Formation of Colouristic Environment of Residential Area of Modern Towns and Cities

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**ABSTRACT**

This work deals with philosophical, artistic, psychological and ergonomic aspects of forming the architectural designer's colour solution of the urban environment. Examples of historical and contemporary attempts to solve this problem are given.

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**INTRODUCTION**

The increased intensity of colours' application in the life of a modern human being, the quantitative growth of artificial colour-carriers, the growing desire for increased colour environment, a clear preference for multicolours than for one-colour among consumers are the facts allowing to define the features peculiar to the situation existing in the colour area at the modern stage of our society. These facts are the result of objective processes taking place in the society, involving the social, cultural, spiritual and communicative factors of the modern civilization.

The problem of formation of a system of colour relations is becoming increasingly important in the 21st century, with the emergence of a large number of buildings and facilities in the cities, which functional purposes are unique, with use of the most up-to-date technologies, acquiring the new conceptual and philosophical content, the forms unusual for perception of images in the urban area and applying the principles of their system of colour combinations, the appearance and development different architectural trends within the architectural practice. Of course, it is enough to have two colours: the black and the white for recognition of the material objects and practical orientation in the world. From this point of view the wide range of shades perceived by the man seems excessive. However, the colour plays a more important role in perception of the world, rather than just an orientation in space. Spatial perception is complemented through the emotional one thereby endlessly enriching and complicating the categories of harmony and beauty. So the emotional impact of colour on mentality of the person acquires a status of the objective factor requiring to be systematically researched.

In this regard, it is necessary to employ scientific methodical supplements and clarifications on issues of arrangement of the entire colour pool of the town's item space. To solve the problem, one needs to have a comprehensive approach, with a profound analysis of consideration over the principles of colour arrangement of architectural ensembles, separate buildings and the whole range of architectural and artistic heritage of past generations. The colour and shape of the objects of urban area arrange the ensemble-type perception or destroy it.

The colour plays an important role in man's spatial orientation, creating a favourable psychological comfort, transmitting the functional content, emotional-aesthetic effect and bringing the unique architectural and artistic image into the spiritual and cultural portions of the society's life. Thus, the colour in the semantic field of post-modernistic interpretations of the urban architectural environment as the text has a symbolic and metaphorical meaning, in the high-tech aesthetics: it has the utilitarian-functional and visual-communicative one, and in the framework of ecological architecture it defines the aesthetic and psychologically comfortable side of the architectural environment. All this determines the relevance of the raised topic.

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**Major Part:**

Researches of physical, chemical and optical properties of the colour in the form where the theory of colour exists currently, was started by Johannes Wolfgang von Goethe (1749–1832). Since that time the colour science has made a great leap. At present phase, in our country colouristics is under study by psychologists (B.A. Bazyma, R.M. Frumkin, etc.), philosophers (A.D. Popov, E.P. Chernyshova, etc.), art researchers (N. Kosheva), ergonomists (V.F. Runge, Y.P. Manusevich, etc.) and other scholars in the most diverse branches of sciences and arts. In our work the greatest interest is given to the studies in the area of architectural designer's projecting. These include both the monumental, classical works by G.B. Minervina, V.T. Shimoto, A.V. Efimov, etc. and also relatively new works in this area by A.D. Popov, N.S. Sagoyan and others. Undoubtedly interest is given to the activity of Professor V.N. Odnozhiwkin, who makes multi-directional, directional and non-standard researches and experiments in the study of properties of the colour, which properties are of practical use in many of his creative papers and teaching methods for the students to become designers and architects.

Colouristics is the science on the colour in the architectural designer's projecting and is construed as:

- Harmonious, comfortable colour environment created by the controlling human impacts onto the material-physical environment. Holistic spatial colour field, where the man is dipped in, and which he transforms in accordance with his needs.
- A science on the colour environment extending the traditional knowledge about the colour within the chromatics in connection with implementation into the field of sociology, semiotics, information science, psychology and other related sciences.
- Activities of a colourist - specialist in the sphere of formation of the colour environment, satisfying the human needs, which activities combine the pre-project analysis, elaboration of the concept and specific colour solution [5].

The modern town and cities as a rule are concentrated in the area of town-forming enterprises. Especially it concerns the relatively young, founded within a hundred years period, towns, which appeared as a result of concentration of residential areas near the metallurgical, mining, machine-building and other industries. In the old towns, the new developments traditionally surround the historical downtown, evolving in accordance with the landscape features, functional expediency and social interpretation.

Proceeding from the above, the town is divided into the industrial and residential areas. The residential area is considered by N.S. Sagoyan as "a part of the urban environment", "an area for allocation of residential blocks and neighbourhoods, community centres (administrative, scientific, educational, medical, sports and others), streets and squares, serving the area of green plantations of common use" [8]. As a rule, for this purpose one uses the dry, high, well aired, exposed to the sun landscaped and irrigated territories of the windward side relative to the industrial areas and upstream the river with formation of necessary sanitary protection gaps.

The arrangement of residential areas and its elements in the modern city planning has many similar principles worldwide. The structure of modern towns and cities is the result of evolution of the architectural and urban planning practices for many centuries. It can be argued that the greatest influence on the planning of modern cities was exerted by the first half of the 20th century, when the principles of the quarter development in the residential areas of the towns and cities were developed. These principles were simultaneously developed in the 1920s and 1930s in the Soviet Union by such famous architects as L. Vesenin, S. Chernyshnev, N. Kolli, etc. as well as in the Western countries by architects K. Perry and T. Adams. The Soviet and Western architects treated the problem of the large city planning of as the most correct and comfortable arrangement of life and living of people who inhabited the territories limited by urban highways. Another problem, which was tried to be solved through zoning was the pursuit for deconsolidation of city centres.

A neighbourhood is the most typical dwelling district for the modern construction of the residential area and includes several residential blocks and institutions of the primary network of public services: shops, schools, kindergartens, schools, clubs and recreation areas [9]. The neighbourhoods of residential areas, according to the Khasieva, make up the fabric of the city, and the main transport and pedestrian thoroughfares determine the skeleton of the city. Based on such structural organization of the urban environment, it can be assumed that the structure and fabric of the city in different parts thereof should have different functional, social and psychological characteristics affecting their colouring solutions.

The Russian architects and designers of the last two decades have begun paying huge attention to the colouring solutions of interiors and facades of some buildings. Typically, these cover private homes or residential high-rise residential house or the corporate offices and shopping malls. It is worth mentioning the fragmentary and irregular natures of the architectural approach to colouring solutions of the urban environment in general, resulting that a holistic formation of the overall image of the colouristic design of the urban environment remains outside the sphere of interest of modern architects.

The commuter areas of the modern Russian towns and cities are mainly the successors of the Soviet times. The regular "hruschevka-type buildings" solved social problems which were the most urgent for the late fifties to the mid sixties of the twentieth century: providing the maximum number of citizens with individual housing. The typical bearing-wall buildings predetermined the dirty-grey concrete colour of the map of the Russian towns...
and cities for several decades. It is known that every colour has the power to influence and a specific nature of impact on the human being; physiological, psychological (emotional), symbolic (informative), aesthetic, environmental (formative - in the architectural and compositional solutions).

The colour is a powerful tool of influence, one of the most powerful factors influencing the psyche, mood, health, visual perception of the premises' size. The colour is the simplest and most valid way to change the perception of space, it enables adjusting the human conditions. That is why the vast majority of the Russian towns and cities are unfavourable for a comprehensible and comfortable life of people. On this basis, it is necessary not only to design modern cities, with regard to colour psychological, social, symbolic and aesthetic-imaging factors, but also to conduct a thorough analysis of the colour reconstruction of the already existing neighbourhoods.

In this regard, we can mention an interesting experiment of the small Northern town of Muravlenko (37307 inhabitants). In the beginning of the 2000s in that town, having its dominant regular wall-bearing construction, typical for the late eighties and mid-nineties of the twentieth century, there was a project implemented on colouristic reconstruction of facades in residential areas. Through use of the modern finishing materials, capable of resisting aggressive climate impacts, the facades were painted in bright, light colours that radically changed the perception of urban architecture and environment.

It should be noted that the small size and the geographical remoteness of the town from the centre had a decisive importance for success of that experiment. That area is in the zone of severe climatic conditions, and the inhabitants are mainly engaged in the oil production. Obviously, the desire to create a more favourable psychological and aesthetic environment for the inhabitants engaged in the hard occupations inspired the city authorities with that experiment. The result can be evaluated from different points of view. On the one hand, we can see a certain naivety and lack of compositional integrity of such reconstruction with the colour of the city environment. Some streets were reconstructed without accounting for "off-screen" perception, the effect of air prospects and relations of the architectural environment and means of visual communication. On the other hand, psychologically this environment was perceived quite cosy and positively contributing to more favourable psychological atmosphere in the city, exposed to serious environmental tests.

In the history of modern architecture, there are examples of non-standard approach in colour-shaping decorative-figurative solutions of the residential and public buildings. The first experiments were carried out during the heyday of Western European Modern age, and especially in the creativity of such master of the Spanish modernissimo as Antonio Gaudi. Using a rich tradition of ethnic colour approach, the brilliant architect created the unique urban spaces, forming the image of a residential area in Barcelona. The individual colour-shaping approach to each component of the architectural object, from a house in the downtown, to landscape products in Guelo Park, sharply contrasts to then current typical developments, specifying the humanistic nature of his architectural projects.

Not less interesting for our research is the ideological successor of A. Gaudi, the Austrian architect, Friedensreich Hundertwasser, who implemented the humanistic principles of architecture not only because of eco-friendly materials, biomorphic architectural plastics and proportions that are most harmonious with human perception, but also due to the individual approach to colour solution of the buildings' facades, interaction with the environment and original use of landscaping.

A house as interpreted by F. Hundertwasser is not just a housing unit or as Le Corbusier says the "machine for living". A house is primarily an individual living area, bearing the imprint of identity of the tenant and allows him/her to have a creative implementation of himself/herself in the first line through the colour artistic transformation of the urban environment's fragment owned by him/her. Such an approach can be considered to be unsystematic, breaking the integrity of the visual urban structure, however, the humanistic orientation of this approach is undeniable, which fact permits treating it as one of the areas of urban planning, architectural and designer's projecting.

**Summary:**

It should be pointed out that the perception of colour solutions in the urban environment is significantly different from the perception thereof in the interior. It is determined based upon such factors as:

- large sizes of open spaces, which stipulate a certain specificity of perception, caused by air perspective (blurring of distant views), conventionality of barriers of individual spaces and "off-screen" construction of a deep-space composition;
- complex function of the urban environment in the open space, which can be of utilitarian, social, symbolic and aesthetic burdens;
- landscape components of the volumetric-spatial structure of the town or city, from the nature of terrain and availability of water areas, to landscape gardening and horizon being the objective factors influencing the formation of the town or city's colour image;
- weather-climatic and temporary factors, because the colour perception of the urban environment depends not only on the daypart, but also on the season.
In addition to the above objective factors that affect the perception of colouristic environment of the urban space, we can identify the following elements of the urban environment, in aggregate providing an overview of the colour image:

- Road surface. Colour of asphalt on highways cannot be replaced, not only because of the high rate of wear and tear of the painted layer, but also in terms of the accepted standards of traffic regulation and road marking. Nevertheless, the colour-texture solutions of sidewalks assume an opportunity of broad interpretation thereby giving great options for aesthetic and information-communicative functions.
- Facades of buildings. Modern technologies provide a lot of opportunities for formation and reconstruction of the colour scale of the facades, both under construction or already existing facades. The most common are currently the technologies of hinged facades, finishing with decorative plasters and painting with structural paints. Glazing of facades also gets the opportunity of choice not only of the colour, but of the coefficient of transparency and reflection.
- Landscape products (LP) and landscape facilities (LF). Such elements of the environment as LPs do not affect the formation of the colour environment of neighbourhoods and blocks to the extent that the highways and facades do, but it is particularly the LP that is capable of "humanizing" the urban environment, giving image features, creating a favourable psychological atmosphere of meso-spaces. Landscape facilities: parking or stop complexes, local points of sale, etc. in the urban environment, play a role of city beacons, helping inhabitants and visitors to feel confident in the area, thereby impacting on their colour solutions.
- Landscape gardening. Green areas form the colour environment for the city depending on the season. The greatest impact of landscaping is drawn in autumn, when the foliage takes different colours, warm shades, and the lowest impact is shown in winter and early spring.
- Means of visual communication and advertising. Advertising is one of the most aggressive factors influencing the formation of colouristic perception of the urban space. If different advertising posters, banners and streamers affect mainly on the immediate environment, the information displays, advertising light boxes, signboards, displays and screens paint the surrounding objects in different, sometimes unnatural colours through glowing. The volume of advertising in modern cities becomes larger and heavier going beyond the limits of psychological comfort of inhabitants, so aggressive influence of advertising tools onto the colour perception of the urban environment requires a separate comprehensive research and adjustments of quantitative and qualitative share of advertising in residential areas of the towns and cities.

Conclusions:
Thus, the architectural and urban development activities are in need of a comprehensive use of colours - bearers of the semantic, emotional and aesthetic information, knowledge on their perception in space, formative action, semantics, their roles in the creation of artistic image of architectural works, district, town, city. Designing of the urban colouristic shall be included into the general system of artistic and architectural and urban design and shall be treated from the point of view of the system as a holistic, volumetric-spatial and colour designing, as an integral architectural and artistic work.

The set of colour challenges causes a real need for coordination of examining different phenomena of the colour, requires understanding of the colour problems going beyond the scope of many branches of knowledge and areas of activity. The role of colour in our lives is diverse, the colour is included into the structure of thinking, is a component of the volumetric-spatial environment, a part of material and spiritual culture.

REFERENCES


[13] http://color-tone2d.pp.net.ua/ - author's project of Professor Odnoshivkin V.N., the materials devoted to the foundation of the colouristic composition in the design, decorative-application, visual arts and architecture.