Landscape Urbanism—Retrospective on Development, Basic Principles and Application

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Abstract: The urban and landscape professions of the 21st century are developing diverse theoretical and practical models that they apply in solving the problems of the modern city. One of these models is landscape urbanism, which can be understood as a newer way of looking at the city and its infrastructure again, incorporating the relationship between the city and nature, and ecological and landscape principles into its fundamental core. In a theoretical but also a practical sense, it suggests new modalities that are considered to be able to contribute to the current problems of modern cities, especially those related to the ecology of the city. By reviewing the development stages, methodological framework and practical applications, this paper determines the potentials and limitations of the concept of landscape urbanism and suggests modalities of application in the modern city.

Keywords: landscape urbanism; modern city; green infrastructure

1. Introduction

At the beginning of the 21st century, urbanism is faced with problems arising from new and different circumstances of urban life and the transformation and development of cities. Most of the world's population now lives in urban areas, which have been expanding rapidly since the end of the 19th century. Cities grow into megalopolises and become more and more multi-layered creations of complex social, economic and ecological relations. It is also predicted that the global population will grow from 7.7 billion in 2019 to almost 10 billion by the middle of the century, and that urban areas will absorb this projected growth [1]. Rapid urban growth represents potential for economic and social development, at the same time causing ecosystem degradation through unsustainable and inflexible patterns of urban life and urbanization. The previous methods and strategies of urban planning require adaptation, and new principles or models of urban planning and city design applicable in the newly created conditions are being re-examined.

Urbanism at the beginning of the 21st century, in theory and practice, tries to find new modalities of action and is characterized by heterogeneity and divergence of approaches [2]. This is conditioned by the rapid growth of cities at the end of the 20th century, and the complexity of urban structures and processes that exceed the possibilities of simple control, management and planning [2]. In this light, theoretical discourses that try to find new approaches are considered, and their systematization is carried out, for example, by Jonathan Barnett, who proposes a list of 60 different types of urbanism, divided into six categories [2]. Each of the categories represents certain aspects of the problems of the modern city: (1) infrastructure—system urbanism; (2) ecology—green urbanism; (3) typology and morphology—traditional urbanism; (4) social aspect—community urbanism; (5) economic and political aspect—socio-political urbanisms; and (6) the problem of extreme situations—as

front page urbanisms. Kostrenčić and Jukić [2] explain how green urbanism "...*as the main factor they take the relationship between the city and nature, i.e., the ecological theme. The range of approaches ranges from the continuity of the natural and the built (landscape urbanism) and the intention to plan the city as an integral part of the natural environment (environmental urbanism), to nature in the city as a corrective to the goal of a better quality of life (green urbanism, clean urbanism). All these subtopics point to the importance of introducing the concept of urban ecology as an attempt to respond to the increasingly complex problems of globalization, urbanization, sustainability and climate change—as specific problems from the beginning of the millennium.*". Green urbanisms are classified into seven subcategories: landscape urbanism, green urbanism, sustainable urbanism, environmental urbanism, ecological urbanism, clean urbanism and agricultural urbanism.

In recent decades, landscape urbanism is considered a topic related to the understanding of spatial patterns, organization and properties of space Burley [3], which is debated by many practitioners and theorists in the context of the modern city, but through a very wide range of topics [4]. At the same time, the interpretation of the term landscape urbanism has many directions, but nevertheless, they are theoretically connected by the perception of the landscape as a basic model for urbanism [4,5]. In this sense, landscape urbanism is developing as an alternative form of thinking about space, a kind of critique of disciplinary commitment to traditional forms of urbanism, and it promotes the idea that cities are planned and organized in the best way, not through the design of buildings and infrastructure, but through landscape design [5]. Nevertheless, it is considered that landscape urbanism today does not have a sufficiently developed methodology of action [3], while the diversity and divergence of landscape urbanism, combined with its broad approach to the urban agenda, makes it difficult to define it [4]. Its historical background and belonging to contemporary or classical urbanisms are also being questioned [3]. Nevertheless, the concept of using the landscape as a basic model for urbanism connects the basics of landscape urbanism and a unique theory.

Green urbanisms, including landscape urbanism, can be linked to numerous topics of contemporary planning and urban development, the conceptualization of which is now more transparently actualized through the paradigm of sustainable urban development and how cities deal with climate change. In this sense, as an integral part of it, the principles of planning and arranging cities appear under the names: "ecological design", "ecological landscape design", "green infrastructure", "nature-based solutions, NBS", "food urbanism" and others. They are, according to the basic settings, compatible with the concept of landscape urbanism, but at the same time, as principles of city planning, they can be, or are, an integral part of classical and other green urbanisms, which makes it difficult to classify them pragmatically in the methodological framework of landscape urbanism.

Landscape urbanism as a field of work is primarily focused on urban landscapes. At the same time, urban landscapes are defined as all undeveloped parts of the city and include all urban areas that are not occupied by buildings [6,7]. In addition, it is terminologically compatible with the term "urban green infrastructure" [8,9] which, in addition to the "green", "blue" and "gray" surface layers, includes social aspects and historical–cultural layers (cultural heritage, historical objects).

The aim of this paper is to define the concept of landscape urbanism and to show its origin, development and basic principles. The current trends and principles of landscape urbanism in theory and practice will be determined and systematized, and the applicability of this concept and its principles in the context of contemporary city planning and design will be re-examined.

2. Methodological Framework

Through the study and analysis of scientific and professional literature, the historical background as well as the chronological overview of the origin and development of landscape urbanism were defined, and its fundamental principles were defined and systematized. Through the comparative analysis and interpretation of contemporary theoretical, hypothetical and practical concepts (realizations and projects), the modality of applying landscape urbanism in the modern city was presented. The analyzed concepts have been applied in the last twenty years, and their analysis was based primarily on the criterion of the level of application (scale and typology), the content basis and applied principles and the aim of the project. Based on the results, the potentials and limitations of the concept were defined and guidelines were proposed for the incorporation of these principles into spatial planning policies, where the focus of the work is on urban landscapes, i.e., the application of landscape urbanism in the context of urban areas.

3. Historical Context and Development of Landscape Urbanism

It is considered that landscape urbanism as a "movement" and theory began to develop in the 1980s, in the general time when concepts such as landscape ecology and the idea of sustainability were developing [3]. During this period, experts of various profiles have re-examined the previously perceived boundaries and limitations of their disciplines (architecture, urban planning, urban design, landscape architecture, etc.) in the context of complex urban projects and structures. According to Assardgard [4], it seems that landscape urbanism did not originate from one academic circle or author, but it is still mainly related to the United States of America, with the Harvard Graduate School of Design and the University of Pennsylvania as the main centers of its development. The first major event that more precisely articulated landscape urbanism was the conference called "Landscape Urbanism conference" which was held in Chicago in 1997. It was attended by Charles Waldheim, Mohsen Mostafavi and James Corner, who are also considered important persons who marked the emergence and development of the concept. The newsletter of author C. Waldheim from 1997 states: "*Landscape urbanism offers a vision of landscape as an element of urban structure. In this sense, the landscape is seen in the context of contemporary urban development and public work as opposed to being defined as an art genre, an environmental science, or an applied art. Traditional disciplinary distinctions between architecture, landscape architecture and urban design are postponed in favor of an infrastructural and systemic understanding of the built environment*".

Although the second half of the 20th century is considered an affirmative period of landscape urbanism, many authors note that the principles of landscape urbanism were also applied in history and that they are visible in numerous examples of earlier urban practices and theories. For example, Bojanić Obad-Šćitaroci and Matuhina [5] state that by looking into the historical forms of spatial planning, urban planning and architectural activity in space, it is possible to single out theoretical and practical historical examples that are similar in their characteristics to landscape urbanism. In them, they explain, the use of the landscape is visible "...*as a basic building tool of architectural-urbanistic, cultural and/or social space*", which, because of this, "*can assume the epithet of the predecessor of Landscape urbanism*" (regardless of their scale of intervention). Investigating the historical context and background of the emergence of landscape urbanism, Burley [3] also establishes that the roots of landscape urbanism can be found in Western cultures long before the term was used and generally established. In this context, Bojanić Obad-Šćitaroci and Matuhina [5] and Burley [3] single out examples in the evolution of urbanism and landscape architecture that they consider important for the development of landscape urbanism (Table 1).

Table 1. Presentation of historical theoretical and practical examples that precede landscape urbanism—selected examples according to Bojanić-Obad Ščitaroca and Matuhina [5] and Burley [3].

Name of the Project or Principle	Description
Feng-shui	Traditional, proto-scientific Chinese art that always favors natural patterns and processes; in this context, the sacred landscape becomes a spiritual network of sustainable life balance and becomes an infrastructure that carries the spirit of the place, equivalent to the Greek (Western) "genius loci" [5].
Bir Birkenhead Park, Liverpool, England, author: J. Paxton (middle of the 19th century)	It is believed that this park inspired Frederick Law Olmsted to design Central Park in New York. Unlike Central Park, which is clearly demarcated between "green" park and "gray" architecture, in Birkenhead Park, the landscape is a mixture of green and gray landscape within which hardscape and softscape are integrated, without visible boundaries [3].
The book *Man and Nature* (middle of the 19th century)	George Perkins Marsh wrote a book, *Man and Nature*, which describes the changes in the landscape caused by extensive erosion due to the deforestation of the hills of Turkey and the filling of harbors with sediments. The book was an impetus for the thoughtful land management and sustainability that have been present much earlier than today's society believes [3].
System of city parks (19th century in America)	A parkway system where such a city landscape serves as an infrastructure for recreation and aesthetics (e.g., the plan of the Boston landscape parkway system Emerald Necklace) (1894) [5].
The Emerald Necklace, Boston (second half of the 19th century)	Certain American urban environments such as Boston/Brooklyn, Massachusetts, Minneapolis, Minnesota have defined the development of the urban fabric in the form of connected green areas/corridors or greenways. For example, Emerald Necklace was designed by Frederick Law Olmsted as a series of connected green areas (pucks) that are connected in the city structure [3].
The Minneapolis park system (plan created in second half of the 19th century	Planned circular park system in Minneapolis. They form a system of parks throughout the city that follows lakes, marshes, streams, rivers and boulevards. The system was originally designed by Horace W.S. Cleveland and later the system was expanded by the work of other authors [3].
Biltmore Summer Home and Estate, Asheville Tennessee (second half of the 19th century)	It represents an example of planning and designing large-scale landscape areas based on ecological thinking and sustainability. In this regard, F.L. Olmsted developed a "bass pond" as a sediment erosion control lake to capture the extensive soil erosion occurring during site construction, and the project examined the suitability of various parts of the property to support various agricultural functions [3].
Green belts (19th century in Europe)	Used the concept of landscape greenbelt or landscape pegs/fingers to explore urban transformations in the middle and end of the 19th century. For example, the urban development of the landscape is known in the concept of the urban expansion of Vienna ("Ringstrasse") and Zagreb's Lenucij's Horseshoe, where the landscape framework simultaneously represents the impetus for the creation of architectural forms and the qualitative control of its urban development [5].

Table 1. *Cont.*

Name of the Project or Principle	Description
Garden cities of E. Howard (late 19th and early 20th centuries)	The "Garden City" by Ebenezer Howard constitutes an urban concept that "negates the differences between rural settlements and urban agglomeration; the city takes over the positive ecological characteristics of life in the countryside and the economic and cultural advantages of city life. The landscape is understood as an element of the organization of central urban functions and as a city-building element [5].
Ecological network (20th century)	It establishes an ecological network where the landscape becomes an infrastructure for the protection of natural spaces, preservation of biological and landscape diversity [5].
Ecological infrastructure (21st century)	Ecological infrastructures and ecosystems are introduced, and the landscape serves as an integrated infrastructure for the sustainability of the city and territory [5].
"Berlin Hauptstadt" competition, Alison and Peter Smithson (middle of the 20th century)	It envisages a network of platforms extending over the war-torn center of Berlin that forms a complex system of communications, spatial experiences and three-dimensional spatial hierarchy; the importance of the project is also the point of view of the authors, who accept their own impossibility of independently predicting the renewal of the entire process of spatial, financial and social renewal of the given area, which results in an adaptive solution that allows spatial and temporal unpredictability of development [5].
Syntagma *"Die Landschaft muss das Gesetz werden"*, W. Rossow (middle of the 20th century)	Rossow warns of the destruction of the Earth and puts forward the thesis of the complete interdependence of the city and the surrounding territory, stressing that the landscape must always be the basis of spatial planning. His catchphrase "Die Landschaft muss das Gesetz werden" (the landscape must be the law) is well known, giving the landscape an important role [5].
Project of decentralized Detroit, L. Hilbesheimer (middle of the 20th century)	The project uses landscape and infrastructure as basic elements of the organization of decentralized urbanism [5].
The system of city playgrounds, Aldo van Eyck (middle and second half of the 20th century)	From 1947 to 1978, the author designed more than 700 public playgrounds at forgotten city points created by street crossings, inactive places due to location and other reasons. Over the years, a system has been created (like infrastructure) consisting of city playgrounds (for adults as well as for children), undefined a priori by spatial plan [5].
The article "A typology for the urban ecosystem and its relationship to large biogeographical landscape units", Brady et. al. (second half of the 20th century)	The work is considered important for the classification of urban areas since it represents a new way of thinking about the built environment. In this work, instead of classifying the built environment in terms of its objects and zones, a classification of ecological units is made, which includes human activities. This set the way to combine the continuum of natural landscape settings in the urban environment and the way to show it on maps [3].

In addition to the above, it is possible to single out other examples in which the landscape is an important city-building element. These are, for example: "Finger plan" for Copenhagen, 1947 (realization of green wedges through the city that differentiate urban landscapes according to different functions); and then "London's Green Belt", the middle of the 20th century (the establishment of a green belt on the edges of the city through the organic integration of the hinterland and central parts of the city); or "Green fingers" or "Sljeme-Sava" in Zagreb 1949/1953 (networking of green areas and establishment of green corridors through the city).

In this context, achievements such as "Ville Radieuse" or "The Radiant City", an unrealized project by Le Corbusier from 1930 dominated by green areas and "sunlight" [4],

or the works of Frank Lloyd Wright, are also mentioned (e.g., "Fallingwater house") which Burley [3] notes was a more intuitive understanding of this emerging perspective in the integration of structure and landscape, within which he was able to integrate landscape and architecture in a more holistic form and manner, which was closer to the Chinese philosophy of design, where structures and landscape are mixed together to form a "home". The end of the twentieth century also introduced numerous terms in which the landscape plays an important city-building role [8]: green system, greenway network and ecological network, as well as individual elements of these systems such as green corridors, green wedges, green belts, green fingers and greenways.

Due to numerous historical examples that can be interpreted through the theory of landscape urbanism, some authors question landscape urbanism as a new concept, that is, they question its belonging to the branch of traditional urbanism. However, theorists of landscape urbanism, for example [10], see landscape urbanism as a new idea, whereby historical models are considered only as starting points on which the theory of landscape urbanism is developed in recent times [3].

4. Defining Landscape Urbanism

Landscape urbanism as a theoretical concept does not have a single, established or institutionalized definition, but the definitions of landscape urbanism vary according to different authors and the spectrum of topics to which the authors refer. In this sense, landscape urbanism is the creation of a sustainable city with regard to several parameters, such as ecological, social, economic and aesthetic aspects [11], and in such an understanding, the landscape is reevaluated and acts as a basic model [4]. According to Vicenzotti [12], one of the key settings of landscape urbanism is "... *that landscape has emerged, across a range of disciplines, as a model and a medium for the contemporary city. Landscape has thus acquired crucial importance as a lens through which the contemporary city is represented and a medium through which it is constructed*" [13,14] (in [12]). Bojanić Obad Šćitaroci and Matuhina [5] notes that landscape urbanism aims to create a recognizable place during the expansion and renewal of cities by applying the principles of landscape ecology and landscape architecture. Regardless of the scale of action in the space and the prescribed methodologies, the principle of landscape urbanism dictates that the space be considered both as an independent system and as an integral part of a larger physical, historical–cultural, sociological and anthropogenic system [5].

Furthermore, Turner [15] considers landscape urbanism as: "... an approach to the design of cities, and their components, which aims to make good places through a creative integration of natural, human and cultural process layers", and he singles out some of the important directions for defining landscape urbanism (Table 2).

Table 2. Definitions of landscape urbanism according to Turner, [12].

Author	Definition
Charles Waldheim	"Urbanism describes a disciplinary realignment currently underway in which landscape replaces architecture as the basic building block of contemporary urbanism. For many, across a range of disciplines, landscape has become both the lens through which the contemporary city is represented and the medium through which it is constructed."
James Corner	"Landscape Urbanism 'brings together two previously unrelated terms to suggest a new hybrid discipline. Not unlike the combination of biology and technology to spawn biotech, or of evolutionary science with business management to produce organizational dynamics, the merging of landscape with urbanism suggests an exciting new field of possibilities'."

Table 2. *Cont.*

Author	Definition
Architectural Association	"Landscape Urbanism 'aims at developing instruments, proposing responses and investigating potentials emergent from the developmental pressures that regional networks exert on localities today. The understanding of landscape is central to this project, both for the degree of spatial control it offers to large-scale urbanism and for the way in which it allows the integration of natural processes and urban development into a sustainable artificial ecology. The landscape offers the double opportunity to reframe urban problems and recontextualize the practice in general'."
Sarah Kathleen Peck	"Landscape urbanism is a mode of thinking about the design and functioning of cities that places landscape architecture as one of the first steps in urban development, rather than the last."
Christopher Grey	"Landscape urbanism is the approach to the design and planning of open space where landscape is the structuring medium. Landscape urbanism considers the horizontal field over the vertical figure-ground and secondly, it describes a move from the pictorial to the operational; in other words process (both in analysis and design synthesis) is favoured over a static end form."
Julia Czerniak	"The notion of site propelling landscape design work interfaces with the emerging amalgam of practices known as landscape urbanism, a phrase taken here to be the conceptualization of and design and planning for urban landscapes that draw from an understand of, variously, landscape' discipliniarity (history of ideas), functions (ecolgies and economies), formal and spatial atrributes (both natural and cultural organizations, systems, and formations), and processes (temporal qualities) impacting many scales of work."
Ignacio Bunster-Ossa	"Landscape Urbanism is an. . . 'inside-out reversal of the city/landscape relationship. . . placing open space concerns at the core of planning and design of urban areas'."

The diversity and divergence of landscape urbanism, combined with its broad approach to the urban agenda, makes it difficult to define what landscape urbanism actually is. However, the concept of using the landscape as a basic model for urbanism still holds the framework of the theory together [4].

The defining aspects of landscape urbanism listed by Weller [4,16] are the following: "(1) align itself with contemporary scientific paradigms of nature as a complex, self-organizing system, conceptualize, interpret and directly engage the city as a hybrid ecology; (2) emphasize the creative and time-developmental agency of ecology in the formation of urban life as opposed to envisaging an ideal equilibrium between culture and nature; (3) include within the purview of design all that is in the landscape—infrastructure and buildings, etc., and do this at scales which bridge the divide between landscape design, landscape ecology and landscape planning; (4) experiment creatively with computer driven methods of mapping social and ecological forces which affect a given site so as to get closer to the complex dynamics of the landscape; (5) aim for structural efficacy and instrumentality by design and to apprehend both site and program as creative subjects and opportunities

but generally privilege a rational understanding of site forces, not the designer's subjectivity; (6) foreground the landscape as the ultimate system to which all goes and from which all comes, a template for urbanism".

The same author points out that, "conversely, landscape urbanism rejects: (1) the Garden (paradise) as landscape architecture's ur-metaphor—(replacing it with the City); (2) the landscape as urbanism's other, as a repressed, gendered, and passive layer; (3) a puritanical nature that needs to be reinstated as such to effect equilibrium between nature and culture; (4) designing toward fixed and final objects or aesthetic intuitions regarding formal composition; (5) style, image, scene, and symbolism as dominant aspects of design; (6) neo-conservative new urbanism on the one hand and avantgarde originality on the other; (7) architectural and landscape architectural design as the production of isolated objects; superficial contextualism and commercial styling of places either aloof to, or in some way merely compensating for the instrumentalities of the world around; (8) modernist planning and its pretense to control and contemporary planning which is devoid of the creative processes common to design processes; (9) a McHargian binary coding between nature and culture [16]".

From the above, it is possible to conclude that the definitions of landscape urbanism vary according to different authors and the spectrum of topics to which the authors refer. They emphasize the importance of landscape as an extensive or main medium for planning and shaping cities. Also, the landscape is seen as a medium that connects the urban and landscape, ecological and social paradigms of the modern city. At the same time, landscape urbanism is seen as a theory or paradigm of recent urban planning and is classified in the category of contemporary urbanism, which finds its foundation in the "green" and ecological movements of recent times. Therefore, landscape urbanism can be defined as an urban theory (concept) for which the starting point of reflection is the landscape, not buildings or built infrastructure, whereby the natural, structural, cultural and infrastructural layers of the urban space are integrated [17].

5. Methodology and Practice of Landscape Urbanism

In the professional literature related to landscape urbanism, it is noticeable that there is no unequivocal, operational, or methodological framework for landscape urbanism, and that there are broad and often uneven conceptions that would translate this theory into concise methodological models. For example, Burley [3] concludes in his essay that there are many topics that can be described under the term landscape urbanism and that his perspective looks at the urban environment as a series of components and compositions where topics and contents can be mixed and combined in endless configurations. Within that, landscape urbanism transcends the standard, is expressed in many forms and normative theories, and is currently in the formation of "phases". He concludes that it takes time to build cities that express landscape ecological ideals and that it remains to be seen whether they are an environmental perspective that can create a better urban environment ("it is too early to say"). Similarly, Assargard [4] notes that it is extremely difficult to define the methodological framework of landscape urbanism, since the literary sources of landscape urbanism are inspiring but at the same time predominantly theoretical and abstract. In this sense, he notes that little has been written in terms of a methodological framework and that literature on the theory of landscape urbanism and projects related to landscape urbanism prevails.

Nevertheless, some authors mention some methodological frameworks or design principles that clarify the term in more detail. In the theoretical framework, the discussion of Turner [15] is significant, for example, for which landscape urbanism integrates the ecological layers ("ecological design") used by Ian McHarg (author of the book "Design with Nature") with the cultural layers used in the design of the "Parc de la Villette" in Paris (competition work by Bernard Tschumi in 1983). At the same time, McHarg [18] understands that the best way to intervene in the environment is through planning and design processes that respect the ecological aspects of the space and the character of the

landscape, while Tschumi designs a park "Parc de la Villette" [19] in which the landscape is a medium of integration of natural and socio-cultural layers, making a flexible urban environment. In this sense, Turner sees the goals of landscape urbanism as the creation of "good places" through the creative integration of natural, human and cultural process layers. In the discussion on landscape urbanism, Burley [3] also mentions the approach to the creation of an urban form according to the "Landscape First" principle, i.e., through the creation of an urban form in which the features of the landscape and ecological conditions form the first step in the process of shaping the space into which other elements (buildings) are then incorporated and roads), as opposed to planning in which the landscape (and green areas) are accompanying or decorative elements of the urban environment that are defined at the end of the process.

According to Gray [5,20] regarding the methodology of spatial interventions, landscape urbanism can be defined "as a strategic approach to (re)shaping the urban fabric through processes that we associate with the concept of landscape: irrigation systems, vegetation, biodiversity, ecological awareness, spatial orientation, revealing the possibilities of contemporary forms of urban agriculture, as well as existing and newly planned urban systems of public infrastructure." According to the same authors, when describing the methodology and expression of landscape urbanism, they single out two models of landscape urbanism—(1) "mechanical or computer" i.e., an architectural model based on the creation of new infrastructure systems, architectural forms and green structures through the abstraction of natural systems and existing processes and including the variety of spatial patterns, the fusion of standards and disciplines, and (2) the model of "suppressed design characteristics", which deals with the space between buildings, records and analyzes contextual processes and considers the possibilities of their qualitative change, with the aim of ecological and programmatic renewal.

In the discourse of discussions about landscape urbanism, it can still be read that its methodological framework has not yet formalized unequivocal and established methodological models [3,4]. However, the practice of landscape urbanism, readable through projects that are connected with landscape urbanism, provides clearer frameworks of direction and principles that can be described. Some of the most frequently mentioned contemporary projects and performances are, for example, Parc de la Villette in Paris, High Line in New York, Jiyang Eco park in China, BIG U in Manhattan, New York. In addition to them, the following examples can be distinguished: Ningbo Eco-Corridor in Ningbo, The Bentway Park in Toronto, Phase Shifts Park in Taichung, Fresh Kills Park in Staten Island, Linear Park Dorćol in Belgrade, Madrid Rio in Madrid, City-Bridge in Florence, Xuhui Runway Park in Shanghai, Nou Parc in Barcelona, Bropakren in Linköping and The Lowline in New York. In addition to those listed, some cities have specific examples of landscape urbanism that includes the characteristics of green infrastructure (Copenhagen, London, Portland). Looking at the contextual characteristics of the specific locations of the projects and the goals and characteristics of the projects themselves, the motivations, frameworks and principles applied in their design are read. Their original motivations can be linked to the theoretical basis of planning and/or design, and their implementation as a set of principles applied in specific locations.

What connects all the examples is the emphasis on the ecological principle, which is expressed through the synthesis of natural elements (topography, water, vegetation, microclimatic conditions) into diverse "healthy" or "healthier" ecosystems, which often mean restoration of habitat conditions, increase in biodiversity, restoration of natural habitats or the application of integral "natural" systems and solutions. At the same time, as a rule, newly created landscapes are not "wild nature" but a reinterpretation of nature in which layers of new technologies and ecological, social and cultural layers of contemporary city life are incorporated. Newly created landscapes, in this sense, either contain certain ecological components on which solutions are based (integral drainage, transformation of gray city infrastructure into green, etc.), or they are not explicitly expressed, but the landscape, and all its natural components, served as the basic model into which other parts of the

"gray" city infrastructure are incorporated. Another important feature of the examples is the fact that, in most examples, it is about the reintegration of neglected, destroyed and poorly used urban areas that are seen as a potential for the development and renewal of the wider urban area. Therefore, it is very often about the processes of remediation, conversion and revitalization of the area using the principles of landscape urbanism.

An important feature of the practical examples and realizations is the variety of scale of interventions, as well as the consideration of most specific locations in the context of the green infrastructure of the city (physical and functional connection of green corridors or areas in cases where this is possible). In the city structure, the analyzed examples are mostly dotted or linear parts of green infrastructure (green fragments within the intensively built-up city fabric or "green" corridors that extend through mostly built-up parts of the city). According to the typology of urban landscapes (open areas of the city) based on the basic purpose of the areas, they mostly consist of parks or linear parks of a larger or smaller scale.

In a chronological critical essay on landscape urbanism, Burley [3] concludes: *"Like any idea, landscape urbanism is expressed in many forms and normative theories"*, and many theoretical discussions are directed toward criticism of the theory [4,5]. Assargard [4] links many critical assumptions to the lack of a clear methodological framework, while Kim [21], in a study of critical opinions on landscape urbanism, lists some basic problem categories in the spectrum of internal criticism of landscape urbanism related to theory, practice and the relationship between practice and theory. Some of them are vagueness of terms and errors in terms, such as lexical ambiguity or deliberate vagueness; absence of practical results, form-oriented practice and ambiguous identity in practical results (e.g., ambiguous identity leads to difficulty distinguishing landscape urbanism projects from those of conventional landscape architecture); and criticism oriented to practical methods (errors in practical methods and the absence of practical methods within which the lack of practical methods is considered the fundamental problem of landscape urbanism).

6. Landscape Urbanism and Green Infrastructure

Landscape urbanism as a paradigm has been developing since the end of the 20th century, in a general time when theories and concepts such as landscape ecology, ecological design, green urbanism, sustainable development of cities, green construction, etc., began to develop continuously. The concept of green infrastructure began to be implemented more intensively in Europe from 2013 [8], and to this day it has shaped its basic assumptions within spatial planning processes (strategy, study and green infrastructure plan).

According to the European Commission [22], green infrastructure is a strategically planned network of natural and semi-natural areas that includes all its ecological features and is based and managed in a way that provides a wide range of benefits to the ecosystem. It includes "green" and "blue" areas (green areas and water corridors) and other physical features in land, coastal and marine areas whether in rural or urban settings. The network of "green" and "blue" urban and suburban areas brings natural, economic and social benefits, contributes to citizens' health, recreational opportunities and general quality of life, supports the "green" economy, increases biological diversity and the general state of the environment. Within the same document, the European Commission represents the point of view of protection, restoration, creation and improvement of green infrastructure. It is considered an integral part of spatial planning and territorial development in cases where it represents a better alternative to standard gray infrastructure systems and emphasizes the importance of green infrastructure in the protection of Europe's natural capital and its integration into sectoral policies and financial instruments of the European Union [22].

The connection between landscape urbanism and urban green infrastructure is visible in many spheres of today's practice [1]. In principle and theoretically, they are connected by the understanding of "city as landscape", in which the landscape is an important city-building element and a medium that does not follow architecture but is an equally important morphological structural component of the city. The urbanity of the landscape can be concisely read in the green infrastructure through the establishment of networks of connected green and blue areas, which are a prerequisite or an equally important segment of determining the purpose and typology of urban areas. At the level of urban planning, the implementation of green infrastructure is already an integral part of urban policies in certain examples. For example, the United Kingdom in the National Planning Policy Framework [23] indicates that plans of all levels must have strategically approached the preservation and improvement of the network of habitats and green infrastructure, and guidelines for the natural environment [23] point out that the requirements of green infrastructure should be considered in the earliest stages of planning and included in the preparation of planning proposals for development [8].

Except at the level of planning, at the level of shaping and designing urban areas, the guidelines of green infrastructure documents (local level) are similar or identical to the principles implemented in many projects declared as landscape urbanism projects. These are, for example, the strategic greening of open urban areas, the introduction of alternative, natural drainage of surface stormwater, the transformation of neglected, unkempt or destroyed land—brownfield regeneration, the systematic transformation of gray and blue infrastructure—for example, the redevelopment of watercourse corridors, rivers and wetlands applying the principles of ecological design, etc. In this aspect, both green infrastructure documents and many contemporary landscape urbanism projects rely on nature-based solutions—practical design solutions that are based on nature, i.e., sustainable natural elements and processes [24,25], and on the principle of ecological design—development processes that integrate ecological aspects, striving for solutions that have the least possible impact on the environment during the entire life cycle [26].

In this context, it is evident that landscape urbanism, green infrastructure and nature-based solutions have different definitions that individually determine and distinguish them. Also, their basic roles in the planning and design of urban landscapes are uniform—all of them can be linked to the concept of sustainable development, and include social, ecological and economic contributions to urban environments. However, they are distinguished by the methodological framework. Landscape urbanism does not have a clearly developed methodological approach to integration into city policies. In contrast, green infrastructure was implemented through strategies, studies and green infrastructure plans for individual cities, and the principles that develop natural-based solutions often coincide with the principles of green infrastructure at the local level (green infrastructure projects in urban areas). Considering that both are modern concepts, they should always be implemented using a parallel bottom-up and top-down approach [27], but it would also be necessary to incorporate public dialogue and a participation model [28]. Furthermore, in such processes of planning and landscape design, it is important to include different groups of people to make these processes inclusive for everyone [29].

Although all the mentioned concepts are more recent and relate to the end of the 20th and the beginning of the 21st century, green infrastructure and landscape urbanism find their roots in similar historical models in which the landscape played an important role in the planning and shaping of urban areas. In this regard, practical examples and implemented projects within urban areas can be linked to all three mentioned concepts, given that they are connected by the ecological contribution to urban areas. In this context, it is possible to compare the measures of action—the measure of landscape urbanism and nature-based solutions refers to the urban environment, while the measure of green infrastructure should in theory include the city, regional and interstate level.

Because of all of the above, we can re-examine green infrastructure as a way in which landscape urbanism was implemented in today's urban planning, design and management

practices. In this sense, landscape urbanism is a theory of urban and landscape planning, while green infrastructure can be characterized as a methodologically based practical application (study, strategy and plan of green infrastructure). However, this affiliation needs to be reconsidered since there is an unequivocal connection between green infrastructure and other forms of green urbanism, and especially for the reason that the applicability of green infrastructure is possible (and is still applied today) within classic forms of urban planning and development. Therefore, answering the question of whether green infrastructure is part of landscape or green urbanism, or is a concept that complements classic urbanism, is as difficult a task as pragmatically answering the question of whether landscape urbanism is a completely new urban orientation, or historical examples indicate its continuous existence in the historical chronology of city development, urbanism and landscape architecture. However, the basic premise of the development of green infrastructure, which is implemented by the policy of the European Union, derives from the ecological values of the area, given that its basis is the preservation and improvement of biodiversity. By adding social values, through the cultural ecosystem services of green infrastructure, the definition comes very close to the definition of landscape urbanism.

7. Conclusions

Landscape urbanism is included in green contemporary urbanism. The defining aspects of landscape urbanism distinguish it from other ecological paradigms because in its essence it does not start from nature but represents the integration of natural, structural, cultural and infrastructural layers of urban space. It is distinguished from classical and other urbanisms by its starting point, in which the landscape is the basic medium for designing urban environments into which all other parts of urban life and urban infrastructure are integrated.

By analyzing the theoretical foundations of this urban concept, one can see that the methodological framework of the theory is incomplete. The methods of landscape urbanism are interpreted diversely and not clearly enough in the spectrum of different spatial disciplines, but also within individual disciplines, which ultimately makes it difficult to clearly apply knowledge in the planning and design of urban environments. Nevertheless, the modalities of applying landscape urbanism in the modern city, analyzed through a comparison of declared landscape urbanism projects (hypothetical and practical projects—realizations), indicate that landscape urbanism provides a functional framework for this theory. In the spectrum of urban practices, landscape urbanism can be linked to the concept of green infrastructure at the level of planning urban areas, while other practical principles of landscape urbanism, which we mostly read on individual realized projects of larger or smaller scales, are applied mainly at the level of shaping and designing urban areas. Within that, especially at the level of planning and designing urban environments, the principles of ecological landscape design and nature-based solutions fit into the overall process as an integral part of the overall process.

Landscape urbanism, as well as all the above-mentioned principles applied in practice, certainly make an important contribution to the modern city, especially within the framework of ecological paradigms and how cities deal with climate change. However, the clarity of the methodological bases of landscape urbanism, as well as the categorization of the affiliation of individual principles to a particular urban orientation (e.g., green infrastructure, ecological landscape design), is the task of some future theoretical discussions.

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