greenway in Hannover, Bielany Forest in Warsaw, users of green environment in the cities of Marseilles and Munich, “Castel Guido” organic farm in Rome, Park “Monceau” in Paris,

CHAPTER 4

Human issues

Members of Working group 1B :

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Human issues, introduction to thematic papers

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In everyday language there is not always made a difference between "green structure" and "nature". This kind of mixing meanings complicates communication, even when "natural qualities" of the green structure are most important, which often is the case. "Green structures" are from one perspective a matrix, developing during ages through different land use and urban projects, from another perspective a part of the urban constructions. What was earlier a free growing edge of a farmland, could 50 years later be a framework, combined with gardens and play areas, to a residential area as a part of urban green structure.

What is here in short called "human issues" (concerning green structure in urban planning) includes a wide range of scientific and professional perspectives, each and together more or less necessary to understand the scope of "Green Structure and Urban Planning". The following papers are to be seen as examples of some of these perspectives. They differ in purpose, method, contents and kind of results and show thereby the different approaches and competence available in the group. The intention with presenting these examples is not to analyse and separate "the knowledge on human issues concerning green structure" into completing sectors together forming "the whole". Rather, the examples show a few of the islands in a large archipelago of relevant knowledge, examples from which you can get an impression of the width and the variation within this archipelago.

While the WG "Ecological issues" presents results from studies with mainly natural scientific methods, the WG "Human issues" has a more inclusive approach. Even including natural science, the "human angle" adds the task to understand this kind of thinking, in comparison with research within the social sciences and the humanities. Also added is the kind of professional thinking and experience-based know-how, which in practical planning works as a kind of filter for scientific and ideological input. The working-group has mainly consisted of researchers from professions-oriented academic environments, i. e. the members have experience from two positions, the discipline-oriented researcher's and the holistic problem- oriented planning professional's. The different theoretic and methodological approaches shown in the papers, give together an impression of the necessity of "mental mobility", an ability to

change and move between viewpoints and scales, which is characteristic for the scope of "Green Structure and Urban Planning". The "human issues" includes both the reasons on an everyday level (How is green structure beneficiary for human beings, especially urban citizens?) and on a philosophical level (How do we understand green structure and why?)
In this overview the choice has been to make short presentations of the following papers, concluding methods and results. As a guideline, each author's field of research or professional occupation is added in brackets. Again, these are examples of approaches contributing to development of the concept "Green Structure and Urban Planning" to whom could be added several others, e. g. from sociology, ethnology and human geography, to mention some traditional fields of research, but also the coming networks for "urban studies", mostly cross disciplinary, all relevant areas potentially paying attention to urban green structure. However, there is a substantial gap between the large amount of research fields regarding "human issues" and the very small amount of scholars actually taking the step to relate these fields of knowledge to the environmental tasks, including planning the development of cities.

The similarities and discrepancies between the regions and countries in Europe are not explicitly discussed in the papers. To some extent though, they have been mentioned during the working groups work. A significant example of different benefits of green structure is the role of thermal comfort (see Scudo). In the northern countries hedges and tree rows are often used as wind shelter, while in the southern parts of Europe, the shadowing function may be the most important. Also differences between various cultures, according to land owning and land use, recreational habits (see Werquin) and use of public space have been discussed as well as differences between urban and rural citizens, "indigenous" people and immigrants and not the least, contextual socio-economic structures.

Presentation of following papers

The urban green structure mirrors the relationship between man and nature, in history and contemporary. While urban citizens up until the 19:th century enjoyed refined and cultivated pieces of "domestic" nature within the towns, a great change in attitude took place in the 20:th century. For several more or less integrated reasons (leisure time, tourism, environmental consciousness, urban migration, functionalism) the dominating attitude changed into favouring "the natural". *Karsten Jorgensen* outlines, in his paper *"The Origins of Urban Green Structures"*, historical roots of to-days ideas of "green structure"; public parks, park ways and park systems, nature in cities, garden cities and green belts, being earlier concepts, brought together in "green planning" from the 1960:ies, later supported by motives from landscape ecology and the international directives for biological diversity. (Garden history)
In his paper "*The Bird and the Beast*", *Kimmo Lapintie* addresses the conceptual,

philosophical frameworks used in both planning and planning research. He point out that behind the common dichotomies (red/green, man-made/natural, etc.) there is a more fundamental dualism between rationality and unreason (metaphorically "the bird and the beast") often neglected in planning discourse, although it is the very basis for the legitimacy of planning. He maintains that the dimension of unreason, the unmanageable and the uncontrollable in urban development, should be accepted, since no policies or communicative practices can be supposed to bridge the gap between reason and unreason. (Urban planning, Philosophy)

The ambition to reach general knowledge of environmental preferences and ideals is in this material handled in different ways. While *Patrik Grahn* et al in *"Healthy environments"* have used large statistic materials to learn how the use of parks is affected from the form and contents of them, and also linked medical statistics to peoples actual distance from home to nearest green area, *Kestutis Zaleckis* has used quite another approach in *"The role of the green-structure in creation of preferred environment"*. By discriminating between "green spaces" and "green structure" he describes the structuring activity as the very possibility to create preferred environments, meaning that the characteristics of preferred environments cannot be achieved by single objects but by the linking of parts forming the environments strived for. (Landscape architecture)

Related to the use of green space for recreation, *Ann-Caroll Werquin* has collected several studies and datas about Marseilles. Only a brief summary of this paper is in this book, showing how practises have changed in the last decades, and how mobility facilities allow people to use a large variety of spaces in the whole city region. Still, green areas are expected near to home: "Even if we do not use them, we want them to be there." (Urban planning)
The environment's physical influence on the human body is one of the issues studied to grasp the importance of climate control, by vegetation or by built constructions. *Gianni Scudo* present in "*Thermal comfort*" one in urban planning often forgotten variable and "thermal comfort indexes" as a for green structuring purposes important field of research. (Architecture)

Environmental preferences can be measured as the willingness to pay for a real estate or residential area. *Jean-Marie Halleux* shows in Valuing the green structure the possibilities with *"The Hedonic Price Method"*, a way to use economic valuation of environmental qualities. The paper categorizes two scale analyses: the residential property scale and the neighbourhood scale. At the neighbourhood scale, green equipments are related to both, aesthetic and recreational benefits. The paper also tackles the context issue, the cultural preferences issue and the importance of design. (Economic geography)

Klaus Wagner presents a study from Austria, "*Qualities of agricultural land"*,

exploring potential possibilities within evaluating and combining the possible functions of agricultural land, especially in and near urban areas. The six studied functions are production, recreation, habitats, resource protection, hazard damage protection, and spatial structuring. (Land use planning)

In *"The greenery in some French new towns"*, by *Bernard Duhem* and *Ann-Caroll Werquin*, is evaluated the experiences from a period when green structure was a main topic as never else in France (a fact that coincide with most countries in Europe, ed. com.). Globally seen, the new town concept has been heavily criticized. However, it could be important to learn from this very spread and comparable experiments. Especially concerning green space adjacent to home environments, as well as green structure as a base for urban development (together with traffic and service structure), the new towns own qualities often unfair forgotten, due to frequent social problems in these areas. (Urban planning)

The values of urban green space is often hard to point out in an adequate way for urban planning purposes. *Alexander Ståhle* has been part of a pioneer project in Stockholm, Sweden, where large inventories and inquiries has been the foundation of a *"Sociotop map"*, used for describing the user values in a spatial form. In the same way as different biotopes are mapped for nature conservation purposes, the human use of public space is mapped as a tool for urban planners to consider this use as values in the urban environment. (Landscape planning)

The function of green structure to promote sustainable mobility, is explored by *Lucia Martincigh* in *"A green-network. The integration of the green structure and the non motorized transport modes´ network."* The paper concludes some general guidelines, useful to accomplish links and synergy effects by combining and integrating pedestrian network and green structure. This ambition demands accuracy in studying the local situations, understanding the advantages as well as the hindrances for this integration. To increase pedestrian mobility it is necessary with networks that are both comfortable and enjoyable.

Finally, *Philippe Hanocq*'s paper *"Practices in planning and design of urban green areas (Belgium)"* contributes with outlining the professional/social situations where the discussion about alternative developments take place. If the above presentations are examples of various R&D works, Hanoque gives examples of projects in different scale, showing the width within what is counted as relevant facts and relevant values, depending on scale level and type of project: (1) Implementation of green areas through strategic planning at the global city scale; (2) A development project for a brand new neighbourhood based on the creation of a structuring green area; and (3) The design of a development project in an existing green area. The cases presented are processed in Belgian context, offering opportunities for comparing with the situation and professional habits in other countries. (Landscape Architecture/Urban Planning)

Reflection: Professional know-how versus scientific results – are they compatible?

"Human issues" are, compared with "ecological issues", rich in experience from hundreds of years of gardening as well as landscape planning for various human purposes. At the same time, the field is somewhat starving of inputs from the scientific world, a fact that complicates a general discussion on "Green Structure and Urban Planning", regardless of local context, history and economy. Still, as the work in this Action has shown, there are many common aspects and themes, fruitful to discuss in international groups like this. One conclusion could be that it is important, in this situation, to point out the significance of the overview on a meta level, legitimating an input of Ethics and Rhetoric, to sort out the interesting similarities as well as discrepancies, concerning views and perspectives on green structure. This concerns not least the problem with a just consideration of arguments based on humanistic knowledge, compared to those based on natural scientific knowledge. This consideration could never be anything else than – a "human issue".

The history of urban green structures

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Introduction

Urban green structures have developed as an integrated concept in urban planning during the last few decades in Europe. Today this concept has the potential of becoming a general and legitimate part of all urban planning. This is a relatively recent phenomenon, it is therefore of interest to review its historical roots. As a background for analysis of future potentials of urban greenstructure, it is important to know where the ideas come from, and what lessons can be learnt from the earlier phases of this development.

The history of urban green structures is related to the history of garden art, and especially to the development of public parks in the 19th century. The public parks came, at least partially, as a reaction to the general urbanization and the poor living conditions resulting from this. The public parks were regarded as important factors both for public hygiene and for general moral, and "nature" was regarded as central in both cases. Today the urban greenstructures are valued both for their social, spatial and technical importance, but from a different point of view: they are important ecological factors; they are important for natural biotopes in the city. The concept of nature, and the ideas about its influence on people, has undergone a similar development, from a romantic, anthropomorphic, aesthetic view of nature to a biocentric, ecological view.

In this paper, I will look at the development of the urban green structures from this point of view, and as a conclusion I will discuss some of the main ideological features of the early development, that may still be of some relevance today. It is obvious that the way urban green structures are regarded in society, is closely related to the concept of nature, or, more precisely, to the general attitude towards nature.

The rise of public parks

The history of garden art is generally a history of private gardens until the late 18th century, when the idea of the public park is born [1]. The earliest theoretical work in which the public park ("*Volksgarten*") is described and defined, is "*Theorie der Gartenkunst*", published 1779 – 1785 by Christian Cay Hirschfeld, a Danish-German professor of Philosophy at the University of Kiel[2]. His work was

influential and taken up by many who were closer to the practice of planning urban green during the following decades. He obviously also hit the "*zeitgeist*" quite well with his theories. This is illustrated by the development that followed: during the 19th century, public parks were built in virtually all major cities, not only on Europe, but also in America, and even a few in Japan [3]. Also other public arenas like newspapers and public organizations were developed during this period, and the message from the French revolution in 1779 "freedom, equality and brotherhood" challenged the ruling classes throughout Europe, and enhanced the development towards more public parks, although not in France in the first place. The definitions of a public park are many, here is the functional aspect emphasized: a public park is open to the general public and designed to meet their social needs and accommodate for their outdoor activities. Hirschfeld describes the public park in his book, and develops a program for its contents. He focuses on its potential value for the general well-being and education of the people. The recreational purposes are emphasized and the effects upon the working population of nature and of escaping the stressful urban environments are described as being of great importance. He goes on to describe the social values of a public garden: "*The different classes will, by here getting closer to each other, on the one hand obtain a more respectful and modest attitude to each other, and on the other hand more friendliness and explicit kindness to each other. Everyone will here get their unhindered right to enjoy the nature*." He goes on to describe the need for a certain type of artworks in the public parks: "Buildings with pictures from the history of the nation, statues of dead heroes, and memorials of important deeds with instructive inscriptions can be elegantly established in appropriate places with very favorable effects." What is important here is not the description of the physical lay-out of the park, which more or less followed the predominant romantic landscape style, but the explicit social and educational intentions behind the "Volksgarten" or the public park. Hirschfeld states that all cities should have parks like this in order to educate the general public to value the nature as well as national heroes and their fellow citizens, also when they belong to a different social class. And that "nature" plays an important role in this educational project.

Public parks in Europe

In Germany, The Englische Garten in Munich is among the earliest public parks in this sense of the word. It was commissioned by the rather unpopular Elector Carl Theodor in 1789 to reduce the dissatisfaction among people, probably as a direct result of the French Revolution, and in any case inspired by Hirschfelds work. The designer was Friedrich Ludwig von Sckell, who was one of the most influential

landscape gardeners of the time. The park is built on former military grounds and covers a large proportion of central Munich. The style is, as the name says, the English landscape style, and there are many references to Hirschfeld's recommendations in the design. Also Peter Joseph Lenné picked up these ideas and referred to Hirschfeld in his text: "Uber die anlage einesVolksgarten bei der Stadt Magdeburg" after having designed the Klosterbergegarten, also one of the earliest public gardens in Germany of some size. The ideas were taken further by Gustav Meyer, Lenné's pupil and later partner at the "*Preussische Gartenlähranstalt*" established by Lenné in 1826. Meyer also designed the Humboldthain and Treptower Park in Berlin around 1870.

The English landscape style garden emerging in the early 18th century was in the first place related to the phase of Enlightenment; the irregularity was to reflect the principles of enlightened tolerance[4]. When the public parks were developed in the 19th century they were built in a similar style. The landscape style was intended to have the favorable effects that the people who strolled around in these close to nature-like surroundings, interspersed with monuments of different kinds, would experience themselves as liberated and independent members of civilized humanity etc. With inspiration from Rousseau's nature romanticism, effects related to public health and moral was added to the intentions of the public parks.

Public parks generally were developed as a reaction to urbanization. Especially in England the industrialization had led to a drastic reduction of living conditions in cities. High disease and death rates forced through political reforms, and in 1833 the Select Committee on Public Walks was established, in order "to consider the best means of securing Open Spaces in the vicinity of populous towns as Public Walks and Places of Exercise, calculated to promote the Health and Comfort of the Inhabitants". The committee concluded the same year in a report to the Parliament that there was a great need for public parks where the workers could walk with their families on their free day, in order to improve their health[5]. The landscape gardener and horticultural writer John Claudius Loudon became the major advocate for public gardens early in the 19th century in England, e.g. in his "Encyclopedia of Gardening" from 1822 and in several other publications. Like Hirschfeld, he was engaged in the public parks' influence on public hygiene and moral, but he also had an even greater vision: In 1829 he published "*Hints on Breathing Places for the Metropolis, and for Country Towns and Villages, on fixed Principles*" – which was no less than a green belt plan for London, introducing "breathing zones" for the metropolitan area[6]. This early attempt to incorporate the public park idea into a greater vision of the urban development was never realized, but may have acted as an inspiration for next major step in this development. If we regard Hirschfeld's theory and the first generation of "*Volksgärten*" as the first step, the second came with Frederick Law Olmsted's planning of systems of interrelated parks in North America.

The development towards park systems

In England and elsewhere in Europe, the development of public parks continued throughout the 19th century. In Paris some parks belonging to the aristocracy before the revolution were turned into public parks after 1789. With the mid 19th century plans of Baron Haussmann (1809-1891) together with landscape architect J.P.Barillet-Deschamps (1824-73) and the engineer J.C.A. Alphand (1817-1891), parks like Bois de Boulogne, Parc des Buttes-Chaumont, Parc Monceau and Parc Montsouris became important elements in the modernization of the city, together with the so-called "Boulevards" broad streets with extensive plantings of trees [7]. A major contribution in England was Joseph Paxton's Birkenhead Park in Liverpool, developed in 1843-47 by the municipality of Liverpool, as a direct result of the Select Committee's work. Frederick Law Olmsted was a young American, with a background as a journalist and "scientific farmer" in New York, employing principles published by Loudon in his "Gardeners Magazine" and other journals. Olmsted gave up scientific farming and traveled to Europe in 1850. There he arrived in Liverpool, and immediately became fascinated with the recently opened Birkenhead Park, and especially its social implications: "*The poorest British peasant is as free to enjoy it ...as the British Queen.*", he wrote later. From 1855 to 1857 he was editor of a journal of literature and political commentary. He spent six months of this time living in Europe visiting many public parks[8]. In his writing he strongly argued for the value of such parks close to the city, so that citizens could easily enjoy the green areas, lawns, trees, light and shade, shut out from the city, even when being almost in the city centre.

Olmsted and the American *"Parkways"*

In 1858 Olmsted won the competition for the design of Central Park together with Calvert Vaux. The development of Central Park was a major breakthrough for the development of public parks, not only in America, but also worldwide. It was immediately referred to by major writers on public parks[9]. The development of park systems built in cities like New York, Boston and Chicago, put America up front as the main reference in the development of public parks[10]. A new development was the separation of different types of traffic; in Central Park this is done by separating the pedestrian from the commercial traffic vertically, using the so-called "arches"; bridges or tunnels that enabled people to walk through the park without having to cross a carriageway in the same level. Olmsted and Vaux designed many more public parks, and in 1868 they were asked to make a park design for Buffalo. Olmsted was shown three alternative sites, and he suggested that the city bought all three, and said he would design a system of parks and interconnecting "parkways". These parkways were defined by Olmsted as "*broad thoroughfares planted with trees and designed with special reference to recreation as well as for common traffic,*"[11] and acted as extensions of the park experience. Up to 70 meters in width, the parkways were much broader than the normal streets of the city and provided separate lanes for different

types and directions of traffic. Areas of turf planted with rows of overarching elms created park-like environments. Spacious circles marked junctures where parkways came together or where they encountered major city streets. Olmsted and Vaux referred to the Paris Boulevards developed under Haussmann, and they also visited Paris and met with Alphand, while working with the Buffalo project [12]. In 1870 he wrote what may be considered as a program for green structure planning:

"the duty of arranging new trunk routes of communication between it and the distant parts of the town existing and forecasted. These may be either narrow informal elongations of the park, varying say from two to five hundred feet in width, and radiating irregularly from it, or . . . formal parkways. They should be so planned and constructed as never to be noisy and seldom crowded… If possible, also, they should be branched or reticulated with other ways of a similar class, so that no part of the town should finally be many minutes' walk from some one of them; and they should be made interesting by a process of planting and decoration, so that in necessarily passing through them, whether in going to or from the park, or to and from business, some substantial recreative advantage may be incidentally gained"[13]

Nature in cities

Parallel with the Buffalo project, Olmsted and Vaux also designed the Riverside Estate in Illinois, demonstrating the emphasis they put on the private green as being a part of the total green structure. The Riverside is a community of single-family housing with big gardens; roads and housing areas laid out according to the terrain. There are no right angle road crossings, a design principle creating more public land, and "private land with a public function: as transition area between private and public". At the same time Olmsted and Vaux worked on the plan for the Niagara Falls State Reserve, where they not only preserved the natural qualities of the site, but also removed a factory and an amusement park and restored the natural scene. Later Olmsted designed the Emerald Necklace, a park system for Boston. Throughout his career Olmsted points towards future green structure planning; he was engaged in the Conservation Movement [14] and the development of the National Parks, as well as with the City Beautiful Movement[15], that actually based much of its ideology on Olmsted's work.

Garden cities and green belts

The Englishman Ebenezer Howard had studied Olmsted's projects like the Riverside Estate and the Boston park system. He was skeptical to the speculation in properties he saw in these areas, but also very inspired by their green values. He had also studied the social experiments of Robert Owen in New Lanark, Scotland, and the garden village of George Cadbury [16] near Birmingham, and when he put together these experiences he wrote the book "*Garden Cities of Tomorrow*" [17] Howard's theory prescribes a certain maximum size of the garden cities, in case a city grows beyond this size, there

should be “satellite” towns” around the “mother city”, and around each city there should be a green belt, in order to contain the city growth as well as providing a green environment for the city. Several “garden cities” were built in England and elsewhere with reference to this theory. In the second half of the 20th century Howard’s theory was accomplished to a higher degree, following Patrick Abercrombie’s “Greater London Plan of 1944[18].

The concept of nature that is being demonstrated in the green belt philosophy is more functional and technical than earlier ideas about nature’s good influence. Nature is related to specific roles or functions in the city. Green belt philosophy is quite close to green structure philosophy in this respect; it is the operational values of green areas that are in focus. The functional view is also expressed by other pioneers in urban planning, like Camillo Sitte, who published “*Der Städtebau nach seinen künstlerischen Grundsätzen*” (City Planning According to Its Artistic Principles) in 1889. Here he distinguishes between two functions of city green: the “decorative” and the “hygienic”[19]. Also Patrick Geddes engaged in the green and sustainable development of cities, he proposed among other things a park system for Dunfermline in 1904. He was also among the first to take the professional title of landscape architecture in Europe.

The influence of green belts and garden city planning had many interesting results around the globe, and in general they made people’s environment greener and more interesting. One such example is the park development in Stockholm during the 1940ies and 50ies. Holger Blom, who took over as head gardener in Stockholm in 1938, developed what he called a “Park Program”, inspired by both the Olmsted heritage and Le Corbusier’s “park in city”. The “Park Program” defined the parks as crucial urban elements, both for their climatic effects, their functional and social values, and their roles in preservation of cultural and natural monuments. He introduced the so-called “play-sculptures” and the results of this period have become famous as the “Stockholm style”. In Copenhagen the “Finger Plan” ensured access to green areas throughout the city. Similarly, the 1934 the plan for the Oslo-region put down principles for a network of green corridors that have had strong impacts on planning up till today.

Third and fourth generations of public parks

In the early 20th century athletic competition was taken up by the worker’s unions and organized sport was turned into a mass culture. Sports grounds and stadiums of different kinds became integrated parts of most public parks built during the first half of the 20th century, and in some cases even the main content. Famous examples are Stadtpark Hamburg from 1910 and Bos Park in Amsterdam from 1934. In Oslo, the “*Vigelandsparken*”, mainly a sculpture garden, built in the 1920ies and 30ies, also contains several sports grounds and swimming pools. Another major green area in Oslo, the Ekebergåsen, purchased by the municipality in the 1890ies to meet the needs

of the growing population of workers, is still today the arena of the Norway Cup, the world's biggest football tournament. This phenomenon seems to be consistent enough to be named the "third generation" of public parks, following the two mentioned earlier in this paper.

A fourth type has emerged during the last few decades, where the focus is put on cultural or natural monuments, either historical or contemporary. This new type has sometimes been developed in connection with garden fairs or Olympics etc, like the park system of Barcelona, following the 1992 Olympic Games. In other cases it is based on an increased focus on management of cultural monuments. The most prominent examples of this new type of parks are the so-called "ecological parks" like the Naturpark Südgelände in Berlin and the Duisberg Süd development in Germany built in former industrial zones, where some of the rusting machines and buildings are silent witnesses of former activity. The contrasts created by the natural or sometimes more pastoral scenes framed by industrial relics are striking, and contains the underlying message that "nature heals the wounds of civilization", maybe creating some kind of hope for a more ecological balanced urban life.

Green structure and urban planning

The Greenbelt and Public Park developments created a good basis for a more comprehensive green planning, and in the 1960ies the first attempts of a "green plan" were made, e.g. in the "*Grünplanung Darmstadt*" by Günter Grzimek [20]. In the 1980ies and 90ies we have seen new attempts in urban planning where ecology was taken more explicitly into account, e.g. focusing on biotopes and corridors for the movement of fauna and flora in the city, as well as on participation planning. Another idea was the use of the concept of "balancing interventions" to ensure a more ecologically sound development. In Berlin the "Grünordnungsplan" states that interventions that harm areas with a high ecological value, like a green garden or a lake, should be avoided. In cases where they have to be implemented, they should be "balanced" with a replacement of the harmed area.[21] These ideas are related to the concept of "ecological footprint", which focuses on the total impact of human activities, measured by the quantity of "natural area" needed to "neutralize" a certain activity; e.g. to purify the pollution caused by the activity.

All these ideas contribute to the focus on nature and natural elements in the city. This is of course important, and there is, as we have seen, a long tradition for this focus in urban design. But the main problem for green structure planning today seems to be that greenery is still seen as an antithesis to urbanity, and green structure planning is thus difficult to integrate into urban planning. What is needed today is therefore a planning concept where the total green structure, private or public, is regarded as an integrated part of the urban fabric, and as a "tool" for urban development. A tool – not in the sense of an instrument to control the development, but the contrary: an uncontrollable 'fait acompli' that may enrich urbanity. A green structure may

contribute to the reconciliation of the split between the quest for control and the need for individual freedom that has haunted modernity throughout its history.

A renewed interest in the ideas of those who contributed to the history of public parks and greenbelts may bring back this focus in urban development. The urban planners may thus see how green areas have been regarded as crucial and integrated elements in the city from the rise of urban planning, and the green planners may see how the green structure of a city has a value beyond the ecological perspective. Nature is not only a part of our physical surroundings, and thus subject to physical and biological forces. The concept also reflects the way we categorize the world, and thus has a cultural dimension that goes much deeper than e.g. the historical value of a park. When Hirschfeld and his contemporaries suggested that nature in cities have a favorable effect on people's moral, they may have had this in mind.

Notes :

1. Also in earlier times there have been examples of public urban green areas of different kinds; e.g. the medieval commons or the so-called pleasure gardens as well as the accessible promenades of royal parks in the 17th and 18th centuries; what was new in the 19th century, apart from the broad scale on which this was accomplished, was the fact that the public parks now were deliberately designed for the benefit of the general public, and to an increasing extent on publicly owned ground.
2. The Oxford Companion to Gardens, Oxford University Press 1986, p 457.
3. In Kyoto and Tokyo public parks were developed around 1870 on former imperial grounds, as a result of the opening towards the west during the Meiji Era.
4. See: Hermand, Jost: "Rousseau, Goethe, Humboldt: Their Influence on Later Advocates of the Nature Garden" in "Nature and Ideology" edited by Wolschke-Bulmahn, Joachim (Dumbarton Oaks 1997)
5. Nolin, Catharina: "Till stadsbornas nytta och förlustande – Den offentlige parken I Sverige under 1800-talet" p.33 (on public parks in Sweden in the 19th century)
6. This was 69 years before Ebenezer Howard's famous Green Belt proposal. See Tom Turner's article on this story on London Landscape Web http://www.londonlandscape.gre.ac.uk/1829.htm
7. The work in Paris was published in Alphand's book "Les Promenades de Paris" 1867-73. An English "equivalent" of this book was "Parks, Promenades and Gardens of Paris, described and considered in relation to the wants of our own cities and of public and private gardens" published by William Robinson in 1869. Olmsted corresponded with Robinson, and was interested in his ideas about nature.
8. According to the head gardener in Englischer Garten in Munich, Olmsted visited this park no less than three times during this period.
9. E.g. Gustav Meyer in his "Lehrbuch der schönen Gartenkunst" published 1860, lists as examples of public parks, Bois de Boulogne in Paris, Tiergarten in Berlin and Central Park in New York
10. In e.g. the 1914 volume of the leading Norwegian art journal "Kunst og Kultur" there is one issue on garden art with two articles about urban development and public parks in America – by landscape architect I.O.Nickelsen: "Byer med trær, lekepladser og blomster" and professor of history of art Harry Fett: "Amerikanske lekeplasser" clearly indicating America as the most interesting place in this field.
11. See (online) http://www.fredericklawolmsted.com/Lifeframe.htm
12. See (online) http://www.cr.nps.gov/history/online_books/mcclelland/mcclelland2b.htm Although Haussmann (and Alphand?) had even more ambitious visions of a system of interconnected

green areas than what was realized, e.g. a 250 meter wide greenway encircling the city, the main focus of the Paris development was to improve technical infrastructure.
13. From Olmsted's pamphlet Public Parks and the Enlargement of Towns, 1870
14. Olmsted's preliminary report to Yosemite Valley Commission has become famous for its contribution to the understanding of the conservation movement.
15. Frederick Law Olmsted was one of the founders of the movement in the 1890ies, and his son Frederick Law Olmsted Jr. led the movement through its peak years in the first decade of the 20th century.
16. Robert Owen developed a worker's village in New Lanark in Scotland, and wrote about the ideal city looking like a park dispersed with houses early in the 19th century. George Cadbury developed the Bourneville garden village for workers in the Birmingham slum in the 1890ies, where a Village Trust was set up to avoid speculation.
17. The title of the 1898 edition was, interestingly:" To Morrow: A peaceful path to real reform". It became a best-seller; within less than a year, "The Garden City Association" was established, and within ten years it had resulted in sufficient interest and economical support to start the building of Letchworth - the first garden city, designed by Howard's friends and members of the Garden City Association, Raymond Unwin and Barry Parker. It was the second edition of the book in 1902 that got the famous title: "Garden cities of tomorrow".
18. See Lucey, Norman, 1973, (online) http://www.rickmansworthherts.freeserve.co.uk/howard1.htm#sna
19. These historical notions and their equivalents today are discussed in Lundgren, Alm, Elisabeth (2002): "Stadslandskapets obrukade ressurs" (The unused resource of the urban landscape) Chalmers Tekniska Høgskola, Gøteborg
20. See "Grünplanung Darmstadt : Plan fyr den Ausbau eines Grynflæchensystems als Beitrag zum Bauleitplan der Stadt Darmstadt, abgeleitet aus dem Bestand, den Voraussetzungen und langfristigen Notwendigheiten" by Günter Grzimek, Darmstadt, Roether 1965. Also discussed by Winfrid Jerney in TOPOS 2003/08
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The Bird and the Beast

Philosophical concepts and dichotomies in planning of the urban green

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1 Introduction

When green is made into an object in urban and regional planning, what is actually happening? Usually this is conceptualised as a technical, architectural, ecological or political problem, dealing with e.g. which concepts are useful for planners and other practitioners (green belts, green fingers, green structures, etc.), how do parks and green areas contribute to the cityscape, how should the urban green areas be managed, or what kind of policy measures should be applied to ensure equal distribution of recreational values or to prevent ecological damage. How could we justify, then, the use of philosophy in this context?

I will not argue that philosophy as a 'basic' discipline studying ontological, epistemological or ethical issues should provide a framework or foundation for more specific and more practical disciplines. I shall rather argue that there is a philosophy of sorts embedded in the most practical disciplines, such as planning, in the sense that they are using conceptual frameworks that are rooted in various historical discourses pervaded by philosophical concepts. Since these conceptualisations are only partly open and reflective, the role of philosophy (as a professional discipline addressing conceptual problems as well as problems of argumentation) is to provide both interpretation and criticique of these conceptual frameworks.

My intention in this paper is to follow some of the paths related to the concepts used in planning, in an attempt to point at some of the blind spots of planning thought, that is, problems systematically avoided by both planning theories and practice. I am thus particularly interested in where planning constructs an artificial comprehensiveness and consistency. These fables, as well as the openly presented 'problems', are suitable targets for philosophical analysis and critique, and they are also illustrative of the potential usefulness of philosophy in this context.

The discussion in this paper is based the theoretical work done in our project Governing Life in Helsinki University of Technology, which is funded by the Academy of Finland.

2 Dualisms and Totalitarisms

Judging from the most common concepts used in urban planning and design, these disciplines and practices seem to be no less dependent than other disciplines on some of the basic dualisms of western thought. Planning is itself often connected to rationality – not only by the advocates of the theories of rational-comprehensive planning[1]., but also by their critics who support the so-called communicative turn in planning[2] References to Habermasian *communicative rationality* [3] reveal an attempt to maintain the rational core in planning thought, although it is admitted to be more complicated in the dialogical, process view of planning. The same can be said of the concepts *management* and *strategy* widely used in contemporary planning discourse. They are both clearly related to the rational core: if we want to manage something, we want to keep or give it an *order*, or to prevent it from chaos. Strategic action is clearly rational and reasonable action aimed at certain objectives or at least it is a reasonable orientation in the current situation and the awareness of the different alternatives for action.

Rationality is, thus, considered both useful and good, or even necessary for planning of the urban environment. And since the city is nowadays understood as part and parcel of its regional and even global environment, the traditional dichotomy between the 'city of order' and the surrounding 'wilderness' has disappeared, together with the crumbling of the ancient walls and city gates. But this does not mean that rationality would have lost its opposition. Without something to fight against, without *non-rationality* or *unreason*, planning would hardly make any sense. But what is this non-rationality for planning? Is it simply non-planned environment or development, as the understanding of the whole territory as the proper object of planning would suggest? If so, we would have to understand how this constitutes a threat to our communities and societies. This is one of the questions we have to keep in mind, since it belongs to the questions that, as I suggested above, have been systematically avoided by both planning theorists and practitioners. The reason for this is evident: If we would have to characterize the opposite of planned as something that is simply non-planned, but still should be managed by planning, planning would immediately start to seem totalitarian. The necessity of legitimation would follow: In what sense, against what kind of danger, is planning legitimate in this ever larger area of jurisprudence? What is the social or natural contract behind the planning reason?

On the other hand, there is another dichotomy, more simple and concrete, yet equally dangerous in its implications. This is the dichotomy of *red* and *green*, the construction of buildings and infrastructure, on the one hand, and the natural environment, on the other. This pair of concepts has taken many forms, but the dualistic implication is evident in each case. When cities are growing, they are "taking over their surrounding natural areas", "penetrating into virgin land", or "destroying the last pieces of urban nature." If the city is a rational *artefact*, a man-made object or structure, do the green and natural areas it potentially threatens represent *nature*, nature independent or distinct from human activity? The bedrock, the sea, the fertile soil, they have all been

there for thousands or millions of years, and they can only be destroyed, not usually constructed by human activity. Are we dealing with a man/nature dualism here?

Some would immediately object that there is very little of the original nature left on our globe: Even the wilderness is often the object of some form of management. Conservation of natural areas is one of the key functions of planning. So if management and planning refer to rationality and the presence of man, nature is not the conceptual opposite of planning. Conversely, we could point out that nature is omnipresent in the most urban of the environments: there are hundreds of species in the concrete desert of the city, and the air, humidity and temperature of the city are all dependent on the natural features of the urban site.

But this is not the point. The very fact that we keep using dichotomies like red/green, growth/green or planning/green structure reveals that there is an important dualism behind our way of thinking about natural and built-up areas. The natural areas, in spite of their being subjected to planning and green management, are never *totally* man-made, and the urban environment, in spite of the dozens of species that biologists are able to distinguish from our stoned stairs, is never totally nature. The opposites of our basic dualistic concepts can never be totally wiped out, either by rationalistic or by naturalistic totalisations.

My interpretation is that we are not simply dealing with dualistic concept pairs, such as man/nature or rationality/irrationality, which would correspond to planning concepts such as red/green or planning/non-planning. We are rather concerned with a *hidden dualism*, which is in fact hidden behind apparent dualisms. The point of much of our activities is to try to 'solve' the 'problems' inherent in the *apparent dualisms* or controversies. This activity is of a totalising nature, since it attempts to hide the other, more crucial dualism – vainly, since the activity is itself based and motivated by the existence of this dualism. I shall discuss this original and crucial dualism metaphorically "The Bird and the Beast". This is a reference, on the one hand, to Alfred Hitchcoch's horror picture The Birds, and to Michel Foucault's discussion of unreason and bestiality.

Before that, however, let me give a short illustration of these 'totalitarian dualisms'. What seems to be the motivation behind introducing conceptual dichotomies such as urban growth and green (as we have done in our GREENSCOM-project) or green structure and urban planning (as we have done in our COST-action)? There are clearly real and potential conflicts and controversies between the conservation of natural areas and habitats, on the one hand, and finding new sites for construction, on the other. Conservation has traditionally been seen as the weaker party, but its weight has become more significant as the environmental arguments and policies have won both local and global acceptance. This dichotomy, thus, seems to be the problem, the apparent dualism between growth and green, and it is supposed to be solved by concepts, arguments and policies that avoid taking sides. The concept of sustainability belongs to this category

of concepts, as it includes both development and thus construction, but also the long-term benefits of green areas for the citizens and the future economy of the city, as well as biodiversity. Sometimes even an economic concept, such as willingness-to-pay, might do. The objective of our research activity, in cases like this, seems to be to bridge the gap between the opposites of this apparent dualism, to *communicate* between them.

But why is this dualism apparent, and what is the more fundamental dualism behind it? There are, in fact, two possible interpretations of this situation. Actually the word urban *growth* is itself a metaphor, giving an appearance of naturalness, unavoidability and productivity to human construction. It is a naturalisation of something that is in fact the result of political decision-making and deliberate human action, which does not simply 'grow'. In a sense, then, the concept seems to be on a par with the concept of green, which is also *growing*. This has clearly been a rhetorical way of supporting urban growth. But this naturalness, despite its successful history, is no longer the concept that will communicate between the two. In fact, the reason why urban growth is naturalised is related to the argument that unmanaged urban growth is dangerous, that it needs planning. Growth is not here an integrating but a frightening dimension, a symptom of the existence of non-rationality and chaos.

The communication between growth and green will thus be based on something else. It must be shown that there is a common rationality behind conservation and development, between construction of housing and construction of green areas, and between economy and ecology. And surely these arguments can be put forward: good green structure networks contribute to the long-term economic viability of cities, as well as to the real estate prices. Ecological management of green areas will save energy and money for the city administration [4], and giving people the possibility to take care of some common green areas [5] does the same. The problems seem to be related to how these arguments can be explained to the citizens, or how could we measure the benefits and costs in the long run. The rest is simply political bargaining: How shall we finance the necessary measures and distribute the costs and benefits?

This is only apparently easy, however, just because it is so easy. It does not represent the actual problem, nor does it even explain why such a problem has appeared. The actual and difficult conflicts between urban construction and the conservation of natural areas that we can see in many contemporary cities are not only based on problems of calculation or lack of argumentative skills. They are related to the fact that if rationality is the communicative bridge between growth and green, then it clearly c*annot give any voice to its opposite, the non-reason, the unexplained, the unmanageable*. The principle of rationality is that 'whereof one cannot speak, thereof one must be silent', as the early Wittgenstein put it [6]. Non-rationality is certainly something that we cannot speak with, since our word represents our Logos, our reason. But even Wittgenstein in his young arrogance did not assume that what we can speak of is all there is[7]

3 Governing the Desire and the Will to Power

If we want to address this basic dualism between reason and its opposite, we are naturally led to the original Platonic distinction between the reason of the philosophers and the desire of the majority of people, so eloquently argued for in the Republic. For Plato, the desire (of children, women, slaves, and even the less worthy part of the free men) did not only desire, but it wanted to govern both the individual man and the state, although this would have had catastrophic consequences (432d). This will-to-power of the unworthy, governed and kept inside its proper borders, is not only interesting as an important tradition in Western political thought and as an object of the anti-totalitarian modern critiques.[8] This will-to-power is also interesting, since it openly addresses the above-mentioned problem of legitimacy: If the unworthy have a will-to-power, they actually form the basic danger that legitimises the use of rational governance by the wise. The wise, on the other hand, are those who have access to true knowledge, and who are, in spite of the fact that they have thereby freed themselves from earthly desires, chosen to turn to their countrymen and govern them. Consequently, this conception also explains the necessity and persistence of this original dualism: since the rational men do not desire themselves, the rational state will need the unworthy, it will need their desiring and will-to-power, in order to function properly. Hence the ever-present coexistence of both the energy from desire and the legitimate governance of it.

Now it would be interesting to compare this by now 'politically incorrect' feature of classical thought to the modern self-understanding of the planners' role in society. The disinterested benevolence of the planning expert can easily find its roots in the philosopher-king, as well as the vested interests of the stakeholders will remind us of the desire and the will-to-power of the unworthy majority. But the pictures are not entirely equivalent. What is missing in the modern, politically correct conception of governance, is the original and persistent dualism between the rationality of the governor and the unreason of the governed. If the classical *ecology* was based on the rational governance (*logos*) of the household (*oikos*) and its lesser members (women, slaves, children), the modern concept of ecology is a totalitarian concept: everything is subjected to the priority of the ecosystem. The rational governance of the oikos is projected onto the natural environment, which has now become the very model of rationality.

But if nature is thus rationalized, the only place that remains for unreason is the human mind (as already with Plato) and the irrational forces of the mob, the unorganised multitude of the unwise people. But even here the dualism is hidden underneath a host of totalitarian concepts: social and cultural sustainability, communicative rationality, public interest, general will. These are all grand ideas and principles that no one can question or oppose, least of all from the point of view of individual or group desire. They are meant to communicate between the governor and the governed, but all they can do is to hide the original dualism. The point was, namely, that one *cannot* communicate with unreason. It can only be silenced, controlled or destroyed.

The disappearance of unreason from the intellectual landscape of Western thought has, however, attracted the interest of many philosophers and social theorists. An illuminating example is Michel Foucault's analysis of the history of madness, which he deliberately wrote not as a history of mental illness but rather as the development and disappearance of unreason (déraison). In other words, he depicted madness-as-illness as only one moment in the history of silencing unreason, of taking from it the right to speak-for-itself. "The language of psychiatry, which is a monologue of reason about madness, has been established only on the basis of such a silence. I have not tried to write the history of that language, but rather the archaeology of that silence."[9]

But can one really write an *archaeology* of silence? This problem was immediately noticed by Jacques Derrida: "Is not an archaeology, even of silence, a logic, that is, an organized language, a project, a sentence, a syntax, a work?"[10] And further : "Since the revolution against reason, from the moment it is articulated, can operate only *within* reason, it always has the limited scope of what is called, precisely in the language of the department of *internal* affairs, a disturbance." [11] If unreason, thus, cannot as a whole be given a legitimate voice in the history and in society, then its role will necessarily be reduced to a breaking of social order, to a problem one cannot understand, to a demand one cannot justify, that is, to disturbance.

4 Designing a cage for the love-birds?

But if one cannot make science (logos) of unreason, could one perhaps show it(mimesis)? Indeed, we do have a whole genre of monster-images, representing the ever-present unmanageable and uncommunicable element of our metaphysics. These extend from the *King Kong* to Hitchcock's *The Birds*, and they are usually based on a juxtaposition between scientific reason (and the respective management and exploitation) of our Western culture and a sudden appearance of the monster: a flock of violent birds, an enormous monkey or Godzilla, or even a group of people gone crazy, the mob. The Birds is emblematic in this respect: the film starts with two love-birds in a cage, and it ends with a Dystopia of a world that has made man a refugee in his 'own' city: There can be no communication, no negotiation between him and the destructive flock of birds.

While the contemporary film seems to be more interested in Dystopia, urban planning and design are still stuck with their Utopian tradition. The birth of modern planning was connected to the unmanageable growth of the industrial city, and it produced a host of 'moral colonies' of reason: the city beautiful, the garden city, the urban village, the functional city, the organic city, the ecological city (Lapintie 1996). In a sense, we have been designing cages for the love-birds, and tried our best to close our consciousness from the beast. But since urban design is inherently connected to mimesis, we may assume that this is not the end of the story.

We may now end these reflections by discussing what this conclusion means for urban planning and design practice. As I wrote in the beginning, the relevance of philosophical analysis in practical disciplines like planning and design is based on a critical reflection of the conceptual structure and the metaphysical and ontological assumptions behind these disciplines (and, of course, behind the concept of discipline itself). It is of course quite common for a practitioner to deny that there would be any need of such reflection, that what is needed is simply more data, more indicators, and more advanced tools for action. While there are undeniable merits in such a practical attitude, it is also evident that the unreflective practitioner is dangerously on his own if the cage is opened, and the birds decide to fly away.

notes :

1.The roots of the rational-comprehensive planning theory are not often discussed, since the theory is used as a common enemy against which its alternatives (such as incrementalism and communicative planning theories) are measured. Andreas Faludi (1987), however, gives the honour of formulating rational planning theory to Edward Banfield, in Meyerson & Banfield (1955). Faludi's own formulation is given in Faludi (1974).

2. Healey (1996), Sager (1994)

3. Habermas (1984)

4. For this argument, see, e.g. Hough (1985).

5. I am referring to a case study from the Greenscom-project dealing with management contracts in the city of Utrecht.

6.Tractatus n:o 7.

7. Tractatus n:o 6.522

8. Karl Popper's liberalist critique against Plato's Utopianism (Popper 1971), against which he put forward his innocent-looking 'piecemeal social engineering,' is a case in point.

9. Foucault (1973), pp. x-xi.

10. Derrida (1985) p. 35.

11. Ibid. p. 36.

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Eight experienced qualities in urban open spaces

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Introduction

When recreation areas today are analysed and described, for instance at the prospect of exploitation, it is clear from the political debate that the decision-makers have not been given a fair chance of assessing the importance of such areas to the town population (Grahn, 1991). The qualities in urban green areas are most often not appropriately accounted for in maps and documents, forming the basis for different kinds of decisions. When urban green areas are described, there are no values presented referring to people's preferences, needs and /or health. This paper aims at understanding why certain parks are frequently visited, whereas other parks hardly attract anyone. We presume that the frequently used and preferred urban parks embrace qualities of certain importance and role, qualities in the shape of certain characteristics, having a more or less archetypical characteristic.

Background

Constantly we communicate with the world around us, but not only with words. The sur-rounding environment confronting us tells us how to behave, both by instinct and by conditioning. A high quality park must be able to communicate with the visitor on many levels, for example through sight, smell and hearing. Professionals in the sphere of architecture speak of the semiotics of buildings, maintaining that people quickly learn to read what the constructed environment has to say, for example, about power, sanctity, and value (Morris, 1971; Ras-mussen, 1986). In this case, it is primarily a question of conditioned behaviour. From early experiments, we know that man react by reflex to Gestalts (Schuster & Beisl, 1981), such ac circles and axes. Carl Gustav Jung (1964), the founder of the analytic psychology maintains that we also react by reflex to inherited symbols, archetypes, which we can find when in a more or less unconscious state, as in dreams. The archetypes show us how to relate to the world around us. More recent research by Ulrich (1984), Coss (1991), Öhman (2001), and others shows that there are inborn reflexes warning us of things that may jeopardize our safety, like spiders, snakes, and great heights. There may even exist inborn attitudes towards

odours and sounds. Moreover, man develops constancies (size, colour etc) very early in childhood to be able to perceive and understand the surrounding world (Atkinson et al 1996). Here, inborn reflexes and conditioned behaviour co-operate. Could it be, that man has inborn, or partly inborn concepts of experienced qualities in nature and in nature-like environments? Could it also be, that man has this kind of concepts of experienced qualities towards more cultural phenomena? And if so, is it possible that we as researchers in landscape architecture can detect these kinds of concepts, which could be a kind of archetypical concepts?

Human health and urban parks

For thousands of years there have been ideas to the effect that human health and well-being will be influenced in a positive way by his spending time in natural surroundings; wild nature as well as enclosed gardens (Knopf, 1987; Gerlach-Spriggs et al., 1998; Cooper Marcus & Barnes, 1999). Beneficial properties are attributed to natural daylight, fresh air and greenery. However, it was not until 1984 that the first report about the measurable effects of nature's influence on health was published (Ulrich, 1984). This study was soon followed by others (Kaplan & Kaplan, 1989; Ulrich 1999; Grahn, 1993, 1994). An important aspect is the influ-ence of parks on human health. Parks enhance powers of concentration, lower stress levels and alleviate irritation (Grahn & Stigsdotter, 2003). A simple stroll in a park may strengthens the muscles, provide fresh air and daylight; all-important factors for a healthy life (Ibid.).
Research about the impact of the physical environment on people's health and well-being was formerly carried out in isolation by different research disciplines, such as medicine, en-vironmental psychology, and in recent years landscape architecture. Now days a change can be noticed. Collaboration transcending professions and research boundaries takes place in Sweden as well as in other parts of the world (Stigsdotter & Grahn, 2003).

From a theoretical design and landscape architectural point of view it is important to show that one benefits from actually spending time in a natural environment or park, while also trying to find an answer to the questions of how and why one benefits. Are there better and worse nature/park environments, and in that case, what is it that constitutes the differences? Studies have shown that the design of the outdoor areas is of utmost importance, whether the health effects will appear or not. Examples can be seen in kindergartens (Grahn, 1996, 2003, Grahn et al 2000), in homes for old people (Grahn & Bengtsson, 2004, Ottosson & Grahn, 2004) and in institutions for sick people (Stigsdotter & Grahn, 2002, 2003, Ulrich 1999). From the studies cited in the sentence above, one can draw the conclusion that certain char-acteristics in the design seem to support the health effects.

Urban open green areas in the city promoting health effects

The principle of triangulation has been our main approach in this research program. It implies that to gain reliable knowledge about a problem, one must illuminate that problem from dif-ferent directions. To reach this goal, we make use of quantitative as well as qualitative research methods. Quantitative methods concern questions of "how much"; these include questionnaire studies using fixed alternatives. Qualitative questions deal with the contents of the phenomenon; these studies involve diaries, deep interviews and focus groups. We also make use of methods lying somewhere between the purely quantitative and qualitative, such as multivariate cluster and factor analyses, which are quantitative with regard to data collection methods, but qualitative with regard to analysis procedures and concept development.

To get knowledge about how people use and experience urban open green spaces, we chose to contact key-people, responsible for outdoor activities in different kind of organizations. That way, we could get a broad picture of the needs different people in the society experience. Organizations are units in the society, which have been intentionally constructed to obtain social, cultural, religious, politic or other human purposes, which distinguish them from units like families and companies. The organizations are of two separate kinds: Public organizations, such as kindergartens, schools, hospitals, old people's care and home. Associations like po-litical organisations, churches, sports organisations, cultural organizations, scouts and nature organizations. Our hypothesis is, that key people from organizations can give a good picture of the needs people feel in the whole society, in depth and in great detail: old people as well as children, poor people as well as the rich.

The study takes place in three Swedish cities, of the same magnitude: Lund, in the South of Sweden, Västerås and Uppsala in the Stockholm region. All three cities have a medieval background, are cathedral cities with universities and large high-technological companies. That implies that the three cities are fairly similar concerning socio-demography (Berggren-Bärring & Grahn, 1995b). The green structure, however, differs in these three cities. The differences between them as regards availability of green areas are striking: Lund is a fairly compact city of continental European format, with only approximately 770 hectares of green areas. Västerås, situated in a more patchy landscape, has about 2 780 hectares of green areas. Part of Uppsala lies within a large forest, while the rest spreads out over a plain. The inhabitants have 6 210 hectares of green area at their disposal (Ibid).

A total of 39 key-persons from the four kinds of organisations from the three cities of Lund, Västerås and Uppsala were asked to keep a diary of all of their out-door activities for one year. Those who had been responsible for keeping the diaries during the year were then inter-viewed in great detail. They were asked why they preferred

to visit certain places, which qualities attracted them. In this interview, they described the qualities, not only in words, but also in drawings, maps, sketches and photos.
Besides this qualitative study, we started a large quantitative one. That study attempts to re-veal the complex relationships between the use of parks and park qualities by analysing quan-tified and classified parameters, one by one as well as in combinations.
The parameters consist of 51 qualities, collected from 86 different studies of people's preferences and habits, concerning urban parks (Grahn, 1985, Grahn & Sorte 1985, Berggren-Bärring & Grahn, 1995a, Berggren-Bärring & Grahn, 1995b, Grahn et al 2000). About one third of these studies had a quantitative approach; questionnaires with pre-coded questions. Approximately one third had a more qualitative approach, with semi-structured interviews, sometimes combined with observations. Nearly one third had a more pure qualitative approach, with deep interviews and observations.
The 51 parameters were used in a questionnaire to the organisations in the three cities. We got a total of 1 600 individual evaluations of the urban open green spaces. A computer-based geographical information system has been an important tool in the analysis and synthesis of data. All individual evaluations were stored in a database, which were analysed using the sta-tistical software SAS (SAS Statistics 1996), and the database software Ingres integrated with the GIS software Strings (INGRES Tabular Data Base & The STRINGS System, 1987).

Result :

The impact of access to many green urban open spaces

What are the implications of the huge differences between the three cities, concerning the amount of green urban open spaces people have access to? One would assume that most of the square metres of green area in Lund would be utilized. This is not the case. Just over 70 % of the area is used in Lund and Västerås, whereas 89 % is made use of in Uppsala, which has the largest area. As regards the number of urban open green spaces, 51 % of the single urban open green spaces in Lund are visited, 60 % in Västerås and 65 % in Uppsala. A large part of the smallest green urban open spaces < 1 ha, are not visited at all. In the size class 0-1 ha, only a third are visited. On the other hand, most of the larger green areas are visited in all three cities.

Comparisons between the use of parks in Lund and Uppsala show that in Uppsala, almost ten times the areas is used, twice as many green areas are visited and three times as many visits are made, than in Lund. Västerås takes an approximate middle placing in these comparisons.

Experienced qualities in urban open green spaces

Which interesting features do popular parks have in common and what is missing in not popular or not frequently visited parks? From the diary-entries, it was seen that

the qualities could be divided into certain classes, where each type or class satisfies special needs. One can thus speak of types of needs and types of qualities, which are intimately connected with each other to give a certain experience. The characteristics are illustrated in drawings and photo-graphs, and could be grouped together to a limited number.

In the quantitative study, the visitors had been asked to state the qualities, which determined their choice of green area, and how strong these qualities were in the area chosen. In the questionnaire, the respondents were asked to indicate what open space qualities they considered to be of importance to their activities. Treating the 51 listed qualities by factor and cluster analysis, shows that it is possible to distinguish eight different concepts. These concepts were decisive when it came to choice of urban open green space, and they could easily be found again in the qualitative study, written in the diaries and illustrated in the drawings and photos. We interpreted these concepts as eight room characteristics, in the urban open green spaces.
Certain room characteristics are more popular than others. These characteristics consist of symbols manifesting themselves through many different sensations via sight, hearing, loco-motion, etc. Table 1 below gives a brief presentation of the room characteristics.

The Eight Nature/ Garden Room Characteristics	Characteristics of the Nature/Garden Room
1. Serene	Peace, silence and care. Sounds of wind, water, birds and insects. No rubbish, no weed, no disturbing people.
2. Wild	Fascination with wild nature. Plants seem self-sown. Lichen- and moss-grown rocks, old paths.
3. Rich in Species	A room offering a variety of species of animals and plants.
4. Space	A room offering a restful feeling of ”entering another world”' a coherent whole, like a beech forest.
5. The Common	A green, open place admitting of vistas and stay.
6. The Pleasure Garden	An enclosed, safe and secluded place, where you can relax and be yourself and also experiment and play.
7. Festive	A meeting place for festivity and pleasure.
8. Culture	A historical place offering fascination with the course of time.

Table 1: Characteristics of the eight Nature/Garden rooms. (Modified version of table 1, page 66 in Stigsdotter, U. & Grahn, P. 2002. What Makes a Garden a Healing Garden? Jour-nal of Therapeutic Horticulture Vol 13, pp 60-69.)

Relationships between experienced characteristics and the size of urban open green spaces

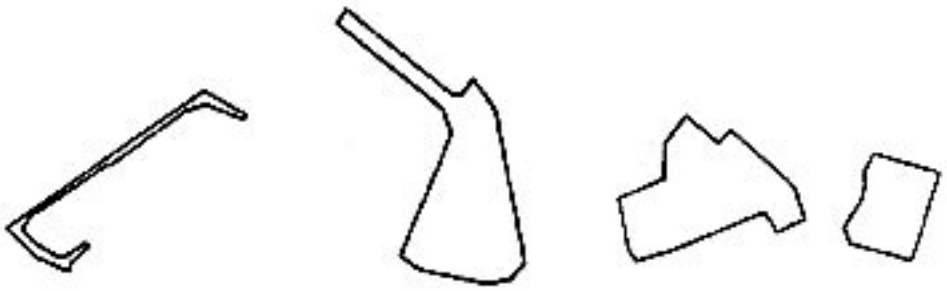
Clear relationships were found between these qualities and the size of the green areas in each town. As regards the festive and the culture characteristics, the relationship was fairly similar in all of the three cities studied. There were no striking differences as regards the pleasure garden and the common either. When we compared wild, rich in species, space and serene in the three cities, the differences are striking and are shown to be clearly statistically significant. In Uppsala and Västerås, these room characteristics are associated with large green areas, and are quite common. In Lund, these characteristics are allotted to relatively small green areas, but as a rule they are associated with the largest green areas of the city. Green areas with these four room characteristics are far less usual in Lund.

The most popular everyday activities, such as taking a walk, exercise, outings, physical games, and just relaxing - enjoying birds, flowers and butterflies, are encouraged by large parks with the experienced qualities wild, rich in species, space and serene. The young as well as the old citizen would appear to have a great need for these areas.
With regard to the size of the areas, it was found that two size classes of green areas were the most visited, in all three cities: 1-5 hectares and 10-50 hectares. The former favours culture and festive, the latter serene, space, rich in species and wild. However, the optimal area for certain activities was significantly bigger. It was activities, which are more sensitive to distur-bances from other people, noise or traffic, such as out-in-the-wild activities: scouting or col-lecting berries and mushrooms. Here, the optimal area was about 100 hectares.

Relationships between experienced characteristics and the shape and form of urban open green spaces

The shape and area of a park are often seen as important factors influencing the way people experience and use parks. We have developed a measure of shape called the “balance quo-tient”, to be used as a parameter in our analyses. The results reveal a complex pattern, though some conclusions can be drawn: We discerned that a large proportion of the parks least vis-ited, consisted of elongated areas. The importance of shape is more pronounced in parks smaller than one hectare. The significance of the form factor was also found to be valid in size classes over one hectare, but this significance decreased relatively rapidly the larger the area studied. Children are particular sensitive to the shape of small parks, since it clearly influences on their play. The experienced characteristics most sensitive to the shape and form are serene, space, rich in species and wild, they are associated with shapes more round and kept together. In the smallest parks, almost no activities take place besides “passing by” if the shape is elongated or lobed.

Picture 1. Different shapes of parks. The left shape has got the lowest quotient and the right shape the highest. (Pictures by A-M Berggren-Bärring)



Summary and conclusion

The characteristics communicate directly with the visitor. The room characteristics Serene, Space, Rich in Species and to some extent Culture appeal to many people. It is of particular interest that they also appeal to the most ill and vulnerable persons; those who strive to find balance with themselves. The room characteristics The Common and The Pleasure Garden usually appeal to those who are somewhat less stressed and vulnerable, either those who wish to observe other people carrying out activities or those who wish to carry out the activities themselves. The Festive finally appeals to some stressed persons but frightens others (Stigsdotter & Grahn, 2002, 2003). Most of the room characteristics require more natural areas with large masses of growth such as tall trees and many kinds of plants.

On closer study of which individual green areas were most preferred by most groups of visi-tors, it was found that these areas included older city parks, centrally located woods and parks near bathing spots and beaches. Analyses show that all these most preferred urban open green spaces contain many experienced characteristics, which in turn encourage many activities. The conclusion drawn is that large, lush, varied green urban open spaces must be developed in the cities, if the aim is to have people spend time out of doors. If the aim of the society is to promote the health of the citizens, the increase of the use of urban open green spaces would be a good means. With that, the opportunities to exercise and to restore from stress would increase. However, our results indicate that the following must have a high priority if the use of green open spaces will increase. Especially the smaller neighborhood urban open green spaces must:

- Be located near the homes
- Have a shape round or kept together
- Have several room characteristics in the design

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Role of the urban green structure in creation of preferred urban environment

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Introduction

One of the most important actualities and tasks for urban planning today is creation of sustainable environments. The search for sustainability of urban environment means a search for both higher and new qualities of townscape as well. Concerning the character of spatial planning these new qualities depend on the following things:

- New planning methods that let to create more functional spatial models and structures;
- New functions assigned to planned spaces;
- New models and concepts for urban planning.

Creation of an urban green structure can help to add some new qualities to or to improve the old ones of an urban environment. Why? The term "structure" means location and order of related parts within one organism or system. Complex mind says that system is more then just a mechanical sum of its parts. Any system has a new quality that was not presented in its single part, e.g. like a human body and its parts. According to the analogy of the abduction logic we can assert that if the urban green structure or system is created, then it should be able to perform some additional functions that are not performed by a single ore dispersed green areas.

It is well known from the practice and planning experience that the green structure (if it is understood as a sum of green areas that are territorially connected to each other and are acting together) can improve recreational, social and ecological qualities of an urban environment. ***Besides that it can help to create a preferred, more psychologically acceptable urban environment at a whole city scale.*** This paper summarizes both some theoretical premises and empirical remarks concerning the green structure and creation of preferred urban environment. The common aim of the paper is to show that the both creation of preferred urban environment and the usage of the green structure for that purpose are worth of consideration.

Theoretical premises for creation of preferred environment

The objective of urban planning is to create a spatial and functional model of environment what meets the human needs and creates optimal conditions for the existence of both society and individuals. The following findings of environmental

psychology are very important for the spatial urban planning and its priorities:

- There exists a human need to live in preferred environment: "People tend to seek out places where they feel ***competent and confident***, places where they can make sense of the environment while also being engaged with it". If this need is not satisfied it leads to the long time stress followed by decreased ability to work and loss of any motivation as a result of stress. "Along with the common environmental stressors … some define stress as the failure of preference, including in the definition such ***cognitive stressors as prolonged uncertainty, lack of predictability and stimulus overload***".
- The characteristics that make the environment "preferred" are determined by the different researchers and could be summarized as following: no visual stress production, legibility, coherence, complexity and mysteriousness. These definitions will be explained later in the terms of urban design.
- The important features of conceptual perception are determined. The whole big spatial structures and complexes are perceived conceptually only. We can perceive jus parts of a complex directly and visually. When we become conscious about something in conceptual way we create a mental map or model of that object. The higher mental functions as imagination and long time memory are used for creation of the mental model. All models are simplified and changed if comparing to reflected reality. This is true for the mental city model as well. The main features of the mental city model are following: **1**. It is simplified, distorted and supplemented with additional elements; **2**. Whole city is created in imagination when a part of it is visually perceived (even if this part and a city are seen for the firs time); **3**. The mental map replaces a material environment for our brain in many situations.

The first feature of the mental city model means that imagination and long time memory could add some new things to the mental city model. The second feature means two things: a) Human psychological reactions to urban environment are influenced not only by visually perceived objects but by a wide environmental context; b) We have some kind of pre-image in our imagination – even before the real perception of the city starts, e.g.: human will imagine a whole city even if he (she) will be "dropped" in the point within unknown city. The third feature is very important if we speak about the emotional, psychological attitude to environment. It means that human reactions and responses could be based on the mental image but not the real environment (if we speak about reactions at the whole city level).

The main conclusions made on the base of these findings of the environmental psychology are the following:

- We should take into consideration the psychological needs of human beings when the spatial model of a city is created. The whole city should be formed as the preferred environment – not the local spaces only.

- We should create the preferred urban complex by creating and shaping the commonly imagined mental model of a city but not the material environment directly. This common mental image of city is described and researched by K.Lynch.
- The criteria of no visual stress production, legibility, coherence, complexity and mysteriousness should be used for evaluation and creation of preferred urban environment

Another one important question for the topic is: how culture and society influence these mental images? This question is quiet important because the imagination and long time memory are the higher mental functions and culture plays an important role in their formation. ***The additional important statements considering preference of the environment***, could be made in the context of the theories of M.Cole (cultural – historical psychology), C.G.Jung (analytical psychology) and semiotics:

- There exists a high probability that culture makes an influence on the standard of preferred environment by supplementation of culturally determined images and schemes of an ideal city – some kind of an archetype (we are "instructed" what and how to imagine by culture).
- Despite the probable significance of the archetype it is believable that these cultural schemes could not be used as a final and desired model for creation and evaluation of the preferred urban spaces because:
  - The city is too complicated and its model is formed by many factors that are not under control of planner often.
  - The common mental image of city could be researched and formed just with quiet low degree of probability.
  - The cultural images often are to simplified, symbolic and schematic to be applied in the urban planning as the final models.
  - The objective of town planning could not be a final spatial model of city absolutely similar to the "ideal" and preferred urban environment. The objective is to make the environment more similar to the cultural image if comparing to the present situation. Creation of the preferred urban space should be a permanent process.

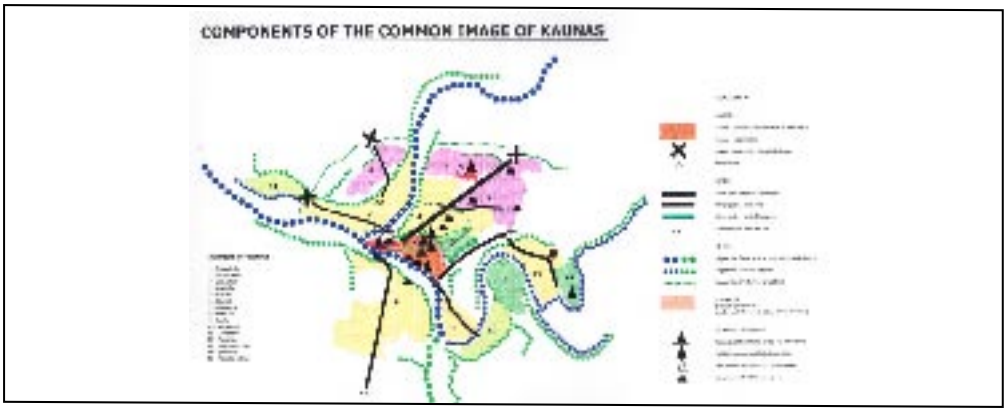
A lot of more detailed theoretical and practical research should be done for the test, further development and implementation of these theoretical discursive findings into practice. The most actual topics for the further research:

- Relations between culture and the criteria of preferred environment.
- Images of preferred urban space in a specific culture.
- ***Importance and possibilities of both the methods of spatial planning and spatial substructures (e.g. green structure) in creation of the preferred urban environment.*** This research should go from "bottom to top" – theoretical conclusions should be made on the base of practical study. This method will give the best and the most obvious results.

Green structure and preferred urban environment (Kaunas case)

Preferred environment is psychologically acceptable environment. This term could be applied to both visually and ***conceptually perceived*** environments. Could be the green structure considered as probably enough useful for the purpose of creation of the preferred urban environment at the scale of conceptual perception? How could the green structure make the urban environment more preferred and how it should be planned to perform such a function? Some preliminary conclusions and guidelines could be made on the base of a specific analysis of Kaunas case. The selection is reasoned by the specific urban features: Kaunas is a typical soviet town with big and monotonous areas that are filled up by the typical many-flat houses. The problems of psychological acceptance are of high actuality there. In such a situation the possible usefulness of the green structure should be seen very clearly.

The analysis for both finalization of the hypothesis and more detailed conclusions is made on the base of evaluation of the possible role of the continuous green structure and its elements (as green belts, parks, etc.) for the key features of the preferred environment at the level of a whole Kaunas city image.



The main characteristics of the image of Kaunas:

- The image is fragmented. It is possible to state with a high probability that some parts of the image will not be imagined as parts of the city.
- Domination of the one center–district.
- The spatial characteristics of districts are very similar: it is a result of soviet urbanization.
- The districts are formed by boundaries and some landmarks in many cases. It is true because the districts are very similar to each other and only boundaries and very significant landmarks let to imagine some similar areas as different districts of the image.
- The net of ways plays a vital role in the integration of the image. It is so because of the mono-centric structure of the image.

Can the continuous green structure make this city image more preferred? Important premise: each environment should have the features of the preferred environment more or less expressed. In opposite case, such environment will not be conceptually perceivable. This fact could be illustrated by the following example: legibility is one of the key-features of the preferred environment; according to K.Lynch's definitions we can say that if an urban environment is not legible, then the city image could not be created and a city could not be conceptually perceived.

Results of the analysis of green structure role for the preference of Kaunas city image:

No visual stress production. This feature of a spatial environment means that visually perceived space "isn't either too diverse or too monotonous". The criteria for such an ideal space depend on the neurophysiologic characteristics of the human nervous system. This feature depends on the visually perceived environment and should not be applied to the image of city. Despite that this feature should be considered when the preference of a visually perceivable environment is analyzed.

Legibility. It is "the inference that one can explore an environment without becoming lost". From the point of the city image it's the possibility to find, notice, perceive, and distinguish the potential elements of city image from the background. If environment is not legible, then the common city image could not be created or imagined. This feature is should be applied to the physical environment and visually perceived space as well, but not to the image.

Coherence. "It's the sense that all parts of (conceptually) perceived environment make a one unit". From the point of the city image coherence should depend on the three characteristics of the image (these characteristics make an essence of perceivable integrated order – in opposition to unperceivable disintegrated chaos):

- **Continuousness of the image**. In Kaunas case, it depends on the network of ways very much because the way is a place where the "creation" of the city image starts: people see and remember the most distinguished elements of an environment while they move through a city. These memories are used for "creation" of the mental city image later. Greenbelts can play an important role in creation of the more preferred environment in Kaunas case. For example – by making clear connections between the center and the autonomous districts of the image.
- **Clear separation of parts (districts) of the image**. The green slops of the rivers are very important for separation of the similar areas in Kaunas. Without these slops-boundaries there would be just a one big district in the image of Kaunas.
- **Hierarchy.** Role of the green structure isn't very big in this case directly, but the green slops make a great visual background for some very important

landmarks in the image of city. In their turn these landmarks are very important for perception of the center and legibility of the image.

The culture can make an influence on the kind of hierarchy and the ways of integration what will be more preferred that the other but it is a theme of another research.

Complexity. "Environment is complex if it contains enough variety to make it worth to learn about". In the term of city image it could be described as diversity of types of elements in the image. The properties of human perception should be taken into consideration when the complexity is researched. We construct the mental image of environment from the pairs of oppositions. It is the fundamental feature of perception. Environment without the perceivable oppositions will be not complex. The city image should be made in the same way and its diversity depends on the clear presence (necessary condition) and number of the pairs of oppositions.

Culture can determine the kind, number and spatial relations between the oppositions. The role of the green structure could be very important here because, according to Jacques le Goff, nature is understood as a natural opposition for urban environment in the European culture. There the green structure makes the image more complex by forming a few, quiet important green districts in the image of Kaunas.

Mysteriousness. It is "the prospect of gaining more information about environment". Mysteriousness of the city image depends on two things. The first one is a permanent ability to discover something new in a city: e.g. to find some kind of "terra incognita" in the image. The second one is a representation of an unpredictable "chaos" (with a proper emotional attitude to it) as an opposition to a well known and predictable order. It could be produced in two ways: both as a one part of the perceived spatial oppositions and as "chaotization" of structure of the image. An understanding and symbols of chaos depend on cultural influence very much. The green structure helps to produce these effects by creating a green districts in the image of Kaunas.

Conclusion : The case of Kaunas, shows that greenstructure can play the significant role in creation of more preferred image of city. It is important for the assurance of the all key – features that are "feeled" through the image of city.

Examples what the green structure can give:

- Green boundaries for the separation and creation of the districts in the city image (coherence of the image);
- Greenbelts for the better integration and continuousness of the image (coherence);
- Green districts for the bigger complexity and mysteriousness of the image;
- Green background for the landmarks (better legibility of environment and coherence of the image).

Resume

On the base of presented discourse it could be concluded (with a high enough probability) that the green structure can help significantly in creation of the more preferred urban environment. The term “green structure” means the system that is performing some additional functions if compared to a single green area. In such a case the creation of more preferred image of a city could be one of the additional functions of the urban green structure. The experience and results of Kaunas case confirm the main thesis of this paper and could be used as the preliminary guidelines in an urban planning.

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Leisure activities and natural spaces
Additional information from enquiries, nationally and locally (Marseilles)

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More leisure activities and more commuting

- Commuting for leisure has been on the increase in France in recent decades, more so than other activities. New types of leisure have developed, the radius of amenities that can be used has increased very quickly, and spare time activities can take place not only at the weekend but also during the week.

- So, even in a city like Marseilles where a mass exodus from the city at the weekend is a long-standing and cultural habit, mostly for visiting parents in the countryside, such mobility is increasing and proximity does not have the same significance nowadays.

- Leisure time is synonymous with pleasure, amusement, diversity (activities, places), increasing one's knowledge, keeping others company, individual freedom and development (both for adults and children), but the actual pursuit of leisure is variable, as it often depends on the income of the family. The less well off have to apply the brakes on themselves or on their children, having few leisure opportunities despite the wish to engage in them.

A large part of the demand relates to the proximity of 'natural' spaces

- Trips to all 'natural' spaces not far from the city are now three times more numerous than ten years ago. All natural spaces are visited places, ranging from the ones offering amenities such as the nearby regional natural park of the Camargue to the 'wild' ones, with no special layout, in more mountainous areas, quite far away, or behind the coastal strip. They are regarded as a kind of public park of the metropolis.
- On Sundays visiting a huge shopping centre (the largest in France, called Plan de Campagne) is also a popular activity; this is open 24 hours a day and can be categorised as shopping for fun, with varied outlets such as coffee shops and sport playgrounds for all. It is quite a meeting place for some people.
- Festivals and others cultural exhibitions (for example, pop concerts for young people, municipal events open to everyone, markets and fairs of all sorts) are also on the increase, attracting huge crowds, probably due to the decline in social relationships of the new suburban way of life.

Public garden of ‘Maison blanche’ (previously a ‘bastide’ estate , ‘fun’ surf at ‘la Pointe Rouge’, the very successful ‘Prado’ beaches created in the eighties

Urban public gardens bring quality into daily life, even when they are not visited

•In the densely-populated core of this Mediterranean city, open spaces and large busy streets are visited more often than public gardens. Many of the public gardens were created in the 1970s to modernise the post war city. Now some of them are losing users, especially small public gardens within the city, (69% of inhabitants never go at all), and virtually one person out of every two says they never visit urban parks. However, in response to the question: “If, in the future, the municipality could have a large open space in the city centre, what use would you like to be given priority?” 51.5% of inhabitants preferred the layout of a big public garden, while only 14.8% voted for the second best choice of a leisure centre. A public garden is considered a priority for enhancing the quality of life and quality of neighbourhoods. The demand is higher when people have lower incomes (70%) or are retired (50%).

• The beaches in the municipality of Marseilles, which were created over twenty years ago within the city centre and are reachable by underground, attract one third of all leisure trips, while representing only ten per cent of the city’s public green spaces. They are virtually an entertainment park with lots of events and a wide choice of games; they are as popular as the Marseilles football stadium (which is very well supported) and have also a select clientele. They are gaining visitors all year round, showing that leisure activities can also be located within the city and be successful.

Natural and attractive places within the city centre can be very successful

• Having to drive quite a long way for leisure does not put users off and sometimes it is necessary (for example, when escorting children to activities or going to see relatives). Inhabitants often want to have a better choice and to be in wilder surroundings, but if the choice of natural places within the city boundaries is enhanced, they gain more visitors, reducing the need for commuting and relieving the pressure on natural spaces beyond the city boundaries.

- The most recent green space that has been developed in Marseilles is a large and quite natural urban park (100 ha). This park, together with the beaches and a new public garden which has been created as a trend-setter for urban renewal in the craft and industrial sector, have demonstrated by their success that green and human qualities are to be found within the urban fabric, even though the demand is going to get ever greater in the future.

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Environmental comfort in green urban spaces : an introduction to design tools

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1 Introduction

Understanding how is possible to plan and design outdoor urban green spaces for a better environmental comfort is one aim of the bioclimatic approach to urban design. Green structures play a determinant role in mitigating the microclimate of grey urban structures and in the same time they are open to moulding dynamically urban spaces (streets, courts, squares etc…) Sun, wind, heat and water vapour with their daily and seasonal rhythms and performances sustain and stimulate pleasant and comfortable outdoor activities.

Thermal comfort is a complex adaptative process which involves integrated physical, physiological and psychological adaptation. Up till now it was studied mainly from a physical/physiological. The result was a large discrepancy between what people perceive and quantitative evaluation of comfort made by experts through different comfort or bioclimatological indexes [1]

Furthermore the calculation of such indexes in the context of microscale urban environment is a task to be done by expert and often it is very expensive in time and money because it requires detailed microclimatic date from field survey and complex computer simulation.

Research in progress is trying to overcome this discrepancy and to elaborate comfort indexes close to people perception and therefore useful to urban design (Nikoloupolou 2001, SaGAcités 2002).

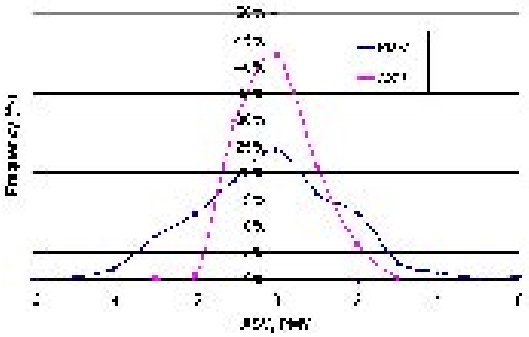


Figure 1: Comparison of the Actual Sensation Votes (ASV) obtained from the questionnaires with the Predicted Mean Votes (PMV) for Athens, calculated from the mathematical model, for each interviewee.

2 Thermal comfort adaptation in urban spaces "niches"

While indoor environment tend to have relatively steady and controllable (by building and mechanical services) thermal, radiative and convective conditions, the outdoor one is defined by a great daily and seasonal variations of much less controllable

microclimatic parameters (mainly solar radiation and wind), which affect the energy budget of the body and therefore its thermal comfort.
From a physiological point of view, human body does not have sensors to perceive the single climatic parameters. For thermoregulation it can only consider the temperatures of the skin and of the blood which are directly influenced by the integrated effect of all climatic parameters which strictly interact and affect each others. As an example, in winter sunny environment with little wind the mean radiant temperature as the same importance as the air temperature, and its importance can grows in summer : in Mediterranean countries MRT can easily reach 60-70°C with air temperature of about 30-35 °C. In windy environment air temp. is far more important than radiant temperature because convective heat exchange dominates. (Höppe)

The physiological approach is accounting about 50% of the variation in thermal perception; the other 50% cannot be measured only by physical parameters. Thermal sensation is strictly interwoven with the global sensorial perception (gestalt perception) and therefore it is determined by physical, physiological and psychological adaptation processes.
Physical adaptation involve all the changes people make in order to adjust themselves to the great differences of the environment or to modify the environments to their needs. The process involves changing cloth levels, posture, metabolic heat with the consumption of cold or hot dinks or changing position which is the effective and more common way of avoiding discomfort in outdoor spaces.
Physiological adaptation implies changes in the physiological response due to a repeated exposure to a stimulus which lead to a gradual decreased strain from such exposure mainly in extreme environments.

Human response to physical stimuli is not in direct relation to their magnitude, but depends how people elaborate in a cognitive way the information received from the environment. Therefore psychological adaptation is play a determinant role mainly in outdoor spaces The main psychological factors influence thermal perception are (Nikolopulou and Steemers 2003) :

- **Expectation**, that is what the environment should be like, rather than what it actually: it is related to experience and based on the deviation of thermal sensation of the past day or season. ("*for this time of the year I would prefer it warmer or cooler*")
- **Experience**, in short or long term, guides actions to cope with variable thermal environments
- **Time of exposure**. Discomfort is not perceive as negative if the person anticipates that it is shot-lived, such as getting out of a warm car to enter a building in winter.
- **Perceived control**. It is widely acknowledge that people who have a high degree of control over a source of discomfort, tolerate greater variations, and reduce the negative response. The issue of free choice is very important in outdoor space; people waiting for an appointment or to catch a tram report much more dissatisfaction with

thermal environment than people in the space for leisure and therefore free to move when they want. (Wolhwill)
- **Naturalness**. In environment free from artificiality people seems to tolerate wider changes in microclimate.

3 Green structure contribution to the outdoor comfort

Along with the mentioned psychological parameters, the "naturalness" (increased by "green and blue structures") of the urban space influence in a positive way comfort perception through urban climate mitigation.
The contribution of large green structures to urban microclimate mitigation (urban forest, green belt, large parks etc…) is quite well known (Bernatsky Chandler, Horbert and Kirkgeorg, Mayer and Matzarakis, Monaco, Oke, Santamouris, Yoshino)
The mitigation of small green urban structures is relatively less known due to the morphological variety of urban spaces -shape and orientation– which generates the mosaic of microclimates inside an urban context. (Wilmers 1988 , Gomez, Raeissi and Taheri, SAGAcités)
The main variables urban designers can really control (and which is dominant in Mediterranean urban spaces) is the radiation field : short-wave or solar radiation (direct, diffused and reflected) and long wave or "terrestrial radiation" (from the sky, the ground and objects above ground).
Urban green structure play a fundamental role in radiation control.
If we compare a street s with and without vegetation the difference of air temperature is very low, let's say about 1 °C, but the difference of mean radiant temperature (MRT), due to the shaded and unshed surfaces temperature differences and to the low leaf temperature) is very high: during summer in N-S oriented streets the MRT difference can be up to 30 °C which means to be almost in comfort in vegetated streets (Ochoa de la Torre, Scudo and Ochoa de la Torre, Mayer, and Matzarakis). A large contribution to lowering the radiant temperature is given also by green surfaces (either green walls and /or loan).

4 Design tools

Only In the last 20 years the transfer of knowledge from climatological and biometeorological studies to urban & architectural design tools has begun to take place (Chandler, Grupo de Termotecnia, Gomez, Raiessì, Santamouris) and guidelines, (Akbari H. et al., Grupo de Termotecnia , Katzshener), simplified methods (Brown and Gillespie, Dessì 2001, Ochoa 1999, Katzschener, Rayman) and simulation programmes were developed (Solene, Envimet , Williamson and Errel).
One of the main problem facing outdoor comfort indexes is how to of MRT - Mean Radiant Temperature. MRT is the whole radiant balance body- environment : short waves (sun) and long waves radiations (terrestrial + sky) exchanges which depend on view factors associated with sky and surface temperatures which has great variations in time and space depending on urban topography and materials.
MRT can be calculated with many programmes at different level of complexity. The

more interesting are the ones designers and planners can use (Brown and Gillespie, Rayman, RUROS guidelines, etc).
Infrared remote sensing images can be of some help to get information on surface temperature, but the very low resolution needed for urban microclimate design (< 10 m) limit its use also for economic reasons.
It is important anyway to stress that the different simplified programmes based on thermal indexes are not an absolute evaluation of outside thermal comfort or strain. They give designers the direction where proposed solutions are going to .
The work carried out by ROROS [2] give designers a cluster of simplified tools : nomograms to evaluate mean AVS -Actual Sensation Vote- and radiant conditions in early design stage, a methodology for thermal comfort mapping, guidelines for visual and acoustic comfort in urban spaces.

4.1 Thermal comfort index and nomograms

From field survey and measured data, models for the calculation of ASV where elaborated for the different Cities (Copenhagen, Cambridge, Kassel, Freiburg, Milan, Athens, Thessaloniki), then graphs (nomograms) giving a mean ASV have been plotted, according to a combined ASV model developed for different climatic areas.

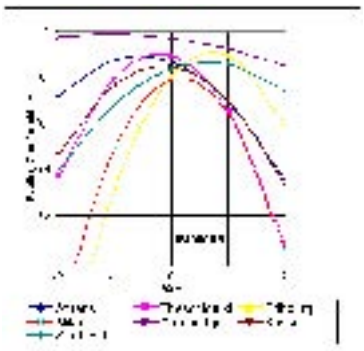


Figure 2: Ratio of people feeling comfortable for different ASVs, for the different cities, in summer

The urban designer can calculate or estimate the ASV value corresponding to the climatic conditions of the area of interest, using either the model's equation or nomograms and then enter this value in a set of curves to obtain the percentage of users that would feel comfortable.

4.2 Simplified evaluation of radiant conditions in urban spaces

A simplified graphic method to evaluate radiant conditions in urban context has been developed on the basis of computer simulations performed using the software Solene (Teller). The output of the method is an approximate evaluation of MRT, which can be easily utilised to calculate comfort indices such as PET or similar.

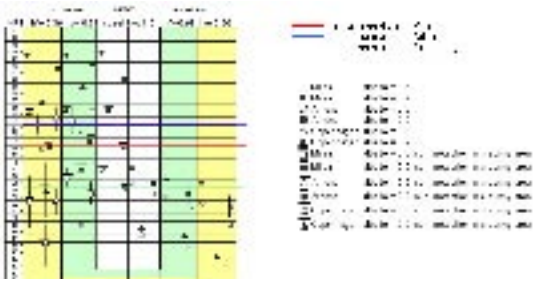


Figure 3: Variation of MRT in the reference streets– EW orientation- in the midday, summer season

The model considers different spatial configurations for street

and square corners. effect. Continuously changing radiant conditions were divided into five periods of the day. For every period the values of MRT in shade or in the sun have been evaluated. In these periods the radiant conditions are considered constant, being the variations controlled by physical and psychological adaptation mechanisms.

4.3 Thermal comfort mapping and zoning

A methodology for drawing microclimatic thermal comfort maps to be applied to any site in a relatively simple and effective way was developed. The main meteorological parameters used are solar radiation and wind : their spatial distribution are mapped with the use of morphological models (i.e. Townscope for short ware radiation), data from city meteo and field measures.
The thermal comfort zones derive from the overlapping of the thematic layers “radiation pattern” and “wind pattern” calibrated by field measures and sky view factor analysis.
From the comfort maps a comparison and assessment between different alternative design conceptions can be achieved, which follows the needs of urban design.
The mapping procedure can be used in different kinds of urban planning processes, especially at the scale of neighbourhood and open space planning.

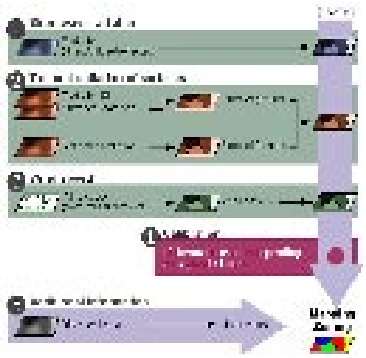


Figure 4: Basic structure of thermal comfort zoning

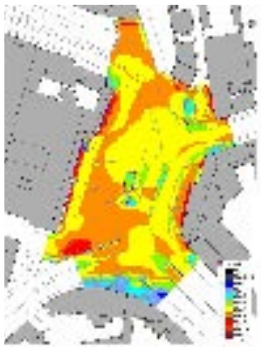
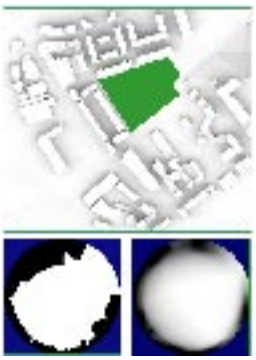


Figure 5: Thermal comfort zoning for Bahnhofsplatz

4.4 Visual comfort in urban spaces

In people’s minds, a successful open space is often associated with a positive visual experience.
Within the RUROS research, “visual comfort” has been addressed using a more technical approach borrowed from lighting design studies. To ensure “visual comfort”, adequate illuminance levels, measured in lux, have to be provided throughout the space, while preventing glare sensations. More precisely, disability or discomfort glare occurs when the field of view contains either great luminance values, measured in cd.m-2, or great luminance contrasts.
The luminous appearance of specific urban space through Europe, defined as Luminous Sensation Vote (LSV) evaluated on a 5- Point scale (from “very dark” to very bright”) was indagated through interviews and measures of illuminance levels.



Surprisingly even with very low illuminance levels very few negative votes were recorded.
Also Daylight penetration within the urban fabric has been recognized as an important quality factor that required means of preservation especially in very dense cities.

Figure 6: (Top) stereographic projection of the obstructions as seen for a single point within the open space shown on the above site plan (coloured in green)
(Bottom) multistereographic projection computed for the whole site. The grey level indicates the site area fraction that has open access to a given direction in the sky vault.

4.5 Sound Environment and Acoustic Comfort in Urban Spaces

Effects of architectural changes and urban design options on the sound field of urban squares have been studied using computer models developed at the University of Sheffield .Typical results are summarised in some graphs considering square size, building height and aspect ratio, as well as boundary absorption. Different graphs give general design advices such as when the square side is doubled the SPL is typically 6-9dB lower in the far field,
Further advises are on the use of green facades façades which increase boundary diffusion of incident sound and also boundary absorption thus reducing noise further. or in improving soundscape quality reducing SPL around 65 dBA do diffuse active and passive soundmark (live music and running water).

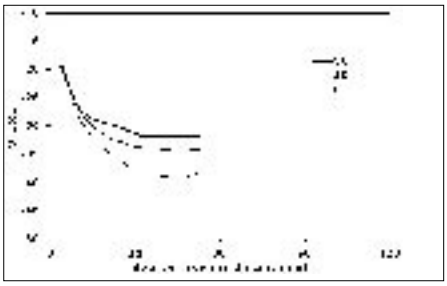


Figure 7 : Effect of square height. The basic square configuration is 50x50m, 20m high, and absorption coefficient 0.1

notes :

1. Energy balance equation indexes based on two node model :
Effective Temperature ET (Gagge et al. 1971), Physiological Equivalent temperature – PET - (Hoppe 1999), New Standard Effective Temperature SET and OUT_SET (J. Picup, R. de Dear, 2000)
Energy balance equation based on one node model :
Perceived Temperature (PT). (Vinet, Jendrintzky)
Thermal Comfort Model (Grupo de Termotecnia)
COMfort FormulA-COMFA, simplified model developed mailny for Landscape use. (Brown and Gillespie)
Universal Thermal Climate Index (UTCI). Is is going to be elaborated by Internatioonal Society of Biometereology and will take into account both physical-physiogical and psicho-logical factors (Hoppe 2002).

2. RUROS : Redescovering Urban Realm in Open Spaces. The project is a part of Key Action 4 “City of Tomorrow and Cultural Heritage” from the programme “Energy, Environment and Sustainable Development” within the Fifth Framework Programme of the EU

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Valuing green structures
The use of hedonic models to assess the influence of green structures on residential property values

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1 Introduction

It has now been recognised that there is a research gap in the field of urban planning where the economics of green structures within cities and urban regions is concerned. By dealing with the issue of the influence of green structures on residential property values, our work tackles one aspect of this wide and important issue. Different techniques can be used to evaluate financially the environmental amenities. Perhaps the most common are travel costs, contingent valuations and hedonic prices (More et al., 1988; Facchini, 1994). In this article we concentrate on a literature review of hedonic price models (HPM).

The fundamental principle of HPM is that the utility provided by heterogeneous goods is based upon the utility yielded by their various characteristics, rather than by the goods themselves (Lancaster, 1966). This idea can be applied to a property by describing it as a vector Z of n attributes (z1 ... zn). When HPM is applied to the study of housing markets, a distinction is made between two types of housing attributes: those that are dwelling-specific (size, number of rooms, etc.) and location-specific (Wilkinson, 1973). Within the location attributes, it has generally been accepted that there is a need to distinguish between global accessibility within the urban field and neighbourhood quality. Neighbourhood quality is a term used to encompass a wide range of influences: measures of local amenities (school, shopping centre, etc.), measures of the socio-economic status of the neighbourhood, and measures of the quality of the residential environment, for example, the view or access to open spaces, such as parks and beaches.
The hedonic theory is based on the idea that, for composite heterogeneous goods, there exists a function P(Z), which, for each good, relates the vector of attributes Z to a price P (Rosen, 1974). This market clearing function is called the hedonic function. In a competitive market, buyers and sellers take the hedonic function as given. In the hedonic theory, the hedonic function results from the interplay between housing supply and demand. The hedonic price function is, therefore, the equilibrium of both the bid prices and offer prices. In this context the hedonic price of a specific attribute does not depend on an intrinsic worth. Rather, this value results from demand and supply interactions on the entire market. Since the price of a property is a consequence of the

price of its housing attributes, P(Z) can be estimated from observations of the prices and attribute "bundles" of different houses. In practice, this can be realised by using the statistical tool of multiple regression.
In this paper, we combine the results of HPM to analyse how attributes related to green elements within the urban environment influence residential prices. The general hypothesis is that green structures have a positive impact on prices. Beyond this central assumption, a major aim of the research is to specify which environmental factors actually contribute the most to the prices or, in other words, contribute the most to the quality of urban life. In this short article, we focus mainly on the results rather than on methodological issues. However, for the interested reader, a longer version of our bibliographic analysis can be found on the website for "Green Structure and Urban Planning" Cost C11 action . In order to keep the present article to a reasonable size, we have chosen not to incorporate the numerous bibliographic references. The cited bibliography is limited, therefore, to a short selection. The longer bibliography is available on the Cost C11 website.

2 The effects and performances of green structures on the basis of HPM literature

As stated in the Introduction, when HPM is applied to study housing markets, a traditional distinction is made between dwelling-specific attributes and location-specific attributes (accessibility and neighbourhood quality). In relation to the effects of green structures, according to the HPM literature the first point to note is that green structures are actually related to both types of attributes. Although most of the studies are related to the neighbourhood scale, several researchers have also tackled the impact of the green elements at the scale of the residential property.
The HPM literature has also found that, like any other land uses, green land uses can actually be a source of both positive and negative influences. Although negative influences related to green structures are generally negligible, it is underlined by the literature that in some circumstances, a green structure can result in a loss of value. For example, some authors state that proper maintenance is essential to sustain the flow of green benefits, since a deteriorating park may become a social sore point within a neighbourhood, and may, as a consequence, prompt decision makers to consider it for non-park development options (More et al., 1988). Similarly, it is also recognised that heavily used public parks may have a negative impact on adjacent houses and may even decrease their prices (Tyrväinen, 1999). In this specific context, negative effects are more important than positive effects.

In terms of positive impacts, our bibliographic review shows that, at the neighbourhood scale, two kinds of performance are usually considered when green structure influences are appraised using HPM: the aesthetic impact, and accessibility as related to recreational benefits.

An important feature of the HPM analysis on the effects and performances of green structure is that they are local, i.e. based on local housing markets, urban structures and cultural preferences. Great caution is needed, therefore, in the transfer of HPM results, since demand varies greatly in different areas of Europe, both in terms of aesthetic performances and recreational performances. For instance, it can be risky to transfer the results of Nordic research on forest aesthetics to central Europe, where demands for quality in urban greens differ as a result of cultural differences and history of land use (Tyrväinen, 1999). Furthermore, as tastes and practices vary, there are also differences in the characteristics that make a recreational site attractive in each country or even region within a country.

3 Aesthetic performances as measured at the scale of the individual property

In the USA, research on the influence of trees as measured on the residential property scale has been conducted since the 1970s (Anderson & H.K. Cordell, 1985 and 1988). This kind of research is related to the dwelling-specific attributes, rather than to location-specific attributes (neighbourhood quality). In terms of performance, it is mostly the aesthetic of green that is assessed, as we expect trees to raise the value of residential property mainly for aesthetic reasons (trees make the property look more attractive). However, trees in the front garden or yard also provide shade, noise abatement, privacy, a wildlife habitat, and wind reduction.
From the research undertaken we can conclude that, for similar houses, a significant change in the tree landscaping of plots can lead to a selling price increase from 5% to 15%. In order to explain this variability the key element seems to be the vegetation abundance in the neighbourhoods. In fact, the lowest increases were found in areas with abundant vegetation in the surroundings. This conclusion is in line with the theoretical meaning of hedonic prices. As stated above, hedonic prices are not actually dependent upon an intrinsic worth, but are dependent on the result of demand and supply interactions. If urban vegetation is abundant, it is consistent with a lower market value, although the intrinsic worth – in terms of quality of life – will continue to be present.
The fact that green aesthetics as measured at the residential property scale has a positive effect on house prices can be related to the important and problematic issue of urban sprawl. This relationship correlates with a residential mobility analysis where the search for natural amenities acts as a centrifugal force within the sprawl process. However, compared with the collective green structures located in traditional urban fabrics, individual greening at the plot scale generates numerous planning problems, since it leads to diffuse urbanisation and low density, rather than to qualitative compactness.

In the USA, because wooded lots sell at higher prices and also more quickly than houses on cleared lots, house builders are now conscious of the added value generated

by trees. Therefore, they have abandoned the practice of clearing all trees from the lot before construction begins. Trees are often left in relatively undisturbed buffer zones between properties, ensuring that a greater proportion survive the construction process. However, only time will tell whether the trees remaining on these lots will survive the numerous stresses and abuses they suffer during the construction process.

According to some American research, tree species were taken into account and the valuation differences between hardwoods and pines analysed. The general conclusion is that hardwoods are slightly more valuable than pines, but that each contributes substantially to property values. Similar results were found in Finland and the UK (Garrod & Willis, 1992a and b; Tyrväinen, 1997), where researchers found a significant positive relationship between broad-leaved woodlands and house prices, but a significant negative relationship between mature coniferous forests and house prices. This situation makes sense in that dense, mature coniferous forests may not be appreciated close to a house in high latitudes, because of the shading effect. The direct conclusion is that environmental benefits could be increased substantially with proper management. Near houses it is better to decrease the relative proportion of mature conifers and plant deciduous or low-growing trees instead.

4 Aesthetic performances at the neighbourhood scale

Some American and European research has concluded that a direct window view onto a park or open space can easily increase house prices by 5% - 10%; it should be noted that these figures are only based on the aesthetic performances and, therefore, do not integrate other impacts on price related to the accessibility to recreational sites. On the other hand, the influence of the specific performance of the direct view cannot be demonstrated in some other research. For instance, an analysis of several Dutch towns sheds some doubts on the impact of the aesthetics of trees, as this hypothesis has only been verified statistically in 5 tests out of 14 case studies (Luttik & Zijlstra, 1997; Luttik, 2000). To understand this ambiguity, it should be noted that the impact hypothesis has not been verified in several cities where the green planning had been very effective. Indeed, as stated above when outlining the theoretical development of HPM, the price of an attribute is not dependent upon an intrinsic worth, but on the result of demand and supply. In the Dutch towns where green structures have been widely developed, it is plausible, therefore, that the abundance of urban green leads to minimising their market value. From this point of view, a negative impact result can be the consequence of effective planning and an absence of green shortage. But despite the decreasing market value, green intrinsic performances related to the quality of urban life are still effective.

The same Dutch study also concluded that water aesthetics had an important impact on price, resulting in a substantial increase in house prices – up to 28% – for houses

with a garden facing water, especially if this water was connected to a sizeable lake. Other research also confirms the important aesthetic impact of water, which also correlates with the findings of landscape psychologists. As water is a highly prized element in the landscape, bodies of water can be recommended readily for inclusion in town development programmes.

Some research developed on the aesthetic performance also tackled the issue of the influence of a park's attributes (More et al., 1988). Here, the major conclusion is that parks that concentrate on open space may be more effective at maximising property values than parks that offer sports facilities. This result underlines the need for the thoughtful landscaping and designing. In fact, design is necessary in order to optimise on site recreational benefits and external aesthetic benefits. Of particular concern is the zone of interaction where the park and its surroundings meet. Buffers of natural vegetation can screen high-use facilities from surrounding properties, both to reduce the negative impacts of use and to enhance the experiential quality for users by screening out traffic sights and sounds.

5 Recreational benefits at the neighbourhood scale

In the reviewed publications, aesthetic performances are rarely differentiated clearly from the recreational benefits. From a methodological point of view, substantial precautions are actually needed to achieve this differentiation. Such precautions have been taken in the study of the Finnish town of Salo (Tyrväinen & Miettinen, 2000), where researchers found an aesthetic impact – related to a window view onto forest – of ± 5% and a recreational impact of ± 6%. When both effects are aggregated, an added value higher than 10% is achieved.
An analysis of Cardiff, Wales also managed to distinguish aesthetic and recreational influences (Orford, 1999). From this research, we observe that both effects seem to have a similar influence on price. In Cardiff it was found that in some of its immediate vicinities, the major city park (Bute Park) leads to a price increase of 40%. However, this very high premium declines rapidly a few streets away, halving to around 20%, when the aesthetic performance has disappeared. Another interesting Cardiff result is the fact that Bute Park's influence is dependent on the neighbourhood's characteristics. More precisely, the research has found that in low-density areas, this influence is much lower than the 40% previously stated. This is consistent with the fact that access to open space is less valued where density is low.

The catchment area of a recreational green structure is dependent on its attributes: the more the structure is attractive, the further people will travel to visit the site. In order to explain the maximum distance people are willing to travel to green spaces, the size is often taken into account. For instance, on the basis of Belgian and French surveys, some maximal distances have been estimated: ± 1,000 meters for a park larger than 30 hectares; ± 500 meters for a park between 10 and 30 hectares; ± 250 meters for a park

smaller than 10 hectares. Theoretically, other attributes also determine the attractiveness of each recreation area, for instance, landscape features, facilities, accessibility and other available areas. Following the hypothesis that the spatial configuration of the influence on price due to a green structure is related to the extent of its catchment area, it is logical to consider that the influence on price will expand with the attractiveness of the park (measured, for instance, by the size). To our knowledge, studies do not exist on the double relationships between the attributes of green structures and the spatial configuration of both the catchment area and house price influence. Nevertheless, some HPM results confirm the likely hypothesis that bigger parks have wider influences. For instance, the results of the Cardiff study show that the impact of green structures on house prices is indeed dependent upon the size of the parks, with the largest park of the city (Bute Park) having a much more important impact than the smaller ones. This analysis is also interesting concerning the influence of the smallest parks, as it shows that very small parks have only a positive influence on those properties with a view of them. As the small parks do not actually offer recreational possibilities, this conclusion validates the concept that it is appropriate to distinguish aesthetic performances from recreational performances.

6 Conclusion

According to the literature review on hedonic models used to assess the influences of green structures on residential property values, the general hypothesis about the positive impact of green is confirmed. More precisely, the fact that green structures are linked positively with utility functions is related to two major kinds of performances: aesthetic performances and recreational performances. Of course, this result strengthens the position of green structure in the policy decision process. However, in the Netherlands, for instance, this general hypothesis has only been partially confirmed, probably owing to the fact that green planning has been significant in that country. As the implicit price is the result of demand and supply, the abundance of urban green leads to a minimising of their market values, although intrinsic performances will, of course, continue to be present.

Beyond the central hypothesis of the positive effect of green structures on property levels, this literature review also enables us to underline some specific environmental factors that contribute to the quality of urban life. For instance, as stated in different researches, the presence of water features seems to be particularly appreciated, which leads to recommendations for the inclusion of bodies of water in town development programmes. The role of park design has also been highlighted. As shown by different HPM research, it is actually useful to create buffers of natural vegetation to reduce the negative impacts of sport and recreational usage. A third green management recommendation relates to the shading effect of certain trees, as HPM studies have shown that coniferous trees should not be planted near houses, and that deciduous or low-growing trees should be used instead.

HPM results can also be analysed in relation to urban sprawl. Firstly, it is interesting to notice that the positive effects of green structures on residential prices confirm the relationship between suburbanisation and searches for natural amenities. Clearly, as households are willing to live in a green environment, this can very easily lead to a diffuse sprawl, if green qualities cannot be found within traditional urban fabrics. At the same time it is also essential to note that, while suburban settlements are triggered by the search for natural amenities and homogeneous green landscapes, new out-of-town developments tend to affect those very features adversely, as they can lead to both the fragmentation and decrease in the percentage of open space available.

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Qualities of agricultural land evaluation of its multifunctionality

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1 Introduction

Experts on regional planning complain about the lack of awareness concerning the economic use of agricultural land. Calls for a better protection of agricultural land have been raised at national and international (Austrian Conference on Regional Planning, OECD), political and scientific levels. A project within an INTERREG IIC project undertaken by the Federal Institute of Agricultural Economics in Vienna contributes to a more sustainable and economic use of agricultural land, which is often seen as just a residual area, after all other social demands on space have been satisfied. The trend towards segregation into regions, with intensive production, and towards extensively used regions, often reducing agricultural purposes to just production, or even giving up agricultural land use altogether - also shows the need for a careful planning system, especially in regions which are under extreme pressure from other land uses. But the agricultural landscape and the green structure have various other functions besides the production of food and raw materials, which should be made clear to the public. For example, the effects of agricultural land use:

- on water and soil are expressed in the Resource Protection Function
- on the protection of objects such as settlements are expressed in the Hazard Damage Protection function
- on the diversity of species are expressed in the Habitat Function
- on the amenity of the landscape and the suitability for recreation are expressed in the Recreation Function
- to segregate different, intrusive exploitations, such as industrial plants near settlements, are expressed in the Spatial Structuring Function.

2 Evaluation model

The sectoral and transnational co-ordinated system of the evaluation of landscape functions shows the effects of agriculture on these functions. It was applied for the evaluation of agricultural areas in the model region of Marchfeld, which is located in the eastern part of Austria, surrounding Vienna. Conflicts are increasing in this region because of different competing land users:

- intensive agricultural production with irrigation
- ground water overloaded with nitrate
- the distribution of woodland and the risk of wind erosion

• expansion of built-up areas near Vienna
• increasing traffic volume
• mining (gravel, oil and gas).

The units used for evaluation are 'agro-functional' land units, which are homogenous in the type of landscape, in natural conditions, in land use and in administration. Because of the complexity of these functions they were divided into 'sub functions', which were evaluated by criteria and indicators. For each agro-functional unit the six agricultural functions were evaluated on a scale of values from 0 to 5 (Figure 1).

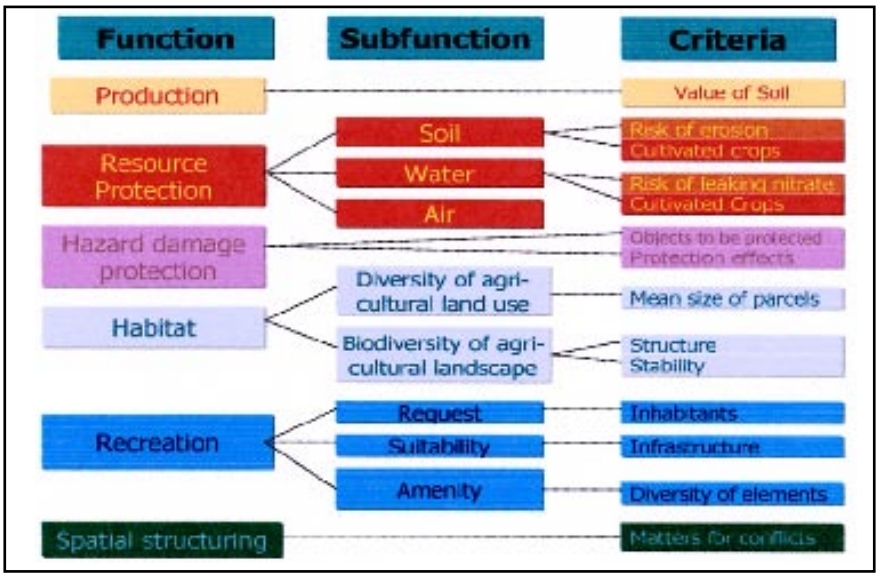

Figure 1: Scheme for evaluation of agricultural areas

2.1 Production

Every agricultural land use that affects monetary earnings must be taken into consideration in the evaluation of production. In the case of the model region, Marchfeld, only the production of feedstuffs and renewable resources plays a major role. In the Austrian soil map 1:25.000 the value of the soil and other indicators such as climate, slope and water conditions are expressed in the indicator soil value for arable land and grassland, which was classified on a scale from 1 to 5 due to the distribution of different soil values in the agro-functional land units. Although production is only one function, it is in a special position because without it all the other functions would disappear, or would have a completely different look.

2.2 Resource protection

Resource protection has been divided into an evaluation of the protection of soil, water and air. The natural conditions, for example, the risks of erosion and of leaking, precipitation and slope have been viewed in conjunction with the given agricultural land use, differentiated in specific land-use groups and indicating areas at lower or higher risk of soil erosion or leaking. Combining these indicators gives pointers to the positive or negative contribution made by agriculture to the protection of resources.

2.3 Hazard damage protection

Hazard damage protection should be evaluated from the point of view of objects that have to be protected, for example, from avalanches, landslides, falling rocks, flooding, and wind. This function is more important in the evaluation of forests and also more important in other regions than in the model region. So the contribution of agricultural land use was low throughout all the land units under evaluation.

2.4 Habitat function

The evaluation of the habitat function has been based both on an assessment of the diversity of land use in the agricultural areas, using the number of different fields in the land units as an indicator, and on an evaluation of the biodiversity of the agricultural landscape, using the structure and stability as indicators (number and age of landscape elements).

2.5 Recreation

This function has been evaluated based on the demand for recreational areas (dependent on the number of inhabitants in the surrounding land units) and on the suitability or attraction of the land units for recreation (dependent on the landscape elements and boundaries).

2.6 Spatial structure

The function of spatial structuring includes aspects of the arrangement of different land uses and the need for visual or spatial buffer zones, and has been evaluated due to the length of borderlines of different land uses, which include a potential for conflict.

3 Results

Figure 2 shows a compilation of the agricultural evaluation of all functions for the 24 agro-functional land units in the region of Marchfeld. Even in this small project region (seven communities), which is quite homogeneous in land use and landscape compared to other regions, significant differences in the importance and intensity of the functions occur.

- In the northeastern part (hilly zones in Auersthal) the functions are very much linked. The functions of production, habitat and recreation, and the function of space structure score highly.
- But in Weikendorf (higher terrace) only the function of production is of high value. In this case the agricultural and regional policy should determine whether measures should be taken to increase the value of other functions.
- In the surrounding areas of settlements the functions of recreation and of space structure have a higher priority. In some cases the function of production is given a very low priority, but the high values of the other functions indicate the considerable importance of such open areas among built-up areas and woodland.

The results of this uniform and integrated evaluation process of agriculture, forestry and water management are compiled in a common map, as a contribution towards maintaining the different functions of landscape and to avoid conflict between the different land use categories. The evaluation process can also be a basis for discussion of future developments, for the harmonisation of sectoral policies and for the simulation of the effects of different land use scenarios, such as reforestation at the scale of 1:50,000.

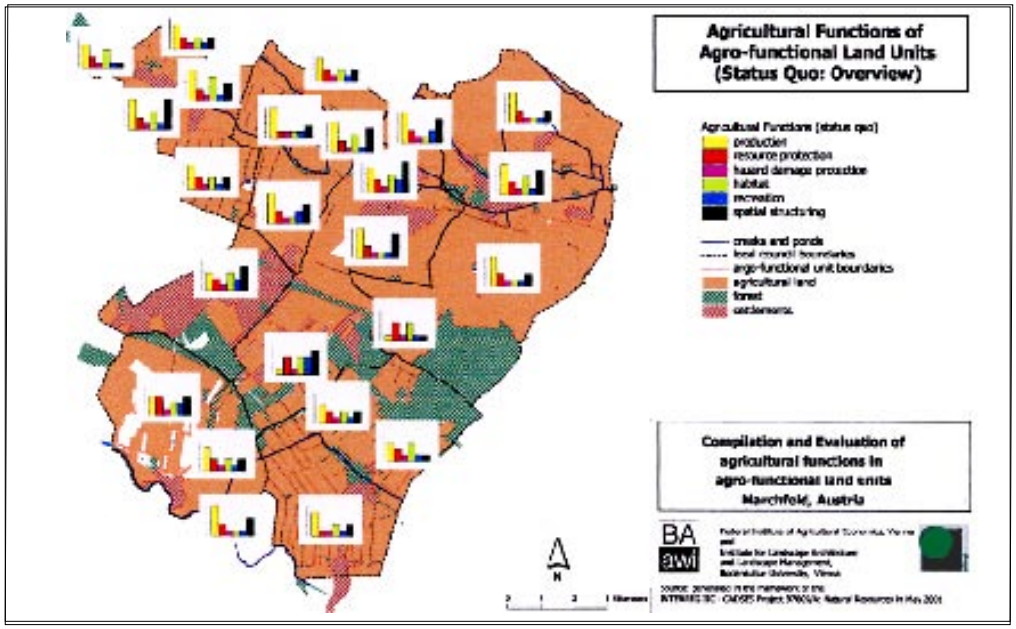

Figure 2 : Results of evaluation of agro-functional land units

In an international context a more general approach to the evaluation process needs to be adopted to facilitate the assessment of various green spaces with all their functions. International and inter-sectoral agreed functions provide the overall link to express and compare the social value of green structures.
For more information about the international project, Natural Resources, see http: //www.naturalresources.de/

4 The experiences of the COST C11 working group

Agricultural areas serve various purposes. Nowadays globalisation makes us careless about our food supply: it will be produced somewhere in the world. But if we think about the projected increase in the world population, this will not necessarily be the case in say 50 or 100 years' time. The same applies where food safety and animal welfare, and regional cycles for sustainability are concerned. Therefore, one important aspect in the discussion of green structures is the protection of natural resources, not only for ecological reasons, but also with a view to saving at least the remaining

resources with potential for food supply. In addition, the production of food and raw materials provides a link to the other functions mentioned in Section 2.; their interdependence needs to be borne in mind.

The preservation of open spaces always focuses on economic constraints. Green spaces in cities can only be kept if there are no more important economic interests in these areas. For instance:

• if they cannot be built on because of natural conditions, as in Sheffield
• if they are conserved because of private interest with adequate capital in the background, as in the case of the bastides in Marseilles, or
• when they become natural areas again once the economic interest in the areas has declined, as happened in the areas of the steel industry in Sheffield and the soda industry in Marseilles.

Therefore, not only has the economic value of the land to be documented very clearly, but also the overall ecological and social value of green spaces, in arguing for their conservation or management. Only then does the community have the political background to retain green spaces, especially agricultural areas, on 'strategic' sites: for example, the agricultural areas in the city of Breda, which can only be managed because the city bought these areas of high interest for ideological reasons (teaching, therapy, and awareness of nature and food production).

The market regulates the landscape management and the conservation of the amenity of the landscape only in regions of special economic interest (for example, tourism). When tourism is not a driving force, then current social and environmental problems can be tackled together to enable satisfactory solutions to be achieved in the case of landscape management and the unemployed (for example, in the U.K. and France). But this works only within a relatively stable economic framework, because in times of recession clothes and food are regarded as more important than a well-tended lawn.

Green spaces are subject to mid and long-term trends and have to be adapted in their use and design accordingly. Changes in use take place automatically, but with some planning and managing the new structures will be more efficient and better adapted. This concerns the change of use from built-up areas to green spaces and also the different uses within the categories of green spaces, for example, from agricultural areas to parks or golf courses, from keeping cattle to keeping horses, and from meadows or cereals to more intensive fruit and vegetable growing in the urban fringe.

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The greenery in some French new towns

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1 New towns in French planning

1.1 Background

In the 1960s the French government decided to create new towns. "*The drawing up of Structure Plans for Paris and others large French metropolitan areas shows the necessity of creating really new urban settlements in order to create a human, well-functioning and controlled urban development*," stated the Prime Minister Georges Pompidou (4/04/1966).

This major action addressed such questions as traffic jams in the capital, underground utilities in the outskirts, speculation with rising land prices, and, above all, the need to create a better liveability for inhabitants and relationships with a pleasant environment and places of leisure. The strategy of new towns involved experimenting with the renewing of practices (in civic design, in management) and tools.

Five new towns exist in the Paris region and four in the other Regions, close to large cities. The Parisian new towns are thirty kilometres from the centre of Paris, near water-leisure centres located on the rivers and adjacent to motorways junctions.

The views on the Regional reshaping have proved to be relevant: they had an effective role in addressing metropolitan congestion and general spatial segregation, with the result that a balanced development was ensured and new towns are now urban centres for very large perimeters.

The new towns are structured bodies, neither satellites nor autonomous, but rather they now form a planned nucleus in a polycentric city-region, offering good accessibility, dynamics in the employment market, and a large range of amenities.

1.2 The major part played by State in the creation of real towns

New towns were created before the laws on decentralisation intervened. Municipalities were not convinced about such an approach in which, moreover, they were losing some of their own power in urban planning. They felt reluctant about the State's involvement in laying-out and planning the space, and were concerned about the high density designated for the housing stock of the town centres; they wanted to regain their full role. The State maintained its leadership of the development, however, organising the overall strategy and designating the perimeters for the built-up area and also for the provision of green belt status for each new town, in effect taking decisions for the whole project. This role was made easier by direct central government investment or

funding and by specific legal, administrative and financial tools, which proved highly effective.
Protected Regional Natural Parks were also created adjacent to the new towns.
Two of the Parisian parks are focused on here, in particular as they relate to green structures and urban planning, as these topics formed a major part of the innovative ideas that were developed and yet had not been studied in depth.

1.3 Well-organised towns

The challenge at the outset was to create significant urban nodes located on flat cultivated land, in large greened areas dominating the rivers. The centres were built according to functional 'rigid' drawings, alternating strong pieces of architecture with corridors for traffic and green spaces. The tower blocks of apartments, with innovative architectural forms, were a testimony to the strong assumption of modern values and the need to encourage use of public transport and local amenities; the numerous green parks and natural spaces were meant to demonstrate that the urban nodes were each separate from one another. The backbone of the urban settlements was the new system of major roads designed by engineers with whom the planners had to combine, and which gave that rigid shape that was difficult to overcome afterwards. 'Greenways' free from cars were included in the first new build; these have retained their qualities in daily life.

1.4 Difficulties, especially in social development

New towns had difficulties to overcome from the beginning. The planners' view was to have high density and modern architecture in the town centre, resulting in a vibrant inner city where many people would live together (and where people could promenade side by side in the outdoor spaces). This idealistic view had stiff competition from the overwhelming success of owner-occupier detached houses, also favoured by State policy. Due to this competition and to a long period of economic depression, selling the flats in tower blocks proved to be difficult and increasingly the given balance between social housing and the free market, and between rented and owner-occupied property was not respected. As a result, the apartment blocks in high-density central neighbourhoods are now more dedicated to low-income residents than had been predicted. New towns in general are above the regional average in the proportion of less well-off residents, a development that has resulted in some quarters in poverty (with the local population experiencing difficulties including unemployment, unrest and feelings of insecurity), which is being combated but nevertheless is responsible for an overall false perception about urban density and the compact city.

2 Features of the new towns: high density and green at the same time

2.1 Not as high density as usually thought

Residents view new towns as high-density localities (almost too much so), which is

not actually true according to the number of inhabitants and jobs per hectare. The sense of high density comes from the vistas of tall buildings and housing blocks with a similar number of residents per block. Tall buildings that are seemingly hallmarks in some town centres have been caught up in the confusion between high density, the poverty of the residents and the lack of comfort in the actual housing. This has led to a global misjudgement about high density. The overall average density is low compared to Paris, a continuous built canvas, which, with an average of five-storied blocks and a lot of jobs available, has double the number of city dwellers/jobs compared to the most high-density of new towns.
Urban density could not be adopted to the extent that had been planned originally, in the implemented forms that are now criticised. Subject to a good level of public utilities, densification could be experimented within the new towns on the land still available for urbanisation, but it was mainly viewed with suspicion locally.
Another hallmark the density of new towns related to the high internal density of housing (several members per family per dwelling). The number of large families living there was the highest in the Ile-de-France Region (3.09 residents per dwelling in 1999).

2.2 A central part played by the green structure

The increasing need for nearby green spaces and leisure-places was foreseen. The greenspace provision was regarded as important. 50-100 square metres of green surface per capita was required and greenery was to be widely dispersed: parks reaching the centre, large treed avenues, numerous small greened squares, green corridors separating the neighbourhoods and preserved cultivation surrounding the whole area.
Due to the paradoxical elements: tall, landmark buildings in the centre, the omnipresence of green, residents felt uncomfortable when having to give an overall image of their cities and to choose between saying whether they were high density (pejorative) or green (valuable). Both points of view expressed their feelings.
Furthermore, the large extent of green spaces integrated within the most high-density sectors was not in itself a factor of quality of life: the green spaces themselves could not counteract the all too obvious urban design and architecture. The ‘rigid’ appearance dominated. In addition, the large urban parks very close to the less well-off residents created problems, since they were viewed as part of the ‘out of favour’ area by other residents, and so they did not provide as many opportunities for relaxation as envisaged.

2.3 New towns have an acquired knowledge about the compact urban fabric and comfort

Several models of the urban fabric were tested (with layout principles and densities varying from one new town to another), in order to get varied neighbourhoods and to get a balance between blocks of apartments and one-family houses (not rejected but with no suburban sprawl), with a strong requirement for the green qualities necessary for both forms of housing to value urban comfort in modern life.

The many options about neighbourhoods and green advantages in housing were quoted as good conditions by all inhabitants – both the well-off and the poorest families – as shown in research studies.

3 Green structure and human issues: findings from Evry and Cergy, two of the Parisian new towns

3.1 Global findings, green components are part of the qualities

The green structures of the new towns are highly regarded, demonstrating a well-designed environment. They are not the hallmark of a new town but contribute to its liveability and strengthen the image of some popular sectors, even if they cannot do much to help those out of favour (see section 1 above).

In contrast to most of the planning principles of the original concept, which gave a rigid urban form and were abandoned and replaced by a traditional urban canvas, (making architecture, new streets and public spaces look like the Parisian's ones and mixing pedestrians and cars), the large provision of green spaces and the way of using green components has proved long lasting. Real, separate parks (not just green wedges surrounding housing blocks), pocket gardens for the use of nearby residents, green corridors (cultivated, treed or natural) with greenways allowing cycling or walking, are all means for improving the quality of life. Road aesthetics, also widely used, may emphasise an image of a tidy and green city if done well, slowing traffic down and not fragmenting the urban canvas.

Giving green character is nonetheless transforming nowadays: there is more use made of the site's values, of the existing green lines, to correct the anonymous image (the international style favoured in the 1970s) and to retain some cultural features. For example, reinforcing the link to the river and re-creating orchard and meadow grassland, or having a harbour, with cafés and restaurants making it a most attractive place.

What was also very relevant in the planning and was successful in the making of the place was the importance of creating leisure opportunities, of all kinds. For relaxation, sport, fun and games, whether based on the river or enjoying large landscapes and quiet rural preserved environments within the Natural Parks (one is within touching distance of Cergy: the 'Vexin français', offering various opportunities for walking and entertainment. There is not one in Evry, but the new town owns a protected green belt and is not far from two large forests open to the public). The context of natural and cultivated surroundings continues to be one of the main attractive features of the new towns.

3.2 Human issues resulting from the research : qualities noted by residents

• Balconies increase the overall feeling of well-being

Large balconies were common in the first generation housing blocks, supposedly substituting for the advantages of a small garden by saving the soil. An innovative

architectural programme of high-density apartments, built in 1972, all social (rented) housing by then, ranged from six to eleven storeys (and 242 inhabitants per hectare). Some blocks comprised two hundred dwellings, leading to considerable management difficulties in the common entrances and stairs, and a global negative assessment. On the other hand, these dwellings were said to be particularly pleasant because of the provision of a balcony, an external room of fourteen square metres, with a good feeling of privacy (because of skilled design work on the base plan). The interviewed residents highlighted the main advantages of the balconies as being an increase in the liveability of the dwelling and an improvement in their general well-being. They spoke of having a real rest due to:

- facilitating a special contact with nature
- giving the opportunity for a personal touch in decoration and gardening (not commonly provided in rented flats)
- keeping some distance from the next-door neighbours of the blocks (important when there was too little social mix and many noisy youngsters).

• A large range of green is valued in the urban environment

The vocabulary used to describe 'green' in the specific development process of the new town was extensive (trees along streets or promenades, hedges or shrubs separating the paths from the roads, cultivated land, woods and lawn occupying the corridors, allotments, orchards, etc.) It was much appreciated. All this green was said by the different residents (of flats or houses, in ownership or rented housing) to be improving the climate (less hot in summer) and the air quality. River banks were also valued highly in everyday life.

• External spaces nearby improve housing conditions

The diversity in size and arrangement of gardens and green areas nearby was regarded as a luxury. The wide range of external spaces, private, semi-public or public, small or large, covered by grass, wooded or farmland, for recreation or contemplation, sometimes dedicated to a special use (for example, a kindergarten or sport), did bring to all kind of residents a better sense of liveability, inasmuch as it was to be found in the proximity of homes or not far away and well connected by green networks, especially important for kindergartens, and places to play games.

All residents approved of:

- the cycle tracks and pedestrian network, greened, for safety and pleasure, even enabling the creation of personal links between the people and the trees.
- the urban integration. The greenery of the new town allied with the image of large, low-density parts, was quite an idealistic image for a considerable range of residents. The extended view of farmland outside the perimeter of the new town was said to help people to "breathe". The generally green aspect made it easier for people coming from the countryside or the provincial towns to adapt to the large metropolis. New towns were often their first residence in the Paris Region.

• in addition to their usual roles, the large parks were good places to send youngsters, away from high-density or low-rise housing and preventing conflicts due to noise and constant movement.

• Some types of green spaces influence social relations, depending on the type of dwellings and the lay out

High-density/low-rise urban forms were experimented with quite widely and with success in the new towns, although the idea itself was somewhat rejected by the inhabitants (terraced houses are uncommon in France; urban traditional forms are mainly blocks of apartments or detached houses, a deep-seated tradition).

These forms combine the advantages of individual green spaces, a nice environment and social relations. In one of these units (small blocks of flats, some looking like terraced houses, 206 inhabitants per hectare), the existing private gardens were too tiny for children's games, for having friends or relatives, or even for growing vegetables. But they were an important means of enlarging the dwellings, being an extra 'room' for dirty work, to enjoy fine weather on your own, to fill with flowers (they were often densely filled, even with small ponds and lots of flowers). The best way to benefit was just to look, because in these spaces you could hear a lot of talking outside. Public grounds in the vicinity were the real place for games and social relations. A public square, usually a hard surface and centrally located in the lay out of the plan, and where shops and the bus stop were, was quoted as being the 'heart' of the unit, giving the neighbourhood the importance of a village. The elderly spent time there, whereas children played and congregated in the streets and on the large pedestrian paths. Residents spoke of having both the qualities of a social life and of the natural environment.

Numerous semi-public small green squares provide facilities for mothers and children. Most sectors of the new towns are built on the model of small neighbourhoods and divided into small units arranged around semi-public green spaces. Flats for large

French new towns of Evry (the so-called 'Pyramids buildings') and Cergy-Pontoise (public open space of 'Le Grand Axe')

families facing these plots of green allowed the residents to let young children play outside, even when going out to do some local shopping (asking other local people to keep a keen eye on them). Such social relations involved families living in the same squares and were limited by close proximity.
Only larger gardens in low-density areas of the new town (around 37 inhabitants per hectare) were used as a playground for the children (where they could invite their friends), and for social contacts (having relatives for a barbecue, etc.). They gave a higher level of pleasure and comfort, even if they did not provide the total quietness that families had thought before coming. These gardens were less of a display, being full of grass and trees, including fruit trees, and with green hedges. Social relations existed between families, inviting the others for a drink and so on. Children could feel alone or isolated, however (and also some of the occupiers); home life could be difficult when both parents worked.

• Satisfaction for the green spaces but a desire to move when living in some of the social dwellings

In some way, new towns propose an urban life in high-density cities minimising the 'inorganic' aspects of the environment and offering individual and collective activities in green areas.
The interviews undertaken by different types of families and in varying dwellings, flats and individual houses, both cheap and expensive, showed satisfaction about green structures. The social housing benefited from the advantages of a small area of external space (garden or balcony) and of useful vegetated public spaces, which were appreciated by a large range of residents.

The burden of too many social problems had become predominant in the high-density social housing blocks of some neighbourhoods. When housed there, families said that they would move as soon as they could afford it. Some of the lower- density developments were more highly regarded. Yet some recent developments involving flats to rent or property where the social composition was balanced carefully and urban forms were skilfully mixed, show the way of having compact and attractive cities.

Conclusion : Green structure cannot cure all problems

To conclude it can be said that new towns accelerated the making of greener cities, invented new procedures for regional planning, were a broad field for experimentation, and they found the way to provide varied private, public or semi-public green spaces even in high-density housing and are still relevant places to learn from today. They produced insights into a rich vocabulary for 'green' and in pleasant surroundings and natural spaces at people's disposal, and improving living conditions. But, when social difficulties are particularly severe, the green qualities of the environment are not sufficient to help.

Annex
Data on the two new towns of Evry and Cergy-Pontoise

Statistics 1999 (1)	EVRY	CERGY-PONTOISE
Number of inhabitants	80,500	178,700
Density of inhabitants per hectare (1999)	26.4	22
Total perimeter of new town (hectares)	3,049	8,102
Surface for parks	280.9 (9.2%)	1245.8 (15.4%)
Surface for blocks of flats	314 (10%)	326,3 (4%)
Surface for individuals	416 (13%)	1888.6 (23%)
Cultivated land	501.7	1838.3
Surface of large infrastructures	325.7	248.7

(1. from the board for new towns)

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Urban planning for a quality dense green structure, Stockholm sociotop map and park programme

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1 Complex planning conditions

Sweden's capital Stockholm is today recognised as one of the most attractive and beautiful metropolitan areas in Europe. Politics say, "save" and "grow". This is the situation urban planners face: "promote urban growth while sustaining the city's attractivity". This challenge is solved, and not solved, differently on different planning levels. In the Stockholm Regional Plan (RUFS 2001) regional nodes for development are identified as well as the important regional green structure: the "green wedges" that connect the countryside with city centre. The "wedge" concept stands in clear conflict with the Regional Plan's highway plans. The Stockholm City Plan (ÖP-99) for the central municipality says, "build the city inwards", which is an overall in-fill strategy in semi central brownfields and public transport nodes. The City Plan also contains enhancing the characteristic cityscape and saving the existing green structure. The City Plan does not say anything about how a new green structure can be changed or should be developed. On the local level detailed plans for single plots, (so called "voids") are developed, often on green spaces, promoted by building companies, but with a clear lack of understanding of the local public.

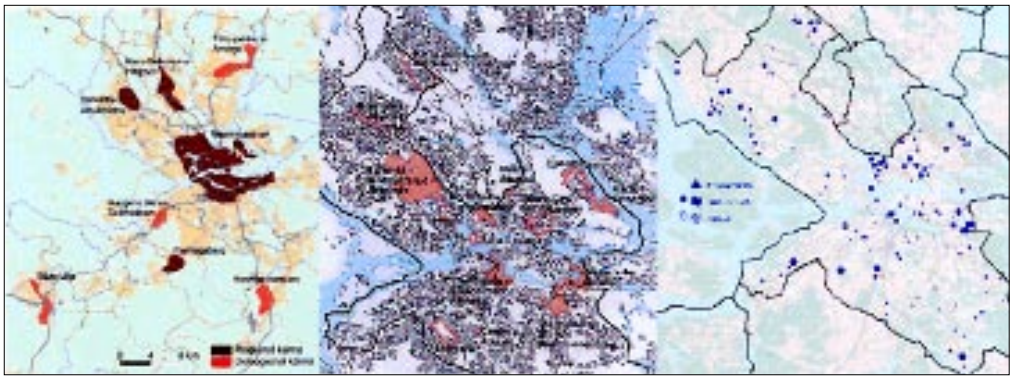

Fig 1. Development areas in the Regional plan, the City plan and Local plans

2 Planning policies based on public dialogue

What is missing in urban planning today is thus, an interface between municipal and local planning levels and constructive dialogue with stakeholders and the public, especially about green structure. A green structure that will be affected by the planned regional and municipal development, and not thoroughly planned local plot developments. To face this complex polarisation of urban interests (save and/or grow) the Stockholm municipality is developing new planning guidelines, a Park Programme, partly based on new concepts for public interests, the "sociotop". The Sociotop Map is developed from public dialogue, and made for planning on city district level (scale 1:10 000), connecting municipal and local levels, city plan and detailed plans. The urban (green structure) planning is with these tools made to focus on qualities and possibilities of developing qualities, to deal with growth and open up for qualitative change.

3 The sociotop idea and mapping method

The "sociotop" concept was developed by me and my colleague Anders Sandberg at the Strategic Department of the Planning Administration in Stockholm in 2000 [1], to complement the accepted concept of the "biotop" (ecologically defined environment). We preliminary define sociotop, with support from environmental psychology, social anthropology, architecture theory, and phenomenology, as "The commonly experienced and used (life world) place of a specific culture". The concept raises the questions "For whom?", "For what?" and "Where?". A sociotop map of a city district describes the common everyday life qualities of open space, green, grey or blue, public or private. The "specific culture" is in this case the citizens of Stockholm. The map is created in the following way:

1) First open spaces > 1 ha are defined and named, on basis of basic city-landscape categories like parks, nature, squares, shores and quays. Also open spaces < 1ha in built-up areas are defined depending on density.

2) Secondly, professionals (landscape architects) value the open spaces by observation with protocols, developed from international and national research on open space life and evaluations. Park experts as for example park- and garden historians are also engaged.

3) Thirdly, the citizens get the opportunity to value their parks and influence the Sociotop Map through several "dialogue activities", partly administered by the city district administrations. On short questionnaires about "favourite outdoor places" posted to adults and personnel at day nurseries and pre-schools, published in the local news paper, webbforms at the city district's websites, interviews and focus groups with youths, adults and elderly people the different place qualities of the public are collected. Environmental psychologist Maria Nordström at Stockholm University

developed the latest questionnaires and interview guides. Since 1996 the Stockholm municipality has carried out 30 inquiries on park and open space qualities and use.

4) This dialogue information is compiled together with the professional registrations into 20 quality-concepts or "socio-cultural values". Then every specific place is registered with its specific composition of values into a sociotop map. The compilation of public and expert place information is done through various cross-checkings, place to place, quality to quality. The quality-concepts are deliberately made to a simple everyday language (e.g. play, picnic, swimming etc) to work as an interface, a tool for communication, between the "public" and the "planner". The GIS-based map can now be used for green structure analyses in various urban planning projects.

4 Parks and nature support urban life

Our investigations of the public opinion and peoples activities confirm that parks and nature in the city support urban life. Green space supplies the citizens with life qualities on shorter (play, peacefulness etc.) and longer (forests, events etc.), distances. Municipal decisions, mass media, as well as scientific and municipal inquiries suggest that this will also be the case in the city's metropolitan future, that there will be a need of:

- peace and relaxation for stressed urban inhabitants,
- a diversity of public meeting places for cultural integration,
- a "second" living room for people in confined quarters,
- places for informal meetings and reflection for businessmen and researchers,
- places for the non-organised sports for spontaneous activities that complement the organised elite,
- activity space for a sedentary and over-weight city population,
- environments for children to discover the world,
- active and social places for youths,
- understanding of ecology, climate and our biological heredity in a world dominated by the computer screen,
- cleaning the polluted city air,
- maintaining historical places and developing local identity of the place to counter globalisation, and
- creating public arenas for contemporary art and garden design.

All this can support the city and constitute the basis for economic growth, if also accessibility, safety and comfort are taken into account. People and businesses will choose Stockholm, not only for work, shopping, culture and service, but also because the city has a good distribution of open space, parks and nature.

5 In-fills mean new green structure

An attractive growing city creates a pressure on urban planning and in-fill strategies.

The common response of the public to in-fills is green area protection and conservation, which is an expression of the areas' great importance. But it is not possible, nor desirable, to conserve a city, as it is constantly changing and growing. In-fills and new dwellings must be related to the supply of open space qualities of a project's surroundings and of a city district as a hole. Urban planners and park planners must look at green space as changeable and moveable, and possible to reconstruct. By reshaping and creating new green structure at the same time as new buildings and roads are built, the urban environment can gain in quality, even if the quantity of green space is reduced. The fact is that buildings (and the people in them) can favour parks as meeting places, but also create peacefulness, if located as noise abatement against heavy traffic. It is all about making a quality denser city. That kind of city has a good distribution of open space because open space make the city into a diversified environment for many lifestyles. Good parks in the inner city also counteract "urban sprawl", which affect many European cities today.

6 Policies and guidelines in the park programme

The Stockholm Park Programme (under developement 2003) is a comprehensive policy and strategy for green space development, partly based on the sociotop-map, and designed to be an integrated tool in urban planning and design.

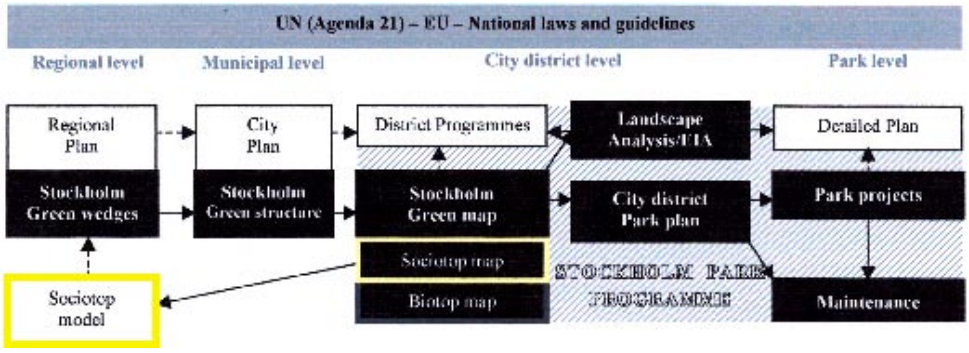

Fig.2 Stockholm Green Structure Planning System

The Park Programme has three main goals: 1) good distribution of parks, 2) sustainable park environment and 3) rich park culture. The first goal is turned into dynamic planning guidelines of two sorts, qualitative and quantitative. The quantitative guidelines (B) summarises policies and recommendations from the European commission's Expert Group on the Urban Environment, the Nordic Council of Ministers, the National Board of Housing, Building and Planning and the Office of Regional Planning and Urban Transportation in Stockholm. The qualitative guidelines (A) are from the Sociotop work in Stockholm, and can be regarded as adapting the European, national and regional guidelines to the local context.

A) Quality dense...
Within 200 m (very close): green oasis, play, peacefulness, sit in the sun, walking
Within 500 m (close): flowers, lively place, picnic, soccer
Within 1 km (on distance): swimming, farming, events, fishing, sledge slope, skating, forest, history, view, water contact, wild nature

B) ...green structure
Within 1 km – Nature reserve >50ha
Within 500 m – City district park 5-50ha,
Within 200 m – Park block 1-5ha

These guidelines can promote the discussion in the urban planning process about how a good distribution of park qualities is fulfilled and what spaces and which places are needed for this object. The overall goal should be a quality dense green structure. Three main strategies are described in the Park Programme, to reach this goal. The first is expansion, which means expanding open space due to lack of space for developing qualities. Second is concentration, which means renewing existing open space and/or reducing the amount of open space while improving the left over open space. Concentration has also to do with increasing accessibility, which concerns possibilities to reach a place (e.g. children), the public character of the place (e.g. economical interests) and the possibility to walk through the place (e.g. handicapped). The last is maintenance, which means maintaining well functioning spaces and structures.

Experience show that some qualities, open spaces, need specific locations such as swimming and view. Qualities like peacefulness and childrens' playing are difficult to superimpose in a park and demand specific spaces. Sunbathing and walking can on the other hand be more easily integrated into a park. Now, quality dense parks become attractive, which creates high attendance rates, which increases wear and tear. Sustainability is thus dependent on park size and maintenance. If the green areas are to remain green and retain their qualities they have to be big enough. At the same time they have to be a part of a well-connected green structure to be accessible and simultaneously function as a sustainable ecosystem. Qualified maintenance is crucial.

7 Co-ordination and dialogue between stakeholders

There are many stakeholders that run the public green areas in Stockholm today. Future green structure planning, projects and maintenance thus demands a dynamic dialogue between politicians, administrators, keepers, experts and the public to ensure a quality dense green structure. It is a question of co-operation and mutual understanding. It is no use building a good park if it is not kept well, and it is no use maintaining a bad park. The users first of all decide what is "good" or "bad".

8 Work in progress and future

The Sociotop Map and the Park Programme guidelines have already been used in several urban planning projects. In the NW Kungsholmen area (a – brown field - development area defined in the City Plan, also a part of an inner city district) analyses of the "supply of parks" where made. They resulted in a proposed new park at the waterfront (today a parking lot, first meant to be housing) and new dwellings (on existing green space) along a highway to reduce traffic noise in a reduced, but improved park. In one case where the urban planners did not take the Sociotop Map in to consideration (they suggested housing on a very valuable park), the public response to the plan was so fierce that the planners had to withdraw their proposal.

Another example is a fill-in project in the old hospital area of Sabbatsberg in the inner city, where the park beside the area of development had to be improved, with a higher density of qualities, due to green space reduction in the city district as a hole. Finally, analyses of the dense inner city district of Östermalm (liked by the "urbanist"-architects) showed that the city district basically fulfilled the guidelines, which is a due to a good green structure (planning) [2].

Fig.3 Proposals for NW Kungsholmen before (left) and after (right) the sociotopwork.

notes :

1.The sociotop concept has also been used by the swedish social psychologist Lars Dencik to describe children's social life space, networks etc. It has also been used by the German landscape architect Werner Nohl to describe types of urban settlements and their social structure. Both scientists say that they have used the concept within their own research and that there does not exist any commonly or scientifically accepted definition.

2. The sociotop model has begun to get attention in other Urban Planning Administrations in Sweden. E.g. the sociotop-model is starting to be used and promoted by the Office of Regional Planning and Urban Transportation as a planning tool for the "green wedges". (See the report "Upplevelsevärden", in Swedish.) The municipality of the second biggest city in Sweden Gothenburg has recently started to make a sociotop map, that in the long run will result in a new locally based park programme for urban development. Six or seven other municipalities are discussing to begin a sociotop mapping. In Stockholm up until today about 10 maps/

plans/projects has been carried out with the sociotop map and model as a base. Around 20 are planned or on going in September 2002.

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A green-network
The integration of the green structure and the non motorized transport modes' network

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Introduction

Many researches were funded by the European Commission to promote sustainable mobility in the IV and V F.P.; some were related to the improvement of the urban structure to promote non motorized transport modes, and in particular cycling and walking, for covering short distances inside the cities. [1]

In the first researches, safety was the most deepened aspect, while the other requirements were touched only on the surface, but the latest researches went much more in depth on the issue, trying to understand what had to be changed in the urban environment to make it more suitable to pedestrians' and cyclists' expectations.

In these few notes, I'll deal with pedestrian mobility themes, focusing on the relation between natural features and walking environment, to point out which is the role that the green structure, under its many different forms, plays, or could play, for improving such urban outdoor spaces.

I will point out which are the main problems related to this aspect, and the suggested solutions, referring to some of the results of the researches I have participated to, and in particular of PROMPT.[2]

It is necessary a premise: here walking is not considered as a leisure activity but as a transport mode and the "human issues" perspective is considered, instrumentally, as the leading one.

The methodology

To understand which were the most important aspects to face first, it was used a double approach: a technical one matched with a social sciences one, that makes possible to check the consistency among experts' and users' points of view, between objective data and subjective feelings. Therefore, for understanding which are the actual problems, and also eventual qualities, various methods and tools, from rigorous scientific criteria to subjective assessments, depending on the case, were applied in selected case studies.

The methodology obviously is based on the collaboration of experts with different backgrounds and on the interfacing of the techniques used in the various fields involved in the project.

By the analysis of various requirement classes and environment performances: acces-

sibility, safety, comfort, attractiveness and offer of intermodality, and by the interface between demand and offer, many detailed problems came out; an interrelation matrix highlighted their recurrence and eventual interferences, showing how to group them in classes of problems; these classes contain at the same time the physical, social and psychological issues, which contribute to the inappropriateness of the pedestrian urban environment. Such grouping takes to think in an holistic way to solutions satisfying contemporarily different requirements and involving various features of the outdoor environment.

The problem: the lack or insufficiency of natural features

Among the various classes of problems, one is strictly connected to the topic at hand: "lack or insufficiency of natural features". Such shortage was detected by the researchers on the base of survey and data analysis and through the involvement, by various means, of the dwellers. From the experts' enquiry resulted that: the percentage of green areas (parks and gardens; trees, bushes, hedges, green surfaces along the paths) in some case was not adequate; the distance of the parks from the residences was sometimes too long to be walked easily; the green spaces didn't constitute a structure and the density of the green network, if existing, was very low; generally, the green value of the places was not enhanced by proper lighting at night; the greenery was not characterized by a good variety of species; the quiet paths in the nature were missing or were straight and long, without sense of space; the water sources were lacking or had a bad aspect; the maintenance of all the green or blue spaces was very low; and finally, there was a lack of animal life.

The dwellers detected most of the over said problems, underlining the lack of vegetation in general and, for the existing green areas, their distance from home, their design sometime too formal to be used, the lack or bad look of water sources, but above all the scarce lighting and the lack of security, the lack of maintenance and the invasion of dog droppings, the lack of drinking fountains. People's mental maps and in depth interviews put clearly in evidence also the various roles played by the green factor, when present.
The "lack or insufficiency of natural features" has some relation with other classes of problems as: "shortage of pedestrian spaces physically and socially appropriate"; "low maintenance and management of open spaces"; "lack and unaptness of lighting"; "lack, deficiency or distance of everyday services, facilities and commercial activities"; "physical, visual and psychological interference with vehicular mobility"; "insufficiency or lack of features increasing the feeling of identity and orientation"; "bothersome environment"; "lack of security".

Therefore to the problems concerning the lack of green, others have to be added, pertaining to other classes, but concerning the wrong use of green elements in relation to the activity of walking and to people requirements. Badly located trees, or other greenery, causing bottlenecks, have to be blamed for the scarce accessibility along the

walkways. Some features are to be blamed for the lack of safety of use by pedestrians, above all by the most vulnerable ones (disabled people, elderly and children): the incorrect plantation of trees causes their roots to bump or break the pavement, creating an uneven surface on the walkways; the fallen rotten leaves, left on the pavement, form a slippery carpet; the choice of evergreen trees along the walkways, in very cold climate, shadowing the pavement, maintains it icy longer. Badly located trees, bushes or hedges next to junctions, diminishing the visibility of people crossing, above all of children, have to be blamed for the lack of safety by car traffic accidents. The trees' foliage sometimes shades the lighting causing problems of visibility and of personal safety. Wrong species or bad locations of trees are to be blamed for bad thermal comfort in summer or in winter.
People detected also other problems, not directly related to the issue, but that could be possibly solved by natural features: the lack of space for children to play in, the lack of elements helping orientation, the presence of long detours in their daily itineraries, of unshielded large parking areas, of bad dimensional relation between buildings' height and streets' width, of bothersome noise levels, of disturbing smells.

The solution: pedestrian network plus green structure

For answering to the "lack or insufficiency of natural features", considered from the pedestrian mobility perspective, many solutions have been proposed; by a careful analysis and integration of the concepts that were behind them, it was possible to arrange some of these solutions in a framework that foreshadows a possible scenario, suggesting what to do and how to do it, and tracing a broad outline of applicable measures; these suggestions can be tailored, time by time, to the specific case's environmental and technical features.
For making walking a more and more appealing mode of transport, the shift needs to be characterized by some additional value. The alternation of built and open spaces, if densely interconnected, can constitute a varied and interesting sequence that appeals to pedestrians; if green and blue structures are integrated to the grey ones, a network of pleasant and comfortable paths, usable to reach on foot various parts of the city, can become an alternative to the car for short trips.
This envisagement is supported by the approach to street design proposed by PIARC Technical Committee on Roads in Urban Areas[3] . The streets, being elements of urban design, have many functions to perform; they are related to traffic, urban planning, social, ecological and economic aspects, and can be combined depending on the specific street role and features. Here is interesting to consider the integration of three prevalent functions: the significance of the street within the townscape, the street as an appropriate space to host walking and its backing social and recreational activities, the street as regulator of microclimate and as ecological corridor.
People wish to have a variety of paths in their neighbourhood or town to use depending on their needs and moods: lively or quiet, among activities or in the nature. For offering a varied and becoming itinerary, the pedestrian network, in some sections,

could overlap with the green structure and become a green network. It is then necessary to verify if and how these two systems can be integrated for creating an alternative green network: an archipelago of larger and smaller islands, more or less green, joined by a system of isthmus, more or less large and green, that hosts pedestrians together with some kind of plant and animal life
Actually, this could be done using squares, widenings and walkways that could be made greenish and put in sequence with the various green areas that are in the city, public or private, with the aim to constitute appropriate itineraries for non motorized mobility, leading to everyday life attraction poles. Such network, formed of different types of spaces: parks and paved spaces with some green, large wooded areas and small patches of grass, rows of overarched trees lining the streets and green facades, lawns and green roofs, places where man's presence is rare and others where it is very high, depending on their location in the town, reaches two aims: shorter, more appealing and comfortable paths for everyday shifts, and more green in the city. Such synergy could cause besides the mutual benefits also other consequences; for example the added value of the green could win some people resistance to walk, at least for "30 minutes a day", as suggested by the WHO campaign for a better health.
The focus is then on which could be the possibilities, and the limits, of making the green spaces, existing inside the "city of stone", interact with the spaces in which people walk, or should walk.

The design of the green network

Pedestrians are not an homogeneous group and then both complains and desires differ, depending on their gender and age, travel habits and cultural background, and some times are not compatible; it is then important to define priorities and check compatibilities to determine an achievable satisfaction level, based on a differentiated design of the space that makes it usable and enjoyable by different users.
People's problems, wishes and hints are all very important for defining some first technical suggestions congruent with all the expressed requirements, as the bright and the dark sides of the green spaces, for considering all the positive or negative consequences of the vegetation use on the urban environment; they should be put in a check list to be used at the beginning, or at the end, of the project, to be sure of considering all the involved aspects.

The theoretic network has to identify with the real situation, making use of the urban environment propositions offered time by time. The possible coexistence between natural and human life, will have different prevalence of the two depending on the types of green and grey spaces, and of their characteristics. The features of the network and of its paths are related to the over said functions and belong to different categories. Some of them are related to objective parameters, as dimension, morphology, architectural and natural elements, materials, colours etc., others are related to perceptive, thence subjective, aspects. The latter are very important to be considered for the wished added value of the network. The following indications are both quan-

titative and qualitative, and consider various requirements at the same time, even if referring mainly to one.

Some general guidelines

The green network must be dense so to be easily reached by every dweller who wants to move on foot for reaching the various attraction poles, among which also the areas forming the green structure; they have therefore to be at about four hundred meters one from the other. This is a way to make the green arrive also into the core of the city. The links to the nodes of the system must be as short as possible, use the existing green areas or skirt water sources (rivers and streams, lakes and ponds, sea etc.) or be designed on purpose. A value equal or less than 1.4 for the ratio of the "actual distance" to "beeline" guarantees a good efficiency of the network as regards accessibility; to this aim, shortcuts can be planned using public parks and gardens, but also private green spaces, as inner courtyards.

The links have to be designed as linear green spaces to be used by all classes of users, for everyday needs or for recreation, as paths to green nodes, public services, attraction poles and transport interchange points. If they have to facilitate besides walking also moving around, resting, talking, playing etc., they have to be equipped with various facilities and present various typologies of vegetation, for creating a relaxing atmosphere, for supporting unofficial meeting places and social relation. To this aim, the minimum width has to be around six/seven meters, preferably more whenever possible. Adjacent private green, if designed with loose borders, becomes part of the greenscape of the pedestrian path, a transition element between open public and built private space; appropriate conventions with private owners can be a useful tool to gain more visual width.

These links have to guarantee comfort (thermal, visual, acoustic, olfactory, tactile, respiratory, hygienic etc.) to pedestrians. Vegetation to this aim can help very much if well studied; besides providing shadow to the users, it influences the gradient of temperature as well as the hygrometry, and improves the ventilation in summer; it can be used to cut the wind and to offer some kind of shelter against the rain in colder climate. It is though very important to design for all the seasons, or at least for the ones that present heavier problems; in temperate climate the use of deciduous trees seems preferable on pedestrian paths. Moreover, to avoid the various problems mentioned ahead, before making any choice it is important to check the sun height and path, the trees' height and growth time, the foliage width and density, the length of the leafy period and the space occupied by the roots. Hedges and espaliers can shield the direct contact with pollutants, above all for children, and, integrating specific technical devices, can also diminish noise. Natural elements, as scented green species and sweet-smelling flowers, running and gurgling water, singing birds and rustling foliage can help blind people to orientate and can be used to disguise bothersome aspects of the environment, as bad odours and traffic noise. Together with the green colour, they

communicate at psychological level a feeling of freshness and serenity.
This green network, using different kind of vegetation, can help the flora and fauna regeneration, and increase people direct contact, and thence knowledge of natural life, and possibility of exercising the five senses. In choosing the green species though, it has to be considered that some can cause an allergy, and then at least the ones that are the most dangerous for people have to be avoided. At the same time, also the ones that are not resistant to the man attempts, as exhaust emissions, no watering and exploited soil, have not to be used, at least for the lines of trees along the roads. It is always important to remember that the project concerns the coexistence of nature and man, and then it is needed a good balance among positive and negative aspects of both; for example the choice of the type of vegetation has to be made considering to attract birds species that are good insect and parasite eaters but do not worsen path hygienic conditions. Some areas of lawn could be reserved for dogs, both for their exercise, without interfering with children security, and for their bodily needs, without fouling the pedestrian paths and areas.

The green network can have an influence also at a larger scale; tree lined streets and appropriate location of squares and gardens improve also the environment microclimate on its whole; linear green paths, if wide enough and richly planted, can act as buffer zones among residences and street activities and traffic, filtering and abating, a little bit, air and acoustic pollution.
For the efficiency of the mobility system, the green links must guarantee the continuity of the itinerary at the crossings with vehicular traffic; for people walking in such idyllic environment, unexpected conflict points are very dangerous; it becomes then a must to give priority to pedestrians also at crossings and to make this evident for car drivers by design, perhaps “green”.
For the townscape function, the orientation and the visual appeal of the paths are very important; therefore their design, besides making use of the various built environment characteristics, can make use also of the green environment qualities. Spatial hierarchy improves the legibility of the urban structure, therefore different scales of green spaces with different characteristics and use should be planned; the adventure quality of the spaces can be achieved by the variety of the landscape and its details, by the various green species and types of water sources. The seasonal variations of the vegetation, that relate people to the natural cycles and to the flowing of time, help to develop local identity. Orientation and sense of belonging are helped by landmarks in the streetscape, which can be built or made by natural elements: a wood, a beautiful big tree or a gorgeous flowering bush can play the same role than a square, a steeple or a statue. Too wide spaces can be re-balanced to become at human scale by the use of tree lines, bushes, hedges and flowerbeds. Green wings along the path can shield traffic and the view of big parking lots.
The presence of more green has also many psychological effects, the most important being the decrease of urban stress, but can also make people feel in danger. In the design, it is very important to foster the feeling of security by paying very much atten-

tion to the shielding effect of the green elements and to the importance of an appropriate lighting to compensate it. Some physical or visual continuity between the green path and the adjacent space must always be kept; no too long stretches of path, far away from lived in buildings that create a permeable interface with windows, doors, lights, have to be planned; the type of lights and their location have to be chosen in accordance with the green elements project, that has to be made first to meet the other requirements.
Lighting is one of the main aspects of the green network design, because it has many roles: it improves accessibility and safety of use along the paths, and safety from traffic accidents at the eventual junctions; it communicates a sense of personal security; finally, it enhances the qualities of the surrounding natural landscape. In making such lighting project it is needed a high expertise for maintaining a good visual comfort for the users, without glaring, light pollution towards the sky and too much inconvenience for animal nightlife.
To sum up, the chosen solutions must be appropriate to the path three-dimensional space, must satisfy the requirements, but must also leave to people some freedom in interpreting the places and in ideating possible uses.

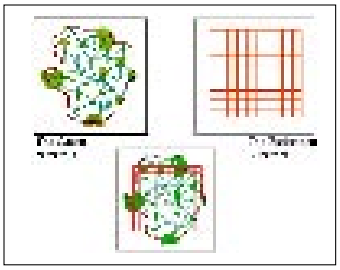

Figure 1: Structuring the green network
Figure 2: A proposal for an integrated network (Laurea Degree Thesis, prof. Lucia Martincigh, student Alessandra Mannetti)

The conditions

The dimension and the impact of the green spaces, the choice of vegetation and its relevance, the use of water and presence of facilities depend on the width of the space that is at disposal, or that can be acquired. Also abandoned areas can be reused for the scope, as railway tracks, industrial sites, decontaminated tips etc.
For the success of the project and of the implementation, three more aspects have to be considered. First, the need to put together different disciplines and expertise, for handling the integrated approach of the design, and to find a common language and shared values to be achieved. Second, the need to face the maintenance of the green

network already at design stage; therefore in the choice of the vegetation species, many aspects have to be considered: the use of autochthonous plants (if they demonstrated to be able to survive to the actual urban environment and worse life conditions), the watering and cultivation needs, etc. If the green spaces show to be derelict, people desert them at once, not only because they are not beautiful anymore, but also because they are felt at once dangerous. Third, the need to involve the citizens in the process, with two aims: to arise their awareness on the topic, and to have dwellers and managers participating to the development of the project, to the financing and to the maintenance.

Notes :
1. ADONIS, CAPTURE, DUMAS, OPIUM, PRIVILEGE, PROMISING, STAIRS, WalCyng IV F.P. ; ECOCITY, ISHTAR, PROMPT, PROPOLIS, PROSPECTS, SUTRA, TRANSPLUS in the cluster LUTR V F.P.
2. PROMPT – new means to PROMote Pedestrian Traffic in cities" (2000 – 2003), E.C. V Framework Programme (Key Action "The City of Tomorrow and Cultural Heritage) co-ordinator : Kari Rahuala, VTT, FI, partners: Lucia Martincigh, DiPSA, I; Willie Huessler, IBV, CH, Liv Ovstedal, Sintef, N, Philippe Hanocq, LGU-CRAU, B, Catia Rennesson, CERTU, F, Bernard Patrice, CETE, F. http://prompt.vtt.fi
3. PIARC Technical Committee on Roads in Urban Areas, "The urban road network design – New approaches", report, 1991.

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Practices in planning and design of urban green areas in Belgium

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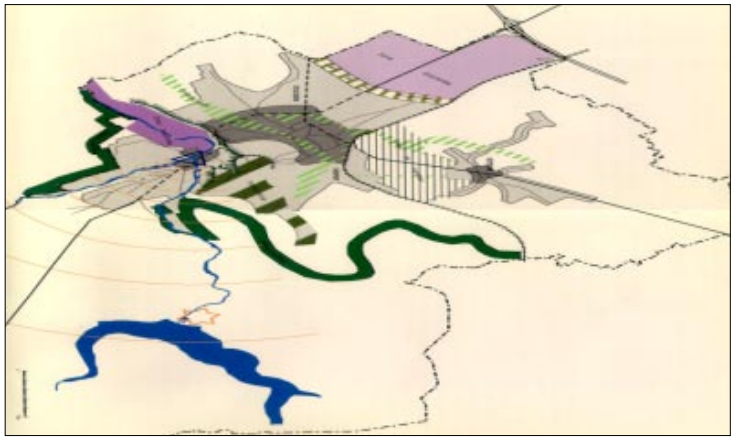
In most developed and urbanised nations, the green areas are in a permanent dialectic relationship with the built areas. It is noticeable that natural and urbanised spaces are the contrasted but complementary facets of a unique development process, of a same "rationality" producing comparable human artefacts. So, the (sterile) opposition between the 2 types of "produced" landscapes (natural and built) seems a rearguard question, since green areas are more or less considered, in theory at least, as essential components of the urban development whatever its scale and its purpose may be (from the global town's project to the particular square's development project).
Nevertheless, considering the competition between urban functionalities and other financial stakes, green areas are extremely vulnerable and generally under valued so that each development project requires in fact particularly convincing argument in order to create or simply maintain such areas, or even to introduce them as a crucial component of the project.
Through concrete examples of planning and design at 3 different scales in Belgium, this paper tries to put into the light a maximum of elements contributing to such argument.

First case : Implementation of green areas through strategic planning at the global city scale



EUPEN is a middle-sized town (East of Belgium) characterised by a relatively dense central area, but at the same time, green open fields are still existing inside or at the fringe of this central area.

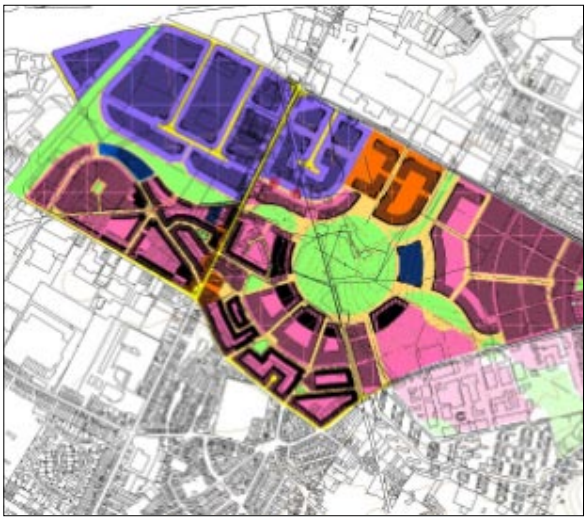
Early nineties, the local authorities decided to control the town development, faced with a strong pressure for new urbanisation, an economic mutation from industry to services and a great demand for new equipment. Leaning on strategic urban planning, it was argued that the existing green / blue structures could be an important component of the municipal development project. So, a **green / blue network** system was planned and designed, for which the main development lines are the following :

- A major role of the green / blue network is to offer EASY and ATTRACTIVE CONNECTIONS for pedestrians and cyclists to the main amenities of the city and to link the multifunctional central area with the surrounding residential areas and with the natural sites on the outside. For this, green paths are planned on existing vacant fields in the valleys (thalweg) of the small rivers and streams crossing the city in order to find low slope and to guarantee accessibility and continuity of the itineraries across the central area and to the outside.
- It was decided to enlarge as much as possible these basic green / blue network, in order to provide not only functional links but also a nice quiet place for the dwellers, at the scale of the city, inviting for promenade, social live and eco-education for the children. So a concept of structuring "LINEAR PARKS" serving all the neighbourhoods across the city was proposed.
- The very sloping hillsides were "naturally" included in the green network, with the ambition to re-build through greenery, LANDSCAPE COHERENCE and the previously destroyed legibility of the rivers sites.
- The building of "VEGETAL SCENERY" is a crucial point of the project. The vegetation is structured by sequences, from fully organised landscapes in the central area (either on the model of "English parks" with exotic plants / trees or plantation of old varieties of fruit trees remaining the previous orchards. The harvesting of the fruits is by the way an occasion for attractive seasonal entertainment among the children and the city dwellers), to semi-natural and natural landscapes at the fringe of the city and outside, at the junction with protected natural zones.
- The city, already owner of some parts of these fields, is trying to own some new strategic plots and also to negotiate the re-development into green areas of potential future industrial wastelands in the valleys (restoration of brownfields), in order to anticipate the modifications in the industrial structure and to constitute some land reserves for programmed public equipment and eventually housing, while maintaining sufficient green open areas.
- In some cases, particularly in the central area, the parks are partially used to promote new housing development in order to prevent flight of the dwellers to the outskirts. It was assumed that such a green, quiet environment could be particularly attractive for top of the range housing, while valuing the green areas if the implementation was adapted (new buildings are planned to surround the green area and to showing "noble façades" instead of rear of buildings.
- The green structure is supposed to fulfil functional, landscape and patrimonial roles but also to have positive ecological / environmental impact. A part of the green areas

intends to host wild animal live. Some parts are also voluntary maintained as “natural flooding areas” related to the rivers and in connection with still existing nature reserves at the fringe of the city. The entire park areas are also permeable surfaces, used to feed the water table.

- The green structure is as far as possible extended to the next streets in order to improve the visual environment for the dwellers and to attract them to use regularly the green connections as pedestrians or cyclists, having at the same time a positive impact on the motorised traffic.
- Finally, the green network is supposed to answer to this question : “how to manage the growth of the city in order to maintain a cohesion between the oldest and the newest developments through providing attractive and comfortable public green areas ?”

Second case : A development project for a brand new planned neighbourhood based on the creation of a structuring green area



ROCOURT is a district in the expanding periphery of the city of Liège.
Very recently, the concerned municipalities agreed to plan on this area a brand new neighbourhood on huge industrial wastelands (150 hectares previously coal mining area), comprising dense housing (generally multi storeys housing), craft industries, public equipment and structuring green areas in order to restore a minimum of COHERENCE to the whole site and to offer ADEQUATE CONNECTIONS between these new neighbourhood to the other parts of the conurbation.

In fact, the following argument was developed :

- A “GREEN LINK” dedicated to pedestrians and cyclists is aiming to structure *the* whole area. It connects two green landmarks : a major regional path network dedicated to not motorised users established on ancient railway tracks on one hand and

a green old slag heap (now a nature reserve) on the other hand. The centre of the municipality of Ans can be reached, by foot or cycle, via this link (+/- 1 Km). The green area is an effective functional link for not motorised users but it is at the same time an obstacle (even a block) for the motorised ones (through traffic is not allowed across the green area).

- Along this Green Link, a big area mixing housing and activities is planned. A main challenge was then to offer a GRATIFYING IMAGE as well as an INTERNAL COHESION to the whole project. Indeed, this zone is actually suffering of bad environmental and poor social life conditions. The public areas are poor and very sparse. Vegetation is limited to private properties (gardens), to industrial wastelands and to motorway embankments, and therefore not accessible. The "mineralization" of large areas (extended parking lots, roads, huge buildings) creates an inhospitable "microclimate" : excessive ventilation, dust, aggressive dryness, reverberation and heat in summer, cold in winter etc. The noise of the motorised traffic is too loud. The idea was then to provide a large, quiet and beautiful public green area and to organise the housing (+/- 2000 additional households) and the activities around it. The green area was presented as a real opportunity and a necessary basic condition in order to attract people and activities and so to induce urbanization.
- Moreover, the green area was an opportunity to optimise the COMFORT of the future residents. It defines compartments more or less independent, in order to create "close rooms" favourable to social life and also in order to avoid disturbances between functions (for instance housing and industry) or from the traffic pollutions. Here again, the visual coherence comes from the green area, supposed to soften the great architectural differences between residential and industrial buildings.
- The green area is a WITNESS OF THE HISTORY of the site (cultural role) : it integrates the old water pumping system of the coal mines (a pond is planned to remain these ancient utilities).
- Moreover, the green area has also a TECHNICAL / ECOLOGICAL ROLE : it integrates public networks notably the sewage disposal and a main drink water collector supplying the whole city of Liège.
- At least, it is intended to extend the concept of the spatial greenery into the architectural models used to build the housing and equipment buildings (concept of "vegetal façades").

This project shows that **a structured green public space doesn't result of "chance"**, using here and there some left fallow lands. The maintenance and the development of such green structure are mostly due to a municipal willpower leaning on a general development project and here translated into planning and design documents.

These documents generally define the way of using the green spaces, the necessary connections to realize, the development process, the means dedicated to the development and the maintenance of the green structure, the relationships with the other urban functionalities …

Third case : The design of a development project in an existing green are*a*

At the fringe of the city core of Liège, the site is located on a wooded hill sustaining since the last war a great extend of urbanisation, due to a performing communication network as well as to the development of major equipment. It became in the last 40 years a privileged development axe both for business/ research activities and housing, in addition to the academic activities (new university campus).
This is an INTERESTING but also CONTROVERSIAL problem for our purpose : is it desirable to "urbanise" such green fields close to the city and if yes how to develop this wooded site while avoiding to destroy what constitutes its actual resources : its greenery ? This already old debate found a new lease of life leaning on the principles of "sustainability", some people playing with the ambiguity of the concepts in order to clearly pit urbanisation against environmental preservation.
The solutions to this debate aren't simple and are always the result of a negotiation between opposite interests. They are also the result of a political will and a social demand, which are not always so clearly defined and may vary from time to time.

In this precise case, we had in one hand :

- An expressed POLITICAL WILL to preserve the green areas as a "sanctuary" mainly for **ecological** reason : it is assumed that the site is an important link for fauna and flora and therefore for biodiversity, as a part of the ecological network. In the nineties, the site was therefore ranked by the municipality among others as a green preservation zone, in a document called "Municipal Nature Development Program".
- An expressed SOCIAL DEMAND of the dwellers for maintaining such green areas, which are perceived as an added value for the surrounding housing estates and which are nowadays used as public fields even if private. The reasons of such demand are here mainly **aesthetic and economic**, even if sometimes tinged with the NIMBY syndrome.

On the other hand, we had :

- The same expressed POLITICAL WILL (expressed both by municipal and regional authorities) to greet new activities and population near to the existing city cores in order to avoid the flight of these to further outskirts ; the arguments here are

mainly land-use **planning, public finances and ecology**. So in the eighties, the site was ranked as a reserve for urbanisation by the regional authorities (with the total agreement of the municipality) in the so called "Regional Land-use Plan". It is fully equipped with energy, adduction and sewage technical networks.

- An expressed SOCIAL DEMAND of some parts of the citizens to live in such perceived gratifying environment, next to the city, employment opportunities and services ; the arguments are here **economic, aesthetic and sociologic**.
- Expressed INVESTORS WILL (public and private) : the arguments are here purely **economic**. The research / business park is managed by a public body (Provincial Authority + University) searching for extension opportunities (with additional employment). The owner of the site is a private real estate company for which the existing demand (activities + housing) is a real opportunity.

The public authority finally decides that it wasn't opportune to purely reject this development project, but taking account of the oppositions, the promoter has accepted drastic conditions to implement his project, notably the maintenance of "sufficient" greenery, used as the main component of the environment and as the link between the buildings and between the public and private areas.

The regulation is fully used to maintain and even develop a green wooded landscape, without putting a strain on public budget, for instance :

- Obligatory mix between low and middle density, either single houses on large plots, or collective housing in relatively small buildings (2 to 4 storeys). The single houses are implemented relatively far from the streets (> 10 m) and the prospects between 2 buildings are larger than usual (> 10 m), in order to maintain as many trees as possible in front of the houses and laterally. The owner of a plot is contractually linked with the municipality in order to maintain some trees appointed by the administration or to plant exclusively some vegetal species. The architectural models used for the collective buildings are supposed to offer a maximal integration to the natural environment (use of vegetal façades and roofs, use of wood as building material, obligatory quickset edge between public and private domains).
- The project comprises plots for an extension of the business park. These are very large and deep in order to create a large wooded buffer zone(>25 m) between "exclusive" functions (housing and business activities). This buffer zone is accessible to the public (pedestrian paths are implemented in it, but its maintenance remains private. A continuous vegetal front is obligatory maintained between the street and the buildings.
- The project also comprises green public equipment (public playground on the ancient sand quarry : +/- 3.25 hectares) and green public paths generously sized. Moreover, the streets are also generously planted with trees remaining the "alleys" still existing in the surroundings. The public access to the site is therefore largely improved, so that many citizens can enjoy this particular atmosphere of "civilised forest".

Conclusion

The developers and the political authorities can use a range of tools to argue in favour of (re)insertion of public open green spaces inside or at the fringe of the cities. In this prospect, the most relevant arguments, converging to lay down that urban green areas are essential links towards urban sustainability, seem to be :

- **Economic arguments**, especially the positive impact of green areas on residential property values ;
- **Social arguments**, particularly the meeting and cultural exchanges opportunities encouraging social integration and also the well-being of a community appreciating to live in a desirable and gratifying environment ;
- **Public health arguments**, both physical and mental, pushing forward beneficial physical exercises opportunities as well as the capabilities to get back in touch with one's inner self and to de-stress ;
- **Cultural arguments**, learning about nature and history ;
- **Environmental arguments**, considering biodiversity, bio-climate and reduction of pollutions, reduction of motorised travels, regeneration of food and water resources, maintenance of biological and landscapes diversity

The here presented examples show that the implementation of new green areas or simply the maintenance of the existing ones, in a context of strong concurrence between urban functions and divergent interests between operators (including political authorities and citizens), is always a dialectic process involving such relevant logic arguments as tools for negotiation with the economic forces, particularly with the land-owners which are obligatory involved in a democratic planning process. This process involves also :

- **A political agreement** at every decisional level on the opportunity to develop / maintain green areas for community purposes and common interest ; This can only be reached if the here above arguments are sufficiently convincing faced to opposite arguments (for instance public finances, safety, …) ;
- A relative **social consensus** about such development considering strong economic pressures (employment, cheap housing, …) and egoistic demands, besides real cultural, aesthetic, environmental concerns. Here again, the same argument may be used contradictory. Information and participation seem here obligatory steps to reach such a relative consensus

Above all, each situation is specific and every project has to be treated at the right scale, so that the arguments in favour or in disfavour of green areas development may vary and aren't easily adaptable from one case to the other, as showed in the above presented cases. **Particularly, the "greenery project" isn't only a project treating of functions and rationality and but is also a project treating of harmony and emotions**.

‘Green structure’ – the term discussion

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In European countries many terms have been applied in order to define parts of urban space covered mostly by vegetation and predominantly performing recreational functions. Among others these are terms: ‘green space’, ‘open space’, ‘green open space’, ‘pattern of green areas’, ‘framework of green areas’, ‘green infrastructure’, ‘system of green areas’.
These terms have reflected the evolution that has taken place in (as) regards to understanding the role of these types of areas in cities. Today the idea of the system is considered as dominant in planning practice. It has become a point of departure as plans are drawn up. To emphasise the importance of this approach, urban planners have tended to use the terms ‘system’, ‘framework’ or ‘pattern’.
The COST’s participants decided to use a new term ‘green structure’ (to be written in one or two words). By this term they wish to convey to the public a message what are or should be the main features of the contemporary green spaces in the city. These spaces should be developed in order to form a structure (which elements are discussed below) penetrating the whole city such way as it fulfils many functions in a similar way like the technical infrastructure does.
As the term ‘green structure’ is not formally approved in any country and also not very widely used, the problem of definition has appeared. Since the beginning of the Action the assumption has been set to let the term be defined during four years of co-operation, while different aspects of the structure and case studies of different cities would have been presented. The broad discussion among COST’s participants concerning the problem definition is available on the Action’s webside (http://www.map21ltd.com/COSTC11).

This discussion reveals that depending on different professional background and interest the COST’s participants tend to consider and understand the green structure in slightly different way. As a result of co-operation there has been worked out an agreement that green structure should be understood and defined in following aspects:

‘Green structure’ as an idea – a concept that can be used to indicate the position of green areas in the urban landscape (according to MoU). Green structure is also a planning concept that is an attempt to integrate better green issues in urban land use planning and urban design. Its intention should be a development of planning and

management tools for a structural role of green areas in the urban fabric. Several dimensions of the green structure concept should be considered:

- the spatial dimension: all land of the urban landscape that is neither covered nor sealed including for instance parks, play grounds, sport fields, allotments, private gardens, green spaces of housing districts, industrial properties as well as along streets and railroads.
- the ecological dimension: flora and fauna and their habitats. Urban hydrology and climate.
- the cultural dimension: history, identity, green as design elements.
- the social dimension: recreation, health, leisure and pedagogical meaning.

'Green structure' as an object - the pattern, contents and composition of the sum of vegetation, non-paved soil and non-tubed water in urban areas. But all mentioned elements should be treated as a system because it can perform some additional functions as a system, besides the functions performed by single green areas. Green structure in wider approach encompasses all urban open spaces, from designated public to private open spaces (residential, commercial, industrial and services), including accessory urban open spaces, e.g. along roads and railway lines. These open spaces which are non vegetated (not green) sometimes are important for recreation, environmental improvement, wildlife and urban character. What should be underlined in some European cities (with well developed residential areas) a significant stress is put on private gardens that has become a very important element of the green structure.

'Green structure' as an multifunctional entity - since the beginning of the Action this aspect has been most obvious. In MoU the following functions have been indicated:

- social - sport and recreation that can contribute to the communication system first of all for walking and bicycling;
- ecological in details: contributing to the biodiversity through creating habitats for plants and animals, as well as assuring their movement, creating urban mesoclimate, improving air quality and performing water retention function;
- structural – green structure pattern can shape the urban landscape e.g. through the green fingers, green rings or green islands (archipelago).

These reveals the problem of green structure multifunctionality. Each functions needs its own particular condition to make this function perform. Every single green structure element plays particular function according to its own condition like environmental characteristic, ecological potential and neighbourhood conditions. Thus, to connect these areas automatically is not enough so as to make them perform. In order to secure ecological connections different conditions have to be analysed than in the case of recreational functions. On the other hand connectivity is not so vital in the structural role, however thanks to particular green structure elements like green cor-

ridors, it could be accomplished as a side effect. In this perspective the green structure appears as constructed from several layers which represent functions and not always embedded exactly the same areas.

'Green structure' as a quality – an important aim of green structure development is to improve quality of urban space and environment. This space must satisfy needs of the urban society consisted of individuals with different ways of life and specific freedoms of choice. Green structure can contribute successfully to create rich environment with high level of aesthetic excellence.

'Green structure' as an action - "to structure in a green way", i. e. to structure urban areas for sustainable development by establishing a proportion between the grey and green city. This meaning includes also all activities that are essential to create conditions for green areas to perform their vital role for the quality of urban life. Time, as a vital factor, must be considered in green structure development and protection. It is a very long period between the moment of the taken decision and the moment when the particular green structure element is mature enough to start playing its function. However, a very little time is needed to redevelop particular green structure element as build up area (densification process). Because of that a stable and clear policy is required in order to establish the general green structure concept for the whole city (regional context is most welcome). Green structure planning is considered as a main instrument of this policy. It is a mechanism which deals with how green structure might be planned in a spatial sense, and then how they might be designed, managed and maintained for the benefit of the local population. The multi-scale approach should be adopted : regional scale (ecological and recreational connections), city scale (general directions and the main goal), local (design according to specific situation of each place with all its involved elements like space characteristics/conditions, its history and landmarks, as well as uses and social composition).

Conclusions

(about Human issues concerning green structure and urban planning)

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The possibility to integrate "green structure" in the concept of sustainable development, in urban areas, relies on the potential to merge this idea with other planning ideals, including urban densification. The unifying aspects in this COST Action has been the idea that green structure can make a difference in urban planning and the awareness that green structure is needed in the future to guarantee a healthy urban environment. Despite these underlying agreements there are, however, differing ideas of what the most urging issues are and how these shall be solved – both on a theoretical and on a policy level. The Action has been of great value for collecting important reasons and arguments for green structure, both from a theoretical and from an empirical point of view, and also for showing examples of best practice from the different parts of Europe. Different local and regional geography is connected with different possibilities, benefits, problems and threats concerning green structure These differences have made clear, that the distinctive features of a town or city district are as important to consider as the general functions and benefits. "The green structure fingerprint" is, in the best of worlds, composed to articulate a certain urban identity, together with fulfilling generally proved functions and effects.

Seen as a whole, the green structure carries connections to countryside, waters and nature reserves, ameliorates urban climate, supports biological diversity and gives orientation in the urban structure. As urban elements, parks, greenways and waterways could be the answer to lots of needs and functions, as shown elsewhere in this report. In the micro-scale vegetation on roofs, facades, as well as solitary bushes and trees, can have great importance, both for experiential aspects, wellbeing, feeling of safety and comfort, and for a sustainable management of the urban landscape.

Life quality aspects – a powerful driving force for human's choices

Within densely built up areas there is a fair base for collective transportation. Short distances indicates also good conditions for non-motorized transportation, wherefore there seems to be reasonable to believe car traffic to decrease in dense areas. However, this statement has shown hard to prove. There is research indicating recreational car trips to increase in dense urban areas. There is also research showing that densifying cities by building in green and brown in-between areas, has none or marginal effects on travel distances and car transportations. Thus, going by car can be understood, not as an effective mode for transport from A to B, but as a way to enhance ones owns quality of life. If it is not taken for granted that human beings are rational and effective

from a global point of view, but from a personal, when choosing transport equipment – then it is more reasonable to discuss transportation with a "life quality perspective". If the battery of arguments against car traffic is shot, not against the hazards connected with discharges of CO2, but against more "touchable" environmental hazards, more connected with life quality in urban environments, there will be found several facts pointing away from "the compact city" as a simplified solution, to a city with an interwoven green structure, made up by green areas and elements with different functions and use.

- Health is promoted by proximity to accessible green areas.
- Social interaction is promoted by a green structure with nodes integrating districts.
- Children, elderly and other groups with specific demands on outdoor environment, benefit from a multifunctional green structure including design for specific needs.
- Green structure could provide an environmental friendly infra structure, for non-motorized transportation.
- Private housing economy profits from public economy, green structure raising house prizes.

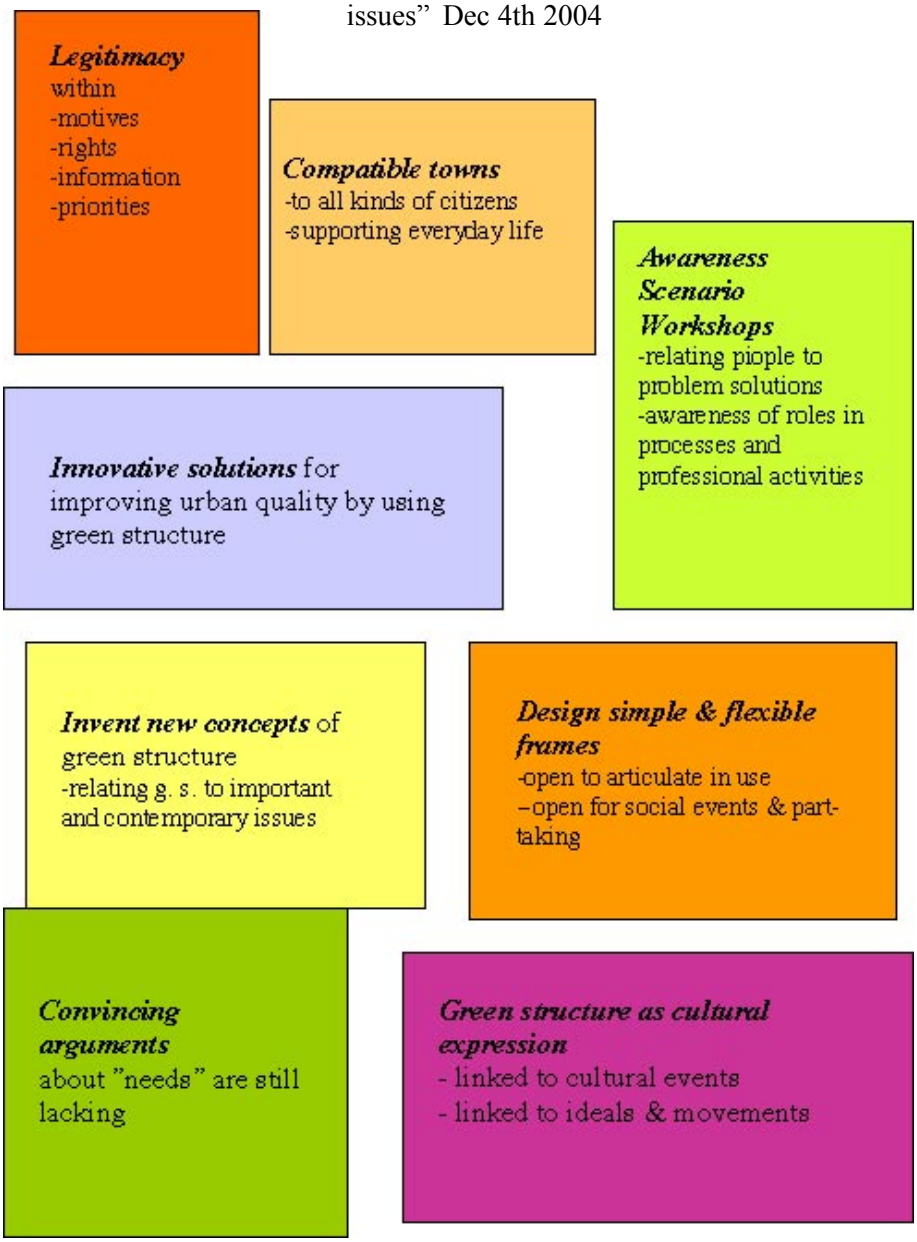
This kind of facts is useful in urban planning but has to be implemented in the local context. There are no general truths about what kind of green areas is most favored and used, so that the benefits of a green structure can be fulfilled. In the woodland countries in the north, there is often a wish to clear outdoor areas from trees, to get more sunlight in the open space. In the Mediterranean countries, on the contrary, it is of outmost concern to shade outdoor areas (and facades) with trees, not to get to hot and sunny open space. Customs and traditions influence the private actions.

To influence urban planning, design and management

The communicative turn in urban planning is established within the academic world, but not always on the municipal arenas all around Europe. The need for further research and examples, to find ways for mutual understanding and creative cooperation, for public views and expert views, will be extensive for yet a period. To see "green structure and urban planning" from the point of view of "human issues", is to take seriously that we are not to find the truth, but to handle facts, perspectives, rationalities, circumstances and ideas. "The green structure concept" demands more of argumentation and specific solutions for different situations, to achieve agreements and economic sustainability.

Not the least to achieve agreements, the specific design solution is of vital importance, effecting expectations as well as willingness to pay. Negotiations between land owners and public as well as private users and managers can be influenced both for

from brainstorm – ”important human issues” Dec 4th 2004



the better and for the worse according to what resulting environment is presented by the landscape and urban designers.
Management of parks and green areas has changed during the hundred years of public green space, from an activity encompassing lots of competent workers, to a highly efficient mechanised activity, with few employers. With increasing costs for health care and education, municipals tend to choke the "less important" expenses, resulting in a less dynamic, less diverse green environment. To fulfil the aims of an ambitious and creative urban planning and design, it is of absolute importance to include also the long-time management.

Summing up

The working group for human issues has achieved an increased awareness on:

- the importance of stressing green structure as multifunctional, interdisciplinary, multilevel, multiperspectivic issues, which could not be isolated, but have to be linked to social and ecological politically burning questions to be taken seriously.
- the differences between countries, regions, organizations and individuals, regarding understanding of the problems but also planning experiences.
- the importance of a human perspective for progress in understanding the role of green structure within urban planning
- the urgent need of knowledge is not first of all more facts and data, but more understanding and training, to communicate and handle facts, perspectives, rationalities, circumstances and ideas of green structure, within specific situations

Utopia
An island where everything becomes clear Here one can stand on the ground of proofs.
The only road has its destination. Shrubs are burdened with answers.
Here grows the tree of Proper Conjecture, its branches eternally untangled.
The dazzlingly straight tree of Understanding is next to a spring called Ah So That's How It Is.

The deeper you're in the wood, the wider grows the Valley of Obviousness.
Whatever the doubt, the wind blows it away.
Echo speaks uncalled and readily solves the mysteries of worlds.

On the right a cave where sense reclines. On the left a lake of Deep Conviction.
Truth stirs from the bottom and lightly breaks the surface.
Unshakeable Certainty dominates the vale and Essence of Things spreads from its head.

Despite these attractions, the island is deserted, and the tiny footmarks seen along the shores
all point towards the sea.
As though people always went away from here and irreversibly plunged into the deep,
Into life that's inconceivable.

Wislawa Szymborska (Adam Czerniawski, trans.)





CHAPTER 5

Policies for “green structure and urban planning”

Members of Working group 2 :

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Introduction

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The objective of the working group has been to engage with the "world behind the plans" by asking questions about the processes of green structure planning. We ask, for example, what decision makers regard as important in this process? What constraints experts meet when they seek to promote urban green structures? And, how can ordinary people influence decisions about green spaces and environments that have a material impact on their quality of life?

Though the planning system is very important as a frame and sets the context of planning decisions, we decided that our analysis has to take a dynamic perspective since laws and regulations are constantly tested and under review. (The website is the best place to find the main planning framework of each country). It was a deliberate decision not to define the term green structure at the beginning of the WG2 programme. Instead we made the assumption that a definition would emerge at the end of the program through a discussion and analysis of our chosen examples and problems.
The group chose a framework for analysing policy instruments for green structure planning (public ownership, regulation, incentives) that offers an inter-actionist rather than a technical or structural approach to planning policy development and implementation. The particular framework we have employed is that of Van Tatenhove, Arts and Leroy (2000). This approach emphasises the role of discourse and actor coalitions in the development of policy arrangements rather than the formal development and implementation of given policies.

Discourse coalitions involve individuals and institutions that pursue a common policy objective based on shared argumentation - even though their knowledge, skills, resources and interests differ. Hence, rather than understanding environmental decision-making as a rational and technical process which privileges the knowledge and skills of experts such as planners and consultants, this approach understands planning as a function of the actions of individuals and wider forces in society such as institutions, power, knowledge and financial resources that *act on each other*. In this inter-active process new discourse coalitions are formed, new rules (formal and informal) are made and new resources and knowledge are mobilised. Sometimes too old discourses, coalitions or rules are drawn on and regain influence but in a new way. Working separately and together these relationships influence how green structures

become inserted into the planning process and influence the potential of green structures as drivers of policy and political change.

This report applies to case studies for green structure planning in 11 European cities. We define the chosen framework through a series of questions about discourses, actor coalitions, knowledge and resources of all kind that are mobilised over time in policy arrangements for green structure planning. Telling the "story behind the plan" we automatically refer to actors, the power play and the rules of the issue at stake. The chosen cases exemplify and throw light on policy arrangements at regional, metropolitan and local levels and illustrate how the special context of every case has importance.
The cases focus on different environmental resources such as rivers, parks and open spaces, different political systems and geographical regions. For example, in southern Europe the city and regional scales are analysed for Madrid, Marseilles and Milan. For central and eastern Europe the cities of Munich and Warsaw focus on the role of rivers and river corridors in green structure planning while the cases of Ghent (Belgium) and the Randstad in the Netherlands reveal how regional and local policy arrangements act to pursue new green structure initiatives relating to forests and farmland for nature conservation. The cities of Gothenburg, Aarhus, Helsinki and Sheffield in northern Europe offer insight into innovative forms of policy making at the city and local scales.

The choice of cases reported on was a pragmatic one made on the basis of personal knowledge, interviews with key actors and access to policy documents. They are presented in an order that draws our attention first to the city region, then to the metropolitan area finally to the neighbourhood and site specific level. Given the premises of the policy arrangement approach however, it is inevitable that the analysis and interpretation of each case involves consideration of several spatial scales from the international/regional to the local. For example, in some cases new funding resources at the EU level have prompted change at regional and metropolitan levels, while the

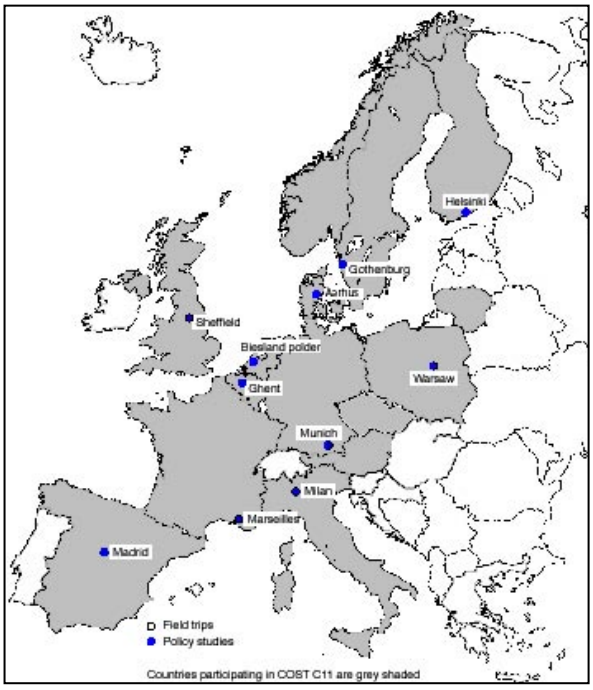

Fig.1: Case studies from 11 countries in Europe

financial stringency experienced by all nation states and public authorities during the early 1990s precipitated a new range of incentive based policies and locally negotiated solutions that Impacted on green structure planning.

Policy arrangements as a framework for comparative analysis

As conceived by Van Tatenhove et al. (2004) policy arrangements are the 'temporary' stabilisation of both the substance and organisation of a policy domain in what is an ongoing process of change. Through examining the interaction between four dimensions of policy evolution, namely: policy coalitions, resources, 'rules of the game', and policy discourses, it is possible to highlight how policy innovations are initiated and stabilised (see Figure 2). Analysed in terms of these four dimensions innovations may be introduced through new coalitions of actors, whereas in other cases they are initiated through new discourses, or reinforced by rules and resources that precipitate a chain reaction in all aspects of policy making. Eventually this chain reaction stabilises in a coherent policy arrangement. Conceived in this way the framework provides a means of analysing and interpreting change and continuity in environmental policies.

Van Tatenhove and his colleagues link the process of environmental policy arrangements with wider changes in political modernisation that have been experienced in Europe in the twentieth century. In particular their studies suggest that the traditional demarcation between the state, the market and civil society has been breached in the latter part of the twentieth century period such that many more actors and institutions are now involved in the political domain of environmental planning and decision making. As a result, political processes involving both formal and informal networks are now involved in the production and distribution of power and meaning (discourses) that shape public life.

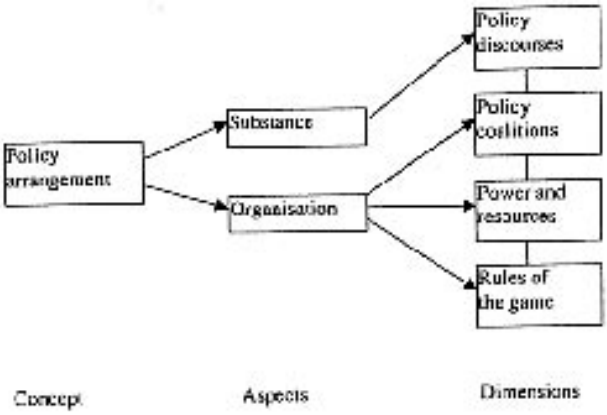

Fig.2. Policy Arrangement Frame (Tatenhove et al. 2000, p. 56)

Our task in the working group was to extend the framework offered by Van Tatenhove to a range of spatial scales relevant to green structure planning in cities and their surrounding regions. The overall objective was to analyse and interpret the substance and organisation of different policy arrangements so that innovations in green structure planning could be identified, lessons drawn and shared. The existing diversity of

policy arrangements for green structure planning suggests that new approaches have gained ground and coexist alongside traditional interventionist measures. From the ecological perspective top-down approaches may perform well, especially when they are combined with modern means of public participation practices designed to explain why conservation of cultural or biological heritage is necessary (Marseilles). Wider changes in social attitudes have seen new coalitions of actors working together to ensure that policy development address issues of long term, sustainable environmental quality. In some European countries this social change has seen a more integrated approach to urban development in which consideration of social, environmental and economic functions of green structures has become a pre-requisite of city-wide policies, neighbourhood regeneration programmes and individual projects, rather than an afterthought. Lastly, calls at the European level to stem urban expansion through a process of urban densification pose a particular problem for the maintenance of green structures, their environmental qualities and ecological functions. For example, river corridors and other wildlife habitats such as forests transcend urban boundaries and require large-scale ecosystem approaches that sit uncomfortably with policy arrangements that often divorce the city and the countryside from each other.

Although the case studies differ In scale and substance they nevertheless reveal a close interplay between policy arrangements and processes of political and ecological modernisation suggested by Tatenhove et al. (2000). In what follows the outcomes of our analysis are grouped under three headlines that lead in our opinion to three main fields of future research.

What counts as green structure?

Today **g**reen structures comprise a wide range of different land-use types such as parks, forests, farmland, derelict land, canals and engineered rivers, together with a range of more naturalistic features and vegetation types such as valleys and river terraces, ridges and cliffs, fenlands and heathland that make up the green infrastructure of a city or region. Together these elements form an observable pattern In the urban landscape and at the same time they function together to support a range of a environmental and social benefits. On the basis of the cases reviewed It Is clear that many WG2 participants, more or less consciously, stressed that the main attribute of the green Infra-structure resided In those functions performed thanks to the connectivity of green structure elements. If this Infra-structure Is too fragmented then the ecological and social functions perform sub-optimally and the areas themselves are not perceived to be of value by citizens or politicians. But In practice green structures Identified and ‘plotted’ on formal plans are sometimes not “green” in reality and, vice versa, grey structures such as housing and commercial areas sometimes fulfil important green functions for the well being of the citizens. So, the formal green structure found on plans is not necessarily identical with the actual green structure of a city or a city region. The experiences of participants In WG2 suggest that a systematic review of the connectivity of green spaces and green Infrastructures Is a new task for municipal

authorities seeking to Improve both the ecological functions of the city and the quality of life of residents, workers and visitors.
While the range of land uses and green elements contributing to green structures has widened, It Is also clear that the reduction of public funding allocated to green structures has had an equally damaging effect on the ability of green spaces to fulfil their multiple functions. On the one hand, It Is easy to assume that green structures maintain themselves - they need no clipping and trimming. On the other hand numerous studies show that green structures perform their environmental and social functions effectively only if they are well maintained. The challenge for municipalities Is to find Innovative ways of funding the kind of sensitive management practices required to maintain high quality green spaces whether In housing developments, city extensions or existing parks. In particular, explicit discussion of the real costs of designing and maintaining high quality green structures needs to be undertaken during the early planning stages of urban re-development and new edge of city extensions. Without explicit attention and agreement of these costs It Is difficult to promote new mechanisms for sustaining high quality green structures or to enlist new partners in their design and future management.

In the countryside around towns farmers, foresters and property developers are welcomed as new partners who through their own activities contribute to the design and maintenance of high quality, cultural landscapes. The formative role of these primary land users In supporting green structures Is already recognised at a regional level (Ticino, Madrid, Biesland, Ghent), and by better integrating farming and forestry with planning for urban growth, ecological and recreational needs of the city and city residents could also be met more effectively. However, within the city boundary the contribution primary land uses and land users can make to green structures is neither recognised nor expected by city authorities persuaded of the development Imperative. Moreover In these circumstances even when new actors like voluntary bodies and NGOs seek to promote looser forms of development that Incorporate green structures, as In Sheffield, existing ‘rules of the game’ make it difficult for these alternative discourses and practices to gain legitimacy. So, while the competence and interests of new actors can influence the material character of green structures and widen the Involvement of local communities - residents and businesses - In managing local environments, involving these new actors In the green structure planning process also presents new challenges. In particular we need to know more about the Interests and environmental and social values of commercial actors and Institutions If green structures both within the city and the surrounding countryside are to be secured

The need for concerted activities to promote and deliver green structures within devolved planning systems.
Planners are used to working within a differentiated model of decision-making that acknowledges the need for acting at different levels (vertical structure) and across

different sectors (horizontal structure). On the positive side this system allows the division of planning work so that decisions are devolved to the lowest appropriate level (principle of subsidiarity). On the other hand devolution of responsibilities to the lowest level can lead to problems of legitimacy and accountability especially when green structures transcend administrative and political boundaries. Hence green structures are organisational challenges for planners, politicians and the public as well as material concerns.
Natural areas and administrative boundaries are often not congruent with each other. A top-down-approach would perhaps enhance opportunities for achieving a greater fit between administrative and natural systems, but this is an unrealistic ideal. In some cases where established administrative and political boundaries have conformed with natural units, political change has seen this unity dismembered, only for a later period of political change to re-establish It (Madrid, Warsaw). In many cases cooperative approaches are now regarded as a more flexible way of dealing with fragmented administrative bodies. Our studies reveal that consistent with the ecological modernisation thesis, cooperative institutions or networks have become more accepted in the political arena, but the process of handling co-operation requires new skills and practices that address questions of legitimacy, equity and accountability.

For example, new planning techniques or instruments are needed to overcome sectoral boundaries between activities such as housing, transport and leisure that Impinge on green structures, and the problem of spatial fit required for green structures that transcend administrative boundaries, The project-oriented way of planning enhances pragmatic and integrative views and values but lacks a strategic overview of the cumulative Impact of several separate development projects. Undoubtedly the renewal of old industrial technical infrastructures like communication corridors and waterways, the rebuilding and redesign of "derelict buildings" and "derelict landscapes" offer potential for integrative approaches to green structure planning. But In many cases the widening of the planning scale (from city to region or region to country) together with the enlargement of infrastructures such as airports, business parks, motorways etc. leads to a loss of green space (Munich, Ticino). In practice the positive and negative impacts of densification strategies for green structures are not necessarily balanced.

Clear changes are to be seen with new actors and institutions entering or seeking to enter the planning process. However, existing planning systems are not designed to actively involve all those actors who seek to participate. In practice informal instruments are used to accommodate new actors in the planning process. But while our case studies show that efforts to involve stakeholder groups have become more common, Informal procedures often lack transparency and accountability, and many ordinary people who are not members of organised groups are left 'out of the game'. Their concerns are often only given voice when intermediate actors working on

their behalf are systematically enlisted Into the planning process (Sheffield) or when Individual planning officers take on this role (Aarhus).
The chosen policy cases represent different levels or scales of planning. On the one hand many researchers and practitioners hold onto the ideal embedded In the principle of subsidiary so that discussions about projects occur at the 'right' level or scale. On the other hand the principle of subsidiarity will only work properly if the 'right' body is established and Is Invested with the authority to conduct the task in hand. In the case of green structure policy the municipality should be considered to be "the most responsible " institution. But within Europe as a whole, the regional level has also become more Influential and our cases demonstrate that many Individual actors and Institutions - not just planning professionals - have to 'play the game' on different 'levels' and scales at the same time. As a result It Is not clear whether existing policy arrangements for green structure planning are equally effective at all spatial scales or whether new arrangements are required to deal with these scalar effects.

Time and dynamics are central issues in the development of green discourses, strategies and visions

Time is a vital factor in green structure development and protection. There is a very long period between the moment a decision is taken to design, conserve, or enhance a green space and the moment when the particular green structure element is mature enough to start playing its full functional role. However, very little time is needed to redevelop an open space or derelict area as part of a densification process. Because of these lag effects and the ever-present threat of development in urban areas, a resilient and coherent policy is required in order to establish the green structure matrix for the whole city or region.
History reveals that green structures in urban planning are an issue of tradition and modernism at the same time. Pattern strategies like "green fingers" (Helsinki, Munich), "green wedges" (Warsaw), "green belts" (Munich, Marseilles, Sheffield) are a constant issue of debate. Also visions like the "dense city", the "city of short distances", "green city" etc. rise, disappear and reappear as well as discourses like "wilderness or design", "culture or nature" (Marseilles) or "rich south against poor north, or vice versa" (Madrid, Munich) "shrinking or booming city", "sustainable city" (Aarhus) etc. Our experience shows that multiple discourses, strategies and visions coexist in cities throughout Europe and that few visions have proved resilient to change. In practice planners have to cope with a plurality of issues and values, and they are In a unique position to learn from each other and find the 'open window' through which greenstructure plans can be promoted and placed firmly on the political and public agenda.
But addressing the overall shift from government to governance that the policy arrangements model highlights does not sit easily with the professionalism planners are currently expected to exhibit.. In the context of green structure planning a new professionalism is required that promotes green structure planning s in a number

of ways. For example, by operating In a proactive rather than a restrictive way; by Identifying the positive contributions of greenstructures to city life; by combining formal with informal instruments of public Involvement, and by establishing financial and social incentives for designing, maintaining and monitoring high quality green structures. Approached In this way the promotion of green structures as part of the on-going process of urban growth and renewal Is seen to present conceptual, material and organisational challenges for city planners, politicians and residents alike. Our case studies show that green areas continue to be lost or degraded through the urban development process, but other studies show that Innovative practices are also emerging. From these cases we gain Insights about how political and social processes are enmeshed In the promotion of green structure planning - including the roles professional planners are now expected to play.

New actions should promote better understanding of green structures

- Because a broader range of land-use types is perceived to contribute to green structures today, new actors, especially private and non governmental actors have entered the planning process. We need to learn more about the interests and values of these actors (private landowners, farmers and foresters, businesses and the service sectors etc.).
- Because we need concerted activities to promote green structures within devolved and complex planning systems we should know more about how municipalities use traditional and new instruments to achieve effective and equitable outcomes. Do classic restrictive policy instruments go easily together with discourse-oriented forms or is compatibility only achievable through radical reforms?
- Because time and dynamics are central issues in the development of green discourses, strategies and visions, the relevance of process oriented planning and management strategies must be accepted. We should invest more in the training of planners especially by offering direct experience of developing and conducting new processes of public involvement and decision-making.

Different planning systems (plans and procedures) in Europe are more or less supportive of green structure planning. In this COST Action we haven't managed to analyse them in detail in order to find solutions that could be recommended as "the best practice". Of enduring concern to participants In WG2 is the question of how green structure functions are to be managed In an Integrative and fair way - especially when these functions collide and work against each other, e.g. ecological versus aesthetic functions; recreational versus ecological ones etc; high density development versus looser urban forms. We offer no material guidelines for action; rather action should be born out of awareness and insight. But In terms of good governance a general recommendation is to open up the process of decision-making by taking more proactive steps to better Inform the public of planning proposals early on In the process, by designing procedures of public Involvement that are fair and just, and by monitoring the outcomes of planning procedures so that future decisions about green structures are evidence based.

Interregional, regional or inter-municipal level

and scale of green structure arrangements in Italy

The Park of river Ticino valley, regional parks network for the "urban region" of Milan

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The green structure of the city and region of Milan is mainly represented by the Lombardy system of regional parks of which the Park of Ticino Valley represents one of the most important in regard to dimension, position and richness of natural and architectural monuments. The disposition of the regional parks in the surrounding of Milan reflects the geographical morphology of the area. Two north-south flowing rivers form the valleys of Ticino and Adda, cross the Padanian plane and divide the Milan region in west and east. Milan area is formed in the north by the Prealps and the Alps and in the south by the great agricultural area, where resurging waters come from the Alps. In a process of almost 30 years since the beginning of the 70s the banks area of the two main rivers together with parts of the southern land and the woods and mountains in the north of Milan had been transformed in a network of Regional Parks to realise a wide green belt for the city of Milan and its conurbation area.

The Ticino valley shows a great biodiversity and represents an ecological corridor between central Europe and the Mediterranean area. Nevertheless the valley is settled in the middle of one of the most urbanised areas in Europe (Milan region, nearly 3.5 million of inhabitants – the southern end of the "Blue Banana") characterised by various forms of sprawl phenomena.

The area of the Regional Park of Ticino is characterized by

- natural woodland areas used in the past as "hunting reservoirs";
- wide agricultural areas in the south; canals on both sides of the river of which those in the east are used as waterways since medieval times and as place for building Villas for Milanese nobility since XVI century ("Sistema dei Navigli");
- other canals for hydroelectric production and industries and for agriculture (Canale Villoresi, XIX century, Canale Industriale, 1900-1940);
- three medium sized historical and industrial cities (Pavia, Vigevano, Gallarate with almost 80 000 inhabitants each) and several small sized cities;
- two ancient monasteries with a wide possession of land;
- the Malpensa airport (intercontinental hub for northern Italy);
- three highways, some state and provincial roads and four railways crossing the river.

In 1974 the Ticino valley from the Lake Maggiore until the River Po (on an area that gradually grew until 90 640 hectares, with a linear shape of nearly 110 km) had been

transformed in the Lombard Ticino Valley Regional Park, including the territory of 47 municipalities (with 430 000 inhabitants) touching the area of three provinces (Varese, Milan, Pavia).
So the image of the Regional Park Network results as a complex pattern of "natural" and "agricultural" areas with huge infrastructures, historical cities and modern metropolitan peripheries shared between different levels of administration from municipal to provincial until regional scale. On another perspective the Park Network represents also a sort of articulated and rich museum of landscape, architectural monuments and historical infrastructures with consequent problems of heritage conservation under the control of national legislation.
Planning system: The Italian system of environmental planning is based substantially on: cataloguing of areas for environmental limitations, identified by the Regions (through Regional Territorial Landscape Plans); management and design of green areas at a local municipal level (through Master Plans and various forms of Detail Plans).
The coordination between landscape planning on a regional scale and planning on a municipal scale is carried out by the Territorial Coordination Plans (Piano Territoriale di Coordinamento – PTC).
The planning and management of the Regional Parks is based on the PTC. The Plan has, when adopted the effect of a declaration of general public interest and urgency, and of the impossibility of postponing the interventions specified in it. It replaces at all levels landscape, territorial or urban plans or any other planning instrument. On the legal point of view the Regional Parks represent a "consortium" between municipalities and provinces.

1 Policy discourses

The public discourse evolves since many years pointing out the "challenge" to preserve a "natural area" in the middle of the most urbanised territory of northern Italy.
The first great discourse on the green structure in Milan area rose in 1967 with a movement in Pavia (the Cambridge of Lombardy) asking for a "defence" of the survived natural area of the River Ticino from the increasing conurbation and urbanization phenomena. In this time the discourse about "preservation of natural areas" was running together with the other emerging discourse of the "conservation and restoration of historical city centers" (Centri Storici). Between 1974 and 1978 a regional law established the "Lombard Regional Park of Ticino Valley" (the first regional park in Italy).
During this process the discourse gradually passed from the idea of "defence of nature and historical heritage against urbanization and industrialization" to the idea of "challenge to integrate industrial development and urbanization with nature and landscape preservation". The way to translate the "idea of the challenge" into a real political instrument was the Territorial Coordination Plan (Piano Territoriale di Coordinamento, PTC), that plays the role of a "large scale planning institution" directly controlled by all the municipalities being part of the Ticino Park.

Today the discourse of "challenge" began to retire once again back to the discourse of "defence", because of the contradictions of the development in the urban Region of Milan. Economic increase and new infrastructure facilities are foreseen, for example the enlargement of Malpensa Hub or the realisation of new high capacity railways connecting the airport with Turin-Lugano-Milano and new highways connecting the airport with Pavia. Next to this, the new Fair of Milan in the area of the former oil refinery of Rho-Pero near Sempione is in construction, followed by the need of other new highways partly crossing the area of the park. All these infrastructure improvements result in attracting local investors and with the consequence of producing conflicts with the local administration, that supports the Park.
But green structure was seen as a form of regulation of the territorial balance at regional level by the administrative body. During the formation of the Park Network an important event was represented by the fact that a great part of the members of the regional administration were specialists and not mere politicians occupying a seat. The body was elected with the institution of the regional government in Italy since 1970 (but the Regional administration started to have a full delegation of power from the State only in 1977). Two are the great problems of the governance of the territory in the metropolitan areas of northern Italy: on one hand, is the extreme administrative fragmentation of the land in small municipalities with the consequential difficulty of coordination of single, small scale master plans and their integration into large scale plans and programmes; on the hand, is the extreme aggressive, intense and deregulated development of the metropolitan areas.
The great discourse of "innovation" within the regional administration in Lombardy was the idea to match better administrative political territories with the natural-morphological territories: including rivers crossing the plane, the pre-alpine woods and mountains in the north and the great agricultural plane at the south of Milan. Following the example of the Ticino Park, these administrative units were identified as "green structures" for "Milan urban region area" and instituted as "Regional Parks". The remarkable fact of this action was that, with a lack of "large scale planning" because of the great lateness of the Regions (Regioni) in this field, the Lombard administrators should use tools of "green structure" planning to create a new tool for "grey structure planning". In this sense this "park strategy" was seen not only as a way to provide green structures for the city and the region of Milan, but also as a "chance" to quit irrational forms of governance in the territory at the metropolitan scale. This strategy was extended to the whole Lombardy region to form a system that grew gradually in the 80s and 90s covering almost 20% of the regional territory (4 481 26 km2 forming the Network of 22 Regional Parks distributed on the river valleys crossing the plane and on the mountains in a region of 23 851 km2.)

2 Coalitions and influence

University and public opinion. During the starting phase of the construction of the Ticino Park in the seventies, the most important and successful coalition was the

association between the university and public opinion. The public opinion was mainly represented by the inhabitants of the area and the cities belonging to the park. They had organised themselves in a local association (civic associations, environmental associations). The intellectuals and specialists from the university were coming from different branches – human issues, urban planning, biology and ecology. In the sparkling atmosphere of the seventies the two parts of the coalition met thanks to the mediation of the local political organization and with the official support of the left political parties. The Park was founded thanks to a petition addressed to the just born regional administration (Regione). After the institutionalisation of the Park the coalition survived in an institutional frame: the park administration represented by the Assembly of the Consortium (Assemblea Consortile) is constituted by a council of the delegates from the municipalities and from the provinces. This Assemblea Consortile commissioned to Universities investigations, studies and symposia on the Park, e.g. on the economic transformation of the area. At the same time the environmental association collaborates with the Park in volunteer monitoring and maintenance. This kind of collaboration is quite an exception in the urban planning practise in Italy.

Public opinion, professional specialists, regional administration. After the success of the Ticino Park, and its governmental instrument, the Territorial Coordination Plan, worked out in many other municipalities in Lombardy - under the pressure of the local public opinion. They commited themselves to professional studies of planners for the realisation of regional parks. At the same time the regional administration supported this kind of initiatives because the Park Coordination Territorial Plan was meeting a requirement of national legislation. This kind of plan was transmitted from the State to the Regions. So, during the eighties and the first half of the nineties the policy of the "regional parks" had been strongly supported by the Region, realising a strong coalition between different levels of administration (regional, provincial, municipal) with the agreement of local associations. Today this coalition became more feeble because the Region plays the role of a mediator between the Parks and has to deal with strong local economic forces asking for more freedom of action and loosend restrictions of the park ties.

Coalition private investors, public opinion, administration. This kind of coalition represents the new approach in the last decade and shows the evolution of former coalitions. Another example is to be seen nowadays in the project of the Locarno-Venice navigation line trough the waterways net of Navigli. The project is promoted by the the old local association of the Friends of the Navigli (Amici dei Navigli), by the Swiss municipality of Locarno at the Lake Maggiore and by private enterprises with the aim to build port structures, waterways and facilities for boats. This navigation line exists since the medieval time until the last century. I was totally demised in the sixties. The initiative meets the sympathy and the interest of many local municipalities because they see the possibility of an economical grow with tourist activities in their territory. In this way the initiative tries to create a coalition by winning popu-

lar support, administration on various levels, the interest of intellectuals and professionals, various operators with economical interests as well as two countries.

Coalition of peripheries against centre.
Notwithstanding many studies and debates show, that the structure of the region is still almost monocentrical. Since the post-war reconstruction a regional balance has not been found for the urban development of Milan area. Few "central areas" mostly within the city of Milan are able to attract most qualified functions thanks to the high level of accessibility. Many peripheral areas in the region are characterized by an uncontrolled grow of residential settlements. Among those peripheries are many areas of the Ticino Park, whose inhabitants commute everyday to Milan. A feeling of hostility against the city of Milan became obvious in the "regional peripheries", because all unattractive functions (some industry, logistic, etc.) are situated in the territories of the Park. Development is depending on the realisation of new great infrastructure facilities as the hub of Malpensa or the high capacity railways. In a certain sense the Regional Park represents a coalition of the peripheries against the centre but nowadays many municipalities in the Ticino Park are in a great dilemma: on one hand, the realisation of some new highways gives more accessibility; on the other hand is at stake the quality of the environment that represents one great resources of the area.

3 Distribution of power and resources

The importance of the local agreement. As seen before the success of this kind of "regional" green structures depends much on a negotiated agreement within local inhabitants and other actors. For the people living in the area, especially the river with all its attractions belongs to the local heritage since generations. The esteem of the park depends much on the support and direct involvement of the local population. The few that opposed to the Park had been farmers – who were suffering from restrictions of their activities. Others were the owners of the quarries who had to stop their activities in the river bed. Nevertheless after a while the farmers committed themselves to adequate activities within the park regulations. They were helped with some facilities to improve the quality of their products and perform better on the global market. After almost 25 years of existence of the Park and nowadays of an insecure local support for the Institution of the Park some municipalities start to suffer a little of the constraints of the Territorial Coordination Plan for local urban development. They want to meet the new economical chances for the area represented by the Malpensa hub with the consequential attraction of investments, work opportunities, etc.

The power of the big companies. In the case of Ticino Park the great company (partly public) SEA (Società Esercizi Aeroportuali) plays an important role and has nowadays the power to administrate the Malpensa airport and Linate airport in Lombardy as well as some other airports in South America. The plan of the hub, with

the third track and some new service centres nearby the airport and the promise of an increase of business in the area represent a stake able to pursue some municipalities of the Park to renounce to the environmental quality in the name of economical progress. Naturally in this game is not evolved only the SEA, but other companies too, that are interested in activities to increase industrial growth in the area of Malpensa.

Regional administration as a mediator. In the last years the Region has promoted the formation of the regional green structure with its formal legitimation and has now changed its role. Instead of representing a real pole of power it started to play the role of mediator among different interests: on the one hand, investors and companies requiring freedom of initiative and less limitations in the regional green structures; on the other hand, the Parks administration tries to defend the position reached with the evolution of regional and national legislation in thirty years of political debate on green structures. In this lack of authority private interests, included those of the big company SEA, seem to have won the first round: some "natural areas" had been cancelled by the national government from the list of the "national natural areas". This represents a hard strike to the integrity of the Regional Parks Network that has lost a certain level of protection. This meant the re-opening of negotiations about the status of the regional green structure.

4 Rules of the game

Considering the up mentioned phenomena it can be deduced that one of the most important rules of the game is that any initiative relating to maintain the regional green structure must look for the agreement with the local population. First of all because of a technical problem: the Assemblea Consortile of the Park is constituted by legal delegates of the municipalities within the Park boundary, and the master plan of the Park (PTC) is in the end the only formal instrument of governing land use (PTC is an instrument that gives indications that must be included in the local master plan). On the other hand because of structural problems: the institution of the Park depends much on the wish of the local public opinion and of local society. Every day the administration of the Park is invaded by an enormous quantity of questions and requires of all kind from local people. They must try to satisfy these wishes, otherwise they risk to loose the local consent that is at the base of their existence.

In the last development of the game, influenced by the liberalism that characterised the Italian political life of the last years, local regional power declines. New rules seem to be required. In October 2002 the Park of Ticino received an hard strike with the cancellation of the status of "natural area" of his woodlans from the national list of protected areas (the Regional Parks includes some parts that are also under the protection of the National Low on Protected Areas that represent the most restrictive form of tie in the Italian legislation). At the same time the Park had been declared as Monument and Heritage of Humanity by the UNESCO. These ambiguous events represent new rules of the game, accepting contradictive activities without coordinating them with a planning instrument.

The integration of urban forest discourse in spatial planning, Belgium
The 'Ghent Park Forest' case study

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1 Introduction

An influential discourse over the last decade in spatial policy in Flanders (the northern autonomous region of Belgium) concerns the creation of forests near cities and towns. Large-scale forests are seen as the best strategy for providing the urban dwellers with green spaces for recreation, for sustaining a variety of ecological functions and as an instrument that could limit the urban sprawl.

This case study aims to explore how this originally sector-based discourse could receive its prominence in current land-use debates and even came to produce a new set of spatial practices for shaping the rural-urban interface. To this end, the focus of the case study was particularly on the discourse-actor relationships, which have carried forward the strategic idea.

2 The rise of urban forest discourse

While policy discourse on the creation of urban forests was established in the 1990s, its emergence is to be situated in the wider institutional and professional debate on forestry since the early 1970s. At that time, open space in Flanders was increasingly under threat of urbanisation and its effects. Despite protecting actions by the state such as forest acquisition in some instances, in many other cases, inappropriate and weak legislation have constrained public authorities to effectively take action.

During the 1970s and 1980s, a small circle of forestry experts (mostly in the Flemish Forestry Association), have made considerable efforts for attracting policy attention to three key messages: forest conservation, forest expansion and multi-functionality. Despite their successes in initiating some important changes in established institutional rules, they did not succeed in changing the discouraging position of forests in actual land-use policies.

In the run-up to important reforms in the spatial planning system for Flanders, forest policy took an increasingly strategic direction. In the context of the conference 'Towards a Greenspace Strategy for Flanders' (1988) a clear strategy for forest expansion was discussed. The problem of forest shortage in Flanders was framed as the incapacity of the existing forests to provide the desired multi-functionality (economic, ecological, environmental, social). As a structured way of presentation, this 'storyline' held together a whole machinery of arguments meant to justify and motivate the need

of forest expansion, especially in densely populated and scarcely forested areas. (Van Herzele, forthcoming)
In 1993, the storyline was included in the Long Term Forestry Plan for Flanders, which also introduced the term ‘urban forests’. With this strategic policy document the forestry sector could position itself as a well-prepared and convincing partner in the negotiation process around the Spatial Structure Plan for Flanders (SSPF). In 1997, with the formal approval of the SSPF, a forest expansion target of 10.000 ha was included in regional spatial policy. The Flemish government was given the task to designate the areas for forest expansion in the regional land use plans.
The Flemish forest administration developed a forest expansion programme dividing the required afforestation target over the sub-regions of Flanders, taking into account the actual inequality of forest distribution. It was particularly the aim to provide each city and town in Flanders with an urban forest. A series of ‘scientific’ studies were advanced aimed at finding the best locations for these forests. The results are currently being used in the negotiations for the integration of urban forest projects proposals in the regional land-use plans, which are prepared in the framework of the processes for the delineation of urban areas in Flanders.

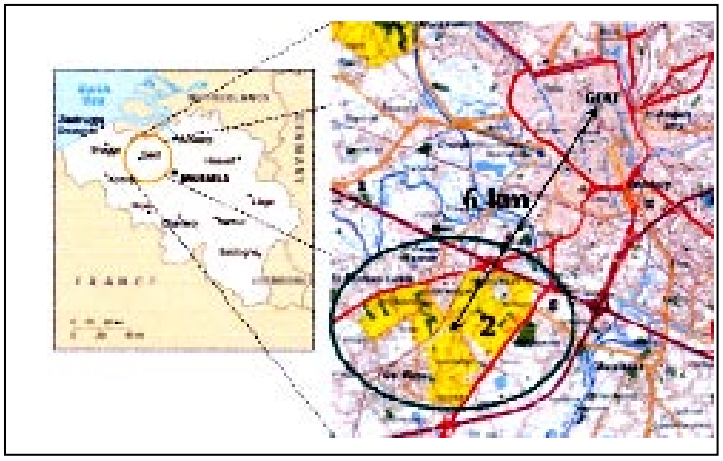

Fig. 1. Location of the Ghent case study area in relation to the city centre. (Source: De Vreese et al., 2004)

3 The Ghent Park Forest project

In 1995, the Flemish forest administration, together with the Province of East-Flanders, launched a location study for a 200-300 ha forest near Ghent. It was decided to preferably spend this ‘spatial budget’ for the realisation of one unbroken forest unit (100 ha being the minimum norm according to the Long Term Plan Forestry). The study adopted a ‘scientifically sound’ method by means of multi-criteria analysis. As a result, the ‘Kastelensite’ (castle area) was selected (Fig. 1) because of its potential to border the residential development of city, to reinforce the historical characteristics of the castles in this area and because of the presence of forest in history.

In 1999, a EU funded Life Environment project was started with the prime objective to create a firm societal support base for the Ghent urban forest. The project

initiators (Flemish forest administration, province of East-Flanders, Flemish Forestry Association) formed the 'Bossanova' alliance. They rapidly gained the support of Flemish green party members and the local nature movement, which particularly endorsed the ecological function of the urban forest.
In the same period the Spatial Structure Plan for Ghent was in the making. Two preparatory studies (1999) calculated the actual forest shortage in Ghent with the standard of 100m2 forest per inhabitant, referring to the Long Term Forestry Plan. The planners took the forest need into account, however, they rather started from a structure-based vision emphasising the preservation and connection of open spaces. Moreover, in the city's view the enhancement of the urban quality of life was a major concern. In this context the concept of the four 'groenpolen' (large multi-functional greenspaces in the urban periphery) was made, as a main part of the city's green structure. The Kastelensite was included as one of these areas.
After the elections (October 2000), the new political coalition of Ghent declared its engagement for the realisation of the four 'groenpolen' in its governmental agreement (2001-2006). The creation of an urban forest was foreseen in three of the locations. Unfortunate to Bossanova and its supporters, this was not the case for the 'Kastelensite', for which the "preservation in its present landscape values" was among the action points of the political coalition.

Increasingly aware of the importance attached to the actual landscape, Bossanova decided to change the name of the project from 'Urban forest' into 'Park forest' (December 2000). In the same period, the opportunity arose to relaunch the project's strategy. The project was integrated in the planning process for the delineation of the urban area of Ghent (led by the Flemish Spatial Division). A procedure for the regional land use plan was started with the aim to develop an 'urban landscape park' of 1 200 ha, which, besides about 300 ha new afforestation, also included a 10-15 ha business area. The process was followed by a group of officials from various regional administrations (including the Divisions of Monuments & Landscapes, Land, Nature), as well as the three municipalities involved.
Among the widened group of administrative representatives, a discussion was started on the urban forest's image, which led to the choice for dividing the desired forest expansion over several units. The preparatory study for the land-use plan (September 2001) included a structural sketch, designing the 1 200 ha area as a landscape mosaic of different land-uses, including farmland, forest, conservation and habitat creation areas (Fig. 2) The total forest cover was estimated one-third of the area and split up into a variety of different forest sizes, ranging from three 'core forests' to numerous small forest patches spread over the area.

While the above concept brought the public administration and politicians to agreement, the uncertainties among local people were growing. In October-November 2002 information meetings for the wider publics were held. Recurring concerns

were about various inconveniences, safety, privacy, etc. Of course, also many of the affected farmers were present and strongly contested the legal insecurities. A main controversy, moreover, dealt with the business area in the plan.
Based on the preparatory study and after negotiations with the affected landowners/ farmers, in Summer 2003 the draft regional land use plan was finished. After this, the local authorities were consulted and the plan was adapted to their remarks. The formal procedure includes a public consultation after the approval by the Flemish government of the draft plan. However, in June 2004, in front of the elections for the Flemish parliament, the Minister of environment refused to put his signature because the plan showed too many deficiencies and his political (green) party could not agree with the business area. As local green party members had positioned themselves in the contestation against this area, it was also said that the disapproval was made entirely with electoral advantage in mind.

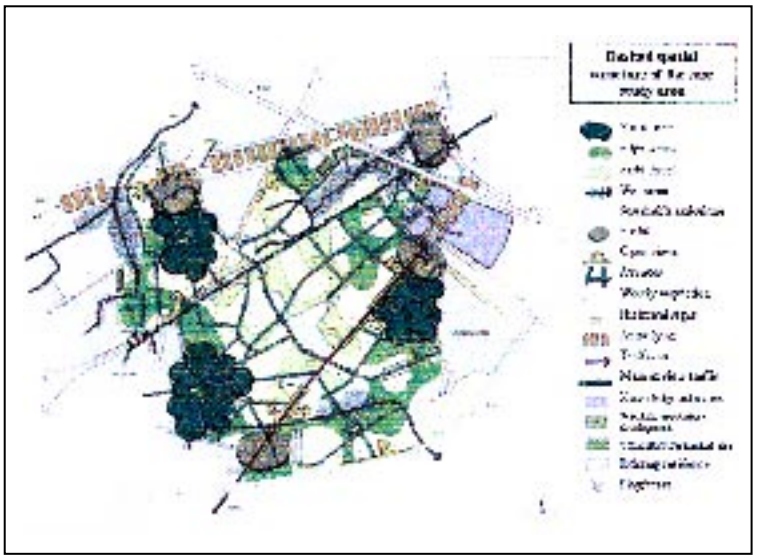

Figure 2. Structural sketch for the project area (Source: De Vreese et al., 2004)

4 Discourses

The largely target-led and criteria-driven urban forest discourse is actively linked with the notion of 'multi-functional forestry'. In this concept the forest is being treated primarily in functional terms (as resource and amenity), which focus on those aspects of the forest involved in the provision of economic, ecological, environmental and social goods and services. According to the Long Term Plan Forestry, for fulfilling its multiple functions a forest must preferably have a surface area of 500 ha, and an absolute minimum of 100 ha.
In contrast with the broad functionality of the urban forest, other open space land-use were assigned a much more narrow function. For example, in the location studies, traditional economic criteria are being used for agriculture. Underlying this approach is also the assumption that agriculture is not strong enough to resist to urbanisation, and is neither able to capture the expected recreational pressure.

In the 1990s, urban forest discourse found stronger evidence in the context of the emerging 'structure planning' discourse, aiming to counteract the continuous urbanisation pressure on the countryside by promoting a concentration of development in the cities. Accordingly, and in the face of the reality of urban outflow, themes of urban quality of life gained an increasingly prominent place on the political agendas (Van Herzele and Wiedemann, 2003). Hence, urban forest discourse was strengthened with the message that urban forests will improve urban life and prevent people to leave the cities.
In the case of the Ghent Park Forest, the urban forest storyline and its supporters were able to impose the afforestation targets in the regional land use plan. However, the urban forest image did not maintain unchanged during the process. With dividing the forest area into smaller units, the preparatory study for the regional land-use plan brought about a to foresters new forest image. Furthermore, by embedding these forest units into a larger mosaic of land-uses, also the concept of multi-functionality was given a broader meaning, relating the forest functions to housing and other nearby land-uses (Van Herzele, forthcoming).

The case also shows that the success was less evident, when urban forest discourse came to interfere with local realities. The message as a whole continued to be fundamentally contested: Why the urban forest will be planned here? Is there a need for forest at all? Is society asking for forest? Though it was not surprising that the affected farmers were strongly contesting the occupation of their land, the logic of reshaping the open landscape into a dense forest was not fully understood more generally. While 'functional' expert-based arguments prevailed in the officials' presentations, non-resource values that encompass beauty, cultural heritage, feeling safe, seemed to be important to the public. However, these were mainly considered as a resistance to change, as too personal or less relevant.

5 Actor coalitions

In the course of the process from discourse creation to site planning, the circle of actors involved has widened. In the planning process of the Ghent Park Forest various new coalitions were established. The project was initiated by the earlier mentioned 'Bossanova' coalition, aimed at facilitating the implementation of the project. Shortly after, the (sectoral) project was integrated in the spatial planning process for the regional land-use plan (coordinated and led by the regional Spatial Planning Division).
In this context sub-coalitions were formed, for example, between the Flemish forest administration and the Flemish Land Agency, the latter having much expertise in agricultural matters.
These project-based coalitions agglomerating around specific time-dated tasks have undoubtedly contributed to the coherence and efficiency of the plan-making as well as in engendering the required political support. On the other hand, this approach

also seemed to cause internal power conflicts, alienation of the affected farmers and a lack of transparency to the wider public. Furthermore, the interference of the project with other processes and their policy coalitions (the structure plan for Ghent and the delineation plan for the urban area of Ghent) seemed to make the picture even more complicated and confusing. It was also unclear who was to be expected to communicate with the public.

6 Distribution of resources

The urban forest discourse is actively generating various types of new resources: preparatory studies, a strong set of instruments and budgets for effective implementation. In 2000, the Flemish government installed a special 'Forest Expansion Unit'. It is the aim to acquire up to 1000 ha land for afforestation per year. The earlier mentioned 'location studies' are meant to provide the required ('objective') knowledge base for selecting the best locations for the creation of urban forests. In order to facilitate the implementation of new urban forest projects, including the Ghent Park Forest, more detailed inventory studies are being made, for example, agro-economic investigations. Various instruments for the acquisition of land are currently considered, such as right of pre-emption, land exchange and compulsory purchase. In addition, increasing investments are being made for building 'the needed public support'. For the Park Forest Ghent various projects were launched to be supportive to this aim (De Vreese et al., 2004).

7 Rules of the game

The urban forest discourse attributes a dominant role to central governmental actors. This is also reflected in the organisation of the three step strategic process of urban forest projects: 1. location phase (in the format of a 'scientific' study); 2. concept phase (with the involvement of various public actors); 3. implementation phase (with the involvement of the affected local people and the broader publics). The argument for keeping the first steps of decision-making out of wider social debate was framed as the need to let prevail common over personal interests (Nachtergaele et al., 2002).

It was Bossanova's clear intention to involve the public in the implementation of the Park Forest project (e.g. through a series of interactive thematic workshops for the design). However, this was constrained through the integration of the urban forest project in the formal planning procedure for the regional land use plan, which does not include 'communication' as a structural element. In the face of this, it was not possible to initiate a constructive debate with the wider publics.

While the integration of the urban forest project in a formal process of land-use planning has provided legitimacy to urban forest discourse, has widened the circle of actors involved and has facilitated the development of appropriate instruments for land acquisition, on the other hand, the formal process appeared to be too slow, not flexible enough and to heavily depending on political bargaining, for appropriately dealing with local expectations, concerns and insecurities.

8 Conclusion

In this case, discourse-actor relationships were most important in transforming policy rhetoric and practice.

The case illustrates how a forest-directed discourse (regional level: forest expansion, multi-functional forestry) could be reconciled with a city-directed discourse (municipal level: urban structure, quality of life) has resulted in a powerful combination, but that this combination has dismissed alternative discourses, which could lead to a more place-directed approach. The integration of place-based approaches that acknowledge local people-landscape interactions (Van Herzele, 2004) with approaches that acknowledge the effects on different functional levels as well as the wider public interests remains a contentious issue and an important challenge for urban greenspace planning (Van Herzele, 2001, Van Herzele et al., 2004).

It is positive, however, to discover that in this case, the widened Park Forest concept has proven to provide a larger 'discursive space', holding interesting challenges for cross-sectoral collaboration, including local farmers and other stakeholders as key players into new actor coalitions for the Park Forest's design and management. Hopefully, governmental actors will shift their role from decision-makers to facilitators of a renewed process.

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Green structure planning in Madrid city and metropolitan area

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General information

The establishment of Madrid as the capital city of Spain took place in the 16th century, when king Philip II established the court in Madrid on a permanent basis. Prior to that moment, Madrid was but a small village with a strategic interest being located right in the centre of the country.

Despite the lack of natural resources, the continental climate was healthy, the topography allowed an easy extension of the city towards the east, and the closeness to the Guadarrama Sierra determined the existence of hydraulic resources and therefore of an interesting scenery and vegetation north-west of the former village. Although the Manzanares River, running along the centre of Madrid, is a low water level river, abundant subterranean waters ensure the supply of water for the new capital city.

The green natural areas are located mostly in an arch stretching between the north and west of Madrid. The rest is dry and lacks vegetation consequently leading to a quite unproductive agriculture. Only along the banks of the Henares and Jarama rivers and specially the Tajo (located 50 km south of Madrid) there is vegetation and the possibility for agriculture with irrigation facilities.

Madrid grew consistently during the 19th and 20th centuries, reaching a million inhabitants in 1930. Due to the emigration from rural areas to the big cities since 1950, the capital, and especially of the metropolitan area, began intensively to grow. The big growth of the metropolitan area took place in the decade 1960/1970, with a rapidly industrialisation, which made the periphery grow faster than the centre. From 1975 onwards, the growth of the capital decreased and it even lost population, while the metropolitan area continued to gain inhabitants but at a more moderate speed. At present the Madrid municipality has 2 938 723 inhabitants [1]

1.The current planning legislation in Madrid Autonomous Community is constituted by the Territorial Policies of 1995 and the Land Law approved in 2001. The Master Plan is the most important instrument in urban planning that covers the whole municipality. This last Law establishes the following land reserves for green areas :

- Master Plan: 20 m2/100 built m2, for general assignment.
- Development Plan: 15m2/100 built m2, for local assignment.

The state legislation approved after the Constitution of 1987 only gives some standards that affect planning (property rights, land appraisal, expropriating guarantees, etc.), but cannot regulate specific urban planning that concerns to Autonomous Communities. The current Madrid municipality Master Plan was approved in 1997. It sets up the structure of green areas, among other specifications, since there is not a specific plan for this matter. There is not an integral plan of whole territory of Madrid. The Urban structure results from the sum of many Master Plans of smaller municipalities.

The province of Madrid is one of 17 Autonomous Communities that constitute the Spanish State. It has a small surface respect to other Autonomous Communities, although it counts with a high rate of population. Most of the population is concentrated in the city of Madrid and its metropolitan area, in the province is no other city with more than 50 000 inhabitants.
Madrid is a very compact city that has grown in a radial way (except for the northwest area full of natural beauties), using a territory that allows smooth urban development due to a gentle topography. No physical barriers must be overcome or natural elements be preserved, since the big natural green areas are concentrated in the northwest arch of Madrid city.

1 General description of the case. Natural green areas, urban and metropolitan parks

In this arch along the Manzanares River the “Casa de Campo” and the “Monte del Pardo” are located. Both of them constitute the big green natural areas in Madrid capital city, and have usually been protected from the developing processes because they are part of the Royal Trust as Hunting Grounds.
The 1 722 ha “Casa de Campo” is a natural park of public use since 1931 when it was transferred to Madrid’s town council. It is the biggest park in Madrid and the busiest (apart from the Retiro Park of a historical nature) for it even is provided with an underground line inside. The southern part of the park has suffered from damages due to new installations in the fifties such as a Country Fair, an Amusement Park or the Zoo. These leisure infrastructures have diminished its surface and its original character. Nevertheless, it has also been enlarged linking it with the adjoining municipality of Pozuelo (Somosaguas Park). In general the park is in a bad state due to an over utilization and the lack of maintenance.

The 46 728 ha “Monte del Pardo” is a green natural space that stretches to the northwest, linked with the “Regional Park of the Manzanares Upper Bassin”. It is a part of the green wedge extending from the centre of Madrid to the Guadarrama Sierra. It belongs to the National Trust, an organisation that administers the former Crown assets. Only a small part of its surface is for public use, the rest constitutes a reserve for autochtonous flora and fauna whose protection is ensured due to its special status and to the financial resources destined for its conservation. This green structure is linked with the ”Casa de Campo” due to the existence of some sport areas of private use, such as the “Country Club” or the “Puerta de Hierro Golf Club”.
The 130 ha “Parque del Retiro” is the main historical garden in Madrid. It belonged to the Royal Trust as a garden of the “Buen Retiro Palace” during the 18th century and in 1869 its property was transferred to Madrid’s city council. Due to its over utilization and to its poor maintenance and surveillance, it is a bit damaged. The ban of the traffic inside the park improved its environmental status already, but due to policies of eas-

ing the traffic around the park, the accesses for pedestrians is not very comfortable. The adjoining Botanical Garden, as well as the "Capricho Garden" which is located in the outskirts and was recently acquired by Madrid's city council, constitute examples of 18th century gardens. Although they are for public use, Their access is also restricted, though they show a good state of conservation.

During the past century, another interesting park was created in Madrid: it is the West Park that, together with the Debod Temple Gardens, is sited on the slope between the city and the river thus creating an itinerary of green areas that despite some unevenness reaches the "Casa de Campo" and the north-west green wedge.
As a result of the recent urban planning efforts over the last years several parks, some of great importance, have been created, like the "Juan Carlos the First Park", located north-east of Madrid near the "Capricho Garden", or the "Polvoranca Park" in Leganés, located in the metropolitan area south-west of Madrid.
Two metropolitan parks of great interest are projects of urban planning now: The Manzanares linear park, under construction now, will occupy a surface of 500 ha along the Manzanares river banks south of Madrid between the ring road M-30 and the edge of Madrid municipality. The park is equipped and will recycle former dumps. Most of the surface has been expropriated. The Valdebebas Park is still to be carried out at the north-east of the centre. It will have a surface of 530 ha and will be placed, like the previous one, on a dump.

Regional parks

At present, apart from other less important protected spaces, there are three Regional Parks in Madrid metropolitan area, which are the following :

- The "**Regional Park of the Manzanares Upper Basin**", created by law in 1985. With a surface of 52 796 ha it is located north-west of Madrid and encircles 16 municipalities, six of them located within the metropolitan area, including Madrid capital city. It sets up an interesting green corridor from Madrid's municipality to the Guadarrama Sierra. Within Madrid's municipality it includes the "Soto de Viñuelas", a private natural space of 3 000 ha, which the town council has intended to acquire so that it becomes a public asset.

- The "**South-East Regional Park**", created by law in 1994. With a surface of 31 550 ha, it is located south-east of Madrid's municipality and encircles 16 municipalities, nine of them within the metropolitan area, including Madrid capital city. It protects the environment of the Jarama, Manzanares and Henares rivers.

- The "**Guadarrama River Regional Park**", created by law in 1999. Located west of Madrid's municipality, it has 22 116 ha and encircles 19 municipalities, eight of them within the metropolitan area. It protects the environment of the Guadarrama River, which is surrounded by a lot of problematic housing developments. In

Torrelodones' municipality is linked with the "Regional Park of the Manzanares Upper Basin".

2 Policy discourses on city and region scopes

Three different level of decision-making can be considered within Madrid Autonomous Community:

a) The municipal level, including only the municipality of Madrid, with a surface of 606 km2 and a population of 2 938 723 inhabitants.
b) The metropolitan level, constituted by 28 municipalities (Madrid capital city and its surrounding 27 municipalities), with a surface of 1 944 km2 and a population of 4 845 083 inhabitants, though no directly elected political body is responsible for this level.
c) The provincial level, equal to the one of the Autonomous Community, with a surface of 8 066 km2 and a population of 5 022 289 inhabitants.

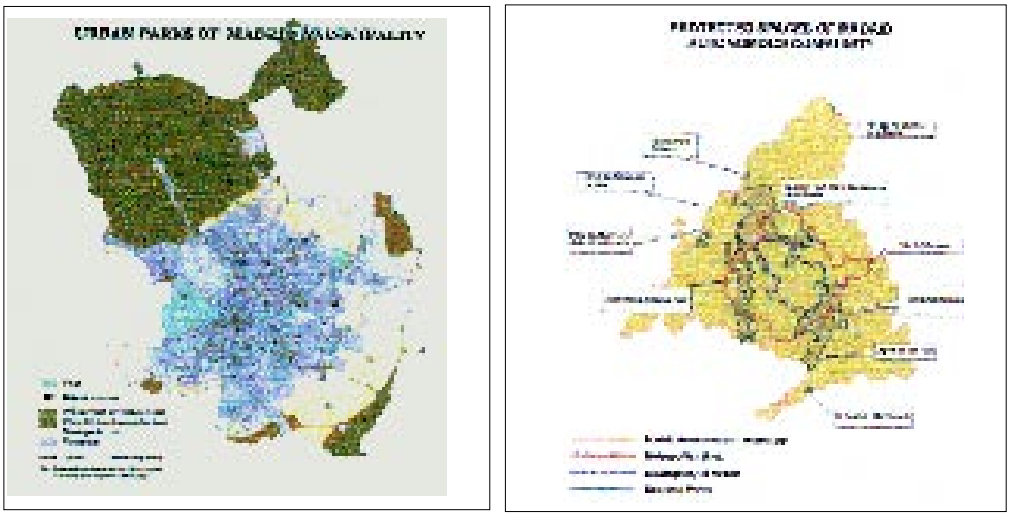

Figure 1: Municipal and provincial level of planning

The municipality of Madrid has expanded after the Civil War, by adding some municipalities of the vicinity. At present, the municipal land is almost occupied, except in the south-east area, where the so called South-east Strategy is still to be implemented. Most of the new urban settlements for the future will therefore be developed either in the metropolitan area which is dense but more suitable for settling, or out of it within the province. The metropolitan area will presumably have a higher demand of green areas.

As in Madrid's municipality Master Plan the amount of green areas has grown from the 15m2/inhabitant of 1997 to 16,78 m2/inhabitant in 2001. Although these figures

seem rather satisfactory for Spanish average, the distribution is quite irregular within the municipality. Thus, while in the "Casa de Campo" many of these areas are concentrated, in other districts such as Chamberí, Salamanca or Chamartín, the catchment areas barely reach the amount of 3 m2/inhabitant.

3 Policy coalitions and influence

Protected spaces, such as Regional Parks or other natural spaces, are managed by Madrid Community Department of Environment, while urban parks and green areas are managed by the Town Council; in the case of Madrid, the green space of the "Monte del Pardo" is managed by the National Trust, an organisation that manages the assets belonging to the Crown.

By creating the Regional Parks, Madrid Autonomous Community has set up the protection of the existing green natural areas, scattered around several municipalities within the Metropolitan Area, thus ensuring their conservation.

In Madrid's Community, the public company "Arpegio", in charge of developing public policies about the land, has carried out some interesting initiatives concerning green areas, such as the "Arroyo del Culebro Linear Park", with a surface of 253 ha, creating a green itinerary along the Culebro stream that includes the existing "Polvoranca Park".
Some NGO's, such as "Ecologistas en Acción", a confederation resulting from the union of 300 ecologist groups, carries out campaigns to raise public awareness as well as encourage the conservation of green natural areas, some of the actions being a part of the Natura 2000 Network.

4 Distribution of the power and resources

Within the scope of the Metropolitan Area, there are two spheres of competence to be considered: the Regional one (Autonomous Community) and the Municipal one (Town Council). There is not a specific institution to manage the Metropolitan Area.
Madrid's Autonomous Community has a Regional Parliament (Asamblea) elected by the citizens every four years. Madrid Parliament has full competences for drawing up and passing laws concerning regional and urban planning.
The Department of Environment and Ordination of the Territory is in charge of carrying out policies concerning regional planning, environment, urban planning and land use. Within the Department, the Urban Planning Commission ultimately approves the urban plans (Master Plans) and coordinates its contents.

The members of the Town Council (City Councilors) are also directly elected by the citizens every four years. The election of the Mayor is not direct since he/she is elected by the City Councilors. Every Town Council has competence for drawing up and approving its own Master Plan, although the final approval must correspond with the guidelines of the Regional Urban Planning Commission.

According to the current system of distribution of financial resources in Spain, the Autonomous Administration has more resources for carrying out its policies than the Municipal Administration, which, in general, has less resources for attending the requirements of the citizens. Madrid's Community has a much bigger budget than the one of Madrid's Town Council, which nevertheless affects 58% of Madrid's Autonomous Community population.

5 Rules of the game

Because in the Metropolitan Area the Regional power and the municipal power coexist, it will be necessary to build cooperation between them in order to achieve the aims independently of the colour of the government they have.

In the future it will be necessary to improve the financing of the municipalities, because at the moment they only have 13% of the public expenditure, and they have not enough resources to attend the demands.

Conclusions

- Lack of planning of a territorial nature.
- There is not a specific institution to manage the Metropolitan Area
- Natural green areas in the Community of Madrid are protected by planning, although there are some of them (Guadarrama Regional Park), surrounded by a lot of problematic housing developments.
- In the municipality of Madrid, the average of green areas per inhabitant is quite satisfactory, although the distribution by districts is very irregular. In some of them the standard of green areas is very poor.
- Lack of maintenance of green areas.
- Insufficient financing of the municipalities to attend the citizens demands.

Green planning as a prerequisite for urban development in Aarhus, Denmark

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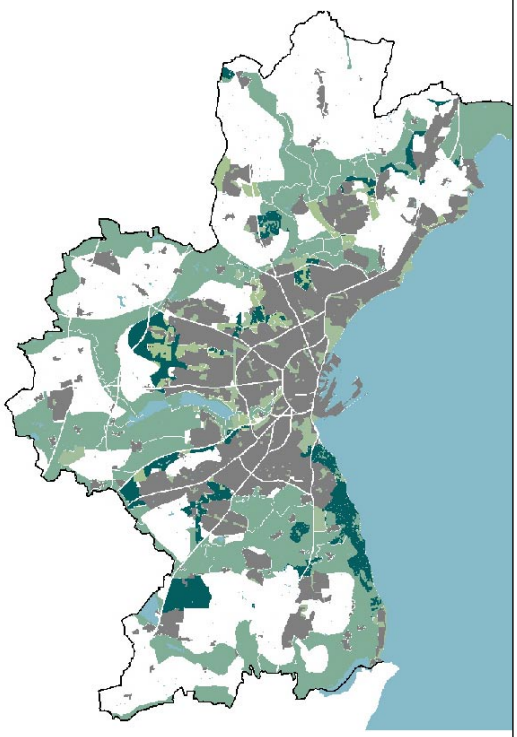
1 Background

With 292.000 inhabitants in 2003, Aarhus is the second-largest city in Denmark and the metropolis of the peninsula of Jylland. It is a major centre of commerce, industry and higher education and a major University City.

Aarhus is one of the oldest cities in Denmark. The name means the houses by the river. It was founded at the mouth of the Aarhus River as a coastal trading area in the Viking Age. 1100 years ago Aarhus covered only 1/2 km2. Today, the city covers 150 km2, which is about 1/4 of the municipality of Aarhus.

Except for the old city centre Aarhus is a green garden city with large areas of single-family houses and well-spaced residential blocks. An attractive landscape of glacial origin with hills and river valleys, lakes and forests surrounds the city and creates varied recreational opportunities for its citizens. The harbour lost its commercial importance and is currently under redevelopment for other urban purposes. So is the city centre section of the river. It was since the 1960s covered by a road, but with a re-opening it has become a most popular public area for socialising.

Figure 1: green structure plan



Aarhus is also a ‘green’ city through the priority given for many years by politicians to environmental issues. Various plans of actions for the environment combined with a policy of extensive land-ownership and a practice of green (Eco) accounting are the main tools of the municipality for creating an environmentally sound city and for pursuing the international demand for sustainable development.

The environmental priority has influenced the provision of green spaces directly. An example is planting of large areas of recreational forests at the urban fringe in order to secure areas with important drinking water resources from farming related pollution.

2 Green planning

In the organisational structure the City Architect´s Office is responsible for the comprehensive urban planning and the Nature Environment Division (NED) for the green space planning and management from green structure planning to daily maintenance of green spaces and urban trees. In the GREENSCOM study of Aarhus (WP 8) the close personal contact between four high rank members of staff to supplement the official procedures were found to make cooperation between the two former divisions, the Road Division and the Mayor´s Office smooth. The NED presents the green issues, and consensus between divisions is reached before an issue is carried forward to political debate and adoption. Consensus between sectoral divisions provides a strong argument in the political arena in favour of any project.

Another strong argument in the planning approach in Aarhus is that plans are developed in close contact with the local citizens. This approach has eliminated most resident protests. About 30 'local councils', which are voluntary neighbourhood boards, have become important cooperation partners for the NED. The local councils serve as a mouthpiece for the local citizens and opposite, as a distributor of information and introduction to debates initiated by the municipality. The most active local councils have much influence and have become part of a 'holy alliance' with the municipal staff of especially the NED.

The urban green structure has created the major point of departure for the strong position of the green space policies in Aarhus. A national Planning Reform of the 1970s required preparation of a green structure plan as part of the municipal planning documents. This requirement coincided with a growing public interest in nature caused by the then visible environmental consequences of urban life. In Aarhus the introduction of the Green Structure Plan was supported by the political vision of 'Aarhus surrounded by forest', which became a publicly well-known catchword and so a powerful instrument in the political and public discourse. Physical consequences of the wide accept of this green image have been e.g. the large afforestation projects already mentioned, securing new land for a 'missing link' in the overall green structure, re-opening of the historically important Aarhus River and creation of a large new lake in the river valley. But maybe just as important the green structure has come to control urban growth, which is an optimal situation for green space management: All thematic maps of the Municipal Plan of 2001 – 2005 are presented on a basic map, in which the green structure is incorporated. It was never adopted politically that the green structure was to appear in this way. It was rather a consequence of the close cooperation mentioned above and of the skill and strategic understanding of the NED staff involved.

The Aarhus green structure is built on mainly preserved landscapes, which are differentiated in nature areas, existing forests, planned forests, other green connections and existing lakes and streams. At a more detailed level, the so-called Frames of the Municipal Plan specify the land use category of each local planning zone including green spaces like parks and play grounds, cemeteries, allotment garden areas, sports grounds etc. It is a policy that all dwellings should be no further away than 500 meters from a green area of at least 6000 m2. All maps are part of the GIS-planning system (MapInfo) of the Municipality of Aarhus. An interactive map with an underlying ortho-photo covering the whole of Aarhus is available at the home page of Aarhus.

To summarise, the discourses on green structure planning in Aarhus are based on:
- National planning requirements that include green structure planning
- Political interest in pursuing green issues, especially 'Aarhus surrounded by forest', which has been supported by municipal landownership.
- Community interest and cooperation.
- Cooperation practice between municipal divisions.
- Professional skills of municipal staff with long tenure.

The organisational and legislative framework has thus been the point of departure for the political and professional person related ability to sustain and increase a community interest in green issues. The communicative approach of especially the NED in cooperating with local citizens and other stakeholders like e.g. the nature organisations is seen to have supported a positive green discourse. It is in line with the focus of the current municipal plan to improve citizens' participation and has moreover reduced the time consuming citizens' complaints on green space issues considerably.

3 Discourses

Aarhus is one of the large Danish growth centres. This means that the building pressure is high. The policy is to redevelop vacant land within the city zone, e.g. brownfields, but also to expand the city zone, as vacant land within the city only covers the land needed for a few years, which can moreover only be released over a decade. In the balance between urban growth and green it is important to sustain an interest in the green space provision in the development areas whether old or new. Different stakeholders have – consciously or unconsciously - created discourses that are crucial for this interest in the urban green structure.
The importance of green structure interest at the political level can be illustrated by a case where a quick and clever move by politicians interested in the urban green structure secured a former motorway reservation for a new green belt. The Hasle Hills green belt now connects two major green wedges of the Aarhus green structure. By the first suspicion that the motorway was going to be built further to the West, a change of land use was suggested. It was adopted by the municipal board prior to an otherwise inevitable development – and so economic – pressure on the political leadership.

The development of the green belt was funded through several sources: a public-private partnership on a soil deposit for building artificial hills, by national and municipal funds, but also by international funds. The NED staff applied for the funds in order to develop the hill area together with the local citizens.
The political green space aspirations in Aarhus over time can also be traced by introduction of the catchword 'Aarhus surrounded by forest' and by the use of the green image of Aarhus as a political argument for attracting new enterprises.
Both have influenced the green discourse, but especially the catchword, which has proved to 'catch' the national political level as well as the local community level. At the national level it was a basis for easily receiving funds for the large afforestation projects on municipal land mentioned above.

The vision of 'Aarhus surrounded by forest' was included in the first Green Structure Plan. The discourse created by the clarity of this plan is seen to have made 'the greenbelt move' mentioned above possible. But is has raised many other discourses concerning the green features of Aarhus, in which a renewed interest about the river. The historic continuity of the Aarhus River and its valley had been lost to roads, sewage and waste disposal in the urban development of the 1960s and 70s. Only the scenic Lake Brabrand had remained a valued recreational amenity, but disconnected from its river context. The western green wedge of the green structure made it visible that the lake was part of the river course that was the cultural heritage of Aarhus. The City Architect's Office widened the discourse about nature: A fenced, cut hole in the road surface was made to show the river below, and prospects of this section of the river changed into an attractive urban river environment were published. These ad hoc 'events' changed the public as well as the political opinion in favour of the expensive re-opening project. The river area has become so successful that the re-opening of the next section is being planned. Also the river project has created an economic spin-off effect, as the adjacent, privately owned buildings are being renewed.

Figure 2 : the 'cut' in the road made to show the river,
Figure 3 : the motorway reservation secured for a new green belt.

In relation to the urban green it must be mentioned that sustainability is a major policy of the current Municipal Plan, thus being the implicit point of departure for also green space planning and management. Together with the Aarhus River valley focus of the Green Structure Plan - and a donation from a deceased Aarhus citizen – the environmental interest was utilized to create a new lake upstream Lake Brabrand and thus to improve the recreational amenities of the Aarhus River valley. The privately owned meadows of the area, which needed new expensive drainage systems, were changed for other land through negotiations with the farmers. As it turned out to be an economically favourable situation, the farmers slowly accepted the idea of the lake, including the nature preservation and environmental issues involved, thus creating a positive discourse on this nature development project. Since closing the drainage pumps in the summer of 2003 the Aarslev Meadow Lake has become a successful bird life area, a water purification element of the Aarhus River system and a valued recreational amenity, as the lake is surrounded by a new path system. A similar project is being planned in the northern part of the municipality, supporting the discourse on wetland habitats as a sustainable urban amenity.

The Green Structure Plan thus has been the basis of several green discourses connected to more specific projects. However, as mentioned initially, The Green Structure Plan has also become the backbone of the urban growth of Aarhus and has therefore become an indispensable part of the planning discourse. The close cooperation of high rank members of staff of the municipal divisions involved in planning has supported this discourse. As the green structure appears as a basic element on all development maps in the politically adopted municipal plan, the green land use is nor questioned by planners, nor by developers. Thus the urban fringe growth happens as an in-fill in a green web with the consequence that all new urban district have the quantitatively good balance between growth and green that is imperative for developing high quality green spaces.

The discourses in key words :

Policies of the municipal administration count:
- A green Aarhus image
- Sustainable development
- Citizens participation
- Urban development within and at the fringe of the city

Innovative initiatives of the municipal staff count :
- Including the green structure as a general basis of all municipal planning maps.
- Creating ‘holy alliances’ with the local community through local councils in order to facilitate mutually beneficial partnerships with the citizens.
- Creating public discourses to support new ideas for development of urban and natural localities.

- Raising international, national and regional funds to supplement the municipal funding of large green development projects.

Citizens' reactions count :
- A positive interest in green planning.
- Local responsibility of local councils.
- Decrease in citizens' complaints.
- Trust in the municipal green space planning and management through the communicative planning approach.

4 Looking forward

The current challenges in green planning and management policies in Denmark comprise increased citizen participation, a sustainable point of departure and public-private partnerships within existing or decreased economic constraints. The focus on public-private partnerships - and privatisation of municipal operational management units as in Aarhus - is in line with the liberal-conservative turn of the national government, which came with the 2001 election. Also the growing interest in additional fund raising for larger green space projects might be driven by this political change.
According to the Aarhus study the actors, rules of the game, tools, and resources of the municipality, i.e. the framework for future urban development are as follows:
Actors

As revealed in the GREENSCOM study of Aarhus the main actor of the green planning and management is the Nature Environment Division (NED), but also other municipal divisions like the City Architect's Office and the Road Division play important roles. The driving force of the NED is seen to be professional pride, the strength to be professional skill to combine knowledge of people, places, politics and economic opportunities, which is reached through long tenure.
The politicians, especially the alderman of the Department of Technical Matters, which comprise the divisions mentioned above, have played an important role until the change created by the 2001 election. Currently they appear to play a minor role, occasionally as a barrier.

Opposite, the citizens have become an important group of actors. The establishment of voluntary local councils has improved the cooperation between the public and the private levels and created a mutual learning situation.
For special projects like e.g. the Aarslev Meadow Lake mentioned above, the nature organisations, especially the local board of the national wide Nature Preservation Association, are a third group of cooperation partners. Also the Farmers' Association is frequently involved in planning concerning the agricultural landscapes of the municipality.

Finally, private developers and management firms play an increasing role in the development of the Aarhus green spaces.

Rules of the game

To act within the intentions of the overall Green Structure Plan.
To aim for consensus within the municipal organisation, the local councils and other important actors before carrying through initiatives.
To allow for and economically support local initiatives raised by the local councils.
To involve the local councils, the operational management staff and other actors at an early planning stage.
To aim for solutions that benefits all actors in win-win situations.

Tools

- The Green Structure Plan.
- Economic and other benefits in public-private partnerships.
- Ad hoc events/material to create a discourse.
- Negotiations/contracts
- 'Holy alliances'
- Timing

Resources

- A Green Structure Plan to guide urban development.
- Close personal cooperation practice between municipal divisions to adapt projects and approaches.
- Skilled members of staff with long tenure to create continuity and trust and secure optimal timing and use of available funding.
- Resourceful local councils to act as a sparring partner for the municipal staff.
- Natural landscape features to support the Aarhus image and the community interest in the urban green elements and amenities.

The innovative approaches described in the cases of the GREENSCOM Aarhus study (WP 8) comprise tools and practices that aim to answer these challenges in a professional attempt to manage the public green and open spaces optimally for the benefit of the Aarhus citizens.

Reference :

The Aarhus case study, GREENSCOM work package 8.

The Green Fingers of Helsinki in Finland
A Green structure as a part of master planning

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Helsinki is a young and green city among the European capitals. It was founded in the year 1550, but its development has been rapid only in the last two centuries, especially at the end of the twentieth century. The main factors, which have influenced and are influencing the development of the green structure of Helsinki are:

- Geology and geography: the location of the city on a peninsula, long seashore and many islands,
- Land ownership: The city owns 66% of the land in the city and owns large forest and lake areas also in the region of Helsinki,
- Culture, history and landscape: many historically interesting manor houses with their fields are situated within the "green fingers", the main green areas of Helsinki. Peoples' parks from the industrial era are on the nearby islands,
- Social values: decision makers make an impact on nature, outdoor recreation and green areas. Green areas are an important element of identity for Helsinki and the city,
- Legislation: land use, nature, ecology, cultural heritage, every-man´s rights
- Planning tradition and practice: especially important is the long tradition to combine green area planning as an essential part of land use planning,
- Public participation: argumentative planning processes are appreciated,
- Cooperation between planning levels: region, whole city, part of city, sites and implementation levels are relevant [1].

1 Discourses and development in green structure planning

In Helsinki there has been a long and strong tradition in planning green areas as a part of city development plans that means as a part of land use planning.
Green areas have been important already in the first essential land use plans. The first plan for Helsinki Central Park was included in the City plan of the year 1911. Then Helsinki only consisted of today's downtown centre. In the first comprehensive city master plan by Eliel Saarinen from the year 1918, the elements of the green fingers were already there. From the year 1960 Helsinki has made a strategic and structural land use plan once every ten years.

In the master plan of 1970 shows large radial green areas, that are clearly a structuring element. They begin near the centre and continue between the built areas to the Helsinki suburban areas as "Green fingers". In the master plan process of 1970 the discourses were concentrated on the equal recreational possibilities of the inhabitants.

A social dimension in planning strategies was emphasised. Norms for the amount and quality of green areas were developed. Use and accessibility of the recreation areas were in focus. The Planning profession spread its wings to include many other types of profession. The Municipal planning office hired sociologists as well the first biologists. The importance of the protection of nature elements and was seen. Industrial development and harbours had taken much of the shoreline out of public use. There was a big need to turn the development round.

Helsinki Central Park was planned during that decade to match the dimensions of the growing city. Helsinki had enlarged over ten kilometres to the north from the time the first Central Park was planned in the beginning of the 20th century. The main idea of the new plan was to protect the Central Park as a natural forest, which begins near the city centre. This specific master plan was ratified by the Ministry in 1978. After that there has been a co-ordinating working group for planning and implementation of Helsinki Central Park. To this Central Park Group a member of the society "Pro Central Park" was invited. This is a society of citizens who are interested in protecting and developing the park. This was an example of citizen's participation long before it became a part of planning legislation.

1.**The Finnish planning system**

The detailed plan: The detailed plan is used in all municipalities, urban and rural, for regulating the location of functions, size and type of buildings as well as the formation of the townscape. The plans are approved by the municipal (city-) council.

The master plan: The master plan can be fine-tuned according to municipal needs. The council can decide to make either a more strategic or visionary master plan to co-ordinate the spatial need of different sector, or it can make a more specific plan to guide building quite directly,

The joint master plan: Municipalities are independent but not isolated. They are becoming increasingly interconnected as networks. Just like nature protection areas, urban networks don't usually stop at municipal borders. The Act includes the possibility of preparing joint master plan to promote inter-municipal spatial policies. Municipalities can also establish common development areas.

The regional plan: The 19 regions, established in the early 1990's to replace the former regional planning associations, have the right to prepare their own land use plans and create regional development strategies. The regional land use plan is prepared and approved by the regional council and ratified by the Ministry of the Environment. Particular attention is given to ensuring an appropriate regional and community structure, to preserving landscape values and ecological sustainability and to providing proper conditions for business and industry. The regional land use plan transfers national and regional land use goals to the local level.

Some statistics: Total area of Helsinki is 686 km2 of which land area 185 km2, sea area 50 I km2, shoreline 98 km, number of islands 315. Land use: housing and working areas 64 km2, recreation areas 77 km2 of which parks 28 km2, traffic and other areas 44 km2. Land ownership: city owns 66%, state owns 13%, private land is 21 %.

Helsinki city owns 55 km2 recreational land beyond the administrative boundaries mainly on the Helsinki region.

Population of Helsinki was 559 300 in the beginning of the year 2004.

The population of the Helsinki region is 1 232 000 and it is growing more rapidly than the population of Helsinki.

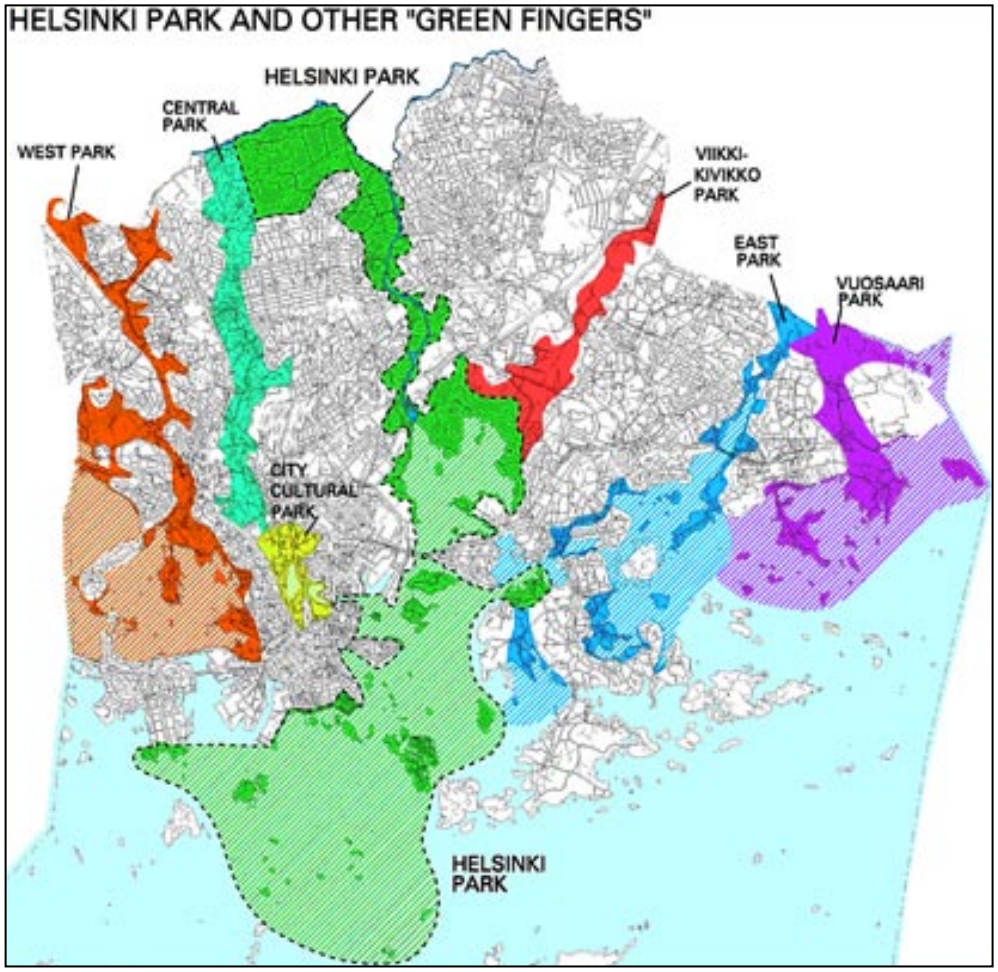
The master plan of 1980 was made in two parts, the master plan for the Inner City and the master plan for suburban areas. Regional plans are guiding the master plan. The importance of the green areas in planning discourses is shown clearly in the process of regional planning. At first stage the green structure plan for the whole region was made. The other land use sectors were added later. The Green structure for the regional plan was approved by the combined council of the municipalities and ratified in the Ministry of Domestic affairs (nowadays Ministry of Environment). The Master plan 1980 followed this green structure. The Ecological viewpoint was already strong in this plan. Social and norm oriented planning was deepened. Co-operation between implementing and planning organisations was strengthened.

In the master plan 1992 the sustainable development and environmental values were important goals. The main issue in this plan was to gain the Inner City shoreline for inhabitants, housing and recreation and to move the big harbours to the east, to the Vuosaari suburban area. The green structure was strengthened near the centre and along the shoreline. On the eastern shore of the Inner City a long park area was planned. Special ecologically oriented areas were reserved for the new eco-village of Viikki. For the archipelago of Helsinki was made a specific detail master plan.

The newest master plan 2002 was ratified by the City Council at the end of 2003.
The Master plan 2002 strengthens the structural thinking of green areas and gives emphasis to the qualitative viewpoints, the cultural meaning and the identity of the green areas. The new housing and other building areas were mainly planned on brown areas, which have already been in building use. These areas are old industrial sites, oil harbour, old airfield etc. For every city area has been planned a 'park' identity. Cultural landscapes, which tell the story of the city´s development, are taken as a strength, as an interesting part of recreation. Nature elements are strengthened and taken as profiling entities. Public participation has been arranged in local seminars, forums and discussions. The new land use and building law ensures wide participation in the planning process and delegates the decision making to the municipalities. Concerning the quality demands of green and park areas especially in the central hart and the shoreline of the city, there has arisen the discussion of economy and funding. Green areas raise the economic value of nearby housing and building areas: Could it be possible to have a part of the rising value for the implementation of the parks and green areas?

The green fingers of Helsinki are profiled and they have got an identity in the new master plan.
Most important is Helsinki Park, which is a park and anchor for identity for the whole city beginning from the archipelago in south and continuing to the forests of northern Helsinki.
It includes the most important phases in the city history and modern times, and the

most important features of the nature and ecology of Helsinki. The biggest nature protection area in Helsinki is in the middle of Helsinki Park. The Park is situated centrally and the future development areas of the city are near it.
The shore areas and the sea with the archipelago of over 300 islands and the nature with large natural forests are important structural elements of the green fingers. The other important elements are the historical landscapes and the recreation activity centres and sport areas.
The Fingers are combined to each other, to local city areas and neighbourhood parks, green belts and green corridors. Their functions are at the same time recreational and ecological and they connect green areas with each other.
The idea is to have a green structure, which enables citizens recreation, cultural and ecological experiences as an easy and natural part of everyday life.
The green fingers are continuing to Helsinki region, the neighbouring cities and municipalities. Parallel with the Helsinki master plan there is prepared the regional plan for Helsinki region. Green fingers are an important structural part of this plan, too.



2 Actors and coalitions

Actors on green structure planning are: political parties and political individuals, local politicians, city planning board, members of city Council; societies, which are representing some interests in the field of green areas (activities, sports, nature, local interests, youth, handicapped, permanent and temporarily acting etc), individual citizens and business oriented actors and last but not least municipal, regional and state authorities and planners.

The most important actors on a practical level in green structure planning of Helsinki are the green area planners in Helsinki city planning department. They are mainly landscape architects. They are preparing the plans and arranging the co-operation with other actors. They work on different levels of planning, master planning and detailed plans in close connection with other city planners, who take care of other city elements and structures.

Implementation of green areas and implementation planning is situated in other city organisations, such as building and construction organisations. They make local implementation plans for green and nature areas. These are prepared in keen co-operation with local inhabitants. The Green team is making also the citywide implementation programs for the city owned green areas. Nature protection is in another implementing city organisation, the environmental centre. They are making also environmental programs. There is still another city organisation taking care of sports and outdoor recreation activities and having their own implementation plans.

Co-operation is important. City planning has the co-ordinating role. According to the new Building and Land Use Law there must be at the first stage of a city planning process a plan for participation and impact assessment. It is published, who and when is taking part in the planning process.

3 Distribution of Resources and Power

Ordinarily the majority of land use changes will take place on city owned land (City owns 66% of the land and state 13%, giving a total of 79%). In practice, it means that the City Council has a near monopoly in controlling development. The fact explains the importance and responsibility of the city´s planning department in preparing the development strategies and the political importance of the City Planning Committee.

In Helsinki there is a traditional culture, that citizens are interested in public land use, especially public green and recreational areas such as the Central Park and other green fingers. Politicians are also aware of that. This means that the green fingers have rather a strong place in the mental map of decision makers as well as citizens. When the legislation gives broad possibilities for participation, discussion and proper planning tools, the prosperous possibilities for development of green fingers are clearly available.

Helsinki owns in neighbouring cities and municipalities recreation and nature areas,

which are nowadays partly in effective use. This gives possibilities even in future, when Helsinki metropolitan area enlarges.
The Government provides national land use guidelines, which could concern significant national interests regarding the quality of the environment, transport and other major infrastructures, ecological sustainability, natural resources and cultural heritage. According to the new Act, these guidelines should be implemented through regional plans. The Ministry of the Environment and the Regional Environmental Centres supervises implementation. International agreements and programs can be implemented by national guidelines. National land use guidelines include the possibility of preparing joint master plans to promote inter-municipal spatial policies.

4 Rules of the game

Official rules of the game are written in the new Land Use and Building Act 2000. In Helsinki the practices, which are now legally binding, have been used voluntarily already before, but not systematically. The Master plan 2002 process was the first large-scale plan where the new law was used. Because the law gives broad possibilities for different actors to take part, there was not so much need for unofficial processes beside the official one.
The most important changes in the rules of the games in the new master plan have been the law based participation and the municipal ratification of land use plans. Only the regional plans are ratified in the Ministry of the Environment.

Public participation, information and environmental assessment : The new planning system is very open to public participation. The previous procedure of consultation took place mainly with landowners. The new interactive approach will be extended to include participation with all individuals and institutions whose living and working conditions will be affected by the plan. Citizens can participate in the entire planning process from the very beginning. Protest against local planning decisions will go to the Administrative Court and then on to the Supreme Administrative Court.

Public participation and environmental impact assessment (EIA) of spatial plans will be closely linked. A participation and EIA plan has to be made at the beginning of the local and regional planning process. This plan may be taken to the regional environment centre for consultation. Systematic EIA has already improved the planning process by raising awareness and bringing the knowledge of citizens to an equal position with experts and authorities.
A new working culture has emerged, and local authorities have become more interactive with the public. Information is disseminated by regular planning reviews, which are delivered to private homes. The media and non-governmental organisations follow planning issues keenly. To function properly, the new planning approach requires that grass-root organisations contribute to the discussion and have the proper means to operate.

In Helsinki master plan 2002 process the first round of participation took place during the year 2000 in respect of the ‘ideas’ or ‘sketch’ master plan. The participation included an exhibition and local forums around the city. The findings and comments were reported to the City Planning Committee. Then the city planning department prepared a new, revised plan, called the ‘proposal’ for the Master Plan. The participation process changed rather much of the initial ‘sketch’ ideas. After the first proposal had been approved by the City Planning Committee, it was then formally presented to the City Board (the City’s executive committee) for endorsement. After a further round of participation the proposal was then taken to the City Council for its final ratification.

5 Challenges and learning

Challenges of the green areas as a part of a developing and expanding city concern the city structure, and also more and more the metropolitan structure and regional co-operation.

At the same time the daily used city-wide and local green areas and structures have to be developed.

The structure of the green areas must be strong and at the same time sustainable and also flexible enough to bear changes.

When the city´s urban fabric is intensified, there is need for more quality in green areas and new implementation resources.

The more the green areas are integrated to city development, as a part of the planning process, the more likely they get resources and money, too.

In participation in planning processes must be at a balance between nowadays inhabitants, stakeholders and possible future inhabitants.

Planning must be argumentative and based on multidimensional knowledge, which is integrated into the planning processes from the very beginning.

Researchers have to find their way to participate and get their knowledge as arguments in innovative formulations of goals and strategies and practical solutions

Protecting distinctive Mediterranean urban forms in Marseilles, France

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1 An on-going process for conserving high quality green neighbourhoods in the northern sector of the city

The description of Marseilles (placed in the field visits section) and especially of the "green city" (the leafy radius of urban fabric) raises several questions. How to value distinctive neighbourhoods when the expansion of the city is necessary? What to consider as heritage when it is the whole pattern of the land together with the network of water bodies which give the neighbourhoods their special character and distinctive microclimates that are well adapted to summer heat ? How to incorporate such urban forms into a modern, Mediterranean city, capable of evolving with its own cultural values and seeking sustainability?

The circumstances are rather more difficult in the northern sector than elsewhere because of numerous big social housing estates located there. This sector is nonetheless of a special interest because it still contains several neighbouring Bastides of high quality, near obsolete canals, refreshing parks and a seascape that all together form e a large green corridor going down from the northern slopes of the city to the dense part of the city on the coast. In the past, the Bastides of the northern heights were well preserved and highly valued as distinctive cultural landscapes - landscapes that were lost elsewhere.
Keeping alive traditional urban planning and design skills about these urban forms was regarded as an important issue for local inhabitants and other stakeholders with an interest in these distinctive neighbourhoods. But this conservative approach is in opposition to the international modern lifestyle that seems to prefer detached houses in the outskirts of the city, and which is typified by the approach to urban development preferred by the municipal authority. In practice three groups of actors each holding controversial views have emerged. One group is composed of stakeholders and inhabitants (locally based or belonging to Marseilles city-region), the second group is composed of elected representatives and the third one having its say in the debate was the State's representatives. In France the local role of the State is in the process of changing (towards more cooperation) as higher powers are devolved to municipalities. But the State still has some legally binding tools and means of intervening if the overall interest is not accounted for.

The municipality of Marseilles has one clear overall priority for the future of the civil parish, namely economic growth and an increase in the number of inhabitants and

employment opportunities. The objective is to reinforce the role of the metropolis and to achieve a more balanced social composition, especially an increase in more middle-class or well-off inhabitants. To-day Marseilles civil parish comprises 44 % of the residents of the regional sector and 58 % of the low incomes, and is missing of people qualified for office-work. When faced with the social characteristics of the northern neighbourhood, the head of municipality advocated residential development of low density and detached houses, which would be immediately attractive to new, middle class inhabitants. This proposal was contrary to the policy of protection for allotments, as proposed by communities, and to policies for compact and innovative development on part of the land. From her standpoint this latter policy would be too risky, and be too difficult and time consuming to organise.

The debate has been going on for more than ten years; substantive achievements are many, but developing an overall plan for conserving the distinctive form of the neighbourhood together with its associated public green spaces is far from being achieved. The recent tools and policy processes being proposed by the State in the trend for political modernisation and governance could not be used because of the main municipal representatives have not agreed to be the compulsory partner as required in the procedure. So the State had to intervene in the contrary with the traditional dictatorial way to protect three important Bastides and put them on the list of indestructible mansions and gardens.

We can wonder in a case of this kind, if there was any chance of achieving consensus since the objectives of the three groups and ways of approaching these issues were so different. The Municipal authority fixes goals that can be achieved in the short to medium term. They place high priority on being, while inhabitants and State have no immediate goal to reach but put emphasis on longer-term outcomes. But for the Municipality to pay attention to opposing views is probably not the most telling point. What is worth noticing is the constraint that opposition put on municipals. It slowed the decision-making process and obliged them to seek more appropriated ways of combining improvement of the existing and new developments in the northern sector, even if they didn't give up all hope of promoting detached houses and middle-class inhabitants in this neighbourhood.

During the period of debate, experiments in trying to work towards more sustainable development in other sectors were successful and released pressure on the north. The chance for working towards a different overall plan for the northern area has not been lost, but the process and procedures for developing a plan needs more efforts.

2 Discourses ranging from a short-term vision to a long-lasting one

The discourse of the municipality relates mainly to the overall situation, in which Marseilles is promoted as a very green city (fifty per cent of natural land within the

city's boundaries) and a city that seeks economic renewal (the Mayor's expressed priority "to make the wealth, the inhabitants and the firms coming back" discourse for his new mandate 2002-2007). Further discourse is about the lack of green spaces in the city-centre and points to projects that can turn this dense city core into a green one (several public gardens created or projected in the recent past or for the coming years). These discourses are consistent with the recurrent wording of the general goal and avoid more local issues. When addressing local concerns, a second argument is to say that plenty (enough) has already been done to save numerous Bastides (some Mansions were maintained and reused for amenities and a few parks or gardens were kept and are open to public). This main municipal discourse is equivalent to considering the non built-up part of the northern sector as empty open land that is easy to urbanise and denies the specific cultural value of the farmland and parks of the Bastides estates associated with the social housing areas no-profit housing estates. This view is expressed in the planning documents (Unitary development plan) by giving permitting rights to build that do not require special refinements in the layout of the land.

Having this open-land protected is presented as conflicting with the goal of achieving a better social balance in city-dwellers, almost a deliberate misrepresentation of the vision for the future. Furthermore, a surplus of public greenery is almost viewed by the municipal authority as a bad thing, as there is a lack of care touching the outdoor spaces in the nearby of the non-profit housing. So more greenspaces are viewed as a risk of giving an increase in untidy spaces.
The discourse of stakeholders from Marseilles (social scientists, writers, planners) which gained support and legitimacy from the inhabitants, was formulated through an exhibition on the Bastides, delivered in 1992, presenting the importance of the heritage not only for the buildings and the provision of greenery (gardens and agricultural land) but also as testimony of the benefits of the "southern" Mediterranean way of life, which in the past offered any inhabitants opportunities to experience the surroundings of the dense core together with the cool and shady, green spaces associated with this distinctive Mediterranean urban form. The discourse expressed the need to take account of this cultural value as a backbone of Marseilles' beloved image and former prominent role.

State representatives discourses focussed on some individual Bastides, as a hallmark of a historical period, worthy of protection. Even so, when looking to the whole sector, State representatives were not absolutely against a development-process, instead they sought sensitive development that would combine protection and urbanisation. The State discourse resembled a long-term vision for planning while the values put forward by municipality were felt to lead to acts of dispossession, with no compensation for the loss of cultural heritage, which development would provoke. The State's action to preserve historical heritage addresses the long-term vision, and does not focus on its immediate effects while municipalities are often acting in the present.

3 Actors and coalitions

The neighbouring residents already appreciated being close to natural spaces and also supported the approach that considered the cultural value of the mansions as much as it served to dispel the bad image attached to their neighbourhood. Their actual relationships with external spaces prove to be very diverse, reflecting the multicultural origins of a Mediterranean city. Some groups identified with green spaces as parks and gardens (and play areas, local and districts parks are needed), others identified green spaces through all sorts of open land, natural and agricultural ones, unused or derelict areas, allotments when existing, streets or informal meeting places as in front of the supermarkets (and in the surroundings of coffee-shops). Where to be during one's spare-time is due to where to belong to the very mixed social flows. They shared the large consensual discourse of keeping features of this green environment and protecting the Bastides as a whole.

The making of the exhibition can be analysed as an arrangement showing features of a process of political modernisation that involved members of local municipalities as well as inhabitants. The exhibition was welcomed by the elected people in the local town-hall (a former Bastide) and was arranged by city-users with contributions from architecture and landscape teachers working as researchers together with representatives from different tiers of government (national and regional) who supported and subsidised it. The exceptional qualities of the greenstructure expressed by the visual displays, brought together a wide range of city-users, journalists, inhabitants (even inhabitants of the social housing estate who were happy to understand their daily environment), cultural institutions and State local representatives. The visual displays acted as a means of transforming "scientific" knowledge that lay citizens can share, an important contribution in itself. This exhibition helped to secure wide public agreement for the protection goal and its preparation and conduct was obviously a step forward followed. Afterwards several proposals were made by communities and inhabitants for new uses of the land (allotments, use of one unemployed Bastide for an landscape school, …) but not one proposal was accepted by the municipality.

4 Recent laws balancing power relations were not at use

The exhibition empowered local political representatives who could express for a while the search for identity of their local sector. And, as when there is locally a special focus of interest, things were changed a little. Citizens gained confidence in themselves to express their viewpoints (for the planning process in particular) , and experts became used to exchanging ideas with local people face to face, sometimes also involving themselves in regular communities activities. Albeit development applications in the local plan were not changed, but the cultural value testimony was recognised, and for the laymen citizen justified the legally binding conservation designation that intervened later on.

This example, if not resulting in innovative or good practise as happens sometimes, shows the recurrent difficulty for some municipal representatives to use governance as a trend-setter to improve the future layout of a part of the municipal territory, even when they are facing different kind of proposals.

Lack of legislation is not the problem as many new legislative tools have been issued in the recent past. New rules were issued with the law on Landscape (1983). One regulation, the disposal "Preservation area for architectural, urban and rural heritage" could have been a very adequate means of achieving urban development together with the regeneration of typical landscape. This regulation which is implemented together by representatives of the municipal authorities and the State (and has to be launched by the municipality) makes provision for a detailed study of an area and special rules affecting the development process. It is not as often used as could be, especially in the south of France. At the levels of the civil parish or the city region, the State has recently reviewed most of its planning system to enhance participative decision-making and partnerships and to try to apply the brakes on competition between municipalities. The State's position is to promote more co-ordination between national guidelines on subjects as sustainability, landscape quality, … and schemes elaborated at the different levels. It seeks to encourage local territories to adopt an integrated approach (the units of life and work should act as a whole) for preparing some special large-scale frameworks and a common project (with increasing protection of the natural spaces). Therefore new laws on urban planning and inter-municipal co-operation were put into power. The objectives of such a shift are clearly stressed in the new policy framework drawn by three laws ("urban regeneration and solidarity" issued in 2000, law for including sustainability in spatial planning, 1999 and law enhancing inter-municipal co-operation (1999) and subsidies were decided. But the constraints and the guide lines adopted by the State are taking a long time to influence the practices of municipalities and other planning levels.
In addition to the usual tools (unitary and master plans) in the city region of Marseilles, as in a few estuaries, a special compulsory instrument (coming from the Law on coastal areas, issued in 1996) was enjoined by State. Anticipating these later changes guidance advocates the production of a Master plan but on a larger geographical area and through processes that engage stakeholders (more governance). The preparation of this plan for the Marseilles city-region was obviously a moment to engage a wide range of agencies and actors, but it was felt that the final document did not sufficiently reflect all the visions expressed by actors and coalitions in the discussions.

5 Rules of the game

When establishing its local plan, the Chief Executive of the municipality was deaf to questions raised by the city architects and town-planners staff on the future of the green structure in the northern sector. He did not want to enter a debate on the values of the existing green with inhabitants and stakeholders, and used the minimum of public debate required by the procedure. He thought only of "saving time" and

going faster towards the overall economic and social goal for the city. The municipal representatives belong to those for whom governance still appears as a long and sensitive process with to many residents nowadays. “Saving time” can also be part of a bottom–up approach based on knowledge at the grass roots (detailed knowledge of features of land inhabitants views) and also has to take into account different points of view from both inside and outside the municipality.

As it does happen sometimes, for the municipality, a “waste” of time resulted from the opposition of local residents and stakeholders. The municipality has now to work out a new development-project of the area. Stakeholders who initiated the action and exhibition expended quite a lot of energy, gave their professional services at no cost, and subsidized resources so that the necessary information was assembled and transformed for a public exhibition.
The exhibition on the Bastides opened a period of debate. Even if looking back, the cause of conflicts and deadlock resulted from feeble attempts to work in a more collaborative and inclusive way and the absence of an overall integrated plan for the future of the northern sector. Locally inhabitants could express their viewpoints and gain a better knowledge about their close environment, which did not occur during the preparing of the local plan. The exhibition and its success thoroughly justified the State’s local representatives to intervene in a dictatorial way to protect the neighbourhood. Almost conflicting with a more collaborative and inclusive approach to governance, the municipal base plan is nevertheless evolving and rules of the game may change in the future (municipality will probably seek for more governance).

Space is a rare and precious asset for cities, especially when having such cultural value as in this case. Time also appears as an essential component needed for the planning-process and decision-making. In this case, working together from the outset to determine a process for policy-making should have been a better way forward. In this way stages could have been agreed for a process that would reveal all the knowledge required and provide a structured series of meetings with an enlargement of the coalitions to try and reach consensual position for the future. It is also relevant to note how strong effect the catchword “Protecting the Bastides” had on the whole city and for the inhabitants of this deprived sector. It represents the agreed discourse for thinking about the future layout of this neighbourhood.

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See more about Marseilles in chapter 2.

The Vistula Valley case in Warsaw, Poland
Warsaw - back or face to the river?

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Level of political decisions/Scale of planning : Municipal level, regional level and (in part) national level – the decision on the hydro engineering development of the river as a whole, is to be taken at the national level.
Argument: For centuries the Vistula River, or to be more precise the Vistula River Valley with its Warsaw Escarpment has been the main feature (natural element) taken into account while decisions on Warsaw's development were being made (Staniszkis, 1995). It has been considered a constraint for this development and, at the same time, of significant value as a landscape feature (including green structure) for the quality of the cityscape. For the past few decades, the debate among urban and landscape planners, engineers, politicians and the public has gone on as whether the Vistula and its valley should be left wild (as it still is in a vast part of the Warsaw section) or should be built-up. This debate exemplifies a more general problem of safeguarding wild natural areas in the city when the 'compact city' approach is recommended. It also shows that agreement on the solutions to fulfil the urban, recreational, ecological and technical functions of the river is still far from being reached.

Figure 1 : The Vistula Valley is the backbone of the city's ecological system (Photo: Marek Ostrowski)

1 General description of the case

The Vistula Valley is the backbone of the city's ecological system, and also of the

region and the whole country.
Within the Warsaw section, the Vistula River Valley is a wide and asymmetrical valley consisting of several levels of terraces, which are narrow in the central district, and wider in the southern and northern parts of the city. The river bed retains certain features typical of a braided river, such as sandbars that are either forested (riparian forest) or bare. Floodplain areas retain a well-preserved hydrological system with oxbow lakes, streams and creeks accompanied by natural or semi-natural plant communities. The upper eastern terraces of the Vistula present a specific landscape. Dunes, separated by peat swamps or small ponds create different conditions for the green structure, which consists of patches of pine or beech forests. Thanks to these well-preserved natural elements, the valley of the Vistula is considered one of the most natural elements of Warsaw's environment and has been recognised as the main ecological corridor in the EECONET since the early 1990s (Gacka-Grzesikiewicz, 2000, Koncepcja, 1995).
Because of these features, the development of the city has taken place over centuries on the morainal plateau. Along with the city's development, the extent of the Warsaw section of the Vistula River Valley was being increased. Initially in the thirteenth century it amounted to only 600 m – just the central part of the city, with its highest elevation of escarpment (Bystron, 1997). Now, its length reaches 30 km and 57% of the whole city lies within the Vistula Valley (Skorupski, 2000)
The bridge construction, which was important especially for the right hand side of Warsaw's development, was difficult because of technical conditions. The first permanent wooden bridge was built in 1573. It functioned only for 30 years and it was destroyed by ice. Warsaw waited 260 years for the next steel bridge (Bystron, 1997, Skorupski, 2000). Now there are 8 bridges in Warsaw and according to both urban planners and city dwellers that is not enough owing to spatial city developments and their location.

2 Policy discourses at the city and regional levels

Two interconnected, but independently formulated, discourses can be identified:

1) Warsaw: back or face to the river
2) The Vistula Valley – wild or developed

The first discourse dates back almost to the beginning of twentieth century. The fact that Warsaw turned its back to the river, Skorupski (2000) explains and justifies the layout of the land and initial development of the city mainly on the plateau, which is on the left side of the Vistula. The floods meant that both the left side under the scarp and the right side of the river were not attractive for settlement – these areas were mainly inhabited by the poor. The uncontrolled Vistula did not become a central point of the city. The harbour and commercial districts were not built along the river. Only during the period between the First and Second World Wars was there progress in the development of riverine areas through the construction of bridges and embankments, and the building of the elegant, housing district on the right hand side – Saska Kepa.

During this period, the slogan “Warsaw - front to the river” was coined. Certainly, as the years went by the views concerning this slogan changed. After the Second World War the development of the Vistula River Valley concentrated mainly on greenery, although it was also allowed to build housing estates in some parts of the valley. The idea of creating Olympic areas was formed (most recently in the 1990s). However, none of these concepts and proposals have been executed and implemented.

Over time, a new group of arguments concerning this valley has been introduced. The new discourse was connected with a re-discovery of the natural values of the Vistula Valley. In the late 1970s, the first effort was made to protect the river valley and as a result, the Vistula Valley has been recognised in the ECONET-PL as a European ranked ecological corridor (Koncepcja, 1995). At the same time, the concept of the hydro engineering development of the Vistula appeared. The aim was to ensure navigability of the River and also to safeguard existing developed and inhabited areas from flooding (Jacewicz, 2000).

Figure 2 : This ‘face’ does not satisfy either side of the contest. Embankment near the Poniatowski Bridge, left side of the River (Photo: Tomasz Majda)

Figure 3 : This ‘back’ is very much appreciated as an ecological corridor but is too near to the city centre. Praski Harbour, right side of the River (Photo: Tomasz Majda)

The extensiveness of the Warsaw section of the Vistula Valley meant that none of the ideas were fully implemented. Yet many isolated decisions were made in part, which decided the land use of some parts of the Warsaw section of the Vistula Valley. However, these decisions were not permanent, so they did not determine the future use of the valley. The history of this struggle is very well described by Majda (2003).

The development to date does not satisfy either side of the discussion. For some it is too extensive, for others it is useless and restricting the ability to keep the Vistula Valley as an ecological corridor along this troubled area of the Warsaw section.
Therefore, it can be stated that at the moment we are dealing with a conflict of discourses. Realisation of the slogan "Warsaw: face or back to the river" is the subject of considerable dispute connected with a recognition of the uniqueness of a wild river in the city – on the one hand, and with a need for the 'civilisation' of the river as in other European cities and, at the same time, to make use of an empty area located in an attractive landscape close to the centre.

3 Coalitions and influence

The following actors can be identified in formulating policy :

- Mayor of Warsaw, Warsaw City Hall and Warsaw Council – responsible for spatial policy and development (it should be stressed that until 2002 physical developments were carried out independently by municipalities – as Warsaw has been an association of 11 municipalities for more than 10 years).
- Regional Board of Water Management – responsible for the management of part of the Vistula Valley within flood embankments.
- Marshal of the Mazovian Voivodship (Province) representing regional self-government, responsible for the spatial management of the Province, and Mazovian Voivoda representing central government at the regional level, responsible for nature protection.
- NGOs – those of ecological origin (for example, the Polish Ecological Club) and those oriented towards urban development (The Polish Town Planners Society, The Society of Polish Architects)
- Investors
- Public – city dwellers

The discussions, plans, programmes and decisions taken so far show that in the case of the development of the Vistula Valley, within the Warsaw section, it would be difficult to talk about permanent and clear coalitions, and which actions and endeavours might lead to a strictly defined concept. This is as a result of changing points of view and also the extensiveness of the area to be developed (see section 4). It is possible to talk about short-term coalitions formed in order to protect some areas from development, or on the contrary to develop these areas. Examples of such coalitions were common initiatives undertaken by NGOs and city dwellers, in order to protect the

riparian Vistula forests and sandbars, which make valuable habitats for birds, from the development plans for Praga harbour (www.gazetaekologiczna.pl).
Another alliance worth mentioning is the one between the city authorities and investors, who supported the development of Praga harbour. The rapid construction of Swietokrzyski bridge (which connects investment areas with Warsaw's centre) made the harbour area available for investment and future use.

The majority of Warsaw architects gladly accepted the conversion of Wislostrada (one of the main fast roads in Warsaw) into a tunnel (this investment was also realised in record time). Initially, it was planned that the area regained in this way would be used largely as recreational space, with some buildings for the development of Warsaw University. Now, proposals for housing and other residential (apartments) development have already appeared, which will probably put an end to the vision of public recreational areas by the Vistula.

The concept of protecting the natural values of the river and its valley arouses concerns and controversies not only with the architects, who want the civilisation of the river. Owing to the need for flood protection, the Regional Board of Water Management recommends the simplification and standardisation of structure in the area between the embankments, according to a typical transverse model, which definitely reduces the existing morphological differentiation resulting from those natural virtues (Gacka-Grzesikiewicz, 2000). The construction of flood control also limits recreational development within the areas between the embankments.

As a result of the resignation of the central authorities to the realisation of a significant project concerning the development of the middle section of the Vistula, which was aimed mainly to make the river navigable, the dispute concerning the execution of this project in the Warsaw area has ended. Nevertheless, the floods, especially those that took place in Poland in 1997 (although they did not directly affect Warsaw) prompted more rigorous legal regulations dealing with the use and development of river valleys.

4 Distribution of power and resources

J. Skorupski (2000) argues that the Vistula Valley is too wide to be properly developed as recreational and green open spaces by the city itself. A lack of resources and at the same time other more important needs concerning Warsaw's development, caused permanent delays in the development of the Vistula Valley. That is why many projects on the development of recreational areas failed (for example, Multifunctional Centres for Leisure and Entertainment, planned in the 1960s and 1970s; the Warsaw Complex of Water Recreation, Swider-Bis, presented in the 1970s; and the Olympic Games Pitches, an idea first put forward during the interwar period and then again in the 1990s.) However, the lack of funds does not change the role and responsibility of the city authorities in relation to the development of the river valley itself.

In the 1990s, the Vistula Valley became the centre of interest of environmentalists as one of the few 'wild' European rivers. As an indication of its importance, it contributed to initiatives for the protection of the Warsaw section of the valley (see section 5). Ecological organisations observe precisely all emerging concepts dealing with the development and building in the valley; they also make comments and review these ideas. It also happens that they protest against the solutions, which, according to them, constrain the role of the river as an ecological corridor.
Owing to the deferral of the hydro engineering development of the Vistula as a result of changed priorities, the Warsaw hydro engineering lobby is identified with concepts and actions for flood control (see chapter 3 'Ecological approach').

5 Rules of the game

The most important formal rules for the development and protection of the Vistula Valley are evident in the *Act on Nature Protection* (1991; last amendment 2000), *The Water Code* (2001) and the *Act on Planning and Physical Development* (2003). On the basis of these general legal regulations the Vistula Valley is:

- protected as a 'Warsaw Landscape Protection Area' established by Mazovian Voiwod Decree in 1997 and amended in 2000. Also more strict protection – for nature reserves – has been established in certain parts of the Valley : Lawice Kielpinskie, Lasek Bielanski, Jeziorko Czerniakowskie, Morysin and Wyspy Zawadowskie.
- managed in order to control flooding on the basis of The Water Code (2001)
- developed in those areas that are not strictly protected or where development is not restricted because of flood management.

The study of the conditions and direction of Warsaw's spatial development carried out in 1998 (on the basis of the previous Act on Physical Development 1994) assumed that mostly ecological and recreational functions would be appropriate for the Vistula Valley. This view changed in the next document outlining Warsaw's future development, The Capital City of Warsaw Development Plan, Including Obligatory Guidelines for the Warsaw Boroughs in Preparing Local Spatial Development Plans of 2001'. Other functions were introduced into the Valley – many areas, mainly in the southern ('wide') part – were singled out for residential and service development. The 'urban natural system' was greatly diminished (Kaliszuk, 2003).

Neither of these documents is in force at the moment, as simultaneously the administrative structure of the city and the law on spatial planning has been changed.
The new spatial policy is going to be formulated in the next study of the conditions and direction of Warsaw's spatial development [1], which is based on new regulations from 2003. The first announcement states that: "*…the Study shall include guidelines that identify: ... public space that should not be built-up e.g. parks, gardens, and forests of defined conditions for protecting and exhibiting special elements that play a significant role in the cityscape, such as the Warsaw Escarpment and the Vistula River Valley…*" (Krajobraz Warszawski, No. 64).

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1. Present legislation on the spatial planning was adopted in 2003 as the Act on Planning and Physical Development (it changed the law from 1994). The new act as well as the previous one is of procedural character. It means that is regulates actors and their responsibilities, procedures, scope of planning documents. It doesn't enclose the rules and standards for physical development. There are 3 levels of planning: 1) on the national level exists National Spatial Policy (Koncepcja zagospodarowania przestrzennego kraju) 2) on the regional level the voiwodship spatial development plans (Plan zagospodarowania przestrzennego województwa); since 2003 they include also plans for metropolitan areas. 3) on local level two planning documents are elaborated: spatial development conditions and directions study of the municipality (studium uwarunkowa_ I kierunków zagospodarowania przestrzennego gminy - kind of master plan for the whole municipality; since 2003 its scale is obligatory: 1: 5000 – to 1:25 000) and local spatial development plans (miejscowy plan zagospodarowania przestrzennego); the only one legally binding; since 2003 in scale: 1: 1000, in certain conditions 1:500 or 1:2000 is allowed. So, as in many other European counties the municipality has the main power to decide on the land use and physical structure of the area and at the same time on the structure of green areas. Local development plan, as only one legally binding document can establish conditions for development, including prohibition of building also for greenstructure protection and development.

Redesign of the River Isar in Munich, Germany Getting coherent quality for green structures through competitive process design ?

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One of the most influential future challenges in urban planning will be the renovation and redesign of urban technical infrastructure through integrated design of coordinated expert groups like ecologists, engineers and architects. Ecosystems can be restored to a certain degree and citizens will profit from these new facilities in the many projects to come. The restoration of the river Isar in Munich is chosen to demonstrate how urban planners use competitive process design in order to reach integrative quality and what challenges they meet using such planning instruments.

The backbone of the green structure system of the city of Munich is the river Isar. Since the foundation of the city, attempts were made to control the wild nature of this braiding alpine river with its sudden and large floods. The river was largely engineered since 1889 until today. Flood protection and the generation of energy, called “the white gold”, were reasons to force the river into a bed of concrete and build canals. 95 % of the water was cut off for such means. A fundamental impact on the river dynamics was the construction of a large water reservoir in the Alps in 1959 (Sylvensteinspeicher). Subsequently, the reduction of the amount of gravel and sand carried by the river causes continual deepening of the river bed. Also the quality of water was not sufficient, which caused many problems for the bathing facilities in Munich. In the 80s, environmentalists called the Isar a “dead river” and the need to reconstruct became very obvious. Since 1989 concrete actions are taken by the Bavarian state and the city of Munich. In 1993 the contract with the power generating industry expired and had to be renegotiated. As a result, the minimum amount of water in the river will increase from 5 m^3/sec to 12 m^3/sec, which was experimented and fixed as a general guideline for the following planning and design process. Detailed plans touching the full length of the river were delivered with the “Isarplan” in 1995. In 2000 the civil board of the city of Munich took the fundamental decision for the urban section of the river. [1] The main objectives of the project are to redesign the dams of the river Isar, to increase the retention capacity of the floodplain, to regain the river and its banks as a space for living, including the possibility for swimming without health risks and last but not least allowing natural dynamics to form and enrich the floodplain for wildlife of all kind.

Actions to cut off trees in order to restore the dams were planned and done by public

staff and in the beginning strongly criticised by the local press. But positive effects became visible to everybody in the following summer. The second rebuilt section then was welcomed very much by Munich citizens. The third section to redesign is now the prominent waterfront for the inner city. It is of a different character in morphology and function in comparison to the former sections. That's why well designed coherent solutions are sought to improve the recreational, ecological and technical urban functions of the river. An international design competition for teams of landscape architects, town planners and river engineers was held in 2003 [2]. But when the jury came up with the winner design a public debate put the whole project on a halt. The new riverbed should have been presented to the public during the national garden festival in Munich (Bundesgartenschau BUGA 2005), a delay of two years has likely to be accepted now. The challenges for planners in the conflict about the appropriate design for the urban section of the river will be analysed in the following.

1 Policy discourses on wilderness and formal design of the river banks

Several rebirths of the discourse about "formal design" versus "wilderness" can be observed in Munich. An early discourse was led over the loss of the beauty of the wild river outside the city when dams and canals were first built (1902-1924). The first public initiative in Munich, the "Isartalverein", was founded with the aim to protect the wild river and its banks from settlements and to safeguard it for recreational purposes for the citizens of Munich. The influence was only small but still important, reaching for example a swinging form of the main canal and saving some important sites by buying and owning grounds.

In the 80s a debate within professionals raised the question, if the "technical-natural"

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1. Spatial planning in Germany is clearly a municipal domain, but tied into a hierarchical and sectoral planning system where local land use plans need to conform to the regional and other technical plans. The management of water and rivers is divided into several levels of watersheds. Small rivers are under the responsibility of the municipalities, whereas the management of the Isar is a task for the Bavarian state. In the case of the river Isar, Bavarian state agencies must work closely together with several cities and city departments. The new European Water Framework Directive (WFD 2000 / 60 / EG) states that information, hearings and public involvement are important activities in joint actions for clean rivers. It is implemented in Germany and the Bavarian state according to the deadlines given from 2004 until 2015.

2. The procedure for design competitions is discussed in Germany very strongly. Regulations were renewed in the recent years in order to simplify them and touch not longer only building tasks but planning and engineering works as well (GRW 1995, RAW 2004). Competitions are not necessarily compulsory but recommended for public authorities. The deal for having many integrated solutions in a competition is that the municipality must guarantee fair and objective placing for the planning and building job to be done. The rules say also that the solution and design of the winner or one of the winners should be build. The procedure of a competition in Germany is very strict and gives experts an important role in the play. Lay people like politicians and citizens are involved but their power to influence the outcome of the competition is rather weak.

design of the river banks of the Isar can be a prototype for urban green space in general. Having observed how people were sun bathing, partying, walking and cycling at the southern Isar, Prof. Günther Grzimek promoted his idea of "usable non-designed green space". He triggered the second aesthetical discourse on the river Isar, saying that green space does not have to be expensively prepared and maintained by landscape architects. Other professionals rejected this view, in particular arguing that well designed green spaces are required for intensive recreational use in inner cities and that these would also provide ecological benefits (Grzimek 1983, De la Chevallerie 1984).

Though the river has become a technical building with some remains of its natural character in the southern part of the city, a survey shows, that the citizens of Munich appreciate not only the relicts of wilderness but have learned to adopt and use also technical elements like concrete cascades or the first canal (Werkkanal) with a more formal design (Nohl 1998). The outcome of the design and engineering competition for the central section of the river was the overture for the third, actual discourse. The winning proposal convinced the majority of the jury because it did not conceal the use of technical elements such as walls or flagstone. Some local politicians and neighbours did not accept the winning proposal because a "more natural form" should be given

to the river bed to symbolize the rebirth of its new ecological quality. This target was in their opinion better met by the second winner.

Figure 1: Winning design of the team SKI+Partner, Irene Burkhardt, Johannes Mahl-Gebhard, Prof. Matthias Reichenbach-Klinke, Hans Schranner

2 Actors and coalitions in the case

The Bavarian state is responsible for the river and its qualities. Municipalities along were motivated to modernise their sewage treatment plants in order to improve water quality of the Isar to conform to EU bathing water quality standards.

The redesign project is of citywide relevance, decisions are taken by the city council of Munich. 200 000 inhabitants live next to the river and need green facilities because their Wilhelminian quarters are very densely built up. The city is divided into 25 districts, 8 of them neighbouring the Isar. Especially two district bodies became active within the debate (Au-Haidhausen and Ludwigvorstadt-Isarvorstadt). They published

and discussed what was planned and transported the question of design as an issue into the public arena. Together with other non governmental organisations (NGOs) they have no formal rights to decide but became very influential in the case and accompanied the project with critics and suggestions. Environmental groups were informally involved during the whole process and gatherings for citizens were held since 1989 including as an information strategy all steps of planning from the guidelines to building activities.

One coalition in the debate was built between professionals of different backgrounds promoting the winner design and another between local district politicians and NGOs fighting for the realisation of the second prize. A working group in a staff position was set up with the aim to coordinate different departments of the city (horizontal coordination) and the cooperation between the city and the Bavarian state (vertical coordination), though the political colours differed in the city and the state. The cooperation between landscape architects, town planners and civil water engineers was required for the design competition and worked well. Teams had to present coherent integrated design proposals and not just come up with just technical solutions.
But this very strong coalition of influential professionals within and outside the administrational bodies and the choice of the instrument of the design competition excluded many people from the neighbourhoods or lay-people from the decision making process. Some of these found strong partners in the newspapers and in the tabloid press, raising the question of design to a heated conflict of political relevance. People that were not organized in interest groups or political parties had no say in the matter about the design, except that some were cited with their views by the local press.

3 Distribution of power and resources

All actors see the great opportunity the redesign project represents for the city and want to influence the outcome. For this purpose they invest special social resources

that are available to them. The Bavarian state gives a large amount of money and has the power to define the constraints the city has to accept. The City of Munich has the power to decide about the land use in the corridor of the river banks and is responsible for the urban quality of life in the whole city. The administration used the pressure of time as a resource to keep with the deadline of the German garden exhibition "BUGA" (Bundesgartenschau) to accelerate the planning and decision-making process.
The cities council will now decide about the procedures to be taken in the action and the final design. The competition mobilised resources that cannot be taken for granted in a normal project. This was not only the knowledge of different professional groups such as landscape architects, water engineers and project managers but the multiple integration of this knowledge in 7 competing design proposals. Such professional and interdisciplinary creativity can be understood as a special gift that professionals provided for the city and the state in this project. These resources were won with a competitive strategy.

To be "the voice of people" or to "act with common sense in the behalf of general welfare" are resources claimed by several actors and those who did not want to accept the rules of the game of competitions and the winner design. Public resonance changed the matter into an issue and it became impossible to go over the "public wishes" who ever expressed and published it.

4 Rules of the game

Involvement strategies were set into action to esteem the vote of NGOs and informal political bodies on the level of quarters. But the process was not systematically opened to participatory co-determination of normal people or users that cannot express themselves as powerful interest groups do. A hearing with the opponents was held in summer 2004. As a first step in the game the two competitive teams had to work over their proposals but not add new ideas or qualities to strengthen their specialities. Surplus the design was presented in an identical lay-out to compare better the two options in the following debate. A supplementary survey said that both options produce more or less the same ecological impacts (Schober 2004). The two-days meeting pointed out the arguments of the local neighbouring politicians and groups of all competencies giving their recommendation for the second winner and putting the city into a strong dilemma how to come to an appropriate decision for the escalated problem. After the rules for competitions the winner has the right to get the order to build. It was the task of the cities staff now in the beginning of the year 2005 to build some kind of co-operation between the winner and the second winner of the competition and to prepare the material for the binding decision on the city councils level. One section of the fives will be built by the winning design team, antother by the second winners.

The strong emphasis that the European Union puts on the involvement of people and participatory approaches is not yet in full adapted in Germany (Aarhus Convention

etc.). Though many efforts are made they address and include mostly organized groups and give to those that feel personally affected the opportunity to appeal. Informal but well organized platforms for facilitated and structured discourse activities are still rare. The awareness of the necessity to adopt an interdisciplinary and participatory approach in a planning process is accompanied by fears that these projects may become overcomplex and impossible to handle.

Formal rules and laws derive from the German and Bavarian building and environmental laws. The character of a design competition is between informal and formal. Within professionals they are positively perceived in Germany. A design competition is also seen as a means to give resonance to an important project. Many professionals give their creativity and knowledge for free, the city has the choice between many coherent proposals and a debate about what is needed and wanted can be based on vivid ideas what may be possible. Professional teams compete and one of the winner ranks can claim to get the contract to the realisation (if the project is to be realised at all). But this quasi-automatic mechanism causes problems too, because an open democratic discourse and a process to build bridges and real consensus is hardly to be organised. The procedure gives all power to the jury working insular and hidden from the public eyes. Moreover, the process of decision making in the jury has in many ways a bias to support expert rather then lay peoples´ views. The presentation of the outcome of the competition and its exhibition shows visibly to everybody that a two-way-dialog with the public is not part of the procedure. In spite of the many advantages of competitive planning instruments, the rules of design and engineering competitions have come under pressure today and professionals are seeking ways to open the process in order to make it more transparent, flexible and democratic.

Conclusions

Experts agree that the river will never again be entirely natural due to the strong interventions of the past and the many constraints within the urban environment. What can be achieved is a restoration within these constraints. The amount of water that will flow through Munich and the shape of the river banks are and will be manmade.
The discourse how far natural restoration may lead is political in nature and should be organised as such. With the strategy to create a pressure of time the staff-team trapped itself not waiting to start a new discourse about new principles of design in the central section. The instrument of the competition in Munich has fulfilled the integration of professional perspectives but has failed to communicate new thoughts to the broader public. Good proposals need time and must integrate professional knowledge and public understanding, also because there is no right or wrong in the decision about design qualities.
It can be asked, what exactly was the reason for the escalation of the conflict, a deep gap about values between lay people and experts about design qualities or the lack of a well-structured dialog to overcome this gap? That’s why legitimate formal decisions should be flanked by informal discourses involving different perspectives of

professionals, NGOs and lay peoples views. Design in this case was of important symbolic relevance either hiding or showing explicitly the characteristics of modern urban green infrastructure. The set of rules for design and engineering competitions has to be further developed to fit better for environmental learning and democratic decision-making. For future challenges such as the renewal of old infrastructures into modern usable green infrastructures we need the knowledge of professionals as well as the engagement of lay people.

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Local participation in urban planning in Sweden

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In general terms different forms of partnerships and planning participation are recommended in the Swedish policy discourse to support sustainable urban development. Partnerships between private and public actors are often necessary for the implementation of larger developments projects with or without sustainability ambitions. Citizen participation beyond the formal proceedings according to the Planning and Building Act is however rare and viewed as time consuming and laborious among many planners and politicians. Others point out the need of local knowledge about urban green resources (how it is used and perceived) as a complement to expert knowledge (green properties and functions) in order to protect and improve urban green qualities. The case described here shows innovative approaches to citizen participation in early stages of planning.

The paper will discuss the issue of citizen participation in the view of two current discourses. One is related to mainstream planning practice saying that public participation beyond the standard procedure is not necessary. From this corner you can hear arguments claiming that such efforts are often in vain as the local people seldom can understand the full picture and that their opinions are difficult to use in the design of the plan. It is also against the principles of representative democracy. The other discourse is related to experimental efforts of devoted planners. It says that local participation in early stages is very useful as it brings new knowledge and learning into the planning process. Although laborious in the early stages it will save time in the later stages of adoption and implementation of the plan.

1 General description of the background

Gothenburg City was established in 1621 and was for a long time the only port to the sea on the Swedish west coast. The harbour, shipping and trade became the natural sources for early urban development. Gothenburg was a rather small town until the end of the 19th century when the process of industrialisation emerged and made later Gothenburg the second largest city of the country and the most important industrial city. The city started to grow along the river valleys. This development culminated in the 1960s when Gothenburg was an important harbour, shipyard and industry centre of Scandinavia (e.g. Volvo and SKF). The need for labour housing and new industrial sites made the city expand to the neighbouring former agricultural and hilly landscape. In order to manage this the city bought a lot of farmland in surrounding municipali-

ties. The city is today characterised by a large urban landscape only partly densely built up. In the ongoing transformation from industry to knowledge-based business the former industrial and shipyard sites with very central location are redeveloped for new purposes. Due to offensive public landowning policy in the 1960s the city today controls large parts of the urban landscape. This is a powerful position when it comes to negotiations and partnership agreements with private sector interests.

The Gothenburg structure plan of 1993 followed by the plan of 1999, includes a green plan recognising the green assets and values concerning ecology, recreation and leisure-time activities, natural and cultural heritage, parks and landscape images of the whole municipal land and water area. The structure plan is a policy instrument without legally binding regulation. The green plan has a background in an earlier natural and cultural preservation programme set up by an informal sector-crossing task group representing the offices of Urban Planning, Real Estate, Park and Leisure-time, Environment and Gothenburg Museum. This group had an important role as a coordinating and information-distributing actor within the municipal administrative system concerning green issues. The Real Estate office is a strong player as responsible for the landownership of the city. Over the years this office has developed some interesting tools connected to contracts with developers that will be further discussed below.

To summarise, the discourses on green planning in Gothenburg is based on the following main points of departure:

- Public ownership and control of land resources.
- Long tradition of knowledge-based green planning at the comprehensive level.
- Partnerships between the city and the private sector, where the city has a relatively strong position due to public landownership and municipal planning monopoly as stated in the Swedish Building and Planning Act.

Furthermore, the Swedish culture traditionally contains strong individual relations to the natural landscape. This means that, even if Gothenburg is a relatively green and sparsely built up city, there are strong reactions among the citizens against developments that are seen as threats to urban green qualities. That is why the large central park, Slottskogen (“the castle forest”), in reality is well protected, although without any legal means. Neither developers nor politicians would think of meeting the public opinion that any building proposal in Slottskogen would create protest among the citizens. Strong opposition of those who feel influenced by the project often results in long-lasting disputes and sometimes in changed plans or unsolved problems. This is also why communication with diverse stakeholders and users of green space in early stages of planning processes is recognised as essential by some planners of the city. While ecological and cultural values are rather well investigated and described in previous planning documents, the social aspects and local user knowledge is currently in focus for innovative green planning activities.

The driving force is the recognised need for broader communication in the planning process in order to make possible the implementation and the positive adjustment of the over-all development policies of the city at the local level. This is an adaptation to the relatively strong power of stakeholders and citizens provided in the current planning legislation as well as a necessity in a partnership strategy. According to the Swedish Planning and Building Act (1987) not only formal stakeholders (for instance private property owners within and around the planning area), but also any citizen who feels influenced by the planned project has the right to complain on the proposal. This can be done in three stages of the planning process: program, review of proposal and final exhibition before adoption by the municipal council. Any written complain has to be commented by the planning organisation and all complains and comments are published in the planning documents. Furthermore, a written complain that has not been met in the adopted plan will give the author the right to appeal to higher levels of public authority. The first level is the county administration, the second and final is the Swedish government. Accordingly, this may prolong the planning process with several months, or sometimes even with years.

2 Policy discourses

The over-all planning policy of the city is densification of the already built up areas in order to take advantage of already made investments in infrastructure and public transportation systems. This means development of un-built areas in established urban districts where the local use and appreciation of green resources is unknown to the urban planners and sometimes not even recognised and expressed in the green plan. Vast areas of former farmland owned by the city have a significant value as a cultural heritage and are an appreciated landscape for recreation. Any densification or development project in these areas will meet resistance from neighbours and other interested citizens.

The problems of "urban growth and green" are approached in innovative ways in some cases studied in the EU research project "Communicating Urban Growth and Green" (Greenscom) [1] . The Swedish Uggledal-case concerns densification in an area south of the city [2]. The planner in charge wanted to grasp local knowledge before designing a new housing area in order to fulfil the high ambitions of environmental concern as expressed in the district plan (detailed level of the Gothenburg Structure Plan) as well as trying to avoid the normally occurring NIMBY (Not In My Backyard) reactions in this district. The innovative tools developed in the case opened for mutual learning as "space of action" was shaped and made participation meaningful to the local actors. The planner invited to voluntary participation meetings in local groups, one for women, one for elderly people and one for school children. These groups had the opportunity to discuss and influence the design of the development project in a

1. See www.greenscom.com for further information.
2. Lundgren Alm et al. (2001)

very early stage of the planning process. Especially the women group became very engaged and met at least 10 times during the whole process. Both the planner and the participants experienced a fruitful learning process. The local people were given the chance to express their ideas and concerns. The planner got local knowledge that she otherwise would not have had and was also able to explain the planning system and priorities of the city council.

One core condition was the municipal land ownership and the purchase contract between the Real Estate office and the developer. The price of the land was not connected to the size of the site but the number of flats determined in the final detailed plan. This meant that there was a "space of action" for influence by the local groups. They could reject some of the proposed buildings without economic losses to the developer. The plan passed the formal procedure of decision-making without serious complains from the stakeholders and neighbours concerned. This detailed plan is legally binding and contains future protection of the over-all green structure as well as responsibilities of the new house owners for long-term maintenance of commonly owned land as a result of the communication and negotiation in the planning process.

3 Actors and coalitions

In the Uggledal case the local groups, the developer and the consultant architect formed a local forum led by the city planner where many problems and options could be addressed and managed. It was based on a coalition between the developer and the Real Estate office (landowner) as formalised in the purchase contract. Both these parties were interested in development in this attractive part of the city, avoiding normally occurring NIMBY reactions and time-consuming appeal processes. The politicians of the city, who adopt the over-all policies and take all the formal decisions in the planning process, accepted the innovative initiatives in this case from similar reasons. However, they were not directly involved in the work process.

Different departments of the City of Gothenburg bring in expert knowledge and contain formal arenas for advice and decision-making in the planning process following the standard procedures of the city. Many officials within these departments find extended participation difficult, un-necessary and time consuming. They did not take part in the informal forums of the Uggledal case. This meant that some agreements made at site by the local groups, the planner, the developer and his architect was not accepted in the end. The reasons were formal or technical and could have been met if known in the early stage discussions.

Other officials of the city administration are prepared to bring in new ideas and extra efforts. In this case the devoted planner of the Town Planning Office responsible for the detailed plan and the previous guiding district plan was a key actor. She is convinced that this kind of early stage citizen participation pays off in the long run. Time

and efforts in the beginning will save work in the later stages of the planning process. This idea and approach has not yet become mainstream in the city administration, although we can today see similar approaches tried out in other areas and by other officials. It is likely to believe that new forms of communicative planning practice will emerge together with urban growth policies in favour of urban densification instead of urban extension. The compact city discourse is strong all over Europe.

4 Resources and power

Public land ownership gives the city a strong position for negotiation. This formed the basis for the coalition between the Real Estate Office and the developer. Through the land purchase contract conditions for the involvement of the local groups were shaped that gave some power to their voluntary participation and engagement. Accordingly the participants found it worthwhile to invest time and efforts in the process. This includes the planner who got support from the local people to make a plan that could be accepted by all parties involved and thus adopted without any serious complains.

The power of the officials unwilling to leave the traditional way of working is based in the established culture of the planning system. They could not be forced to take part in the informal activities of the local groups. These officials of course have the power to seriously damage the efforts of the devoted planner if they want. This was not the case here. Their absence only made some minor problems in the process, well compensated by the planner who succeeded to make the participants of the local groups learn about and accept reasonable over-all policies even if not of personal benefit. Citizen participation is a process easy to damage, it requires coordinated responses from the whole city administration. Otherwise it can turn contra-productive and result in passivity and distrust. Communicative approaches challenge the traditional tasks and roles of planners and other officials [3] . The role and power of the process leader, in this case the devoted planner, must not be under-estimated. There is a need of skilful process facilitation and, at the same time, a risk of more or less conscious manipulation.

5 Rules of the game

The formal rules of the game are set by the planning legislation, which in Sweden support voluntary involvement of all interested stakeholders and citizens in specified moments and procedures of the planning process. The question is if this is sufficient or if extended citizen participation is necessary to improve urban planning and enhance implementation. Proponents of the latter view are striving for an over-all development strategy recognising urban qualities and giving frames as well as “space of action” for local adaptation. In this case the comprehensive structure plan documents provided the planner with different kinds of expert knowledge about the local

3. Malbert (1998)

area in the larger context of the city. The initiative to invite to early stage neighbour involvement beyond formal requirements resulted in local forums where this expert knowledge could meet local experience-based knowledge in a mutual learning process. This resulted in local adaptation of the densification strategy of the city. The purchase contract between the city and the developer gave openings for local actions within the frames of the over-all planning strategy. The principle of the contract was based on previous experience about the necessity of some space of action to make the effort meaningful and the result acceptable to all parties.

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A partnership approach to regenerating public greenspace in Sheffield : the role of the Sheffield Wildlife Trust.

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1 Sheffield and its 'beautiful frame'

Sheffield is an industrial city in northern England and with a population of 513.000 ranks as the fifth biggest municipality in England. One third of Sheffield's 36 238 ha lies within the Peak District National Park and another third is agricultural land with some scattered villages. Together these beautiful landscapes frame the city which itself is characterised by steep-sided valleys and streams that run down from the uplands in the west to join the flat bottomed valley of the River Don in the city centre. In the 19th century Sheffield was the steel production centre of Britain with steel works sited along the flat land along the River Don. Between 1801 and 1931 the urban area grew rapidly but in a haphazard way and housing for factory workers was of poor standard, built at high densities and without proper sanitation. It was during the 1920s that local people began to campaign to protect the countryside surrounding Sheffield with the overall purpose of designating the Peak District as a national park and creating a permanent Green Belt around the city (Jones 2001). The success of these campaigns is evident today and the tradition of environmental campaigning continues with over 50 environmental and amenity groups based in the Sheffield region.

Green space within the city is also extensive and Sheffield is regarded as England's greenest city – it contains 150 woodlands and 50 substantial public parks (Fig.1). In addition to the greeenspaces associated with the valley system, another major component of the green structure is land gifted to the city by wealthy industrialists especially in the Victorian period. These estates are now mainly parkland and are protected by legal covenant to ensure that they are used by the city as open space. They cannot be built on without a special Act of Parliament but without the funds to manage them, several parkland estates are managed to keep them looking tidy rather than to maintain and enhance their landscapes and biodiversity. A more planned provision of open space provision associated with the Garden City movement of the inter-war and post war period was made both in areas of social housing and the low-density, semi-detached estates built for the aspiring middle classes. However, with insufficient public funds to plant and maintain the required landscape structure of these modernised estates, the quality of green space especially in areas of social housing was low. Since local residents had neither the money nor the skills and inclination to maintain them,

the green spaces of these housing estates continued to deteriorate. With the benefit of hindsight, it is now widely acknowledged that the extent of unused grass outside the curtilage of the dwellings, often harbouring litter, was a factor influencing the perceived and actual deterioration of these 'new' housing areas.

Sheffield's problems in relation to greenspaces are therefore not so much to do with a lack of greenspace or unstructured greenspace. Instead there is a richness and variety of green spaces and high quality landscapes for people to enjoy - both in and around the city. The problem facing the city is to manage this rich resource with a declining budget and to work in imaginative ways that mobilise new funds, resources and skills. The development of a new partnership approach to the strategic planning and management of parks and open spaces as part of the city's recent review of its planning policies is the subject of this case study. In particular, the study focuses on the Sheffield Wildlife Trust and its formative role in promoting an inclusive approach to environmentally led urban generation. The main purpose of this case study therefore is to examine what difference the direct involvement of a non-government organisation makes to the process of green space policy making at the city scale and to explore whether a more inclusive and balanced approach to urban regeneration has been achieved.

figure 1. Sheffield city - proportion of land in different land use

2 The Planning system

Planning policies concerned with open space, and biodiversity conservation and enhancement are the responsibility of city governments in England but these policy arenas have always been a discretionary area of activity and expenditure. As a result there is high local variation in the extent to which city authorities intervene in the market to purchase land as open space, in the range of policies they adopt to protect green spaces and in their expenditure on them. For example, many cities like Sheffield have adopted Green Belt polices to conserve the countryside around cities;

but the amount of publicly owned land in these Green Belts varies widely (Elson, 1986). In the case of Sheffield, a deliberate policy of public ownership coupled with those estates gifted to the city authorities, means that the area of open space in public ownership is high when compared to other cities - 49.3 square metres per capita compared to the average for all metropolitan authorities of 36.2 sqm/capita (CIPFA Leisure Statistics 1991/92).

Metropolitan authorities such as Sheffield, are responsible for preparing a Unitary Development Plan (UDP) that sets out policies for a period of 5-10 years. Unlike many European countries the UDP is not a legally binding document. Instead local planning authorities composed of elected councillors and advised by planning officers, make judgements about whether or not development proposals are consistent with local policies. Hence, while UDP policies are based on national guidance issued by central government - Planning Policy Guidance (PPG), each city interprets these policies according to their own circumstances. The details of the Sheffield UDP are at http://www.sheffield.gov.uk. They show that policies for green structures apply to the Sheffield Green Belt, the Peak District National Park, Biodiversity, Nature Conservation Sites, Rural Diversification, Green Network and Greenspace. As part of the statutory review process of its UDP policies concerned with parks and open spaces were reviewed in the early1990s. This review was sponsored jointly by the city authority (Leisure Services Department) and a voluntary sector organisation The Sheffield Wildlife Trust (SWT) with funds from a national fund – The Urban Programme. This fund had been set up under the Thatcher government to assist economic regeneration of disadvantaged areas in the UK and with high unemployment associated with the structural decline of the steel industry, Sheffield was able to benefit from this new funding programme. The Parks Regeneration Strategy sponsored by this partnership employed an independent consultant, Alan Barber, to undertake this review. Its recommendations led to innovative approaches to open space renewal in which the SWT was a major partner.

3 Policy discourses

Key findings from the review (Report to Leisure Service Development Committee 1999) showed that a number of parks and open spaces were neglected and vandalised, and that greening initiatives associated with re-development of urban sites were often cosmetic and unrelated to the needs of local communities. Much of this deterioration in the quality of the open space resource was attributed to the reduction in public expenditure on parks as a percentage of net sport and recreation expenditure. This had fallen from 68% in 1982-3 to 32% in 1991-2 or £8.38 per capita population – one of the lowest figures recorded by metropolitan authorities. The Report also pointed to the perception that the poor quality of the city's greenspaces acted as a disincentive to inward investment and was a factor influencing the perceived rapid deterioration of the 'new' social housing areas developed throughout the city. In seeking to reverse

this ‘spiral of neglect’, the Parks Regeneration Strategy linked park renewal with an overall goal of urban regeneration and recommended a new partnership approach that would:

- secure additional financial resources
- work with new partners and local communities to review and determine service standards
- enable groups and individuals to actively contribute to the parks service
- develop a ranger service to support activities in parks and
- improve management for people, wildlife and heritage.

This partnership approach represents a move away from traditional, quantitative (technocratic) approaches to park/open space provision to one that is concerned with the specific qualities of individual spaces and management standards and practices that better reflect the range of benefits and functions modern society expects. In Sheffield, as in other cities, traditional approaches to park planning and provision were based on normative, spatial models that linked park size with the catchments from which users are drawn. This *supply based* approach reflected national Planning Policy Guidance of that time (PPG 17) and in terms of planning practice used standards of supply based on the National Playing Fields Association (NPFA) – 6 acres standard. The NFPA recommends a minimum standard of 2.4 hectares (6 acres) of outdoor playing space per 1000 population. In recognition of the size of the public estate in Sheffield, especially large areas of informal green space in the city, the standard was raised for Sheffield to 6 ha (14.4 acres) /1000 population in 1993. Whilst recognising that the spatial supply of accessible parks is important, the new strategy emphasised a *user-orientated approach to management* by recognising that park use reflects qualitative attributes of the resource *and* changing expectations of society.

A key principle of this new approach was involvement of local people and other stakeholders in discussions about how the parks and informal open spaces should be managed. This more collaborative approach involved the most extensive public consultation exercise the Parks Department had ever undertaken. Traditionally the public have several opportunities to be involved in the process of preparing and agreeing the UDP and in decisions relating to development application. However, numerous research studies show that public participation in the planning process is often dominated by interest groups and by individuals with a personal interest in the outcome – the NIMBY phenomenon (Bedford et al 2002). By taking a more pro-active and targeted approach to public involvement in the policy process, the Parks Review process meshed with central government guidance that placed renewed emphasis on public participation in planning and local government. During the late 1990s successive reports from the Labour government encouraged local authorities to ‘get in touch with people’ by consulting organised groups and individuals to help build community skirls, social capacity and active citizenship (DETR 1998). The process of public

involvement adopted as part of the Sheffield Parks Regeneration Strategy is widely regarded as an example of best practice (DTLR 2002).

4 Actors and coalitions

Although urban development had become more plan led since 1991, the Thatcher period had also seen a liberalisation of the planning system that appeared to favour private developers at the expense of the public interest (Rydin, 1998). It also favoured the promotion of partnership approaches to urban regeneration and new funding arrangements associated with the Single Regeneration Budget (SRB) were designed to support this approach. Administered nationally, the SRB required new coalitions between the local state, the private sector and local communities if projects were to be funded (Phelps and Tewdwr-Jones 2000). In the case of Sheffield, the city authority already had some experience with partnership working when these new national funding streams began to operate. As a deprived area the South Yorkshire region benefited from EU Objective 1 and 2 funds for land reclamation projects associated with the derelict land left by its industrial legacy. For example, The Five Weirs Trust had been set up in 1986 to manage several urban renewal projects on former industrial sites along the river Don in the inner city. This Trust had involved members of the Leisure Department and the Sheffield City Wildlife Trust who worked alongside the Development Corporation – an independent agency set up by central government to acquire land for urban development projects. In practice these early urban renewal projects permitted only cosmetic, landscape improvements rather than providing opportunities for significant habitat creation and renewal. However, they provided important experience in partnership working for the SW Trust and the city authority and served to demonstrate how members of the local community could be mobilised as volunteers and project managers. In this way shared experience of partnership working through the Five Weirs Trust provided the basis for a new coalition between the local state and the community through the activities of the Sheffield Wildlife Trust.

The emergence of the Sheffield Wildlife Trust as a ‘community’ partner however requires some further explanation. Few wildlife organisations or environmental NGOs have the legitimacy or authority of the SWT to act on behalf of local communities as both a strategic player and a delivery organisation. Several studies such as those of Lowe and Goyder, (1983) and Bedford et al (2003) show that some NGOs act as interest groups rather than pursuing collective or communal concerns. The question then arises about how the SWT achieved sufficient social legitimacy and authority to act on behalf of local communities? Several factors seem to be important: a large membership in the city; strong social commitment by senior officers who have been or are employed in public sector service; a willingness on behalf of the organisation to work in difficult social and environmental neighbourhoods that other NGOs would not enter; and the capacity of its staff to generate innovative projects that directly employ and train local residents in environmental improvement in activities such

as gardening, food production on allotments and environmental education. Informal networks in which academic researchers, consultants, Local Authority Officers and SWT staff and volunteers encountered each other regularly also seem important. By demonstrating that its approach to community involvement in environmental projects had widespread public support the Trust gained political legitimacy and acquired the authority to act on behalf of local people. But, as other Wildlife Trusts will testify, gaining legitimacy and authority also requires a willingness by local councillors to accept a more collaborative approach to policy making. Some councillors feel their authority is threatened by a more collaborative approach to policy development because they themselves have been elected to represent local people. In the Sheffield case, the changed political landscape of the mid 1990s that saw a 'New Labour' national government come to power with the intention of pursuing a devolution agenda both regionally and locally had a significant impact on local politics.

5 Resources, rules of the game and power

In the UK as elsewhere in the EU, many cities are regarded as the economic powerhouse of regional economies (Roberts and Colwell, 2001). Sheffield seeks to be economically competitive but the city authorities recognised that inward investment would be deterred by poor environmental conditions. A large green estate - some of it heavily polluted, and a reduced tax base on which to fund greenspace improvements suggested that innovative approaches to environmental improvements would be required. However, it is difficult to identify precisely what relations permitted economic competitiveness and an innovative partnership approach to greenstructure planning to go hand in hand. It is unclear whether the private sector would have been disciplined enough to take its environmental responsibilities seriously without the new partnership approach required by EU funding. In practice, the liberalisation of the UK planning system is likely to have favoured cosmetic solutions to open space planning and management in which the most lucrative city centre sites would have been picked off first – not the disadvantaged, public housing estates on the city fringes in which the SWT worked. In other words, the formalising of new 'partnership rules' operating via EU Structural Funds between 1994-1999 that required a multi-sector partnership approach to urban regeneration may well have widened the range of sites that could benefit from urban regeneration initiatives. And, national planning policies that also encouraged partnership approaches to urban re-development may well have further extended the range of sites and regeneration projects. But studies suggest that cross-sector and bi-lateral partnerships are often not equal partnerships and their anticipated inclusionary approach depends in practice on the political culture of the local authority and its interpretation of what is in 'the public interest' (Rydin, 19998). For many years the Labour -controlled city council had vigorously pursued an interventionist policy of land acquisition for housing and green space. The election of a new authority with a more Liberal complexion in the early 1990s and its willingness to adopt a more facilitating role in open space planning and management, permitted SWT to be

regarded as an equal and responsible partner capable of undertaking a strategic and delivery role in urban regeneration initiatives.

Without the additional 'rules' of EU funding and a change in the political complexion of the city authority from Labour to Liberal in the mid 1990s, the local partnership in Sheffield may not have developed on an equal basis. Moreover, SWT's own culture of social and environmental responsibility seems to have been instrumental in directly involving local people in environmental regeneration projects. Significantly, it also succeeded in involving people from disadvantaged neighbourhoods that private and public sector developers would not normally seek to develop in innovative ways. Without SWT's historical commitment to working in disadvantaged areas with low-income groups and unemployed people of all ages, the Trust would not have had legitimacy to act as a major strategic partner on behalf of local people. Its large membership and its track record in working with socially excluded groups gave the Trust legitimacy but also ensured that environmental and social regeneration went hand in hand. The success of the partnership is highly dependent on the history and particular strengths of the Trust in community involvement – strengths that many Wildlife Trusts aspire to but which few have been able to develop with the same kind of success. SWT is currently the largest Wildlife Trust in the UK with an annual turnover of £2.5 million and 75 employees.

The most recent development in the partnership between the city council and SWT has seen the establishment of a private company 'The Green Estate Company' with a 50:50 shareholding of SWT and Manor and Castle Development Trust. The Company holds the land of the Manor and Castle estates, together with associated houses (formerly public housing) as a major asset. This company generates income from ground rent on housing to provide on-going funding for landscaping and through social entrepreneurship the company aims to generate local employment and enterprise through activities associated with the management of green spaces, allotments, gardens. In this case, ownership of former public assets has been devolved to SWT and Manor and Castle Development Trust.

6 A more balanced, socially inclusive approach to urban regeneration ?

In the Sheffield case, an inclusive approach to greenspace planning and action based around a partnership approach emerged during the late 1990s as a pragmatic and opportunistic response to changing relations that operated on international, national and local levels. The legacy of an extensive public green estate coupled with a strong tradition of public service among professionals involved with open space issues shaped a distinctive local response to greenstructure planning and management. Crucially, the legitimacy of the SWT as a representative of the community enabled the voluntary sector to act as an equal partner alongside the local state and private

sector in urban renewal projects. In this case, achieving an equal partnership in green-structure planning is a function of a complex web of inter-relationships that are place and context dependent rather than a predictable response to a process of political modernisation *per se*.

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Of ‘green’ policies and practices in the urbanizing region, Biesland, Randstad, the Netherlands

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The case is about a local level initiative - a combined effort of farmer, citizens, researchers and regional authorities - to bring about an innovation of the current, national policy for nature- and landscape management by farmers. The driving force behind the initiative is the growing awareness that farmers in the urban fringe, even more so than farmers elsewhere, have difficulties to continue their farm. In the urban fringe, competition for land is especially fierce. Agriculture more and more often looses out from other land uses, especially urbanisation and nature- or park development for recreational purposes. Farmers must intensify in order to be able to compete at the world market, but this will damage the landscape and so this is not an attractive option. To a limited extent, the vicinity of a city is an advantage. There are possibilities to earn part of the income from, for example, day nursery, activities for the elderly, a campsite or the sale of ice-cream. What is mostly opted for is to sell the land and to either stop farming or to try to continue elsewhere. The initiative in the Polder van Biesland however, was meant to create possibilities for farmers to earn a substantive part of their income from nature- and landscape management, in addition to the income earned with the farm activities.

The main question guiding this case description is: how does the interplay of discourses, discourse-coalitions, resources and rules of the game influence chances for bottom-up, innovative ideas, especially in situations of multi-level governance?

1 General description of the case

The ‘Polder of Biesland’ is located in the rapidly urbanizing region of The Hague, Delft, Pijnacker-Nootdorp and Zoetermeer. The area is part of the ‘Randstadgroenst ructuur’, a national policy initiative to create a coherent ‘greenstructure’, mainly for recreational use by the growing urban population of the Randstad.

At the provincial level, the area is part of the ‘Green-Blue Slinger’, the provincial version of the same ambition. In and around the Polder of Biesland, most land has been acquired from farmers during the past 10 years. In addition to land that was transformed into urban area, land was transformed from meadows into forest, nature area and/or recreational parks. In the Polder of Biesland, only one (out of about 10 in the 1980s) agricultural enterprise remains. This farmland is characterized by long, narrow fields, separated from each other by 23 kilometres of ditches, characteristic of the traditional polder-landscape in this area.

In 2001 the farmer learns from a journalist about the vision 'Farming for Nature', a vision developed at Alterra, a research institute in Wageningen. The vision, like himself, strives after a more significant role for farmers in managing nature and landscape and includes a strategy to compensate farmers financially for their contributions to nature- and landscape values. The farmer proposes to become a 'pilotfarmer'. In that same period the involved researchers are looking for situations to bring their vision into practice. They start a common project. The province of Zuid-Holland, together with a research programme of the Ministry of Agriculture, Nature Management and Food Quality (LNV) are found willing to finance the research.

2 Discourses

In several ways 'Farming for Nature' is quite different from existing policies. Most importantly, the notion of 'green' implied in the vision is one of integration. It is assumed that to maintain landscapes like the Polder of Biesland, farmers need to play a role. The institutionalized policy discourse looks at 'green' differently: land, especially in the vicinity of cities, must be given in hands of nature organisations in order to safeguard it against further urbanization. There is a national policy to promote landscape and nature measures by farmers, but this policy does not lead to a 'real' integration: farmers can continue their 'business as usual'. They often consider the subsidies as a nice surplus to their income, for which they do not have to change their farming practices considerably. Farming for Nature, on the contrary, implies a completely different farming system – no minerals (fodder, fertilizers) from outside the farm are allowed to be imported.

Various efforts are made to get the Ministry of Agriculture, Nature Management and Fisheries to endorse the initiative. Together with another Farming for Nature initiative, the project gets a status as 'pilot project'. The Minister promises to contribute half of a regional fund, on the condition that the regional partners contribute the other half, and on the condition that the approach will be approved by the European Commission. Various actors are actively involved in the initiative: local people and their organisations, municipal councillors, the 'national green fund' (institution that may manage the fund), officials of the different municipalities (they form a project-group, preparing decisions of the 'steering group', consisting of politicians), an expert-centre to assess the expected effects in terms of natural values, a public notary to formulate the contracts. Interviews and workshops are organised to get broad input in the project. A newsletter is issued to inform people regularly of the state of affairs in the project. When a local freemason-club gets wind of the initiative they organise a fundraising dinner with local enterprise and politicians, and start the foundation of an organization 'Friends of the Polder van Biesland'. In February 2004, the organization is formally founded.

In sum, the initiative can be characterised as bottom-up and 'small' in terms of number of farmers involved (one). Despite its small scale it had, however, enticed a con-

siderable number of actors at the regional level to contribute to the project. It had the (verbal) support from the top of the Ministry of LNV.

It is important to note that the ambition to change national policies was not a priority from the beginning. Achieving purely local ambitions would have been satisfactory enough for the regional actors involved. However, early in the process it became clear that a substantial change at the local level, even if recognized as a pilot project, would be looked at with eyes framed by existing national policies, especially since part of the national budget would be put into the projects. The required approval from the European Commission gave the regional initiative a European dimension. The procedure to go to the European Commission would have to be organised by the Ministry of LNV.

3 Discourse coalitions

The discourse that would exclude farmers from the implementation of policy objectives such as the Randstad green structure (Randstadgroenstructuur) was supported mainly by a coalition of the Ministry of LNV, the State Forestry Service, the Land Planning Service (DLG) and the Province.
The discourse that would see a crucial role for farmers in the management of urban landscapes was initially supported by a small local coalition of the farmer and the volunteer of the nature group. By connecting their ideas to 'Farming for Nature', they provided themselves access to the large network of the researchers of the research organisation working on the vision. This gave them easier access to the Ministry of LNV.
One cannot say that there are just two discourses and coalitions in the Polder. There are of course many more. Nevertheless the above points at a distinction between, on the one hand, the strongly institutionalized policy discourse with a heavy emphasis on land acquisition and a firm belief that farmers are in a weak position to contribute to 'green' objectives, and on the other hand a local discourse wherein a combination of nature, agriculture and 'use' of the area by the city-dweller is emphasized. The latter discourse is also endorsed by part of the research community.

4 Resources and power

In summer 2003, the contents of what a broad coalition actually wants in the Polder was rather clear. Researchers, farmer, volunteers and regional officials had worked together towards a publication of a colourful book in which results were summarized. After the regional politicians, as members of the steering group, had offered the book and a declaration of intent to the Director General of the Ministry of Agriculture, procedural matters started to dominate the process.
In terms of finances, nature organisations in the Randstad were in a far better position than farmers willing to play a substantial role in nature conservation. 'Green' in the Randstad had strong support, even although in the competitions with infrastructure, budgetary cuts would be a constant threat. Financial means were earmarked to buy the

land that was supposed to be taken away from agriculture and given in hands of nature organisations. In the Polder of Biesland in 2004, 10 hectares are officially still to be extracted from the farm, consistent with the plans for the Randstad green structure. A decision of regional partners to choose for 'Farming for Nature' did not lead to a reallocation of the means, which meant that additional money had to be found to finance the regional initiative. The money to acquire hectares from farmers in Biesland was claimed to acquire hectares elsewhere, so that the nature target (in terms of purchased hectares) could still be achieved. This is an illustration of how the existing distribution of financial resources and the notions behind this ('green' is better of in hands of nature organisations) prevailed over the outcome of a regional wish to create nature by giving farmers a greater role.

5 Rules of the game

One recurring question was whether the proposals would be in line with European legislation that prohibits state support to farmers if this would cause a distortion of competition with other farmers in the European Union It took more than two years to get the state-support procedure going, and until now the initiative has not yet 'reached' decision-makers in Brussels. State support to nature organisations for management and maintenance of forests would not have been a problem. In case the land would keep its designation 'agriculture', the regulations on state support would slow down decision-making. This is not to say that the state support rules do not make sense. There are many examples of illegitimate support to farmers, resulting in distorted competition. In this case however it was very clear that the farmers' position on the world market would be damaged considerably by the measures he would take to contribute to nature and landscape values. The state-support – rule of the game, which is closely attached to allocation of resources, throws light at a discourse that was not yet explicitly mentioned in the above. A third, 'economical' discourse emerges, that primarily looks at farmers as competitors at the world market, and not so much as potential suppliers of 'green services' (the latter is part of the vocabulary of an upcoming discourse in the Netherlands). The rules of the game which are based on this economical policy discourse is at odds with the Farming for Nature-discourse. They made it harder for the latter to exert influence at a local level.

An important question is whether the slow-down of the process was a result of the rules themselves, or of the political culture in which particular notions of green had strong institutional anchors, for example in the elaboration of rules like the state support rule. Comparative research among European countries can perhaps reveal whether and to what extent national governments create space for manoeuvre in relation to European legislation, to promote òr hinder equal chances for nature organisations, farmers and others alike to contribute to the natural environment.

6 Pilot projects – a new rule of the game ?

The practice of pilot projects is, in itself, by now a rather widespread phenomenon in the Netherlands. A special law was even adopted to facilitate experiments in the environmental policy domain. This choice for experiments and pilot-projects, can be interpreted as an attempt of the national government to give more room for manoeuvre for (local or regional) coalitions with innovative ideas. Further research however should indicate the potential of these pilot-projects. Is there really space for policy-innovation, which was not invented at the traditional policy institutions? What is the role of pilot-projects in situations of multi-level-governance, if an increase of local or regional initiatives is accompanied by a greater demand by public bodies for control, accountability? What if the regional discourse is different from the discourse implied in existing rules and regulations?

7 Conclusion

It is important to note that there are, of course, ideas that can be implemented without involvement of a national or international government agency. In this case however what was initiated ‘on the ground’ in the Polder could not do without involvement of other decision-making levels. It is likely that this will be the case more and more often in the future. A task for future research therefore is to scrutinize implicit assumptions, which have ‘penetrated’ rules and procedures in specific policy domains, such as the implicit notions of ‘green’, which were incorporated in rules and procedures at several levels in the Biesland case. By grasping these notions, the stability and dynamics of a policy arrangement, especially when it cuts across levels of decision-making, can be understood better. This understanding then can contribute to cope better with the dilemma of regional innovative initiatives, which do not fit within the frames