

THE SYSTEM OF GREEN SURFACES IN SPAS WITH SPECIAL REFERENCE TO THE CASE STUDIES: VRNJAČKA, KANJIŽA AND PRIBOJSKA SPA

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Taking into consideration the significance of the vegetation in urban areas the paper analyses current and attached regulations in Serbia relevant for planning and preserving of the system of green surfaces, with special reference to the spas. Referring to the results, it is pointed out the limitations of the current legal framework. Also, the existing planning documents for Vrnjačka, Pribojska and Kanjiža spa are analyzed.

Referring to the obtained results, the recommendations are formulized with special reference to the system of green surfaces in spas. They stand for harmonization and improvement of the existing law regulations for the system of green surfaces and also for providing corresponding legal and other mechanisms, where financial support for the plan realization and efficient management is included.

Key words: *the system of green surfaces, spa, green infrastructure.*

INTRODUCTION

Urban areas at the beginning of XXI century are encountered with numerous problems regarding planning and preserving of green spaces. As a very important part of climatic infrastructure, the influence of vegetation is recognized, between the others, in clearing up the atmospheric air, protection of dust, smoke and soot, the protection role from ionize radiation and as well positive impact to the human beings. Beside above mentioned, the presence of forest cover influences not only climatic conditions, such as wind circulation, increasing the air humidity, the amount and the deposition of precipitation, but also to the other conditions which are in the function of the environment protection such as the regulation of the content of water in the water currents, the influence to the erosion processes developed as the result of the rainfall, wind and water currents, and the impact to the filtration and regeneration of the air.

The recognized problems in the cities, in respect to planning and preserving of the green

areas are, beside the others, non-existence of appropriate studies, the cadastre of green areas and monitoring then, unsolved legal-property relations, the use of green surfaces for construction, non-effective management and inconsistent application of regulations (JUP Urbanistički zavod Beograda, 2003).

These recognized problems are also present in spas which are undertaking the smaller surfaces where the expiration or lack of appropriate plans and strategies is very often phenomenon. However, it should be noted that tradition, medicinal natural factors, highly educated experts, wealthy cultural and historic inheritance of the surroundings, excellent geographic position, surroundings and food together with the low cost of therapeutic treatments are acknowledged advantages while as shortages are stated inferior infrastructure, expiration of medical equipment, shortage of spa strategy, education for new programs, low marketing surveys, lack of the financial support for development (www.udruzenjebanja.co.yu).

Taking into account above mentioned, it could be assumed that there is a great need for the

overall strategy for spas, as a key document for further development and conservation, where the system of green surfaces has a very important role.

The system of green surfaces within urban area compromise parts within different owners and different categories. For the system of green surfaces, in the professional literature in the plan documentation, the term green infrastructure is often used - soft infrastructure.

Regarding the aim of this paper - to explore the current status of the existing legal framework and practice covering the system of green surfaces - and taking into consideration the importance of the vegetation in spas, the paper will specially analyze the existing legal framework covering planning, preserving and maintaining of the system of green surfaces. Also, the current practice with references to the planning documentation for Vrnjačka, Pribojska and Kanjiža spa is particularly analyzed.

THE OVERVIEW OF THE EXISTING REGULATIONS COVERING THE SYSTEM OF GREEN SURFACES

Special influence to the planning, building and preserving of the system of green surfaces have had the first and, until now, the only Law on building and maintaining of green surfaces (Official gazette SRS n.8/72). After passing and adopting the Law on environmental protection in 1991 the previous law was put out of effect.

After more than a decade, by adoption of the Law on environmental protection (Official gazette RS n.135/04), according to the article 20, the obligation to consider public green surfaces was introduced within following decree: *"The public green surfaces in the inhabited places and regions included in spatial and urban plans are build and maintain in the way which enable protection and advancement of natural and created values. If because of the construction of the object is destroyed public green surface, it has to be compensated under the conditions and in the way which determine the unit of the local government. Common conditions for protection, the way of building, maintaining and restoration of destroyed green surfaces and, as well, conducting of the data of green surfaces is arranged by separate laws"*.

For the Law on planning and construction (Official gazette RS n.43/03), after the examination of the key words - public green surfaces, the system of green surfaces, green infrastructure - it can be assumed that the Law does not include special regulations. Although the previous Law on environmental protection from 1991, according to the article 15, established the obligation for spatial and urban plans to "fortify special regime for preserving and utilizing the area...public green surfaces" in the existing Law on planning and construction there is no clear regulations supporting the system of green surfaces.

However, in the part "the content of urban plans...for the Master plan.." (article 36) this Law considers, "straights, corridors and capacities for traffic, energetic, waterpower, communal and other infrastructure". Similar to this, in the Rules for arrangement, article 41 posture 4 points out the necessity for "... closer regulations... communal and other

infrastructure" where under "other" could also be understood green infrastructure, i.e. the system of green surfaces.

Further, within the principle for preserving the space (article 3) it is assumed that "the harmonization within the European normative and standards in the field of planning and organization of the space for creating conditions for trans-border and international cooperation" has to be achieved during the planning. In that way, the possibility and consideration is given to consult other important international documents and guidelines also, not only in the field of planning but also within the sectors such as the system of green spaces.

Taking into consideration that nature properties are included within the system of green surfaces during the planning process regulations covering the protection of nature are of importance. This section is regulated directly within several laws and regulations and indirectly within regulation of the Law on forester, hunting etc. As the Law on the protection of the nature is in draft, it has to be noted that, till the adoption, the regulations of the previous Law on the protection of the environment from 1991. are applied covering the protection of the nature.

Further, integral part of the green infrastructure are cultural properties, more exactly, their direct surroundings. Also, according to the Law on cultural properties (Official gazette RS n.71/94), article 3, protected area of the real estate cultural good has the protection as the cultural property. The article 47, within the regulations for establishing real estate cultural properties, beside the name and description, include the border of the protected area and the measures related to the protection, conserving and using the cultural properties and it's surroundings. Beside that within the article 48 the obligation is set up that if the real estate proposed for cultural property is situated out of inhabited places, the republic institution for the protection of the cultural properties is obliged to enclose the opinion of the institution managing the protection of nature with special measures for protection and the borders of the protected area, corresponding to the valid Law on the protection of nature.

Forests and forest land are integral part of the system of green surfaces. The Law on forest (Official gazette RS n.46/91,83/92,53/93, 54/93, 60/93-67/93, 48/94, 54/96, and 101/2005) cover the protection, promotion, consumption and management of the forest and forests land and other potentials of the forests. According to the article 4, the forests and forests land under the country's ownership, the management is by public enterprises.

The maintaining of the parks, green and recreational surfaces are under the communal activities. Taking into consideration the obligation for maintaining and organization the system of green surfaces the Law on communal service is applied (Official gazette RS n.16/97 and 42/98). Under the maintenance of parks, green and recreational surfaces this law considers: planting the trees and other vegetation, maintaining, equipping of the place and maintaining the functional condition as these surfaces are representing properties of common usage. The Law further regulates obligations of the communities - the city to provide necessary scope, level and quality of the service, implementation of the supervision and the control within the covering communal service. The law includes the possibility to found the public enterprise, but also the possibility for public to carry out some communal services.

The Law on spas (Official gazette RS n.80/1992) does not go further regarding the planning, preserving and maintaining of the system of green surfaces. The spa is defined as "the area in which is existing and it is using one or more natural medical factors and which is fulfilling the conditions within the scope of organization and supply for their utilization within the accord of the regulation of this law." According to the article 2 "it is assumed that the conditions are fulfilled within the organization and supply of the area within the article 1, paragraph 1, if the spa has "...corresponding communal and other objects (water supply, canalization, traffics, PTT and electro objects and public green and recreational surfaces)".

According to the article 7 "protection, promotion and use of the spa area is performed in harmony with this law and the laws on

organization and protection of natural property and environmental protection". According to the article 8 "an appropriate planning document for spas is brought within the regulation for planning and maintaining of the area".

According to the overview of the existing legal framework, it could be assumed that the sector which covers planning, preserving and maintaining the system of green surfaces is not adequately represented. The main limitations are following: it is not clearly defined what is understand under the term public green surfaces, i.e. the system of green surfaces then, there are no special regulations or decrees by which this field is in more detail regulated and there is no special regulation for protection and improvement of the vegetation - the system of green surfaces in spas.

As the system of green surfaces includes different categories it has to be noted that several laws are applied such as law on forests, cultural properties. These regulations completely meet the needs for the regulated categories. However, obtaining more efficient planning, it can be assumed that further "planning of the system of green surfaces needs whole legal support, in a sense of harmonizing regulations within the sectors" (Crnčević, 2005).

THE SYSTEM OF GREEN SURFACES IN URBAN PLANS: THE EXAMPLE OF VRNJAČKA, PRIBOJSKA AND KANJIŽA SPA

An insight to the contemporary practice includes overview of the existing planning documents for spas. The overview and analyses understand an insight to the accessible plans, actually to the part covering the system of green surfaces.

Vrnjačka Spa

Vrnjačka Spa was declared as Spa region under the Decree on establishing the area for spa Vrnjačka Spa (Official gazette RS n.26/97). Important natural potentials are mineral springs, the presence of the surface under the vegetation - more than 60% of the whole surface - where surfaces under the forest and forest land can specially be distinguished.

These surfaces influence creation of the special microclimatic conditions - the temperature amplitudes are not significant, the drought period is short, there are no heavy heaths. Because of the topography of the terrain and the wealth of vegetation, Vrnjačka spa is protected from the winds but still average year air humidity is considerable high (78%).

Vrnjačka Spa does not have severe environmental problems as the economy

development is based on the improvement of the tourist offer. Problems which are appearing are problems of air pollution, noise, non-legal construction and creation of wild landfills within the forests and forest land.

According to the Master plan for Vrnjačka Spa 2005-2021 (Official gazette of the community Kraljevo n.12/05) the system of green surfaces consists of (Figure 1):

- within the public surfaces: parks, squares, greenery within blocks, tree lined paths, the

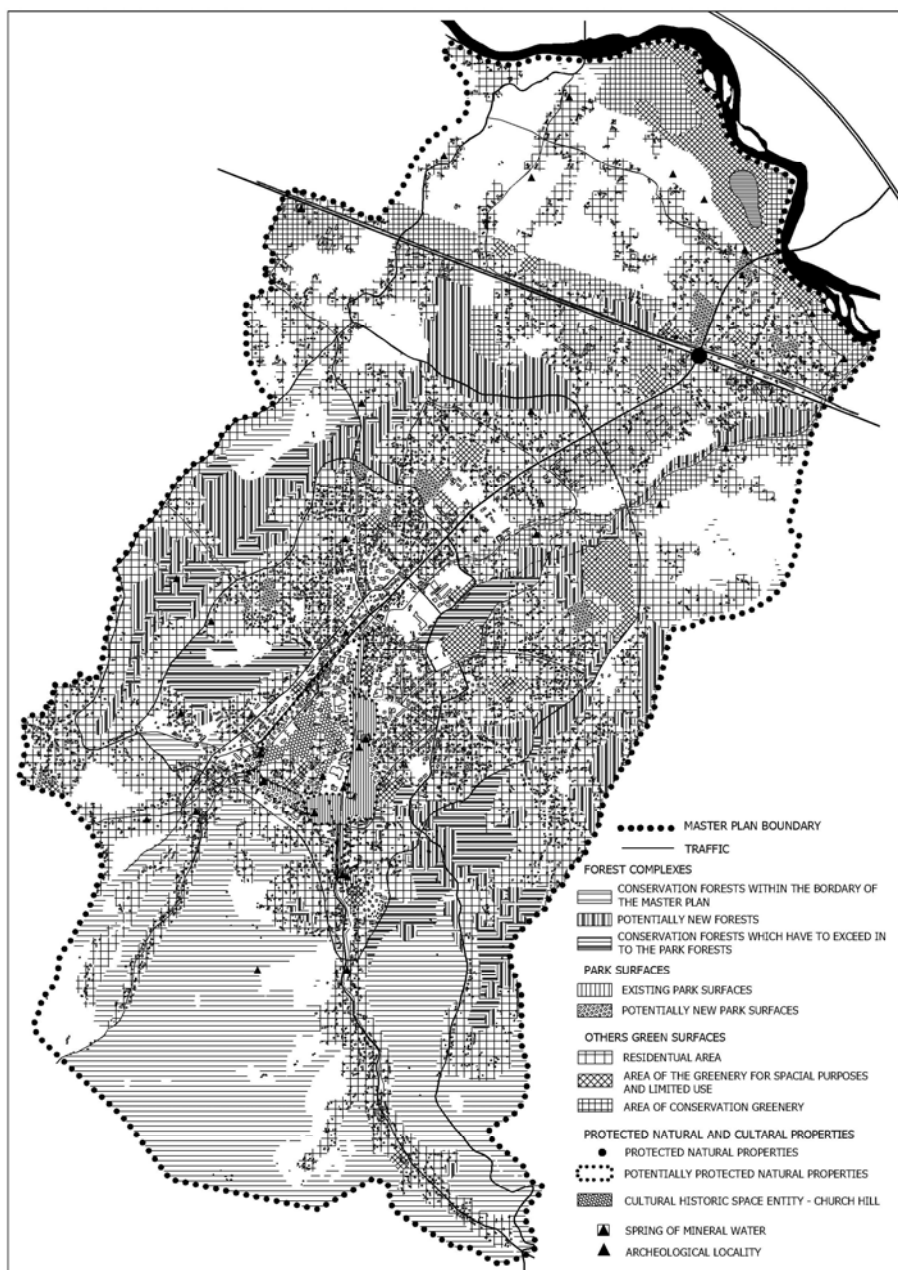


Fig. 1. The system of green surfaces
Source: Master plan of Vrnjačka Spa 2005-2021

greenery for special purposes and limited uses (around schools and medical institutions, sports and recreational spaces), conservation greenery (around industrial and other objects, coastal greenery), park forests and conservation forests;

- within natural property and according to the information from the Central register for the protected natural properties, on the territory of Vrnjačka Spa as the monuments of the nature are distinguished: Black pine tree, Four oaks, Two oaks -Vrnjci and the Church hill as a cultural historic space entity.

Within the common conditions for Vrnjačka Spa in the Master plan with the aim - protection and promotion of the environment - following measures are included for the system of green surfaces:

- the protection of all elements of the natural structure in a sense of valorization and separating potential single or group species for protection;

- because of an unequal quality within all categories of greenery the plan promotes improvement, not only in the esthetic sense but also the restoration of sanitary-hygienic conditions.

Within each category the plan includes rules for further development. Within the tree lined paths it is planned raising the new, particularly next to traffic infrastructure, then planting vegetation around water springs as well as the recultivation and revitalization of "Podunavske bare" by planting conservation greenery along Western Morava. What also could be distinguished is that the plan give special intention to the spa park and forests by promoting their protection.

Taking into consideration the importance of forests and forests land, in a sense of water protection and water regulation function, within the plan, the forests are protected through the function of conservation forests in accordance with the Decree of the municipality of Vrnjačka Spa (Official gazette of the community Vrnjačka Banja, n.5/86). These forests complexes with the surface of 420,71 ha are situated along the border of the master plan representing part of the forests of surrounding mountains Goč, Željina and in a wider sense

Kopaonik. Further, protection understands declaration of the natural property with the status of the Regional natural park. Also, it has to be noted that master plan is promoting protection and maintaining forests complexes within the borders of the plan area under the names Raj, Brankova glavica, Borjak, Duga and forest complex above the hospital.

Specially with the plan it is foreseen putting under the protection the spa park as a natural property as well as the area around the mineral springs "Jezero" and "Slatina" with the surface of 23,10 ha.

Therefore, for the Master plan of Vrnjačka Spa it could be assumed that the plan represents continual protection of the natural resources and the system of green surfaces. The system of green surfaces, within the plan documentation, is well represented in the textual and graphic sense. All present

categories are included and well processed. As potential of the plan it can specially be recognized that plan stands for protection of forests and the spa park.

Pribojska spa

The Pribojska spa is situated on the 5th km upstream from Priboj at the right valley side of the river Lim, spreading in the zone of 500-600 m height above the level of the sea.

The Plan of detailed regulation for Pribojska spa will be elaborated (Institute of architecture and urbanism of Serbia, Belgrade, August 2008).

The Plan of detailed regulation "establish and arrange the border of the public construction land with the elements for the cadastre support notification, the regulation lines of the streets and public spaces and construction lines, leveling peak elevation of the streets and

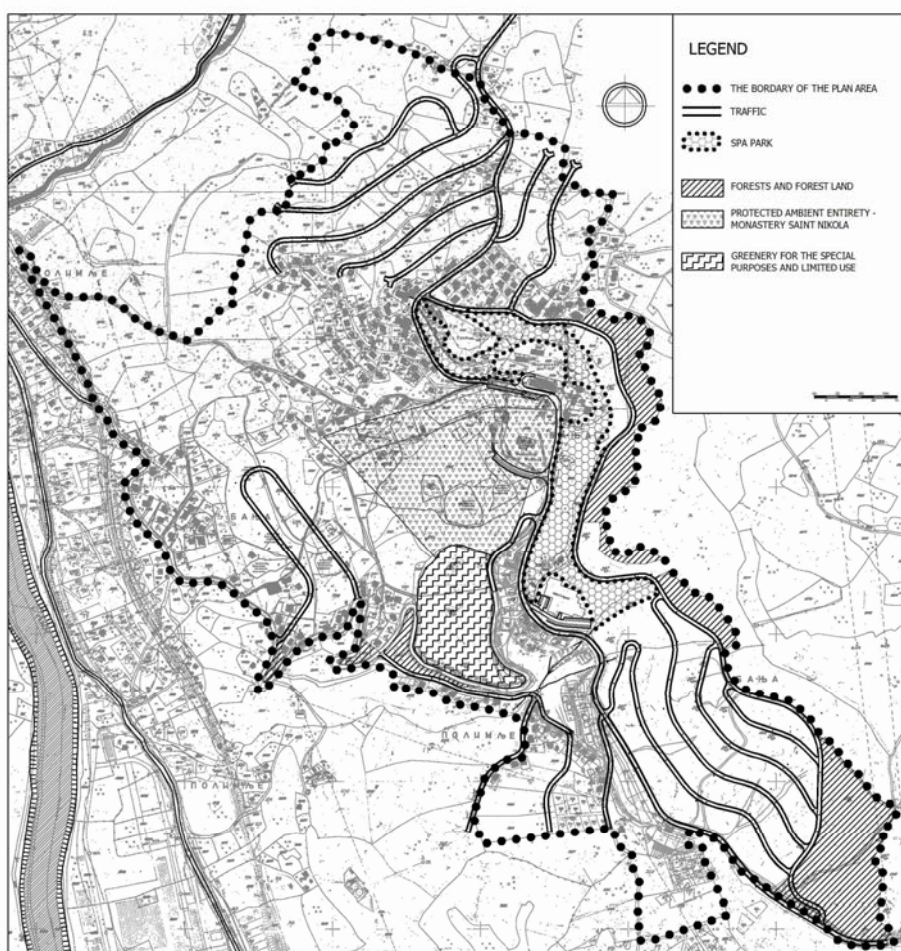


Figure 2. The system of green surfaces for Pribojska spa
Source: The plan of detailed regulation for Pribojska spa

public surfaces" (The Law on construction and planning Official gazette RS n.47/03).

The plan of detailed regulation for Pribojska spa consists of the following public surfaces:

- spa activities,
- public green surfaces,
- traffic surfaces,
- the objects for public purposes and
- religious objects.

In the analysis and evaluation of the conditions and in the assessment of the development possibilities it is stated that the public green surfaces are relatively conserved but, in general, do not fulfill ecological and biological aspects and landscape conditions. It is stated that it is necessary to protect the landscape characteristic and improve the visual character of the whole area.

Within the part "The conditions and development possibilities of the free and green surfaces" the rules for greening and maintaining of the plan area are stated. The main aim is promotion of the landscape characteristics and the existing biological fund - the stand of oak and the culture of pine. Also, it should be noted that, by special measures, the springs of mineral water are protected as the main natural resource.

All activities predicted by plan, the construction of new capacities for logging as well as the new recreational centre are planned with minimum disturbance of the landscape.

The plan further includes rules for the system of green surfaces: the spa park, the greenery for the special purposes and limited use, forests and forest land (Figure 2):

a) Spa park

Plan comprises planting new park within the central zone of the spa respecting the existing conditions and maximum promotion of the area. The greening is planned with autochthonous species and with attached rustic equipment: benches, waste baskets, the place for calm resting, walking lines, view point.

b) The greenery for special purposes and limited uses

The greenery for special purposes and limited use - around the objects for public purposes

(RH centers, multimedia center, baths, annexes) has to be arranged in the way that the approaches are clearly marked and, where it is possible, beside the access lines and in front of the objects, to include short vegetation - bushy and flower vegetation. The recommendation for the private garden plots is to form flower gardens or live fences from bushy and tree species on the part of the lot to the streets. Suitable shade at the playground has to be provided for the new recreational center, at the sports terrains.

c) The line greenery

The regulation of traffics lines is included under the line greenery - street line trees, lines lawns and line trees at the parking lots. The existing fund at the traffic has to be protected and along the traffic with intervention to form line of short greenery with line trees from autochthonic deciduous species with thick and shady treetops. It is planned to plant the new trees at the places marked for parking.

d) Forests and forest land

The existing monastery forests is planned to be connected to the surrounding walking paths and some of the parts of forests to be converted in park forests with limited sports and tourist activities.

This plan in a whole treats the system of the green surfaces considering that the system of

green surfaces is well presented in textual and graphic sense. What is characteristic for the plan area is that the spa is not developed. Therefore the accent of the plan is in raising new green surfaces with full support for the protection of the existing biological fund and in keeping the landscape authentic.

Kanjiža Spa

The Kanjiža settlement is situated in a meek plain within right bank of the brook Kereš. The absolute height above level is from peak elevation of 76.50m till the 85.7 m. The distinguished natural factors are relief, water surfaces, term mineral water, climatic factors and greenery.

The analysis of the plan for Kanjiža Spa comprehends the analyses of the Kanjiža Master plan (Official gazette RS n.8/03) where the spa area is included and marked as a block 12. Within the spa block (Figure 3) the spa park with old spa is included, together with the residential area with the apartments for renting, sport and recreation and conservation greenery.

Taking into consideration that the environment is degraded, the plan specially points out the importance of the vegetation. The greening of the place, as it is pointed out, was done structurally and according to the conditions and possibilities, following the construction of

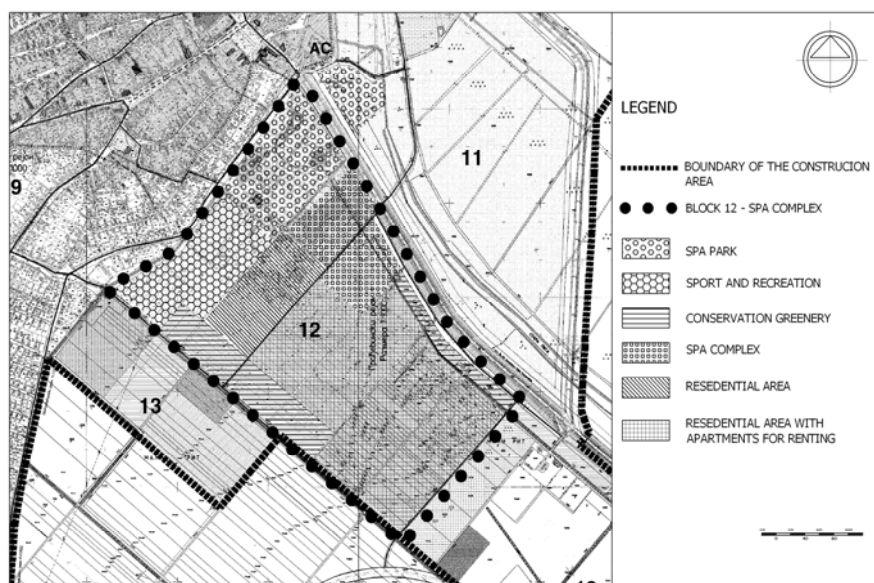


Figure 3. The system of green surfaces for Kanjiža spa
Source: Master plan for Kanjiža, block 12

the town. The results of the the public spaces valorization within the town stresses that "the network and continual system of the green spaces is not enough realized" (Master plan for Kanjiža, 2003).

Within the rules and conditions for creating the urban landscape of the spa complex settlement, as one of the most attractive point of Kanjiža, it has to have visual identification together with the functionality of the constructed objects so that the medical and touristic-recreational needs are fulfilled for the users of the spa. Symbiosis of architectonic and horticultural forms, within the use of urban equipment has to make pleasant ambient, which has its own identity.

The system of the green surfaces for Kanjiža consists of: public green surfaces, green surfaces with limited usage, green surfaces for the special purpose.

Within the block 12 - the spa- among the category public green surfaces, it is considered spa park. It represents the only park in Kanjiža called "Narodni park". Located beside the spa complex, in the eastern part of the town, it takes the surface of around 12,210 m². It is planned to be supplemented, i.e. reconstructed with introduction of the species of trees and ground vegetation.

The greenery of the residential area and sports-recreational surfaces are included within the green surfaces with limited usage .

The residential area plan considers obligation to provide 30% of the green surfaces as necessary. This green area has to be connected with other parts of the system of the green surfaces. Their horticultural treatment will be realized in the landscape manner, by forming the group of decorative trees and bushes.

For the green surfaces around the objects of individual habitat it is recommended that about 30% from the surface of the whole lot has to be under greenery. Bigger lots will have to be grouped in the following way: front gardens, the space for children games and rest for elders and vegetable gardens.

For the sport - recreational surfaces it is recommended that 40 - 50 % of the whole area has to be under greenery. They have to be

protected from wind and connected with other parts of the settlements. Further, the greenery has to be arranged in the way that south exposition of the sports terrains are in the shade.

Within the category greenery for the special use the conservation greenery is considered. This category undertakes reduction of negative effects of the micro location.

After looking at the Master plan for Kanjiža, it can be assumed that plan does consider system of the green surfaces in the textual and graphic sense. The system is well elaborated and not only recognizes limitations of the current status of the system of green surfaces but also includes the measures for further improvement.

CONCLUSIONS

The planning of the system of green areas in Serbia, according to the overview of the legal framework does not have appropriate support. Unstated and non harmonized legal regulations are the primary limiting factors. On the other side, taking into consideration that the system of green surfaces includes different categories, it should be said that planning, especially forests and forest land as well as the protected nature and cultural properties is regulated separately.

However, it should be noted that current practice gives full support to the protection and improvement of the system of green surfaces where, it could be said, the current conditions impose processing of the subjects area.

Therefore, main recommendations are as follows: harmonization and improvement of the existing law regulations for the system of green surfaces and provision of the corresponding legal and other mechanisms, including the financial support for the plan realization and efficient management. Also, the "strong necessity for landscape architects to establish interest coalitions with physical planners and environmental lobbies from the start, so that concept lobbying can be promoted, agreed and efficiently implemented" (Maksin-Mičić, 2003) could be confirmed. Further, after obtaining above mentioned conditions more detailed regulations for spas could be defined, such as promoting protection of the system of green

surfaces in spas and defining rules within the separated categories such as spa park, spa promenade and others.

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