

**Original scientific paper**

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**DESIGNING AN EVERYDAY CHAIR**

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**ABSTRACT**

Within this scientific paper, a brief analysis of furniture design is made, with a concrete analysis of the ancient Greek Klismos chair. About the famous Klismos chair, there are papers and analyses that claim the comfort and daily use of the chair at that time by all people without division.

A brief description of the beginnings of the modern era is also made, including how it influenced today's architecture and design. By presenting the first modern chairs as unique and free from the former styles, in symbiosis with the Klismos chair, a new concept design for today's everyday chair is obtained. The Triga chair is minimal and functional, which follows today's trend through shape, material, and color. It is designed to be used for everyday activities and as a dining chair.

The research methods used in this paper are the qualitative method, the real and productive analysis, the generalization method, the simulation method, and finally the application method.

**Key words:** chair, design, architecture, Greek chair, postmodernism, Scandinavian design

**1. INTRODUCTION**

Christopher Alexander defines design as the process of finding a physical object distinguished by order, organization, and form, which derives from function (Keller 1975: p.4). Physical objects and buildings are the result of an unconscious reaction during the daily lives and actions of people. To facilitate the activities, vernacular architecture and design appeared – people designed objects and buildings with the materials provided by nature.

Furniture is a mandatory item that differs between movable and immovable. Over the centuries, furniture has been transformed into different styles and movements, changing its appearance and material. When researching chairs, it is confirmed in the literature that the antique Greek chair Klismos decently represents the first design principles of the most common functional chairs. The evolution of the design of the chair happened in the history of modern times, when the direction of the design styles started to change.

In the synergy of the two different times, concepts, and styles of the design, from an architect's point of view, this paper presents a new idea for the design of the everyday chair, which can also be used as a dining chair.

The purpose of this newly designed chair is to satisfy the most ordinary needs in normal functioning, firstly by emphasizing the purpose and secondly by giving shape under the aspect of modern minimalist design. The chair is intended to be realized with the most basic rectilinear forms, with wood materialization. Wood is an organic material and is always part of new modern trends. As a final product, the Triga chair is presented as an ordinary chair that is easy to use and efficient for its purpose. This content is followed by the ancient Greek chair.

**2. FURNITURE DESIGN**

Furniture is an object that is used in everyday life to satisfy basic human needs. It is divided into

two groups: movable furniture, such as the chair, and fixed furniture, such as the door. Otherwise, movable furniture is divided into four groups:

1. "Human body support devices
2. Surfaces and objects to support various activities
3. Storage and display pieces
4. Spatial partitions." (Postel 2012: 2).

The piece of furniture exists because of the existence of humans, and the design itself was born from instinctive needs. Since the primary thing is the function, later the piece of furniture begins to be treated in terms of beauty and precious design. Furniture design is based on beauty and art, based on the principles of design together with its theory, the type of material and possible combinations, the method and technology during production, and today's important areas for the environment. The design of a piece of furniture means the interweaving of function, comfort, utility, and beauty.

According to author Jim Postel, there are some considerations that influence how people think and feel about furniture design:

- Aesthetics (the meaning of form)
- Historical precedent (examples from the past)
- Principles of design (i.e., unity, harmony, hierarchy, and spatial order)
- Function and social use (ergonomics, comfort, proxemics)
- Design processes (sketching, iterative overlays, model studies, digital modeling, full-scale working prototypes, collage assemblies)
- Material (classification, characteristics, properties, availability, cost)
- Fabrication processes (hand, power, digital)
- Environmental design matters (sustainability, renewable materials, off-gassing)
- Surrounding context (the spatial setting of furniture)
- Professional practice (economic, legal, and business decisions)" (Postell 2012: 2).

When designing, the designer is faced with a thought process and many ideas, and the procedure ends with a selected model that should satisfy the design principles and the conceptual idea of the designer. This study will analyze and represent the process and final conceptual model of a chair that can be used as both a dining chair and in everyday life, a new chair designed and conceived from wood. During research and analysis, the main inspiration for further processing of a piece of furniture is based on the glamour, uniqueness, beauty, and functionality of the historical Greek chair with the name 'Klismos'.

### 3. FEATURES OF THE 'KLISMOS' CHAIR AS INSPIRATION

The Greek chair called Klismos (410 BC) is known as a unique chair because of its functionality and shape.

„- The Klismos chair is both graceful and functional, combining comfort, simplicity, and elegance in one typological form whose proportions evolved over several hundred years.“ (Postell 2012: 76). Due to its light weight, the chair was easily portable and was used for everyday use, specifically in domestic activities. At that time, the old Greek wooden houses were simple, with few pieces of furniture. Klismos was one of them, "...known for its harmony and beauty, as it rises from the floor with gentle curves and results in a deep elliptical back.“ (Saridis, 1982).

The shape and design of this first Greek chair can be seen in various ancient Greek drawings, more specifically in sculptures, reliefs, and angiography. The drawings show a woman or a man sitting in a chair, comfortably performing various daily activities. The chair was used by all people, regardless of gender, age, or position. It was present in all types of buildings at that time, except as an ordinary chair, it was also used as a throne. Usually it is made of wood, but it is also found in materials such as gold, silver, or ivory.

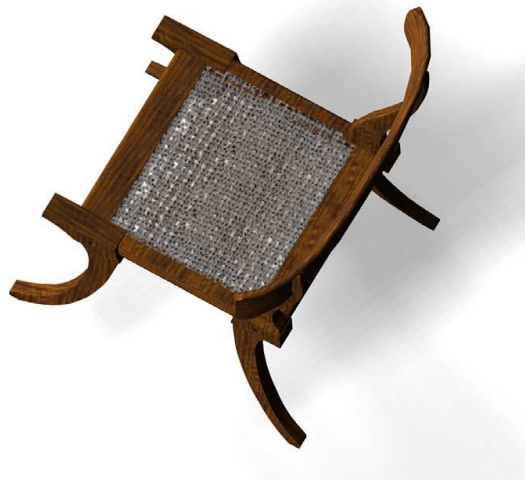
The chair has four curved legs that are wide at the top, where they connect to the seat, and thin at the bottom. The rear legs extend above the height of the seat, forming an inward curve. The seat is rectangular, followed by a curved horizontal board as a part for supporting the back. The seat is basically designed as a frame; the middle is supplemented with animal skin, fabric, or cushion. The dimensions of the chair were 85 cm high, 77 cm deep, and 51 cm wide.

„- The Klismos chair marks a correlation between furniture design and the political ideology of Greek democracy, expressing dignity and providing practical comfort to the individual user.“ (Postel 2012: 76).

Over the years, the Klismos chair has evolved into a beautifully proportioned design whose formal features and elegant manufacturing techniques have inspired many designers throughout history. In modern and postmodern design, many chairs are newly designed in the spirit of the Klismos chair.



*Figure 1: Klismos chair in elevation. Source: Jim Postel: Furniture Design, page 77*



*Figure 2: Klismos chair from up perspective. Source: Jim Postel: Furniture Design, page 77*

#### **4. MODERN ARCHITECTURE AND INDUSTRIAL DESIGN**

The modern age of architecture began with a revolution by architects, who decided to get rid of decorations in architecture and devote themselves to function. Lewis Sullivan, in his essay "Form Follows Function" under a scientific perspective, confirms why architecture should be freed from ornament and serve its primary purpose - function, while form should follow function (Pheasant 2003:9).

The boldness of the architects continued with industrialization, concretized with industrial design. "Industrial design is the determination of the shape, quality, and relationship of industrially produced objects, assortments, communication, systems, processes, and environments, satisfying the conditions for production, distribution, and the use of interdisciplinary methodology." (Keller 1975: p. 9).

Industrial design has a positive effect on production and economic growth. The main goal of the development of industrial design was the standardization of production, or rather, serial production. As in architecture and design, they eliminate unnecessary excess elements and focus on function.

The architect of the Viennese Secessionists, Joseph Hoffmann, appears with the 'Prague' chair and the 'Fledermaus' chair with the bent wood trend. His furniture design is part of art nouveau – a new line of design creation that was not associated with any previous style (Nielson and Taylor 2011: 433). Then, the architect Charles Jeanneret Le Corbusier, through his revolutionary architecture, proposes his own design of an international-style mobile chair, designed from tubular steel and leather in the seat, back support, and armrests, without unnecessary elements, restrained to functionality. Ludwig Mies van der Rohe appears with the same concept towards architecture and design. His beautiful minimalist architecture of steel and glass is shown in a remarkable way with the Germany Pavilion in Barcelona. The Barcelona chair, constructed on a double X-frame of varnished stainless steel and carefully upholstered in leather, is also on display here. Even today, the Germany pavilion and the Barcelona chair are signs of new movements in architecture and design. Modern design is complemented by Scandinavian style. Here is the architect Alvar Aalto with his 'armchair 406' as a flexible, folded, laminated drain frame with a seat and backrest made of woven materials. (Nielson and Taylor 2011: 442-443).

Architecture and design in the modern era create a reversal of previous artistic standards. At the beginning of the twentieth century, a new era begins. Design is characterized by a tension between mass industrialization and artisanal production. (Lawson 2013: p. 14). Here are the beginnings towards a different understanding of the essence: design can be functional and beautiful through clean, elegant lines and a simple shape.

Today's design has no barriers, either in form, materialization, or the possibilities of technology and production. The best-designed furniture is produced again as an original copy, while new trends are focused on recycled materials and sustainable design, with their application in contemporary furniture and design.



**Figure 3:** Mobile chair designed by Le Corbusier

Source: <https://www.pamono.eu/lc1-chair-by-le-corbusier-pierre-jeanneret-charlotte-perriand-for-cassina-7> [Available until 07.05.2022]



**Figure 4:** Barcelona chair designed by Mies van der Rohe

Source: <https://www.livingetc.com/features/barcelona-chair> [Available until 07.05.2022]

## 5. IDEA AND MORPHOLOGICAL ANALYSIS OF THE SHAPE OF THE TRIGA CHAIR

The process of designing a new chair begins with researching the chair as a basic piece of furniture. The Klismos chair, as a foundation for the subsequent chairs, contributes positive inspiration towards obtaining ideas that fit the principles of design.

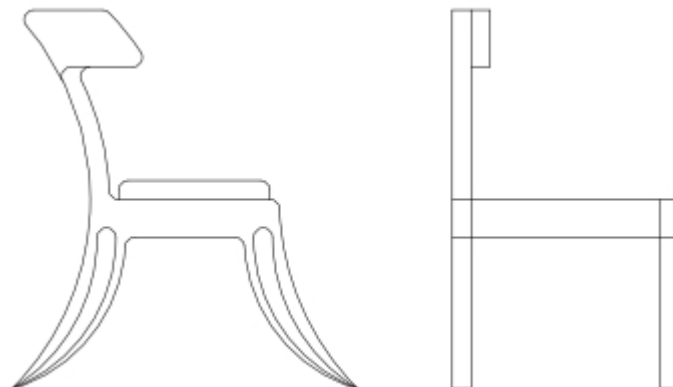
Under the inspiration of the ancient chair and the movements of modern and postmodern design, with a special emphasis on the Scandinavian style of interior design, a concept with elegant lines in the taste of an architectural perspective is achieved. Through the indicated ideograms and diagrams in pictures number 5 - 8 (drawings section), the morphology of the final shape is described.

Otherwise, the Triga chair is treated under an architectural visual field: it is divided into two forms that together make up one final form. Picture number 9 shows a perspective and graphic part with dimensions of form number 1, consisting of the front legs and the seat. The Klismos chair had legs that were curved inward, a detail that shows the oriental lines of Greek design. The legs of the new Triga chair are designed to be straight at an angle of 70 degrees, which in the frontal view resembles a G shape. The seat has a rectangular shape, with dimensions of 46 cm by 46 cm and a board thickness of 5 cm. The first two front legs are glued laterally to the base of the seat. The height of the front legs with the seat is 44 cm, the same with a width of 5 cm.

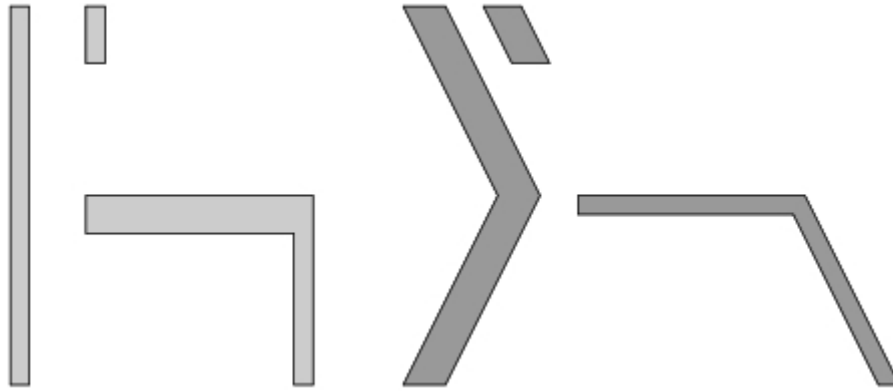
Picture number 10 shows a perspective and graphic part with dimensions of form number 2, consisting of the rear legs and the backrest. The seat is glued with the two front legs as one whole, while shape number 2 is invented as one element, made up of the two rear legs and the backrest. The difference between form 1 and form 2 is also noted through colors.

The backward legs have a height of 41.2 cm with the seat; they pass at an angle of 70 degrees to 16 cm in the seat, where they stick nicely as two contradictory elements (picture number 11). The upper part of the backrest has the appearance of a frame, with a height from the seat to the highest point of 83.5cm. For comfort, the backrest is partially lowered down to 16 cm. This part of the frame under the extension of the rear legs is wrapped with straight lines. Form number 2 is the second detail realized under a similar concept to the ancient Klismos chair. The final result of the chair is shown in picture number 11 through technical drawings, as well as from three-dimensional perspectives in picture number 12.

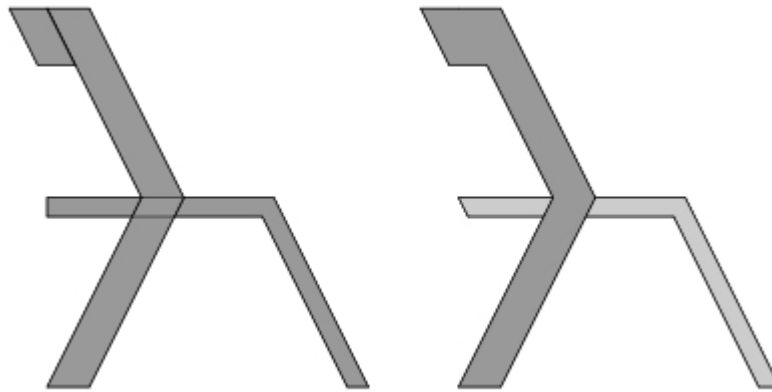
The elements of Scandinavian interior design are simplicity, lighting, and clean shapes, with a strict preference for natural materials and clean lines, emphasizing functionality. The Triga chair is based on the concept of postmodern design, with concreteness in Scandinavian design. Straight, clean lines and minimal details make the function a priority. The construction provides stability, and the contour of the form is flexible for the anthropometry of the human body.



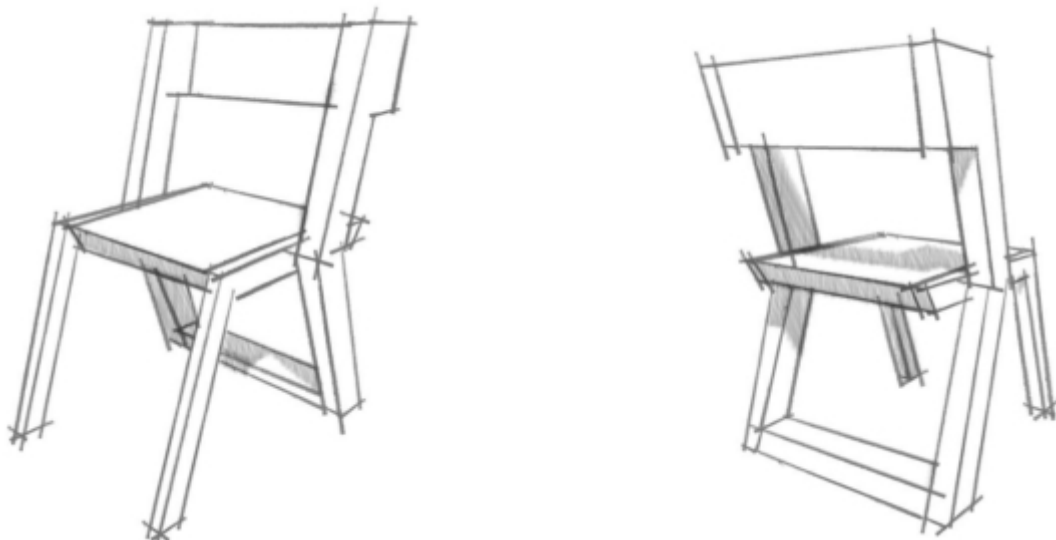
**Figure 5:** Klismos chair with it's original shape, transformed within straight lines



**Figure 6:** Dividing into individual elements and shaping



**Figure 7:** Combining the shaped elements



**Figure 8:** Final shape of the Triga chair

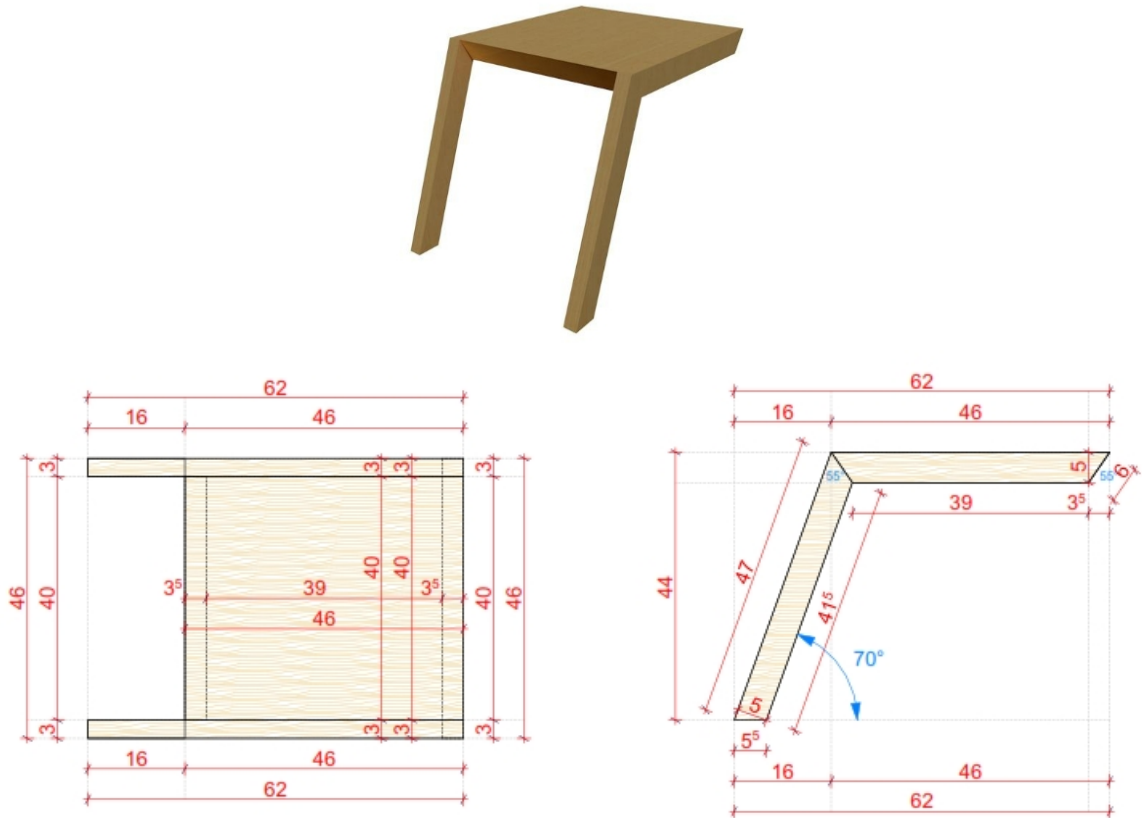


Figure 9: 3D perspective of form 1 and graphic drawing of elements of form 1 in Scale = 1:10

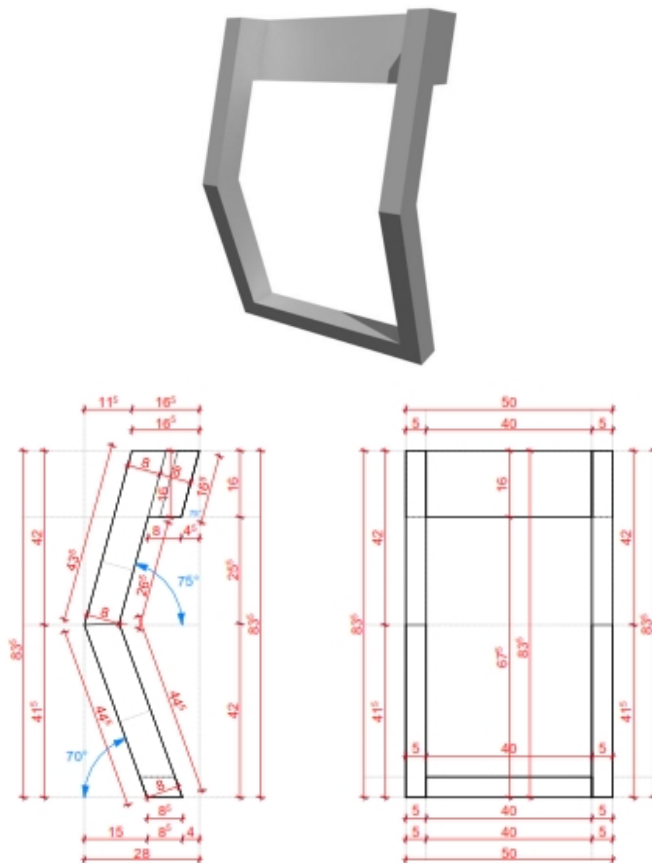
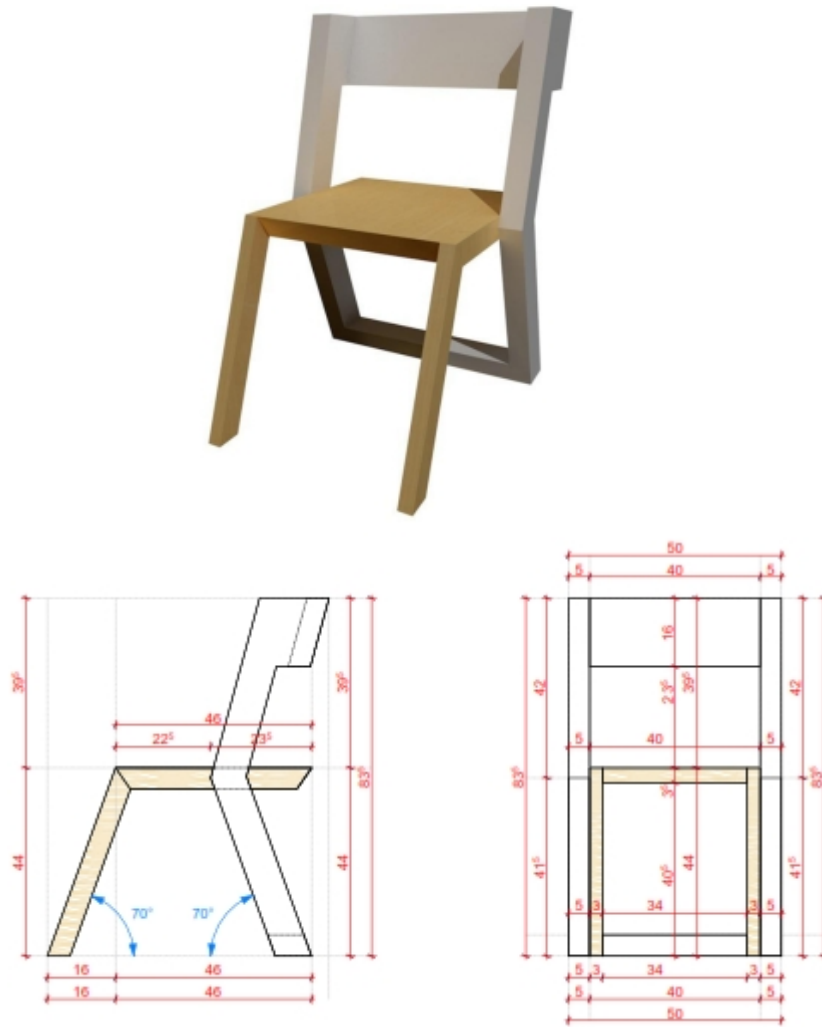


Figure 10: 3D perspective of form 2 and graphic drawing of elements of form 2 in Scale = 1:10



**Figure 11:** 3D perspective of shape of the Triga chair with combined shape 1 and 2 graphic drawing of the chair with dimension in scale 1:10

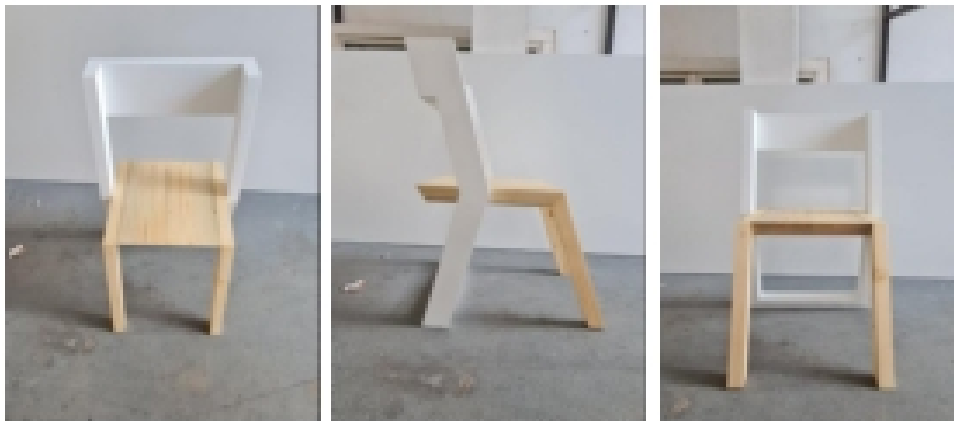


**Figure 12:** 3D perspective of the Triga chair



## 6. THE METHOD OF PRODUCTION

The Triga chair is made of oak wood (*Quercus cerris*) due to the fact that it is easily available in our region. Another reason for choosing this type of wood is its physical advantages, easier processing, and durability. The component parts of the chair are drawn with a CAD program; they are shaped as separate parts with the help of woodworking machines. Next comes the joining of the elements to shape two concrete forms – the first form of two front legs with the seat joined with wooden dowels and wooden glue. The elements of the second form are connected with screws, two-component glue, and dowels with wooden glue. Finally, with the same connecting elements, form number 1 painted with colorless varnish is connected with form number 2 painted with white paint from catalog Ral 9016. The Triga stool in picture number 13 is shown after the completion of the work in the workshop.



**Figure 13:** Photos of the final manufactured product, the Triga chair, made in a workshop.

## 7. CONCLUSION

The Triga chair is a conglomerate of theoretical analysis of chair design in time from ancient Greece to post-modern architecture, resulting in a symbiosis of design with a century difference. The Klismos chair is a model of a stable and functional chair that has endured for a long time to provide inspiration even today. In ancient Greece, it is found in several drawings, which prove to be an important piece of furniture from the civilization of that time.

Through sketching and designing, the Klismos chair was analyzed and divided into all the separate elements that made up its final form. The same elements that are curved in the original version for the new design are conceived as straight lines at an angle of 70 degrees because modern architecture is based on straight, clean lines and the purpose of the object takes precedence. The backrest in the Klismos chair is also curved, while in the Triga chair it is designed with straight lines.

The white color and the natural color of the wood create artistic beauty due to the fact that they carry the spirit of true nature, which provides relaxation. The simple wood processing emphasizes the original nature of the materials. The simple form, free of unnecessary elements, creates a sense of harmony during use. The straight lines of primary architectural shapes, such as the square, indicate stability. Due to the flexibility obtained from its simple form, this chair can be used for many daily activities.

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