Graphic Design Applications for Spatial Imagery and Examples from a Nursery School

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ABSTRACT

In this study, from the point of the significance of "spatial imagery" in spaces, the contributions of graphic design to space were explored. Also, the importance and effect of illustrative, photographic, typographic and pictographic studies on the spatial imagery have been evaluated on the basis of examples. The observations obtained during the research showed that illustrations, photographs, typographies and pictograms, which have highly expressive language, have turned the space into a conceptual medium while presenting design solutions in accordance with the function and identity of the space in the creation of the spatial image and also positively influenced and directed the human behavior in the space. Graphic design solutions were shown with examples of architectural elements that create awareness of the space, perceive it and create permanent images in mind. The issue was supported by comparing the images before and after graphic analysis of sample spaces in this research. As a result, it was understood that the spatial images created by illustrative, photographic, typographic and pictographic analyses, which are the subdisciplines of graphic design, were transformed into an environment where they can communicate with the users of the space that is an architectural product, and express themselves correctly.

Keywords: space, graphic design, environmental graphics, spatial imagery, interior graphics

INTRODUCTION

In recent years, the concept of "spatial image" has frequently been mentioned. The image, in its most general definition is, "the impression and influence that an entity has on the human mind" (Gemlik & Sigri, 2007). The spatial image is the person's perception of the environment which becomes meaningful in the mind. While Rapoport (1974) describes spatial image as perceiving the environment based on experiences, Baud-Bovy and Lawson have defined it as a scheme formed in mind as a result of the perception of the environment with the goal, prejudice, imagination, and the influence of the senses (Baud-Bovy et al., 1998) Man perceives, interprets, and makes sense in many of the fixed and moving visual elements in the space by selecting those that are remarkable or reasonably suitable. Perception depends on many factors, such as human's cultural and social characteristics, past experiences, and the spatial image may not be the same for everyone. The perception based on the place and the acquired images are important because they will directly affect the behaviour on the spot. The issue that is being discussed in the all today's studies is that a well-designed spatial image facilitates the perception of the environment and thus positively affects the human behaviour.

Lynch (1960) lists the senses as consisting meaning, serving senses, rhythmic, harmonious, encouraging, invigorating and privileged respectively. Accordingly, when we think of specific spatial image components in interior space as colour, light, material, texture and form, the remarkable appearance of one of them will provide a faster and more effective perception of the space which will distinguish them from each other and leave a more permanent place in minds. A feature that distinguishes itself from others is recognised first and is accepted as the spot. If the place is attractive and logical, it will increase interest, it will boost the desire of the person to stay in the

Contribution of this paper to the literature

- This study will be an additional point of view for the studies in literature and increase the regard to spatial imagery with an inclusion of different graphic designs to assist other studies. It will also be a novel contribution to the limited perceptions of spatial imagery in North Cyprus graphic design studies. Graphic design has begun to be accepted all over the world that it is necessary to strengthen the language of expression of the space, and even a new concept "environmental graphic design" has been developed.

place, and if the time elapses, the sense of the space will deepen and more details will be noticed. Powerful images are helpful as they have convenience in finding good impression and direction about the place. The user who finds the direction comfortably is feeling safe, the work efficiency increases and it is possible to save time.

The design of the spatial image began to develop, especially in the second half of the 20th century. Along with the developing technology and global market, the day-to-day information, media and money flow, developing and changing society structure, and time consuming socialization cities have become crowded, complex and difficult to live in. People in big urban buildings, besides the architectural elements of the space, are surrounded by the system of continuous symbols and communication, and the skill of understanding the language of these spaces is also the struggle for survival of the human. Multifunctional, complex and crowded structures such as hospitals, airports, shopping malls, university buildings are becoming increasingly difficult to perceive, learn, navigate and meet needs. A strong spatial image study, which everyone can understand in these structures, which form a mosaic in terms of user diversity, will help a better understanding of the relationships between spaces and what spaces tell. For this purpose, architects, designers, academics and administrators agree about the same common thought; to reduce the increasingly complicated modern urban spaces to human dimensions by surrounding them with images that everyone can understand. In this process, graphic design has become more and more involved with definitions such as architectural graphics, signage or sign-systems, environmental graphic design and way-finding design.

Today, spatial image is the study that can be done not only by architecture but also graphic design. For the spatial image to be read well, the language used first must be clear, simple and universal. This is the visual language of graphic design. In addition to typography on the surface of the places, graphic designs are made with universal elements such as photographs, illustrations, pictograms. These graphics are not only aesthetic elements that support spatial image, but also spatial analysis that defines space, informs, translates, enhances direction and directs.

METHODOLOGY

Documentation analysis and observation techniques which forms of qualitative methods, were used in the study. Documentation was conducted in order to explore the contributions of graphic design to spaces from the point of spatial imagery. The analysis of documentation was divided into headings which are typographic, illustrative, photographic, and pictographic solutions on the spatial imagery and each has been evaluated and analysed by giving examples from all over the world. Therefore, this study insights not only a descriptive character but also uses observation method to gather information, explore spatial imagery and to be able to examine the other related works. Near East University Nursery School in North Cyprus was accepted as the main example as the case study. The graphic images in the school were analysed and their contribution to the school - student interaction were discussed.

TYPOGRAPHIC SOLUTIONS

One of the most important design elements in structured communication is typography. It establishes a visual structure that produces continuous dialogue, associates not only visual but also typographical features with typographic items, the area of the place, and the basic data of the period, associating it with its surroundings. It has begun to be used with the aim of getting beyond the use of typography, information and orientation, and to give an image to the place like an artistic element, with the development of technology, Giant dimensions have become an important part of typography design with many application methods such as digital prints, three-dimensional applications, digital panes, projections and light games.

For typographic applications, it is necessary to know and to apply the basic properties of typography such as writing character, writing family, font, size, colour, alignment as well as other graphic design applications.

One of the best used examples of typography is the central building of the Adidas Research and Design Centre (SEGD, 2015a). A nickname for this new business building of Adidas is "laces". The "laces" nickname and -in particular the athletes- movement spirit have been inspiration in the design of space graphics. High-voltage and
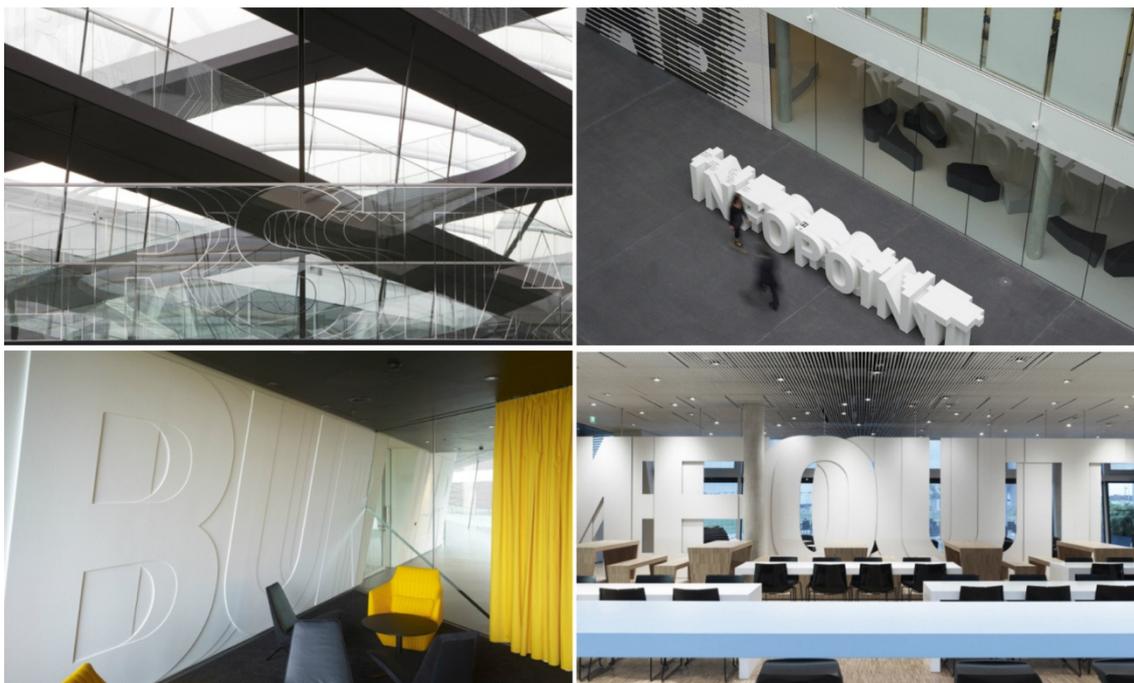
Figure 1. Typographic Spatial Image Studies of the Centre of Research and Design Centre (https://segd.org/)

super-scale typography walks the entire building, bounces on the walls and floors of the rooms, and connects spaces such as shoelaces, and reflects the brand's institutional 3-dimension. The "infopoint" inscribed in three dimensions in the entrance is the statue form. In Bistro the word "TIMEOUT" is a kind of curtain. In Adidas, it is possible to see typography as not only an artistic element but also a surface that limits the space, and informational qualities (**Figure 1**).

ILLUSTRATIVE SOLUTIONS

According to the definition of Becer (1999, 2015) and Workshop (2016), "All elements that visually describe and interpret verbal elements such as title, slogan, and text are generally regarded as Illustration". As can be understood from the description, illustrations are the art of conveying a thought or a message to the audience through universal language of art; painting. It is usually drawn as support for advertising, education and fantasy narratives, or it is designed as an artistic work itself. The diversity of unlimited and rich image world of painting art and application techniques have always been an indispensable element for graphic design applications.

Photographs or illustrations which have meanings by themselves, how and what size images that can communicate with the user should be used, the way it is related with what is intended to create in the space should be considered together with the architectural design. Thanks to the possibilities provided by the huge printing technology, photographs and digital illustrations can be used on the surfaces of large rooms. In this way, environments can be created in many different themes such as legendary, unreal, romantic, science fiction (Stelling & Mason, 2000).

If illustration is preferred, digital designs as well as painting techniques in different techniques can be applied directly to the surface of the room. Hand drawn illustrations, graffiti, stencil printing, manual foil cutting (vinyl), pistol (airbrush) and anamorphic techniques can be applied to all fixed or variable surfaces (Ergün, 2012).

Especially in the places of institutions targeting children and families with children, colourful pictures are preferred more. In order to increase happier and willing participation of children to places like libraries, schools, hospitals, and space surfaces are painted in such a way to appeal to their imagination, or they are covered with digitally prepared images.

Sometimes illustrations are supported by three-dimensional studies. In Seattle, the graphic identity of the Randall Children's Hospital, which consists of 9 storeys, was rewarded in 2013 by the SEGD organization (SEGD, 2015b). The purpose of design by using art and space graphics is to make patients and their relatives make unexpected discoveries and thus to disperse their minds. Guidance and informational graphics were designed with colours of nature; animal motifs, signs and labels were also used. People wandering through these living and inspiring spaces are guided unwittingly and informed. This is the power of space graphics design (**Figure 2**).

Figure 2. Illustrative Spatial Image Studies of Randall Paediatric Hospital (https://segd.org/)

PHOTOGRAPHIC SOLUTIONS

Along with the invention of camera, photography began to replace painting. Photography, which shoots and archives a moment of reality, allows us to get countless and diverse visuals in a very fast and easy way with the technology of our age. Photographs have been preferred for many years instead of paintings, especially in news publications, product advertisements, travel promotions, when a feeling is wanted to express in the most direct way. Today, with the advance technology, the start of illustration and photography in digital media has caused both disciplines to intertwine and the differences between them disappear. No photographs taken are added to the design without processing on the computer. Illustrations can also be produced on a computer in photographic reality, or collage techniques are applied along with photographs. In recent years, the more important thing than the question of photography or illustration, which visual is more effective, striking and original?

Hand photographs placed in the interior design and decoration fair at the city centre of Madrid and at the Expo Hogarbienal in Barcelona are a good example of the orientation use of the installation art introduced with the title "Hand-to-hand" (SEGD, 2015c). It is a work designed from the point of view that there is no more universal language than the pointing hand photographs. The large figures were printed on polyester and placed on aluminium-framed panels in the joint designs of Maria de Ros's architectural team and photographer Daniel Loewe. Along with the orientation, the hand photo makes visitors stop and read the information (**Figure 3**).

Figure 3. Photographic work at Madrid's city centre and Barcelona's Expo Hogarbienal (https://segd.org/)

PICTOGRAPHIC SOLUTIONS

The universal forms and visual expressions that have gained a common meaning throughout the world that are used to express, describe and imitate all kinds of concepts and items are called signs and symbols. There are common signs and symbols like letters, numbers, music signs, religious symbols, and colours in traffic lights. These shapes and expressions have become universal over time and have created a common language for graphic design. The viewer, whichever culture and language s/he has, will have the same perception when they see these symbols. That is why graphic designers refer to this common language when they need a universal definition and message creation.

Signs and symbols are used extensively in the space graphic, especially for orientation graphics. It facilitates the easy understanding of people from different languages, as well as providing a quick and simple perception. The words are applied places where the signs are not enough. But words have different meanings in every language and translations in various languages are needed.

Graphic systems designed by the University of Technology in Sydney, Brand Culture Communications, make it easier for students to participate in workspaces and production studios, while demonstrating occupational health and safety requirements for spaces (SEGD, 2015d). The company that set out with the theme of "find and discover" triggered the sensation of discovery feeling of young people and make them learn the sign systems (**Figure 4**).

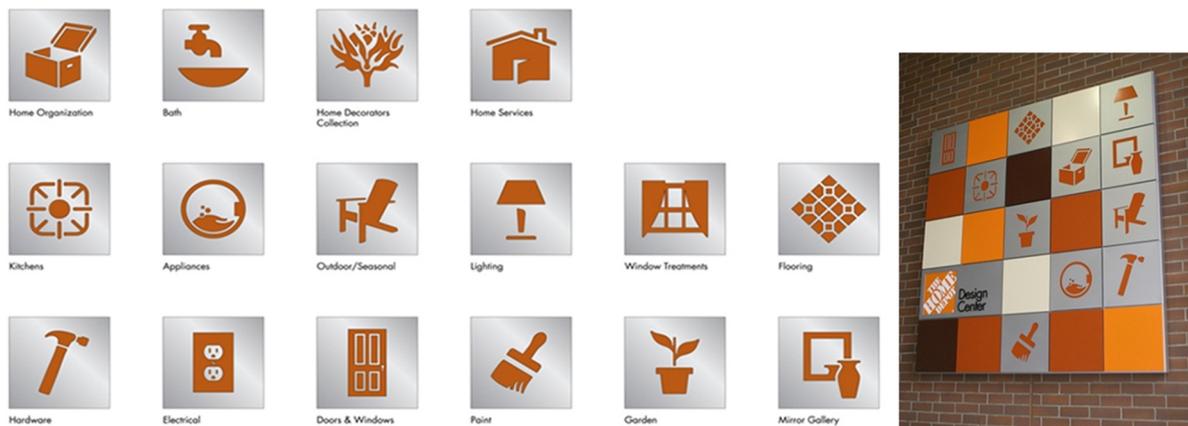**Figure 4.** Orientation Graphics of Technology University in Sydney (https://segd.org/)

Figure 5. Home Graphics Made with Pictograms for Home Depart Store (https://segd.org/)

The "pictograms" are designed by using a number of symbols and signs with pictorial meaning to facilitate written expressions. When looking at the origin of the word, it is seen that it is derived from "pictus" and "gram" which mean it is a picture without writing. One of the most important considerations when designing a sign, symbol and pictogram or when using it in a design, colours, forms and values, which may lead to other meanings, should be avoided. It must be original and simple, express the meaning to be given directly, should not lose its clarity when it is reduced and enlarged, it should not change its formal features and expression even when it is used without any colour.

Home Depart Store, which changed the concept of product sales and renewed, renewed its corporate identity accordingly by making its name Home Depot Design Centre (SEGD, 2015e). The pictograms defining the product classes were designed in accordance with the identity of the institution and used on the space graphics (**Figure 5**).

CASE STUDY OF NEAR EAST NURSERY SCHOOL AND ITS SPATIAL ANALYSIS

A visual work was requested by the administration for the playground of the Near East Nursery School building, which has just started to serve in Northern Cyprus. The aim here is both to attract the young children's interest and to make them perceive and distinguish easily the four doors that open to the corridors and are identical in visual qualities. Erdoğan Ergün's own illustrations were applied to the around of the doors with stencil method. In the study, it was understood that the young children perceived the stylized figures more easily and found the animal figures closer to them. It was also explored that the vivid and soft tones of the main colours accelerated the

Figure 6. Stencil Works for Near East Nursery Playground Doors

Figure 7. Near East School playground doors; before and after graphic work

perception (Porada, 2013). From this point, coloured stylized simple animal images were chosen for graphic analysis (**Figure 6**).

As can be seen in the photographs, the place does not have enough communication with children with its own architectural language. With only four illustrations, the interior playground has been revitalized, appealing to the children, and facilitating the use of doors (**Figure 7**). This is also the case with the feedback from the teachers and the staff after the study conducted. The intended goal has been achieved.

DISCUSSION

Spaces have been recognized as living things in environment and surroundings where people have their leisure time throughout the history and try to understand their feelings and perceptions of their emotions and senses. As a matter of fact, Ching saw the space as a living object and stated: "The space is constantly wrapping our existence, moving along the spatial volume, seeing shapes and objects, hearing voices, feeling the breeze and getting the smell of the flowers that open in the gardens. The place is a material essence like wood and stone. But it is deformed by nature. Its visual form, its light qualities, its dimensions and its scale depend entirely on the boundaries defined by

the elements of the total form. As space is comprehended and surrounded, and a mould is inserted and organized by formal elements, architecture gains wealth" (Ching, 2016).

Başkaya et al. (2003) again described places in a variety of meanings and imagined them as living beings. The venues are almost a choreographer for the dynamic relationship of the moving people. Architects can manipulate the movement, behaviour and shape of the user of the space by controlling the places we move and use in their designs and this cause happiness or unhappiness in socio-psychological terms. The spaces that a designer creates often give us hints about how to use them. Their space organizations encourage certain uses, while others prevent them. For example, behind the scenes in a theatre, if there is a court case in a courtroom, the design is placed in a defined area and guarantees the existence of the law. It is inevitable that if we do not give a correct message about the direction to which we are going, we will have uneasy and mixed feelings.

The most significant part of the urban environment is the people so the environment and the space are created in accordance with their needs. There is an interaction with the surroundings of the person by observing, interpreting and perceiving it. The individual acquires through the sensory organs and decides how to behave accordingly. Thus, there is a constant interaction between the individual and the space. Individuals are self-absorbed and adhered as long as they can perceive the places they live in and it makes sense (Özdemir, 2016; Marshall, 2005).

This impressive analysis of visual gain suggests an examination and description of visual culture. If we take into consideration our sensory organs the most effective one at first is visual by which we gain experience and collect information and data about the space by looking, seeing and observing our surroundings like newspapers, road signs, books, social media or television. We judge and make decisions about the space by analysing our visual experience. (Barnard, 2002).

Graphic design and space and its relation have been studied in many studies. These were analysed in many different dimensions since Graphic Design is a phenomenon that has existed for a very long time in the communities even before they understand it (Frascara, 1988). Graphic design illustrates a great variety of areas to create spatial image. It is possible to see different designs of different buildings from religious sites to schools, from street to street shop windows to stadiums to basement floors (Trolliet et al., 2014). As some examples were given above graphic design can be seen all around of our living spaces.

Gestalt principles and the concepts showed a dramatic development due to advanced visual technology and the perception of human beings were analysed and the principles were assessed by using a range of examples. In its study Rasmussen explored a series of illustrations which are buildings for religious activities. He used some Early and classical mosques, Muslim related old schools and big graves as examples. Consequently, these places were observes and examined from the point of graphic design and it was explored that there was a use of guttal theory. The significance of applying graphic design concepts, which are gestalt principles in buildings, has been highlighted. (Rasmussen, 2010)

Similarly, there have been, nevertheless, a lot of fascinating places that facilitate the discussion of 'graphic affect'. This evaluation of the concept is a significant process in order to express the relation art and design and their closeness (Barber et al., 2016). For example, "the Bauhaus movement, which was the first to combine art and technology to obtain clarity and functionality rather than aesthetics, still has a crucial effect on modern design, graphic arts and visual communication in Greece" (Kyriakopoulos, 2016).

Symbolic structures in the context of public space and cultural image interaction play an important role in the physical and socio-cultural transformation of the place they are located. One of the most striking examples, the Pompidou Centre, was designed by the Italian architect Renzo Piano in 1971, in the Beaubourg region of France, and opened in 1977. According to Baudrillard (1982), the centre which aims at cultural division and political deterrence has made a difference in terms of size, architectural structure and material details within the environment and became an important focal point (Kürkçüoğlu, 2014; Güç, 2013).

Renovating buildings and innovation has had its place for a long time. While remodelling places and spaces rereading has been used as a formal testament for the renovation. These renovations were always done with the thought of using it again but not with taking into consideration art or graphic design. In media, we have seen so much emphasis on the renovation of so many places like Tate Modern in London, the Baltic Art Factory in Gateshead, the Grand Louvre pyramid and courtyard, and the Reichstag in Berlin. While remodelling graphic design took its place and added a great taste to the architectural design and made places more perceivable and living places for people. As Brooker stated "Illustrated throughout with a rich international portfolio of case studies, it explains the theory behind the way that architects and designers interpret and adapt buildings" (Brooker, 2004).

Another example of the work of adding taste to spaces is seen in the tourism sector. Besides the fact that the facilities of the tourism buildings built in the Mediterranean Region of Turkey, the possibilities offered by the buildings and the surroundings of the various styles, forms and quests in the planning-designing process can be physically based on image, identity, meaning which can be done by graphic design such as. For this reason, during

the planning and design stages of tourism buildings and surroundings, image, identity and meaning must be emphasized by a professional graphic designer (Kancıoğlu, 2006).

Compared to the functional associations, it is seen that there are mostly shops, which have displays, and eating and drinking places. These functions are more useful that generate stimuli (colour, sound, smell, diversity, mobility, etc.) that affect the perception of the individual and appeal to different senses, as well as the cause of conscious preference of spaces. In this context, it is an important parameter for explaining movements, which are included in especially busy routes or cafes and the extent to which stimuli are perceived (Kürkçüoğlu & Ocakçı, 2015),

The New Basics Designers at the Bauhaus had a belief in both a common description of visual formation and its importance. Thus the importance of visual arts in spatial imagery comes to the front one more time in another study. (Lupton & Phillips, 2008)

Spatial image and graphic design applications have also taken place in the re-modelling work (Ching, 2014). It is possible to see the effects of spatial image designs in the studies mentioned above.

Spatial design has added meanings to the spaces, and studies have been carried out throughout the history as in many of the examples listed above to facilitate the interaction of graphic design with living beings. Almost all of the attempts to provide space for interior decoration with graphic design have been successful (Wolfe & Horowitz, 2004).

In these examples, it was tried to evaluate the effects of graphic design from the point of spatial imagery mainly in nursery playground but also with many other examples indoors and outdoors. There are many studies in the literature for spatial images. Therefore, a number of designs were analysed and their scattered results, observations, and examples from the results of the studied like Hinckley et al. were evaluated. In their study, they attempted to determine free-space 3D interaction areas in their work. This framework guides researchers or system developers who know design issues as spatial inputs. As Hinckley et al. stated, "A set of strategies, which may help users to better perceive a 3D virtual environment, include spatial references, relative gesture, two-handed interaction, multisensory feedback, physical constraints, and head tracking" (Hinckley et al., 1994). These strategies are handled in so many works.

The positive perception created by the sustainability of space designs and architectural images has reached a point of great importance today. With the help of spatial imagery, NEU Nursery School was chosen as for the space design. This work also included 3D interactions, which led the design of this framework. In addition, these realities were applied with graphs that were formed by the extended reality application such as graphic, sound, video (Gökçearslan, 2016; Şenyapılı, 1996) and differences and effects were analysed with observations before and after implementation. Because sustainability is very important in architectural fields as well (Kayıhan & Tönük, 2008; Kalınkara, 2006) and creating environmentally sustainable places gives much more successful results with environmental graphic design models and shows the importance of spatial imagery and graphic design.

CONCLUSION

The purpose of this study is to demonstrate the role and importance of graphic design solutions that support architectural design so that spaces can easily be distinguished within today's complex architectural complexes so as to increase the directional skills create a better impression of the place's identity and transfer the necessary information accurately and effectively. The way in which the spatial images created by illustrative, photographic, typographic and pictographic analyses, which are the sub disciplines of graphic design, transformed the space of an architectural product into a conceptual medium was explained through examples.

Graphic design has begun to be accepted all over the world that it is necessary to strengthen the language of expression of the space, and even a new concept "environmental graphic design" has been developed. With the help of these graphic elements, which are accepted as architectural graphics, "storytelling" spaces are getting widespread. The day-to-day necessity of coordination of all disciplines for a single objective, while all sub disciplines branching that require specialization, can also be considered for environmental graphic design and requires collaboration with other disciplines such as architecture, interior architecture, landscape, and furniture.

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