VISUAL COMMUNICATION TECHNIQUES IN THE AMBIENTAL DESIGN PROCESS STAGES

TEHNICILE DE COMUNICARE VIZUALĂ ÎN ETAPELE PROCESULUI DE DESIGN AMBIENTAL

ȘTEFANA-ROXANA STOICA[1],
doctor, asistent universitar,
Universitatea Națională de Arte *George Enescu*, Iași, România
https://orcid.org 0009-0007-7632-5150

CZU CZU 7.05.01
747.01
DOI https://doi.org/10.55383/iadc2023.30

Knowledge about the design thinking process definition and visual communication techniques is a must have for any designer who is truly dedicated to developing and delivering designs that satisfy the needs and requirements of the clients. Basically, a design process consists of the following standard stages: identification, documentation, definition of the design options, selection of the best-fit option, and design implementation. Given the many different ways in which a design concept and a design solution can be developed, starting a new design project will always be a real challenge for any designer. Conditionality and freedom of choice are the two conflicting constraints that are inherent to any design project implementation, whose common denominator is the need for innovation and evolution.
Keywords: *design, designer, process, beneficiary, aesthetic, functional, stages*

Definirea procesului de design și cunoașterea tehnicilor de comunicare vizualz sunt noțiuni pe care un designer trebuie sz le posede on procesul de crearea designului pentru beneficiari. On sens larg, procesul de design este format din etapestandard-etapa de identificare, etapa de documentare, etapa de creare a variantelor de design, etapa de selectare a variantei optime — și etapa de implementare. Diversitatea modurilor de creare a conceptului și a soluției de design face ca designerului sz i se parz ontotdeauna o provocare onceperea unui nou proiect.Condiționalitatea și libertatea privind desfeșurarea proiectului de design sunt douz noțiuni diametral opuse care au un numitor comun -necesitatea de inovație și evoluție.
Cuvinte-cheie: *design, designer, proces,beneficiar, estetic, funcțional, etape*

Introduction

Design is the process of creating objects, systems and experiences that are both aesthetically pleasing and functional. This may include CAD/CAM product design, joining elements within a space, graphics, architectural elements and so on. Solving the problems and improving the user's experience are the main goals of the designer.

According to the Italian designer Massimo Vignelli „There is no design without discipline" [1 p. *XLVIII*]. Seen from the perspective of this quote, the concept of design discipline may be regarded as a logical and phased thinking of the design process.

The ambiental design process stages

Although the interior design process may vary with each project and designer, it normally consists of the following stages: initial consultation, space planning, material selection, detail design, project execution, project completion and post-implementation maintenance and improvement.

In the initial consultation stage, the designer meets with the client to discuss about the client's needs, expectations and, last but not least, about budget. Space planning is the second stage of the design process, at which point the designer comes up with a plan for the space to be designed, taking into account issues dealing with circulation patterns, lighting [2 p. 13-15] and functionality (i.e. utilities —

1 E-mal: stoica_stefana93@yahoo.com

water & gas installation, layout drawing). Then comes the selection of the materials and the finishes to be used in the project (which means choosing form the type of paint, wallpaper, flooring, furniture and decorative objects, to the type of house appliances). In the detail design stage, the designer draws sketches and builds models to illustrate what the final space will look like. The project implementation stage requires the designer to work with teams of builders and installers, to have the project completed as planned.

The milestones described above are the steps the designer should go through simultaneously with the architect. In the interior space planning stage, the designer consults with the architect on matters dealing with structural walls, pipe laying and electrical installation plan. Once these details are clarified and defined with the architect, the designer proceeds to the next stages of the design process.

Deciding the interior design style is yet another important step in the design thinking process described above. More specifically, the designer is supposed to present the client with different interior design options, illustrating various styles of furniture and the arrangement of the pieces of furniture and ornamental objects inside the space, as well as the types of finishes the designer proposes for the interior decoration of the space in question. At the same time, the design options presented to the client should be accompanied by bills of materials and products proposed, for the client to get an idea about the total cost of the project.

The stages of the design process may differ depending on where the project stands at any point in the course of its unfolding. The design process stages described above have been defined taking account of the spatial limitations imposed by the architect, knowing that the architect, too, is bound to comply with constraints in terms of project costs and space.

Below is an example of the stages in a design process, where the designer is requested to design a space that exists for real, a space where all pipelines, plumbing and electrical installations are already in place.

In this case, the designer will generally follow the following steps: identifies the space (the designer actually goes on site, takes pictures and takes measurements — specifying the sizes on the floor plan, the sizes of the beams and all the other structural parts), establishes the conceptual references (the designer meets and discusses with the client, to find out what the client's preferences are in terms of style, how he sees the project and what his expectations are regarding the space design. During this kickoff meeting, the designer will try as much as possible to discover the client's temperament and personality and his or her expectations regarding the space design. Based on such findings, the designer will have to find the best way to transpose the client's desires into spatial elements that satisfy the practical needs as well as the ergonomic and aesthetic expectations of the client. The next step is the definition of the spatial-aesthetic requirements (the designer, in consultation with the client(s), identifies what space is to be allocated to what activity and draws up a list of the client's materials, finishes and colors of choice).

At this stage, the designer should have a questionnaire with him, in which he will write down the client's personal data (name, age, gender, address) and the client's wishes and needs regarding the space to be designed. Questions should concentrate on the practical, functional and aesthetic aspects of the space and on its fitting out. The questionnaire should be customized to each client, unless the designer plans to present it to future clients who look for a professional interior design. In the case of corporate clients, a questionnaire regarding the ergonomic [3 p. 262-263] control at the workplace will have to include specific fields, to be filled in with information about the main and the secondary line of business, specifying whether the work is physically demanding, requiring special skills and attention, and whether changes are needed in terms of temperature, lighting or noise at the workplace, all of which are meant to assess the amount of workload. Another section of the questionnaire that is applicable to companies will contain a set of questions that are meant to help the interviewer come to a conclusion as to how to reduce the physical strain at the workplace. The position of the body during work is vital for

the health of the worker. Ergonomics seeks to solve occupational disease problems and create a work space that is adapted to the height of the worker and the work plane. Its role is to facilitate the correct gripping or handling of the work tools from an anatomical point of view and to make the worker feel comfortable working in a space that is large enough for him/her to carry out job-related tasks.

In the next stage, the designer draws the sketches and the technical drawing, marks the electrical, sanitary and gas installations on the plan, thereby establishing the limits of the space. The circulation plan (the plan of functional connections between rooms) should be drawn up before developing the design options for space [4 p. 131-293] furnishing. At this stage, the designer should plan the space taking into account the functionality and the ergonomics of the pieces of furniture and of the space [5 p. 478-480, 482, 500, 514,548, 566-568] itself, in terms of traffic (the space required for the people to move unobstructed round and about the various interior decoration objects).

Ergonomics is an overarching science that encompasses many different fields of expertise [6 p. 56], such as sociology, medicine, psychology and philosophy and applies distinctly to each such field; therefore, the designer should by all means know what the needs of the users are exactly; in other words, the designer should take into account all of the elements that make a space work seamlessly.

At this stage, the designer makes a list of objects, specifying the number of required items, their features, dimensions and prices, as well as the vendor that sells them. Generally, the designer will present the client with at least three options illustrating the arrangement of the objects across the space.

To prevent the client from changing his mind in the stage of selection of the interior decoration items, it is recommendable that the designer present the client with a moodboard [7 p. 232-233], with visuals illustrating the proposed interior decoration of each room, to help the client decide whether the colors, textures and shapes proposed are to his/her liking and whether they need not be modified. This stage of the design process is therefore the most intricate and utterly important, because at this point the parameters are established within which the design will have to fit in order to satisfy the requirements of the client and to prevent changes in the later and more advanced stages of the design process.

Next is the stage where the designer and the client establish in common the final arrangement of the objects in the space and agree, if the case, on what items of furniture, interior decoration and finishes should be revised so as the project may not exceed the price the client has estimated and is willing to pay.

The design contract should also stipulate the period of time during which the designer will provide assistance in the stage of execution of the finishes and the arrangement of all interior design elements in the space. The design contract should also specify whether the designer executes the interior design by creating spreadsheets with related cost estimates, hand sketches, 2D dimensioned plans with options illustrating the arrangement of the objects in the space, 3D space design showing the products that can be purchased directly, or a 3D design of the furniture to be custom-made (in which case the designer's fee increases), including the assistance services to be provided throughout the project (meaning that the designer also agrees to be responsible for the proper execution of the interior decoration stages).

There are many design thinking process methods. According to the theory taught at universities, the design process encompasses the following stages: identifying the design brief, documenting the brief, developing the concept, selecting the best-fit solution and implementing the design project. In a broad sense, these stages are universally valid, but they leave room to different approaches and research pathways, so that the designer is sometimes forced by circumstances to go again through one or another of the earlier stages in the process.

Visual communication techniques

Visual communication techniques that are used in the ambiental design process include: quick sketching, moodboarding, diagrams, infographics, mockups, samples and presentation boards. Quick sketching of ideas and concepts is the most popular visual communication technique in the design process.

In terms of the types of visual composition, the sketches can be classified as follows: the conceptual sketch — the primary one, the investigative sketch (landmarks, details, functionality) and the presentation sketch (views and perspective) showing how the design will look like in real life, by adding shades and creating textures through hatching. It comes in handy at any stage of the design thinking process, enabling designers and stakeholders to quickly explain and to understand ideas and concepts. This technique is commonly used in ambient design, product design, graphic design, graphic and fashion design etc.

A diagram [8] is a graphic representation of a piece of information or of a process flow, whose role is to explain and to make viewers understand the info or the process it illustrates. Diagrams can include elements such as geometric shapes, lines, symbols or images, all of which help getting the message through. In the case of ambient design, spatial diagrams (plans) are used for space planning and organization. Examples of spatial diagrams are circulation diagrams, visual diagrams, floor diagrams and programmatic diagrams. Spatial diagrams [9 p.132-139] are developed in the stage of space function identification. Spatial diagrams are tools that are used in environmental design to plan and organize a space. They can be used to analyze how the different areas within a space relate and interact with each other.

Circulation diagrams show how people move around a space and how circulation routes should be organized in a way that will boost space effectiveness and level of comfort. Visual diagrams illustrate how different areas of a space are either exposed to or hidden from each other. Level diagrams show how different areas of the space connect through different levels (between floors) or the difference in level between a terrace and a garden, for example. Programmatic diagrams illustrate how the different functions of a space are organized and connected with each other. All these types of diagrams require logical and analytical thinking.

Infographics use symbols, connecting lines, arrows and bifurcations to communicate relationships and information flows. Infography is a visual communication technique that exposes main, secondary, tertiary and even connecting, related concepts. The purpose of infographics is to present complex information in a way that makes it accessible and easy to understand by a large audience. Infographics are used to display concrete, documented and clear data, such as notions related to the history and the stages in the evolution of a project, and to extract important ideas and insert all kinds of cultural, social, economic, political, artistic concepts.

While diagrams are rather focused on representing information in a clear and precise way, infographics concentrates on delivering information in an attractive and easy to understand manner. Infographics are more complex than diagrams because they contain a larger amount of details, written information (even full sentences) and images. Moreover, infographics will always take into account the composition principles.

A moodboard [10 p. 12-34] communicates creative ideas, being at the same time a source of inspiration. A moodboard [11] is a visual tool that helps communicate design concepts and ideas. It is a collection of images, materials, color palettes, text and other elements that are arranged in such a way as to evoke a particular style or feeling. Moodboards can be part of a design project for a wide range of industries, from interior design to fashion, product design, advertising and many more.

Architecture mockups are highly instrumental in the design process because they are a three-dimensional representation of the project, allowing designers and stakeholders to visualize what the final project will look like. Mockups can be used to test different ideas and solutions before transposing them into the project, which is why they come in handy when it comes to saving time and money. Mockups show how a space will look like, how it will work and be used. Besides, they simplify and streamline communication between designers and project stakeholders. Mockups can be digital or physical and can be made of different materials and techniques. Basically, mockups facilitate the understanding of the project and the making of informed decisions. Mockups are models of a new project, showing how the project will look like in the end. They can be used to illustrate the architecture of the project or what the interior design of the space is going to look like.

Swatches are also used to show the final look of a project, but they are rather concentrating on details about the materials to be incorporated in the project. A sample may be used to show how a certain material will fit into the project and to help the designer and clients decides on the choice of materials (in terms of textures and shades) by comparing their physical features as well as their aesthetic qualities. Mockups and samples are both visual communication techniques and can be used in tandem, for the client to see the big picture of the project.

Depending on the degree of interest shown by stakeholders in a particular area within the space to be designed, the designer decides on the scale at which the model (mockup) will be built. The mockup will normally be accompanied by design presentation boards illustrating all the stages of the design process. Design presentation boards as such and the way they are put on display are also visual communication techniques within the design thinking process. Presentation boards should be displayed on one row or on two rows, always from left to right, in the reading direction. The way the boards are arranged will also depend on space availability and on how the boards are to be displayed (horizontally — landscape, or vertically — portrait). For example, students' project presentation boards are size A1. Presentation boards come with mockups and samples, so as to show the overall picture of the project, combining 2D and 3D views. They give viewers the chance to actually touch the finished product. Presentation boards are numbered and are built to match each design process stage, i.e. design data, documentation, problem identification, design options, final solution, renderings and mock-up photos.

In ambient design, presentation boards and moodboards in particular should be conceived in such a manner as to immerse viewers into the story and into the vibe, by using color hues, shapes, textures and compositional principles, so that viewers may involuntarily activate, just by looking at the presentation board, one, two or even all their five senses — depending on what the designer intends and desires to achieve. In other words, the designer should be at the same time knowledgeable about the psychological effects of colors [12 p. 21-28] on people and fully capable to identify a material by merely touching and feeling it and to pay attention to sensorial synesthesia (connection between the sense of smell and the visual sense).

All the elements described above can be combined harmoniously, provided that they are correctly positioned on the page and provided also that the designer is well aware of the rules of composition. The design process refers to the systemic method by which designs are conceived, planned and carried out. The process involves application of inter alia, technological, aesthetic, cultural, economic principles, to fully satisfy the needs of the users.

The design and the designer

Sometimes, students as well as fully-fledged designers encounter situations where the design solution stage does not follow what in theory is known as the conventional sequence (unfolding) of the design process stages. For example, students or designers may initially see the design brief from the angle of their personal knowledge. However, after a more thorough documentation on the given brief, they may find that they lack bits and pieces of the information they need to actually carry the project through. Documenting the brief allows students and designers to structure and identify key information and hence to come up with creative ideas and points of view about the design subject, the technologies available for that specific design brief, thereby narrowing down the range of concept design approaches. At that point, the brief starts taking shape and the designer enters the step in which he or she resorts to imagination, creating the model by giving due consideration to the relevant technology and to the target-culture.

Documentation on a particular material can also be extended to include cultural and historical issues, which will lead to the classification into a certain category of the objects/ interiors where that specific material prevails. All these will lead to formulating a conclusion about the design concept, based on which the design object will be conceived.

When the design process is targeted towards a certain culture, the student or the designer will first of all resort to his or her knowledge, looking for information about the social, cultural, economic and aesthetic features of the country in question, cross-checking the info for the sake of accuracy. The designers-to-be will structure their personal ideas about the design brief, which leads to concept innovation. Then, they will concentrate on the details of the model and on the structure and the technique they are going to employ in the design.

The difference between an interior designer and an ambient (environmental) designer is that the latter not only has all the duties of an ambient designer, but he/she is also responsible for how the space feels, sounds and smells like, by giving instructions regarding space acoustic and redolence. Moreover, the ambient designer is expected to decide on the best choice of lighting systems, light shades and intensity, lighting fixture arrangement in the space and adjustment of the light dispersion area. In other words, the ambient designer chooses the fragrance, the lights and the background music that best fit the interior space, thereby creating a complete and sophisticated picture.

Broadly speaking, an interior designer focuses on designing the interior spaces from a functional and aesthetic point of view, whereas an ambient designer concentrates on designing exterior spaces, striving to create an environment that enhances people's quality of life. A designer's knowledge should encompass both these fields of expertise, so that he or she may be able to create a seamless space that resonates in perfect harmony with both the environment and the needs of the users.

Limitations in the design process may or may not be beneficial to creativity. Without certain restrictions a designer might be inclined to use an excessive amount of details, feeling somehow that all details are utterly interesting and necessary, ending up creating a multitude of variants of the design brief. On the one hand, such an approach may be beneficial, because the designer will enjoy full freedom of choice and will not be constrained by functional or aesthetic limitations. Yet, on the other hand, he will most likely waste valuable time and thus face the risk of running behind schedule and exceeding the design delivery deadline. Worse even, the designer's wild imagination may stimulate his creativity to the point where his of her finished product or interior design will, alas, prove unfeasible, due to real-world functional, technical or conceptual constraints.

The technical limitations identified by the designer in a design project are bi-directional: 1) design for compliance (meaning that the shape modifies depending on the technical dimensions [7 p. 41], 2) design according to proposal (mechanism, for example), by emphasizing the advantages, innovation and evolution of the model and implicitly the proposition to launch a new product. In the case of perceived social, cultural, historical and religious constraints, the designer or the student will engage in a more detailed documentation, so that he or she may come up with strong arguments and a well-defined opinion in support of graphic exemplification and sketches of ideas.

Designers and art & design university students may already have a design solution in the back of their mind, even without going through the theoretical stages of the design process. Sometimes it is all just a matter of momentary inspiration, a sort of epiphany revealing an overview of the product or of the interior to be designed. In this particular case, designers/students will have to justify their ideas and to create moodboards and documentation for the model, technology, style and culture, to substantiate their design concept as a whole. In other words, they will have to validate the concept before the beneficiary, along with the quality and accuracy of the design creation.

Another important task of the designer is to try to identify the users' degree of interest in the design. Then the designer should proceed to a market study, assessing the extent to which the targeted range of products are being merchandised, the interest manifested in the technology that is much to the users' liking and, last but not least, the culture or the geographical area where that type of design is wished-for and actually purchased. These steps in the process help the designer identify the market niche the design should target. Towards the end of the design process, the designer will establish the final model, the color and the shades to be used, the technology and the concrete design brief and con-

cept. Putting all the elements described above together, the designer will finish the design, observing all the documented requirements, yet passing the design concept through his or her own perception, so as to finally come up with an innovative idea.

The client should feel empathically associated and physically and psychologically drawn by the proposed design. Roger Martin, as quoted by Magda Sficlea in her book [13 p. 13], believes that the moment of purchasing a design product occurs through the intuitive discovery of the buyer. According to C. Șaramet, the designer finds it difficult to decide when to use intuition [6 p. 71] versus logic or vice versa, during the design thinking process.

Conclusions

Broadly speaking, to outline their design thinking process, designers should ask themselves the following questions: what/why/to whom/how? The question „why?" helps define the motivation, the question „to whom?" helps establish the target-niches and the question „how?" helps identify the design creation method. Often, designers answer the last question with the idea of sustainability in mind.

The decision to acquire or to use design products may depend on the need or, sometimes, on the desire to satisfy a personal pleasure of the user. Nowadays, contracting a designer to decorate an interior space or to design a product proves people's openness to and understanding of the fact that a person who is illiterate in the field of design cannot possibly interfere with the expertise of a professional who has studied for years to become capable to give clients the best piece of advice and to develop accurate, top-quality designs.

Acknowledgments: Many thanks to Proinvent Project — Enhancing performance and innovation in excellence of doctoral and postdoctoral research — Proinvent, contract no. 62487/03.06.2022 POCU/993/6/13 — SMIS code: 153299.

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