Characteristic Features of Urban-Planning Solution of “Udarnik” Health Resort in Zheleznovodsk

N R Sidorenko¹, A G Tokarev²
¹Architecture and arts academy of Southern Federal University (SFU), Rostov-on-Don, Russia
²Department of architecture, Moscow State University of Civil Engineering (MGSU), Moscow, Russia

E-mail: ya.sinaro@yandex.ru

Abstract. Already during the first years of the Soviet regime the government prescribed a line of improvement concerning the state of health resort areas of the country in order to provide proper recreation to the working population. In this connection a vast building program of new health resorts, medical and recreation centers is launched in the towns of the Caucasian Mineral Waters; the development of those took into consideration two essential peculiarities of the territory – its mountain terrain and a specific structure of historic development. The case in point of such design is the building of “Udarnik” health resort in Zheleznovodsk; in its urban-planning solutions the authors of the construction, I.A. Fomin and M. I. Roslavlev, managed to reflect influence of the surrounding low-rise residential development and considerable changes in elevation and irregular terrain of the plot.

1. Introduction
Architecture of the Soviet avant-garde, created and developed during the 1920-1930ss has been an object of huge interest both for native and foreign researchers over a long period of time. The events of 1917 fundamentally affected all spheres of the country's life, including architecture, which was a reflection of socio-political changes in society throughout history.

“In the 1920s functioning of health resorts and health centers, sanatorium-and-spa treatment of the population pursued not only practical aims of healing sick and weakened citizens of the USSR, but also the task of strengthening the support base of the Bolshevik regime” [1, p.85]. The decree of 1919 “On medical areas of national significance” validated the narrative of V.I. Lenin “The health resorts are for the working population” which determined rapid unfolding of health-resort construction over the next several decades in the health resort territories of the USSR; the characteristic features of the construction process being described in certain published works of various authors (A.Yu. Dunaevskiy, A.V. Samoylov, S.D. Bagdarasyan and others). The architecture of health resorts was given priority because "every new success ... in this sphere affirmed the triumph of socialist humanism ...” [2, p.3]. The tasks faced by the architects while designing health-resort complexes are most clearly revealed in construction examples in the towns of the Caucasian Mineral Waters where the process became complicated because of the influence of two essential factors – historical context and peculiarities of the landscape. The research object of the present article is “Udarnik” health resort in
Zheleznovodsk (designed in 1927). The purpose of the work is to identify the town-planning features of the structure and the degree of influence of the terrain and surrounding buildings on its formation.

2. The main part
Design of leisure facilities in health-resort areas of the USSR posed difficult challenges to architects’ activities; the difficulties associated first of all with natural environment, climatic and geologic peculiarities of the territories designated for recreation of the population; the most attractive among which included the towns of the Black Sea coast, and the health resorts of the Caucasian Mineral Waters. A picturesque mountain terrain of these places presupposed preliminary engineering survey activities which unfortunately were not always fulfilled in reality. In some cases the result was locating leisure facilities in hazardous areas. Thus, due to insufficient degree of site surveying the health resort Tsustrakh in Sochi was located upon a landslide site [3].

Despite the difficulties regarding constructive solutions, the Soviet architects found designing of health resorts as community facilities very appealing, as the architecture of those could embody the boldest and the most progressive ideas. It's no coincid...

The Soviet architect I.A.Fomin was an active participant in the process of creation of many health-resort complexes. In 1929 two health-resorts based upon the common initiative of I.A.Fomin and M. I. Roslavlev were accomplished at the same time on the territory of the Caucasian Mineral Waters: a health resort “For industrialization” in Kislovodsk, reconstructed in a neo classical way in the early 1950s, and “Udarnik” health resort (nowadays called “Zdorovie”) in Zheleznovodsk; the latter was added to the list of cultural heritage sites of regional significance in 1981.

“Udarnik” health resort is located on a site limited by the streets Kursovaya (nowadays Semashko street) and Ostrovskogo (nowadays Kalinina street). Irregular trapezoidal configuration of the design area is a result of historical development of the town spatial pattern. At the beginning of the 19th century a famous Russian doctor F.P. Gaaz assisted by a local prince Izmail-Benzhukov, discovered healing mineral springs on the slope of Zheleznaya Mountain which laid the foundation of Zheleznovodsk in 1810.

Zheleznaya mountain became the key factor for the development of the future urban settlement. As far back as in 1812 the first visitors started coming and staying at the foot of the mountain: small groups from different parts of Russia, willing to get treatment in spite of the lack of basic living conveniences. But only almost 30 years later, in 1840 the authorities of the Caucasian spas made a preliminary list of the future property developers planning to build in the first town street stretched along the foot of Zheleznaya mountain [4]. As a result by the end of the 20th century apart from wooden and wickered constructions there had appeared comfortable hotels, state-owned structures, and over twenty revenue houses functioning as recreation and retreat centers. Besides, it was decided to expand the territory of the original settlement with the use of summer cottages on the western slope of Zheleznaya Mountain.

Developed by the 1920s the spatial structure of Zheleznovodsk is shown in the guide-book of 1913 by Grigoriy Moskvich (figure 1). Built along the foot of the mountain the first street of the town (Kursovaya) determined a direction of one more main town street – Ostrovskaya Street merging into Shosseynaya Street, a branch of which (Vokzalnaya Street) in its turn created the connection of Zheleznovodsk central part with the railway. At the turn of the century the railroad tracks were stretched parallel to the foot of Zheleznaya mountain being a part of the way between Mineralnaya Vody and Kislovodsk. Thus, a stretched strip of land was created limited on one side by the railroad tracks and from the other by the bottom of the mountain which predetermined further development of that town part in north-eastern direction.
The lanes crossing streets of Zheleznovodsk were lying perpendicular to the circumference of the bottom of Zheleznaya Mountain. Such urban street grid solution formed town blocks of unusual trapezoidal forms which later influenced building plans of public structures and objects located on such strips of land. One of the most characteristic examples of those is “Udarnik” health resort.

“In one of the original versions of the building design (it legitimately can be called a complex) the pavilions encircle the site on all sides thus creating a secluded inner courtyard (figure 2), [6, p. 319]. Availability of the latter, as mentioned by A.Yu. Dunaevskiy in his article, was a necessary condition of unimpaired operation of any health and leisure institution. Rational arrangement of general layout of many therapeutic complexes was of great importance. For example, wrong territory planning in Zeleny Mys (Green Cape) in Batumi resulted in providing insufficient space to accommodate recreation and sports areas thus failing to ensure normal functioning of the institution [3]. In the original layout of “Udarnik” the inner courtyard was arranged according to the principles of a standard park in the era of classicism: the central place was taken by a round platform, from it pedestrian alleys were diverging radially in different directions symmetrical to the central axis which was running between the lateral parts of the complex. In general, such a solution was consistent with the geometric features of the site configuration and took into account functional specifics of the complex, but did not reflect landscape features and historical identity of the urban space.
Figure 2. Plan of the ground floor in “Udarnik” health resort. Unimplemented version [7].

In the final version of the health resort architectural concept the authors opened the inner courtyard in southern direction, at the same time transferring the building facing Ostrovsky street to the central block, thus creating a U-shaped construction plan of the structure (figure 3). Such a transfer made it possible to preserve the conventional axis of symmetry for the courtyard. This, in turn, ensured the creation of the ceremonial image of the park inside, since the ability to organize a symmetrical space always gives the park a more festive, significant look.

Figure 3. Plan of the ground floor in “Udarnik” health resort [8].

As a result of connecting the structure parallel to Ostrovskaya Street to the central bulk of the building the second small yard for housekeeping needs was created in the north-western part of the site, the least fitted one for locating any significant structures because of a sharp-cornered border in that place. Its availability also was a necessary condition to ensure normal functioning of the therapeutic complex. The new solution made it possible to completely visually isolate the business site from the internal park of the resort and place all necessary amenities on an almost triangular site.

The selected planning scheme of the building and the space-planning decision of the health resort corresponded to the existing urban planning situation in relation to landscape characteristic features.
Using a significant difference in elevation of the site, the authors of the project decrease the number of storeys of side buildings from two to four using cascades down the slope, at the same time maintaining the structure height in relation to the main facade along Kursovaya Street, designed to maintain the existing building line. The façade of the building with its two storeys in height is well-proportioned to space of a chamber town street (figure 4). In its turn, an open courtyard ensured perception of the southern façade of the central building for a distant perspective in the first place - it is clearly visible from the railway station (figure 5). Secondly, the sites were facing Ostrovskaya Street with their yards, thus forming an exotic “green” wall made of shrubs and trees. Having opened the territory of the health-resort from southern side, the authors of the project managed to preserve the historical atmosphere of the place. Not only have they not destroyed it with grand premises but on the contrary managed to support by means of a developed park ensemble which was approximated to a relief slope to the greatest possible extent. The park represented half-way viewing decks situated in three layers and equipped with recreation spaces.

![Figure 4. A façade of the main building of Health resort named after A. P. Smirnov («Udarnik»), the 1930s.](image1)

![Figure 5. A view of «Udarnik», the first half of the 1930s.](image2)

The architectural and urban planning solution of “Udarnik” also naturally interacts with the most important structures in Zheleznovodsk. Two cultural heritage sites of federal significance are located upon the conventional planning axis of symmetry of the resort: Ostrovsky baths (1893) which occupy
the central place of the square with a monument to Soviet power fighters, and the Emir of Bukhara Palace (1912) situated on the terrace of Zheleznaya Mountain slope (figure 6). The inner courtyard of the health resort provides the view of the square where Ostrovsky baths are situated, and the main façade of the health resort along Kursovaya Street is facing the Emir of Bukhara Palace. The study of urban development showed that the health resort building blends seamlessly not only into the ribbon building development along the main town streets but also conforms fully to its altitude visual image. From the central entrance of the health resort the visitor sees unusual tower-like and dome-shaped forms of the summer cottage designed for the Emir of Bukhara rising above the greenery of trees covering the slopes of Zheleznaya Mountain. Therefore, a wonderful view of the whole resort complex is available from the terrace of the Palace; this way you can enjoy a natural cascade descent of side buildings from above. From the inner courtyard of the health resort a holidaymaker can contemplate architecture of the famous Ostrovsky baths with their unique color composition created by the architect P.Yu. Syuzor. And the square near Ostrovskaya health center provides a beautiful view of the majestic and firm silhouette of the health resort with cascade transitions of the inner park, on the background you also can see the towers of the Emir of Bukhara Palace peering through the mountain green (figure 5).

**Figure 6.** Site layout plan:

1 – The Emir of Bukhara Palace; 2 – «Udarnik» health resort; 3 – Ostrovsky baths complex

“A well-developed spatial construction of the ensemble in combination with the remarkably organic inclusion of the structure into the surrounding landscape” - , that was the definition of the main characteristic feature of the architectural concept of “Udar­nik” health resort provided by M.A. Minkus and N.A. Pekareva [9, p.56].

3. Conclusion

Let's summarize the main results of the study.

The volumetric-compositional solution of the health resort is a good example of immersion of a newly erected object into conditions of the existing urban planning situation from the point of view of interaction with both historical buildings and the natural landscape of the area.

The trapezoidal configuration of the plan corresponds to the site, reflecting the features of the historical formation of the city structure. The different number of storeys of the buildings in the health
resort was developed under the influence of a significant slope of the territory and the height of the surrounding buildings. The general layout of the site, accomplished in compliance with all the necessary functional interrelationships, takes into account the landscape characteristics of the area. The ideas of architects related to creating a harmonious interaction between a new building and the environment are fully embodied in the ensemble of the “Udarnik” health resort, which is one of the most recognizable buildings in Zheleznovodsk.

4. References
[1] Bagdarasyan S D 2012 A phenomenon of a peasant health-resort in the Soviet Russia of the 1920s Vestnik MGOU 1 pp 79-86
[2] Samoylov A V 1948 Health resorts and recreation centers (Moscow: Academy of architecture of the USSR) 80 p
[3] Dunaevskiy A 1934 Health resort construction in the USSR Architecture of the USSR 5 pp 58-67
[4] Khachikov V 2008 Zheleznovodsk (Mineral'nye Vody: recreation areas of the Caucasus) 79 p
[5] Moskvich G 1913 An illustrated practical guide to the Caucasus (Saint Petersburg: Edition of guidebooks) 615 p
[6] Tokarev A G 2016 Architecture of Southern Russia during avant-garde period (Rostov-on-Don: YuFU) 416 p
[7] 1927 A health resort for 200 people for Zheleznovodsk An annual report of architects’ and artists’ society 12 p 99
[8] 1930 Design project of a health resort in Zheleznovodsk An annual report of architects’ and artists’ society 13 p 78
[9] Minkus M and Pekareva N 1953 I A Fomin (Moscow: State Publishing House of Literature on Construction and Architecture) 311 p