

**RPTSS 2017**  
**International Conference on Research Paradigms Transformation  
in Social Sciences**

**INNOVATIVE APPROACHES OF LANDSCAPE DESIGN IN  
SOLVING COMFORT PROBLEMS INCREASING URBAN  
ENVIRONMENT**

N. Bauer (a), L. Shabaturova (b), O. Iatsevich (c)\*

\*Corresponding author

(a) Tyumen industrial university, Tyumen, Russia, nbauer@list.ru +7 922 488-91-82

(b) Tyumen industrial university, Tyumen, Russia, Lnshabaturova@mail.ru, +7 905 858-54-79

(c) Tyumen industrial university, Tyumen, Russia, maru-safronova@rambler.ru, +7 982 943-13-91

*Abstract*

The article is devoted to an actual problem of design innovation development, studying the signs of novelty of design solutions, changing stereotypes of the urban environment formation as an ecological system, providing conditions for the people's productive life, making it more comfortable and beautiful. For the solution of environmental problems, it is necessary to apply a set of interrelated technical, social, environmental, aesthetic and other measures. It is useful to highlight in this regard that the innovative approaches of landscape design are examined for creating human's stable life environment full of creative, spiritual, attractive, safe, harmonious and comfortable things. Authors stress the idea that the basis of prosperity is the individual citizens' culture. The technocratic imbalance in the formation of a sustainable cities' environment contributes to the serious environmental and social problems. Only the creative transformation of nature is a way of revealing the essential forces of a man, the realization of his nature, potential and culture. This position gives one the opportunity to take another look at landscape design, seeing it not in the narrow sense, as the part of the project activity, but as an innovative and versatile approach to the organization of natural and anthropogenic components' interaction of the human environment, pursuing the main goal – the creation of highly comfortable the semantic subject-spatial environment of man.

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**Keywords:** Innovative approaches, sustainable environment, open spaces, dynamic and informative intentions, design.



## 1. Introduction

Evaluating the results of people production activity in our country in the twentieth century, Nikolai Shmelev wrote in his article: "...the ruined rivers, the mutilated land, numerous industrial monsters, not producing anything but the giant rubble of useless weapons". It was not done for a person; it was against humanity. (Shmelev, 1998). Therefore, in the early twenty-first century, thoughts and plans for the improvement of the land are particularly relevant. In 1992, The UNO conference on environment and development (UNCED) in Rio de Janeiro proclaimed a new strategy of world development - sustainable development strategy. Man of the new Millennium must be a full member of society, that is, he must live in harmony with himself and with the surrounding people and environment.

The Russian philosopher A. S. Akhiezer characterizes the urbanization of the country "not only by growth, size and number of cities, but primarily by the formation and increasing spread of urban lifestyle and culture" (as cited in Voprosy filosofii, 1998). Ignoring this fact has led to the technocratic imbalance in the formation of a sustainable cities' environment in Russia, which contributes to the serious environmental and social problems. An increasing number of the urban environment's specialists are coming to the logical conclusion that the basis of prosperity is the individual citizens' culture. It is noted that nano-technologies are arising in the cultural, university town, and can not appear in small towns. The Japanese drew attention to the fact that the quality of production of any industry depends on the aesthetic education creating these products. Therefore, taking the experience of the 20-ies of the last century (the Russian VKHUTEMAS, the Bauhaus German), have made it the public domain.

## 2. Problem Statement

Compliance with human high culture leads to its harmony with the outside world. "To live in harmony with nature", as articulated in ancient philosophy, stays true in the broadest sense and in contemporary situation. A. Schweitzer wrote many years ago: «I am life that wants to live among other lives" - which expresses "the ethics of reverence for life" (Schweizer, 1992). The process of urbanization, the urban population enlargement contribute to the erosion of traditional culture and to the formation of new technization culture, new values.

The status quo in the ecological state of the biosphere is largely determined by cultural marginality of modern humanity. There is a need in solving culture's problems, the success of which provides the solution of environmental problems. The creation of new values and ideals, the realization of a new meaning and the man's place in the world, a new vision and a new culture, developing of new technologies and new interactions with the surrounding world are our task; otherwise, future generations will not be able to "live among the living", that is, among the natural environment.

Without nature preservation and transformation, the further society's existence is impossible. But by transforming nature, its generating force can not be weakened. Only the creative transformation of nature is a way of revealing the essential forces of a man, the realization of his nature, potential and culture. The love to nature and the creative transformation allow harmonizing the relationship between man and nature. The environmental aspect of creative transformation aims to harmoniously integrate human cultural activities into the natural environment (Potapov, 2013).

### **3. Research Questions**

The modern person's main task, as the main task of landscape design, is to make the Earth a beautiful and safe home. One must remember Dostoevsky's words: "Beauty will save the world!" However, it will not happen by itself. It is clear that one needs in this aspect highly qualified and socially responsible professionals in the field of landscape design. Residents should relate to the urban environment not as to something ready and given, but as to a space on which it is possible to influence in accordance with nature. The implementation of landscape design for the humanization of the environment gives the person a chance to live in a comfortable urban space with environmental sustainability, which implies the ability of nature to heal itself.

### **4. Purpose of the Study**

Landscape design can be defined as project activity that has a cultural-communicative function uniting in its structure professional and scientific knowledge based on the understanding and solutions of human problems. The development of forming innovative approaches is due to understanding landscape design as a unifying cultural sphere of the modern world.

Design, according to Nelson (1971), is first and foremost free art, a mean of human's formation values covering social and natural environment.

Maldonado (1965) reveals the features of design as a social phenomenon, active social force affecting people's minds and the organization of the environment. He connects the design with the fate of human culture treating as a new form of activity that enriches contemporary culture.

Herbert Simon identifies social and cultural components in design. He believes that "anyone deals with design, devises a course of action aimed at changing existing situations into preferred ones" (Simonds, 2006).

Design has a shaped nature; it has "the ability to think in wholes, systems, to see the universal, transcendental in the idiographic sensual form" (Zelenov, 1987).

Socio-cultural potential of the design is contained in its possibilities preserving the society's cultural values, naturally entering the sociocultural environment of the latest technology achievements. Therefore, the design represents the unity of material and spiritual society's culture where innovations are the result of human creativity design.

### **5. Research Methods**

At the present stage the theme of lifestyle objectifying in the urban environment, became the focus of methodological, philosophical, axiological transformations which are experiencing changes done by a design culture. A new tactic environment's formation is aimed at achieving the authenticity of a person's lifestyle. This implies the creation of environmental situations allowing the person to withdraw from various social roles, appear genuine in communication, which can be characterized by thoughts and emotions.

Design culture needs to make the transition from tutoring position to personality-oriented projecting, understanding the needs and requests of the person and design object as a fragment of reality, surrounding

life world using participation of the future consumer during design processing. There is a great need in breaking away from traditional methods and prototypes for solving design tasks. The original design concept is important, based on innovation but with maximum preservation of the natural environment and preserving "spirit of place".

The actual task of ecological renovation of the existing cities, which provides the establishment in cities, is not only conducive to human life environment (providing healthy and safe living conditions, a harmonious combination of human-created social and engineering infrastructure and preserved nature), but also to cities, comfortable and beautiful (Anthology of world philosophy, 1970).

Axiological rationality or, in philosophical tradition terms, sophistication is a limiting case and a sample of all other rationalities. It is one of the important, though rarely directly observed, qualities of design culture. In historical-philosophical contexts, this understanding is indicated, in particular, by the contradistinction of sophistication/technique, (Zelenov, 1987) mind and reason, wisdom and common sense. In cultural terms, it is the opposition of culture and civilization. In the aesthetic context, the value of rationality is also known as the "value of justification and perfection" (Augustine, 2004).

The process of gradual transformation of the architectural composition of the city in environmental one is gaining momentum: mass consciousness forms a new attitude to urban aesthetics, when beauty is seen not in terms of space and monuments but in the perfection of resolution inheriting in the city's conflicts or preventing them. First of all, taking a positive environmental balance of all sensations into account, starting with basic comfort steps, using all possible means of transport and all kinds of modern communications lead to generating of high spiritual values.

## **6. Findings**

### **6.1. The problem of improving the comfort of the urban environment**

In the methodology of the urban design some years ago, specialists relied on the concept of core factors needed for industrial production: the technology requirements of these industries indicated the nature of the functional territory's zoning and the usage of its natural resources based on the required amounts of labour determined housing needs and the institutions of socio-cultural sphere. This method increased the attitude to the city as to a secondary, dependent part from industrial production formation not having its own historical, cultural and ecological values.

The urbanization's impact on the environment is very diverse. Being global, this problem can be solved if all aspects will be taken into account when exercising any particular urban setting. In urban areas in the relationship between man and nature, two directions are manifested. First, the city with its dense buildings and a concentration of industrial enterprises has a destructive ability in relation to the natural environment. Secondly, it is the scientific-technical and socio-cultural level of large cities' development which can be a fundamental basis for the improvement and protection of the urban environment improving its sustainability. Citizens' culture is manifested in the ability of the urban community restoring the broken and creating new conditions of comfort and safety of the urban environment.

Nature having limited capacity to resist human-induced is not always able to resist the technological expansion that often leads to its degradation. The lack of personal culture in maintaining a reasonable balance with nature, succumbing to the euphoria of victories over it, turns up in uncontrolled destruction of

natural landscapes. There is an urgent need in maintaining and increasing the natural components of the environment, i.e. in the implementation of the system of landscape's reconstruction measures in the open city's spaces using new environmentally friendly approaches.

Analyzing fragments of the urban environment, intended for the implementation of certain functions, let us conclude that the lack of development of pedestrian connections, the disordered boundaries between vehicular and pedestrian spaces, shortage of play spaces for children, adolescents and adults, the lack of choice of service areas and communication complicate human interaction with the surrounding living environment, worsening the quality of life.

Chaotic use of territories is the cause of the ecological sustainability violation in the urban environment: compaction of the soil over root system of vegetation in natural places of spontaneous car parking, irreversible changes of soils due to informal movement of pedestrians, destruction of vegetation under the influence of vehicle exhaust. Nonpoint runoff of precipitation complicates the operation of transition pedestrian paths, complicates the usage of rainwater for the development of biomass.

The current practice of the urban environment beautification often leaves unresolved problems in the perception of objects from the point of view of a person's cultural-emotional responses. The lack of equipped places for recreation in the natural environment, the predominance of grey concrete and asphalt surfaces, a dull kind of haphazardly planted many years ago different kinds of vegetation - all of these add a lot of negative emotions to the human condition. In any city, except for a very limited area of the central district, the spiritual content of the urban space has gone, which was materialized in folk festivals, fairs, celebrations and exhibitions. Favourite places filled with symbolic images should appear on new urban areas. A natural accent should be laid in each fragment of the environment by means of landscape design distinguishing this object from others due to the positive impact on the person's psycho-emotional state. There is a great need in restoration of old and creation of new landscape's key elements inspiring cultural landscape.

One of the most common problems of the modern city in our country is the lack of artistic expression and artistic intent, which should be expressed by its brand. Culturally artistically depleted urban environment does not cultivate and contribute to the formation of modern citizens' artistic taste.

## **6.2. Innovative approaches to improving urban's environment comfort**

Engineering is not only the creation of the project and the departmental anonymous implementation of it. Design is at the same time a shared conceptual space, a flowing action of a project conceptualization, project discussion, critical reception and managing this project, having impact on the user's lifestyle, the socio-functional and object-spatial environment, called recently by a special term "innovation".

Innovation, in respect to the design object, is the impact on this project that undergoes different changes in the course of the projecting and which will be forced to adapt to the user, not experiencing his life without any changes, but through symbols of some life concepts, professed values, meanings or even through the prism of life existence.

Today, a design innovation studies the symbols of design solutions novelty; it is not accidently that in the design, there is a challenge concerning development of a professional design critique, based on the

ecology and axiology project; a project informatics is being formed seeking to streamline the design sector and make it predictable and manageable (Aurelius, 2011).

The realization of the fundamental importance of the concept of cultural landscapes conservation oriented to protect the values associated with the natural elements and their spiritual heritage, their authenticity and integrity, as well as with genius loci – the Genius of the place, is currently new. Genius loci covers the most important components residing in the centre of people's attention, such as a sense of place and unity or the cohesion of society, cultural identity and cultural diversity (as cited in Voprosy filosofii, 1998).

In design practice, it is necessary to strengthen the narrative structure and plasticity of architectural and design forms. The basis of the spectacular design solutions should be the synthesis of design and artistic ideas. Examples of thematic design are projects of an emotional intense form, a large-scale sculpture in the urban environment (pleasure gallery B. Tschumi in the Parc de La Villette, Paris).

The designer vision of the object gave rise to a phenomenon of design culture as exteriorization and interiorization – the saturation of the interior of the exterior forms and the removal of interior objects in the urban environment, the effect of the dissolution of architecture into the environment. It is due to the fact that these compositional methods of organizing interior environments are transformed. The transparent building's walls hide continuation of the scenery reflecting the landscape, which creates an optical effect of dissolved space. The notion of interior as a closed space is being dissolved. For example, in the Gallery of the Cartier's Foundation in Paris Jean Nouvel, the interior is the Park surrounding the building. Such plastic compositions qualitatively change the nature of the environment.

Today and thousands of years ago, the main mission of the plants has not changed – they continue to pose health, comfort and beauty. But the requirements of rational space organization have been greatly increased. Improvement becomes both philosophy and industry. The city does not have to be grey and boring. Landscape architects have a strategic objective to make the city so beautiful that every neighbourhood would be pleased with their own variety of colours featured in a special style. To achieve the goals one cannot do without modern technologies and materials, qualified specialists and irresistible desire of each resident to make their city beautiful.

Objectives of city improvement should not be limited by devising driveways and car parking, fencing and installation of gates.

The formation of residential areas approach brings together a whole range of issues: planning organization and zoning, architectural and landscape colours, green spaces, flower decorations, vertical gardening, geoplastics, small architectural forms, lighting, street furniture and equipment, holiday decorations, sculpture, water composition, etc (Simonds, 2006).

Orientation on the environment humanization of the majority of the population predominated the artistic and creative content in environmental objects. Any scientific analysis like any project begins according to the laws of art, as an account of events, the story from the first person. In design practice, it is necessary to strengthen the plot. The basis of compositions spectacular design solutions is the synthesis of design and artistic ideas. These are the thematic design projects made as large-scale sculptures in the urban environment (pleasure gallery B. Tschumi in the Parc de La Villette, Paris).

Such plastic compositions qualitatively change the nature of the environment. The tendency to the entertainment, staginess is not a goal in itself, priority is given to practical problems, and there is nothing minor when it concerns the human environment.

Modern designers' projects take into account the relationship with the construction materials and production technology, functional terms and ergonomic requirements, with the region's traditional construction methods, with the features of the landscape, with the specifics of the local everyday culture. This approach led to a typological diversity, the lack of a rigid hierarchy for identifying the significance of elements as a part of the whole, which is manifested in the selection of the co-subordinates system, which reflects the idea, where a dominant role is chosen by any topic.

Summarizing the listed above approaches, one can distinguish such qualities of modern design as expressiveness, elegance, imaginative expression; the convergence of the activities of designers and architects, caused by a change in design ideology; the emergence of new environmental paradigm, focused on the behavioural situation of the human in the environment, on the functional parameters of the environment; technological process, new materials and modern technology.

The restructuring the urban life content– the welfare, tourism, non-manufacturing trends, the increase, growth and diversity of the service sector, the strengthening of city's cultural and leisure components form new conceptual approaches to the urban environment and environmental compositions. In the analysis, the authors systematize the basic concepts of modern urban environment comfort:

- Elimination of the consequences of the total designing, which corrode the ties of the historical centre connection, the stylistic imagery of the cities' central areas, the structure of these areas have been violated, the traditional shopping districts have lost an easy walking distance to the centre.
- A departure from the simplified organization of the environment according to the principle of "metro, boulot rated, dodo" ("metro, work, bed"), led to the disruption of urban infrastructure, to environmental alienation, loss of the feeling of the house, the self alienation and depersonalization of man.
- The nomination of a new environment concept, which is human, oriented, including the re-designation of the environment: the historic districts of European cities are given new functions – recreational, cognitive, educational and meaningful. City streets and squares are organized as a pedestrian, convention and gaming space, shopping malls – as a creative, entertaining environment.

One of the most promising aspects of environmental design is projecting the urban environment, taking into account its perception from the point of view of an involved observer, the active role of the human as an element of the environment into which he is included. This involves such tactics of environmental design as:

- taking into account the dynamics of person's migration;
- the urban environment is modelled in such a way that he does not feel it in a state of distance and disinterest;
- environment is perceived by the person with all the senses of his whole nature, including not only vision and hearing, but smell, tactile-skin sensations, motor reactions;

- environment is visually not panoramically covered by near point or peripheral sense of sight
- distance is extremely shortened.

The analysis showed that the main feature of the present project concepts is in the pursuit of the universality of the environment, tendency to the versatility leads to increasing recreational spaces in the environment. Comfortable urban environment should include such environmental objects, which can relieve tension, help mentally relax man, make him smile. It should be noted that by itself, the accessibility, the lack of distance between the environmental object and a pedestrian offer the prospect of contact, involve the subject in the environmental space, making his walking or exploring of the city emotionally captivating journey.

Innovative approaches conceptually change the nature and meaning of the urban environment formation. The spread of the movement ideas, the sense making development updates the design, which leads to the interpretation of the urban environment as events and as cognition. The event-driven nature of environmental situations leads to a new behavioural type of modern man in the city. The dynamics of modern life does not allow a person in one place only to shop, in another to work, and in the third one to relax, so modern urban environment in each place needs to show some features of universality. This applies not only to its utilitarian suitability, but also to an even greater extent and aesthetic qualities. It is necessary to implement a recreational micro-environment in any place of the urban environment, as the possibility of a short rest and informal interaction: water paths, dry fountains, fragrant gardens, green terraces and bridges, open floral green cafes, etc.

All environmental initiatives in many European cities can be described as aimed at redefining the behaviour of the citizen from the mainly contemplative to active work. Formation of the environment with the inclusion of educational and gaming techniques allows for environmental situations design in which a person can achieve such a dynamic state where he feels free and authentic as himself, without a psychological defence and social roles. The ability of a person to get in touch with his own feelings and the ability to sincerely express a cultural urban environment leads to the assumption forming the objective world corresponding to the human nature helping to achieve congruence, reflected in human behaviour that reveals what he really is. It cultivates harmony, beauty, sociability, compassion, kindness, liveliness, communication, respect and understanding of traditional norms of the urban behaviour.

In solving such problems, designers began to use environmental objects, functioning in space, being born from human interaction; they can be defined as open. In this case, not a person adapts to the system, but the system is organized around the person. Reception of this open form is widely used in environmental art objects, fountains, water trails of Western European cities. Social openness as declarative gesture was given pride of place to environment organization of the square near the Paris city hall in summer – sand soccer with children's arenas, skating-rink in winter (Bauer, Shabaturova, & Iatsevich, 2016).

Innovative approaches of landscape design are focused on dynamic and informative intentions of the modern man; qualitative change in the urban environment — the degree of movement freedom outside the contours of the pedestrian areas increases. Return of pedestrians to the city centre was the biggest achievement of environmental design. Surfaces adapted for various types of travellers assume their new functions. The natural landscape is complemented by artificial elements; all the possibilities of landscape design are used including the changing geometry of the terrain, plastic and colour modelling of vegetation,



the construction of water devices. Searching architectural and environmental objects that are compatible with the natural landscape, which is evident in the integration of gardens and parks with the city's structures in a sign of understanding the role of green spaces (Nefedov, 2012).

Previously, the city design involved the collection of small designs that formed separately private properties and environmental features: the designing of urban spaces and process starts from engineering thought to practical designs in project, their landscape organization, decorative and scenographic interpretation. Now the methodology of environmental engineering is focused on creating design concepts. The category "environment" is understood as an understandable and comfortable part of the city.

To solve the existing socio-cultural problems for increasing the urban environment it is necessary to use innovative landscape design approaches (see table 01):

**Table 01.** Innovative landscape design approaches for socio-cultural problems of increasing the urban environment

<b>Social and cultural problems of the urban environment</b>	<b>Innovative approaches of the urban environment forming</b>
the absence of general principles and laws governing the formation of the urban environment; increasing pollution of the environment; aesthetic inexpressiveness; functional disorder; violation of architectural harmony with human needs; elimination of functional yard spaces; 7. the destruction of the historic environment in peripheral city areas; the erosion and disappearance of the spiritual fulfillment of the urban space; the substitution of natural elements of the environment by artificially created ones; impersonal open spaces; the prevalence of utilitarianism and asceticism in urban planning; irreversible changes in the chemical and mechanical composition of soils; the replacement of the yard spaces by not authorized car parkings	the transition to a holistic interpretation of urban space; improvement of urban environment spaces; creative transformation of nature; the achievement of the functional orderliness of the landscapes objects in the city environment; effective use of all the components of the urban open spaces; the consideration of person's needs for providing comfort; the formation of the urban space recognition; personal culture improvement, forming a new worldview, a new co-evolutionary interaction with the environment.

Innovative approaches in the landscape design of any project become technologically, culturally meaningful and humanistically oriented. The same innovative approaches help to turn the urban environment into an object that, by increasing the artistic and creative content, should enhance humanization, humanitarization, ecologization, organic culture of all listed levels – from the artistic image of a single landscape object to figurative contents of the ecological system of the urban environment.

Orientation of the landscape design in improving the way of life demanded a more humanitarian and developed project culture, that all was typical for the practical-methodical and design-program stages of its development. Invoking theme of way of living in landscape design has led to the formation of the relationship concept between lifestyle, environment and project-oriented culture.

Innovative approaches are based on the method of direct and indirect relations detection of citizens' life between different spheres of reality making new associations. With their help, landscape design is becoming a focus of the intersection of the spiritual and material, scientific, technical and technological, humanitarian and industrial culture. The design culture in the context of the environment focused on the future livelihoods of people should improve standards of living basing on approval of spiritual and moral values, endlessly transforming person.

Person-oriented environmental design changes even the targeted person – the word "consument" in this concept does not reflect its content but changes it to more appropriate terms as environment, people, subject. In the context of innovative landscape design approaches, the concept of comfort formed in the modern sense of the word, meaning "warmth, coolness, light, contact and harmony with the natural elements". The paradigm shift has led to a different understanding of the project, which included not only the everyday material environment of man, but also the person himself not as a passive consumer, but as an adequate, reasonable, active, highly organismic environment component (Azizyan, 1990).

## 7. Conclusion

Concluding, one should sum up that one of the most difficult problems of modern urban environment formation is creating the enabling conditions of life for people: creating comfort, a favourable microclimate, and aesthetically impressive urban open space. The problem of maintenance, reconstruction and creation of "free spaces" (parks, greenland, urban reservoirs, gardens) turns of great importance. All these places are not free from building site. It shapes our behaviour, mood, taste, where the culture of thinking, attitudes, understanding is concentrated. Person needs to see around himself: grass, water, light, bright colors, interesting aesthetic forms because he is not the last and not least part of this nature. This is the quality of life when one wants to go out in the yard, in the street, in the city, to admire everything, to communicate with friends, to see beauty and to live with it and in it.

Applying innovative approaches to landscape design and urban environment, it is possible to create complex multi-level linkages between population and the nature in which social, biological and cultural needs of the person are integrating together. A reflection of the current landscape state is the motivation of his conversion, which includes: information, individualization, organicity, unity, health, wealth, spirituality and beauty. The result is a conceptually different subject-spatial environment that surrounds people and is a product of their project activities, their understanding of beauty and harmony.

Landscape design in organizing space on the basis of (non-architectural) principles: ergonomics, high mobility and versatility of the elements forming the space, emphasized a rational approach to the use of the latter.

Landscape design is based on the following principles: ergonomics, high mobility and versatility of the elements, forming the space, emphasized a rational approach to the use of the latter. The purpose of these principles – the creation of highly comfortable, the semantic subject-spatial environment of a man,

which means comfort with the position of the utilitarian and functional, psycho-physiological and emotional-aesthetic point of view. This is one of the fundamentals of general philosophy of modern design, one of its main distinctive features. The indicated position gives one the opportunity to take another look at landscape design, seeing it not in the narrow sense, as the part of the project activity, but as an innovative and versatile approach to the organization of natural and anthropogenic components interaction of the human environment, pursuing the main goal – the creation of highly comfortable the semantic subject-spatial environment of man.

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