

INTERIOR DESIGN AS AN OBJECT OF THEORETICAL STUDIES

Abstract: The issue of system software design interior design. The content of theoretical component and design solutions to challenges. Specified on the theory of modeling as a basic theory and basic theory, including the theory of graphs. Examples of elementary sub graph.

Keywords: system software, design engineering, graph theory.

Statement of the problem. The goal of interior design is an integrated development that is based on functional improvement, the aesthetic and psychological enrichment optimize interior space. The main objective is the organic combination of the interior of a single unit according to certain prescribed design requirements. However problematic is invariant design factors specifying optimization.

Analysis of recent research and publications. When choosing the shape, size and spatial organization of the building designer takes into account such factors as the functional requirements of planning and engineering design features, economic demands, expressive appearance and style. Interior design is always based on the architecture of the system and its characteristics [1]. So important is the use of a systematic approach to interior design.

Goals of the Article. Weighty in a particular issue is to determine the conditions and requirements for the design of the interior design with the ability to invariant problem solving based on a systematic approach.

The main part. Process design can be represented as a linear chain of steps in the process of multi-loop closed levels, which collects and analyzes the analytical and empirical information and preparing an opinion on the transition to a higher level: thorough analysis, synthesis and evaluation of current and prior information, viewpoints and possible solutions. These levels are not stable (pulsating or turbulent) in the search for solutions and even during the execution of the project according to the directions taken and receiver of information. Level 1 (highest), concentric epicenter, describes the kind of "balance" between the opportunities and plan, develop quality assessment and, if necessary, identification of facilities for peer review, the level of 2 - evaluation and synthesis of information - identify areas Level 3 - accumulation information. In this synthesis is regarded as mapping and linkage areas, aspects of the tasks to resolve issues in order to determine an agreed solution. On this basis, ie, on the first level, defines the purpose and objectives of the design. This *approach* falls under the concept of *system*. Meanwhile task requires an adequate understanding of the setting and details, as well as determine the conditions of performance and the degree of goal achievement. Statement of the problem, in turn, makes very specific requirements for a preliminary review of the project situation as problem accumulates on one side requirements (eg,

functional, aesthetic - artistic image, style, psychological effects, taking into account the importance of certain factors), and the second - conditions (circumstances that must be considered in the bill - the "human factor" to the needs and tastes). This falls under the concept of *system design* (subject and object). It should also be noted that, as a rule, the design process can be described qualitatively *rational* decisions, except in a few variations that can be pre-conditioned by peculiarities of customer requirements. According to the problem formulated a list of questions that need to be seen. Thus, resolving issues and obtaining solutions is interconnected with the content of the problem and its analysis, which may vary according to the discovery of new information relevant impact on solutions to so design process becomes interactive in nature. In addition, as in any scientific problems should be restrictions and criteria that cover a wide range of issues (such as material science, engineering, technology, composition, as well as financial, legal, sociological, social, etc.). It is a fertile place for nomination predictions, hypotheses, experimentation, prototyping, which features a layout method [2]. The basis for theoretical research should be theory modeling of basic theories: analogy, similarity, information systems, combinatory.

It should be noted the existence of such paths in the design - *Analog-Prototype* using the concept of patterns and *innovative*. Pattern - (pattern, Eng. - Sample, Model, Style) - a complex combination of sensory stimuli that is perceived by man as a member of a class of objects. For the environment - is an example of a three-dimensional space, or sample environment, which belongs to a class, the type invariant and subject to formalization. From the perspective of Gestalt pattern seen in comparison with the standard or recognizing the prototype. The prototype also treated as an abstract set of incentives that reproduces a set of similar forms of the same pattern. The process of learning pattern contains two phases: information on signs, information on the relationship between the features [3]. The current theory of the formation of the prototype contains theoretical models in which: a prototype - an abstraction that is stored in memory and which reflects the central tendency of a certain category, the notion of density features - prototype displays a fashion or a combination of symptoms that occur most densely. Accordingly, the prototype is "synonymous with" the best specimens of a set of patterns, or prototype - a pattern that contains features that include a set of instances that are most densely occur. It should be reminded that there are theories of analogy and similarity that should be the theoretical basis of modern theories. It is believed that information stored pattern features better than the information value characteristics. However, it should also be noted that the notion of pattern and prototype theory can only be producing the basis for creating image-purpose. This course also contains a *pragmatic* approach when once counted the actual conditions and design process is carried out taking into account the necessary requirements, or, alternatively, defined *ideal* solutions according to specific parts of the problem (specific issues) and their synthesis is performed to determine the final solution, which is attached to the real conditions.

The second way - innovation - based on high scholarship performer, theoretical and professional knowledge, including - Fine and connected at the same

time, elements of intuition, the ideas that make the creative element in the design, by which the original decision shall innovation and creativity is bordered to the concept of insight.

Assessment of the Problem and the goal is to be as criteria. It should take into account the mixed nature of the criteria on the design, which is caused by different levels of challenges and, therefore, different levels of results, the necessity of interpretation and understanding. This assessment may take into account economic and qualitative indicators (achievement functions and requirements such as usability) of values in art - art image, style, and at the same time must be considered: the value of ideas and the results in the form of sense, the implementation of the aesthetic gamut of feelings (associatively) and compliance with aesthetic pleasure.

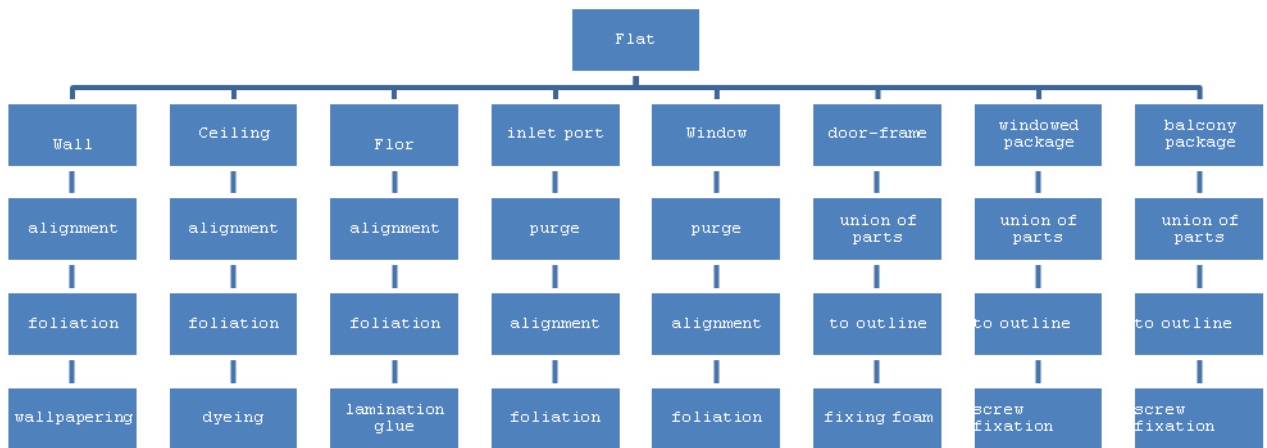
Development of project *concept* usually is in line with project ideas that are produced with all the circumstances and requirements. Based on their review and possible previous rankings or integration and subsequent optimization is formulated as a certain major or thought of an idea or task design. In this case, variations of the design project will be required criteria but are specified, parameters following factors: weighted cost (eg, certain materials from a certain range), ergonomics (personality types balance and space and its characteristics) aesthetics - form, style (art image and corresponding associations that will have some value to the *user* of interior design).

From the perspective of system analysis design process, as well as technology, to implement them can be considered as complex systems. Thus, the studied objects are defined as those systems composed of separate parts connected by various - temporal, spatial, functional relationships and having a *holistic* character of functioning due to the fact that each object has a certain number of elements, each of which function closely related to the other functions and is aimed at providing a general function. The distinguishing feature between the project's design and engineering processes is that in the design process, we consider two projects - artistic and technical, as a prerequisite of its execution is perfect (for the solution of certain problems and the definition of specific criteria) a combination of create content components - design procedures. Within these projects, specific technologies used, and the end is the technology of the components and their installation. However, there are different technologies with different methods, including credit processing facility, as of the same material and of different materials, so-called *alternative*. The challenge here lies in determining *optimal* or *effective*. *Problematic* predefined structure design objects and their visualization, and the main task - to determine *the final* number of elements of their relationship that should define *the relationship* between them. Preliminary structure is usually represented as charts, lists (a sequence), etc. However, it provides only a general idea, which is not always possible to ascertain relationships between structure elements. At the same time, the use of systems theory and graph theory to describe the structure, such as interior design, allows the system to come up as the overall presentation of the structure and to describe

the relationships between design objects and elements of these objects . In Ill. 1 shows a fragment of an elementary sub graph (room, separate furniture, etc.).

And, in fact, the graph object interior design premises, for example, contains the following components: living room, kitchen, bathroom, hallway, bathroom, office. Overall, the design is a complex problem, which is intertwined problems of modeling, analysis and synthesis options. With a large percentage of the design in the design outlined as follows: designing a new design object some typing, reconstruction, individual orders. Design method is usually divided into:

traditional, characterized by a high content of intuition, complex relationships the individual stages, the lack of robust analytical dependencies;



Ill. 1 under the column fragment elemental

Modern-oriented computer-aided design with extensive use of computer. In the latter distinguish the following main areas: the use of ready-made technological solutions at all levels of the design by making use of existing unit (does not lead to the determination of the optimal option, because these decisions are not always the best), the use of typical and group processes based on the development of classifiers standard processes and operations, the establishment of bases for unified process (allows to determine the area of solutions close to the optimum and reduce the number perebyran options, but this requires a lot of direction and time-consuming preparatory work), creating individual design solutions through the use of common requirements and identifying certain patterns - building on based on existing empirical design of technologies and their further scientific support specific integrated interpretation of the project (the most difficult path that requires experimental research and theoretical development, modeling, circumstances, events and objects). However, in all directions characteristic is the large number of informal procedures and interactive, sequential (iterative - step) projection mode.

Optimization design process in interior design is challenging, because making region - set options - asked not analytically, but usually logically - in the form of various kinds of rules, regulations, directives, which have both formal and informal . There are following types of optimization - *parametric* and *structural*., For the first characteristic is a complex multivariate problem, which is quite difficult to solve automated methods due to the large number of criteria, the complexity of modeling mathematical methods. For the second characteristic multilevel decomposition of the design process using iterative algorithms for solving design problems on every level and use the mode of dialogue to solve complex problems that are difficult formalized. For this dissection of complex processes executed on several interconnected levels (stages), which are characterized by consistent growth from level to level degree of detail design decisions. The design process at every level is a multivariate procedure in which each project on the basis of one embodiment of forming a number of more detailed options for the next level. As a result of the design at all stages formed a "tree" of feasible options that meet the specified limit. Note that this is the most subject to graph theory. More effective is the organization of choice rational choices of design decisions at every level, but because of iterations, criteria for evaluating design decisions (except for the last level criteria - quantitative) are mostly heuristic in nature, requiring academic improvement using dominant function and image-purpose.

Elementary particles and process design project can be identified as art and design and design-technological modules (HKM and KTM). For ordering information links and creating a rational system of coding blocks can be singled out as a combination of HKM and the NTP based on function and stages - as a certain set of technology blocks.

Thus, the interior space of the design process - a graph and model (options) - This sub graphs. However, certain restrictions which are normative, technical, design, technological, material science, qualimetric, aesthetic, etc. character defined in model space region specific manufacturing processes that take into account the image-feature and constructive-technological features of the design object and the possibility of a specific implementation of capital goods or materials. We can therefore conclude that the use of graphs in the project can serve not only during certain training tool that can be used, for example, in the learning process, but also as a tool to determine the optimal option in interior design.

Conclusions. The analysis of the design process pointed to the problematic task of interior design for the solution of which requires a systematic approach with the involvement of relevant theoretical support. Optimization in the design process is a multi-level and to achieve it is advisable to use graph theory.

Prospects for further research. Promising research towards interior design should include the optimization procedure development options and their assessment methods involving peer review and factor analysis. For qualitative determination of the structure options should be further development of presentation options in the form of graphs.

Literature

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Аннотация

Кардаш О.В. Дизайн інтер'єра как объект теоретических исследований. Рассмотрена проблема системного обеспечения дизайн-проектирования интерьера. Определен смысл теоретической составляющей и пути решения задач проектирования. Указано на теорию моделирования как основную, а также базовые теории, среди которых теория графов. Приведен пример элементарного подграфа.

Ключевые слова: системное обеспечение, дизайн-проектирование, теория графов.

Анотація

Кардаш О.В. Дизайн інтер'єру як об'єкт теоретичних досліджень. Розглянуто проблему системного забезпечення дизайн-проектування інтер'єру. Визначено зміст теоретичної складової і шляхи вирішення завдань проектування. Вказано на теорію моделювання як основну, а також базові теорії, серед яких теорія графів. Наведено приклад Елементарна подграфу.

Ключові слова: системне забезпечення, дизайн-проектування, теорія графів.