

READING URBAN FORM AS A STUDIO TEACHING METHOD: CASE STUDY IN SIBERIA.

Daria A. Belova, MA, docent in the SFU (Russia), PhD student in the Sapienza University of Rome (Italy),

Ludmila V. Gaikova, docent in the Siberian Federal University, Russia

Anastasiia Fedan, senior teacher and PhD student in the Siberian Federal University, Russia

ABSTRACT

Quite often heritage monument is perceived as a separate domain in Russian conservation theory and practice. Teaching practice demonstrates the situation clearly: quite commonly studio regeneration projects are conducted in isolation from the context, or lacking the methodology for preliminary analysis. However, many international concepts attempt to avoid isolation of buildings as physical objects from a cultural environment with its multi-layered history of significances (Waterton & Watson, 2015). The paper presents a case study of the application of urban morphology as a research tool and a teaching method (Caniggia & Maffei, 2001), to the Siberian context. Research group of Siberian Federal University (SFU) organized the experiment, in which students worked on the two stages of a regeneration project for the old Military camp in Krasnoyarsk. Between the two stages, the workshop was organized for students of Sapienza University and SFU to conduct a methodological study. Then the research group continued the second stage of the experiment in which examined the applicability of morphological analysis in Siberia. The qualitative difference of regeneration proposals before and after the application of morphological analysis, as well as the level of subsequent students' proficiency, proved the potential applicability of the method in Siberian academy and practice, and effectiveness of the workshop as the tool for its introduction. Keywords: teaching urban morphology, reading urban form, Siberian heritage, urban regeneration

INTRODUCTION

The gap between academy and practice is one of the major concerns of many scholars around the world, and Russia is no exclusion: the Siberian Federal University (SFU) in Krasnoyarsk, according to the position of local authorities, remains isolated from city problems. The second gap of SFU is relative scientific and academic isolation from the rest of the world, which is partly caused by the remoteness of the region and closeness of the current Russian academic system (the legacy of the Soviet Union). This might limit the exchange of innovative tools and methods. Another gap is that the conservation of urban and architectural physical heritage has been commonly concerned with individual objects - significant buildings, complexes and monuments in Siberia, which was actual in many countries until the recent times: "Policy-and practice-orientated bodies tend to treat historic features in geographical isolation from the wider landscapes of which they are an integral part. Yet realizing the full potential of the landscape as a cultural, educational, intellectual and economic resource requires an appreciation of how individual features are connected historically and geographically: how they fit into the wider historical landscape." (Whitehand & Gu, 2010). Besides, stating heritage as a process, D. Harvey, among many other researchers, shifts the focus from the problem-solving paradigm to the identity-building potential of heritage and comprehends time dimension (Harvey, 2010). However, the deep considered contextual analysis is still often missing in Russian academy and practice: commonly studio projects of regeneration or reconstruction are being conducted in isolation from the context or lacking the methodology for preliminary analysis.

Aiming to solve the mentioned problems together, the small research group of SFU selected one of the examples of unique historical socio-building units in Krasnoyarsk as an experiment.

BACKGROUND

The former "Military camp", which was previously located outside the city, but today is embraced by the urban development (Fig.3), is in the list of monuments of architectural heritage, which are in danger of demolition in Krasnoyarsk (Fig.1). The old Military camp occupies the significant territory, which is today of significant interest for developers. Only 10% of the area is today a lively residential area. The area is filled with two- and three-floor military brick-made barracks, the buildings of the cadet corps and the Mariinskaia Gimnasia. When the main military function was eliminated, the territory became officially opened, after the decades of closure. However, the place



Figure 1. Military camp in Krasnoyarsk. Location.

still exists in relative isolation, while the buildings are structurally degrading. At the same time, architectural historians name the epoch-making events, which were tightly related to the history of a place. The barracks of the Military camp, which were built approximately between the first and second decade of XX century as residential buildings for officers, remember the century of historical changes and could tell the story about Krasnoyarsk. Today the buildings remain quite comfortable for living, according to the opinion of many residents. The place is also characterized by the unique "distributed lifestyle", in which community feel the ownership, responsibility (not just for their flats, but for the whole area), inclusion, and know their neighbours, respect and follow the old traditions and remember narratives, forming the intangible heritage of the neighbourhood. However, new Krasnoyarsk masterplan entirely ignores the Military camp. Therefore, this urban phenomenon was selected as the location for the experiment.

METHODOLOGY

Yet there has been many research attempts and well-developed theories, which aimed at providing analytical tools for the comprehensive design practices (Gehl, 2011; Lynch, 1981, 1990; Jane Jacobs, 1961; Alexander et al.) Many of these theories are analytic and cause certain difficulties when transferring to synthesis and practice (Maretto, 2014). However "urban morphology" in general, and the school of Caniggia in particular (Caniggia & Maffei, 2001), for instance, proved its practical effectiveness for many locations. Its qualitative tools could be especially relevant for the reading, understanding and incorporating the obtained information in projects, strategies, planning, conservation and management process when it comes to historical urban landscapes. One of the main features of urban morphology is that it treats the urban fabrics as an organism made of "social, economic, cultural and environmental fabrics, energy and information networks" (Strappa, 2019), where all the parts of this organism exist in the correlation with each other (Maretto, 2014). Whitehand & Gu claimed: "Awareness of the existence of historic features is not enough. How they fit together is critical." (Whitehand & Gu, 2010) G. Strappa in his lecture explained: "The more

such fabrics are interrelated and efficient, the more the organism will be dynamic, versatile and capable of meeting the demands and aspirations of its citizens." (Strappa, 2019)

Thus, in the experiment students of SFU worked on the two stages of a regeneration project for the old Military camp in Krasnoyarsk, Siberia. Between the two stages of the experiment, the Workshop in Urban Morphology and Design as a teaching method (Oliveira (ed.), 2018) was organized in Rome by the Sapienza University of Rome to offer the opportunity to students of Sapienza and Siberian universities to conduct a methodological study on the Roman historical fabric. Then the research group of SFU continued the experiment in which students examined the applicability of methods to the preliminary research in Krasnoyarsk. They aimed at broadening the range of methods of contextual analysis for the architects in the Siberian academy and practice, at the same time opening one more door to the international relationships of the academic Department of Architecture in SFU.

RESULTS AND DISCUSSION.

The first stage included data collection and first brainstorming: desk studies – inventories, mapping, archival search, literature analysis, statistical analysis, anthropological analysis, analysis of stakeholders (Yaneva, 2012); and numerous consultations with experts and field studies – questionnaires, interviews and inventories on site. During the research, the rich history of the place, embodied in maps, photographs, stories and publications, historical facts, which are directly or indirectly linked with the Military town, but important for the culture of the whole city, was collected and developed into the analysis. The Military camp appeared very recognizable socially. It is now divided into two parts. One part is still functioning and consisting of the residential area where the community of residents of military unit lives the traditional life according to the principles which were developed by their predecessors. The second part of the town is abandoned, the buildings are partly destroyed and rebuilt (see Fig. 2). All this resulted in the first ideas on the scenario of the development of the territory: almost without exclusions, all students proposed public spaces in place of private ones around the existing residential buildings in the area, which is now alive and extensively used by the residents. Moreover, many previous projects for the area proposed the complexes of public buildings (museums, studios and shops, restaurants) on the place of the existing residential unit, changing entirely the function and overall logic of space. The authors took into account the most important works of the architectural and urban scientists, but quite often missed the significant strategic dimensions and definitions of the place.



Figure 2. Lived and overall areas of Military camp (in blue).

Workshop in Urban Morphology and Design (21th – 30th May, 2019, Faculty of Architecture, Sapienza University – Piazza Borghese, 9 – Rome) intended to methodically carry out an architectural study on the urban historical fabric in Rome. As the theme of the workshop the preservation and the processual transformation of the Roman fabric was proposed:

1. the morphological reading of a limited part of Roman historical fabric through the methods of Urban Morphology (Caniggia & Maffei, 2001);
2. the representation and redesigning of the urban fabric;
3. the design of a new urban intervention concerning the recovery, contemporary design, urban restoration of the area under study.

(<http://www.giuseppestrippa.it/?paged=3&cat=3>)

The workshop allowed the Siberian students and teachers to experience methodology, in the academic and urban environment, which bared the morphological traditions both tangibly and intangibly. The experts of urban morphology guided step-by-step analysis of Roman historical fabrics and accompanied the site visits and data collection, organized excursions and discussions. This allowed comprehending how the methodology works in practice and trying to apply it immediately. Additionally, informal communication with the students of different countries and cultural backgrounds allowed to consider the approach from different points of view. All the above helped broadening horizons and overcome the barriers of mental and cultural perception, allowed avoiding working with the symptoms of the problem and to focus on the problem itself. The modern science is largely oriented towards the complex self-developing systems, which could be visible from works of many researchers (Yaneva & Heaphy, 2012; Latour, 1999; Stepin, Gorochoy, & Rozov, 1999) The approach to the city unit as to the organism, made of fabrics, in which all the layers and aspects are interrelated, provided from the one hand the understanding that every intervention could bring the significant changes to the whole system, and from the other hand, that its success is largely dependent on the historical background, and how it fits the context. Thus, the students learned that each element of the place has its role in the system and both influence and is influenced by the system.

At the beginning of the second stage of the project, the students of SFU conducted a morphological analysis: analyzed historical stages of development of the territory and the hierarchy of the structural elements of the Military town as the socio-building unit (Fig. 3-4), determined the “nested” (Moudon, 2019) hierarchy of space structure, found the current and former nodes and poles, the geographical reasons of their allocation, analyzed the nature and quality of its ages, openness, connectivity and closeness of spaces, the appearance of private/semi-private/public spaces and the potential of their development. First, students found that all the former Russian military camps (1/4 of XX century) obtained similar typological, functional and morphological structure; then, identified the “typical units” in the urban structure of Krasnoyarsk’s Military camp, relying on the literature, maps and interviews. Krasnoyarsk Military camp as a planned settlement consisted of the units of residential blocks, organized linearly, oriented primarily in South-North direction. The units were turned by the short side to two main roads, which connected the functional polarities and nodal points with specialized buildings (church, main squares, public buildings and parade grounds), and went from the West part to the East. The secondary roads divided the residential units and went in a North-South direction. Students also analyzed the transformation of the main typical unit, and the life around and inside it in time, based on the documents and interviews of residents. The combination of morphological analysis and social surveys allowed to determine the social borders of a traditional neighbourhood.

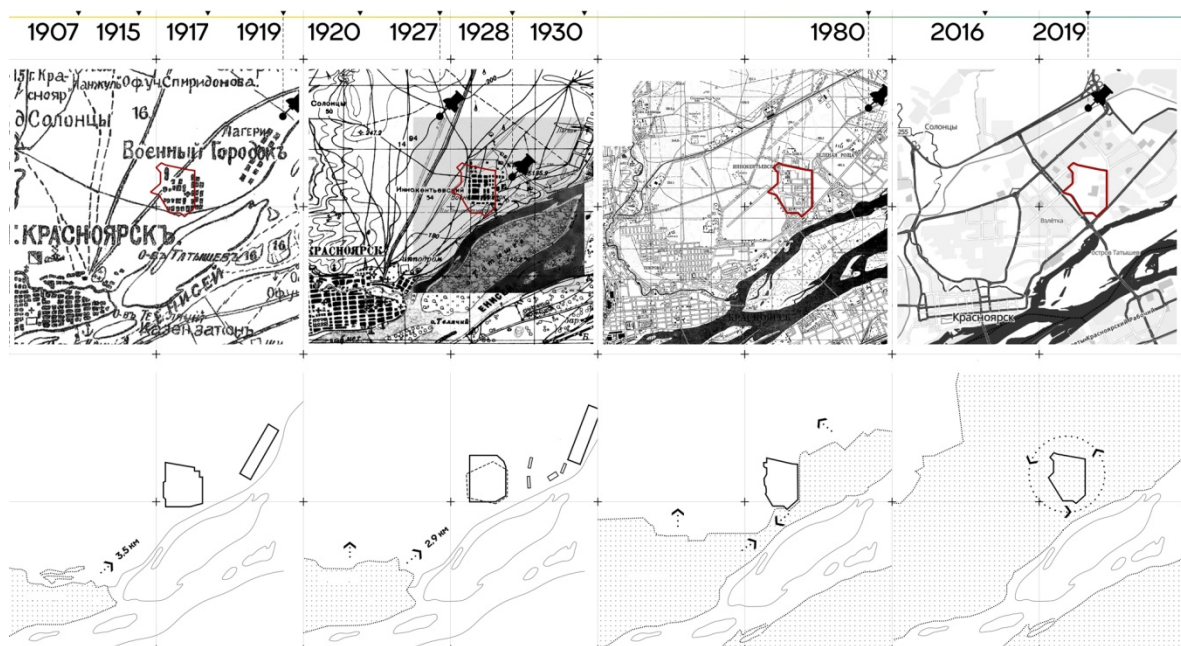


Figure 3. The location of Military camp and city growth, which 'embraced' the camp.

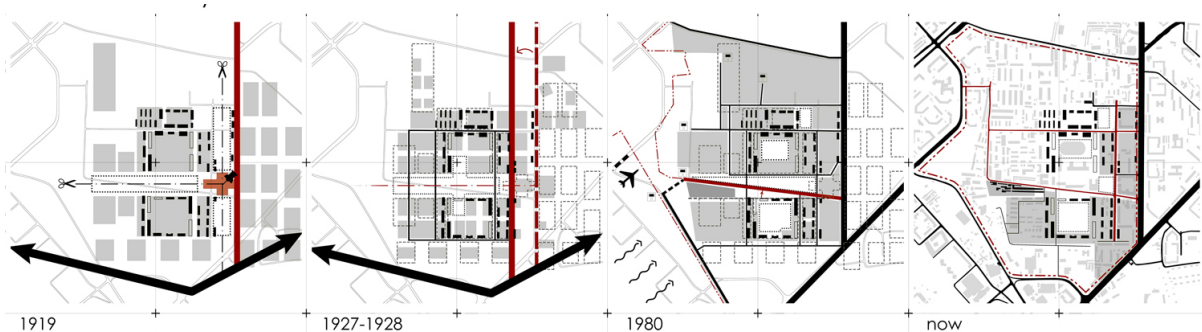


Figure 4 Historical stages of the development of Military camp.

The former structure of nodes, poles and direction of axes were largely dependent on the climatic features of the territory and the structure of the terrain. First of all, the overall territory of the camp was located on the natural terrace in the distance from the main city, the most convenient way of locating the urban units. Secondly, the location of poles corresponded the locations of naturally important points: the viewpoint on the natural elevation drop or the intersection of the major inter-city roads. Third, an almost orthogonal grid of main streets didn't correspond to the directions of main winds, which ensured that the Siberian winds in cold period would not be enforced. At the same time, it allowed the most efficient insolation. It is worth saying that the structure of the surrounding streets of the city ignores the camp: it corresponds to the main direction of winds, which along with other factors makes this surrounding area uncomfortable. This was due to the neighbouring location of the former airport: the direction of the runway for aeroplanes dictated the direction of the main streets when the airport was closed: new neighbourhoods were planned on the runway (airstrip) and preserved its orientation.

In sum, students found that features, which allowed the territory to be comfortable and efficient, were eliminated with the decay of the main function. The degradation led to the concentration of life along the secondary roads and to the shift of leading directions from main to orthogonal secondary roads. The presence of external movements at the secondary roads contradicts the social life of the place. The former poles degraded almost completely and now abandoned or filled with modern "neoplasms". Thus, the overall structure stopped functioning and was converted into several residential units surrounded by the huge abandoned territory. Therefore, for the project of regeneration of the territory students selected the strategy of the revival of historical organization of the place through the revitalization of its hierarchy of directions and poles/nodes, in which they placed the systems of special buildings with new functions, preserving the existing system of significances. The selected principle of the location of private/semi-private/public spaces respects the existing and historical organization of the place. Students focused on the substitution of the former degraded "polar" functions with the modern ones (Fig. 4). The private areas of communities remained private while the new poles were introduced to the intersections of main roads in order to provide the potential for development and not damage the existing unique lifestyle of residents. By introducing the special buildings and developing the "poles", they returned the original role to the former main roads and provided the vectors of development. The specific "types", which were identified during morphological analysis, were used in the proposals for the structure of future development of the territory. This approach assumes at the same time the minimal intervention to the residential units, which still contain valuable traditions, communities and the traditional lifestyle. Additionally, students also tried to apply the morphological analysis to the structure of buildings. All the above led to a more in-depth understanding of the main principles of "organism", the process of formation of Military camp and the respect to previous urban form.

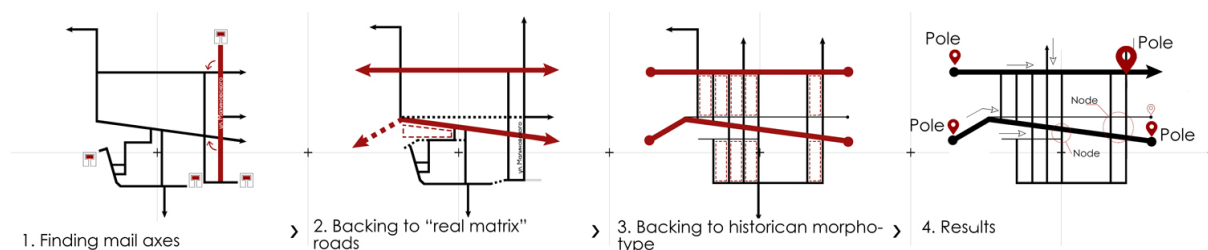


Figure 5. Students' proposal for structural regeneration of the Military camp.

CONCLUSIONS

The introduction of morphological analysis during the professionally-organized international workshop changed the way of students' perception significantly. The results of students' analysis don't pretend to the status of academic research and may contain the degree of unproficiency. However, the strategic way of thinking, careful approach to historical environments, taking into account contexts and system of social significances, the consideration of differences between public/private and transitional spaces, were the ultimate results of students' growth. The holistic approach to the part of the city as to the system or organism with respect to its inner qualities and rules changed students' mindsets and their understanding of urban regeneration completely. The more comprehensive perception of the territory raised the quality of the final projects. Students' voices started to sound more confident and grounded. Thus may lead to the conclusion that, first, international workshop as the introductory teaching tool demonstrated the effectiveness. Second, urban morphology as a tool for the development of holistic thinking works well on the Siberian ground and will be developed further in SFU.

Degradation of the main function of the Military camp caused the gradual degradation of the nodal points, poles, and the whole structure. After the morphological analysis, instead of the densification of the existing living area and the introduction of the public square to the private yards, students made an attempt to respect the traditions and social structure, selecting more systemic and sustainable approach. Additionally, the research experiment accelerated the positive activities around the place: the results of the research were communicated to citizens, practitioners and authorities. Media agencies in Krasnoyarsk were informed by the Deputy Minister of construction of the region Yevgeny Ganchukov: "The historical centre will be created in Krasnoyarsk on Malinovskogo street, where the houses built in the 1900-1910-ies and known as "Kolchak barracks" are located. For the memory of all generations, these Kolchak barracks will not only be preserved but also ennobled. Something like a cultural and historical place will be created there, such concepts are being developed." (<https://tass.ru/obschestvo/6943168>) This might be considered the sign of significant progress and efficiency of research intervention.

REFERENCES

- Alexander, C., Ishikawa, S., Silverstein, M., Jacobson, M., Fiksdahl-King, I. & Angel, S. *A Pattern Language: Towns, Buildings, Construction*.
- Caniggia, G. & Maffei, G. L. (2001). *Architectural Composition and Building Typology: Interpreting Basic Building*. Alinea.
- Gehl, J. (2011). *Life Between Buildings*.
- Harvey, D. C. (2010). Heritage Pasts and Heritage Presents: Temporality, Meaning and the Scope of Heritage Studies. *International Journal of Heritage Studies*. Retrieved December 12, 2018,
- Jane Jacobs. (1961). *The Death and Life of Great American Cities*.
- Latour, B. (1999). On Recalling ANT. *The Sociological Review*, 47(S1). Retrieved from
- Lynch, K. (1981). *A Theory of Good City Form*.
- Lynch, K. (1990). *The image of the city*.

- Maretto, M. (2014). Perché La Morfologia Urbana? *U+D_urbanform and design*, 1(1).
- Moudon, A. V. (2019). Introducing Supergrids, Superblocks, Areas, Networks, and Levels to Urban Morphological Analyses. *Iconarp International J. of Architecture and Planning*, 7(Special Issue 'Urban Morphology'), 01–14.
- Oliveira (ed.), V. (2018). *Teaching Urban Morphology, The Urban Book Series* (F. F. Arefian, M. Batty, S. Davoudi, G. DeVerteuil, K. Kropf, M. Maretto, V. Oliveira, C. Silver, G. Strappa, I. Vojnovic, and J. Whitehand, Eds.). Cham: Springer International Publishing AG. Retrieved March 5, 2020,
- Stepin, V. S., Gorochov, V. G. & Rozov, M. A. (1999). *Filosofiiia Nauki i Techniki [Philisophy of Science and Technics]*. Gardariki.
- Strappa, G. (2019). *Morphological map: base prototype*.
- Waterton, E. & Watson, S. (2015). *The Palgrave Handbook of Contemporary Heritage Research*. Palgrave Macmillan.
- Whitehand, J. W. R. & Gu, K. (2010). Conserving Urban Landscape Heritage: A Geographical Approach. *Procedia - Social and Behavioral Sciences*, 2(5), 6948–6953.
- Yaneva, A. (2012). *Mapping Controversies in Architecture*. Ashgate Pub. Co. Retrieved December 11, 2018, from
- Yaneva, A. & Heaphy, L. (2012). Urban Controversies and the Making of the Social. *Architectural Research Quarterly*, 16(1), 29–36.

CORRESPONDING AUTHOR

Daria Belova, docent in the Siberian Federal University, supplementary PhD student in the Sapienza University of Rome, Facoltà di Architettura - Piazza Borghese 9, Roma.
dariia.belova@gmail.com