



Development of a methodology for the characterization of urban and periurban green spaces in the context of supra-municipal sustainability strategies



Amparo Verdú-Vázquez^a, Eva Fernández-Pablos^b, Rafael V. Lozano-Diez^a, Óscar López-Zaldívar^{a,*}

^a Departamento de Tecnología de la Edificación, Escuela Técnica Superior de Edificación, Universidad Politécnica de Madrid, Spain

^b Directora Técnica SERVAC (Servicios Ambientales y Culturales), Boadilla del Monte, Madrid, Spain

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ABSTRACT

Periurban landscapes should be interpreted as multifunctional spaces enabling them to be valued according to environmental, economic and social criteria. This article proposes a methodology for the characterization of urban and periurban green spaces in the context of strategies which enable planning processes for cities of the future to be devised. Firstly, the green belt is characterized and evaluated and its resilience and dynamic analyzed. Subsequently, different supra-municipal tools are compared and a summary of various existing methodologies and programs is produced, making it possible to develop a matrix for diagnosing projects for green spaces and periurban natural spaces and evaluating their potential as a Green Infrastructure in the context of Open Space Strategies. The application of this method in the characterization of periurban space emphasizes elements of scenic beauty whose incorporation in the said strategies does not require large investments but instead an effort in terms of promoting such places. The drafting of this Open Spaces Strategy offers a cross-disciplinary planning tool with which to take action using a landscape reading scale. This comprehensive view makes it possible to optimize efforts and investments and involve the whole community at all levels of operation through processes of citizen participation. As a result, a systematic and collective diagnostic tool is obtained for characterizing the urban and periurban green belt, which can be applied to the various periurban spaces in accordance with the multifunctionality demanded by supra-municipal strategies.

1. Introduction

The Mediterranean landscape has been strongly conditioned by human action throughout history. This intervention has generated a matrix of landscapes which have reached our time with a different condition, complexity, quality and state of conservation, depending on the intensity or sustainability of the human action impacting them.

We look at, study and understand the landscape by means of a seasonal scale which contrasts with the immediacy which is prevalent in society, but necessary inasmuch as it will also condition the evolution of our landscapes for future generations and the probability that they can be properly enjoyed.

In the future, population concentration processes will make it necessary to occupy and, as such, modify periurban landscapes which are already quite sensitive. The population of cities will continue to grow and it will be increasingly necessary to protect the environment in order to improve the quality of life of their citizens. It is estimated that by

2050, 70% of the population will be urban or will live in urban environments (Ahern, 2011), something that had already been noted in 2007 when the world's population started to be fundamentally urban (Forman, 2008). This information, confirmed by the United Nations Population Fund and presented at the Johannesburg Summit,¹ has meant that macro-cities have been developed on all of the continents, attracting major population flows in search of better job opportunities, leisure possibilities, communication options or access to the challenges of the technological society (Martínez, 2015).

In order to create sustainable urban models, the urban-natural connection must be revived and promoted, to help to develop and value the natural urban environment and improve the quality of its green belt with areas for relaxation, communication and the enjoyment of urban experiences (Priego González de Canales, 2004). In this respect, the fragmentation of habitats and loss of biodiversity are realities which affect urban and periurban spaces, and there is a growing interest in studying them and devising environmental and social strategies which

* Corresponding author at: Universidad Politécnica de Madrid, Avenida de Juan de Herrera, 6, Madrid 28040, Spain.

E-mail address: oscar.lopezz@upm.es (Ó. López-Zaldívar).

¹ Johannesburg Declaration on Sustainable Development. UN. 2012.

contribute towards improving the quality of citizens' lives.

Urban areas act like large areas which generate a disconnection and obstruct the radial connections which favor permeability. In addition to this aspect, we consider that the urban environment accommodates large industrial and commercial facilities and agricultural or natural areas are reduced by large linear infrastructures, it is becoming increasingly necessary, both socially and ecologically, to study the possibilities for connectivity between the city and periurban areas from integrative perspectives such as those offered by landscape reading.

“Cities have turned their backs on the natural environments which were there long before them, trees and parks have gradually been replaced by concrete blocks or by grand avenues which split the city into a thousand pieces. Thinking about nature means thinking outside of the city, hence the importance of recovering citizens' direct contact with natural elements in their environment, in the first instance, and in parallel recovering, conserving and managing the biological communities which traditionally made cities pleasant places for mankind” (Priego González de Canales, 2004).

The need to create and maintain natural environments in the city is becoming increasingly obvious, places designed to combine public use, healthy eating, mitigation of climate change and the preservation of biodiversity. The search for healthier lifestyle models or the lack of time to access natural environments close to the city on a daily basis, make it necessary for many citizens to search for areas to do sport, or to enjoy healthy leisure activities close to where they live (Carrus et al., 2015), areas in which to resume contact with the Earth through urban farming or exit routes from the city towards the periurban environment of their towns. These functions are often assigned to the large periurban green areas, the periurban belt where they are located being the great unknown for the majority of inhabitants in large cities.

The identification of these areas is key to the development of urban-periurban networks which promote the conservation and restoration of the ecological and functional connection, as the only way of creating a true green strategy which improves the quality of the urban environment and the life of the citizens (Cabello et al., 2012).

However, in the same way, educating society about the need to value the Mediterranean landscape and ecological designs as the only sustainable model, not for the future, but from now on, is becoming increasingly urgent. In order to meet these needs, the creation of green areas has been a further element in the external image of towns and cities with an urge to create parks and gardens with a high level of sophistication and investment in infrastructure, without including innovative criteria in their design and ecological sustainability (Falcón, 2007).

In this respect, this article addresses the need to review the evaluation tools for large green areas and their potential as bridge-areas in a sustainable strategy. In order to do this, it is important to establish quality standards which make it possible to evaluate the green urban and periurban areas: their design, the context of the location, the adequacy of the programs and their economic viability in terms of environmental, economic and social sustainability, to evaluate the ecological and social processes and the maintenance criteria which are followed (Design Trust for Public Space and the City of New York, 2010).

Generally, town planning and development models focus on development potential and the green areas are those which remain between the buildings. This is why it is necessary to adapt the concepts and designs, enabling a closed structure which is not always going to favor permeability or the formation of spaces between the urban and natural environments.

This fact currently implies the convergence of political, technical, social, economic and environmental decisions which respond to current needs and issues through the sustainable planning of the network of urban and periurban natural areas in the city.

This article seeks to cover the issues associated with the large cities

in which there is a substantial divide on the border of the surrounding urban and periurban landscape, with a growing need to determine landscapes with a certain uniqueness and catalogue them as protected periurban areas, reserves or land with regulations governing its use or a management plan. In this respect, the proposed methodology includes landscape analysis scales, from the level of detail as a landscaping project to the multi-functional dimension intended to be integrated in supra-municipal strategies concerning open spaces.

Society must be involved in the conservation of our environment, hence the need to be strategic, to analyze options and to opt for complete solutions, adapted to suit the needs and situations which exist at any given moment. This is a key moment to be able to adopt new concepts in project execution, using measures which are economically assumable. As such, it is necessary to start with citizen participation, to inform and involve the population in the future of its open spaces.

Landscape-based reading makes it possible to understand the need to create networks, to integrate periurban spaces in the city, to listen to and understand the needs of all players and sectors, from the government and political decisions to citizens, offering a common vision which improves the future of these spaces. The document, ‘Green Infrastructure. An integrated approach to land use’ (Landscape Institute, 2013) defines the figure of the landscaping professional as the person able to perform this reading and also to design, offering aesthetics and multifunctionality.

2. Methodology

2.1. Characterization and evaluation of the green belt

Since it began, green planning has incorporated the principles of landscape planning in city design, giving prominence to increasingly explicit green structures, in which the relationship between the environment, sustainability, nature and the landscape are not mere spectators but rather an active part, key players in the creation of sustainable strategies and in the design of the city of the future.

Its principles were set out in 1988 at the UNESCO Environment and Biosphere Conference which established the need “to work jointly on a systematic and collective description for the green areas in a city, to achieve common evaluation methodologies which help to create green belts which form part of it” (Falcón, 2007). These methodologies must respond to the union between function and design in green areas and management as an integral and active concept.

The green planning of a city also includes the regulatory aspects, the need for regulations governing the use, design and maintenance of green areas in both the local government system and General Plans.

In Spain, the characterization and evaluation of the urban green belt has been developed locally based on fragmented visions. As such, it is possible to find classifications based on technical, social, environmental or maintenance criteria, but it is difficult to find references which cover all of these aspects at once.

Between the years 1992 and 1995, the first classification for green spaces was developed by the Spanish Association of Parks and Public Gardens, which set out three categories depending on the ownership, public or private, of the spaces generated and, among them, their physical location in relation to the urban areas or function of the space that they occupy (Salvador Palomo, 2003). This classification is not based upon design or project criteria but identifies a series of constructive typologies and classifies types of land use based on the fact that they can all accommodate a “free or green space”. In 2008, the Technical Commission for the Management of Green Spaces of the Spanish Association of Parks and Public Gardens offered a vision based on the management of green areas incorporating the ownership and management competence of City Councils (Ugidos Alvarez, 2013).

In the year 2001, the “Regulations for the classification of green areas” were developed (Ballester-Olmos and Morata Carrasco, 2001), in which an exhaustive characterization and classification of public green

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