

METODOLOŠKI PROBLEMI PRIMENE OBNOVLJIVIH IZVORA ENERGIJE U ZAŠTITI KULTURNOG NASLEĐA

METHODOLOGICAL PROBLEMS OF THE APPLICATION OF RENEWABLE ENERGY SOURCES IN CULTURAL HERITAGE PROTECTION

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Heritologija kao nauka o zaštiti kulturnog nasleđa, multidisciplinarna je oblast, u kojoj pitanje energije ima izuzetan značaj u domenu zaštite nepokretnog kulturnog nasleđa, odnosno arheoloških lokaliteta. Modeli savremene prezentacije nasleđa zasnovani su na primeni novih tehnologija, kao i na ekološkoj bezbednosti u koju je uključena i primena obnovljivih izvora energije. U ovom radu istražuju se metodološki problemi u formulisanju paradigme zasnovane na principima intentio operis i intentio auctoris, koja u projektovanju modela prezentacije kulturnog nasleđa uvažava pitanja jedinstvenosti, originalnosti i ekskluziviteta autorskih prostornih rešenja, zbog čega je veoma osetljivo i pitanje modela primene obnovljivih izvora energije.

Ključne reči: obnovljivi izvori energije, kulturno nasleđa, paradigma

Heritology, as a science for the protection of cultural heritage, is a multidisciplinary field in which the issue of energy is of great importance in terms of protection of immovable cultural heritage, that is, archaeological sites. Models of contemporary heritage presentation are based on the application of new technologies, as well as on environmental safety, which includes the use of renewable energy sources. This paper explores methodological problems of formulating a paradigm based on the principles of intentio operis and intentio auctoris, which in designing a model for the presentation of cultural heritage takes into account the uniqueness, originality and exclusivity of author's spatial solutions, which makes the model of renewable energy application very sensitive.

Keywords: renewable energy, cultural heritage, paradigm

1 Introduction

Double referentiality characterizes the application of renewable energy sources in the domain of objects and landscapes protected as cultural heritage: the presence of man in nature, on the one hand, and the presence of nature in man's creation, on the other. These positions are not predetermined as given cultural models, even when dealing with objects belonging to the same historical and stylistic groups, but, as practice shows, they always represent a created constellation, which, with a historical background of understanding, must be considered and adaptable from standpoint practices of introducing technical and technological innovations. Models of creating, or shaping reality, when it comes to the introduction of renewable energy sources into the space of cultural heritage objects, therefore, depend on the convergence and / or divergence, not only of basic disciplines, heritology and energetics, but also of numerous auxiliary scientific disciplines, which are necessary in author's concepts of interpretation of heritage, they pass through the prism of subjective and intersubjective experiences, which is why heuristic assessment is an important methodological step in the protection of heritage.

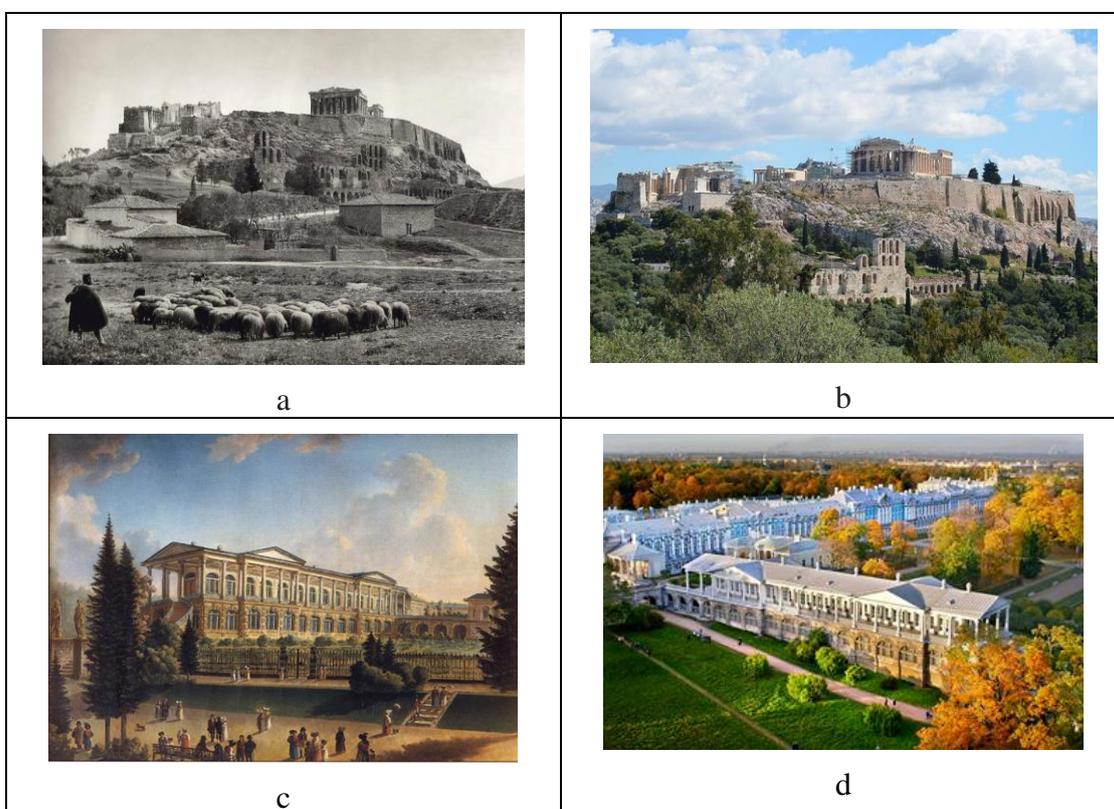
2 Intentio operis i Intentio auctoris

In this research, considering the application of technological solutions in heritage protection, the presence of man in nature was considered within the intentio operis principle, and the presence of nature in the human part that represents heritage, within the intentio auctoris principle. We pre-

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sent the results of comparative research (with a brief excerpt from a case study), on the basis of which the problem is defined and methodological directions established based on selected scientific sources that make up the research circle necessary for observing the problem.

Defining the constellation in which the study of the most appropriate approach for studying the mode of application of renewable energy sources (in space or in the surrounding environment of cultural heritage objects) is moving, we methodologically determine in a kind of palingenesis process that encompasses multidisciplinary areas that comprise heritology, and the fields of energy sources study. Considering different schools of thought within intuitionism, formalism and phenomenology, structuralism, deconstruction and postmodernism, Fernando Braudel's "la longue durée" is imposed as the dominant ideograph, [1] because it is established that, apart from the historical layers of the cultural heritage object, as this author points out, we have to consider changes as well, as "... the only way of speaking that connects history with the present and transforms it into an indivisible whole" [2]. It is a view that the scenery with its geographical characteristics has its history without which it would be impossible to understand the scenery where the cultural object was created, so changes in the levelling of land and vegetation can be observed in parallel with the changes suffered by the objects in the localities.



UNESCO World Heritage Site - Acropolis in Athens: a – 19th century. [3], b - 21st century. [4]; The Cameron Gallery, Sankt Petersburg: c – 18th century. [5]; d – 21st century. [6]

Recognizing the long history and perspective of landscapes changes, UNESCO-protected cities, such as St. Petersburg, whose historic core is protected, make specific laws, such as laws on the boundaries of cultural heritage protection zones in the city and land uses within such zones (2014), as well as the St. Petersburg Land Use and Development Rules (2010), which prevent the construction of high-rise buildings and the inappropriate expansion of new urban areas that could in any way compromise the integrity and authenticity of the protected core with the environment. However, methodological approaches in investigations of the authenticity and integrity of protected cultural heritage, in the part dealing with the presence of nature in the creation of man, in modern practice can offer completely divergent results. A comparative analysis of UNESCO's World Heritage Sites [7], with an analysis by Boris Groys, a philosopher, theorist, and critic of contemporary art, [8] shows that such contradictions can be one of the methodological problems in understanding

the task facing a technophilosopher who, as a forerunner of the engineer, explores the necessary aspects for the introduction of technological content into the spatiality of cultural heritage:

UNESCO World Heritage Sites o Sankt - Peterburgu	Boris Grojs
<p>... The city has preserved the authenticity of its main components. The initial layout of the city and much of the original buildings in the historic center of St. Petersburg testify to its extraordinary universal value.... The nominated cultural assets connect outstanding examples of Baroque imperial residences with the architectural ensemble of St. Petersburg, which is a remarkable Baroque and neo-classicist capital. Ensembles designed in and around St. Petersburg by Rastrelli, Vallin de la Mothe, Cameron, Rinaldi, Zaharov, Voronikhine, Rossi, Montferrand and others had a major influence on the development of architecture and monumental art in Russia and Finland in the 18th and 19th. Century.</p>	<p>... St. Petersburg is one general cultural quote and the behavior of the people who inhabited it has always been a process of constantly quoting some - rather fictitious - Western pattern. In the capacity of such a quote, St. Petersburg - though at a certain historical moment, but at the same time extra-historical - immediately emerged as a major city, skipping all stages of historical growth. ... Therefore, it is usually perceived as an "inorganic" city, as a gigantic theatrical decoration consisting of quotations from some, perhaps real, historical cities, housed in some specific, extra-historical, unrealistic, illusory space...</p>
<p>In the field of urban design, St. Petersburg represents a unique artistic achievement in its program ambition, plan coherence and speed of execution. From 1703 to 1725 Peter the Great raised the city from a landscape of wetlands and rocks ...</p>	<p>... The fact that St. Petersburg was built on wetlands, and that it is also under constant threat of submersion, and also a special climate with inevitable bad weather and unusual avian lighting, further created and creates the effect of absence of a place where the city stands. St. Petersburg resembles a city raised by Goethe's Faust-obsessed, as is well-known, New-Faustian spirit in which the lemurs remain the main actors....</p>
<p>St. Petersburg has twice been directly and tangibly linked to events of universal importance.</p>	<p>....Saint-Petersburg and Petersburg statehood are symbols of that self-colonization, and therefore Russia's attitude towards them has always been as doubtful as their attitude towards Russia: St. Petersburg was also the capital of Russian glory and power and an eternal sign of cultural enhancement and psychological humiliation of the Russians....</p>

3 Methodological problems and scientific sources

The afore mentioned very comparative view of the divergent opinions of world-renowned experts on the same topic in the field of cultural heritage represents the paradigm of the atmosphere that accompanies many cities in the world, which objectively represents a significant problem for the engineer who creates projects linking protected heritage with new models of energy sources. From initiation, through necessary interaction, to the transformation of ideas required in the collaboration of heritologists and engineers, this problem requires the natural background of understanding, as noted by Karl Popper in Objective Cognition [9], to which we also associate Faerbend's Sci-

ence as Art [10] and Jaus's Aesthetics reception [11], as a basis for methodological research on the line diachrony - synchrony - history.

Significant sources of knowledge for methodological research are also found in the works of Maximilian Sora, who is the author of the syntagm Human Ecology [12]. Bearing in mind that we seek methodological strongholds in works of authors who belong to scientific fields traditionally placed outside the problem of heritage protection (geographers and mathematicians), we show that this is a methodological eclecticism that imposes the theme of linking cultural heritage with energy, i.e. renewable energy sources. This polyperspective relationship enhances the scope of categorical analysis and only confirms the philosophical line from Aristotle's conception of art as a formative energy expressed through various scientific and artistic designs, to Huserl's notion of Lebenswelt [13].

Considering that the protection of cultural heritage is an obligation of every generation, such as the obligation to constantly review values and models of heritage protection in search of better methods, the use of renewable energy sources can be considered as a logical part of this process of review and improvement [14]. As Susnjic points out, the key factor in history is change, because "... what does not change, does not have history ...", it must be understood that every periodization is conditional and that there is "... necessary, general, constant and essential in changing historical circumstances and events. "[15]. In relation to cultural heritage and new technologies in the methodological linking of cultural heritage and energy, it is also shown that in such a change, the mediating role of the skill of interpretation is necessary, which in scientific observation, on the topic of incorporating renewable energy sources into the space of the protected heritage, must have an aesthetic dimension.

Finally, in the well-known theoretical line advocated by the German aesthetist Fischer, that "... the simple synthesis of subject and object, in which the subject is subordinated to the object, is not sufficient to the spirit of art ..." [16] we also associate the necessity that methodological research, which precedes the creation of the concept of renewable energy resources application, realizes the creation of a constellation for the subject and the object as an active process of "... the transformation of the art of the past into the spiritual energy of the present ...", which is, in the domain of museology, the thought of the Serbian theorist Protic [17].

4 Conclusion

The methodological problems of the application of renewable energy sources in the protection of cultural heritage are manifested at different levels in the process of harmonizing the changes that affect the objects and landscapes of the heritage over time. In order to include renewable energy sources into these new spaces in the 21st century, it is necessary for their design to have a high level of sophistication that respects the fragility of heritage. Therefore, previous, multidisciplinary methodological research presents the basis of engineering work, from initiation, through necessary interaction, to transformation of ideas about applicable solutions. Comparative studies of the scientific sources presented in this paper indicate that methodological strongholds are also found in the sciences that have historically been outside the field of cultural heritage protection.

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