Industrial Stylistics as a Figurative Component of the Playground Facilities

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Abstract. The article traces the manifestation of the industrial style, which appeared mainly in interior projects at the end of the 20th century, in objects of environmental design of urbanized spaces. The main line of research focuses on the possibility of using industrial style in designing objects for a children's playing environment, with the aim of resolving or compensating for the progressive unification of playing equipment in a modern city. The experimental part of the research is represented by the project proposal - a play object for playgrounds "Degrees" and a game area "Skeleton" made in the industrial style. The results of the study showed that the imaginative solution of such objects of the children's playing environment has a unique and multi-faceted associative line that allows to stimulate children's imagination, as well as solve the problem of excessive uniformity of the environment. The stylistic originality of such objects has a semantic meaning not only for the children's playing environment, but also for the urban environment as a whole, which demonstrates the value of including such objects in the existing urban environment.

1. Introduction
The aesthetics of industrial style appeared intensively in design at the beginning of the XXI century, first in interior solutions, then in the urban environment and manifested by the inclusion of non-characteristic materials used mainly in construction or industrial premises. Designers copied various industrial objects, left open ventilation pipes, ceiling beams, brick and concrete walls without decoration. There was an element and deliberate processing of materials to create the effect of aging, as if time and weather conditions affected them - metal and other rough texture in industrial style can be frosted or with traces of rust, wood may seem raw, concrete textured, and brick worn.

In the urban environment of many industrial cities, industrial style has become an indivisible context for the formation of both urban architecture and environmental design objects. We assume that against the background of such an environment, children's game objects made in the industrial style can also be developed, acquiring a new semantic meaning for society and its users. The article first comprehends the possibility of using industrial stylistics when designing objects for a children's gaming environment.

2. Materials and methods
Intensive urbanization, the growth of automobile traffic and the development of IT technologies have
transformed the existing urban environment and led to the actual extermination of children's play space [3]. This situation is identical above all for modern industrial cities, in which industry is a key city-forming specialization.

The environment, with all its spatial components, has a significant impact on the development and maturation of the child, since children literally translate and master the information received from the adult environment into their children's world. In the case when the residence is an industrial city, its features are reflected not only in the environment of the city, but also in the way people live. From this it follows that the production component, being a formative factor of the environment, becomes the formative factor of human consciousness. The urban environment is not only a source for acquiring new information, emotions and a resource in socialization, but also contains many dangers. Therefore, the problem of the perception by children of the social-spatial environment of a megacity is important [16].

The works of A. Gryaznova [7] are devoted to the questions of the figurative component of industrial-transport objects in the structure of urban development. The author emphasizes that not only industrial buildings can be nodal objects of a spatial composition of a building, but also elements of small architectural forms contribute to the harmonization of the human environment [1].

The specificity of the redevelopment of historical industrial facilities with subsequent integration into the urban environment [4] has been studied, the modern principles of creating new industrial territories within the city are described, taking into account their greening and humanization, where it is emphasized that even technical structures can be combined as aesthetic and practical functions, possessing not only the necessary functionality, but also an attractive figurative component [13; 15]. Researchers are addressing the issue of converting old industrial areas [5].

Significant changes in the environment in industrial cities have led to the clear need to incorporate natural landscape elements into the game environment, in order to compensate for the excessive technological effectiveness and environmental man-made environment [21, 22]. The disadvantages of an artificial environment created by people can easily fill the natural component, which should be given its place in the projects of game spaces.

The problem of increasing the noise from motor transport, which influences the children's playgrounds and the surrounding area near the roads, is also rising. There is a need to create noise protection forest belts for recreational areas and, in particular, children's playgrounds in conditions of heavy traffic in cities [6].

Increasingly, the experience of the participation of residents in the urban planning process, based on joint decision making, is finding its application. The combination of competencies of both professionals and ordinary citizens was first proposed and tested by joint design expert Henry Sanoff [14].

As for the playing spaces, few of them have bright imagery and scenarios, as a result of which the physical activity of children decreases markedly, there is a greater distance from nature and inclusion in the industrial environment. Therefore, there has been an urgent need to involve children in the creation of spaces that, subsequently, will belong directly to them. The experience of children's participation in children's space planning initiatives is called the concept of emotional work. First of all, this will influence the further demand for playing space among children. Such practices have already found their application, but are not yet widely used [2].

As known, during the game, children learn about the world, so it is so important that the process of knowledge is open to everyone and every child can participate in it. It is necessary to equally take into account the needs of all children, both mobile and people with limited mobility, without exception. Unfortunately, in cities with heavy traffic and dense residential buildings, the realization of this need is significantly complicated, so the current environmental situation requires immediate resolution.

In the works of researchers, an increasing attention is paid to the theme of the development of an inclusive game, elements of which are simply absent in today's environment [18]. The issues of accessibility and usability of existing gaming spaces are affected [10].
The forms and types of games are determined by the space in which the game is organized. For example, the constant presence of a child in the room contributes to the transition to a passive lifestyle, which has a detrimental effect on his health, at a time when physical activity is especially necessary [20]. In addition, the game, as a process of cognition, affects the development of physical abilities, cultural education, as well as the moral maturity of a person, which indicates the need for her presence in the child's life [19].

Children should not be deprived of the possibility of being in play areas. It is important that the child may experience minor setbacks and distinguish between real danger and danger. It is in the course of the game that the child acquires a similar experience. Many researchers are concerned with security issues, which are conditionally divided into two types: hidden and obvious. At the same time, there is a proposition that the future belongs to those who have a real opportunity to overcome difficulties and go to success through failure [16].

The most acute shortage of development of high-quality courtyard spaces is observed in industrial cities with a developed infrastructure and heavy traffic, where insufficient attention is paid to the organization of the children's environment. At the same time, the environmental industrial component, as an integral part of the life of most modern cities, can become a leitmotif in the search for an original imaginative solution for playgrounds. Objects made in the industrial style will not only diversify the playing environment, but also convey the industrial spirit of the city from its positive side.

Recently, the playing environment has become predominantly passive in nature, primarily due to the excessive monotony of the playing equipment, the discrepancy between the playing area and the residential area, etc. Increasingly, we are witnessing the emergence of universal sports equipment, which does not allow compensating for the lack of playing spaces. We want to qualitatively transform the existing children's environment from the predominantly passive and devastated to a place of effectively-active stay of children, designed in the production style. The goal is to create a game object in production style with a flexible (or variable) set of game scenarios. By this formulation we mean the following: the game object does not have a clear, prescribed game scenario, which needs to be clarified; on the contrary, the child himself has the right to fantasize, play and invent. Accordingly, there may appear several variations in the playback of those or other game actions, which will represent a set of game scenarios.

The artistic imagery of objects, expressed in industrial style, makes it possible to demonstrate the industrial side of objects on the positive side - this is both an educational aspect for children and a point of attraction for urban residents.

3. The results of study
In the course of the project experiment, the following objects in the industrial style were designed: the play object “Degrees” and the playing zone “Skeleton”. This is manifested in the figurative component, structures and materials. Stylistics manifests itself in mechanisms, metal pipes, gears, arrows and other structural elements that are responsible not only for aesthetics, but also for the function of the object (Fig. 1). These materials are complemented by chrome-plated surfaces and glass, a replacement for which in our project proposal has become a dense polycarbonate, which is resistant to fractures, but at the same time may acquire a suitable abrasion. In modern reading, used in our offer of the playing environment, industrial style is inherent in the combination of coarse elements with elegant details of the decor. Therefore, we deliberately pursued the idea of making part of the construction fragments involved in the past, and leave other details of the composition intact, thereby playing not only on the color contrast, but also on the variability of materials processing. And the interest in various mechanisms emphasizes and completes the individuality of industrial stylistics.

The “Degrees” design is a geometric shape made on the basis of frame elements, the composition of which is complemented by a measuring scale and numbers on the railing resembling a protractor. The play object is a metal frame structure, the individual transparent and colored elements of which are made of monolithic polycarbonate. To implement the construction frame, rectangular pipes of 200 mm are used, as well as circular pipes of 50 mm in diameter, where the largest is the main supporting
element and the smallest is additional. Chrome and silver elements, which are almost always found in car fittings and vehicles, make it possible to emphasize production styling.

Due to the translucent sections of colored and matte polycarbonate, a feeling of lightness of the structure is created, despite the rather impressive size of the object.

![Figure 1. Playing object "Degrees". Author: Marina Protciuk.](image1)

The sleeve of the hill is intentionally divided into sections, two of which are made of transparent material - polycarbonate. Such a solution avoids the fear of confined space through the entry of daylight through colored material.

![Figure 2. Playing object "Degrees". Author: Marina Protciuk.](image2)
This effect can be achieved not only the greatest openness of the structure, but also to give
dynamics during descent from the object. The axis of the composition is a spiral staircase to the
second level, and the descent can be carried out not only on the hill, but also on the grid. The space is
also used under the playing form: the balls fixed on the ropes can be used as seats, and the ropes on the
frame of the structure under the sleeve create another obstacle that you can try to overcome. It is
obvious that the playing object without obstacles will be significantly distant from real life. If we take
into account the desire of children to conquer peaks, to overcome difficulties that they were not
originally capable of, such a game form will cause a certain interest in the knowledge of the world as a
child (Fig. 2).

The play zone “Skeleton” is a metal frame construction resembling the skeleton of an ancient
animal. In total, 5 types of frame elements take part in the design: 3 up to 3.5 meters high and 2 up to 6
meters high (Fig. 3). The composi-
tion is formed by repetition and alternation of existing elements, the
interaction between the elements of which is achieved by “bundling” the modules between each other
with metal pipes, to which, later, the rope net is attached.

![Figure 3. Playing object in the industrial style "SKELETON". Author: Marina Protciuk.](image)

You can enter the playing structure from several open sides, then the movement is carried out on
the grid, which has a variety of weaving, prompting to change the tactics of movement for
coordination in space. Processing, coating and painting of structural elements are also important from
an aesthetic and practical point of view. First of all, this is a safety issue: all welds and fastenings must
be properly treated or hidden. There should be no conditions due to which the child could suffer and
be injured when interacting with playing equipment. Secondly, this is the original color score decision,
which affects the positive image of the playing form as a whole.

The project used discreet colors with a concise inclusion of bright accents. It is also indicative that
not pure, the main, but complex color combinations of ruby-red with deep lilac and fragments of
grass-green color take part in the color solution. Deep black emphasizes and completes the graphic
composition. Elements of frosted glass and chromed metal only reinforce this style.

And completing the composition wind vane on the roof and lighting elements, designed in addition
to the play object.
4. Conclusion
The process of incorporating playing elements into the industrial context is local. It is necessary to take into account the most comfortable conditions for visiting the playground, its location and accessibility for users. In this case, playing objects are planned to be located in the square on the embankments of the Volga River in the city of Togliatti. It should be noted that objects made in the industrial style, due to their mobility and unique image, can be in the open spaces of any other city.

The aesthetics of industrial style is presented in the format of the design of the children's playing environment. The prospects for the use of industrial stylistics in the urbanized environment in general and in the playing environment in particular are demonstrated. The project objectives of the study were: to reflect the industrial spirit of the industrial environment, organically fit into the urban context and in the playing environment in particular are demonstrated. The potential for the use of industrial stylistics in the urbanized environment in general and in the playing environment in particular is demonstrated. The predominant feature of this playing equipment is the admissibility of its production in small batches, which indicates the potential future demand for such objects in the urban environment. The industrial style is presented in the format of the design of the children's playing environment. The practical novelty of the objects is expressed in the individuality of the artistic image and stylistic approach of the industrial orientation to the development of playing equipment, which indicates the potential future demand for such objects in the urban environment. The predominant feature of this playing equipment is the admissibility of its production in small batches, which preserves the possibility of including objects in the general urban landscape.

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