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PLANERSKI MODELI PREOBRAZBE KAMENOLOMNOGA KRAJOLIKA URBANIH REGIJA

DOKTORSKA DISERTACIJA [SAŽETAK]

SPATIAL PLANNING MODELS OF QUARRY LANDSCAPE REDEVELOPMENT OF URBAN REGIONS

DOCTORAL DISSERTATION [SUMMARY]

Doctoral thesis “Spatial Planning Models of Quarry Landscape Redevelopment of Urban Regions” gives a comprehensive overview of the transformation of abandoned quarries with an emphasis on urban regions. The abandoned quarries in today’s planning, architecture and landscape architecture practice are considered as degraded, devastated and mostly dangerous landscapes. Renewal and conversion of abandoned quarries predominantly observed from a technical point of view. Redevelopment concepts are based on quarry characteristics isolated from the surrounding context. The spatial approach to recovery of abandoned quarries has been neglected and the criteria for evaluation are undefined. This leads to the absence of appropriate planning measures for redevelopment and rehabilitation and therefore the lack of realization. The spatial planning professionals need to establish appropriate tools for determining suitable models of renewal and conversion of abandoned quarries.

The subject of the research has established integral planning method by which an appropriate model of transformation of an abandoned quarry is established, based on planning criteria. Integral planning method is based on GIS operating system in combination with a multicriteria method – analytical hierarchical process [AHP]. The method derived from comparative analysis of criteria and transformation models of ten multidisciplinary researches in the technical, biotechnical and natural sciences. The impact of the quarry on the environment and the impact of the wider spatial context on the quarry create the anthropogenic landscape – the quarry landscape. Defining the term quarry landscape affirms a new type of the industrial landscape that has not been evaluated so far. The planning method and models of redevelopment were re-examined on Urban agglomeration Zagreb.

The general aim of the research is to link contemporary concepts derived from theories of landscape and spatial planning with contemporary models of redevelopment (renewal and transformation) of quarry landscape.

The original scientific contribution of this paper is manifold:

1) It establishes a system of spatial planning criteria for evaluation of abandoned quarries developing an integral spatial planning method and redevelopment models of abandoned quarries. In the doctoral thesis it is stated that until now no comprehensive multidisciplinary analysis of the methods, models and criteria of quarrying has been conducted by scientific research. The comparative analysis of ten multidisciplinary studies has been used for a comprehensive overview of quarries and spatial contexts, establishing complete criteria for the abandoned quarries redevelopment and reducing the number of transformation models to four basic models (biological rehabilitation, agricultural or commercial forest recovery, rehabilitation by architectural interventions and infrastructure rehabilitation). The result of the synthesis of criteria, the use of scientific methods and models has created preconditions for determining the integral planning method based on the use of GIS operating systems in combination with the multicriteria method – an analytical hierarchical process. The applicability of the method was verified in ten quarries of Urban Agglomeration Zagreb and it was established that the method can be used in all continental types of urban areas.

2) The term quarry landscape is defined. Despite the negative impact and consequences of abandonment of quarries and their exploitation, the value and importance of some quarries is recognized in terms of their anthropogenic and cultural landscape value. Defining the term quarry landscape a new type of industrial landscape that has not yet been recognized. The establishment of criteria for evaluating quarry landscapes enabled the possibility of recognizing quarry landscapes as a cultural heritage in spatial planning.

3) The abandoned quarries of Urban Agglomeration Zagreb were recorded and evaluated. As part of this research, data difficult to obtain regarding quarries of Urban Agglomeration Zagreb were collected and systematized. This revealed that there exist seven highly valuable quarry landscapes that marked the architectural and cultural heritage in the area of Urban Agglomeration Zagreb.

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■ U doktorskom radu napravljen je sveobuhvatni pregled teme preobrazbe napuštenih kamenoloma urbanih regija. Predmet je istraživanja uspostavljanje integralne planerske metode, temeljene na primjeni operativnih sustava GIS u kombinaciji s multikriterijskom metodom. Doprinos provedenoga istraživanja temelji se na utvrđivanju sustava planerskih kriterija vrednovanja napuštenih kamenoloma, utvrđivanju integralne planerske metode i četiriju planerskih modela preobrazbe napuštenih kamenoloma, utvrđivanju pojma kamenolomni krajolik te određivanju kriterija vrjednovanja i obilježja kamenolomnih krajolika, prikupljanju i usustavljanju tesko dostupnih podataka o kamenolomima Urbane aglomeracije Zagreb te evidenciji svih napuštenih kamenoloma.

[Translated by the author,
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