

A City With Vanishing Ambience: Virtual Architecture And Education To Help Repair Novokuznetsk's Glory

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Abstract The article proposes an interdisciplinary approach to solving the problem of the prospects of individual cities of the Siberian region. On the basis of culturological material, with the involvement of research in the field of architecture, the author analyzes the reasons for the loss of the city of Novokuznetsk of its former representative appearance. Among the factors that contributed to the city's loss of the status of a convenient, comfortable place to live, along with the economic and environmental components, the city's atmosphere, created, among other things, by the architectural landscape, stands out. Despite the fact that urban architecture still has undoubted attractiveness against the background of nearby cities, and Novokuznetsk has, so to speak, its own "face", nevertheless, some important "traces" in the cultural and historical heritage have been lost today. Thus, the article makes an excursion into the cultural and historical past of the southern capital of Kuzbass, which makes it possible to draw a conclusion about its worthy cultural potential, which can become the basis for the revival of its former glory and outline the prospects for further development. On the basis of research in the field of architecture and pedagogy, the possibility of "immersion" in the architectural atmosphere of the lost monuments of architecture in order to develop the ambient environment of the city is substantiated and a comprehensive model of such "restoration" by means of modern technologies is proposed. The concept of virtual architecture proposed by the authors of the article is interesting from the point of view of its contribution not only to local history, but also as one of the attractive, relevant and understandable for modern youth ways of immersion in the history and modern life of their city, cultural and educational leisure. The study, in general, outlines the development of one of the most relevant today multidisciplinary scientific areas at the intersection of pedagogy, cultural studies and architecture, contributing to the solution of a number of both theoretical and applied problems.

Keywords: ambience, sustainable development, Novokuznetsk, Kuzbass, architecture, culture, education, renovation, visual simulation, virtual tourism, university.

Contents

1. Introduction
2. Methodology
3. Results
4. Conclusions

Bibliographic references

1. Introduction

The city of Novokuznetsk (the southern part of Western Siberia, Kuzbass, Russia) is increasingly gaining a reputation as a fairly good place for temporary residence, but not the place for a sedentary life of a self-respecting citizen. Novokuznetsk with its ferrous and non-ferrous metallurgy enterprises is believed to be an ideal springboard for ministry appointed CEOs, Novokuznetsk is still valuable for people from the post-Soviet space of Central Asia and Transcaucasia as an industrial city with a relatively underdeveloped trade infrastructure. Novokuznetsk appears to be quite cozy as an educational "cradle" – there are many good schools in the city; the problem is no cradle can remain as comfortable for the body that grows.

Environmental and economic issues are of great importance, but they should allow the room for other agendas, too. Environmental and economic problems are common to all big cities elsewhere. Moreover, ecology has always been problematic both in industrial and post-industrial cities. And instead of shedding tears about the poor ecology and scarce economy, we suggest focusing on the aspects of urban life that can be improved by the efforts of expert groups, aspects that can obviously change Novokuznetsk in terms of its atmosphere, or *ambience*.

1.1. General notes

Before analyzing the atmosphere of the city today, it should be said that it is difficult or impossible to point to the date when Novokuznetsk ceased to be a promising and attractive place for permanent residence of educated and purposeful individuals. It can only be noted that Novokuznetsk of the times after perestroika for many years remained sincerely loved by the majority of citizens (in those days, no one would have thought of promoting social and advertising appeals like "I ♥ Novokuznetsk" in the media, on billboards and even in the form of temporary and permanent monumental structures).

The city was interesting to both metropolitan residents and foreigners. Echoes of this interest can be found in the materials of the Internet.

American journalist, publicist and public figure A. Parker Burroughs visited Novokuznetsk at least 5 times in the period from 1991 to 2004. He reflected his impressions of the city in the blog cycle "My Russian Affair" (Burroughs, 2008). Comparing the polluted air of Novokuznetsk with the air of Pittsburgh 50 years ago, Burroughs, however, notes the vibrant, friendly atmosphere of the city, the beauty of its squares and streets in summer, the magnificent panoramic views from the observation deck of the Kuznetsk Fortress, from the bridge over the Tom River.

Art critic and historian of material culture P. Bussler (Cuxhaven, Germany) visited Novokuznetsk annually during the 1990s and 2000s. Considering that the modern civil and office architecture in the center of Novokuznetsk is comparable to the European one, P. Bussler was surprised at the lack of thought-out architectural planning in a number of city quarters remote from the center (Witthohn, 2012, Ivanova, 2012).

The acclaimed Russian percussionist, composer, conductor and conservatoire pedagogist Mark Pekarskiy, who came to Novokuznetsk at the invitation of representatives of creative unions and the city administration in 2005, was very warmly welcomed by the audience at the beginning of the concert, but was forced to interrupt the performance, which took place in a landmark place – the sonically unique theater hall in the Palace of Culture "Aluminschik" – because of the jeering noise coming from the audience (Nemirov 2005).

According to the oral observation of Prof. A.V. Vashchenko (1947-2013), an internationally acclaimed folklorist and a recognized researcher of ethnic cultures (Mokletsova, 2012; Fedosyuk, 2015), Novokuznetsk was not like other Siberian cities that he happened to visit (Irkutsk, Tomsk, Khanty-Mansiysk, Tobolsk, Barnaul, etc.). First, the difference concerned the citizens he met in public places-streets such as squares, shops, cafes. Admiring the women, who appeared to be particularly well-groomed, considerate, intelligent, reserved, Professor Vashchenko could not help noticing that many men looked unsaddled and had furtive manners. Pointing to intelligent, receptive students with "the eyes of novice but committed humanitarians," Professor Vashchenko noted that there were always bored students at lectures who did not even try to hide their disappointment. Noting about the surprising multitude of athletic young people with confident movements and loud voices, the professor was saddened to see many miserable figures of the old people, struggling to make their way to the grocery store.

Admiring the scale and beauty of the Theater Square, the professor could not resist making puzzled remarks at the sight of the sculpture of a steelworker with a crowbar-rod inside the rotunda in the Garden of Metallurgists (1934): the steelworker was placed in the rotunda as a result of the reconstruction of 1990. The idea of the author (architect Yu. M. Zhuravkov), however, can be appreciated by a specialist who is familiar with the architecture of Novokuznetsk in general and can explain the steelworker inside the rotunda by the ironic desire of the architect to emphasize the love for neoclassic style that was typical of the city's ideological fathers (in fact, Novokuznetsk was called Stalinsk in the period of 1932-1961). When developing a single architectural ensemble on one of the central thoroughfares of the city with such a non-trivial history, the method of stylistic heterogeneity was considered appropriate by many.

But let's focus on the Garden of Metallurgists. On either side of the Garden of Metallurgists there are located the Modern Age culture heritage objects – the first Kuzbass sound cinema "Kommunar" (1933) and the Palace of culture and technology of KMP (Kuznetsk Metallurgical Plant) (1935). The building was originally built in the constructivist style, was later rebuilt and renovated in the spirit of the requirements of the time – with the addition of classical elements (Stalinist Empire style).

You can tell these buildings were lucky as many interesting architectural objects of the Soviet era avant-garde have either been lost forever (the First Kindergarten (1931), a complex of dormitories for the KMP workers (1934), the Young Spectator's Theatre (1936) and others); or are terminally ill and living out their last days: the Children's Culture House (1930), the building of the Siberian Metallurgical Institute (1933), the Hotel on the Upper of Colony (1936)

It can be taken as a coincidence that hard-working, thinking people (engineers, doctors, programmers, cultural and artistic figures) began to leave the city en masse in the years when the mentioned buildings ceased to be functional. Excluding (as was agreed at the beginning of the article) environment and economy as leading reasons, we can assume that people left Novokuznetsk because of the opportunity to live in another country (many had relatives abroad). Finding themselves in demand professionally, many decided to emigrate to Australia, Canada, South Africa. Some could leave because of the persecution of local organized crime, others – because of the desire to find a more sparing (climatically, socially and culturally) place to live in the sunset of their professional activity.

In recent years, the reasons for moving from Novokuznetsk to other regions (again, non-economic and non-ecological reasons) have become different. If you do not take into account the need to move after work, or the inconvenience of working in a region located in the Asian time zone for those who are forced to work synchronously with the European head offices of companies, the problems of higher education and health come to the fore. Higher education, of course, should give the residents of Novokuznetsk a real chance to find their professional place in the post-industrial world. Health care, in turn, should be effective in Novokuznetsk so that seriously ill people of any income have a chance, firstly, to survive and, secondly, to return to a full life.

But let's assume that the current state of the architectural economy of the city has to do with the migration moods of its residents. Could architecture contribute to a decent professional, academic, and physical existence, could the path to well-being pass through the dimension of architecture?

2. Literature review

In the past decade, much was said and written about the sustainable development of everything – natural resource-intensive industries, the urban environment, society, and the individual. But, as far as we know, no one has discussed the sustainable development of the ambient environment, i.e. the sustainable development of historically composed intangible properties that ensure the attractiveness of the place (despite the harsh climatic conditions, environmental problems, and relative poverty of urban budgets).

Ambience, ambiency within or outside the sustainable development paradigm, has been discussed in the works of researchers from many fields of knowledge, from sociology to cultural philosophy. So, based on the vision of ambience as an important component of urban atmosphere, the French scholar T. Griffero suggests an atmospheric approach to solving a number of problems of urban civilization. Thinking in line with the theories of new aesthetics and new phenomenology, T. Griffero explores the factors that are involved in the formation of the impression of the city, the ability of the city to become an image – “imaginability”). The scientist attaches great importance to the factor of development of urban space by inhabitants, their desire and ability to cultivate the so-called immersive properties of cities (Griffero, 2013). Griffero's idea of the urban atmosphere as a cultivated property of the city is quite consonant with other authors' search for ways to change the image of the city over time, including relevant humanitarian theories and developments of creative intelligentsia from the post-industrial educational environment, in particular – the project of creating a virtual architecture. Research was conducted in the direction of solving both conceptual and technological issues (Deeva et al., 2020; Cherednichenko, 2018).

It is known that virtual architecture is an actual type of architectural experiment aimed at the formation and determination of atmospheric properties not as an objective given, but as a product that acquires features in the course of receptive activity. This is the message read in G. Chelkoff's research paper (Chelkoff, 2018).

The article by P. Chebotareva and N. Rask is a study of two more aspects of the urban atmosphere. The first aspect concerns the intersection of natural, architectural and social environments as a condition for the formation of atmospheres. The second aspect concerns the potential that the architectural environment has in terms of attracting inhabitants to the atmosphere as an elusive “reality”. Accordingly, architects can encourage the inhabitants of the urban environment to research human behavior within such atmospheres, form relationships between the individual and the environmental. The researcher' hypothesis is based on the ecological theory of perception, ecological ethics and the principles of modern experimental architecture. In the course of their study,

P. Chebotareva and her co-authors used narrative material obtained during a field study of the urban environment (Chebotareva et al., 2018).

Further, architecture and pedagogy form a symbiosis in the works of V. Lebois and D. Laburthe on the possibility of teaching the sensory experience of architecture. According to the authors' reasoning, only action and bodily movement make it possible to immerse yourself in the architectural atmosphere. The interaction of the body with spaces has its stages: the stage of exploring the atmosphere through physical exercises designed to hold the attention of students, the stage of ensuring the results of research through the design and implementation of the embodied representation, etc. (Lebois et al., 2018). As a result of the analysis of experimental work on body immersion in the space of the Malraux multimedia library of masters of the Higher School of Architecture of Strasbourg (France), the authors come to recommendations on the use of techniques of body interaction with the surrounding architectural space. The authors call "active pedagogy" the approach, centered in the physical exploration of architectural spaces.

Finally, scholars K. Demers and A. Potvin write about the importance of knowledge about the historical forms of the urban atmosphere for an objective multisensory interpretation of its current state (Demers et al., 2016). When reporting on the physical environment laboratory, which was conceptually developed and then built and populated in the province of Quebec (Canada), the authors have in mind a full-scale changeable structure. The laboratory experiment is aimed at filling the shortcomings of digital modeling of changing urban spaces, as it includes the study of the "experience" of historical and typological forms of the architectural environment by people inhabiting the laboratory space. In the course of the experiment, scientists try to link the theory of the environment with the real complexity of its multisensory "experience".

3. Methodology

2.1. Pedagogy and the "discovery" of architectural environment

The history of architecture in Novokuznetsk has it that before becoming mundane, uninteresting, and ultimately inconspicuous or out of place in a changing urban environment, many architectural objects including standard ones live through a period of "glory", defining, at some time stage, the identity of individual streets, neighborhoods, parts of the city. Our task is to recreate the historical atmosphere of a number of topoi in the city by means of a virtually constructed historical and architectural retrospective in those periods of time when architectural objects (for example, the cinema "Kommunar", or the Palace of Technical Creativity of the KMP) set the architectural tone for their surroundings. Next, we will try to reconstruct the historical sensory complex associated with the perception of the urban architectural environment by people who were young in the past decades. The perception of the urban architectural environment, based on an in-depth retrospective knowledge of it, can and should differ from an unbiased, superficial perception. The question is how and where most citizens can acquire such knowledge.

Approaches to the problem have already been outlined in the studies of the authors mentioned in the literature review above.

Returning to the above-mentioned study by V. Lebois and D. Laburthe, who described an experiment on teaching the sensory experience of architecture by means of "active pedagogy" (Lebois et al., 2018), it is necessary to think about how the architectural space of Novokuznetsk can be mastered by young people of the modern generation. If we take the axiomatic suggestion about a young human body with its sensory advantages being a better tool for studying architectural reality and urban atmospherics than computer simulations of objects and processes for the starting point, next thing we do is ask: why does higher school pedagogy make so little use of the natural tendency of young people to keep to mobile, dynamic patterns of behavior? And, secondly, if we really believe that the physical and sensory experience of architecture can become a full-fledged pastime for the young, why should we re-invent what had once been invented and play down the value of the approach suggested by V. Lebois and the co-authors?

Indeed, the discovery of the architectural space with the help of poses, gestures, dramatized imitation of typical situations associated with collective movement inside and outside the buildings can contribute to the formation of an empathic attitude to the city, its architecture, its history, its everyday life. French researchers chose the Malraux media library building as a venue for a series of experimental classes on the physical development of an unfamiliar architectural space and establishing contact with the present visitors and employees of the media library. The initiative research group from Novokuznetsk, with appropriate grant support, could use functioning public institutions located, for example, in buildings of the industrial avant-garde era. Having gathered a team of teachers

from different academic subjects – architectural design, social psychology, anthropology, physical culture, dance, we could start the experiment on “sensory mastering” of architectural reality and make many fields of cognitive experience intersect as we go on.

2.2. In the nearest future

From the very beginning, it is important that students could see the efforts the project developers make, either in education or in architecture. To identify and, later, brand a city’s ambience is not at all an easy thing to do. The architects and the educationalists can hardly cope with such a task without the help of city and regional authorities, as well as sponsoring entrepreneurs. The more co-efforts are made (reconstruction of architectural complexes and zones, tourist reconstruction of industrial zones, turned into open-air museums), the more likely it is that Novokuznetsk will regain its lost ambience (Mendgen, 2007; Drozhzhin, 2018). To contemplate the past through the prism of the present, to call the past to witness the process of survival of a building, a quarter, a square – that is what the younger generation needs today.

Realizing the impossibility of direct application of German ideas and German experience of the 1990s to the transformative restoration of the atmospheric environment in a Russian Siberian city in the 2020s, we are forced to strengthen the pedagogical aspect of the study. It is hardly possible to form a certain set type of personality in a short time in order for young people to stop leaving for Novosibirsk, St. Petersburg or Kaliningrad, and stay in Novokuznetsk and its surroundings and work for regional employers. But if our goal is to encourage young people to stay in the region, or to prevent massive outflow of university-age youth, we should further understand the pedagogical foundations and psychological essence of what we call today "social activity" of young people. This is the future stage at which our research has a chance to take a more constructive form.

4. Results

3.1. Discussion

Correlating what was suggested as relevant from the point of view of opening, maintaining and changing ambiances in foreign studies with the material directly related to Novokuznetsk, it should be said that the city has an objective chance to become one of the most interesting places in Siberia, having everything necessary to launch the branding process today. Let's start with the architecture. As mentioned in studies on the architecture of Novokuznetsk (Blagynykh et al., 2020), constructivism can be considered the architectural style that has always contributed to the uniqueness of . Constructivism as a philosophical concept, a style of thinking (not just an architectural style) is surrounded by a certain mythology, and the involvement of mythology in the emergence of atmospheric properties of a place is difficult to overestimate (Weil, 1999).

1920-30-e is the period of formation of the New Kuznetsk (Cherednichenko, 2018), the beginning of mass housing construction where embodied the basic principles of the new thinking of the time – saving materials, the erection of buildings from prefabricated parts, and, most importantly, the idea of a healthy home, taking into account psychological characteristics of the space, solar exposure, colours and shapes, compensating, thus, the scarcity of external appearance.

All over the world, buildings of the constructivist period are treated with awe (six monuments of residential architecture of the 1920s in Berlin were included in the UNESCO World Heritage List in 2008). This is confirmed by numerous exhibitions held in Russia and Siberia together with the Goethe Cultural Center: “Utopia Incarnate. New architecture of the 1920s. Russia and Germany”; “Life in the World Heritage Sites of the 20s”, etc. The main purpose of the exhibitions was to compare the architectural and urban planning concepts of residential areas of cities designed by German, Italian and Soviet architects. One of these traveling exhibitions “Life in the monuments of modernism” was held in Novokuznetsk on the basis of the Siberian State Industrial University in 2009. The objects of Novokuznetsk fit well into the cohort of constructivist buildings.

In the urban atmosphere of Novokuznetsk, there are still buildings that, according to experts, present top interest from the point of view of constructivist architecture and the history of the Soviet avant-garde, but they require immediate attention as objects in need of salvation. Unfortunately, some of these objects – as mentioned in the Introduction – are lost forever. For example, the First Kindergarten (demolished in 2018), according to some experts, was designed by the famous Margarete Schütte-Lihotzky, the first Austrian female architect, master of the European avant-garde of the twentieth century (Blagynykh, 2018). The authorship of Schütte-Lihotzky has been proved. It is her special attention to designing children's institutions, it is certain similarity of the First Kindergarten to the objects Schütte-Lihotzky designed in Europe. The decisive argument though is the presence of the surname

of Schütte-Lihotzky in the German directory of the architects who participated in the design of socialist Novokuznetsk as part of Ernst May's group: Schütte-Lihotzky is listed there as the author of "Kindergarten" in Sotsgorod. (Lizogub, 2017). Another example, a unique engineering object of the late 20s – Blast Furnace 5 of the Kuznetsk Metallurgical Plant (dismantled in 2012) – the architectural object that closed the prospect of Kurako Avenue, one of the main thoroughfares of the city. Now the historical panorama is deficient.

The hotel on the Upper Colony residential district is one of the monuments of Constructivism, the first hotel in the city built to accommodate engineering and technical workers of the Kuznetsk Metallurgical Plant and foreign specialists who visited Novokuznetsk during the first "five-year plans". The hotel has been closed for many decades. It will probably soon be demolished too – frozen, its windows broken.

3.1. Visualizing the past

No doubt, losing the constructivist architecture in the city, we lose the city's history. History lost, we will fail to return our glorious past. Past lost, the urban atmosphere will lose authenticity. Constructivist buildings such as the First Kindergarten, the Upper Colony Hotel, the building of the first university in Kuzbass – the Siberian Metallurgical Institute – and others did contribute to the atmospheric identity of Novokuznetsk. It is difficult to say how the disappearance of these objects will affect the image of the city in generations' memory. But if loss is inevitable, in what dimension could we restore the historical, aesthetic and moral essence of the image?

The following stages of the revival of the urban atmosphere are suggested:

- study of the atmospheric properties of Novokuznetsk at the current stage, culminating in the creation of an atmospheric map of the city;
- visualization of disappearing architectural objects (3D models, videos);
- creation of a program of architectural renovation of historical attractions (Fig. 1)
- creation of a program that makes it possible to carry out virtual walks around the city.

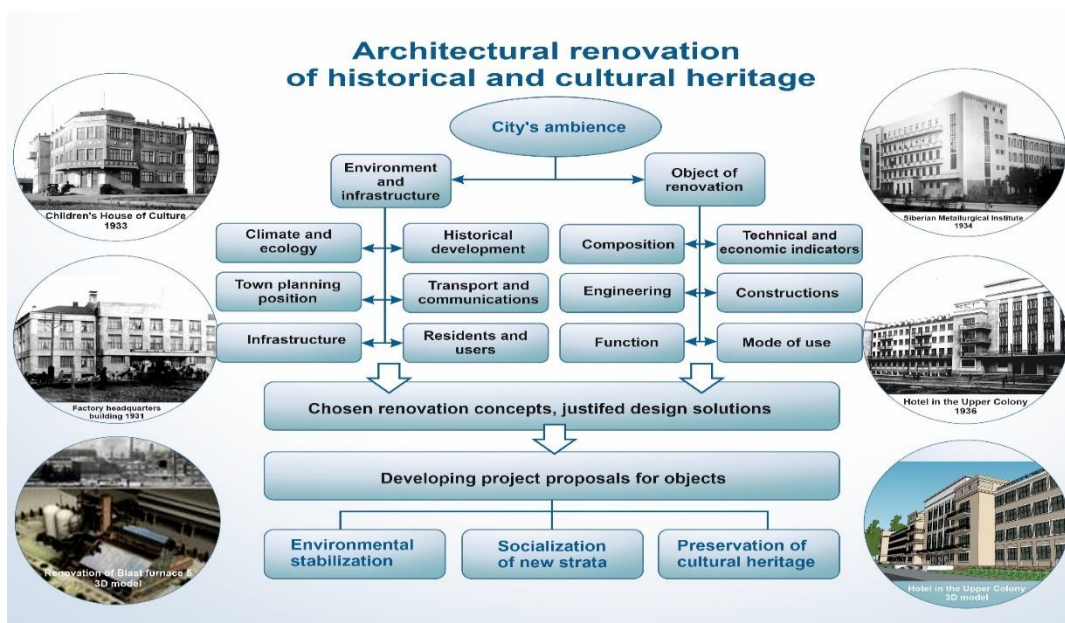


Fig. 1 – Architectural renovation of historical sites

Disappeared buildings can be recreated using virtual architectural reality. In the modern sense, virtual reality is an interactive environment that is technically constructed using computer tools to operate objects similar to real or imaginary ones, based on their three-dimensional graphical representation, simulation of their physical properties, and their ability to influence the environment.

Virtual reality also involves the creation by means of special computer equipment (helmet, glasses, suit) of the effect of human presence in this object environment (sense of space, dynamic sensations). Digital technologies allow you to involve not only the architect, but also visitors in the process of recreating and changing an architectural structure, as if extending the virtual design process to the stage of operation of the recreated building.

We can say that architecture is always virtual in philosophical terms: it connects the virtuality of imagination with the reality of vision.

Further, based on what is taken for granted today (Novokuznetsk is becoming less and less interesting for young people), an academic study of the social and cultural factors that stimulate the trend is planned. Going over the hypotheses, we can already talk about the lack of sufficient background knowledge in the field of local lore and regional studies, the specifics of the social and communicative behavior of the average young Novokuznetsk resident, the lack of receptive skills and the ability to artistic self-expression.

5. Conclusions

In the course of further research of the ambient environment as a new opportunity to draw attention to the history, traditions, and prospects of Novokuznetsk, it is an interdisciplinary approach that is useful. Interdisciplinarity, which takes the form of an infusion of the subject areas of the history of architecture, practical pedagogy and applied cultural studies within the framework of this research project, becomes the scientific space in which one can begin to build a theory.

Beauty is in the eye of the beholder, as an English saying suggests. To feel the vibrations of the grandiose past in something that does not look one hundred percent attractive today, you need to acquire an inner vision. Nature does not give such a vision to everyone. We believe that virtual architecture and pedagogy will help young residents of Novokuznetsk to acquire such a vision.

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