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COMBINATION OF WOOD AND GLASS IN THE SET OF DECORATIVE ITEMS FOR INTERIOR DESIGN

Anna Mukanova – Yury Lozhkin – Mikhail Chernych – Vladimir Stollmann

ABSTRACT

Aesthetic capabilities of some materials are exhausted to a certain extent. The combination of materials in design objects renews the perception of traditional products providing a new decorative effect. The approach to the development of decorative functional sets for interior design, consisting of several different-purpose items produced from different materials, united graphically and stylistically using several techniques is presented in the paper. Each material and technology are unique and their combination and graphic-stylistic unity multiply the aesthetic perception both of each product and the whole set. The marine-style set of three items is created – wall lamp, clock and mirror – with different types of wood in intarsia technique and fused art glass of different colors ~~are~~ combined.

Key words: wood, interior, fusing, colored glass, intarsia, pine, linden and hazel wood.

INTRODUCTION

Interior is the architectural artistically designed internal space of a building providing comfortable conditions of a human's life activities. The interior filling with objects is one of its components. The interior elements are divided based on several features:

- activity degree (passive, active);
- location (desktop, floor-standing, wall, overhead);
- material (wooden, plastic, metal, glass, gypsum, textile, etc.).

Currently, the use of natural materials is getting more and more popular. In this regard, there is an interest in wood as the material that can combine ergonomics, economy and aesthetics in the product (SMORODINA 2017). Wood esthetic properties are defined by the richness of its color shades and variety of texture (CHERNYCH *et al*. 2013). Modification and natural finish significantly extend the color-texture palette of wood species (MAMONOVA 2009, CHERNYCH *et al*. 2013, SLABEJOVA *et al*. 2016). Wood is used both as a mono material and in combination with other materials, such as glass. For example, the artists Scott SLAGERMAN and Jim FISHMAN (2020) create unusual sculptures from the molten glass and wood fallen from trees. The authors named the collection "Wood&Glass". The works represent hollow vessels inside the U-cuts of the tree and serve as vases (Figure 1).

Fig. 1 Items from the collection "Wood&Glass" (Scott Slagerman, Jim Fishman).

The unusual combination of wood and glass can be also seen in the collection "River" by the American fine art restorer Greg KLASSEN (2020) (Figure 2).

Fig. 2 Dining table "River" (Greg Klassen).

The development of functional sets is relevant as well as the development of single items.

The aim of the work is to develop decorative functional sets for interior design. This set makes a favorable impression due to the combination of aesthetic properties of transparent and non-transparent materials and the overall image and style solutions.

MATERIAL AND METHODS

The set was composed of different-purpose items, it was made of wood and glass united graphically and stylistically and combines decorativeness and functionality. The clock, mirror and wall lamp in marine style were chosen as items. The distinctive features of marine style in the interior design are as follows:

- blue and white color palette reflecting sea depths;
- use of natural materials (wood, linen cloth, glass);
- use of souvenirs in the form of sea fruits (shells, corals, stones);
- aged furniture from the natural wood.

Wood in the marine-style interior embodies the ship elements, and glass – sea depths.

The items contain the base and decorative insert produced using intarsia and fusing. Each technology is unique and their combination increases the set esthetic value.

Intarsia is the technology of producing 3D mosaic pictures obtained by the combination of different wood species, change of tones and textured patterns. Items produced by this technique convey the material beauty and have attractive appearance, but, as many centuries ago, are produced manually and serve as attributes of expensive furniture (BARSUKOV *et al*. 2017).

Glass fusing is the technology of producing art items from glass, during which the glass elements are heated up till softening and joined together to form a single unit. The

items produced by fusing provide special exclusivity to the interior adding bright emphases (ZELINSKAYA, SEDOV 2019).

The image of blue whale – a unique sea animal – was chosen for the decorative insert. A blue whale has peculiar longitudinal folds in the front part of the belly and belongs to the fin whale family. The sketches of the items were made based on this image (Figure 3).

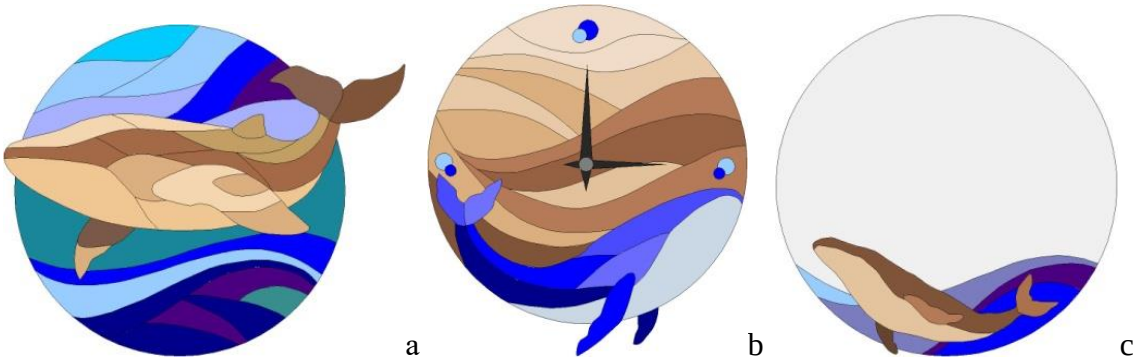

Fig. 3 Sketches of the items: a – wall lamp; b – clock; c – mirror.

Types of the items – the circle resembles a ship steering wheel, an illuminator, as well as smooth shapes of shells.

RESULTS AND DISCUSSION

Structure

The decorative inserts in the lamp and mirror were produced of wood of different species, in the clock – of the glass. The lamp and mirror bases were produced of glass, and the clock one – of the wood pieces of different species glued to plywood.

Pine, linden and hazel wood, different in color and surface finish, were used in the set. Spectrum glass (Mexico) of different colors was used to highlight certain areas of the whale body and give volume to the whale and waves due to the contrast, color and textures. Linden and hazel wood are readily cut, and pine wood has a vivid striped texture that allows imitating longitudinal folds on the whale belly (Figure 4).

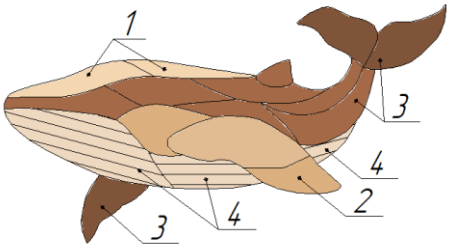

Fig. 4 Scheme of placing wood plates of different species: 1 – linden, 2 – light hazel wood, 3 – dark hazel wood, 4 – pine wood.

The glass decorative elements were produced by fusion.

The lamp was equipped by the lighting element consisting of LED strip, switch and body for placing three AA 3.7 V accumulator batteries. The clock contained the quartz mechanism of smooth motion with the set of hands.

Technology and equipment

The wood elements of the items were produced in the following sequence. Cutting by the template on the band saw JWBS – 16X (Taiwan). Grinding of the elements along the outline for fitting on the machine OSTERMANN KSM-2600 (European Union). Gluing with the glue Moment Stolyar PVA (GOST 18992-80) (Russia). The final polishing and applying of protective and decorative coating – acrylic glossy varnish for artistic works "Aqua Color" (Russia). Assembling of the decorative insert with the base, lighting element and clock.

The technology of part production from glass contained the following operations. Glass cutting with oil glas-cutter TOYO TC-10 (Japan), grinding the edges using the grinding machine Inland Contour GT (Germany), cleaning and degreasing the elements with the glass cleaner Grass Clean Glass (Russia), gluing the elements to be fused with UV-curing glue Loxeal UV 30-20 (Italy), fusing in the software-controlled furnace DF-10-072 (Russia). The fusion temperature and time mode:

– heating with the rate of three degrees per minute up to 750°C;
– curing at a temperature of 750°C within ten minutes;
– fast cooling to the annealing upper temperature (570°C);
– annealing at a temperature of 570°C within ten minutes;
– cooling with the rate of two degrees per minute to the annealing lower temperature (470°C);
– cooling together with the furniture to the room temperature.

The items produced are demonstrated in Figures 5 and 6.

Fig. 5 Mirror (overall dimensions: 223 × 220 × 23 mm).

a b

Fig. 6 Wall lamp (overall dimensions: 267 × 220 × 22 mm): a – at daylight; b – during nighttime.

CONCLUSIONS

The combination of wood and glass allows creating not only single items, but also different-purpose functional sets of items for interiors, united graphically and stylistically.

The combination of different wood species in intarsia technique allows creating 3D mosaic images due to the color and finish surface contrast of the mosaic elements.

The fused elements of the colored glass complement esthetic properties of the wood adding bright emphases to the composition and provide special exclusivity to the items.

The proposed concept of producing interior decorative sets based on the combination of transparent and non-transparent materials in items, and design of the items in one graphical and stylistic solution allows strengthening the esthetic perception, contributes to creating the comfortable environment for a person.

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AUTHOR’S ADDRESS

Anna Mukanova, master student
Kalashnikov Izhevsk State Technical University
V.A. Shumilov Institute of Construction and Architecture
Department of Technology of Industrial and Artistic Processing of Materials
Studencheskaya St. 7
Izhevsk, 426069
Russian Federation
anikm96@mail.ru

Prof. Dr. Mikhail Chernych
Kalashnikov Izhevsk State Technical University
V.A. Shumilov Institute of Construction and Architecture
Department of Technology of Industrial and Artistic Processing of Materials
Studencheskaya St. 7
Izhevsk, 426069
Russian Federation
rid@istu.ru

Assoc. Prof. Yuri Lozhkin
Kalashnikov Izhevsk State Technical University
V.A. Shumilov Institute of Construction and Architecture
Department of Technology of Industrial and Artistic Processing of Materials
Studencheskaya St. 7
Izhevsk, 426069
Russian Federation
lyv2007@mail.ru

Associate professor Vladimir Stollmann
Technical university in Zvolen
Faculty of Forestry
Department of Forest Harvesting, Logistics and Amelioration
T. G. Masaryka 24
960 53 Zvolen
Slovak Republic
stollmannv@tuzvo.sk