

Color solutions of mass housing in Moscow in the conditions of sustainable development of the metropolis

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Abstract. In the conditions of Moscow's sustainable development, the variety of facade solutions has expanded significantly. The object of the research were the transformations of coloristic solutions of residential development in the largest metropolis of Russia – in Moscow. The purpose of the research is to identify the peculiarities of the formation of the coloristics of the city at the present time. The specific features of color formation of foreign cities are shown, as well as the introduction of black in the facade finish of residential buildings in Moscow as a new expressive means of architectural techniques. According to the results of the study, the main four techniques of shaping the architectural solutions with the involvement of such a powerful influencing factor as black color have been detected. The first technique is characterized as a holistic-volume application of color for the entire building, when all the facades of a residential building are completely black, and architects work with such a building as a large “cube”. The second technique is the use of black as an underlay and revelation of a primary color. The third technique is the black color as an underlay that reveals and accentuates form-making. The fourth technique is the black color for creating a false facade. The results show that the first trend of absolutely black volume has a greater negative impact both on the urban environment and on the urbanites themselves. Two subsequent trends, with reasonable application, promote the revelation of architectural intent and are most appropriate. The last trend is rather contradictory, it creates the illusion of plasticity with highly questionable architecture. Keywords: white-stone Moscow, light tones, polychromy, black color, black as a trend.

1 Introduction

The color component of the concept forms an integral part of any architectural solution [1-4]. As for the space-planning decision of an architectural project or the design of a certain object, it is difficult to identify the predominance of any range of colors. Although various fashion trends exist where color preferences change from time to time, there are long-standing suppositions in architecture, which seem to be eternal: the ceiling is to be white, the

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walls are to be light, etc. However, the world around us is polychromatic and its color scheme is in perfect balance, with a huge number of colors.

Another thing is cities as a man-made environment for normal living. The very different conditions in which a particular city appeared, predetermined the architecture, the face of the city. Local conditions, traditions, technologies, and building materials have generated very specific city-planning formations. [5-8] For example, white and blue Santorini. Ochre and brown shades predominate in New York (Fig. 1,2).



Fig. 1. Color range of New York.



Fig. 2. New York. East River Quay.

Swiss Bern is peculiar in its color scheme, where most of the buildings located in the historic center have an olive shade (Fig. 3). The color choice of urban public transport acts as a contrast to it. The tramcars and buses have a complex crimson-cherry red shade in combination with the “olive” city (Fig. 4).



Fig. 3. Color range of Bern (Switzerland).



Fig. 4. Color of public transport in Bern.

2 Materials and Methods

The author has analyzed the development areas of Moscow. A comparative analysis of the coloristic development of the city in different periods was carried out, including with the use of regulatory documents [9-11]. The stages of change and practical introduction of new techniques of color formation of the city development have been determined.

3 Results

There is the current stereotype of Moscow. It is white-stone (Fig. 5). Even the walls of the Kremlin were white at some point in history. Most of the historical temples and churches are also designed in white.

All large-scale housing in Moscow tended towards light tones. Prefabricated construction offered facing materials that are mainly white, perhaps slightly tinted. Color inclusions and accents were not so significant to talk about their impact on the architecture. In the current situation, Moscow became surrounded by white-stone dormitory areas with individuality minimization.



Fig. 5. White-stone Moscow.

To some degree, this can be explained by the inertial movement: as it was white-stone, so it remains the same. It is partly due to natural conditions, when the city lacks light and sunshine. In some way, it can be attributed to cultural traditions: in Russia, light colors were always associated with higher standards of living and way of life.

In the current situation, yearning for the power of the color impact, Moscow has turned sharply towards polychromy. The boundary is seen very clearly between the white-stone areas of the pre-perestroika period and the polychrome development of the post-perestroika period (Fig. 6).



Fig. 6. Post-perestroika development of New Moscow.

The developed techniques of a space-planning decision of the dwelling have not been significantly changed. The techniques of creating a fairly comfortable dwelling have been developed. A typology has been added: apartments, studios and many other highly specialized dwellings appeared, which is generally driven by the market and demand. The architecture of present-day large-scale development has undergone a major transformation. The appearance of new construction materials and technologies enables to significantly transform the architectural environment of new residential areas. [12] The active introduction of the color occurs mostly, as before, in combination with white and light shades.

However, one of the latest trends is the active introduction of the finish having black color and other tonal shades close to black into large-scale residential development. A few architects used it in small quantities in public buildings, individual housing construction [13]. The use of black color did not guarantee the promotion of an architectural idea. The black color in large-scale housing construction had a “taboo” rank. Presently the situation has changed.

Both in the human body and the urban body, the use of something in excess quantity causes harm, the use in permissible quantities gives a better effect. The same situation applies to the introduction of black color in the urban structure of Moscow. Four main trends in the use of black color in the city architecture can be distinguished:

- holistic-volume, when all the facades of a residential building are completely black, and architects work with such a building as a large “cube”, regardless of any architectural details, in combination with other “cubes” of other colors, while the “cube” can have dozens of floors (Fig. 7).

- black as an underlay and creation of greater contrast, and revelation of a primary color (Fig. 10).

- black as an underlay, revelation and accentuation of form-making (Fig. 8, 9).

- black as the creation of a false facade (Fig. 11).



Fig. 7. “Beregovoy” and “Lyublinsky Park” Residential Complexes.

The first holistic-volume trend can definitely be attributed to negative examples. It is possible to guess some architectural concept if you look at such development (colored “cubes”) through an airplane illuminator. In close proximity, a black pile consisting of dozens of floors, even if there are other multi-colored buildings, does not contribute to psychological comfort.[14] Such houses are situated in New Moscow, in the residential district “Yaroslavsky” in Mytishchi, in “Beregovoy” and “Lyublinsky Park” residential complexes (Fig. 7), on Zvenigorodskoye Highway and in many other places in Moscow and Podmoskovye.

The next two trends, when applied moderately, significantly improve the architect’s task to create a bright and individual facility [15]. It is this trait, being an underlay for the revelation of the main thing, that contributes to the considerable introduction of black color into many architectural facilities [1]. For example, the residential buildings on Tyumenskaya Street are designed in such a way, where black color is introduced for the sake of contrast to white color and revelation of orange-red inserts.

On the 800th Anniversary of Moscow Street, the black color contributes to the active play of green and bright green tones. In the residential development near the metro station Spartak (Volokolamskoye Highway), “Ostrov” and “Simvol” residential complexes (Fig. 8, 9), the black color reveals the light form-making lines.



Fig. 8. “Ostrov” Residential Complex on NizhnieMnyovniki Street.



Fig. 9. “Simvol” Residential Complex.

And the last trend is due to the fact that some construction companies build absolutely lapidary boxes of residential buildings, which are devoid of any architectural details. Moving away from monotony is achieved by creating the optical illusions of facade three-dimensionality with the active introduction of black color, sometimes even in aggressive combinations, such as black and yellow, which is used to designate dangerous areas (Fig. 10).



Fig. 10. “Level Amurskaya” (Moscow) and “Yaroslavsky” (Mytishchi).

4 Residential Complexes

In general, it should be noted that the black color is a peculiar trend at the present time; besides the architecture of residential and public buildings, it actively proves itself in various sectors of life (Fig. 12, 13, 14, 15). There is plenty of it in the new terminal “B” at Sheremetyevo Airport (Fig. 11), in the new metro stations of recent times Savelovskaya, Rizhskaya (Big Circle Line), Govorovo; the photos of car parks are shown (Fig. 12); currently, the metro trains themselves of brand-new models and even a baby stroller can be absolutely black (Fig. 15).



Fig. 11. New terminal “B” of Sheremetyevo Airport.



Fig. 12. Car parks in the residential development of Mytishchi and “Ogni” Residential Complex in Ramenki.



Fig. 13. New model of the metro train “Moscow 2020.”



Fig. 14. New stations of the Moscow Metro.

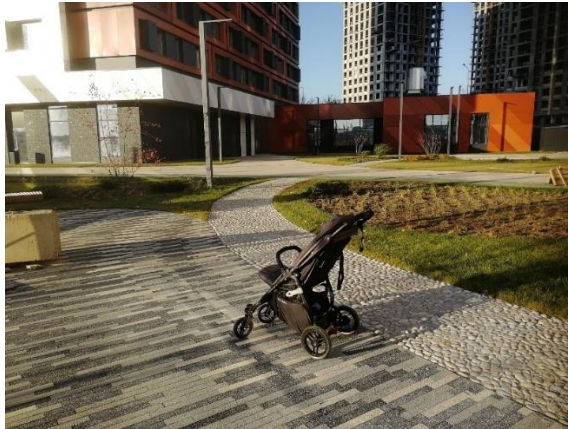


Fig. 15. Baby stroller.

5 Discussion of Results

The identified new trends in the formation of large-scale housing in Moscow with the introduction of more polychromy in the post-perestroika period and greater introduction of finishing materials of black color (and colors similar in tonal terms), in the recent period, are a definite request for reorganizing the environment and follow as part of worldwide trends. The black color has become popular in the recent period and, besides architecture, appears in all spheres of activity.

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