

ECO-DESIGN AND STRATEGIC CHALLENGES OF MANAGING SPA POTENTIAL IN THE REPUBLIC OF SERBIA

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Abstract

This thesis explores the concept of eco-design as a foundation for the sustainable development of spa destinations and the strategic challenges of managing spa potentials in the Republic of Serbia. The starting point is the importance of spa tourism for the national economy and public health, as well as the fact that Serbia possesses numerous, yet largely underutilized, thermo-mineral springs. Theoretical framework defines key concepts of management and strategic governance in tourism, with reference to the phases of the strategic process, national strategies, and challenges of their implementation. It analyzes institutional obstacles, insufficient investment in infrastructure and human resources, and the need for stronger partnerships between state and local actors. The eco-design chapter presents the definition, principles, and application of ecological design in tourism. It emphasizes the importance of energy efficiency, rational resource use, and biodiversity preservation, as well as the necessity of intersectoral cooperation and environmental education of the population. Conclusion highlights that integrating eco-design principles into strategic management is a prerequisite for long-term sustainable and competitive spa tourism development in Serbia.

Keywords: eco-design, spa tourism, strategic management, sustainable development, Serbia, Svrackovci Spa, environmental education, casestudy.

INTRODUCTION

Spa tourism represents an important segment of the tourism industry that combines recreational, health and wellness activities. The Republic of Serbia has an exceptional natural wealth of thermal mineral springs, over 1,000 springs, of which about 500 are mineral waters of different temperatures. There are about 35 registered spa resorts and spas on the territory of Serbia, which makes Serbia one of the richest countries in Europe in terms of sources of healing waters. [1] These resources create preconditions for the intensive development of health and wellness tourism, so it is emphasized that Serbia has the potential to become a regional leader in this area. However, the current situation does not fully reflect that potential - spa tourism in Serbia is still

underdeveloped and underutilized compared to the possibilities. According to data [1], spas in Serbia generate the majority of traffic with domestic tourists, while the participation of foreign guests is relatively small (only about 10% of the total number of visitors to spas). At the same time, wellness and spa tourism is expanding in the world with an annual growth of over 10%, which indicates the economic profitability of investing in this branch. Spas are not only places of treatment, but can become centers of luxury, relaxation and disease prevention, in accordance with modern trends in tourist demand. Investing in spa infrastructure and facilities has proven to be profitable: by attracting more tourists, income increases, new jobs are created and regional development is encouraged. The official

tourism development strategy of Serbia emphasizes that the natural resources of spas enable investments in completely new capacities (eng. greenfield), investments that can ensure accelerated local economic development - employment of young people, development of the service sector and agriculture in spa areas. In this context, the strategic planning of the development of spa tourism, especially in the domain of eco-design and sustainable management, is extremely important, in order to ensure the long-term sustainable use of these potentials. This paper will present the theoretical framework of tourism management and strategic planning in Serbia, look back at the concept and importance of eco-design in tourism, which is an instrument of spa potential management, and analyze the state of spa tourism in Serbia with reference to underdeveloped spas. Special attention will be devoted to the case study of the undeveloped spa Svračkovci and the strategic challenges of its valorization. Through a comparative analysis of Serbian and European approaches to spa centers, key differences in culture and strategy will be identified, as well as examples of successful use of smaller sources in Europe, all with the aim of formulating recommendations for the sustainable development of spa tourism in Serbia.

THEORETICAL FRAMEWORK

Management in tourism in Serbia

Management in tourism includes planning, organization, coordination and control of all activities aimed at achieving the goals of a tourist organization or destination. Tourism management includes the process of planning, organizing and controlling human and material resources in order to realize strategic organizational goals in a dynamic environment. [2] The specificity of management in tourism is reflected in its multidisciplinary - it is necessary to synchronize the activities of catering, traffic, trade, sports-recreational and cultural contents, so that the final tourism product is of high quality and competitive.

In Serbia, tourism management is institutionally organized through the competent ministry, the national tourism organization and local tourism organizations, which, together with the private sector, strive to plan and direct tourism development. The Law on Tourism of the Republic of Serbia defines the framework for tourism planning and development, emphasizing the principles of sustainability and quality of services. At the destination level, the concept of destination management is gaining importance because it implies the partnership of the public and private sectors in the joint management of the tourist destination as a whole. [3] In the context of spa tourism, management faces specific challenges such as maintaining medical infrastructure (specialized hospitals, institutes), developing accompanying wellness and recreational facilities, and extending the season and diversifying the offer.

Strategic planning in tourism at the national level

Strategic planning in tourism at the state level implies the development of national strategies and tourism development plans that determine long-term goals, priorities and measures for the improvement of the tourism sector. The Republic of Serbia has adopted several strategic documents in this area - the current Tourism Development Strategy of the Republic of Serbia 2016-2025 represents the framework for the development of domestic tourism in the current decade. The main goals of the strategy are the sustainable economic, ecological and social development of tourism in Serbia, strengthening the competitiveness of the tourism industry, increasing its contribution to GDP, raising the level of employment in the sector, as well as improving the image of Serbia as a tourist destination. [4] The strategy predicts a significant increase in tourist traffic - by 2025, the number of tourist overnight stays should reach 14.8 million (from 6.652 million overnight stays in the starting year of

2015). [4] In the Tourism Development Strategy of the Republic of Serbia 2016-2025, priority tourist destinations and products of special importance have been identified. [5] Out of a total of eighteen priority destinations, among which there are also two traditional spas, Vrnjačka Banja and Sokobanja, they were singled out as key bearers of the future development of spa tourism. [5] In addition, among the tourism products of strategic importance, spa and wellness tourism are highlighted, which confirms that the importance of spa tourism for overall development is recognized at the national level. [5] Strategic planning at the national level also includes action plans, normative and institutional measures, including legal regulations that regulate the use of natural healing factors such as mineral waters, gases and mud, as well as the powers of local governments in the management of spa properties. [5] Also, the strategy emphasizes the principles of sustainability and compliance with the 2030 Agenda - especially through the preservation of natural resources and the integration of environmental standards into tourism planning. [5] In this way, the national strategy provides guidelines for lower levels of management (regional and local), the private sector and other actors, thus ensuring a coordinated and sustainable approach to the development of tourism in Serbia. [5]

The concept and principles of eco-design

Eco-design (ecological or sustainable design) is an approach to the design of products, facilities and services that strives to reduce negative impacts on the environment in all phases of their life cycle. The basic assumption of eco-design is to take into account the effects that the product or object will have on the ecosystem already in the concept and planning phase, and to minimize those effects by using sustainable materials, energy and technologies. Unlike traditional design, which is primarily functional and economic criteria, eco-design integrates ecological criteria, such as reducing resource consumption, reducing

waste and pollution, the possibility of recycling or reuse, and long-term safety for the environment. Proper waste management is crucial for preserving the quality of water, soil and air, and thus also for the long-term sustainable development of tourist sites. [6]

A strategic approach to eco-design

A strategic approach to eco-design implies that ecological principles are incorporated into the planning of tourism development from the very beginning, and not as an afterthought. PLM (Product Lifecycle Management) can be seen as an integrated information approach that includes people, processes and technologies, with the aim of creating, storing and searching data, information and knowledge about products throughout their entire life cycle. [7] This concept of integrated management of resources and knowledge can also be applied in the field of eco-design, where it is crucial to consider the human factor, technological development and planning processes as a whole in order to achieve sustainable development. In Serbia, the topic of eco-design in tourism has only recently begun to receive attention and is still relatively neglected. Although the national tourism strategy mentions sustainable development as a principle, specific programs to encourage ecological construction and business in tourism are rare. Several hotels in Serbia have introduced international eco-certificates, but this is more the exception than the rule. The reasons for the neglect can be found in the lack of awareness and knowledge about the advantages of ecodesign, as well as in the perceived high costs. Many tourism companies, faced with business sustainability challenges, consider investments in green technologies to be a luxury. Also, there is a lack of support in the form of subsidies or tax incentives that would encourage the introduction of energy-efficient and ecological solutions in hotels and tourist facilities. Strategic actors who should work on the application of eco-design in tourism are primarily state institutions (ministries of tourism and environmental protection) through the creation of a

favorable political framework and incentives. Then there are professional associations and non-governmental organizations that can promote best practices and educate tourism workers about sustainable solutions. Finally, the private sector - investors, designers, managers in tourism - has a key role, because real change depends on their willingness to innovate and apply eco-concepts. One positive initiative in Serbia is the project "EU for energy efficiency and eco-design of products" which, through campaigns, strives to raise the awareness of citizens and businesses about the importance of choosing energy-efficient products. [8]

The role of local governments, ministries and institutions in the (non)development of spas

State institutions and local self-governments have a key role in creating conditions for the development or, if they are absent, for the stagnation of spa tourism. The Government of Serbia, on the proposal of local self-government units, determines areas that are considered spas and regulates the use of thermal and mineral waters and mud by granting concessions or rights of use. [9] This legal provision means that without the initiative of the local self-government to propose a place for a spa (and carry out medicinal tests), the place can remain officially unrecognized, which is the case with Slatinska Banja - although it has the natural characteristics of a spa, it does not formally have that status. [1] The granting of the status brings certain benefits, but also obligations - the municipality must ensure maintenance, monitoring of water quality and cooperation with the Ministry of Health on regular checks. [9] If the local government does not have the capacity or interest to deal with it, the spa remains "wild" or undeveloped.

Case study - Spa Svračkovci as a model of eco design

A case study is a research approach that enables an in-depth analysis of an individual

object or phenomenon. In this paper, the Svračkovci spa is analyzed as a case study, with the aim of showing the possibility of applying the principles of eco-design in the reconstruction and development of an underutilized natural resource. Ecological design (eco-design) represents one of the key concepts of contemporary urbanism and architecture. In the context of spa tourism, eco-design takes on special importance, because spas as tourist destinations rely on the use of natural resources - thermal and mineral waters, air, biodiversity and landscape.

Spa Svračkovci is an example of an underdeveloped and neglected spa in Serbia. Although it has healing water sources, it currently does not have adequate infrastructure or promotion. The goal is to analyze its current state and propose a reconstruction model based on the principles of eco-design, with a parallel analysis of economic profitability and the possibility of integration into the health and eco-tourism system. This example is significant because the Svračkovci spa is located at the crossroads of two phenomena:

- rich natural potential (medicinal sulfur water, mountain environment),
- lack of infrastructure and systematic management (neglect, lack of commercial content). The research question that guides this case study is - How can Svračkovci spas become a sustainable tourist destination by applying eco-design?

The following methodological steps were applied in this case study:

- Observation of the existing condition - review of the infrastructure and natural resources of the spa.
- SWOT analysis – assessment of internal strengths and weaknesses, as well as external opportunities and threats.
- Scenario analysis - proposal of possible development models (eco-design, commercial tourism, public-private partnership). The results of the SWOT analysis show that the Svračkovci spa has significant internal strengths and potentials, but at the same time numerous weaknesses

that limit its development. The biggest advantage is the existence of a curative source of sulfur water and a natural environment that favors the development of eco-tourism. On the other hand, the lack of infrastructure and institutional support represent the biggest challenges. When looking at external factors, it is clear that global trends in tourism, such as the growing interest in wellness and sustainable destinations, can be a strong driver for positioning Svračkovci Spa as a niche tourist destination. However, competition from more developed spas and the risks of climate change point to the need for careful planning and application of eco-design principles. In conclusion, the SWOT analysis shows that the most suitable strategy for Svračkovci Spa is the use of natural forces (resources) and global opportunities, while at the same time reducing internal weaknesses through reconstruction in the spirit of ecodesign. Only such an approach can enable this spa to become a competitive and long-term sustainable destination.

Research methodology

The methodological framework of the work is based on the initial assumption that the concept of eco design can be seen as an integral part of the strategic management of spa potential.

The data were collected using a survey questionnaires in electronic form on the Google Forms platform. The survey questionnaire contained two types of questions:

- Closed questions - a Likert scale (1-5) was used, where 1 means complete disagreement, and 5 complete agreement, for the quantitative analysis of respondents' attitudes and opinions.
- Open questions - enabled the collection of qualitative data and additional comments from respondents. Data collection was carried out in the period from September 29, 2025. until 03.10.2025. year. Respondents were informed that participation was voluntary and that all

responses would be used exclusively for analytical research purposes.

- Addresses or other personal data of respondents were not collected in the survey.
- Respondents entered the names of their agencies or organizations for records and easier data processing.

Validity of the instrument

The validity of the survey is ensured through:

- Content validity – questions based on theoretical frameworks and previous research.
- Logical and linguistic validity – clear and unambiguous formulation of the question.
- Piloting - testing the questionnaire on a smaller number of respondents to check understandability and reliability.

The structure of the achievement instrument research objectives

The questionnaire is divided into two parts:

- Demographic profile – name of the agency/organization, location, years of operation of the agency.
- Attitudes and opinions about spa tourism and eco-design - on a Likert scale. This structure allows:
- Quantitative analysis of attitudes using a Likert scale.
- Qualitative analysis of respondents' opinions and recommendations.
- Linking the results with the research objectives, that is, the identification of the potential of spas and the application of eco-design.

The subject of the research refers to the analysis of the concept of eco-design as an instrument of sustainable development in the context of strategic management of the spa potential of the Republic of Serbia. The focus is on how the principles of eco design can contribute to improving the tourist offer, preserving natural resources and increasing the competitiveness of spa centers.

The goal of the research is to examine the attitude of tourist agencies on the

development of undeveloped spas in Serbia and the application of eco-design in tourist arrangements. The research belongs to empirical, primary and quantitative research because it aims to identify and describe the views and opinions of respondents, as well as to provide preliminary conclusions about the development potential of undeveloped spas and sustainable tourism. The research sample includes all travel agencies and tourist organizations from the territory of the Moravica district. The main goal of the research is to see to what extent the principles of eco design are integrated into the strategic planning and management of spa potential, and to determine the key factors that influence their successful implementation.

Sampling technique

Purposive sampling was used, whereby agencies considered relevant to the research were selected, regardless of previous experience in offering spa arrangements. Imperfect response was taken into account when interpreting the results, but participants who responded provide relevant data on attitudes and practices in spa tourism.

Results and discussion

This chapter presents the results of a survey conducted among tourist agencies from the area of the Moravica district. The goal of the graphic display is to visually show the respondents' views on the development possibilities of underdeveloped spas in Serbia, as well as on the role of various actors in the process of strategic planning, infrastructure improvement and the application of the principles of sustainable development. The graphic displays were created on the basis of the processed data obtained from the survey, and they are accompanied by interpretive descriptions that provide a deeper understanding of the attitudes of the respondents and their connection with the subject of the research.

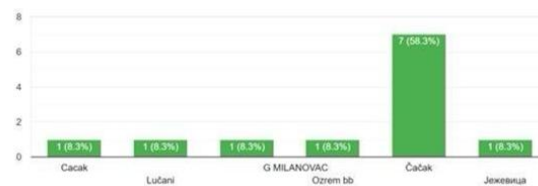


Figure 1. Answers from the headquarters of the agency

The results show that the majority of respondents, 66.7% to be exact, are based in Čačak. Two respondents each (16.7%) indicated Gornji Milanovac, while one respondent (8.3%) indicated Ježevica and Lučani as the location of the agency's headquarters.

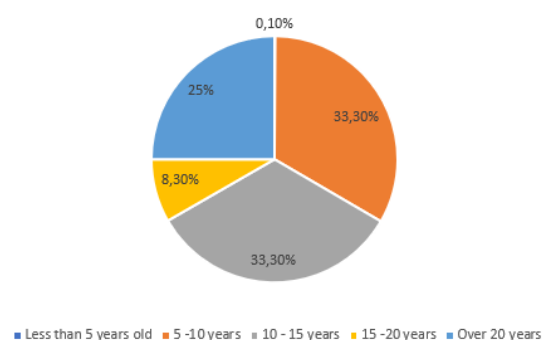


Figure 2. How long the agency has been operating

Analysis of the results shows that the vast majority of respondents, 91.7% to be exact, state that their agencies have been operating for between five and ten years. One respondent (8.3%) has been operating for a longer period, from ten to fifteen years. These data indicate that most agencies have stable, medium-term experience in business, which can contribute to the quality of services, professionalism and ability to develop new projects. Predominant experience over a longer period, as is the case with one agency, represents added value in terms of expertise and long-term stability.

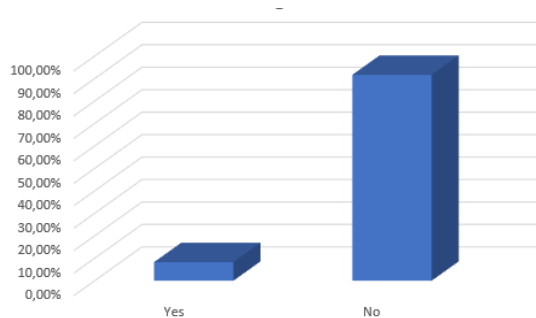
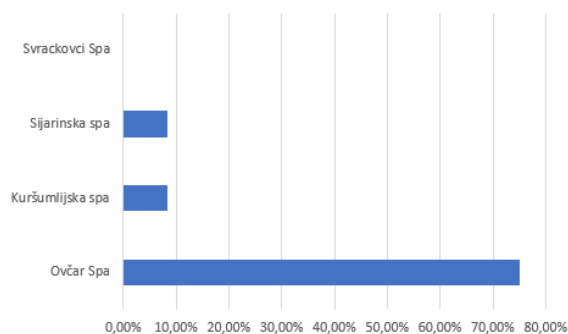


Figure 3. Arrangements that include visiting undeveloped spas

The analysis shows that the majority of respondents, more precisely 91.7%, do not offer arrangements that include a visit to undeveloped spas, while only one respondent (8.3%) stated that such arrangements are available. These results indicate that the offer of agencies is currently focused on already developed spas, while potential, less known or underdeveloped spas remain underrepresented. This information is important for identifying gaps in the market and indicates opportunities for introducing new arrangements that would promote underdeveloped spas, contributing to their development and diversification of the tourist offer.



Picture 4. In your opinion, which is the most underdeveloped spa and has the most potential?

The results show that the majority of respondents, 75% to be exact, believe that Ovčar spa is the least developed, and at the same time, the spa with the greatest potential for development. One respondent each (8.3%) mentioned Svrackovci Spa, Kuršumlijska Spa and Sijarinska Spa as spas with potential. These results clearly indicate that tourist agencies mostly recognize the

potential of Ovčar Spa, which is important information for planning the development of spa tourism. Other spas, although recognized as potential, are not in the focus of the majority of respondents, which may be an indicator of the need for greater promotion and development strategies in those regions.

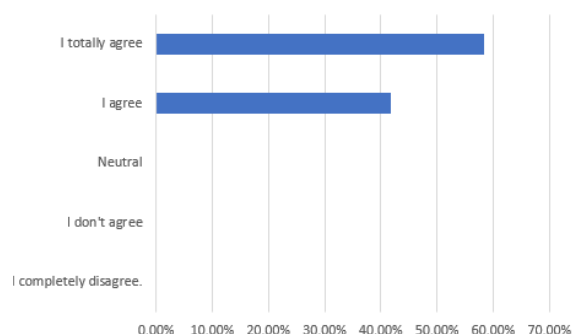


Figure 5. Undeveloped spas represent unused potential for the development of tourism in Serbia

The results show that the majority of respondents fully or partially agree with this statement. More precisely, 58.3% of respondents stated that they completely agree, while 41.7% expressed the opinion that they agree with the statement. No responses indicating disagreement or neutrality were recorded. These results indicate a clear perception of travel agencies that undeveloped spas in Serbia represent a significant unused resource in the tourist offer. Such an opinion highlights the potential of these locations for future investments, promotion and development, as well as the need for strategic planning that would allow the potential of spas to be used to the maximum.

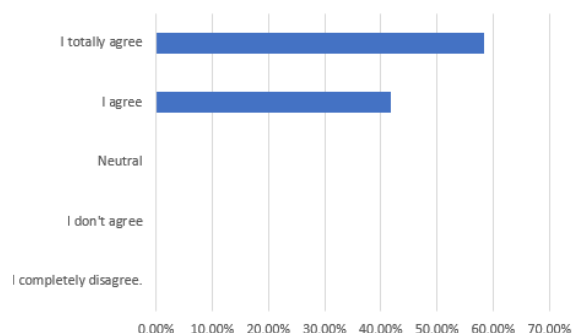


Figure 6. The role of the state in the development of spa destinations

The results of the survey show that the majority of respondents, who represent tourist agencies of the Moravica district, recognize the importance of the state in the development of spa tourism. More precisely, 41.7% of respondents stated that they completely agree with the statement, while 58.3% expressed the opinion that they agree. No respondent indicated disagreement or neutrality. These data indicate a consensus among agencies that the state has a key role in the strategic planning and development of spa destinations. The respondents' perception highlights the need for clear state strategies, support through investments, regulations and promotion, in order to enable sustainable and coordinated development of spa tourism.

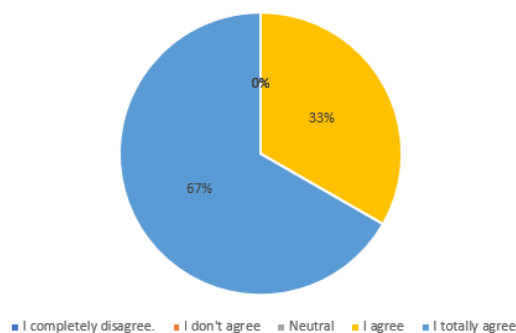


Figure 7. The role of local self-government in strategic planning and development of spa destinations

The majority of respondents, who represent tourist agencies of the Moravica district, recognize the importance of local self-government in the development of spa tourism. More precisely, 66.7% of respondents point out that they completely agree with the statement, while 33.3% express agreement. No responses indicating disagreement or neutrality were recorded. These results indicate the importance of engaging local authorities in strategic planning, providing infrastructure support and promoting spa destinations. Respondents believe that the active role of local self-government can significantly contribute to sustainable development and attracting tourists. The interviewees, tourist agencies of the Moravica district, emphasize

the potential of eco-design and sustainable management as a mechanism for the economic development of local communities. The results show that 41.7% of respondents completely agree, 58.3% agree, without a single neutral or negative attitude. These data indicate the belief that the application of sustainable and environmentally responsible principles in the development of spa destinations can directly affect the creation of jobs and the reduction of migration from smaller towns. Respondents believe that this approach not only improves the local economy, but also contributes to the creation of a long-term sustainable and competitive tourist offer.

Concluding considerations

The analysis of the survey conducted among the tourist agencies of the Moravica district shows that undeveloped spas in Serbia represent a significant unused potential for the development of tourism. Most respondents point out that there is a need for strategic planning, investments and cooperation between the public and private sectors, as well as local governments, in order to enable sustainable and long-term development of these destinations. The results indicate the recognized importance of infrastructure and the integration of ecological principles and eco-design, which can increase the attractiveness of spas and attract more tourists. Respondents also emphasize that local self-government has a crucial role in preserving natural resources and implementing sustainable environmental policies, while digital promotion and branding of "green" and sustainable offers can significantly increase the recognition of destinations. Strengthening the population's awareness of the potential of spas, as well as the active cooperation of tourist agencies, local self-government and the private sector, is recognized as a prerequisite for improving development. In addition, the implementation of eco and wellness programs, as well as the use of local and natural materials in architecture, can

contribute to economic development, the creation of new jobs and the retention of the population in smaller towns. Overall, the survey shows a clear view of respondents that the integration of sustainable planning, eco-design, cooperation of all relevant actors and promotion of spas through digital channels are key factors for the successful development of underdeveloped spas in Serbia. These conclusions provide a basis for further research and development of strategies that can support the development and positioning of spas as attractive and sustainable tourist destinations.

CONCLUSION

Research on eco-design as a basis for strategic management of spa potential in the Republic of Serbia is that sustainability has become a necessity, not a choice in the development of spa tourism. Contemporary trends in the field of tourism management require the integration of ecological, economic and social dimensions of development, which implies a new approach to planning and resource management. Serbia, as a country with extremely rich thermo-mineral and natural potential, has the opportunity to position spa tourism as one of the pillars of its sustainable development and competitiveness on the regional market. The research results show that there is a significant gap between the potential that Serbia has and its actual utilization. The problems primarily relate to insufficient institutional coordination, lack of long-term strategies and management plans, limited investments in infrastructure and personnel, as well as a low level of environmental awareness. The concept of eco-design provides a systemic solution that enables balanced development through optimal use of natural resources, improvement of the quality of services and preservation of the environment. The application of this concept in spa centers enables the connection of health, tourist and environmental functions into a single whole. Through the case study of Banja Svrčkovci, it was shown that even in local areas with limited financial

resources, significant results can be achieved if there is a strategic approach, cooperation between the public and private sectors and consistent application of eco-design principles. The proposed measures, which include the development of infrastructure, digital promotion, improvement of personnel capacities and the introduction of ecological standards, represent a model that can be applied to other spa destinations in Serbia. The essential value of the work is reflected in pointing out the need to integrate ecodesign into national and local tourism development strategies. Only through an interdisciplinary approach that unites science, management, architecture, health and environmental protection is it possible to create a permanently sustainable spa system that will contribute to economic growth, the health of the population and the preservation of natural resources. Eco-design, in this sense, is not only a concept of aesthetics and functionality, but a philosophy of managing space, people and nature in accordance with the principles of sustainability. In conclusion, the development of spa tourism in Serbia must be based on strategies that will enable the rational use of potential, investment in human resources and the creation of a value system based on environmental responsibility. Only such an approach can ensure the long-term competitiveness of spa destinations, their recognition and importance within the European tourist area. Eco-design, as a link between nature and development, is a key step towards a future where ecology and economy are allies, not opposites.

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