

GREENWAYS IN AN EMERGING CITY CONTEXT: A UTOPIA OR A CHANCE FOR INNOVATION?

Arch. PhD Assistant Prof. Luca Maria Francesco Fabris¹,
Dr. Arch. Rositsa Todorova Ilieva²

¹ *Politecnico di Milano, Department of Building Environment Science and Technology*, ² *Politecnico di Milano, Department of Architecture and Planning*

Introduction

Greenways today represent an already diffused practice in great part of the contemporary cities' planning policies. This constantly growing phenomenon is undoubtedly due to the multiplicity of beneficial effects that they successfully exercise within different urban environments. The present paper aims to explore their potentialities inside a relatively new type of cities' contexts, namely the *emerging* ones. Factors like rapid urbanisation and mobility fluxes intensification put under hazardous pressure one of their most vulnerable systems – the *green* one. That is why its timely reinforcement and integration could play a crucial role in contrasting the negative trends of cities' ecological asset progressive fragmentation and deterioration. Furthermore, *greenways* will be examined in a broader perspective, that goes beyond their territorial dimension, conceiving them as important catalysts for cultural and ethical urban evolution.

Problem setting: local background and key references

Local background

The specific project context explored is the one of the new EU capital of Sofia City, recently emerged among the fastest growing European cities (*Top 50 Global Emerging Outsourcing Cities*, Tholons 2008). Two main factors fostered the accelerated growth process: the political changes after 1989 (from planned to market economy) and the EU entering in 2007 (new investors and wider markets). Both changes represented consistent challenges for the urban planning discipline, that had to face numerous new problems - as the mediation among *green system* preservation and “land restitution policies” (public to private), or as the extreme *traffic congestion*, caused by the massive second-hand western cars importation. In order to adapt its regulation tools to the new governance difficulties, the local administration undertook (since 1998) an overall re-elaboration of the city's General Regulation Plan (GRP) that however, due to its extremely belated approval (only in 2007), recently entered in a profound revision phase. This final stage, from the present research point of view, represents a crucial *momentum* for improving and integrating the city's development priorities and, above all, for rethinking its *emerging* in a more strategic dimension. A dimension in which “the ecological intention should be implicit” and “it cannot arrive after, when the disaster has already occurred and all that remains is to look desperately for patching remedies”(De Carlo, G., 1995). In these terms, *greenways* are a concept really missing in the local development agenda. The ignoring of their potential in overcoming the *green system* hibernation (private property control) and the *mobility stress* escalation (no *green modes* law frame), represents an important policy *gap* to be timely explored and addressed.

Key references: past and current experiences

A first very significant contribution to the deeper understanding of the Sofia City's *green system* potential is represented by the so called *Musman Plan - 1938* (named after Adolf Musman - Dresden professor and architect). The plan's *green system* proposal, "influenced all the following urban plans of Sofia" (Kovachev, A., 2005), by introducing two key elements: a *green ring* - bounding the major urban parks and green areas into an integrated system, and a *green wedge* - emphasising the connection between the city and the Vitosha Mountain on the south. However, the last decades intense fragmentation processes compromised it seriously, weakening the system's vital internal connections. Thus the efforts should be now concentrated mainly on the "interface" scale.

A core reference experience in the research regard this, nearly worldwide present theme, is constituted by the Milan's *Raggi Verdi* (Green Rays) recently developed project. The concept suggests a primary *green network* composed by eight *green rays* running radially from the city centre to a peripheral (*fil rouge*) ring itinerary, that interconnects the main periurban parks into an ample *green belt*. Each *green ray* is conceived as *environment of privileged perception*, with a central green axis and a number of *transversal connections* that capture the important green fragments nearby. All they have the role to "export culture from the centre to the periphery, while importing nature from the metropolitan belt to the centre" (Kipar, A., 2008). An idea, besides, very akin to the P. Donadieu's one: "The project of the city-nature implies that (...) the nature-countryside gets more urban, and the city becomes more naturalised or ruralised" (Donadieu, P., 1998). It is important to mention that the project was developed within the larger frame of the Urban Greening Plan and is crucial vehicle for reaching by 2015 the ambitious 30 sqm/inh (now 12,7 sqm/inh) public green areas availability. Such goal emerged almost in parallel to the one set by the Sofia City's last GRP document: 34 sqm/inh (now 15,86 sqm/inh) by 2020. This, along with different other common characteristics – as the radiocentric urban morphology, the population number, the "compact city" territorial extension, made the Milan's case-study particularly precious for the elaboration and critical comparison of the *greenways* strategy described further on (section 3).

Another emblematic European experience is the Vienna City one, which is recently rediscovering its vocation of nodal connection among Western and Eastern Europe (Sofia is now rediscovering its similar Europe-Asia "bridge" role). In relation to the increased growing trend, the city has decided to protect part of its territory from the possible sprawl erosion by a set of *green corridors* (Grünzug) "that will constitute the *landscape continuity elements* among the Vienna City's territory and the surrounding Niederösterreich one, of predominant agricultural character" (Fabris, L.M.F., 1999). In the Sofia City case, this vision could effectively be integrated within the *Northern City Areas Development Program - 2007* (agricultural as well) contributing positively in pursuing its main objectives of "valorisation and rational exploitation of the cultural-historical landmarks, mineral waters, and fostering polycentric development throughout small villages' support".

Finally, to complete this extreme abstract of the guiding research case-studies is the *Vancouver Greenways Plan* experience. It was taken into consideration the capacity of the local administration to put together, since the very beginning of the planning process, two traditionally very distant competences: the road-infrastructure and the landscape one. Thus the *cycling network* was being planned along with the *greenways network*, “maximising funding and staff resources” and guaranteeing higher quality urban environment. Another important feature considered is the rich multilayer role the Vancouver *greenways* are given, being conceived as: “*linear public corridors* for pedestrians, cyclists and recreational users that connect parks, nature reserves, cultural features, historic sites, neighbourhoods and retail areas”.

Shaping the strategy

Goals and Objectives

One of the crucial driving objectives of the study is to provide some catalyst inputs that could foster the rethink of *emerging*, as a process, connoted not only by the traffic congestion, air pollution, suburban sprawl and green system shrinkage, but also as a precious opportunity for the local cultural and natural resources preservation, valorisation, and thus sustainably emerging. *Biodiversity* protecting and increasing is another guiding objective, that sees in the greater *green system* interconnectivity a necessary premise, keeping in mind that “the occasions for biological continuity decrease with the urban meshes closure” and “diversity decreases proportionally” (Clément, G., 2004). Furthermore, the *greenways* plan layout proposed, aims to provide a valid alternative to the present urban mobility patterns, in order to contribute in diminishing the traffic-boom negative impacts and sustaining thus the idea that “a rational society must sooner or later recognise that energy-efficient and non-polluting modes of transport will eventually dominate city movement if the city themselves are to survive” (Tolley, R., 1993). Another key goal of the project is to keep vivid the social and ethical dimension of the urban emerging process, conceiving it as a fundamental condition for its durable success. Last, but not least, is the objective to influence positively the *momentum* of “big plans” and ambitious urban policies elaboration: GRP revision, first Cycling-lanes network scheme, an entirely new cycling mobility law frame, road network enlargement, general urban and territory development programmes.

Planning methods and procedures

In planning the *greenways* network a guiding start-up point was the intersection of the initial theoretical knowledge acquired (case-studies, local plans, statistical data, law frame) with the real-time reality of the Sofia territory. For this purpose it was necessary to undertake a first general on-site survey, embracing as much as possible the *natural region* dimension of the city examined, following thus the Geddesian belief that “planning must start (...) with a survey of the [natural region] resources (...) of the human responses to it, and of the resulting complexities of the cultural landscape” (Hall, P., 1988). In this way it was possible to capture a set of strategic *polarities* (the GRP Thematic Periurban Parks and the major periphery

transformation areas), which putting into *system* was conceived as a unique occasion for the territory rediscover and rebirth. The *linear connectors*, in charge of the system fulfilment, were then designed throughout a constant comparison with: the key natural/cultural fragments location; the Sofia GRP purposes and schemes; the cycling-lanes preliminary plan and the NGOs counter-proposals; the ongoing or planned territorial redevelopments; the possibilities of public transport intermodal connections; the new road network branches overlapping grade; the presence of schools and sport facilities. Furthermore, this inquiry approach was later deepened in analysing the single greenway feasibility features. Throughout the itinerary subdivision in *homogeneous macro- and sub-areas*, it was possible to better control the design process and to roughly estimate the public/private investment ratio, hence the available realisation potentialities. A crucial role in defining the general strategy concept, as well as the specific planning outcomes, was played also by the in-progress consultation of different municipality technical experts.

The “8+1 Strategy Vision”: planning outcomes and implementation tools

The masterplan: from Green Rays to Identity Axes



Figure 1. The Greenways Network

The core planning outcome (constantly upgraded by the in-depth studies) is represented by a general *masterplan vision* (Fig.1), illustrating the *greenways* potentialities within the wide-scale territorial context (1:50.000). The load-bearing skeleton of the network relies upon the *green ray* concept but at the same time, as it will be seen further on, significantly broadens its content horizons. As it concerns the *green system* interrelation aspects, firstly, there are visualised the different green areas types involved: forested area and natural reserves, present/future urban parks and gardens, and other specialised ones; and secondly, there are roughly estimated (in hectares) the quantity-per-type of green areas gathered by each *greenway*. A turning point in the concept is related to the *green ray* trajectories origin, governed by large-scale diametrically interdependent *polarities*: six periurban thematic parks (proposed by the Sofia’s GRP) and two critical transformation areas (the Suhodol Dump and the Kremikovzi Steel Plant). From their analysis emerged four mutual vocational perspectives: *urban parks and forested reserves, water and mineral water resources, sport and leisure activities, sustainable redevelopment*. This upper-structural layout determined the adoption of vaster than the single *green ray* linear connectors, able to put together (and hopefully make work together) the common poles. Thus the four *greenway* axes were defined. Along with the *green system* integrity restoring, they are in charge of pursuing another ambitious objective: engender a stronger urban *identity* consciousness by recovering the

scattered fragments that constitute it, today sadly neglected. As a result, providing good recognisability of each *identity axis* was fundamental. The “thematic” connotations were then strengthened by a set of supportive expedients: materials and street furniture (i.e. recycled materials for the *sustainability axis*), colours (green, orange, blue, violet), but also metaphor names. For that purpose it was chosen a strong image present in the collective cognizance: *St. Sophia* (meaning wisdom in Greek) and her three daughters Pistis (Faith), Elpis (Hope), Agape (parental Love). Thus to the water thematic axis was given the name of Agape, interpreting the numerous (more than 50) mineral water springs on the city’s territory as expression of the Sofia’s “love” to its citizens; Elpis (starting from the university district) is the axis of *hope* that the young generation could be the driver of the city’s rebirth; Pistis connects two of the twenty *green belt* (Sophia) monasteries and the historic *green wedge*. Finally the fourth axis is named Future, as the regeneration of the two critical sites involved is crucial for the city’s emerging.

Detailing the Four Axes itineraries

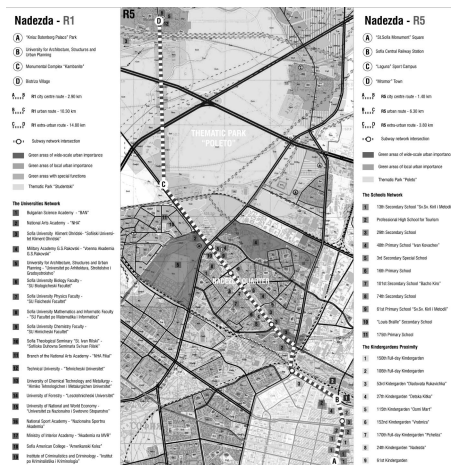


Figure 2. The Identity Axes Studies

of wide-scale urban importance (mainly urban parks), and the *green areas of local importance* (mainly gardens). Moreover, this research stage put in evidence the opportunity to involve other *urban fragments* systems as: cultural and historical landmarks, sport and recreation facilities, mineral waters springs, universities and schools, but also kindergartens and community centres. Each of these was signed with different colour tag so the dominant factors can be easily identified and compared.

The Green Cultural Belt as unique territory resource

Down to the current research phase, the *green belt* element was outlined exploring above all its role of powerful *cultural-historical connector* and identity heritage revitalising engine. There have been put in evidence the incredible presence of

A further research stage outcome consists in the qualitative-type study of the single axis local potentialities. Each *green ray* was subdivided generally in three homogeneous tracks, taking into account the surrounding environment character: *city centre, urban, periurban*. There were also highlighted the intersections with the present and future subway network, in order to verify the intermodal connections potentialities of the project (Fig.2). On the other hand, the ecologic interconnection capacity of the latter was explored taking into account the different *green system* scales: the two periurban *thematic parks* (on the extremities of the axis), the *green areas of local importance* (mainly urban parks), and the *green areas of wide-scale urban importance* (mainly urban parks), and the *green areas of local importance* (mainly gardens). Moreover, this research stage put in evidence the opportunity to involve other *urban fragments* systems as: cultural and historical landmarks, sport and recreation facilities, mineral waters springs, universities and schools, but also kindergartens and community centres. Each of these was signed with different colour tag so the dominant factors can be easily identified and compared.

nearly twenty *monasteries* spread over the Sofia territory, today scarcely known and perceived by the citizens. The planning outcome in this case is very connected to the idea of landscape as “a study tool” and “operating concept” (Fabbri, P., 2007). For all the monasteries there have been elaborated short descriptive cards, giving information about the specific characteristics of the single monument and indicating its distance from the previous/next one, as well as to the *green belt* main route and to the closest *green ray*. This element however embodies also great *green system* reinforcement potential: by bounding in the valley territory the *natural* north and south mountains *green crowns* it could constitute a vital *green shield*, protecting the vulnerable urban, cultural and natural elements, from an uncontrolled *urban sprawl* (the Sofia GRP forecast dominant East-West expansion). Furthermore the belt, as a quality element, could encourage the development of the isolated local realities, putting them into an overall *cultural network*, generating and attracting also *walking* and *cycling tourism* activities.

Deepening the Single Green Ray reality

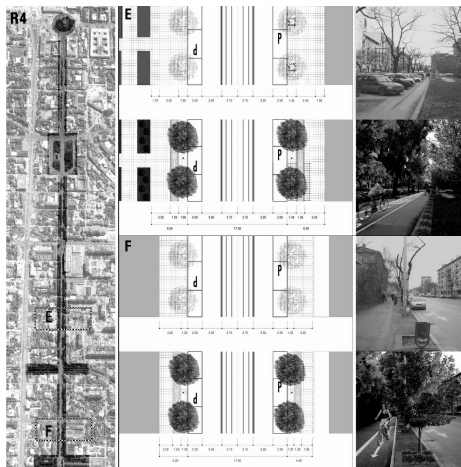


Figure 3. The Single Greenway Studies

One of the important outcomes of the consultation meetings done with the local administration is the identifying of a *specific green ray track* (the one with higher possibilities for short-term realisation) to be studied and verified on a more detailed scale (1:500, 1:200). The *ray* chosen constituted the western part of the “Future” thematic axis, and in its wider territorial dimension connects the city centre with a suburban quarter (“Suhodol”) intended to become in few years the capital city’s most sustainable one. With concern to the possible executive phases, the itinerary was divided in two *macro-areas*, with the West Park as a linchpin. The in-depth analysed area is the one sited between the city centre and the park. From the detailed on-site surveys, with reference to the street section and the context features, three main *sub-areas* were defined: *city-centre* one (0,45km), very rich in service and commercial functions; *next-to-centre* one (1,60km), with major presence of differentiated retail ground floors; and a *next-to-park* one (1,85km), with sidewalk turning into larger and greener pedestrian path, accompanied by inner car lane. Per each sub-area there were studied the possible street-section-redistribution scenarios (Fig.3), and thus were outlined three different solutions for the *green ray* insertion in the context: in *separate lane* within the carriageway (two cycling lanes per direction), *integrated* within the sidewalk through material-change (two cycling lanes per direction), and *integrated* within the sidewalk through separation ground-sign (single two-way cycling lane). Crossings design was therefore crucial for preserving the *green ray* integrity. Furthermore, there were studied the greening continuity elements, paying major attention to the local flora composition, and the pollution and climate resistance characteristics of the plants species.

The Guidelines document

Another, maybe the most important, outcome of the study is represented by the “8+1 Strategy Guidelines”. This crucial plan-supportive document has been elaborated with concern to the following key purposes: give a clearer vision on the current conditions of the *operative context* (laws, policies, statistics data); identify and underline the main problems within each of the two fields analysed – *urban mobility* and *green system*; present synthetically the “8+1 Strategy” layout examined, and above all - supply such strategy with the necessary tools for its proper implementation (typical street sections, material and greening species indications, maintenance considerations, rough timeline scheme, stakeholders map outline, financing and law practices review).

Key findings and recommendations

From a general *greenways* planning perspective, the study, embodying the *green ray* concept as quality urban connector, bringing together “*all the green areas, existing and planned, with the naturalistic areas of the city, by the means of linear elements: green boulevards, pedestrian and cycling itineraries, canals banks, green parterres*” (Kipar, A., 2008), has tried to widen its role by conferring it the task of spotlighting the key identity urban fragments “*that can still be extricated, selected and finally recognised so to restore their inner coherency until they become comprehensible*” (De Carlo, G., 1995). Furthermore, such fragments are conceived not only as landmarks or monuments, but also as important elements/actions of the everyday urban life, as going to school, to the library, to do sport. In this terms, *greenways* (and especially their *transversal connections*) are imagined not as rigid entities, but closer to *soft structures* “conceived as minute, changeable, diffuse ramifications whose meanings shift continuously to match the ways they combine with other features of the territory” (De Carlo, G., 1995).

Differently from the examined case-studies, the “8+1 Strategy Vision” almost inverts the nature-culture ratio, in favour of the second. That is to say that the strong *identity* connotation of its elements is considered as driver of a new concept for territory development, based on the progressively dominant “knowledge economy” model, within the Western-European and global cities context. Green system however remains a fundamental element for the city’s urban life quality and ecological equilibrium.

Another distinctive feature of the project is the relationship between the *green identity axes* and the urban asset. The itineraries net examined overcomes somehow the radio-centric city structure (affirmed in the Milan’s *green rays* case) and transforms the fluxes tensions from an “in-out” to an “out-out” pattern. This aspect is related also to the understanding that “the *emerging city* is not the result of a project based upon pre-existent models” and therefore “it cannot be reduced to one or more historic or administration centres; it doesn’t stop in front of its peripheries’ countryside boundaries” (Donadieu, P., 1998). In fact, the *greenways* role, in the northern still scarcely urbanised city territory, is imagined (similarly to the Vienna’s *Grünzug* model) as a structuring one, guiding the expansion in more sustainable direction while assuring a “territory organisation upon large and permeable meshes” (Clément, G., 2004).

A concern and recommendation for the overall greenways network feasibility is regard the private property ownership barrier. For its overcoming, significant efforts should be focused on the issuing of specific normative instruments, obliging the major private urban transformations to carry out the portion interesting the area of intervention (as hypothesised by the Milan case-study). What is more, the general financing reluctance in such type of interventions should be uprooted by increasing the public/private awareness that “good, green mode facility provision and its correlate, improved urban environment” foster “increased trade, better conditions for employees, counters to out-of-centre developments” (Tolley, R., 1993). Finally, for testing and guaranteeing the overall strategy quality a good practice to follow could be the one of the *Wiener Architekturseminar*, able to stir up questions and ideas fundamental for the project aware design and implementation.

Future perspectives

Even if the presented study is still being improved and verified, it is already possible to imagine some of the achievable results. In the short term: the interconnection of the major urban green areas and thus the gradual decrease of the city’s environmental stress. In the long term: the revaluation and preservation of the vast periphery green areas along with the cultural heritage secondary poles valorisation. Finally, keeping in mind that “*many of the landscape utopias that sometimes guide the world, can become a reality indeed*” (Donadieu, P., 1998), the accomplishment of both short and long term results, even if demanding current policies rethought and innovative planning approaches adoption, could contribute to an essential shift in emerging cities’ urban growth tendency, conveying it into a more responsible and sustainable direction.

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