

URBAN PLANNING CONCEPT OF THE MOUNTAIN SKIING COMPLEX «SUNNY VALLEY» IN MIASS CITY, RUSSIA

The article concentrates on an actual problem of development of the mountain skiing complex «Sunny Valley» in Miass city, Chelyabinsk region, based on the urban planning concept, designed by a development team under the directorship of Professor Alberto Francini from Milan, Italy. The pressing need for the development of this facility, which is one of the fastest emerging mountain skiing centers in Russia, caused by the need to create a social and health-improving complex under unique natural and climatic conditions of the Southern Urals.

The purpose of the urban planning concept is to develop science-based project of architectural and spatial organization of the mountain skiing complex «Sunny Valley», taking into account environmental requirements. According to the purpose, the primary objectives are development based on the use of identified planning techniques, creation of the architectural ensemble of the social facilities and engineering infrastructure. Methods of field survey with photo and video of the area, multivariate urban planning with the definition of priority directions of development are used to solve these tasks.

Urban planning concept the mountain skiing complex is based on planning techniques, containing «lines» and «islands». «Lines» include natural landscape with tracks of car and pedestrian roads, extensive areas of trees, bushes and elements of landscape design. «Islands» include contrasting combination of open spaces and volumes of the main building of a stadium, a multipurpose complex, hotels, multi-level parking and others. Requirements for environmental protection and rational use of natural resources are taken into account maximally, on the buildings solar panels are placed, recycling system of wastewater is provided, local thermal springs are used, that provide additional energy for engineering systems of heating, water supply and ventilation systems.

Keywords: *urban planning concept, the mountain skiing complex «Sunny Valley», Miass city, project, ecology.*

The mountain skiing complex «Sunny Valley», built in 2001, is one of the dynamically developing mountain-skiing centers of Russia. It enlarges infrastructure yearly, uses modern equipment and technologies, provide new services. At present there appeared objective necessity of enlargement of the mountain skiing complex «Sunny Valley» in Miass, Chelyabinsk region in the South Urals, Russia, based on the urban planning concept.

The purpose of the urban planning concept is to develop science-based project of architectural and spatial organization of the mountain skiing complex «Sunny Valley», taking into account environmental requirements. According to the purpose, the primary objectives are development based on the use of identified planning techniques, creation of the architectural ensemble of the social facilities and engineering infrastructure. Methods of field survey with photo and video of the area, multivariate urban planning with

the definition of priority directions of development are used to solve these tasks.

The mountain skiing complex «Sunny Valley» attracts amateurs and professionals due to its convenient location and developed infrastructure and now it includes:

- 11 routs with a maximum height drop of 230 m;
- spring boards, a snowboard park, a tubing route;
- 10 contemporary cableways;
- mountain skiing «Children club»;
- restaurants, guest cottages and other service units.

The mountain skiing «Children club» is a special proud of the mountain skiing complex «Sunny Valley». It has no analogues in the South Urals. Miass town district successfully realizes the program of physical training of school children on the base of «Children club».



Pic.1. General master plan diagram of Ski Resort Complex «Sunny Valley» in Miass, Russia:

- 1 – living zone, 2 – entertainment park, 3 – apart hotels, 4 – cottages, 5 – hotel, 6 – ski rental center, 7 – luxury cottage, 8 – indoor ice rink transformer for 200 places, 9 – sports play-fields, 10 – student campus complex, 11 – ethno-complex «Gold Miners Village»

Cottages designed in Alpine style are provided for guests of «Sunny Valley». The territory of the resort has some barbeque zones cafe «Turgoyak» at the foot of the mountain and INEYCAFE on the third floor of the administrative-services building.

Urban planning concept of complex «Sunny Valley», designed by the group of authors¹ under the guidance of professor A. Francini in international studio of urban planning and architecture of South Ural State University (national research university) in 2012 is based on modern principles of sustainable architecture and is oriented for creation of a large training centre of federal significance with the year-round regime of operation. The need for expansion of the existing infrastructure and buildings is caused by rapid development and popularity of the complex.

¹ The development team: S. Shabiev, Y. Sergeeva, K. Sirenyan, K. Balin

All natural green plantations are maximally preserved in designing. The requirements of ecological safety, applied to forbidden zones, are taken in account while organizing public services on the slopes of the Isvestnaya Mountain. Eco-tourist routs are laid on the slopes and attract attention of visitors to need for careful use and retaining biological and natural variety of the Urals (pic. 1).

In the nearest future for realization of this purpose it is planned to enlarge considerably the infrastructure of the centre. In future there will be located:

- 14 mountain-skiing routes with eight seat haist;
- The largest snowboard park in Russia;
- Fields for out-of-route extreme skiing;
- A training and certificating school of instructors;
- A multi-kilometer skiing route;

- Three settlements with hotels having 1500 places, restaurants and cafes.

The principal planning line of the whole complex «Sunny Valley» is the existing highway. It goes along the foot of the Isvestnaya Mountain. The project assumes a new «line» duplicating the existing one. It is planned to locate a stadium with 2000 seats, a public centre of a cottage settlement with 110 houses and a centre «Fishermen's Village» of prospectors. The «line» is formed as the main direction of pedestrian motion, accentuated by the panorama of the mountains and oriented to the dome of the stadium. Another «line» connects the public centre of the cottage settlement, the main square of the whole complex and aqua park, situated on the top of the mountain.

Secondary «lines» carried out through the main objects of the complex are oriented to the aqua park on the top of the mountain and the centre of the complex at the foot of the mountain. Some important units and a system of open spaces are designed in the places of intersection of main and secondary «lines».

In the future it is planned to locate a stadium with 2000 seats together with a multifunctional complex, which will include commercial, entertaining zones. The stadium and subsidiary territories will be covered with a single dome from a metal frame with transparent inserts from modern ecological materials.

A railway station, a new motorway, a small bus parking next to a railway station, multi-level parking with a helicopter area on the last floor are designed to increase the transport accessibility of the complex. The main access to the complex will be transpired to the railway station. A preliminary design provides a highway, which will directly connect a railroad unit and the existing highway along the foot of the Isvestnaya Mountain.

It is planned to organize a system of areas with alternation of sport units and open spaces on the planning «line», which connects the railway station and the mountain-skiing complex. The direction of pedestrian flows is dedicated by location of entrances into the most important units—the centre of the complex, the hotel, blocks of flats, the stadium. The system of pedestrian communication is designed taking into account the organization of the shortest distances between the main units including the multifunctional complex «The Centre of the village», two block of flats, a hotel, a cottage settlement with a public zone, a children sport ground, winter villas, a year-round aqua park, a sport centre, a railway station, a bus stop with an administrative-service buildings, a multi-level car parking with a helicopter area on the roof (pic. 2, 3, 4).

An urban planning idea of the whole complex is based on the synthesis «lines» and «islands» divided into two parts. The first part «lines» assumes using a natural landscape with tracks of pedestrian, bicycle, motor roads, long span of green trees, bushes and elements of landscape design.

One of variations of light and color solution of the central park is conversion of closed spaces into open ones. «Closed» spaces are provided due to characteristic planning location of buildings, as well as due to using additional horizontal plane connecting the ends of the roofs with steel cables. «Open» space is a central area, a place for various events. In the evenings dynamic images are projected to paving planes reflecting a given subject. A number of dynamic interactive installations «light and sound sculptures» are used as emphasis. While interacting with the audience, the installation «responses» to the movement of spectators with a series of color variations.

The second part «Islands» assumes contrast to linear elements of an open space and a volume main buildings, for example, the system of areas and the dome of the stadium.

Russian style with traditional folk motives and ornaments is used for achieving stylistic unity of facades of the designed buildings. Wooden, rock materials and glass are used as main finishing materials. Traditional ornaments are used for creation of paving pattern of main areas and pedestrian roads. Russian motives emphasize the uniqueness of the created complex and provide solemn mood of the space.

The multifunctional complex is the main centre of attraction of the whole mountain-skiing resort. There are administrative, habitable zones, entertainment and leisure zone, as well as a zone of mountain-skiing equipment hire in the complex. The building consists of two blocks, three and five-storied high, united due to a common part. The internal court opens a prospect to the hotel building located next to the multifunctional complex. Special composition feature of the multifunctional complex is the roof stylized in imitation mountains. This method provides an interesting architectural image of the building.

The seven storied hotel building locks the main area of the complex. The facades of the building overlook the road and the slope, providing an effective view of the mountain. The structural parts of the building are turned in the plan. This method arranges harmoniously the internal court of the hotel, which has a recreational zone with an open swimming pool for guests.

There is an embankment along the river, which includes walking, racing and cycling paths with wooden paving, leisure zones, observation



Fig. 2. Overall view of the mountain skiing complex «Sunny Valley» to the south



Fig. 3. Overall view of the mountain skiing complex «Sunny Valley» to the east



Fig. 4. Overall view of the mountain skiing complex «Sunny Valley» to the west

platforms, green planting and the active use of the relief as visual tribunes and recreational zones. As well as the embankment connects all the parts of the mountain-skiing complex, as it is a part of the architectural ensemble and fulfils transport, recreational and architectural functions.

The object of engineering infrastructure requires special attention. The utilization of household trash and sewerage are provided in such a way that minimum amount of pollutants would fall into environment. For this purpose a system of repeated use of sewage is provided in the whole complex. The projects have recovery system of heating buildings for energy saving which provides comfortable conditions in the accommodations. Solar panels are located on the buildings and several geothermal stations are built

on the site. They provide additional energy for engineering heating systems, water supply and ventilation.

The territory of the complex is clearly differentiated into the basic functional zones. The arrangement of buildings is maximally oriented to the pedestrian accessibility. The project forms a principally new medium of a human scale, which is functional and possesses a sufficient potential for further development and improvement. The whole complex is carried out in the united style and is the final architectural ensemble. The territory of the mountain-skiing complex «Sunny Valley» is to become an attractive eco-tourist zone for guests and inhabitants. It is capable to combine harmoniously the conditions of wild nature, a place of leisure and stay of man.

Alberto Francini,

Professor, Kent State University, Milan, Italy. E-mail: francini@metrogramma.com

Salavat Shabiev,

doctor of science (architecture), Professor, South Ural State University, Chelyabinsk, Russia. E-mail: shabievsg@susu.ru

Received 5 August 2016