

Architectural Education from a Socio-environmental Perspective

Konstantin Kiyanenko^{1,2,*}

¹ *Moscow Institute of Architecture (State Academy), Moscow, Russia*

² *Scientific Research Institute of the Theory and History of Architecture and Urban Planning, Branch of the Federal State Budget Institution "Central Scientific-Research and Project Institute of the Construction Ministry of Russia", Moscow, Russia*

*Corresponding author. Email: kiyanenko_k@yahoo.com

ABSTRACT

Based on a pilot survey of Russian and foreign experts - researchers and pedagogues of architectural schools – the author examines the social and environmental component of professional education. The study shows, which disciplines of the curriculum have social and environmental contents, which names of the authors, and which concepts of this area become known to the students of architecture. Experts assessed the comparative role of the socio-environmental component of knowledge against the background of others – compositional-artistic, engineering-technical, conceptual-philosophical, and market related. The research has made it possible to conclude on the presence of four tendencies in the development of socio-environmental knowledge in Russian architectural education. They are diversification, conceptualization, humanization and 'environmentization'.

Keywords: *Architectural education, Socio-environmental knowledge, Cross-cultural analysis.*

1. INTRODUCTION

One way, or another, architecture is based on certain ideas about the object and the final product of architectural activity, about the place and role of this product in human life. Since the sixties of the twentieth century, a socio-environmental paradigm of architecture has been developing in the world. It sees the goal and result of architecture in the formation of human habitat as a social-spatial structure, and is engaged in the creation of an architectural school that can develop and reproduce the necessary forms of professionalism. Environmental ideas and approach are penetrating into Russian architectural education in various versions and interpretations since the late 1980s - early 1990s, as evidenced by the appearance of 'environmental' educational literature [1], [2], [3].

Today, some schools of architecture in the world position themselves as consistent adherents of the socio-environmental vision, and almost all educational institutions develop this vision as a component of modern architectural knowledge and education. The purpose of this study is to characterize the positions of *socio-environmental* knowledge in the Russian collegiate school of architecture. The paper aims to show:

- what socially-oriented and environmental disciplines and courses are taught in architecture schools and what fields of science they represent;
- who of the authors, the leading social and environmental researchers, are known to Russian students in architecture;
- what socio-environmental concepts are studied in the architecture school;
- what is the position of the socio-environmental component of knowledge against the background of others – compositional and artistic, engineering and technical, conceptual and philosophical, market related.

*Fund: This study is based on the research, supported by the Program of Fundamental Research of the Russian Academy of Architecture and Construction Sciences and of the Ministry of Construction, Housing and Utilities of the Russian Federation - 2021; the Research Project 'Socio-Environmental Paradigm of Architectural Knowledge: Comparative Study of Its Role in Russian and English-language Theory, Profession and Education'.

The information was obtained by the help of a questionnaire survey of a group of experts - researchers and pedagogues of architectural schools, known for the socio-environmental orientation of their educational approaches, for teaching, methodological and scientific publications [4], [5], [6], [7], [8]. Many are recognized leaders of social and environmental education in their educational institutions and in Russia as a whole¹.

Considering some aspects of socio-environmental architectural education, the author applied a method of cross-cultural comparison of status quo in Russia and the English-speaking world. To do this, four experts - leading architectural educators from the United States and Great Britain were invited to participate in the questionnaire². All four are widely known for their significant contributions to the development of environmental architectural science and education.

2. SOCIO-ENVIRONMENTAL DISCIPLINES AND COURSES IN ARCHITECTURE PROGRAMS

One of the first questions was: "Are there socio-environmental academic courses in the curriculum of your architectural school / program?". In case of a positive answer, the experts were asked to name those courses. Russian respondents listed 47 disciplines that represented three areas of knowledge: social sciences and humanities, design and interdisciplinary field, formed at the junction of the first two. The situation is in stark contrast to the one that existed in Russian architectural education only ten years ago, when one academic discipline dominated all over the country. It was a course called 'Social and Environmental Foundations of Architectural Design', which got its name from the Federal State Educational Standard of Russia (FGOS) 2000, and inherited its content from the textbook published earlier, in 1990, and approved by Ministry of Higher Education [9]. The main feature of this text was actual reduction of 'social' to the 'state', predetermined by ideology from one side

and standardized design and construction technologies from the other. The role of major 'social foundations of architecture and urban planning' was delegated to bureaucratic plans and programs of social development at different levels, from national to municipal, as well as to the 'socio – demographic indicators of the population' recorded by official statistics. The 2010 standard abolished this unification. The diversity of disciplines by names and contents, demonstrated by experts, became a consequence of the new educational policy³.

The general array of social and environmental disciplines, reported by the experts, were organized by grouping them into several subject categories, as shown in "Figure 1".

1. Seventeen Russian experts represent twelve schools of architecture, including the Moscow Institute of Architecture, St. Petersburg State University of Architecture and Civil Engineering, and the leading universities of Rostov-on-Don, Yekaterinburg, Tomsk, Krasnoyarsk, Samara, Voronezh, Volgograd, and Barnaul.

2. The survey was attended by Henry Sanoff (North Carolina State University, USA), Eleftherios Pavlides (Roger Williams University, USA), Lubomir Popov (Bawling Green State University, USA) and Ashraf Salama (University of Strathclyde, UK).

3. Universities and faculties could develop and teach their own courses before, but only as elective disciplines or belonging to the so-called 'regional component' of training. This opportunity was not widely used because of the reluctance of school administrations to complicate the unified educational process.

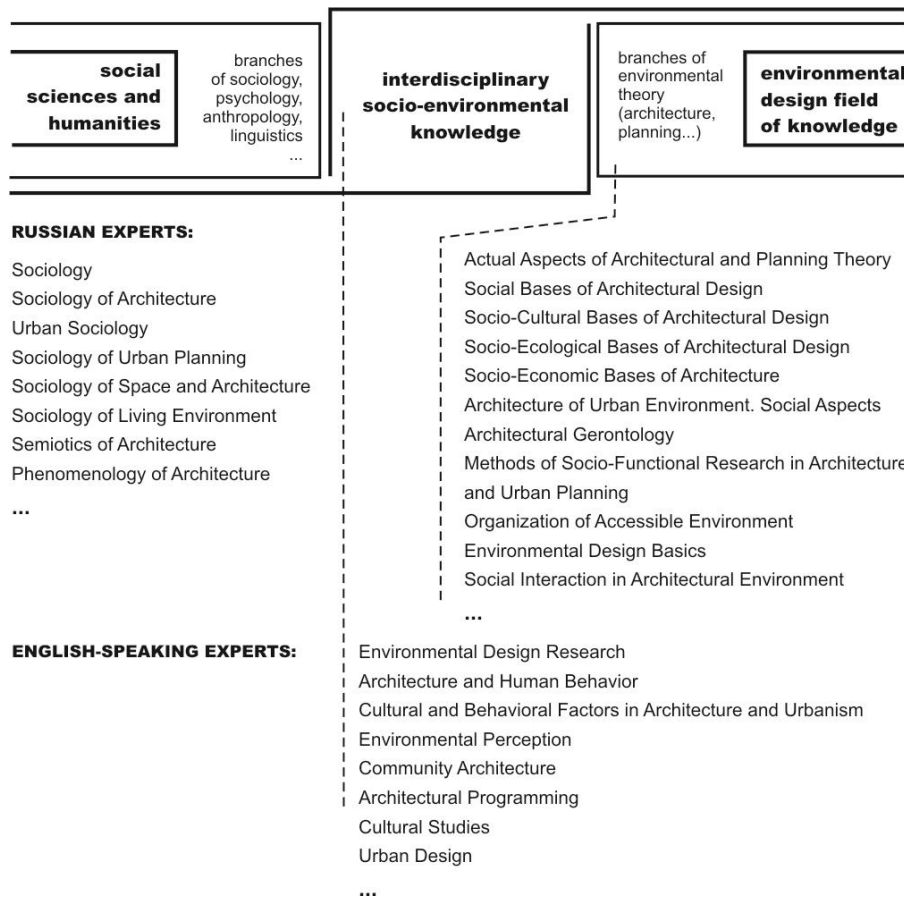


Figure 1 Some socio-environmental disciplines, taught in architecture schools.

In the curricula of architecture schools, experts note several types of courses. Among them are:

- courses that integrate social and environmental knowledge into the general context of the theory of architecture and urban planning (eg., Actual Aspects of Architectural and Planning Theory);
- special courses of social and architectural orientation (Social Bases of Architectural Design);
- special courses at the intersection of several areas of knowledge – sociocultural and architectural, socio-ecological and architectural, socio-economic and architectural (Socio-Economic Bases of Architecture);
- narrowly specialized courses that delve into the problems of the environment for particular categories of inhabitants or take into account certain social aspects of life (Architectural Gerontology, Social Interaction in Architectural Environment);
- courses on certain aspects of Environmental Design and Planning

(Methods of Socio-Functional Research in Architecture and Urban Planning);

- general social sciences and humanities (Sociology);
- branches of social sciences and humanities (Sociology of Architecture, Urban Sociology, Semiotics of Architecture, Phenomenology of Architecture).

Disciplines, named by foreign experts, are fundamental courses that comprehensively consider the socio-environmental issues from the humanitarian (Cultural Studies), design (Environmental Design Research, Urban Design) or interdisciplinary positions (Architecture and Human Behavior). There are also specialized courses dedicated to some big socio-environmental topics (Community Architecture, Architectural Programming, Environmental Perception).

The difference between the situations in Russia and abroad is that the professional and academic language of Russian architects has not absorbed the fundamentally important concepts of 'environmental design' and 'behavior' to the same

extent, and many important topics of the socio-environmental knowledge have not yet developed to the degree that they could shape autonomous teaching courses.

3. AUTHORS STUDIED IN ARCHITECTURE PROGRAMS

The experts answered the question: "What are some of the main authors, scientists, in the field of socio-environmental knowledge, whose works and concepts are studied in your architecture school / program?" All in all, Russian and foreign respondents mentioned 97 persons representing three areas of knowledge ("Figure 2").

The left column of the figure lists representatives of the social sciences and humanities - sociologists, psychologists, anthropologists, cultural scientists, political scientists and philosophers, whose works are under study in architectural classrooms. All of them, to varying degrees, address the issues of architecture, space, city, and housing. But because of their academic position take all these mainly as indicators and determinants of personality, sociality, cultural, and power systems. The list includes social and humanitarian authors of different attitudes. Among them are classics, modernists and postmodernists, some of them are quite loyal to capitalist development, while others are left-wing critics and outright rebels.

social sciences and humanities		interdisciplinary socio-environmental knowledge		environmental design field of knowledge	
branches of sociology, psychology, anthropology, linguistics ...				branches of environmental theory (architecture, planning...)	
Sociology	Z. Bauman P. Bourdieu C. Campbell M. Castels A. Comte G. Debord H. Delitz E. Durkheim J. Fischer R. Florida A. Giddens T. Gierin B. Latour N. Luhman	R. Graz J. Jacobs J. Kruusvall R. Oldenburg	C. Alexander C. Day J. Gehl B. Hiller K. Lynch O. Newman C. Norberg-Schulz J. Pallasmaa A. Rapoport H. Sanoff N. Wates C. Cooper-Marcus G. Cranz C. Durrett R. Lawrence E. Pavlides W. Preiser	K. Dovey G. Cannigia J. Corner R. Koolhaas B. Lawson J. Lerner A. Rossi D. Scott Brown J. Simonds R. Venturi A. Yaneva	Architecture
Psychology	J.B. Watson	R. Arnheim C. Ellard M. Heidmets T. Niit	R. Gifford W. Ittelson L. Rivlin R. Sommer D. Stea G. Winkel C. Zimring	M. Conzen L. Hollis J. Speck V. Vuchic P. Davidoff	Urban Planning
Anthropology	M. Auge	E. Hall			
Culturology	J. Frazer	E. Pader			
Politology	D. Harvey P. Khanna C. Landry D. Lowenthal H. McLuhan D.J. Morris L. Smith				
...			Philosophy	J. Dewey U. Eco M. Foucault H. Lefebvre A. Naess	

S. Sassen - names, listed by Russian experts
 E. Hall - names listed by English-speaking experts
 C. Alexander - names, listed by both Russian and English-speaking experts

Figure 2 Names of foreign authors whose works are studied in socio-environmental disciplines of Russian and English-language architecture schools.

As we can see, in socio-environmentally advanced Russian architecture schools students can acquaint themselves with the ideas of many influential thinkers and researchers of human beings and society from various standpoints.

On the right side of the diagram are the names of foreign architects and urban planners. They are not necessarily English-speaking authors by origin, but become influential due to publishing of some works in English. The admission to this list is the interest demonstrated by the architects and other environmental designers to the socio-cultural roots, prerequisites and factors of design and planning.

The central column of the figure shows the names of those authors who overcome the traditional boundaries of their mother disciplines and form a new generation of 'true interdisciplinarians'. Their works develop knowledge about the environment as an integral socio-physical phenomenon.

Foreign experts mentioned environmental psychologists, sociologists and scientists like F. Becker, W. Whyte, J. Zeisel, R. Barker, R. Bechtel, D. Canter, E. Hall etc. (shown in italics). Russian students learn socio-environmental field of knowledge owing chiefly to the works of socially oriented architects, such as K. Alexander, J. Gale, K. Lynch, O. Newman (right side of the central column). The boundaries separating the central field of interdisciplinary knowledge are shown as dotted lines. This is a reminder that the fences between the three spheres are permeable; 'pure' sociologists and psychologists become 'environmental' ones and traditionally-minded architects turn into 'sociotectors' and 'psychotectors'⁴.

There are about a dozen names mentioned by both Russian and foreign experts (underlined). Among them are sociologists P. Bourdieu and M. Castels, sociologist and philosopher H. Lefebvre, architects C. Alexander, K. Lynch, O. Newman, A. Rapoport, H. Sanoff, R. Ventury. It can be assumed that in the Russian and English-speaking architectural school, committed to social and environmental values, they speak, to a large extent, the same language. To test this assumption, a comparison of the terms and concepts studied by the students was made.

4. The neologism 'sociotector' stands for architects, advanced in social knowledge, and 'psychotector' replaces architects having a good knowledge in psychological aspects of the profession.

4. TERMS AND CONCEPTS STUDIED IN ARCHITECTURE SCHOOLS

To clarify the lexicon of socio-environmental knowledge, the experts answered the following question: "What are the most significant, in your opinion, concepts of socio-environmental knowledge that students of your architectural school / program are introduced to?" "Figure 3" shows all 93 concepts mentioned by Russian and foreign (in italics) respondents⁵. For ease of perception and evaluation, they group into those seven segments that, as our previous research has shown, structure the entire field of Russian environmental knowledge and practice in architecture [10].

Only one of the seven existing segments of Russian environmental knowledge is poorly developed in terms of concepts. It is the so-called 'Design of Architectural Environment'. It is not an area of social knowledge, rather it is a compositional and artistic interpretation of the environment. The two segments of environmental knowledge – Design Methods Studies and Environment Behavior Studies - are more advanced terminologically than the others.

5. The concept that coincided in the lists of Russian and foreign experts is underlined.

Architectural Environment

Design Research

architectural and artistic aspects of environment
design of architectural environment

User Needs Studies

Alzheimer's and the built environment
architectural gerontology
barrier free environment
gender and the built environment
health and the built environment
home range / home zone
housing (collective, shared, cohousing)
residential environments

'sandwich' generation
social structures and processes
socio-functional processes
socio-functional program
spatial structure of residential environments
'third age' architecture
universally accessible environment
user needs

**Socio-Cultural Studies
of Urban Environment**

built environment and the disenfranchised
'smart city'
social interaction
socio-cultural functions of urban environment
spatial inequality

symbolic interactionism
'third place'
'third wave'
urban acupuncture
urban community

Design Methods Studies

activity-based environmental approach
anthropological approach
'circle of environmental knowledge'
cultural and social in architectural design
design process
environmental architectural design
environmental approach
environmental theory
observation method
participatory design
phenomenological approach to design

photo-elicitation method
pre-design research
research methods
social design
social science approach to environmental research
socio-environmental research methods
socio-spatial practice
stages of environmental concept development
typological processes
universal design

Visual Perception Studies

architectural meaning
architectural semiotics
architecture as communication
architecture as text
cognition / memory

cultural perception of built environment
socio-semiotics
spatial perception
spatial symbolism

Environment Behavior Studies

advocacy planning
architectural ethics
architectural phenomenology
architectural psychology
architecture as a means of control
behavioral programming
behavioral setting
behavioral theories
cognitive urbanism
communities
defensible space
environmental behavior
environment-behavior aspects
local identity

mental mapping
natural surveillance
neighborhood
'patterns' theory
personal space
place attachment
place identity
post-occupancy evaluation
social space
socially meaningful distances
socio-psychological factors
space syntax
territoriality

Architectural Ecology Studies

biosphere compatibility
deep ecology
ecological aspects of man-nature relationships
environmentalism

landscape urbanism
sustainable architecture
sustainable environment
theories of sustainability in the built environment

Figure 3 Socio-environmental terms and notions studied in the Russian and English-language architecture schools.

As far as Russian architects increasingly turn to fundamental works on urban, housing and environmental sociology, cultural anthropology, and environmental psychology, their conceptual and terminological baggage is enriched. A comparison of "Figure 1" with "Figure 3" shows that the lists of segments of environmental knowledge in architecture from one side and the scientific disciplines that underpin it from another coincide only partially. But the concepts and terms they use are pretty much the same. In particular, the Russian and foreign experts use concepts of the following disciplines:

- sociology, sociology of the city and housing (community, neighborhood, symbolic interactionism, user needs, social interaction, spatial inequality...);
- social theory of urban planning, urban studies, urban anthropology (urban morphology, cognitive urbanism, spatial structure of the residential environment, socio-cultural functions of the urban environment, urban acupuncture...);
- urban and social ecology (deep ecology, biosphere compatibility, environmentalism, sustainable environment...);
- environment behavior studies / environmental psychology (architectural psychology, behavioral programming, territoriality, environmental behavior, socially meaningful distances, defensible space...);
- design methods studies (environmental and activity-based environment approach, pre-design research, participatory design, environmental architectural design...);

- the textual paradigm (architectural semiotics, spatial symbolism...);
- phenomenological paradigm (phenomenological approach to design, place attachment, mental mapping...).

Although there is only one literal coincidence between Russian and foreign lists of concepts drawn from the questionnaires, it is obvious that most of the socio-environmental concepts used by Russian experts came from foreign sources, mostly from English. The differences are not so much due to the lists of concepts taught, but rather to the level at which the students master them. In the best foreign architectural schools of socio-environmental orientation, they are not content with a brief presentation of concepts in lecture courses, but discuss the primary source books at seminars, master them in research and architectural design studios.

5. SOCIO-ENVIRONMENTAL AND OTHER ASPECTS OF ARCHITECTURAL EDUCATION

The experts were asked: "How important do you think the following components of architectural training are in your school, according to the attention paid to them (rate them on a five-point scale)"; then the six main components were listed. According to the majority of respondents, socio-environmental knowledge stands lower, in its comparative significance, than compositional-artistic and engineering-technical, but higher than design and methodological, conceptual and philosophical and market related spheres ("Figure 4").

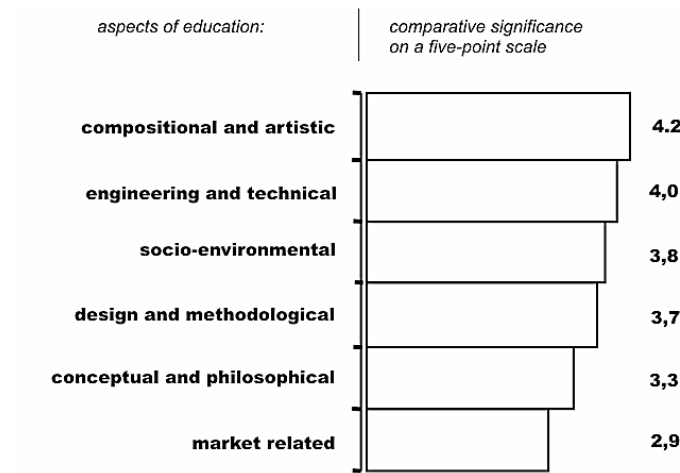


Figure 4 Experts' assessment of the comparative significance of individual educational aspects (on a 5-point scale).

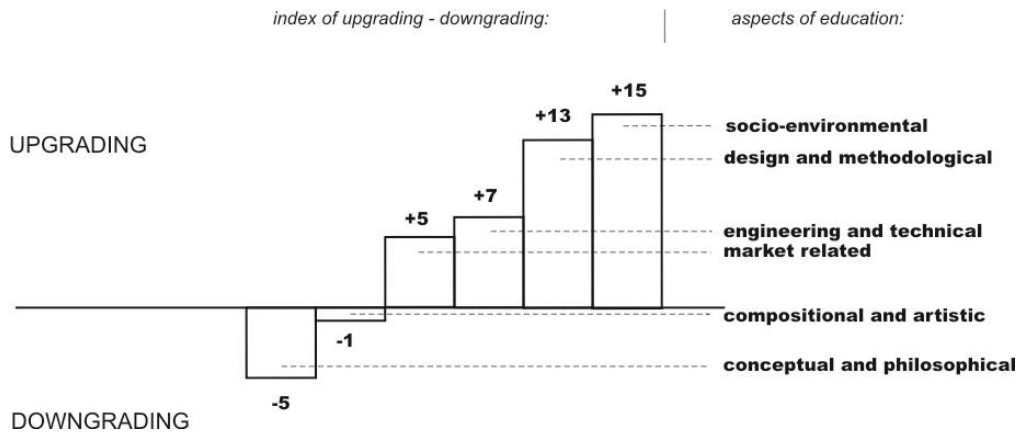


Figure 5 Experts' assessment of changes in the status of individual aspects of architectural education.

The average absolute mark of individual components seems also to be important. The position of the socio-environmental aspect as rated on a five-point scale is "four with a minus".

The dynamics perceived by experts and the tendency to change the role of individual components were also evaluated⁶. The total indices of their ongoing status increase or decrease are shown in "Figure 5".

The prevailing opinion of experts is that the socio-environmental component is developing most dynamically, and its role in architectural education is increasing. Only two out of seventeen Russian pedagogues disagreed with this viewpoint. The design and methodological component also looks like developing. The most downgrading aspect is the conceptual – philosophical knowledge. Logically this does not match well with the development of the socio-environmental component, given their obvious connectedness. It remains to assume that the experts treated the conceptual and philosophical component as specific schools of conceptualization and philosophical thinking that experience difficulties, for example, post-structuralist theory and philosophy.

6. CONCLUSION

The pilot nature of the study, the small number of experts does not allow us to conclude on the state of the socio-environmental component in the architectural education of Russia as a whole. But

6. Each expert noted the perceived tendency of increasing the status in relation to a particular component of education as a 'plus', and decreasing as a 'minus'. Then the signs were summed up, the final index marks the upgrade (overweight of pluses) or downgrade (dominance of minuses) of individual components. The comparative strength of the trend can be judged by the number of dominated signs.

some observations about the most advanced schools that experts represent can be made.

The main conclusion to which the analysis of the language of Russian socio-environmental pedagogy pushes is its multidisciplinary, which is explained by the very nature of this field of knowledge, and by the recruitment of adherents from a variety of socio-humanitarian and design areas. The pre-reform dominance of a single teaching course regulated by the state educational standard and a single textbook on 'social fundamentals of architectural design' were recently replaced by coexistence of different courses and educational texts. In general, the unification of the educational process in the Russian school has obviously been overcome, the *diversification* continues, and now we should talk about improving the scientific and methodological quality of socio-environmental education and effectively integrating it into the general frame of the educational process.

The field of Russian socio-environmental knowledge is becoming more theoretically meaningful, developed in terms of its conceptual language. There is every reason to talk about its *conceptualization*, although the study does not allow us to conclude on the qualitative aspect of this tendency, on the level of students' command of different concepts, terms, and theories.

A comparison of the above-mentioned 'standard' textbook on the 'social foundations of architectural design' with later educational texts demonstrates two more trends, supported by the survey materials. Firstly, 'social' is no more presented to future architects as the equivalent of 'public' at the macro-level of society, or 'state' related phenomenon. Everything evidences to a shift of attention in the architectural school to the micro- and nanoscale sociality – to local communities, to small groups

and individuals. Secondly, the social determinism, the idea that the 'social' unambiguously and irreversibly precedes the 'architectural' and 'spatial', loses its position. There is a growing interest in the socio-spatial interdependent wholes, that is, in the socially comprehended environments. Thus, we can speak of *humanization* and *'environmentization'* of social and architectural knowledge. As a result, a human-oriented impulse is now being introduced into architectural education, and finally into the profession, largely through social and environmental channels of knowledge.

Teachers focused on social and environmental values in Russia and the English-speaking world use essentially the same lexicon. This facilitates inter-cultural communication and contacts of architectural schools, exchanges of information. But the unity of the lexicon is ensured by the undivided dominance of English-language sources. This is partially explained by the underdevelopment of Russian socio-environmental science, and its insufficient contribution to architectural education.

The interviewed experts assess the socio-environmental component as the most dynamically developing in the structure of architectural education. This opinion may reflect the specifics of the vision of people interested in this kind of perspective. Therefore, further research on this issue is required with broader involvement of teachers and students of architecture schools.

AUTHORS' CONTRIBUTIONS

This paper is independently completed by Konstantin Kiyanenko.

The author of the paper is solely responsible for conceiving of idea to study architectural education from socio-environmental standpoint, for developing a theory of 'segmentation of environmental knowledge' in Russian architecture, which became the foundation for the applied research. He personally compiled the original questionnaire form to grasp the content of interest, made up the sample of the responding experts, conducted survey, analyzed the data and wrote the manuscript.

REFERENCES

- [1] A.V. Krashennnikov, Residential Blocks: training manual for architectural and construction specialties of universities (Zhilye kvartaly: uchebnoe posobie dlia
- arkhitekturnykh i stroitel'nykh spetsial'nostei vuzov). Moscow, Higher School, 1988 [in Russian].
- [2] V.T. Shimko, Architectural Formation of Urban Environment: training manual (Arkhitekturnoe formirovanie gorodskoy sredy: uchebnoe posobie). Moscow: Higher School, 1990 [in Russian].
- [3] A.V. Stepanov, G.I. Ivanova, N.N. Nechaev, Architecture and Psychology: training manual (Arkhitektura i psikhologiya: uchebnoe posobie). Moscow, Stroyizdat, 1993 [in Russian].
- [4] A.G. Burtsev, Architectural Semiotics: training manual for students of higher educational institution, studying architecture (Arkhitekturnaia semiotika: uchebnoe posobie dlia studentov vysshikh uchebnykh zavedenii, obuchaiushchikhsia po napravleniiu podgotovki "Arkhitektura"). Ekaterinburg, Arkhitekton, 2015 [in Russian].
- [5] Z.I. Ivanova, Sociological methods for the sustainable development of the city: training manual for undergraduate students (Sotsiologicheskie metody dlia ustoichivogo razvitiia goroda: uchebnoe posobie dlia studentov bakalavriata). Moscow, MGSU, 2016 [in Russian].
- [6] B.L. Krundyshev, Architectural Design of Residential Buildings, Adapted to Specific Needs of Low-Mobile Group of Population: training manual (Arkhitekturnoe proektirovanie zhilykh zdanii, adaptirovannykh k spetsificheskim potrebностям malomobil'noi gruppy naseleniia: uchebnoe posobie). Saint-Petersburg, Lan' Publisher. 2012 [in Russian].
- [7] P.V. Kapustin, Yu.I. Karmazin, Place Value in the Architectural Creativity and Education Updating, in: Scientific Herald of the Voronezh State University of Architecture and Civil Engineering. Construction and Architecture, no. 4 (28), 2015, pp. 76-91. URL: <http://vestnikvgasu.wmsite.ru/ftpgetfile.php?id=491>
- [8] V.M. Molchanov, Fundamentals of Architectural Design: Social and Functional Aspects: training manual (Osnovy arkhitekturnogo proektirovaniia: sotsial'no-

funktional'nye aspekty: uchebnoe posobie).
Rostov-on-Don, Fenix, 2004 [in Russian].

- [9] Z.N. Yargina, K.K. Khachatryants, Social Fundamentals of Architectural Design: textbook for higher educational institutions (Sotsial'nye osnovy arkhitekturnogo proektirovaniia: uchebnik dlia vuzov). Moscow, Stroyizdat, 1990 [in Russian].
- [10] K. Kiyanenko, Environmental design research in Russian architecture: Western roots and national forms of existence // International Journal of Architectural Research Archnet-IJAR, vol. 13, no. 2, 2019. pp. 260-275. URL: <https://www.researchgate.net/publication/333731135>