

Article

Planning the Green Walkable City: Conceptualizing Values and Conflicts for Urban Green Space Strategies in Stockholm

Hélène Littke

Urban and Regional Studies, Department of Urban Planning and Environment, KTH Royal Institute of Technology, Drottning Kristinas väg 30, 10044 Stockholm, Sweden; E-Mail: helene.littke@abe.kth.se; Tel.: +46-8-790-9245; Fax: +46-8-790-6761

Academic Editor: Tan Yigitcanlar

Received: 24 June 2015 / Accepted: 7 August 2015 / Published: 19 August 2015

Abstract: Urban green spaces are essential elements of cities, contributing to the quality of life in numerous ways. However, densification strategies create a complex relationship between urban development and the quality, as well as the quantity, of urban green space. This paper examines the Green Walkable City Programme in Stockholm, a document developed to supplement the comprehensive plan as a strategic backbone for green urban planning. Based on interviews and content analysis, this paper identifies and discusses concerns raised in the development of the planning programme, and addresses the importance of urban green space for citizens' well-being. The new comprehensive plan has introduced a shift in the attitude towards the urban green space in Stockholm. The need for urban growth is used to justify development of green fields, and a focus on the quality, rather than the quantity, of urban green space is promoted. Despite this progress, the public requests definitions for this quality approach and fears that nature within the city will be “parkified”. Therefore, this paper offers a critical reflection on the role of the Green Walkable City Programme, its situation within the context of Swedish green urban planning, and various areas of concern that have been highlighted.

Keywords: urban green space; urban planning policy; ecosystem services; parks; Stockholm

1. Introduction

Trees and green space are important urban elements with the potential to increase the well-being and quality of life for urban residents [1]. In addition, urban densification as a planning strategy has

recently gained attention both internationally [2] and in Sweden [3,4] with regard to sustainability, creating a complex reality for urban green space [5]. Densification is perceived as both a threat to [6,7] and an opportunity for achieving higher-quality urban green space [8]. This situation is further complicated by the fact that the public realm is experiencing challenges of exclusion, as well as reduced social and cultural diversity. Furthermore, new management structures, privatization, and commercialization (effects of globalization) can be potentially harmful to democratic practices [9]. Therefore, although urban green space is associated with multiple benefits, it may not be fully understood or incorporated into policies [10].

Stockholm is the capital of Sweden and a city world-renowned for its progressive environmental and sustainable urban planning, possessing vast areas of urban green space. Urban growth and the pressure for land to facilitate new development constitute central themes in the comprehensive plan from 2010: *The Walkable City* [11]. Moreover, as a strategic backbone for green urban planning, a supporting document, “*The Green Walkable City*”, was developed. The present paper aims to discuss the value and benefits of urban green space with a focus on the well-being of urban inhabitants. Additionally, the major conflicting areas in contemporary urban green space planning in Stockholm will be identified. By investigating the results from the *Green Walkable City* project, this paper addresses the following questions: (1) what are the main areas of conflict within the proposed plan? and (2) how are the social and psychological benefits of urban green space conceptualized and discussed?

2. The Value and Benefits Associated with Urban Green Space

The benefits associated with urban green space range from economic and ecological functions to social and psychological influences, depending on the local context. A contemporary approach to the study of these advantages from an anthropocentric perspective is to consider them as ecosystem services. In this respect, society benefits from several aspects, including stormwater delay, climate change mitigation, and recreational value [12,13] that are often used as arguments for preserving or enhancing green space. Costanza *et al.* [14] defined ecosystem services as the benefits that humans derive from a healthy ecosystem. In addition, the Millennium Ecosystem Assessment [15] established the view that physical and mental health are intimately associated with access to natural areas. The framework used in the Millennium Ecosystem Assessment classified the services as provisioning, regulating, cultural, and supporting [15] to encompass all aspects of green space benefits. Although this concept can be broadly applied to service types provided by the green space itself, expanding this classification more fully to include social and psychological ecosystem services may be necessary [12]. Kaltenborn and Bjerke commented that “expanding the perspective from considerations of the functional capabilities of the landscape to values and socio-cultural meanings is probably one of the paramount challenges of future land use planning” [16] (p. 3). Furthermore, Bolund and Hunhammer similarly argued that due to the substantial impact on quality of life from ecosystem services, they should be addressed in land-use planning [17].

From an urban planning perspective, this paper presents a broad understanding of the concepts of well-being and quality of life, highlighting the spatial and planning implications of the research on urban green space. Individuals living in close proximity to urban green spaces tend to utilize these areas more frequently and reap several major benefits [18], including increasing one’s sense of place

and local identity [19–21]. Green urban areas also contribute positively to civic pride, sense of community, and belonging [1,22]. For individuals living in inner-city apartment buildings, well-used urban green spaces have been linked to stronger ties to neighbours [23,24], a greater sense of safety [23], as well as fewer incidents of graffiti and other anti-social behavior [25]. Studies by Sullivan *et al.* [25] have shown that vegetation is an essential component for generating neighbourhood vitality. In this respect, trees and urban green space serve to enhance social control, informal contact with neighbours, and the sense of community by fostering ties, as well as having the potential to reduce crime [26]. As urban nature provides significant social and psychological benefits, it is a valuable municipal resource crucial to the development of sustainable cities [27]. In addition, urban vegetation has been shown to produce positive cognitive and emotional reactions. The effect of nature on positive mood has been demonstrated following even a brief contact with nature [28], as well as by Ulrich [29] from looking out of a window. Furthermore, several studies have shown that psychological and emotional responses from natural settings have positive effects on restoration, stress, and anxiety [29–33].

2.1. Urban Green Structure Planning in Sweden

Sweden and Stockholm, in particular, have a long tradition of urban green space planning. Overcrowded housing and unsanitized urban conditions in the 1930s led to a shift in the role of green space. The focus moved from boulevards and decorative greenery towards a more functionalistic plan, advocating fresh air and open accessibility. Ideally, green space should be connected to housing and available to all social classes. A multifunctional approach to urban greenery was established by the Stockholm City Gardener, Holger Blom, in the 1940s, by acknowledging recreational, health, ecological, architectural, and cultural aspects of urban green space [34].

Since the 1960s, a network approach to urban green space has evolved in Sweden. This network is associated with the concept of green structure [35], which in the Swedish context is used as a synonym for the internationally used phrases “urban greening” and “urban forestry” [36]. In a sub-report of an Official Report by the Swedish Government from 1994, landscape architects Bucht and Persson defined green structures as “all land [in and adjacent to urban areas] not built upon or sealed” (own translation) [36] (p. 91). According to Lövré [35], this report has been crucial to the spread of this concept. The report further stated that urban green structures function to enhance biological diversity, climate adaptation, recreation, health, as well as educational and cultural values. However, conceptual confusion has been increasing with regard to urban green planning when it comes to what areas should be included and how they should be related. Therefore, the different properties of commons, parks, gardens, squares, streets, and graveyards create a need for a network approach to the green structure concept (also including blue structures (e.g., water)) [36–39].

Today, the Swedish Government acknowledges the importance of urban green space and has recommended that municipalities develop a green plan as part of the comprehensive plan [11,40]. Additionally, one of Sweden’s 16 Environmental Quality Objectives (adopted in 1999 and 2005) is directed towards creating and maintaining a “Good Built Environment” [41]. In 2012, this goal was further specified to request natural and green areas in proximity to any regions of high density be of good quality and availability [42]. The National Board of Housing, Building, and Planning (Boverket) published a report in 2012 on the progress of Swedish municipalities in reaching this objective. The

results indicated that in 2011, 23% of the 290 cities in Sweden had complete green space planning documents, while 15% had partial coverage. In addition, the report also revealed that there is no universal concept or structure for these projects (e.g., Green Plan, Green Structure Plan, Park Programme/Plan, Green and Blue Structure Plan, Green Values, and Tree Plan), and they are developed according to local needs and resources. While freestanding documents are at a disadvantage, those associated with the comprehensive plan possessed a clear advantage as public involvement through consultation and exhibition were enabled. In addition, the report also acknowledges that urban densification combined with the need to maintain ecosystem services and promote health are driving new approaches and planning strategies for urban green space [42].

Although the multifunctional urban green space approach has been a tradition in Sweden, Lövrie [35] showed that contemporary views favour ecological values. For example, in Linköping, the term “park” has been valued lower than “nature”, as lawns are perceived to have lower ecological function than nature. Likewise, in Västerås, the green plan states that urban inhabitants require ample access to parks, providing adequate exposure to nature [35]. As discussed by Bucht and Persson [38] in the 1990s, the question of which values are connected to urban green space and how they are linked still remain unclear. Magner [34] suggested that the conflicting interests within municipalities constitute a further threat to coherent green space planning. In Sweden, a trend exists towards increasing the quality of green space in order to decrease the overall quantity of space to permit population densification [34]. Unexploited areas in Swedish cities have declined, negatively impacting the presence of green space [43]. A general trend of decreasing urban green space can be detected throughout large Swedish cities since the year 2000, and this development has been particularly profound in Stockholm [44]. However, Stockholm remains an incredibly green city with vegetation (or unsealed surfaces with partial vegetation) covering 74% of the city’s urban landscape in 2005. With a total area of 38,000 ha, Stockholm has a population density of 3300 persons/km² and approximately 200 m² green space per person [44] (p. 7). Despite a substantial local difference in quantity, 90% of Stockholm’s population lives within 300 m of some form of green space. In the centre of the city, the local amount of green space is approximately 5 m²/person, with this value increasing to more than 50 m²/person in the periphery [45].

2.2. The Green Walkable City Project

The Green Walkable City (GWC) is a comprehensive planning programme for the purpose of conceptualizing future strategies for the planning of Stockholm’s green space. The plan has been developed by a working group of representatives from the Planning Department’s Strategic Division, the Exploitation Office, and the Transportation Office. The group has worked together with a reference panel composed of representatives from different departments (planning, exploitation, traffic, sports, and environment), representatives from one city district, and the City’s Head Gardener. According to the project leader, the idea for the document was formulated during the creation of the comprehensive plan. Specifically, several of the concerns raised in the consultation for the comprehensive plan were issues related to green space. Therefore, when the plan was approved by the municipality, the planning office received the political commission to create an additional policy document that pertained to green space concerns [46,47].

There are two versions of the programme. The first version was developed for the public consultation that occurred between 11 June and 19 October, 2012. For this consultation, public meetings were held, and the material available at the City Planning Office was also sent out to all official stakeholders (regional municipalities and governmental authorities) [48]. The second version was revised based on the consultation responses of the public exhibition, held between 16 May and 16 July 2013 [49]. This revised version has not been officially approved by the City Council. However, the document, goals and strategies are available at the City of Stockholm's homepage [50].

In particular, the document states that green and blue infrastructure is very highly valued by the residents of Stockholm. In addition, it addresses accessibility and quality of green space for recreation, as well as the view that green space should facilitate a sense of belonging and social interaction necessary for urban development [48] (p. 1). Associated with the vision and strategies outlined in the comprehensive plan (e.g., diversity, innovation, growth, and inclusiveness for residents), the GWC document is structured around four primary goals: (1) to protect and develop the green character of the city; (2) to support accessibility and recreation through the perspective of green urban space as a "living room" or an everyday public space; (3) to support the ecological infrastructure, pertaining to biodiversity and ecosystem services; and (4) to develop tools and processes for the government to work with green space [48,49].

Central to the programme is the argument for new development strategies, including greenfield development. The former comprehensive plan from 1999 focused on densification through infill and brownfield development strategies [46,48,49]. This was largely due to the increased pressure on new development within the Greater Stockholm area and the central message of the document. Consequentially, a new formula for green space must be developed to support future planning [46]. In the GWC, green space management is focused on development, quality, accessibility, and connectivity (both spatial and functional). Importantly, one of the features of the plan is the potential for green areas to physically connect districts via the strategic placement of parks and public functions along natural green corridors [49].

Therefore, the GWC project acknowledges the many roles of urban green space. In particular, green space functions to provide public space [49] (p. 15), social cohesion and inclusion (pp. 15–16), safety, health, restoration (p. 16), accessibility, management, seasonal changes (pp. 17–18), biodiversity (p. 21), local climate mitigation and microclimate (p. 23), and stormwater management (p. 24).

3. Materials and Methods

This paper is based on secondary data obtained for the introductory literature review on the social and psychological benefits of urban green space and primary data which were collected from the GWC programme development. In addition, the project leader at the Stockholm Municipal Planning Office was interviewed during and after the public consultation. Moreover, public meetings were attended, and the written responses to the public consultation and public exhibition, as well as the official summaries and discussion of the responses, were studied. The public consultation resulted in 111 written responses, whereas the exhibition resulted in 47. As there were no significant changes planned for the document following the exhibition and the answers were similar to the consultation, this study primarily concentrated on the public consultation responses.

For the written replies, quantitative and qualitative content analyses were utilized. Holsti defines content analysis as a “technique for making inferences by objectively and systematically identifying specified characteristics of messages” [51] (p. 289). Objectivity in this instance refers to predetermined categories used for text coding. The systematic approach of the method refers to the sample, with all written responses to the public consultation included in the analysis. The results of this study are presented quantitatively below and are complemented by a qualitative analysis of themes and interpretation of the results. Altheide characterizes qualitative (or ethnographic) content analysis as the search for underlying themes. Specifically, this involves an exploratory approach to the text through a “(r)ecursive and reflexive movement between concept development-sampling-data, collection-data, coding-data, and analysis-interpretation. The aim is to be systematic and analytic but not rigid. Categories and variables initially guide the study, but others are allowed and expected to emerge during the study, including an orientation to constant discovery and constant comparison of relevant situations, settings, styles, images, meanings, and nuances” [51] (p. 559). Participating in public meetings and presentations of the new programme revealed the intense debate over urban green space and was often exemplified in conflicts regarding a particular location or case. For this study, the main objective was to identify conceptual areas of conflict in the planning of contemporary urban green space. This exploratory approach enabled categorization within the data collection.

The reviewed responses were categorized according to the sender, official respondent, NGO, and private individuals. The main areas of conflict were identified in an initial examination of the responses and supported by the findings from the interviews. These conflicts included a lack of definition and clarification, densification and urban growth, differentiation between park and nature, and the “parkification” of nature. To determine how the social and psychological benefits of urban green space are conceptualized and discussed, the responses were further categorized according to whether these benefits were explicitly mentioned. Table 3 in the results section displays this classification system. The aim of this exercise was not to quantify the responses, but rather to provide an overview of how these issues were discussed.

The methodological approach was to identify the GWC project as a case study, highlighting important features for a broader discussion of urban green space planning. Stockholm, world-renowned for being green and sustainable, functions as a model for other cities. Although the analysis is limited to the GWC project documents, development, and public responses, the discussion and conclusions reached in this study are broadly applicable to green urban planning.

4. Results

As discussed above, the GWC document is structured around four goals with regard to the character of the city, an everyday life and public space approach to urban green space, ecological functions, and questions of implementation. Each of the goals is supported by unique strategies. Table 1 below summarizes the strategies in the public consultation version of the document.

Table 1. Goals and strategies of the Green Walkable City—public consultation document [48] ((pp. 8–9) own translation).

Stockholm's Green Character	Stockholm's Green Living Room	Stockholm's Ecological Infrastructure	The City's Tools and Processes
-Preservation of landscapes and cultural values.	-To create more public green space for integration and social connectivity.	-To preserve the biodiversity and ecosystem services.	-To develop new tools to secure provision of urban green space to be incorporated into all new development projects.
-Creation of new urban parks as motivation for urban planning.	-To provide adequate access to parks and nature for all.	-To work with greenery and water for better climate mitigation and urban micro-climate.	-To have green investments in all new developments.
-To create networks of urban green space, specifically for social and cultural use.	-To utilize resident engagement and develop forms for extended dialogue and participation, as well as investigate how urban agriculture can be supported.		-To improve management in response to increased pressure on existing green space due to an increasing urban population.
-To have connecting green paths between districts and neighbourhoods supported by social and park functions.			-To increase regional cooperation.
-To make the areas closest to water accessible and protect the views of the water.			-To highlight the green qualities of Stockholm to make them an even greater part of Stockholm's identity.

Based on the comments and responses in the public consultation, the strategies for each section were revised. Table 2 summarizes the newly expanded procedures found in the exhibition document.

Table 2. Goals and strategies of the Green Walkable City—exhibition document. Bold text indicates additions from the previous version [49] ((pp. 6–7), own translation).

Stockholm's Green Character	Stockholm's Green Living Room	Stockholm's Ecological Infrastructure	The City's Tools and Processes/Implementation
-Preservation of landscapes and cultural values should be considered in all changes.	-To create more green public space for integration and social connectivity.	-To preserve biodiversity.	-Strategic and long-term planning of parks and nature.
-Creation of new urban parks as motivation for urban planning.	-To provide good access to parks and nature for all. (Quality)	-Variation of park and nature to support different ecosystem services.	-To develop a new system for green investments.
-To create networks of urban green space, specifically for social and cultural use to connect urban districts.	-To promote acceptable park standards with enough space for all local inhabitants. (Quantity)	-To use Green Area Factors as a tool for all new development projects.	-To establish dialogues and creative processes for public participation.
-To have connective green paths between regions and neighbourhoods supported by social and park functions to connect communities and regions.	-To utilize resident engagement and develop forms for extended dialogue and participation, as well as investigate how urban agriculture can be supported.	-Climate mitigation and urban micro-climate.	-To improve management as a response to increased pressure on existing green space due to a rising urban population.
-Create new temporal and small permanent parks in dense urban areas.			-To increase regional cooperation.
-To make the areas closest to water accessible and protect the views of the water.			-To highlight the green qualities of Stockholm to make them an even greater part of Stockholm's identity.

As presented in the tables above, the revision provided additional focus on implementation, facilitation of change, and temporal solutions. The changes after the public consultation clarify the specific strategies and goals for implementation, provide a map of the regional green areas, and associate the goals discussed in the document with page references.

In the revised document, strategies were developed to promote a long-term and holistic approach to green urban planning. In addition, preservation and cultural aspects highlighted under Stockholm's Green Character goal were adjusted to be considered in all changes. Standards and access to parks and nature have been specified as either quantitative or qualitative measures. The strategies connected to ecosystem services were expanded and complemented with implementation aspects through the proposed green area factor tool. Therefore, the revised goals and strategies specifically discuss implementation issues through strategic and long-term planning, green investments, and focus on dialogues, as well as public participation.

In the public consultation, the programme received 111 written responses. The answers were categorized according to the sender and are summarized in Table 3 below. In the exhibition, there were 47 replies that mainly repeated the same issues as in the consultation and are therefore not further discussed in the analysis. According to the project group's summary, only editorial changes were to be made after the exhibition. Therefore, the questions raised in the consultation and discussed below were perceived to have been considered for the revision. In general, official respondents were positive about the programme's outline and goals. However, members of the public and NGOs were negative, often requesting clarification, definitions, and implementation [47].

The central conflicts identified in the responses were questions regarding the need for new growth and development, conducting an environmental assessment of the programme, and the differentiation between park and nature. The public consultation is an open process that allows respondents to comment on any aspect of the document. The conflict between nature and park was highlighted by one-third (31%) of the respondents. Indeed, half of the NGOs, as well as one quarter of the official respondents and private individuals, specifically mentioned this conflict (Table 3). In order to determine how social and psychological benefits of urban green space were conceptualized, responses were monitored for these aspects. In almost half of the answers (42%), social and psychological benefits were explicitly mentioned. The majority of the responses discussing these values were from official respondents and NGOs, rather than from members of the public.

Table 3. The results of the categorized public consultation responses. Values are recorded in total numbers and percentages.

	Total Number of Responses (%)	Highlighting the Conflict between Park and Nature	Explicitly Mentioning Social and Psychological Benefits
Official Respondents	43 (39%)	11 (26%)	22 (51%)
NGO	27 (24%)	14 (52%)	12 (44%)
Private Individual(s)	41 (37%)	9 (22%)	13 (32%)
Sum	111 (100%)	34 (31%)	47 (42%)

Despite concerns raised regarding the conflict between park and nature by almost one-third of the respondents, the revised Table 2 shows that this conflict is not highlighted in the goals and strategies

presented in the document. Urban growth and the need for new development are stressed throughout the text and parks, and urban green space is presented as an important motivation for such development. This is in line with the new comprehensive plan from 2010: *The Walkable City: Stockholm City Plan* [11], which features a strong focus on densification. Furthermore, this document argues for the importance of urban growth and the need for new development of urban green space to accommodate the needs of the city.

5. Discussion: Conflicts, Concepts, and Context

The GWC programme is a strategic approach for a growing city known for valuing green space and sustainability. Therefore, Stockholm constitutes a model city for programmes and projects that can inspire and influence locations throughout the world now and in the future.

5.1. “Parkification” of Nature and Urbanization of the Park

Although urban green space is necessary to obtain certain important ecological, social, and economic benefits [52], the increased focus on densification as a planning policy creates a complex reality for urban green space. Although densification can have positive effects on green space quality [8], less green space and more people will enhance pressure and management. Ståhle [8] shows that green space accessibility is affected by urban morphology. In this respect, some dense inner-city areas can be considered greener than low-density suburbs that have a greater proportion of open green space. Therefore, the design, use, movement, and integration of urban green space are essential elements in green planning. However, these factors also relate to the central conflict of the public consultation between park and nature.

A park is defined by the Cambridge Dictionary as “a large area of land with grass and trees which is maintained for the pleasure of the public” [53]. Similarly, the Merriam-Webster definition of a park is “a piece of public land in or near a city that is kept free of houses and other buildings and can be used for pleasure and exercise” [54]. Nature, on the other hand, is defined as “all the animals, plants, rocks, etc. in the world and all the features, forces, and processes that happen or exist independently of people, such as the weather, the sea, mountains, the production of young animals or plants, and growth” by the Cambridge Dictionary [53]. Likewise, nature is described as “the physical world and everything in it (such as plants, animals, mountains, oceans, stars, etc.) that is not made by people” by Merriam-Webster [54]. These definitions point to parks as urban phenomena, described as a spatial, material setting defined by recreational activities and the lack of buildings. Nature, on the other hand, is a conceptual understanding of the world that exists regardless of human interference, and therefore cannot be created by humans. Few areas within metropolitan regions remain untouched by humans, and those that persist tend to be highly affected by human interference (e.g., transportation and noise). From the large-scale perspective of professional planners, parks and nature are essentially the same; however, few individuals share this view.

Parks, nature, and urban green space constitute a larger group of spatial concepts. In a Swedish survey by Lövré [35], 41 green plans were studied and 48 conceptual systems identified, with more than 300 concepts for categorizing green objects and areas. These concepts represented a significant variation in content and were seldom presented with precise definitions. In 1983, the Swedish

University of Agricultural Sciences concluded that there was great variation and conceptual confusion concerning specific functional characteristics (e.g., nearby urban recreational areas) [55]. The study also found that phrases such as “wasteland” and “green belt” are difficult for the public to comprehend. Furthermore, Lövré [35] argues that the primary reason for this conceptual confusion is a conflict between everyday practice and professional language. For example, plans are often communicated through generalization on two-dimensional maps. However, regional growth plans and management policies have different spatial representation requirements than urban residents. Diverse use of language and conceptualizations also conveys power hierarchies between categories of spatial applications [35]. Formal concepts are needed in juridical contexts (e.g., planning documents), while functional concepts (e.g., garden and park) are frequent throughout comprehensive planning. In addition, geographical concepts, (e.g., outdoor environments and neighbourhood parks) are used in urban design, technical descriptions, maintenance concepts (e.g., vegetation area), and plantings to fulfil conceptualization requirements [55]. Lövré also highlights the fact that the perception of a “park” is evolving. In particular, social and economic status influences what is considered to be a park [35] and its level of accessibility [56]. In the context of Sweden, green municipal planning on a national level has long focused on quantity, and on an international level Swedish cities are very green. However, recent decreases in management budgets could potentially limit green space and shift the focus to quality rather than quantity [35]. According to Magner [34], quality is an argument for densification and reduced green space. Thus, the GWC project is aligned with the Swedish green planning tradition.

The responses in the public consultation demonstrated that nearly one-third of respondents highlighted a conflict between park and nature. Of the respondents, 25% of official agencies and authorities, as well as a similar number of private individuals, exhibited confusion on this matter. In contrast, more than half of the NGOs focused on this issue, which is understandable since they represent park and nature groups primarily concerned with these issues. Despite these responses, the official statement of the city, as well as interviews with the project leader, expressed that this conflict was not a central concern in the GWC programme [46,47]. Due to the strategic and non-spatially embedded nature of the programme, these concerns will only be addressed during the implementation of specific projects. In regards to the consultation responses, it is asserted that the approach in the programme will guide future projects and establish standards for these terms. Given that the project was initiated due to public concern, the development of a comprehensive plan was the primary motivation for the project. Overall, the revised strategies in the implementation section stress the need for the development of tools for dialogues and public involvement.

5.2. Conceptualizing the Social and Psychological Benefits of Urban Green Space

As discussed above, advantages range from economic to ecological and have the potential to improve the well-being and quality of life of urban residents. The GWC project acknowledges these benefits by discussing urban green space as public space, as well as its influence on social cohesion, safety, health, and restoration [48,49]. The answer to the question of how social and psychological benefits of urban green space are conceptualized and discussed in the document is conflicting. Values pertaining to social life, user-perspectives, health, mood, and connection to nature form the conceptual

backbone of the document. As stated both in the written material and by the project leader, this report will influence and guide future planning in Stockholm. The tools and process strategies are directed at implementation, aiming for a greater focus and stronger initiatives for all of these issues. However, the policy components of the document are vague and broad. The implementation is focused on facilitating the new provision of green space, as well as financing and management, failing to discuss actual values. In contrast, the user perspective of the document suggests that the benefits and values will be apparent when the green spaces are utilized (or by acknowledging their existence for future use). An additional strategy provided in the revised document promotes dialogue and creative methods of promoting public participation. Of the responses, 42% explicitly mention social or psychological benefits of urban green space as essential for the implementation of the programme.

Although the document discusses tools and processes, no actual implementation guidelines are presented, nor is a timeframe. Long-term planning has been heavily criticized by Gunder and Hillier [57], as well as Balducci *et al.* [58], as society is always changing and uncertainty is an influential variable in the creation of any goal. Furthermore, Balducci *et al.* [58] suggest that long-term planning should emphasize trajectories. In this respect, the GWC and the values discussed within the document can function as a trajectory for a discourse on urban green space. This discourse should promote the inseparable benefits and value associated with urban trees and green space. Moreover, the document has an unclear legal status, whereby the comprehensive plan guides new projects but cannot force specific development. However, by incorporating and working with these values, the comprehensive plan has influenced how these values are understood by the planning office [47].

6. Conclusions

The GWC is a document with ambitious goals and has the potential to influence future planning in Stockholm. The central focus on social and psychological values of urban green space is the result of a changing discourse and reinforcing its development. Despite the tradition in Sweden towards a multifunctional approach to urban green space, the recent studies discussed above demonstrate a trend favouring ecological functions. The GWC document relates to general trends in Swedish green space planning. In addition, it provides a broad vision of the benefits of urban greenery, promotes urban densification and ecosystem services, and presents a quality-over-quantity approach.

According to the plan, 1.5%–2% of the urban green space has been developed during the last 15 years. However, the new comprehensive plan includes strategies that will enable pervasive and locally significant changes. While this is easily understood from a policy point of view, the public requests additional details. Such details include: What will happen and where? What does quality over quantity mean in practice? Will all nature be “parkified”? Language and clarification of concepts play a central role in this urge to comprehend the new plan, as professional and non-professional language often differ. The concerns raised by individuals and NGOs would be better addressed in the document with examples and definitions in both spatial and conceptual forms. Planning as the democratic process of inclusion must find better methods of communicating to the public.

One explanation is that the responsibility for urban green space is shared between several departments for planning, management, and programming. In addition, social and psychological benefits can be more difficult to measure than, e.g., stormwater capacity or the number of solar panels,

though they are equally materially and spatially important for a green and sustainable city. The project for the GWC has involved several departments and disseminated knowledge for incorporating the benefits of urban green space into project planning. This has been achieved through the discussion of various new tools and strategies presented in the plan, serving as the primary advantage of the project.

Although Stockholm is an incredibly green city, a growing population and increased development have resulted in a requirement for land use policies and spatial approaches. The analysis in this paper does not point to an absolute resistance to change, but rather an urge to understand what this change involves. As a strategic policy document, the GWC cannot solve all of the problems facing the urban green space within Stockholm. However, Stockholm is internationally known to be green and sustainable, a reputation that can be maintained only by a proactive attitude towards builders and developers.

Urban planning is based on political decisions, and while green is preferred, it is difficult to place demands on builders and developers. Growth is the driving motivation for both the new comprehensive plan and the GWC, although establishing a commitment to preserving and promoting the beloved green values of Stockholm should be more strongly expressed. Stockholm is certainly known for sustainability and greenery; however, it is now time to stop living on old merits and identify new green ways to grow.

Acknowledgments

An earlier version of this paper was presented at the Urban Forests & Political Ecologies: Celebrating Transdisciplinarity conference in Toronto, ON, Canada in April 2013. This research has been conducted as part of a Ph.D. project made possible by a grant from The Axel and Margaret Ax: Son Johnson Foundation.

Conflicts of Interest

The author declares no conflict of interest.

References

1. Dempsey, N.; Burton, M. Defining place-keeping: The long-term management of public spaces. *Urban For. Urban Green.* **2012**, *11*, 11–20.
2. UN Habitat. *The Habitat Agenda Goals and Principles, Commitments and the Global Plan of Action*; UN Habitat: Istanbul, Turkey, 1996.
3. Regeringens Proposition (Governmental Proposition). *A First Step towards a Simpler Planning and Building Law*; Regeringskansliet: Stockholm, Sweden, 2006. (In Swedish)
4. Sustainable Cities—Focus on Transport, Housing and Green Space. Available online: <http://data.riksdagen.se/fil/D2A6AA8B-CF4C-4089-831D-121805B74F8A> (accessed on 1 December 2014).
5. Home, R.; Bauer, N.; Hunziker, M. Cultural and biological determinants in the evaluation of urban green spaces. *Environ. Behav.* **2010**, *42*, 494–523.
6. Thoren, K.H. “The green poster” A method to evaluate the sustainability of the urban green structure. *Environ. Impact Assess. Rev.* **2000**, *20*, 359–371.

7. Green Structure and Urban Planning, General Outcomes of Cost C11. I. Available online: <http://www.greenstructureplanning.eu/COSTC11-book/pdfs/a-Intro.pdf> (accessed on 13 August 2015).
8. Ståhle, A. More green space in a denser city: Critical relations between user experience and urban form. *Urban Des. Int.* **2010**, *15*, 47–67.
9. Low, S.; Taplin, D.; Scheld, S. *Rethinking Urban Parks, Public Space and Cultural Diversity*; University of Texas Press: Austin, TX, USA, 2005.
10. Wolf, K.L. Public value of nature: Economics of urban trees, parks and open space. In Proceedings of the 35th Annual Conference of the Environmental Design Research Association, Albuquerque, NM, USA, June, 2004; pp. 88–92.
11. The Walkable City Stockholm City Plan. Available online: <http://international.stockholm.se/globalassets/ovriga-bilder-och-filer/the-walkable-city---stockholm-city-plan.pdf> (accessed on 1 December 2014).
12. Daniel, T.C.; Muhar, A.; Arnberger, A.; Aznar, O.; Boyd, J.W.; Chan, K.M.; Costanzaf, R.; Elmqvistg, T.; Flinth, C.G.; Gobster, P.H.; *et al.* Contributions of cultural services to the ecosystem services agenda. *Proc. Natl. Acad. Sci. USA* **2012**, *109*, 8812–8819.
13. Middle, I.; Dzidic, P.; Buckley, A.; Bennett, D.; Tye, M.; Jones, R. Integrating community gardens into public parks: An innovative approach for providing ecosystem services in urban areas. *Urban For. Urban Green.* **2014**, *13*, 638–645.
14. Costanza, R.; d’Arge, R.; de Groot, S.; Farber, M.; Grasso, B.; Hannon, S.; Naeem, K.; Limburg, J.; Paruelo, R.V.; O’Neill, R.; *et al.* The value of the world’s ecosystem services and natural capital. *Nature* **1997**, *387*, 253–260.
15. Millennium Ecosystem Assessment. *Ecosystems and Human Well-Being*; Island Press: Washington, DC, USA, 2005.
16. Kaltenborn, B.; Bjerke, T. Associations between environmental value orientations and landscape preferences. *Landsc. Urban Plan.* **2002**, *59*, 1–11.
17. Bolund, P.; Hunhammar, S. Ecosystem services in urban areas. *Ecol. Econ.* **1999**, *29*, 293–301.
18. Schipperijn, J.; Ekholm, O.; Stigsdotter, U.K.; Toftager, M.; Bentsen, P.; Kamper-Jørgensen, F.; Randrup, T.B. Factors influencing the use of green space: Results from a Danish national representative survey. *Landsc. Urban Plan.* **2010**, *95*, 130–137.
19. Konijnendijk, C.C. *The Forest and the City: The Cultural Landscape of Urban Woodland*; Springer: Dordrecht, The Netherlands, 2008.
20. Whyte, W.H. *The Social Life of Small Urban Spaces*; The Conservation Foundation: Washington DC, USA, 1980.
21. Gehl, J. *Life between Buildings: Using Public Space*; Arkitektens Forlag: Copenhagen, Denmark, 2001.
22. Swanwick, C.; Dunnett, N.; Woolley, H. Nature, role and value of green space in towns and cities: An overview. *Built Environ.* **2003**, *29*, 94–106.
23. Kuo, F.E.; Sullivan, W.C.; Coley, R.L.; Brunson, L. Fertile ground for community: Inner-city neighborhood common spaces. *Am. J. Community Psychol.* **1998**, *26*, 823–851.
24. Kweon, B.S.; Sullivan, W.C.; Wiley, A.R. Green common spaces and the social integration of inner-city older adults. *Environ. Behav.* **1998**, *30*, 832–858.

25. Sullivan, W.C.; Kuo, F.E.; Depooter, S.F. The fruit of urban nature vital neighborhood spaces. *Environ. Behav.* **2004**, *36*, 678–700.
26. Kuo, F.E.; Sullivan, W.C. Environment and crime in the inner city does vegetation reduce crime? *Environ. Behav.* **2001**, *33*, 343–367.
27. Chiesura, A. The role of urban parks for the sustainable city. *Landsc. Urban Plan.* **2004**, *68*, 129–138.
28. Hull, R.B. Brief encounters with urban forests produce moods that matter. *J. Arboric.* **1992**, *18*, 322–324.
29. Ulrich, R.S. View through a window may influence recovery. *Science* **1984**, *224*, 224–225.
30. Ulrich, R.S. Human responses to vegetation and landscapes. *Landsc. Urban Plan.* **1986**, *13*, 29–44.
31. Ulrich, R.S.; Simons, R.F.; Losito, B.D.; Fiorito, E.; Miles, M.A.; Zelson, M. Stress recovery during exposure to natural and urban environments. *J. Environ. Psychol.* **1991**, *11*, 201–230.
32. Kaplan, R.; Kaplan, S. *The Experience of Nature: A Psychological Perspective*; Cambridge University Press: New York, NY, USA, 1989.
33. Why is nature beneficial? The role of connectedness to nature. Available online: <http://eab.sagepub.com/content/early/2008/09/05/0013916508319745> (accessed on 5 September 2008).
34. Magnér, K. The Green and the Public—Planning for Green Structure in a City becoming Denser. Master’s Thesis, Swedish University of Agricultural Sciences, Alnarp, Sweden, June 2013. (In Swedish)
35. Lövrje, K. The Green Space as a Characterizing Element of Townscape and Urban Design—Object, Concepts and Structure. Ph.D. Thesis, Swedish University of Agricultural Sciences, Alnarp, Sweden, October 2003. (In Swedish)
36. Lindholm, G. ‘Green structure’ as activity and as object—Implications for urban planning. *Nord. Arkit.* **2002**, *1*, 41–49.
37. SOU. *Environment and Physical Planning, Stockholm: Statens Offentliga Utredningar*; Government Official Report: Stockholm, Sweden, 1994. (In Swedish)
38. Bucht, E.; Persson, B. *Green Structure in Cities and Urban Areas—Extract from the Planning and Building Law Investigation*; Movium: Alnarp, Sweden, 1995. (In Swedish)
39. Berggren-Barring, A-M.; Grahn, P. *The Importance of Green Structure for Use: A Comparative Study of How People in Kindergartens, Schools, Associations, Healthcare Institutions, and Other Organizations Uses Parks in Three Cities*; The Swedish University of Agricultural Sciences: Alnarp, Sweden, 1995. (In Swedish)
40. Tallhage Lönn, I. *More Green Areas in the Planning Process*; The National Board of Housing, Building and Planning Sweden: Karlskrona, Sweden, 1999. (In Swedish)
41. Sweden’s Environmental Quality Objectives. Available online: <http://www.government.se/sb/d/5775> (accessed on 1 January 2015).
42. Green Structure in the Municipalities. Available online: <http://www.boverket.se/sv/om-boverket/publicerat-av-boverket/publikationer/2012/gronstruktur-i-landets-kommuner/> (accessed on 17 August 2015).
43. Sandstrom, U.G. Green infrastructure planning in urban Sweden. *Plan. Pract. Res.* **2002**, *17*, 373–385.

44. Changes in Green Space, within the Ten Largest Localities 2000–2005. Available online: http://www.scb.se/sv/_Hitta-statistik/Publiceringskalender/Visa-detaljerad-information/?publobjid=13640 (accessed on 27 July 2015).
45. Park and Nature Supply in Stockholm. Available online: http://www.spacescape.se/pdf/TillgangRapport_101208.pdf (accessed on 27 July 2015).
46. Borg, K. Interview at Stockholm Municipality Planning Office, Stockholm, Sweden, 12 March 2013.
47. Borg, K. Interview at Stockholm Municipality planning Office, Stockholm, Sweden, 3 February 2014.
48. The Green Walkable City, Public Consultation Document. Available online: <http://www.scribd.com/doc/105620021/Den-grona-promenadstaden-samradsunderlag#scribd> (accessed on 27 July 2015).
49. The Green Walkable City, Exhibition Document. Available online: <http://www.stockholm.se/gronapromenadstaden> (accessed on 27 July 2015).
50. About the Green Walkable City. Available online: <http://www.stockholm.se/Fristaende-webbplatser/Fackforvaltningssajter/Stadsbyggnadskontoret/Grona-promenadstaden/Kort-om-den-grona-promenadstaden/> (accessed on 27 February 2015). (In Swedish)
51. Bryman, A. *Social Research Methods*; Oxford university press: Oxford, UK, 2012.
52. Pincetl, S.; Gearin, E. The reinvention of public green space. *Urban Geogr.* **2005**, *26*, 365–384.
53. Park and Nature (2014) in Cambridge Dictionaries Online. Available online: <http://dictionary.cambridge.org/us/dictionary/american-english/> (accessed on 10 December 2014).
54. Park and Nature. In Merriam-Webster.com. Available online: <http://www.merriam-webster.com/dictionary/> (accessed on 10 December 2014)
55. Bergsjö, A.; Nilsson, K. *Concepts for Outdoor Environment: Use in Planning, Design, Construction and Management*; Movium: Alnarp, Swenden, 1983. (In Swedish)
56. Wang, D.; Brown, G.; Liu, Y. The physical and non-physical factors that influence perceived access to urban parks. *Landsc. Urban Plan.* **2015**, *133*, 53–66.
57. Gunder, M.; Hillier, J. *Planning in Ten Words or Less: A Lacanian Entanglement with Spatial Planning*; Ashgate Publishing Ltd.: London, UK, 2009.
58. Balducci, A.; Boelens, L.; Hillier, J.; Nyseth, T.; Wilkinson, C. Introduction: Strategic spatial planning in uncertainty: theory and exploratory practice. *T. Plan. Rev.* **2011**, *82*, 481–501.

© 2015 by the authors; licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).