INVITED ARTICLES

Frédéric ALEXANDRE*

THE ROLE OF VEGETATION IN THE URBAN POLICIES OF EUROPEAN CITIES IN THE AGE OF THE SUSTAINABLE CITY

Abstract. The emergence of the modern concept of the sustainable city raises afresh the long-standing issue of the place and role of vegetation in urban and peri-urban areas in Europe. The awareness of biodiversity and the exploration of the services provided by ecosystems both lead to the development of ecological networks based on green spaces in and around the city. The establishment of these networks converges with the control of urban growth and urban sprawl, with the 'green belts'.

Drawing on the development of public policy governing the place of vegetation in Berlin, London and Paris, this article seeks to show the correspondences that have developed in the discussions of urban policy carried on in the major industrialized countries, and also the conflicting goals which these policies are meant to implement.

Key words: vegetation, biodiversity, urban landscape, parks and green spaces, green belt, greenway.

1. INTRODUCTION

The area occupied by vegetation in cities is considerable: Clergeau (2007) cites approximate figures of about 15% of the surface in centre-city districts. The proportion rises to 40% in the peri-central areas, the former inner suburbs where private gardens and cemeteries are more frequent. In the outer suburbs, areas of vegetation

---

∗ Frédéric ALEXANDRE, CRESC, EA 2356, Département de Géographie, UFR Lettres, Sciences de l'Homme et des Sociétés, Université Paris 13 – Sorbonne Paris Cité, 99 av. J. B. Clément, 93430 Villetaneuse, France, email: alexandre@univ-paris13.fr

occupy more than half the space and often more than two-thirds. Beyond these lie the peri-urban open areas, mainly rural (cultivated or forested) in terms of their use of space but subject to the pressures of urbanization. Some of these open areas are urbanized, constituting green spaces and gardens (public or private). The urban fabric also allows for 'rips', discontinuities through which unplanned nature – what has even been called 'the wild' (Lizet and Celecia eds., 1999) – can slip in, from abandoned farmland to urban waste ground, reaching the bases of the rows of city trees and the gaps between the cobbles.

Whatever its form, urban and peri-urban vegetation is today the subject of renewed discussion within the context of the quest for a sustainable city. The establishment of ecological networks traversing urban space and relying on the greenways is everywhere on the planning policy agenda. In Berlin after reunification, the double green belt established after the First World War has been allocated new functions; in London, the Greater London Authority has established the Strategic Open Space Network (London Plan, 2008). In France, the implementation of the *trame verte et bleue* (green-and-blue-way), that also concerns urban areas, was raised to the status of a major priority by the *Grenelle de l'Environnement*. The theme is also present in the EU-Leipzig Charter on Sustainable European Cities (Eltges, 2009).

The text adopted at the close of the *Grenelle de l'Environnement* defines the challenge of implementing the green-and-blue-way:

> The challenge goes far beyond the mere preservation of isolated natural areas and the protection of endangered species. It means establishing a coherent ecological network that allows species to move around and interact, and enables ecosystems to continue to provide services to human beings (Ministère de l'Ecologie…).

Further:

> We must henceforth think in terms of the linking and functionality of ecosystems, in terms of ecological continuity on a large geographic scale. This requires incorporating the mobility of the species concerned and to a lesser extent the movement of whole ecosystems over time. It is designed to actively renew an interest in biodiversity, which some people may view as merely 'ordinary' (Ministère de l'Ecologie…).

The goal is thus extremely ambitious, focused on the question of the management of biodiversity and the maintenance of ecosystem services. It is even more ambitious in the cities, where it has to be compatible with the functions inherited from existing parks, gardens, and green spaces designed originally with a primarily aesthetic purpose, complemented during the second half of the 19th century by the public health goal of contributing to social stability by providing the working classes with green spaces that made them stronger and healthier.

Drawing on the development of public policy governing the place of vegetation in three major European capitals, Berlin, London and Paris, this article seeks to show the correspondences that have developed in the discussions of urban policy carried on in the major industrialized countries, and also the conflicting goals which these policies are meant to implement.

2. 'PARK SYSTEMS': AN APPROACH TO SUSTAINABLE URBAN DEVELOPMENT AHEAD OF ITS TIME?

2.1. From the Invention of the Urban Park to Park Systems

Gardens and green spaces took on a new role in urban space in 18th-century England, when the public was first allowed access to gardens inspired by a landscape aesthetic derived from the rural landscape, in which the ideas of the beautiful, the sublime and the picturesque were fundamental. This original objective reappears today in the parks of British cities, most of all in the royal parks of London, such as Hyde Park, founded in 1735. It appears in a less tightly controlled form in the great peri-central green spaces, such as Hampstead Heath, located in an upscale area of north London, which combines more formal sections with others where natural processes, though still managed, are allowed more free rein: woods, areas of heath where yellow broom, gorse and purple heather grow together, and meadows dotted with clumps of trees and ancient oaks, all combine to create that pastoral effect which is so typical of the English approach to managing the green landscape in the city.

Later, during the industrial revolution, the authorities were forced to try to improve the quality of urban life in order to maintain the social order: among other initiatives, they established areas where the working class and the urban population in general could access resources for improving their health. The metaphor of green spaces as the 'lungs of the city' arose at that time, and parks and gardens thus took on an important role in the development of the public health movement, a popular element of urban planning. In the major industrial conurbations and the working-class suburbs, this new function assigned to parks and gardens was often implemented in a diminished form, as in the case of Victorian urban planners who established large grassy commons and playing-fields rather than gardens with trees and flowers.

The goal of health and social improvement was expressed especially strongly in Berlin, where industrial growth skyrocketed (*Gründerzeit*), and the city grew from 932,000 inhabitants in 1870 to 3.7 million in 1913. This industrial expansion was accompanied by planning (the Hobrecht Plan) which was thoroughgoing but

aesthetically deficient: 'rental barracks' (*Mietskaserne*) proliferated, working-class neighbourhoods were built in the suburbs, and a horseshoe-shaped boundary was created to enclose the neighbourhoods of the city centre, which were themselves barely distinct from the collection of villages that had constituted Berlin in the past. A large park, the Tiergarten, once the hunting grounds of the kings of Prussia, occupied the heart of Berlin, indicating how recent this growth had been: its transformation into an urban park by landscape gardener Carl Josef Lenne in the 1830s expressed a search for a style of landscaping that would evoke the forests of Brandenburg, and also the desire to accommodate the population more fully by planting giant expanses of grassy lawn. In the following decades, when the public-health aspect was added in, *Volksparke* were created in working-class neighbourhoods.

However, things changed substantially when urban planning as understood in democratic societies became more widespread (Le Dantec, 2003): parks and green spaces came to play a vital, central role in the designs for cities first developed in the United States, particularly under the influence of Frederick Law Olmsted. The son of a wealthy family, fascinated as much by the natural world as by the American countryside (Harper, in: Paquot ed., 2010), Olmsted was one of the main proponents of nature conservation; in 1864 he became the first director of Yosemite, the park created by the state of California, and in 1872 the planner of the first national park, Yellowstone. Simultaneously, he sought to implement a concept of the city in which the park is the centre of social life. His most famous creations are in New York – Central Park in Manhattan (from 1853) and Prospect Park in Brooklyn (1870) – where he applied his principles: firstly, secondly, aesthetic values, with a preference for the picturesquely rustic, public health concerns, and thirdly, social goals, which for him went hand in hand with a staunchly conservative outlook.

Olmsted received many commissions from cities in the United States, Canada and Europe for city parks on the model of Central Park. His wildest dreams came true when the municipal authorities of Boston and Washington permitted him to implement a 'series of parks' making a physically continuous green space in each city. For this reason, he is viewed today as a precursor of the urban greenway (Cormier *et al.*, 2010; Desvignes, in: Masboungui ed., 2011), although this judgement is questionable given how different his goals were.

The desire to build orderly 'park systems' reappears with the French landscape architect Jean-Claude-Nicolas Forestier: drawing on the concept of 'open spaces', he pondered both the hierarchical relations of urban green spaces and their place in the concentric rings that form not only the city but also the terrain lying well outside it, from 'the great nature reserves and protected areas […] right in to the avenues and promenades' (Forestier, 1906, in: Le Dantec, 2003). Once again, it is the functions assigned to these parks, as 'features conducive to health and beauty', that are stressed. This complementarity of function can be seen even today in the

traditional way that green spaces are viewed. This does not exclude a degree of diversity in the options about which planners and landscapers may disagree: different aesthetic choices are made, the local flora may be featured or exotic species introduced, and so on. But the debate has long remained confined to specialists, and physically speaking, to parks and gardens – a dual barrier that urban public policy is now seeking to overcome.

2.2. Green Urban Spaces and the Natural World

Moreover, if 'nature' was a word frequently uttered in the 19th and early 20th centuries, its meaning was very different from that assigned to it today in connection with the sustainable city. In the debate on the landscaping of public gardens, the partisans of the garden designed entirely via the selection of aesthetically pleasing species have always conflicted with those who sought to evoke natural, rustic landscapes in the English style. But Alphonse Alphand, who was given the task of designing the public gardens and promenades in Paris under Haussmann (he was responsible for the reconstruction of the old quarries that became the Parc des Buttes-Chaumont, and for the Parc Montsouris), made no concessions to emerging ecological ideas:

> When we say that a garden must maintain the appearance of nature, do not believe that this means making an exact copy of the things that surround us. A garden is a work of art. As much thought, organisation, artificial effects sought and achieved go into a picturesque composition as into a formal layout […]. Nature provides the overall outlines, but it must necessarily undergo some touching up to keep it in check and modify it. Things are not set out in some absolute order, as at the moment of the Creation, but in a purely human order […]. If we were to abandon this landscape, as pretty as it is now it would soon start to look almost desolate: the more vigorous species would smother the more delicate ones; as the air stopped circulating through the masses of greenery, the vegetation would stop growing in the excessively shady areas; and the whole garden would come to look unattractively dishevelled. So we should not take mere nature as our model, but imagine its pleasing, artificial arrangement, while yet we stray no farther from the truth than is called for by the needs of our art (1873, in: Le Dantec, 2011).

Instead, it was the ecologists who entered the domain of the landscape architects, keen to demonstrate the artistic forms present in nature's flora: Ernst Haeckel, who in 1866 coined the term *Oekologie*, went on to write *Kunstformen der Natur* (1899), a work that inspired Art Nouveau and Modernist artists.

The 20th century saw a radical break with the love of the exotic and picturesque. Le Corbusier advocated recreating 'wilderness' in the city to provide a contrast with its architecture, and viewed green spaces from a strictly functional standpoint. Article 35 of the Athens Charter (1933), a true manifesto of the ideal city of modern times, demands that 'every residential district must include the green

area necessary for the rational disposition of games and athletic sports for children, adolescents, and adults' (Le Dantec, 2003).

Following this line of thought, large parks were created in the Paris suburbs during the period of rapid urbanization that followed the end of the Second World War. One example is the Parc de la Courneuve (now the Parc Georges Valbon), comprising 415 ha of land that had formerly been abandoned as too swampy, then partly occupied by a slum. This park was created in the 1960s from the plans of landscape architect Albert Audas, to provide an equivalent of the Bois de Boulogne or Central Park in the northern suburbs. Although its social purpose has not diminished, the Parc Georges Valbon has now taken on a new function, becoming a major component of the strategy for maintaining biodiversity in the urban space of the Paris conurbation. As part of the European Natura 2000 programme, parts of it have been classified as a Special Protection Area (for the conservation of threatened bird species) and a Special Area of Conservation (because of its valuable habitats); it is now one element in a discussion initiated by the 'Nature and Landscape' administration of the General Council of Seine-Saint-Denis on the 'green linkage' in that department – meaning the continuous series of green spaces that connect centres of biodiversity and are reserved for non-motorized traffic.

3. WHAT IS THE ROLE OF THE GREEN BELT IN THE SUSTAINABLE CITY?

3.1. The Time of Garden Cities

The struggle to prevent European cities from becoming indefinitely growing and unplanned urban districts or conurbations has led to contain urban growth by creating new urban cores. This point of view has been fostered by the developing movement of city gardens, linked to utopian socialism. Ebenezer Howard, who initiated the movement in his book *To-Morrow, A Peaceful Path to Real Reform*, published in 1898 and later reissued in 1902 as *Garden Cities of To-Morrow*, imagined small urban units which were to accommodate the new inhabitants; he understood life with maintained links with the surrounding countryside as a means to find food supply but also well-being.

However, city gardens attempts soon differed from Howard's pattern. The first attempts, such as those carried out at Letchworth (1903) or at Welwyn Garden City (1919), were rather faithful to the theoretical concept. Contrariwise, Hampstead Garden Suburb in London, set within the urban fabric and meant for notably upper classes, seems quite remote from the initial ideals.

3.2. The Green Belt, a Primary Concept in 20th-Century Urban Planning

The establishment of ecological networks within urban areas has somewhat over-shadowed the idea of the green belt, a major theme of 20th-century urban planning, as is noted by Marco Amati (2008):

> The popularity of green belts among planners during the twentieth century is due to the alignment of their attributes with some of the assumptions that underpinned modernist planning. These assumptions were that strict divisions between different land-uses could be unproblematically drawn, and that planners' actions could be justified by normative conventions and a search for universal truths.

Is the concept of the sustainable city now prompting a paradigm shift, from the green belt to the greenway?

The problem of setting the boundaries of urbanized space and limiting the space that is absorbed in the process of urbanization captured the attention of urban planners, conscious of the expansion of industrial and working-class neighbourhoods beginning in the last decades of the 19th century. Two avenues were explored: the first involved relocating recent residents and workplaces to new, smaller urban centres (garden cities or new towns), while the second led to the idea of surrounding the city with open, non-urbanized areas. The green-belt approach matched the desire to contain urbanization by introducing belts of 'open space'. The word 'green' should not be misinterpreted here: ecological concerns only appeared much later, with the increasing interest in environmental issues in Europe.

While the example of the Ring in Vienna is often cited, Paris could have pioneered the creation of a green belt in 1880, at the time of the debate about the future of the old fortifications, built by Thiers in the 1840s, and the 250-metre-wide 'non aedificandi' zone which surrounded the walls: this zone was in principle not yet used for any purpose, but in fact, slums and squatter settlements had grown up there. Several opposing plans were put forward for the development of social housing or for public-health or aesthetic improvements (Charvet, 2005): the Eugène Hénard project (1903), supported by the public health department of the Musée social, proposed nine large parks landscaped in descending steps, evenly spaced around the edge of the city, while in the project supported by the League for Open Space, Sanitation and Sport, founded in 1909 by Louis Dausset, a nationalist deputy whose concern for public health was tinged with xenophobia and anti-Semitism, the green belt was to eradicate the 'infamous slums'. The law concerning the redevelopment of the Paris fortifications was finally passed in 1919. The work began two years later, but instead of a continuous belt of green space there was a mix of public gardens, playing-fields, schools, hospitals and red-brick HBM (Habitations à bon marché or low-cost housing). The most ambitious feature

of this redevelopment was the creation of the Cité Internationale, whose buildings were spread out across a park designed by Jean-Claude-Nicolas Forestier. But by 1921 the expansion of the Paris conurbation had long since overwhelmed the line of the fortifications.

The introduction of a double belt of open space in Berlin happened more quickly and more dramatically. Relatively sparsely populated (with fewer than 4 million residents) given the area it covered (892 km²), the *Land* of Berlin was seen by developers as the model of a sustainable city because of the quantity of extremely large areas of vegetation, especially forests, dictated by the city's location in a region dominated by moraines. But the poor quality of the land around Berlin from an agricultural point of view does not explain everything: more relevant are the decisions made in the early 20th century, after a century of massive industrial and urban growth.

Urban planning in Germany, both under the Empire and in the Weimar Republic, was based on two principles: that the number of people living in cities should be restricted and that cities should include a large proportion of open space planted with vegetation. The Jansen plan, which won the competition launched in 1910 for planning the redevelopment of Greater Berlin, proposed an initial belt encircling the central districts and a second one, farther out and wider, composed of forests, meadows and fields, the two belts to be joined by green corridors. In the end, the plan was substantially accepted and implemented in the General Plan for open space developed in 1929 by the head of city planning, Martin Wagner. The complicated history of the post-World War Second period, when the city was both divided and isolated, contributed to keeping the green belt in place by curbing the growth of the Berlin conurbation.

The reunification of Germany including Berlin has not led to a real reassessment of these decisions, especially since the *Land* of Berlin, severely affected by the restructuring of the economy and an aging population, is not particularly subject to the pressures of urbanization. The green belt today seems to be well preserved, with its series of lakes and forested areas whose homogeneity is sustained by the many stands of oak and pine trees. In both west and east Berlin, the green belt continues to play a central role in city life, and benefits from substantial knowledge about the biological heritage and its conservation, influenced by the programme of landscape planning and species protection adopted in 1994 and updated regularly. Facilities for city residents (walking trails, bike paths, picnic areas, interpretive signage) are, however, more extensive in the west, for example in the Grünewald around the Wannsee, than in the east. In the former East Berlin, moorland and forest have largely been transformed into uniform plantations of conifers, more responsive to economic or military pressures than to enhancement of the landscape's natural qualities, as can be seen in the Mittelheide in the Köpenick district.

3.3. Green Belts in the UK

In London, and in Britain more generally, the green belt was a major urban planning tool whose necessity became clear in the years between the wars, when the desire to escape the somewhat depressing urban environment inherited from the 19th century had led to the growth of peri-urban development. In 1935, the Greater London Planning Committee was already proposing to create a gap in the spreading urban fabric and retain green spaces for leisure use. The Abercrombie plan (1944–1946), out of which Greater London was born, proposed a green belt 6 to 8 km wide; but in 1947, the more ambitious Town and Country Planning Act surrounded London with a green belt 30 km wide. In this belt, urban growth was to be strictly limited to new towns. This model was then transposed from London to the other major conurbations in Britain.

But the strict conditions defining the green belts in Britain produced unintended effects, as Claude Moindrot (1961) has pointed out. These included dizzying increases in housing prices and rents near the green belt, and in the villages or small-town centres where the upper classes bought and renovated property. Continuing agricultural and industrial activity became difficult, since new employees could no longer find housing near their jobs, leading to an expansion of the commuter travel that the green belt was supposed to reduce. 'It is thus not surprising that in overpopulated cities green areas get a bad press: they are seen as the expression of a static, conservative viewpoint, in which the landscape deserves more care than the people who live in it' (Moindrot, 1961).

But it was for very different reasons that the legislation applicable to green belts came to be considerably relaxed during the 1980s. The Conservative government then in power saw the green belts as one of the reprehensible survivals of the state dirigisme practised by the post-war Labour governments. In any case, the expansion of British conurbations, and of London in particular, into a multitude of secondary town centres, which had started with the establishment of New Towns under the Abercrombie plan, turned out to have spread far beyond the green belts.

For good or ill, the green belt has nonetheless survived, although under relaxed rules (Department for Communities and Local Government, 2006) and relying on the network of protected natural areas. The Colne Valley, to the west of Greater London between Heathrow Airport and the small conurbation of Slough, is an example of its relative resilience. The boundary of the green belt is clear as you leave Greater London at West Drayton, crossing the Grand Union Canal and following the Slough Arm, a secondary canal that transported bricks produced in the many factories in the region into London in the 19th century. The break is complete a few 100 m further on, as you cross the M25 orbital motorway with its four lanes in each direction. Here you enter the Colne Valley Regional Park. The park, created in 1965, was designed to protect the area from urbanization,

conserve and enhance the landscape, and provide recreational facilities for the local residents. This recreational aspect has been intensified, although the requirement of nature conservation has been retained, for example by establishing waterfowl sanctuaries. The existence of this regional park has thus helped to curtail the fragmentation of the green belt in this area and to reverse the process of urbanization.

On a more local level, the green-belt approach is complemented by officially designated areas of great diversity, such as 'common forests' and 'country parks' (Lambert, 2006). This latter designation was introduced in 1966 with the aim of preserving the landscapes of the English countryside by helping to develop them for the use and leisure pursuits of the public. Thus, in 1969, the Countryside Commission published a guide for local authorities, *Policy on Country Parks and Picnic Sites*. It specified the facilities necessary for accommodating urban audiences in a somewhat artificial rural environment. On this basis, country parks proliferated in the 1970s and 1980s, although they have not always been developed as ambitiously or monitored as closely as they might have been. Since 2004 the Countryside Commission has sought to revive a greater commitment to the country parks. Langley Country Park, located inside the Colne Valley Regional Park, exemplifies this determination: this former ducal estate is a historically significant rural landscape, once a hunting ground. A popular place for picnics and walks, Langley Country Park has begun a major rehabilitation initiative, the 'historic landscape project'.

In the East End of London, an area in the throes of reconstruction over the last twenty years (redevelopment of the docklands, installation of major sports facilities including athlete accommodation for the 2012 Olympic Games, and construction of new intra-urban, interurban, and international transport routes), more questions have been raised about the value of the green belt. A meeting-point between the conurbation and the green belt can be found in Hornchurch, part of the London Borough of Havering. This meeting-point is located in the little valley of the Ingrebourne, now a country park. The Ingrebourne Valley Country Park exemplifies a different type of English rural landscape from that mentioned above: a little river meanders through meadows surrounded by wooded hills. The green belt is still in place here. Yet near the mouth of the Ingrebourne, the effect is quite different: Rainham Marshes is a nature reserve managed by the Royal Society for the Protection of Birds. It seems to be in a very fragile situation, surrounded by power lines, motorway interchanges, warehouses and industrial zones, cut off from the town of Rainham by the new high-speed Eurostar line. The conclusion of Colin Wiles' article, 'London's Green Belt: The Forgotten Strangler of the Capital' (2012) seems to be incontrovertible: 'London cannot meet its housing needs because it is hemmed in by an outdated development policy'.

3.4. The Île-de-France Green Belt: Belated and Ill-Defined

The idea of the green belt made a belated comeback in the development of Greater Paris, through the 1976 master plan for the Île-de-France. The position chosen for it at that point may seem surprising: the green belt was deliberately located not at the limits of the conurbation, but straddling the outer ring of suburbs and the peri-urban rural areas. The project consisted of a 'variable green armature for the metropolis', including urbanized zones where new towns (themselves containing a great deal of green space) alternated with open space or woodland. It was indeed 'variable' in the absence of any binding regulation, and ended by absorbing only 27,500 ha of agricultural or undeveloped land (out of a total of 264,700 ha) between 1982 and 1999; during this period the zone acquired more than 500,000 new residents, making a total of 3,718,000 (Barbieri, 2004).

But overall the green belt has not been entirely unsuccessful: after the decentralization laws were passed, the Regional Council's policies were fairly consistent with respect to the acquisition and development of substantial woodland and forest areas for public use, the monitoring of vulnerable agricultural areas in the peri-urban zone, and the allocation of grants to departments, municipalities, and organizations to enable them to implement regional objectives consistently and on their own appropriate scale. We have to admit, though, that while urban sprawl in the Paris region has been curbed, this should not be attributed primarily to the green belt. What should rather be emphasized is the role played by the great state-owned forests managed by the National Forestry Office (first and foremost the forests of Rambouillet and Fontainebleau) as well as the establishment of the regional natural parks: in chronological order, these are the Chevreuse (1985, 63,000 ha), the Vexin français (1995, 71,100 ha), the Gâtinais français (1999, 76,600 ha) and the Oise-Pays de France (2004, 60,000 ha).

In 2005, the Île-de-France region handed the green belt a mixed, albeit diplomatically worded, report card: 'This project has demonstrated the region's ability to find, working within a framework that is not prescriptive but shared, innovative solutions tailored to reconcile regional vision and local constraints' (Barbieri, 2004). The report called for a redefinition of the green belt that would 'reinvent a true living space in the dense peri-urban areas between Paris and the country, one that will combine urban development with the preservation of open space'; this redefinition distinguished between dense peri-urban areas and more sparsely populated ones.

The interest of the planners seems since then to have switched to setting up green corridors and networks, biological and ecological continuities, via a new approach, namely the establishment of urban greenways. At the same time, breaking with decades of decentralization of activity to provincial cities in the name of 'balance' and decentralization of decision-making power to local authorities, in 2008 the then President of the Republic, Nicolas Sarkozy, launched a major national debate about

Greater Paris, with the stated objective of using the powers of the state to strengthen the status of France's capital relative to other major international cities. The law that was passed as a result of this initiative focuses on increasing the multipolar character of the Paris region (which is certainly negligible at present). This proliferation of peripheral hubs is to be encouraged by the new public transport network (the so-called 'grand huit', or roller-coaster). One of the possible consequences of this policy is a renewed growth of the conurbation, but in disconnected patches of development. Tensions may emerge, notably at the point where the 'centre of excellence' of the Plateau de Saclay meets the Chevreuse Regional National Park.

The debate about Greater Paris has also been pursued via discussions and projects requested from some major internationally famous architecture firms. From the quantity of proposals presented by so-called 'multidisciplinary' firms, only the most spectacular have been adopted, that is, those that propose some architecturally striking gesture. The proposals for green spaces and the environment seem very predictable. Some firms made mention of the green belt (e.g. Rogers Stirk Harbour and Partners), but the content of the proposals, though well-intentioned, added no specifics to the existing situation. Christian de Portzamparc's firm in effect revived the idea of the garden city, imagining an archipelago of residential 'islands'. Other proposals were more interesting, such as that of landscape architect Michel Desvigne, who was involved in the Nouvel-Duthilleul firm's project for improving 800 km on the fringe of the Paris conurbation:

> This contour seems now to be merely the point of contact between two poorly conceived boundaries; it mostly takes the physical form of a simple fence separating single-family housing developments from extensive agricultural areas. We propose to link these two worlds by introducing a special environment, making the line that separates them much thicker (Masboungi ed., 2011).

However, in the end the only part of this environmental proposal to be adopted was the creation of an additional 1000 ha of forest in the Val d'Oise.

4. DEFINING A 'STRATEGY' FOR BIODIVERSITY WITHIN THE CITY: AN OBLIGATION FOR SUSTAINABLE DEVELOPMENT POLICIES

4.1. Beyond the Traditional Public-Health and Aesthetic Perspectives

In the cities of Europe, the situation at the start of the 21st century is markedly different from that of the previous century: it is characterized by slowing urban population growth, even if some regional cities still show some momentum – such as Montpellier, whose urban population increases by an average of one thousand people a month. This reduction in the rate of growth does not halt the rapid absorption

of space by urbanization, on account of the expansion of transport infrastructure in urban areas that have grown through suburbanization, the relocation of the population and new construction due to the high demand for single-family houses, and also the relocation of industry, which results in more abandoned industrial sites in inner suburbia.

In this new situation, green spaces as conceived in the 19th and 20th centuries only accomplish part of what vegetation is now expected to contribute to the city. Traditional public-health and aesthetic perspectives have been transcended in two ways: geographically, by overstepping the boundaries of parks and gardens, and functionally, in that what is expected of vegetation in urban areas is becoming increasingly diverse both ecologically and socially.

Today, this changed situation converges with a great demand for the presence of nature in urban areas. As Le Dantec (2011) notes, this demand is accompanied by 'the desire to avert' threats to biodiversity and to respond to the urban planning 'claiming to be rational', typical in the France of the 1960s and 1970s, which reduced the goals of the Athens Charter to the Cotoneaster-Lonicera-Pyracantha trio, 'the signature species of the planted areas in social housing projects' (Blanc *et al.*, 2007).

The new demand for the presence of nature cannot be separated from the new 'methods of appropriation or re-appropriation of urban public spaces' (Blanc *et al.*, 2007), which go well beyond the green spaces foreseen by urban planners. This demand also calls for abandoning the traditional binary opposition of town and country, while also erasing the distinction between native and introduced species. In a city like Paris, so powerfully constrained by the Haussmann legacy which encourages valuing what is already present over social innovation (Fleury, in: Rhein ed., 2010), many residents are unobtrusive gardeners, not only cultivating their private spaces but also, sometimes almost on the sly, sowing plants in public spaces (Blanc *et al.*, 2007).

We are also now witnessing the revival of urban ecology. This can be called a revival, given that it was an issue in the interwar period, though indeed from a very different standpoint: the Chicago school of sociology primarily viewed human ecology in terms of engagement with the urban environment. Present-day urban ecology is based especially on the readiness to recognize the uniqueness of urban biodiversity and to restore all their functions to the ecosystems present in the city (Clergeau, 2007). The interest taken by naturalists and ecologists in the city is a recent development, but their approach has been innovative: breaking with the principles of gardeners and landscape architects, they are less interested in managed gardens and green spaces than in abandoned areas and wild or half-wild species. They connect with the social demand for a greater presence of nature when urban residents conduct experiments, such as the initiative 'The wilderness in my street' in which the Muséum National d'Histoire Naturelle, in partnership with the Tela Botanica network, asked residents to participate in drawing up an inventory of urban flora (Machon ed., 2011).

At the same time, our best-known landscape architects have acquired a passion for the most modest but also most untamed kinds of vegetation in urban areas. Thus, Gilles Clément (2006), champion of the 'garden in movement', asks in one of his poems 'What about the Grass?':

> Residual spaces, empty lots, lots of exoticism, buddleia, rowan, Siberian wormwood…
> Wastelands
> Vacant lots, 'Forests of the vacant lots', natural forest, wild forest!
> 'The wilderness in the city'.

The city surprised by such love for the inconvenient excess of nature that ornaments the roadway, ruffling the tidy edges of the roundabouts and the bases of blocks of flats where the persistent grass-killing machines wear down their snouts to no avail; grids of trees with velvet collars of grass and chamomile flowers, and over there, pretending to be unobtrusive – though it is the only thing you see – that brilliant green moss, arranged between the paving-stones like the natural setting of some jewel.'

The passage is followed by an ode to dog droppings, firmly type-casting this effusion as post-modern. But public policy has been infected by this same enthusiasm: on a simple level, it has increased the quantity of vegetation in public spaces, and it takes more elaborate forms in projects for 'green neighbourhoods' or new gardens in which unplanned growth is permitted. Examples of this in Paris are the 'natural garden' adjoining the Père Lachaise cemetery, which features the ecosystems of the Paris region, and the 'wild garden' in the 18th arrondissement (Blanc *et al.*, 2007). At the same time, local authorities are also making commitments to maintain biodiversity in their areas… With some contradictions with other parts of the public policy, such as the development of eco-industries (Lebeau, 2011).

4.2. Networking: From Biological and Ecological Corridors to Greenways

One goal currently pursued in some conurbations is to build a network of links between green spaces, as in London, where in 2008 the Greater London Authority established the Strategic Open Space Network. This goal borrows its ideas from landscape ecology (Forman and Godron, 1986), even though these were designed primarily to apply to rural areas and the mosaic of ecosystems created by agriculture and animal farming. Moving from an agrarian matrix to an urban one, where 'soil sealing' dominates, somewhat changes the picture. Linear patterns take on new importance. In particular, the concept of a corridor – which can be biological when it allows one or more species to move from one patch of their habitat to another, or ecological when it reintroduces continuity of the same

type of environment – has recently become an essential element of planning. In the sustainable city perspective, these reflexions about landscape biological and ecological value are inseparable of the question of landscape aesthetic value (Kowalczyk, 2012).

These concepts of landscape ecology have led in recent years to plans for interconnecting green spaces in the city, within conurbation communities or urban departments, such as the Green Plan adopted by the Department of Val-de-Marne. These networks are now referred to as 'greenways'.

5. CONCLUSIONS

The role assigned to vegetation in sustainable cities, as they are defined and as they progress in Europe, has considerably increased and widened, well beyond the amenities that were looked for, while it was used in the 20th century's town planning policies. The new services expected from vegetation in and around the city can be defined in terms of sustaining biodiversity, reducing the carbon footprint of human beings, maintaining farmland against urban sprawl. This implies considering the green urban spaces in a much more global way, going beyond parks and green spaces and including the networking of vegetalized spaces.

However, the Paris and London case studies show that such ambitions may create conflict, even contradiction with the will to increase major European cities' attractiveness within global economy presented as a fierce competition between cities which would have no other choice than becoming bigger and bigger. Berlin, city where the spatial extension of vegetation is unequalled, seems to resolve best this contradiction, probably because it gained back late its status as a capital and because it has to share the metropolitan functions with the Rhineland cities, with Hamburg, with Munich, in the German urban system which, due to history, avoids the obligation of being huge.

REFERENCES

AMATI, M. (2008), *Urban Green Belts in the Twenty-First Century*, London: Ashgate.
BARBIERI, N. (2004), *La Ceinture Verte d'Ile-de-France, quelle réalité?*, Paris: Institut d'Aménagement et d'Urbanisme de la Région Île-de-France.
BLANC, N., COHEN, M. and GLATRON, S. (2007), 'Quelle place pour le paysage végétal dans les politiques urbaines', [in:] BERLAN-DARQUÉ, M., LUGINBÜHL, Y. and TERRASSON, D. (eds.), *Paysages, de la connaissance à l'action*, Versailles: Quae, pp. 85–102.
CHARVET, M. (2005), *Les fortifications de Paris. De l'hygiénisme à l'urbanisme (1880–1919)*,

Rennes: Presses Universitaires de Rennes.

CLÉMENT, G. (2006), *Où en est l'herbe ? Réflexions sur le jardin planétaire* (Textes présentés par Louisa Jones), Arles: Actes Sud.

CLERGEAU, P. (2007), *Une écologie du paysage urbain*, Rennes: Apogée.

CORMIER, L., BERNARD DE LAJARTRE, A. and CARCAUD, N. (2010), 'La planification des trames vertes, du global au local: réalités et limites', *Cybergéo – Revue Européenne de Géographie, Aménagement, Urbanisme*, 504, http://cybergeo.revues.org/index23187.html.

DEPARTMENT FOR COMMUNITIES AND LOCAL GOVERNMENT (2006), *Planning Policy Guidance: Green Belts*, www.communities.gov.uk.

ELTGES, M. (2009), 'Leipzig Charter on Sustainable European Cities. A Work in Progress', *European Spatial Research and Policy*, 16 (2), pp. 63–78.

FORMAN, R. T. T. and GODRON, M. (1986), *Landscape Ecology*, New York: Wiley.

KOWALCZYK, A. (2012), 'The Iconic Model of Landscape Aesthetic Value', *European Spatial Research and Policy*, 19 (2), pp. 121–128.

LAMBERT, D. (2006), 'The History of the Country Park, 1966–2005: Toward a Renaissance', *Landscape Research*, 31 (1), pp. 43–62.

LEBEAU, B. (2011), 'Urban Authorities and Economic Sectors', *European Spatial Research and Policy*, 18 (1), pp. 41–51.

LE DANTEC, J.-P. (2003), *Jardins et paysages: une anthologie*, Paris: Éditions de la Villette.

LE DANTEC, J.-P. (2011), *Poétique des jardins*, Arles: Actes Sud.

LIZET, B. and CELECIA, J. (eds.), (1997), *Sauvages dans la ville: de l'inventaire naturaliste à l'écologie urbaine. Hommage à Paul Jovet (1896–1991)*, Paris: Muséum National d'Histoire Naturelle.

LONDON PLAN (2008), *Spatial Development for Greater London*, http://www.london.gov.uk/thelondonplan/maps-diagrams/map-3d-03.jsp.

MACHON, N. (ed.), (2011), *Sauvages de ma rue. Guides des plantes sauvages des villes de la Région parisienne*, Paris–New York: MNHN/Le Passage.

MASBOUNGUI, A. (ed.), (2011), *Le paysage en préalable. Michel Desvigne, Grand Prix de l'urbanisme 2011; Joan Busquets, Prix spécial*, Paris: Parenthèse.

MINISTÈRE DE L'ECOLOGIE, DU DÉVELOPPEMENT DURABLE ET DE L'ENERGIE, http://www.developpement-durable.gouv.fr/-La-Trame-verte-et-bleue,1034-.html.

MOINDROT, C. (1961), 'Un essai de planification du paysage: les zones vertes des villes britanniques', *Annales de Géographie*, 70 (382), pp. 585–596.

OLMSTED, F. L. (1870), *Public Parks and the Enlargement of Towns*, Cambridge: Riverside Press.

PAQUOT, T. (ed.), (2010), *Les faiseurs de villes: 1850–1950*, Gollion: Infolio.

RHEIN, C. (ed.), (2010), *Regards sur les quartiers parisiens. Contextes spatiaux, usages politiques et pratiques citadines*, Paris: UMR Géographie-Cités, halshs-00464678.

WILES, C. (2012), 'London's Green Belt: The Forgotten Strangler of the Capital', *Guardian*, 16th May.