

SECTION 1. ARCHITECTURE AND CONSTRUCTION

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1.1 Modern vision of the architecture of recreational housing in the Ukrainian Carpathians

The article summarizes the experience of studying the architectural features of wooden recreational buildings in the Carpathian recreational region. Local and general trends in the development of recreational architecture are formulated. The specific features of architectural solutions of recreational facilities are formulated. A new approach to the design of recreational buildings in the Carpathian region is proposed.

The purpose of the article is to present tendencies in the development of modern recreational architecture in the Carpathian region, taking into account the historical context and current trends.

The Carpathian recreational region has a huge potential for health improvement, treatment, and recreation, and it is developing in space and time. Since the first half of the nineteenth century, it has been one of the main centers of the recreation industry in Eastern Europe. Rich in history, the Carpathian Mountains occupy a favorable geographical location in the center of Europe, with good transport accessibility, distinctive terrain and well-preserved objects of material and spiritual heritage.

The intensification of construction activities, development and restoration of the recreational potential of the Carpathian region began in the 2000s and continues to this day with varying degrees of growth dynamics, although many issues remain unresolved. The scientific problem is the need to research and substantiate new approaches to solving architectural and planning problems in the construction of recreational buildings.

In the Carpathian region, recreational architecture is often represented by wooden buildings and structures. Traditional huts in the Carpathians vary from area to area, but most houses in the region traditionally had a one-story rectangular plan; one or two rooms; a central chimney; a gable, pyramid, or hip roof; and plastered and lime-whitewashed walls. [5], [6].

Examples of traditional Carpathian huts:



Figure 1. Hutsul Grazhda



Figure 2. Boykiv house

From the early 2000s to the present day, a remarkable number of vacation houses and cottages made of wood in the style of pseudo-traditional kolybas have been built and are still being designed in the Carpathians. However, often due to the ignorance of designers and an attempt to reduce construction costs, modern buildings lose the features of traditional ones and wooden houses bear little resemblance to authentic ones: they look similar, atypical for the ethnic architecture of the Carpathian region

and are often made of non-environmentally friendly materials that imitate natural ones.
[7].

Examples of non-traditional housing for the Carpathians, which distorts the vision
of the traditions of the architecture of the region:



Figure 3. A cottage in Slavske



Figure 4. «The estate of Peter and Paul»



Figure 5. «BUDILAROSH» Manor

Now they are starting to build more diverse residential and vacation buildings in
the Ukrainian Carpathians, which are in greater demand for rent. [8].

Some examples of modern vacation homes:



Figure 6. «KM Polyanytsya Hills&SPA»



Figure 7. «Travy, Tataryv»

Looking at the international experience of building houses in the mountains, we see an even greater variety of forms and materials. And we can also see that the buildings are in scale with humans and are naturally integrated into the natural mountain environment. [9].



Figure 7. «Tiny cabine»



Figure 8. «Aguacates House», Mexico

Based on the analyzed research, it is worth moving away from imitating wooden huts and creating a modern reinterpretation, while leaving the genetic code of the

Ukrainian Carpathians in the interior and details of the buildings. Also, these buildings should be human-scale and not aggressive towards nature and traditional huts.

The concept is to create comfortable houses with ergonomic spaces, seamlessly blending the buildings into the existing mountainous landscape to keep nature and the mountain panorama as the main focus.



Figure 9. Placement of buildings on the terrain

The idea is to create separate vacation cabins that are recessed into the ground on the north side. For this purpose, retaining walls ending in gabions were designed. It is also convenient from the point of view of communications and planning. On the north side, despite the retaining wall, which is deepened into the ground, there are non-residential technical rooms: bathrooms, pantries, kitchens. At the same time, the solid glass from the south to the east side, where the bedrooms and living rooms are designed, offers a magnificent panorama of the slopes of the Carpathians.

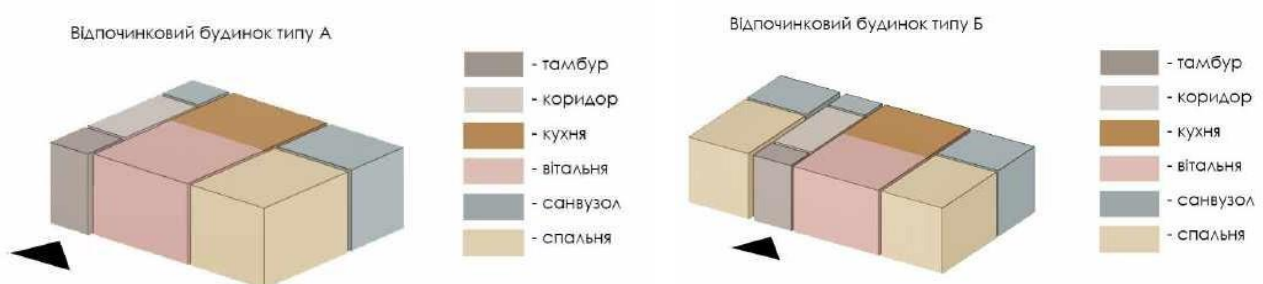


Figure 10. Planning scheme of typical houses



Figure 11. Visualization of the recreation center

To preserve the natural panorama, the buildings are designed only for the 1st and 2nd floors (maximum building height is 6 m).

In addition, it was proposed to use extensive greenery on all roofs, which does not require additional maintenance and creates an even more eco-friendly environment and a visual flow of green hills into the roofs of the buildings.

In the facades of the houses, we wanted to combine rough light walls, reminiscent of lime-whitewashed walls, and wooden elements. The exterior of the facades is made of decorative plaster with the effect of rough concrete, in some parts there are inserts of plank.



Figure 12. Building facades

The structural scheme of the building is designed as a frameless building with load-bearing walls. The external and internal load-bearing walls are made of gas block masonry, and the retaining wall is monolithic reinforced concrete. The foundations are monolithic bored piles with spacers. The floors are monolithic reinforced concrete.

The building's rigidity is ensured in the horizontal position by monolithic reinforced concrete floors and in the vertical plane by load-bearing walls. The roof structure is a flat roof with a green extensive roof.

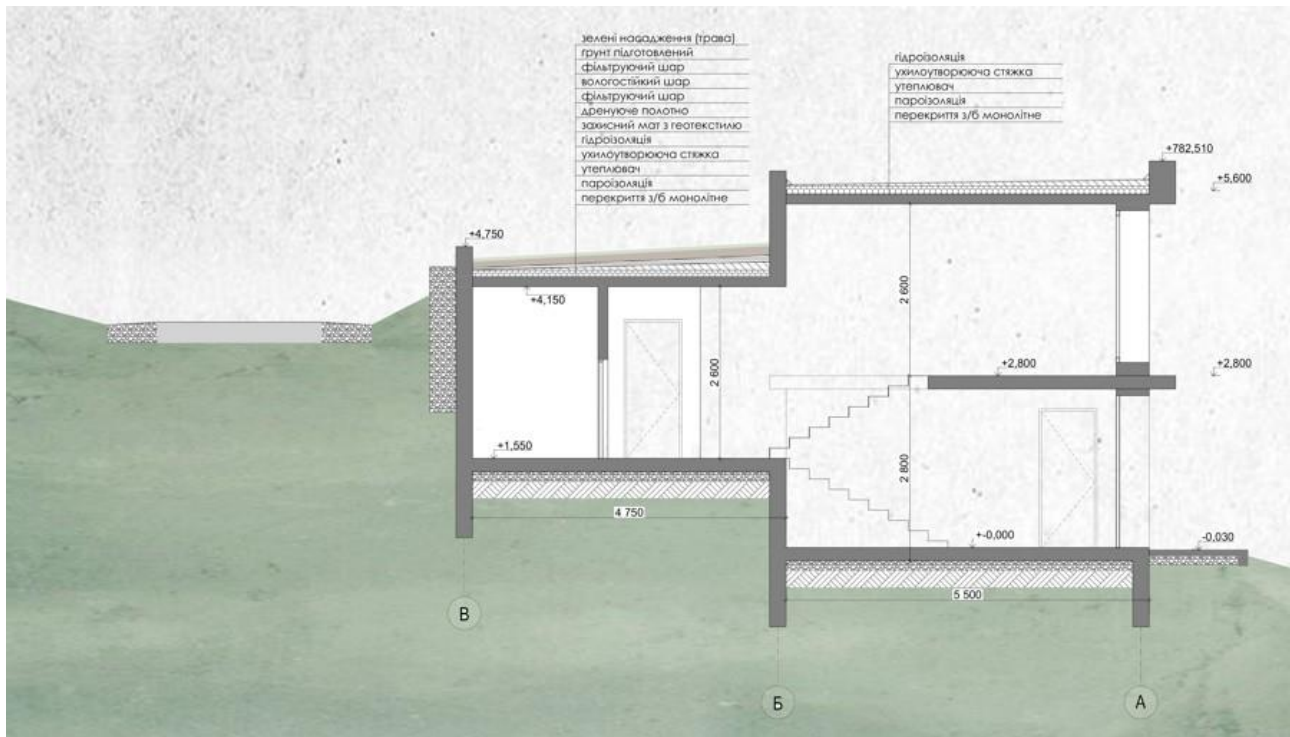


Figure 13. Section of a 2-level house

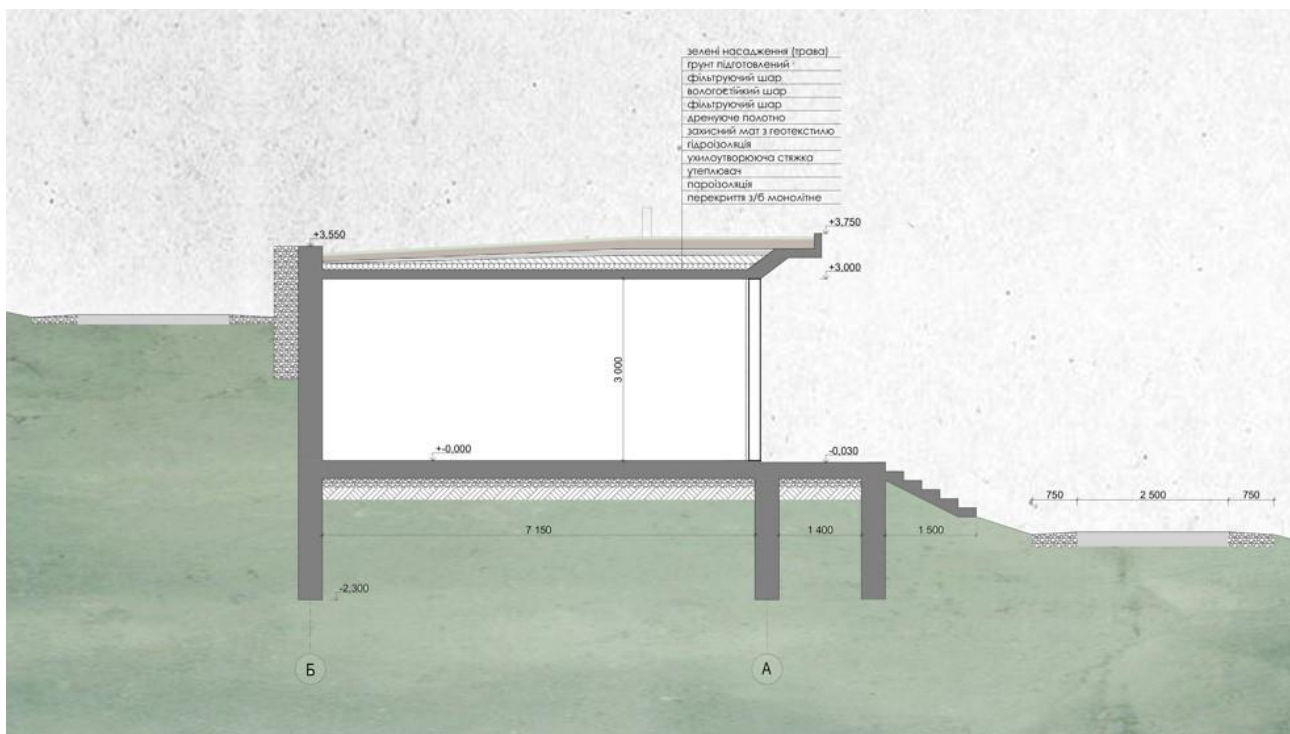


Figure 13. Section of a 1-level house

In conclusion, this form of recreational construction is promising for the Ukrainian Carpathians. This project can be adapted to any other location in the Carpathian region, and in general, not only. The use of local natural materials is environmentally friendly and economically feasible. The semi-buried form of the residential building has become especially relevant and safe in times of war. This design scheme creates safer dwellings, where windowless rooms located near the retaining wall can serve as a shelter in case of danger. Such houses are beneficial for the development of our region and will create a recognizable style of natural architecture in the Ukrainian Carpathians.