Choice of style solution for a design project

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Abstract. The publication reveals the role of marketing research in the choice of style solutions for design concepts in educational institutions. The results of the analysis of styles used in the design concepts of educational institutions, conducted with the involvement of 159 analog objects, are presented. The problem of conflict between the creative and technological components in the design profession is discussed. The role of the digital component in the effectiveness of work on a design project is emphasized. The list of popular professional computer programs used in the course of design engineering. Based on these programs, the student project presented as an example was executed. Discussed issues of digitization of design in conjunction with the assessment of the author's contribution and the impact of the creativity of a particular designer

1. Introduction

1.1 The Role of pre-project marketing research in design

Design, as a sphere of artistic design, solves a wide range of tasks aimed at creating new consumer values in a wide variety of areas of activity: urban planning, architecture, and various industries. Publications of scientists and practicing designers in applied areas of design reveal the role of shape and color [1, 2], ergonomic and stylistic characteristics in the design of products, objects, complexes, and space [3-5]. All these elements should be defined based on the needs of future users. Therefore, marketing research plays a special role in creating new products (goods and services) [6]. At the same time, experts talk about the need to have certain qualities: a sense of empathy and a special professional design thinking that allows you to identify these needs and meet it.

1.2. Features of interior design of educational institutions

The main goal of the environment designer in the field of education is to create the most comfortable, convenient and multifunctional space. The influence of the environment on the quality of the educational process is not in doubt among modern specialists in the field of environment design [7-8]. Professionally designed design can help increase motivation and performance of students [9].

A designer working with educational institutions should take into account, first of all, the influence of the environment on the learning process. When designing a modern space for educational purposes, the following principles are taken into account: openness, privacy, multi-functionality,
transformability, interactivity, inclusiveness and efficiency [10].

1.3. Creative and digital components of modern design
Designed products-novelties and newly introduced objects in the timely world are created with the direct participation of designers, their creative skills and artistic taste. Equally important is their knowledge and skills in the field of digital technologies that allow you to visualize and translate ideas into specific computer images, drawings, two-and three-dimensional digital projects. These two most important components often act not only as partner competencies, but sometimes come into conflict, which will raise the question of the advantage of the technocratic aspect over the creative one, which gives rise to a number of problems [10].

To create a project designer resorts to the help of professional software. In the process of creating a project, the following software products are used as auxiliary resources: Autodesk AutoCAD, 3Ds Max, Corona Renderer, Photoshop, Corel, and others. The authors of the article are convinced that these tools are auxiliary elements that can not be effectively used without the creativity of a particular person and artificial intelligence can not fully replace it.

2. Materials and methods
The preparation of this publication were: secondary information obtained in the course of Desk research, analysis was carried out by methods of grouping and systematization, goal setting and design. We used materials from the laboratory of Construction and applied design engineering of the Moscow technological University of the Moscow region (MGOTU) and 9 student final qualifying works (WRC) of the 2019-2020 academic year performed within its activities. Pre-project studies were conducted in each of these WRC, which determine the basis of the design project concepts chosen by the authors. The results of grouping and classifying content information are presented in the next section.

3. Results
To obtain data, the authors systematized information based on the results of the analysis of 159 analog objects presented in the WRC of students graduating in 2020. In them, the pre-project analysis examined the applied styles presented in the table. 150 existing objects were studied, analyzed in 9 WRC, performed at the department (schools, colleges, technical schools, universities, leisure and educational centers, including art, music, technical sports development and foreign languages) and developed projects in the WRC. The results of the research can also be clearly demonstrated by the results of work on one of the projects described in this publication. The author of the project A.A. Yakovleva, student, department of design photo, supervisor Ph. D., associate professor A.B. Demenkova, consultant, candidate of architecture U.V. Sazonov. Our example shows the algorithm of a design project: from the idea and marketing analysis to implementation in sketches, drawings and computer visualization of the winter garden in the courtyard of the University. As we can see from the table data, the most popular styles in education during the analysis period were classical, minimalistic, and ecological (Table 1).
Table 1. Analysis of characteristics and frequency of styles in design concepts of educational institutions

| №  | Name of the style | Description of the style |main characteristics | Projects analogs, % | Projects WRC, %* |
|----|-------------------|--------------------------|---------------------|---------------------|-----------------|
| 1  | avant-garde       | The Use of modern materials, unusual furniture, the use of bright and contrasting color palette. | | 9  | 11 |
| 2  | art deco          | geometric lines. Bright inserts and materials (metal, mirrors, glass). Restraint and monochrome | | 4  | 11 |
| 3  | classic           | Strict and restrained style and geometry of rooms and furniture. The colors used are pastel, beige, and cream. | | 17 | 35 |
| 4  | contemporary      | Modern, democratic, finishing materials - inexpensive, artificial. The color is varied from light shades for floors and walls to bright or dark and rich tones for furniture. | | 8  | 11 |
| 5  | constructivism    | A style that has nothing superfluous, clear geometry and high functionality of rooms and furniture, movable partitions, natural lighting, soft colors. | | 6  | - |
| 6  | loft              | A style that adapts industrial enterprises to modern premises, combining the rough (concrete, beams, pipes) and elegant (upholstered furniture, mirrors, latest technology) into a modern ensemble. | | 2  | - |
| 7  | minimalist        | Simplicity and brevity, lack of decor. Neutral color palette. Cabinet furniture, simple forms, strictly sealed. | | 29 | 55 |
| 8  | high-tech         | Smooth lines and intricate outlines in the decor of rooms and furniture, ornaments in the form of climbing plants, asymmetry of forms, arches, openings, stained glass Windows, decorative wrought-iron inserts | | 1  | - |
| 9  | art nouveau       | Comfortable light and without decor made of modern synthetic, glass and metal furniture and the latest technology in the equipment, which are located in spacious rooms. Abundance of light from various sources. The Windows have blinds or roll-up curtains. | | 2  | - |
| 10 | punk style        | is a fantastic style that combines vintage furniture and all sorts of mechanisms. Interior colors are dark: slate, wood-brown, cherry. Furniture in dark or rich colors, chairs and sofas with copper rivets, low tables and cabinets with drawers. | | -  | - |
| 11 | techno-futurism    | Strict geometry and rough materials, pipes, communications. Combination of living room and kitchen. Sliding furniture. Cool, urban colors. Lighting - spotlights, lamps on brackets and tripods. | | 1  | - |
| 12 | futurism          | Modern and creative style with a strong emphasis on ergonomics, functionality, the latest materials and technologies. Availability of free spaces. Walls, ceilings, and furniture may have unusual shapes. The monochrome of the light interior is diluted with bright accents. | | 2  | - |
| 13 | eclectic          | The composition of items from the past, present and future is balanced by the selection of color, shape or texture. Lamps and decor items are just as diverse. An abundance of decor and Souvenirs. | | -  | - |
| 14 | eco                | The use of natural and natural materials (wood, cork, raw stone, ceramics), an abundance of living plants, a lot of light. Use of paints of natural colors and shades. | | 14 | 33 |
| 15 | ethical           | A style that reflects the culture of a particular ethnic group. Finishing materials and a range of shades characteristic of the home of a particular people. Authenticity of the environment and the presence of furniture, items, and decor typical of certain cultures. | | 5  | 22 |

Source: Systematized by the authors based on the analysis of 159 objects.
* Two styles were allowed to be combined in WRC projects.
A practicing designer uses drawing as a "process of thinking on paper". The ability to present a creative idea on paper is very important for the development of the project, so the skill of sketching is a very powerful tool in the Arsenal of the designer.

Quick sketches and technical drawings contribute to the emergence of new ideas and reflect the overall picture of the future project. During the implementation of the described project, a number of sketches were made (Fig. 1, 2) the Plans that need to be created, as a rule, are technical drawings, layouts (Fig.3). A 3D visualization of the project is created based on sketches and drawings (Fig. 4).

Figure 1. Sketch of the winter garden.  
Figure 2. Plan of the winter garden fitting plan.  
Figure 3. Plan of the 1st floor and winter garden.  
Figure 4. 3D Visualization of the winter garden.

4. Conclusion

Thus, it can be stated that the project concept is created based on the choice of style, on the basis of pre-planned marketing research, built by conducting content analysis in the course of Desk research, analyzing analogues, developing sketches, preparing drawings and 3D visualization, agreed with the customer.

The problems of applying academic drawing and painting by modern designers, as well as the use
of digital technologies that significantly increase the effectiveness of the designer's work, but also create problems of the author's contribution and influence of a particular individual's creativity, remain debatable issues.

It is necessary to emphasize once again that marketing approaches are the basis not only for making management decisions, but also for creating design projects.

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