Geometry and Composition - Gold section

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Abstract: *The man's concern for beauty and comfort has, in time, highlighted relationships of interdependence between the aesthetics and the functional, causing the emergence of environmental, ambient, habitat and object concepts that today govern many aspects of the everyday life. In composition, the most important concept is the concept of proportion; it refers to the relationship between the visual and the elements. The proportion is the scale, the degree of dominance, or the subordination of the visual elements, it can create the order using the gold section to create harmony of the construction, thus the pre-thought relations can create a unique image, which pleasant for the viewer. The purpose of this paper is to construct the graphic design of an object, in a vertical scheme, using the gold section to create the harmony, the scale balance between one element and the other, or between an entire object and one of its parts.*

1. Introduction

The designers play a significant role in the environmental impact issues because the ecological products are environmentally friendly. These products appear fairly slowly on the market, but now there is a tendency towards creating more "greener" (ecological) products due to the emergence of new technologies and ideas to help designers make the necessary innovations in producing new products.

The affective design is a branch of the ergonomic thinking that deals with the emotional effect that a product has on a user, based on the interaction with it. It's the way a product "affects" a person, resulting in an emotional or behavioral response and that can add significant depth to a design. The purpose is to offer products that, for example, delight. Emotions may nevertheless be unstable or transient, leading to products whose attributes fade soon. The sustainable emotional design links the principle of the affective design to sustainability. If a person has a strong enough emotional attachment for a product, then he is less likely to throw it away.

Le Corbusier points out that "Regular lines are not, in principle, a preconceived plan; they are chosen in a certain form, depending on the requirements of the composition itself, already formulated, and already existing. Lines only set the order and clarity at a level of geometric equilibrium, realizing or pretending to achieve a true purification. The regular lines do not produce poetic or lyrical ideas, they do not inspire themes of work, they are not creative, and they just establish a balance. It is a matter of plasticity, pure and simple (Le Corbusier, 1980, 8).

2. Objectives

For the construction of the gold section, Figure 1 starts from the division of a right-hand segment, usually known in proportional parts (Fletcher R., 2006, 78).

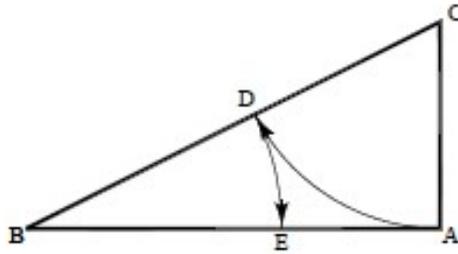[1] Faculty of Arts of the University from Oradea, ipantea.uo@gmail.com

Fig.1 *Dividing a right segment into proportional parts*

We build the perpendicular to the extremity of the AB segment, equal to the half of the AC. We connect points B with C. From point C with CA radius, we draw a circular curve up to the BC segment in point D. From point B, we draw a circular curve of BD radius up to the horizontal in point E. We raise the verticals at the extremity of the AB segment. We draw radius curves AB from the AB segment's extremities up to the high perpendiculars of A and B.
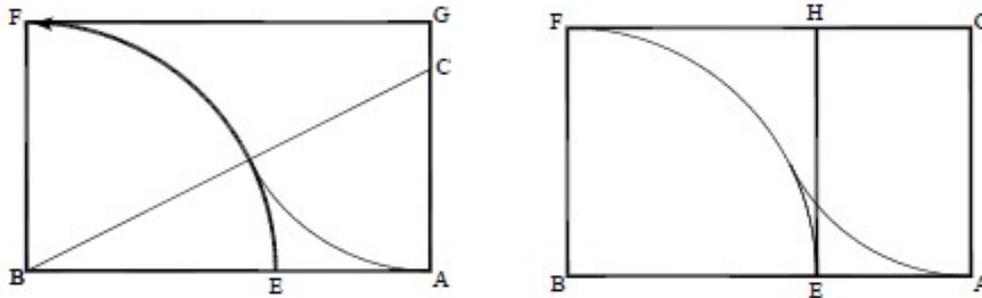

Fig.2 *The golden rectangle*

The result is a rectangle 1 / φ: 1 or 1: φ, AGBF, Figure 2 (Fletcher R., 2006, 80*).*

3. Materials and Methods

In composition, the most important concept is the concept of proportion; it refers to the relationship between the visual and the elements (Reynolds M, 2002, 122). The proportion is the scale, the degree of dominance, or the subordination of the visual elements, thus it can create the order. The "golden section" aims at achieving harmonic proportions, which play an important role in creating the harmony of the construction, thus the pre-thought relations can create a unique image, pleasant for the viewer. We started with the sketch idea of a carafe at which we set the diameter of 154 mm and the height of about 200 mm. Drawing a surface using the gold number is shown in Figure 3.
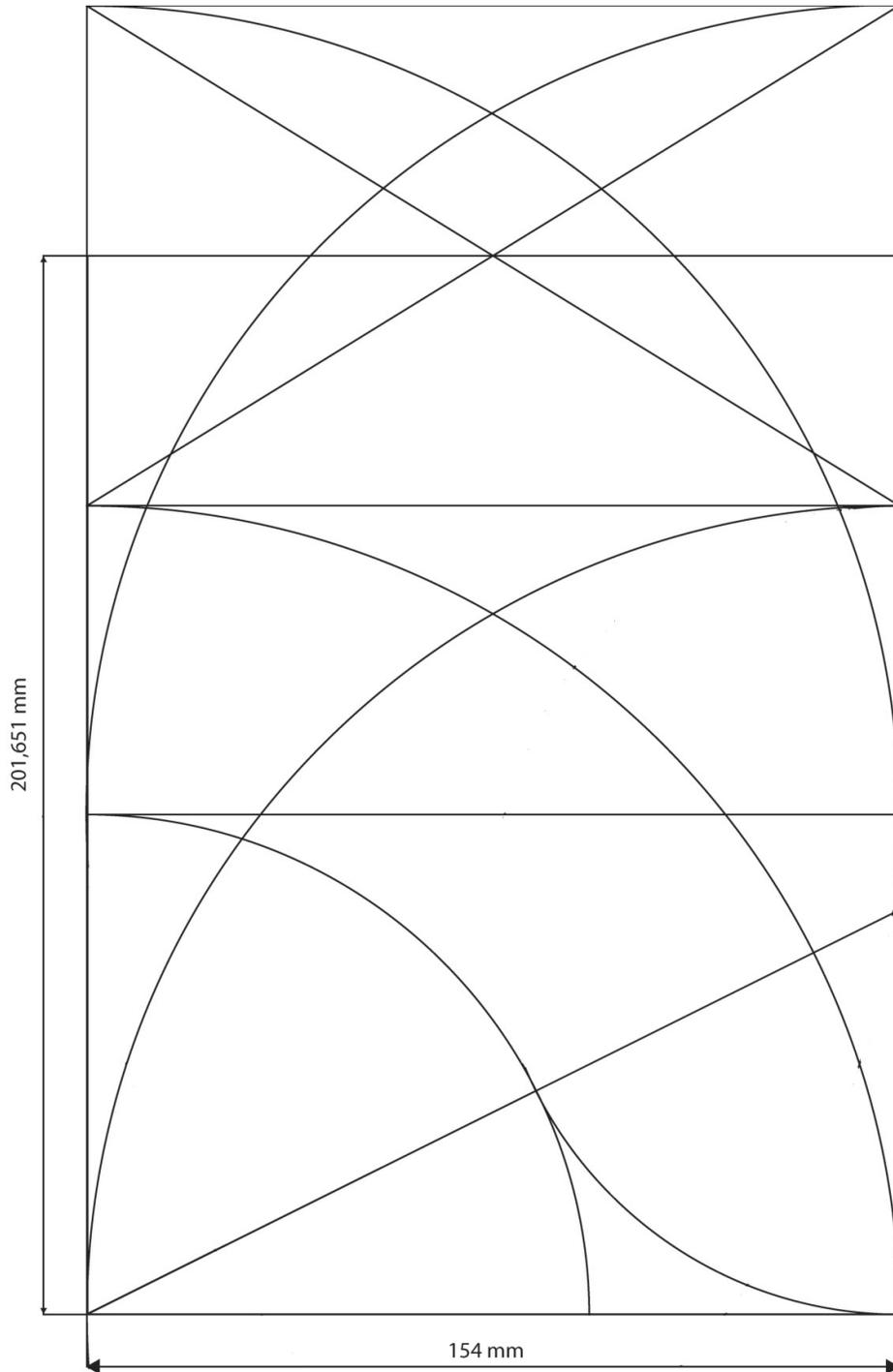
Fig.3 *Marking a surface*

By drawing all the diagonals of the geometric figures obtained and drawing verticals and horizontals through the points of intersection of the diagonals, we reach a harmonic network that can develop to infinity. Extending the proportional rule to a two-dimensional surface or space requires the determination of points spaced apart by segments proportional with Φ (called harmonically conjugated points) Figure 4.
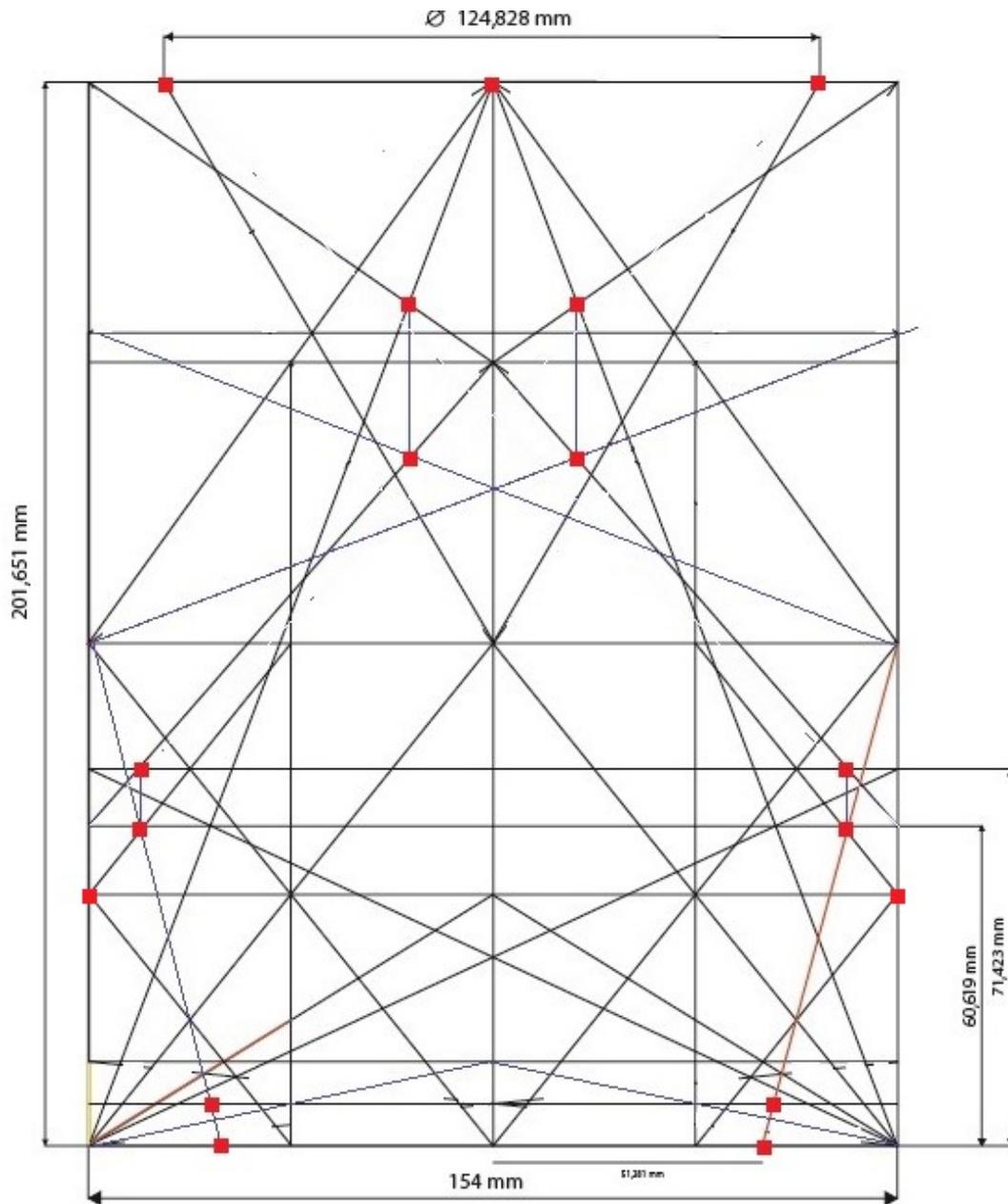
Fig.4 *Harmonically selected conjugated points*

4. Results and discussions

The geometric organization itself does not produce the dynamic concept of inspiration. What gives creative ideas is a compositional process, a means interrelation form, and a method of achieving the visual balance. It is a system of joining elements into a whole. Drawing the contour through the harmonically conjugated points Figure 5.
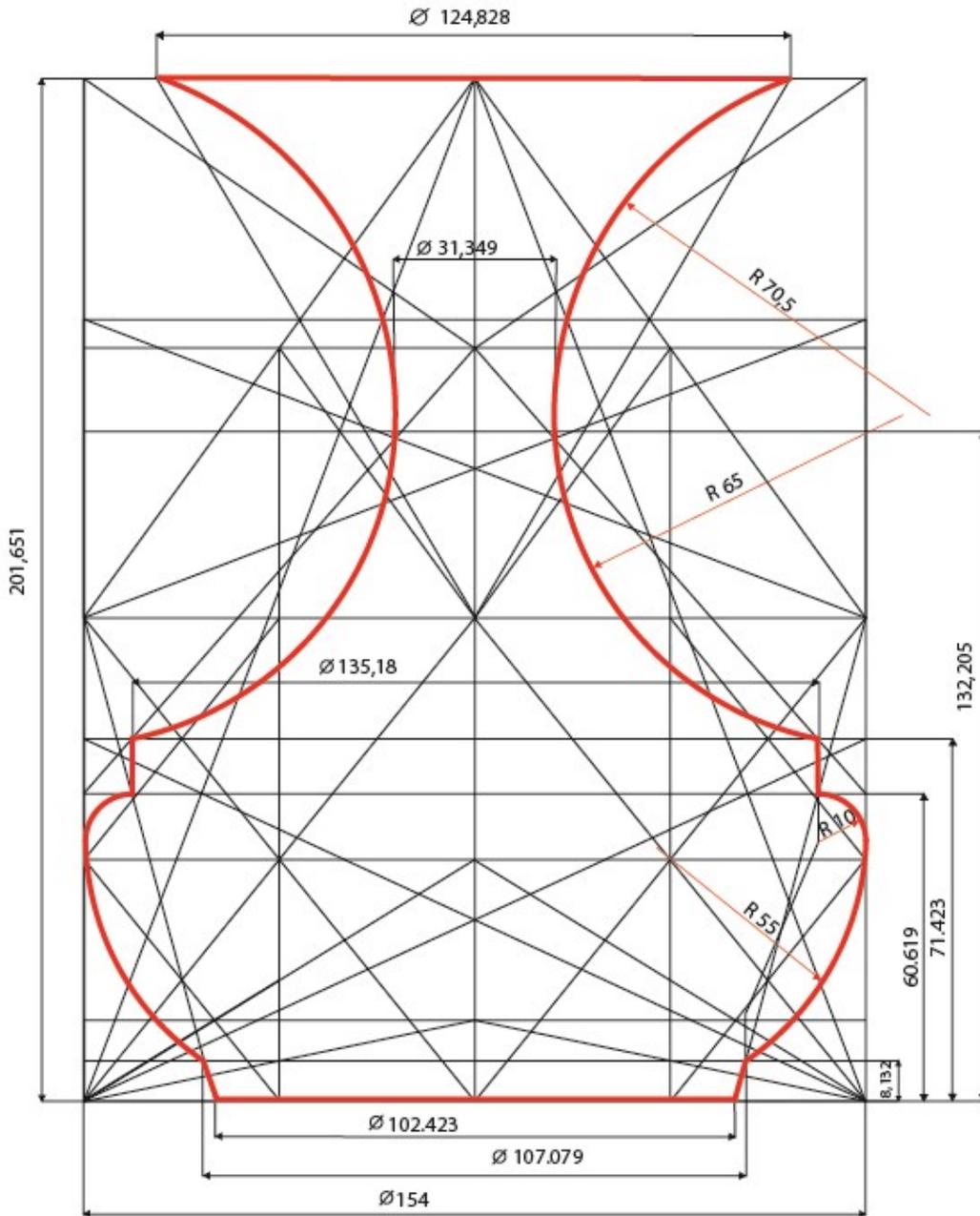
Fig.5 *Drawing the contour*

5. Conclusions

The man, being a living being, bends instinctively to everything that is natural, organic, and rejects everything that is unnatural. Therefore, any object created naturally or artificially is considered beautiful when it also meets the rules of organic and natural proportions. An object is harmonious, has a pleasant appearance, when it is well proportioned, when there are judicious dimensional ratios between the components and between these parts and the whole that increase its aesthetic value. The reports that respond best to these desires are the reports that respect the natural laws of proportionality.

6. References

Book

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Article

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