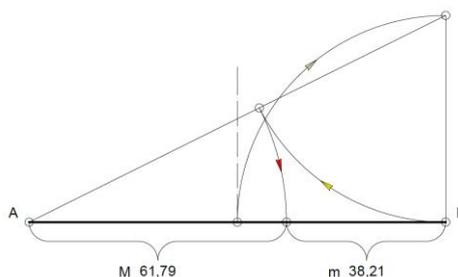


Figure 1

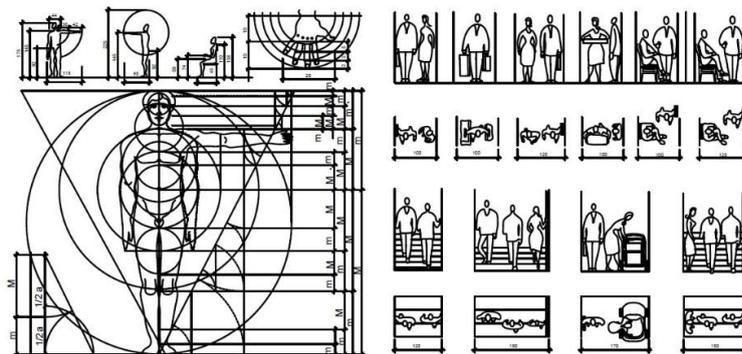


Figure 2

Many point out that the new system of relativity of architectural developments was developed in the twentieth century by the French architect Le Corbusier, a modular measurement table developed in the 1940s, the golden unit of which is equal to F (Modulor is a unit of measurement). Developed by the French Swiss architect Le Corbusier between 1942 and 1948, he recommended the use of architectural forms as a tool for building proportionality.

The module is based on the proportions of the human body, which have the same height and the same model. Le Corbusier considered several options for people with different heights. As an example for applying the theory in practice, medium-sized and larger-sized ones were taken. Le Corbusier "« In variant 1, the modulus height was 175 cm, and 216 cm when he raised his arm. " Based on these data, the remaining ones were calculated (Figure 3).

First of all, it should be noted that it has its competent aspects, architectural constructions, aesthetically perfect proportions, which are built on its basis, the versatility of placement and their compatibility with the proportions of the dimensions of the human body. As shown above, the gold measurement is generated by the geometric method (the relationship of the section to the middle and the edge) or by the Fibonacci method of sequential approximation of a series of numbers. (I would like to point out that such series are not rare, Fibonacci was the first to invent such a series of numbers).

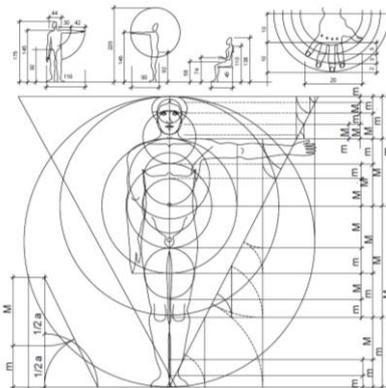


Figure 3

Without dwelling on its architectural significance, I would like to emphasize that they are many, they define the harmony and aesthetic appearance of buildings and structures, and a small part belongs to the Le Corbusier ratio. In addition, the fact that the module is taken from the size of one person (the sample is at a certain height) differs from the height of other people, indicating that it is limited, so there is a deviation in the proportions when designing structures.

Therefore, Le Corbusier repeatedly tried to increase the coverage width of the module by resizing the sample (Figure 4).

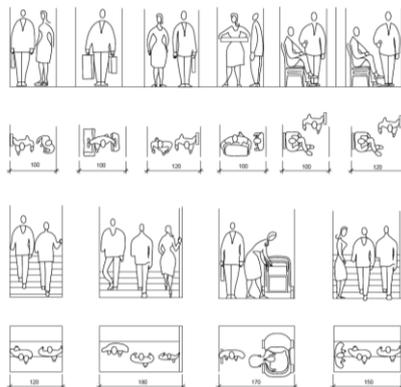


Figure 4

Provides the aesthetic beauty of a construction site built using a modulator. Buildings and structures built in accordance with the proportions of the human body serve as an important factor for a person to feel existence, to live a normal life. The scientific literature emphasizes the effect of constructions based on the law of golden cutting on the human body, for creation.

Modulor Le Corbusier (French: Le Corbusier; real name Charles Edouard Jannere-Gri) is a Swiss French nationalist, pioneer of modernism, representative of international architectural style, artist and designer. Le Corbusier is one of the most prominent architects of the 20th century. He is famous for the buildings and structures he built, and he is considered a sharp writer and publicist. The buildings built under his project can be seen in Switzerland, France, the United States, Argentina, Japan and Russia.

Characteristic features of Le Corbusier buildings are the fact that the volumetric blocks are raised above the ground by columns, the use of flat roofs as open gardens, transparent facades - "Free facades" visible inside the building, free space of floors "Free plans" worked on rental ideas.

A modular is a scale (a system of proportions) developed by the French Swiss architect Le Corbusier between 1942 and 1948 and recommended the use of architectural forms as a means of constructing proportions. The architect himself said of him: "The invention of the modular system, the normalization of its construction, is called for industrialization, and can be applied not only in France (France), but on all continents. Currently, the products are used in pound-inch and meter sizes in Modular, which is spread all over the world. It overcomes the barrier of different measurement system units used in different countries of the world. The purpose of this system is to ensure that architecture and mechanics are in harmony with the dimensions and dimensions of the human body, so that we can live in the world around us and master it (Figure 5).

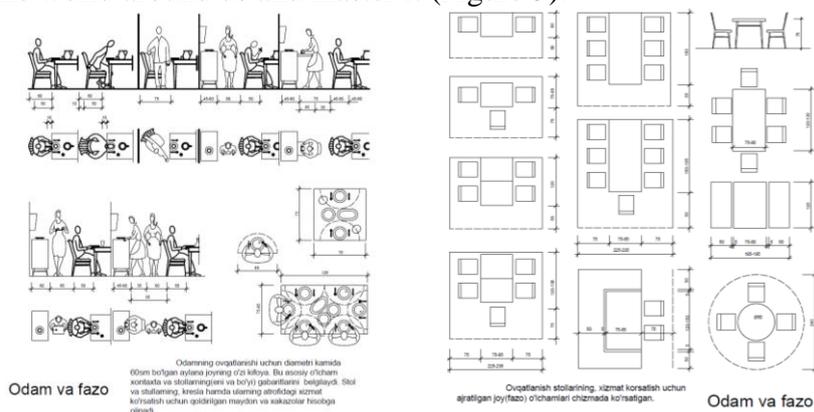


Figure 5

The basis of the modular unit of measurement is the human relative dimensions and mathematical measurements. They are the primary unit of measurement for construction, taking the elements of buildings and structures relative to the dimensions of the human body. On the one hand, in

relation to the person who raises his hand, his position in space is taken into account (Fig. 6).

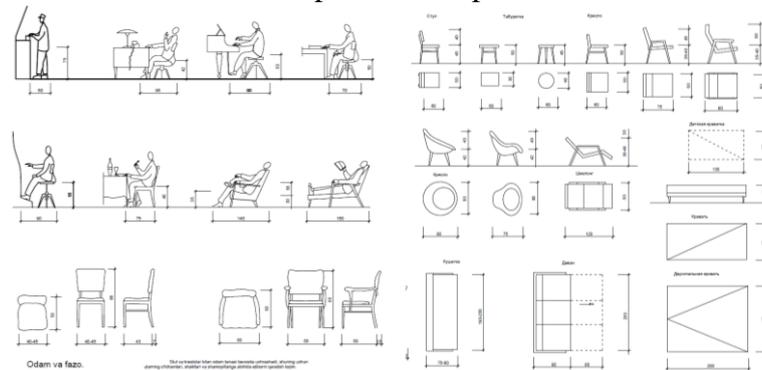


Figure 6

From the foot to the center of the human chest (solnechnoe spletenie), the point in the center of the human chest (solnechnoe spletenie) -head, the toes of the head-raised hand to the tip-three intervals (triad), defines a series of golden cut law and is called the Fibonacci series. On the other side, a square is drawn, it is taken twice and a golden cut is made. Construction objects are taken relative to the human body (e.g., car, furniture, book). Modular is used in the construction of objects in the optimal size possible, adapted to the height of the human body and the relative dimensions of the limbs (Figure 7).

The modulus height is 182.88 cm, which is based on the size of a tall person, and modular adjustments to new drying objects are designed for people of different heights. Modular components include: a 226 cm long ruler, two series (red and blue) measuring tables for measuring devices with a height of 400 meters, and instructions for using it.

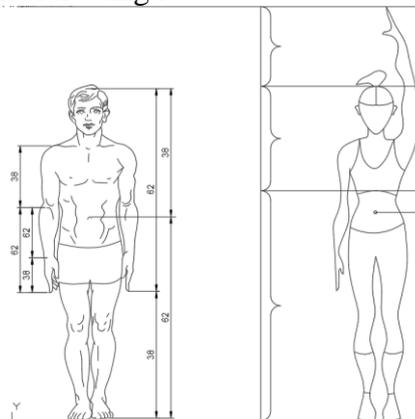


Figure 7

Modular explanation: 1) Three distance measurements: 113, 70, 43 (cm The Fibonacci series corresponds to  $\phi$  (golden section):  $43 + 70 = 113$ , or  $113 - 70 = 43$ . Their sum gives  $113 + 70 = 183$ ;  $113 + 70 + 43 = 226$ . According to the equality of three distances, it restores dualism and the symmetrical division, the opposite resistance is known. 2) Three points of the human body [113 - point in the central part of the human chest (solnechnoe spletenie), 183 - Head peak relation  $\phi$ , 113), 226 - the tip of the fingers of the hand in the raised position] with the addition of the fourth point - means the size of the space occupied by the base point of the lowered hand equal to 86 cm (ratio 140-86). The elements of the triads are the point in the central part of the human chest (solnechnoe spletenie), the head, the fingertips of the raised hand. The elements of dualism are the point in the central part of the human chest (solnechnoe spletenie), the fingertips of the raised hand, the negative point of these two measurements: the red line of the module according to the Triad principle and the blue line of dualism. Dimensions 113 and 70 represent the gold cut, indicating the beginning of the first red series. Size 226 ( $113 \times 2$  - multiplied by two) defines the gold cut. 140-86 indicates the beginning of the blue series. In 1950, Le Corbusier perfected his module and used it in buildings he designed according to the dimensions of the

human body and organs (Figure 8).

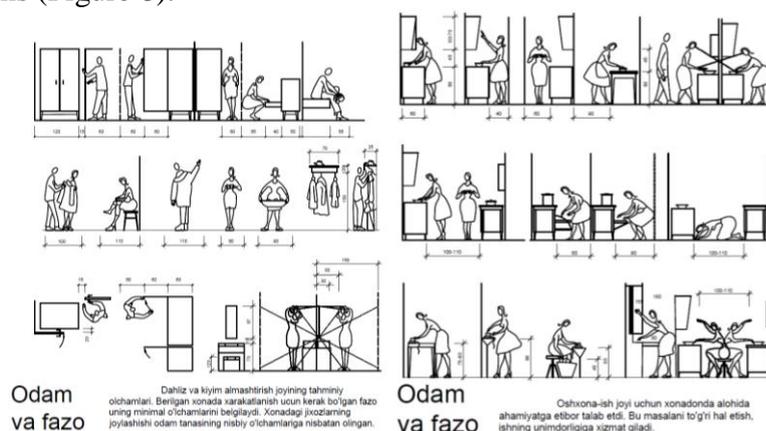


Figure 8

### References.

1. List of sources used. Zinchenko V.P., Munipov V.M. " Fundamentals of Ergonomics ". 2007.
2. S.S.Saydaliyev. Drawing geometry and engineering graphics. TDPU Publishing House. 2017.
3. George Young. Descriptive geometry. The Macmillan Company, New York. 2013.
4. Saydaliyev, S., & Gulomova, N. (2019). Development of Spatial Thinking of Students Based on the Traditions of Eastern Architecture. *International Journal of Progressive Sciences and Technologies*, 14(2), 210-214.
5. Saydaliyev, S. S., & Gulomova, N. K. (2015). UMUMIY O 'RTA TA'LIM MUASSASALARIDA TASVIRIY SAN'AT DARSLARINI SIFAT VA SAMARADORLIGINING OSHIRISH. *FORMATION A CULTURE OF INDEPENDENT THINKING IN THE EDUCATIONAL PROCESS*, 161.
6. Olimov, Shirinboy Sharofovich. "THE INNOVATION PROCESS IS A PRIORITY IN THE DEVELOPMENT OF PEDAGOGICAL SCIENCES." (2021).
7. Botirov, J. S., Bakaev, S. S., Avliyakov, M. M., Shirinov, A. L., & Abdullaev, S. S. (2021). The same goes for art classes in private schools specific properties. *Journal of Contemporary Issues in Business and Government*, 27(2), 1643-1650.
8. Erkinovna, Magdieva Marhabo. "THE ROLE AND IMPORTANCE OF THE CREATIVE APPROACH IN THE TEACHING OF FOLK ART AND THE SCIENCE OF ARTISTIC DESIGN." E-Conference Globe. 2021.
9. Khodjayeva N. S., Mamurova D. I., Nafisa A. IMPORTANCE IN PEDAGOGICAL TECHNIQUES AND EDUCATIONAL ACTIVITY //International Engineering Journal For Research & Development. – 2020. – T. 5. – №. CONGRESS. – C. 5-5.
10. Мамурова, Д. И., & Мамурова, Ф. И. (2015). Соотношения навыков черчения с опытом психологического исследования. *Вестник по педагогике и психологии Южной Сибири*, (1).
11. Islamovna M.F., Umedullaevna S.S. SHADOW FORMATION IN PERSPECTIVE //International Engineering Journal For Research & Development. – 2020. – T. 5. – №. 4. – C. 5-5.