IFLA EUROPE
EUROPEAN REGION
International Federation
of Landscape Architects

Adaptive Capacity Of Cities

Journal #2

This publication was made thanks to the selfless efforts of IFLA Europe Communication and Sponsorship Group members.

Thanks to all who strive for a better future.

Publishers:

IFLA Europe
International Federation of Landscape Architects

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Intellectual Production
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Cover image credits
mag.MA - La Craquelure (Cracks), EFLA Image Competition 2011

Distribution
IFLA Europe

Editorial

Dear readers,

The IFLA Europe Communication Group is very glad to announce the 2nd Issue of our IFLA Europe (former EFLA) Journal. This edition was devoted to the theme of adaptive capacity of cities.

Adaptive capacity refers to creating flexibility that allows a better adjustment to new contexts and changing conditions in terms of behavior, values and orientations in order to effectively live in a different environment without significant declines in crucial functions.

On our 21th century´s urban planet with more than a half of the population being urban, in a world of interwoven financial, ecologic and social crises such challenges gain the highest possible relevance. Solutions of how to develop adaptive capacity to hyperurbanisation, environmental degradation, globalisation, social turmoil and resource scarcity seem to be crucial issues for ensuring our survival.

The built environment professions, including landscape architecture as the bridge between those disciplines, are most responsible instances to offer innovative and sustainable solutions of how to design, plan and manage cities. By thematizing adaptive capacity of cities and their character as complex conglomerates of social, ecologic and economic spheres, this issue of the IFLA Europe Journal aims to offer responds on how developing adaptive capacity should influence the way we think, imagine and design our cities. Can adaptive capacity help to mitigate the fatal projections and to create more resilient places?

In this Issue of our Journal we have contribution from across Europe submitted by colleagues with different professional specializations and backgrounds - which also says a lot about the international land interdisciplinary character of the topic. We hope you will enjoy reading and that this Issue of the Journal will answer some questions, open new ones and enhance the discourse on this important topic.

Many thanks go here also to the IFLA Europe Executive Committee, the entire IFLA Europe Communications and Sponsorship Group under the leadership of Martina Cervera, the IFLA Europe National Delegates and colleague Florian Lorenz. Without their grateful help and volontary contribution, starting from the first phases of defining the theme for the 2nd issue of the Journal as well as in its realization, this Issue would not have became realised.

Enjoy!

Best regards,
Haris Piplas, Dipl.-Ing., M.Sc.

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Introduction

I often wonder if any of us are truly prepared for the challenges ahead when we think about the immediate, let alone the future, demands placed upon this planet in terms of urban growth, climate change and the immense demands of its population. When we speak of sustainability it is really difficult to know exactly what we are talking about, as it seems to mean something different to whomsoever chooses to refer of it. Certainly, only the most arrogant amongst us might believe that we can truly deliver a sustainable future for our planet when, if we are honest, we have little or no idea what the real demands might be when it comes to the future generations who will occupy our cities and rural environments. It seems that more of us are beginning to refer; perhaps more appropriately, to the need for 'resilience' to be incorporated into the future plans for our planet. Perhaps resilience offers us an opportunity to better understand the dynamics of landscape that never cease to be unpredictable and regularly defy what we believe to be an extensive range of profound academic research and alleged innovative technologies.

Irrespective of how we define our terms, what we must not forget is that we are dealing fundamentally with the two most precious elements we have on this planet; landscape, the context within which everything takes place, and people, the largest single influence on everything that happens to the landscape. How these two elements interact is crucial to the survival of both. Thus, it is essential that we do not lose sight of the biggest picture of all, the planet, whilst equally recognising the needs, desires and aspirations of the individual person – truly global to local. As landscape architects, we are constantly pointing out that the 'one-size-fits-all' approach is a redundant line of thinking. Of course, there is a need to acknowledge best practice and to be able to appropriately apply transferable research, knowledge and skills across the globe. If it is not 'appropriate' application then it is doomed, sadly, to failure.

There is a great deal of good work happening across each continent and most definitely an immense amount of excellent research either published or continuing in landscape architectural schools around the world. What we now need is world-wide, practical, and appropriate application of what we know to be best practice and what we know can help mitigate and adapt our planet to the increasing pressures of climate change and urban growth. Landscape architects, as a core part of a multi-disciplinary team will enable this to happen, irrespective of the enormity of the challenge. We must not forget, however, that this is about people, communities and a landscape – urban, rural and otherwise – that needs to work in harmony. We need to engender a belief that we need to do more than carry out the research and educate those who need to know, but we must also produce on a practical level to make it a reality for the future of the planet. Moreover, we need to do it now.

Nigel Thorne, MSc MIHort Intl.ASLA FRSA FLI PPLI
President, IFLA Europe

Adaptive Capacity vs Mitigation And The Urban Environmental Challenge

The notion of adaptive capacity is nowhere more important than in adapting cities to the environmental problems posed by climate change. Adaptation, however, is the twin brother of "mitigation," as mitigating for greenhouse gases (GHG) runs parallel to adapting human settlements to withstand extreme climatic conditions resulting from global warming. So, in my view, adaptation and mitigation to climate change have become not only the most formidable challenges of our times but also representative of what means "adaptive capacity" of cities.

Although there may be synergies between mitigation and adaptation (e.g., trees in urban areas help sequester carbon as they grow while simultaneously reducing urban heat stress in summers) there are also conflicts (e.g., dense compact urban forms reduce GHG emissions by facilitating public transit but in hot-humid regions compactness contributes to human discomfort as, in such climatic zones, a tight arrangement of buildings would block most needed air movement during summers). Thus creating synergies between adaptation and mitigation is crucial to build the adaptive capacity of regions, towns and cities to face climate change and other environmental problems.

But creating such synergies between adaptation and mitigation is not easy. The main difficulty arises from the different way in which climate scientists and design professionals perceived climate change and environmental problems. Scientists examine these problems primarily from a 'scientific' perspective producing quantitative models that have resulted in a type of highly specialized and complex knowledge that excludes planners, landscape architects, designers, and architects. These, in turn, think of those problems as socio-economic problems that demand a qualitative type of approach. Fortunately, recent understanding of the link between climate change, environmental problems and sustainable development has shifted from a one-sided scientific focus towards a trans-disciplinary ecosystemic perspective that also includes socio-economic aspects. Because of this shift, research strategies to deal with environmental problems are changing from being mono-disciplinary, with emphasis on the natural sciences, toward trans-disciplinariety, focusing on the co-production of knowledge including natural and social scientists, policymakers, and the society in general. Due to this paradigm change, spatial planners, urban designers, architects and landscape architects can now fulfill a more prominent role in implementing mitigation and, specially, adaptation strategies at local and regional levels.

The other main issue in dealing with adaptive capacity is that of the scale of intervention. It seems like the appropriate scale is that of the local level; it is the level closest to the people directly affected by climate change and other environmental impacts. Citizen-participation processes must be developed to construct scenarios and to assess the concepts of resilience and vulnerability within a deliberative planning and design process. Responses to climate change and environmental problems require the inclusion of groups from all social scales and the incorporation of economic seactors into the policy dialogue as well as the participation and commitment of civil organizations, the private sector, and academia.

Rafael E. Pizarro, PhD

More Landscape, More Urban Regeneration

Giovanni Sala / Italy

Giovanni Sala, agronomist. He designed and directed the restoration and arrangement of areas dedicated to green public spaces, the environ-mental recovery of old quarries and big nationally used dumps, and analyzed in great depth those themes closely related to the restoration of historical gardens. Most of his professional and project activities take place within the firm LAND Srl in Milan, of which he is both founder and president.

Since more than two decades, the International Community tries to deal effectively with climate change, starting from the three 1992 Rio Declarations and all the measures, strategies and protocols that followed and have been signed since then on.

All Countries are affected by natural disasters: we can consider as an example the floods that have devastated Messina in 2009, Vaicenza in 2010 and the Region Liguria in 2011. Also the heavy snowfalls that paralyzed our country at the beginning of this year, remind us that Nature is an inseparable part of our lives.

We can say that cities, with their strong human settlement on the territory, actively contribute to a relentless and continuous environmental degradation. Every day we witness a steady separation between Men and Nature. The challenges are common to many cities in Italy, in Europe, and abroad: the goal is to reduce social and regional disparities, to minimize the environmental impact and - by offering services and potentials that can attract resources - to ensure the economic and cultural development of urban areas through a process of economic and urban regeneration able to give the city a dynamic image, or even a brand-new image.

The international "good practice" demonstrate that - for starting these processes - is essential to have integrated policies for sustainable urban development, based on three main factors of success, bond one to the other: the project, the atmosphere and the landscape (PAL).

The Project as an initiative based on a specific organization of players located in an area that has economic, social, cultural and environmental resources, which also needs a constructive mood, being it an efficient and actively involved cultural and political system with regulations supported by a renewed territorial planning.

Making the planning processes transparent, flexible and repeatable and enabling participative practices through the development and implementation of plans. A significant contribution in this direction is given by the increasingly widespread adoption of the processes of Agenda 21 by Governments, that have as main objective the support and promotion of cities and territories practices for the reduction of greenhouse gas emissions and the fight against the local impacts of climate change. Since 2008, the Agenda 21 committee has developed guidance on urban climate useful to local authorities, proposing to transform the Plans of Action for Energy Efficiency (PAES) - essentially focused on energy - in Action Plans of energy efficiency and Climate (PAESC), which aim to a more comprehensive local climate policy. "Smart Cities", an initiative promoted by the European Commission, will support those cities that are committed to increase the energy efficiency of their buildings, their energy networks and their transport systems so as to have a reduction of 40% of greenhouse gas emissions by 2020. But the idea of the "smart city" goes beyond energy efficiency and renewable energy sources, foreshadowing a new era for the city that will increasingly develop development strategies and action plans, in close collaboration with public and private subjects operating on the territory, able to produce high technology, to promote sustainable transportation but also to improve the quality of life of the inhabitants, with the purpose of a new economic paradigm of low-carbon emissions according to the Third Industrial Revolution as theorized by Jeremy Rifkin, the American economist very active also in Europe. The Countries that will be able to face and solve the problems of the City will obviously be those that will go back to high rates of economic growth and achieve higher levels of welfare and social cohesion.

The group of Resilient Cities is working in this direction; their first congress in Bonn in 2010 recalled the importance of the role of local governments to contrast the negative impacts of climate and reduce the consequent disasters. With the term "adaptation" we try to define, in synthesis, the ability of a particularly complex organism, such as a city, to change physical and social structures, in order to ensure quality of life and the environment against the higher vulnerability caused by regional climate changes, which increase the risk because of the presence of an intense human settlement. The resilient city simply does not simply adequate, but it changes by setting-up social, environmental and economic responses, in order to withstand the long-term stress coming from the environment and the history. In a way, being it also durable, resilience is an essential element for sustainable development because it acts primarily on structural and managing models of the urban systems. Sustainable cities are also resilient cities. The priority fields of intervention to define consistent actions, projects and measures are the following:

- Regional planning that has as an objective the limitation of land use for purposes of settlement, the strengthening of the government of the hydric system also in its function of draining system for the management of floods, ensuring the multi-functionality of agriculture;

- Prevention, reduction and management of the vulnerability of soil by managing the hydro-geological system with bioengineering techniques, avoiding a forced structure that stiffens the area, strengthening or restoring the preservation and management of the forests near populated areas;

- Planning for adaptation: first of all, the actions in urban planning that are oriented to the adaptation, should limit the urban growth, reduce the sprawl, and promote the reuse of abandoned and reclaimed industrial areas and the restoration of existing buildings;

- Water cycle: also in this case, the responsible use of water as a resource allows to combine together lower energy waste in the water cycle; some convenient actions: reducing the impermeability of the soil; providing rainwater storage to retain the outflow and use the water for different uses - such as irrigation, car washing and toilet flush - constructing dual sewerage systems (with dirty and clear water distinction); restoring the hydraulic inertia of the area and the functionality of the drainage system with the increase of green areas and a careful maintenance of natural and artificial waterways; slowing down the runoff, facilitating the absorption and natural runoff also trough green roofs, rain catchment areas with phyto-purification systems;

- Health and social services and civil protection: integration of climate planning and the Plan for local Health, according to the World Health Organization, because of the effects of high temperature on people suffering from cardiovascular and respiratory diseases;

- Multifunctional urban green: in the climate of

Former Maserati Industrial site. The Water Park (1999-2006)

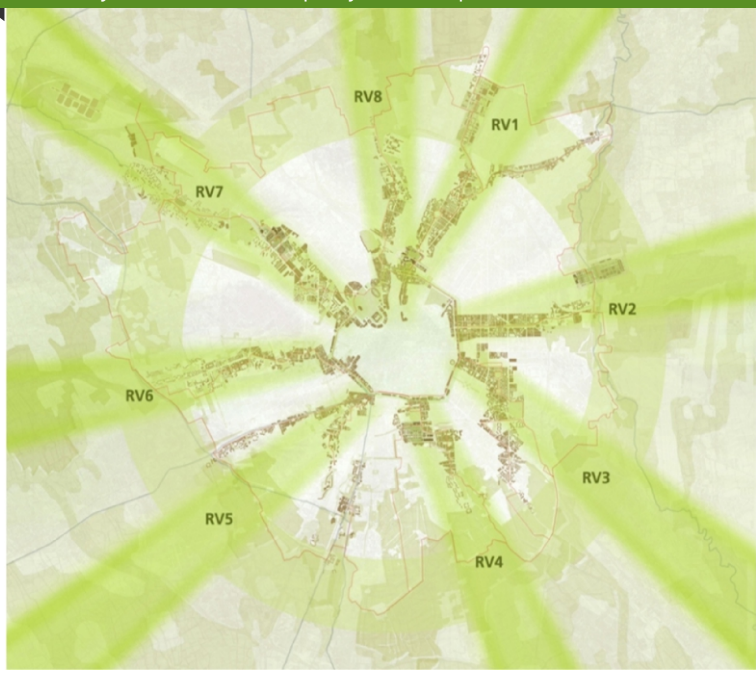
Former OM – Fiat Industrial site. Industrial Memories Park (1999-2006)

Green Rays - Milan street 2010 (Yesterday - Today)

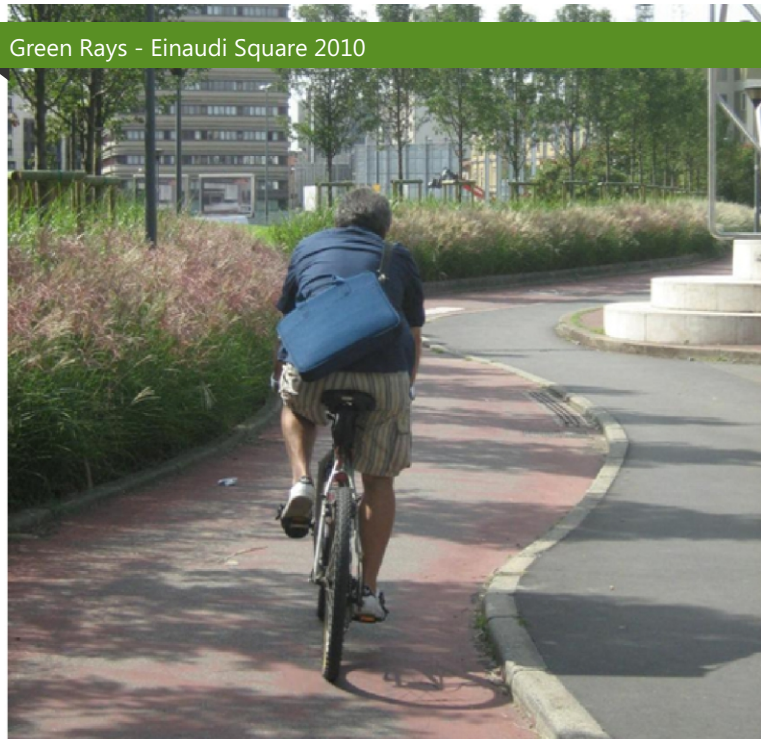
Masterplan EXPO 2015 MILAN - Feeding the Planet, Energy for Life

the evolving city, Green requires a scientific and professional approach in both its design and in maintenance. Planting trees and sowing is not enough. First, relationships between agricultural areas and peri-urban green areas need to be redefined. The green-belt, that runs along a river or a stream flowing aside the city, or more directly the creation of woodland or the restoration of historic forest, don't have to be isolated works but part of a multi-functional green space system. The realization of large green areas, in addition to the capture of CO2, concur to the thermoregulatory function of urban green. Moreover, the production of biomass related to the cultivation and maintenance of plants may contribute to the increase of this renewable resource. The microclimate and multifunctional character of urban green spaces can be enhanced by not just decorative trees and hedges, public and private green, green roofs (that can promote the thermal inertia and the thermal mismatch, and improve the isolation of buildings in summer and winter, the water absorption and the slowing of stormwater runoff), vertical gardens and greenwalls, other systems of green furniture: flower beds, rotatories, pergolas, gazebos, etc.. Urban green is increasingly regarded as a good and as collective space, whose cultivation and maintenance, as well as its fruition, may promote sharing, sociality, cohesion and direct management responsibility from citizens. Emblematic is the example of the city gardens and communal gardens;

Green Rays for Milan Municipality – Masterplan 2003



Green Rays - Einaudi Square 2010



'The Vegetable Garden of Faith' Milan Protestant Church 2011

Currently no technical guidelines have been identified, nor specific indicators for the measurement of the actions for adaptation, differently from what has been proposed by the Covenant of Mayors for the mitigation, which underlines the synthetic indicator of the reduction of CO2 as a reference indicator to measure the achieving of targets of the PAES; hereafter some supplementary indicators, to define verifiable and comparable goals for adaptation:

- Land use mq/hb
- Multifunctional urban green areas mq/hb
- Permeability rate of the soil
- Maximum temperature
- Average temperature
- Number of days of exceeded ozone limits
- Water consumption per habitant and rainwater storage capacity
- Water consumption for irrigation (agriculture) and industrial processes
- Urban air ventilation

The European Commission is strengthening this approach with the program launched last November named Horizon 2020 (2014-2020) that has among its social aims and challenges "...the promotion of safe, clean and efficient energy". Unfortunately, 'Green economy' and 'green solutions' concepts that are rarely referred to simple technologies that use vegetal material, are devaluating.

Milan, the city where we have been based for over than 25 years, is not an easy reality; its density is 7.300 hb/km2, twice the density of Berlin and about three times the density of Rome. Then a question raises: where do we find space for Nature? Right here, in our town, we can find thousands of spaces forgotten spaces, abandoned, 'pending': relicted areas, traffic islands, flat roofs etc. If we close our eyes and imagine, for example, all the roofs in our cities becoming green, than the view dramatically changes.

Exactly on this hypothesis – to imagine a different world – that LAND Group is working with all its strength. We have started in the nineties with the redevelopment of large industrial areas, through the Urban Recover Plans – "The Water Park" former Maserati site and "Industrial Memories Park" former OM-Fiat site – and there we planted thousands of trees and shrubs.

In 2010's we developed strategic projects like "I Raggi Verdi" (the Green Rays) for the City of Milan, that proposed the creation of a green and slow mobility network that involved the whole city, in order to fight one of Europe highest air pollution. Step by step, extraordinary planning has become ordinary, and today the Green Rays are becoming part of the regular city planning. Milan is not among the top-cities in Europe for the presence of green spaces dedicated to its citizens. Today every inhabitant has about 15 m2 of green areas at his disposal, with a non-homogeneous geographic distribution, and therefore the perception of the city is not that of a "green city".

Milan has a unique opportunity for re-launching, which is EXPO 2015: Feeding the Planet, Energy for Life and the choice of this theme promoted the idea of Milan as a very 'agricultural' city:

Design Ecologies To Foster Urban Adaptive Capacity

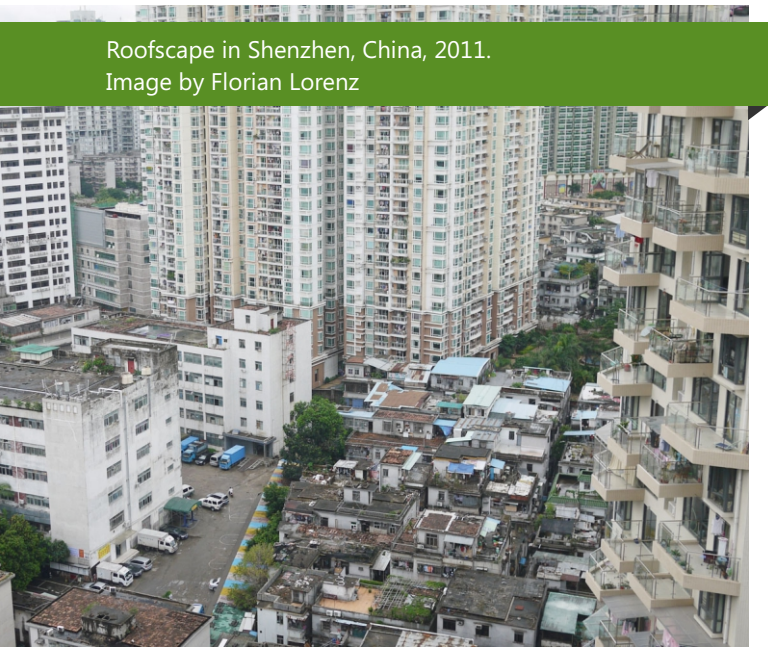
Florian Lorenz / Austria

Florian Lorenz studied landscape architecture and landscape planning as well as ecology in Vienna and Copenhagen. He was working and teaching in various offices and institutions in Europe, Asia and the United States. Lorenz is currently working for the planning and communications consultancy PlanSinn in Vienna, Austria with a focus on landscape architecture, mobility and public relations. Since 2010 Lorenz is heading the research activities of the NGO Smarter Than Car and is actively promoting bicycle urbanism as a concept for a pedal-powered urbanity.

In the 21st century, mankind is facing challenges like resource constraint, climate change, or global demographic shifts in the agglomerations of today's quickly urbanizing world. To work more effectively and to successfully master the above mentioned challenges, landscape professionals will have to put a focus on urban areas with a professional eye refreshed by new concepts and visions. As the tipping points for climate stability and resource availability are drawing closer, such a methodological and professional re-alignment appears more pressing than ever. This urge is additionally fuelled by the long time scales typical for urban design and planning projects and the inherent complexity of contemporary urban environments. The International Federation of Landscape Architects has appreciated such a professional debate as evident from the 2012 IFLA World Congress headline "Landscapes in transition" and the themes of this year's congress.

Brooklyn Grange rooftop farm in Brooklyn, New York, United States, 2011. Image by Florian Lorenz

Roofscape in Shenzhen, China, 2011.
Image by Florian Lorenz



Occupy Wall Street in New York City, United States, 2011.
Image by Florian Lorenz

The concept of urban adaptive capacity may prove to become a vital strategy to collectively encounter many of the urban challenges mentioned above. This piece aims to start a discussion about a number of conceptual thoughts as new design ecologies which bear the potential to become design strategies to create, sustain and foster urban adaptive capacity.

Urban environments are social-ecological systems and therefore refer to social as well as ecological aspects of adaptive capacity 1. In ecological systems adaptive capacity – understood as the degree of resilience to perturbations – is tied to genetic and biological diversity as well as the heterogeneity of the landscape mosaic. In social systems the existence of institutions and networks which are producing and storing knowledge (of various kinds), creating flexibility in encountering challenges and which manage to balance power and interest among interest groups.
It is landscape (and urbanism) professionals working in urban contexts which are confronted with both, social and ecological aspects in their work and who are therefore able to build urban adaptive capacity in a social as well as an ecological sense. The subsequent text will discuss some concepts as methodological design ecologies in which landscape professionals may successfully foster urban adaptive capacity.

Landscape ecological urbanism

Over the previous decade, landscape urbanism (Waldheim 2006), ecological urbanism (Mostafavi, 2010), or, landscape ecological urbanism (Steiner, 2011) emerged as models for an urbanism which attempts to negotiate the social and ecological complexity found in contemporary (mega)cities, their rapid urbanization and tenacious infrastructural issues within them. Those approaches are the most straightforward concepts developed up to date for a redesign of urban environments with the goal to accommodate human life under increasing environmental constraints. Starting from such a professional understanding, new design ecologies may successfully emerge to be tested in experimental design and research projects.

In contemporary landscape practice and teaching we still frequently witness a seemingly irreconcilable divide between goals of social justice, environmental credibility and cultural meaning, while all of them would appear equally important for designers in urbanism2 . Absurdly enough, these goals are redundantly preached - latest since the Bruntland report of 1987 - as the 'pillars of sustainability' to be of equal concern for sustainable development and urbanism. Nowadays, for example, a 'smart city' should be able to negotiate spaces, social networks and technology as smart infrastructure. It is evident that designers in urbanism will have to negotiate these diverging goals if urban areas shall be successfully managed and developed. In this piece I want to provide some inspirational ideas of how such a 'disjunction of concerns' (Waldheim 2010 might be encountered on a theoretical and practical basis in landscape education, research and built projects.

Guided Urbanism

Firstly - as designers in urbanism - we can understand what we do as a guiding of urbanism; we are as much observers, mitigators, mediators and creators of what is happening to our cities. Because of today's speed of (urban) development and the almost total embeddedness of global processes in our everyday lives, designers of urbanism are better off keeping their eyes wide opened than looking only on the site or even town they are about to work on. The question is; how can we avoid to be too focused on our own specialized field in a landscape practice of highly specialized practitioners? Can we permit ourselves the luxury of fishing in our own landscaped pond alone? I would say no. In a globalized world, a sustainable landscape practice has to be informed and guided by the knowledge about global mechanisms at work, while the sense for a critical regionalism (Frampton 1983) can allow for the creation of meaningful (urban) landscapes.

Networked human ecologies

To juggle urbane aims such as environmental concerns, social justice and cultural vibrancy, one may anticipate putting the human subject in the center of one's work. Yet, to follow such a humanist design tradition of optimizing (urban ecological) systems solely for human needs will not allow for a diverse system with a respective adaptive capacity to perturbations.

Another approach may be more helpful; one in which a reciprocal responsibility among life forms is agreed upon (by humans) and respected in a kind of memorandum of association between life forms. This would entails that human society responsibly manages it's (ecological) trajectory in the world. In such thinking, the ecology of relationships radiating from and to human societies and individuals will be seen as closely tied to ecologies of animals and plants and their associations. Such a networked human ecology will – in the best tradition of a Gaia-approach – be designed as an assemblage of productive exchanges with other life forms as manifested in fluxes of matter and energy.
Such an approach is promising for maintaining a diverse web of social relations and physical interactions between humans and other species which would entail a higher overall stability of the social-ecological system, thereby contributing to urban adaptive capacity.

Negotiated ecological debt

Academic discourse over the recent years has to some extent been focusing on metrics for measuring and benchmarking sustainable urban development3. There is a whole range of metrics being developed by a growing global community of (urban) researchers dealing with issues of energy and material fluxes in cities and their (re)design. Landscape practitioners as designers in urbanism will have to be informed about such languages to work in a truly interdisciplinary practice applying cutting edge scientific conclusions and facilitating experimentation in urban areas.

As a simple measure of a metric worth exploring we can anticipate the adoption of the concept of an ecological debt as a means of assessing (built) interventions in the landscape. Ecological debt refers to the consumption of resources within an ecosystem (or a development site) which exceeds

the system's carrying capacity and therefore cannot be replenished (or absorbed). An ecological debt would for example arise if, due to a construction project, soil is removed which previously was functioning as a carbon sink. The ecological debt in such as case would be measured as carbon set free to the atmosphere and the lost ability to sequester carbon to the soil (and other, secondary ecological effects). Such a concept may prove vital for non-urbanized land as well as in dense cities. In an ecologically functioning and sparsely urbanized environment, ecological debt can become a useful measure to assess, critique and eventually limit (built) interventions (such as unnecessary surface sealing). In already urbanized areas, where ecological services provided by parks, brown-fields or water bodies are increasingly vital for and appreciated by the population, the concept of ecological debt can help to develop strategies of how the environmental debt of urban areas towards the wider landscape can be landscapes reduced.

A reduction of the ecological debt of urban landscapes would entail that more ecological functions are organized within cities (most probably providing additional benefits for the urban population as well) and alleviating ecological pressure from the surrounding natural system, thereby substantially raising the adaptive capacity of urban ecological systems.

Vibrant social ecologies

But a mere focus on ecological measures – such as the performance of urban landscapes as ecologically active entities, biodiversity enhancement, treatment of surface runoff or remediation of pollutants – is only one was to raise the adaptive capacity of urban areas as ecological and not least social systems. In this sense we may also ask ourselves if the urbanism we guide as well implies and fosters social justice. To raise and maintain adaptive capacity it is equally important that urban environments allow fostering and maintenance of social capital. And, if the projects we proposed and realized are engaging people in a cultural way. In other words; are landscape ecological projects automatically socially just and culturally meaningful? I would answer with a capital NO, but an integration of ecological narratives extended to the (supposedly engaged) human subject and her/his cultural context would provide more possibility to create diverse, lively and meaningful urban landscapes.

Since the global economic crisis hit, cities around the world are increasingly becoming the stage for the struggle for a renewed sense of social justice articulated in the demand for equal economic opportunities and a more democratic distribution of decision power and (natural) resources. Such movements are taking place in public space and recently erupted around the globe, in Tunesia, Spain, New York or Syria. Such social negotiation processes are creating post-event voids and social arena arise as open contexts in which designers in urbanism are questioned to create new open urban spaces where society can successfully renegotiate its core values and social contracts. In this discourse the concept of social ecology may prove useful to be explored as a strategy for designers in urbanism. There are two aspects (schools) for interpreting social ecology, both of them are worth to be explored by designers. Firstly, a social ecology as conceptualized by the late Murray Bookchin (Bookchin, 2005) is interesting in its quest to redesign social structures which integrate the complex relationship between human and nature. Secondly, the scientific study of social ecology applied to systems influenced by humans can provide vital insight into fluxes of energy and matter within ecosystems which are anthropogenically influenced. Both approaches of a social ecology can be a fresh way for designers to research processes of urbanization and to conceptualize the transition of urban landscapes towards systems which nurture diversity, resilience and adapctive capacity.

A worldwide urban laboratory

There are interesting urban (ecological) research projects completed and in operation which are promising attempts to deal with the design and management of contemporary complex urban environments with increasingly limited (financial) resources.

In the United States the two pioneering long-term ecological research projects in Baltimore and Phoenix have helped shaping a scientific understanding of urban ecosystems and similar studies have since been conducted all across the globe. In Europe the network 'Sustainable Urban Metabolism for Europe' (SUME) is an example of how research institutions and municipalities are starting to exchange research data, policy approaches and tacit knowledge for dealing with future urban issues. In terms of infrastructure, the 'Zofnass Rating System for Sustainable Infrastructure' as developed at Harvard GSD can be a vital approach for assessing and developing sustainable infrastructure projects. The strategies and approaches developed from such research projects and policy approaches can and should be most efficiently applied in the vibrant real-life laboratories of African, Asian and South-American megacities. It is in those urban environments where the clients and support for newurban design approaches is real and needed and where the creative resources of designers in urbanism are most effectively applied. Designers in urbanism can engage in this process either by providing the research and the tools to be applied or can be engaged on the ground in applying globally shared knowledge and conclusions from research for adaptive approaches in specific projects. The discussion of conceptualizing urban adaptive capacity as a methodological approach in landscape architecture, planning and urbanism is a creative input to this process and will in the optimal outcome provide new approaches, benchmarks and metrics which will help landscape (and other) professionals to deal with urban (ecological) challenges we are facing today.

1 A very comprehensive resource pool and academic background on adaptive capacity and resilience is provided online on the homepage of the Resilience Alliance at *www.resalliance.org*.

2 To make a provocative point about disciplinary boundaries, I will in this article refer to the disciplines of landscape architecture, landscape planning, urban planning, urban design, architecture - all of which are engaged with urbanism – simply as designers in urbanism.

3 The question why we mainly measure development of (urban) environments shall be discussed elsewhere. It is debatable if the concept of 'development' will - in the long run – be compatible with the normative goal of 'sustainability'.

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Fostering Opportunities In Cities: Adaptability And Transformability Of Urban Systems

Marta Olazabal / Spain

Marta Olazabal is an Environmental Engineer by training and works in the Basque centre for Climate Change Research (BC3). She has 8 years of research experience in the Basque Country and has also enjoyed scientific stays in Germany, The Netherlands and UK. Combining work and studies, Marta gained an MSc on Environmental Engineering in 2008 and she is currently PhD student in the Department of Land Economy of the University of Cambridge (UK). Her main fields of interest are in relation to urban sustainability, urban ecological services, resilience and adaptation to climate change and resource scarcity.

Borrowing the insights of adaptive governance and transformations in socio-ecological systems, and also those in socio-technical transitions theory, this paper highlights the importance of managing equally adaptability and transformability in cities in a way that opportunities towards more resilient and sustainable development are not vanished.

Cities are widely defined as complex systems formed by coupled social, ecological and economical systems. The complexity of the dynamics and behavior of urban systems goes far beyond its boundaries due to the strong influence of regional and national scales and the deep dependence of cities on natural resources and other services provision.

According to resilience theory scholars, adaptability could be defined as the capacity of actors, social networks and institutions in a system to influence resilience (Walker et al., 2004, Lebel et al., 2006). Fostering adaptive capacity in cities, or as argued by Lebel (2006), strengthening the capacity of societies to manage resilience, is critical to effectively pursuing sustainable development (Holling, 2001).

Different authors attribute diverse characteristics to adaptive capacity (Trejo Enríquez, 2007). In a general way, it can be said that the main components of the adaptive capacities are the economic, social, technological and biophysical factors available in the system to respond to disturbances (O'Brien et al., 2004).

In the particular context of cities, adaptive capacity can be represented by the set of available resources and the ability of the actors, social networks and institutions to respond to disturbances. This also includes the capacity to design and implement effective adaptation strategies to cope with current or future events (Tompkins and Adger, 2004). These resources include economic capital, technology and infrastructure, information, knowledge, institutions, the capacity to learn, and social capital (Brooks et al., 2005, Yohe and Tol, 2002, Haddad, 2005, Klein et al., 2003). This implies that the city's adaptive capacity has direct im-plications for the type and scale of adaptation that is potentially feasible to achieve (Nelson et al., 2007, Brooks, 2003).

However, who decides in cities what should be made resilient to what? And what is the purpose for that urban element to be resilient? Can such urban resilience generate vulnerabilities in other sectors or at other scales? The cross-scale effects which are particularly crucial in cities can fuel maladaptive behavior, conducting cities to rigid and unsustainable traps (Holling, 2001, Carpenter and Brock, 2008). This can be the case of opportunistic interventions that, in the name of wealth or economic development and to induce adaptation and alter resilience, are planned in the short term, not considering long term cascading effects that the complexity of cities and of the systems of cities might bring.

Resilience has long term implications and for this reason, the main objective of resilience management in urban systems is, not only to strengthen the capacity to adapt to changes in the city as it originally functions, but also implies to foster opportunities if unsustainable pathways are forecasted. This process of innovation involves stimulating an urban change of structure or dynamics which perform better in

Figure 1a: The city of Bilbao has recently implemented a bike renting system all over the city.

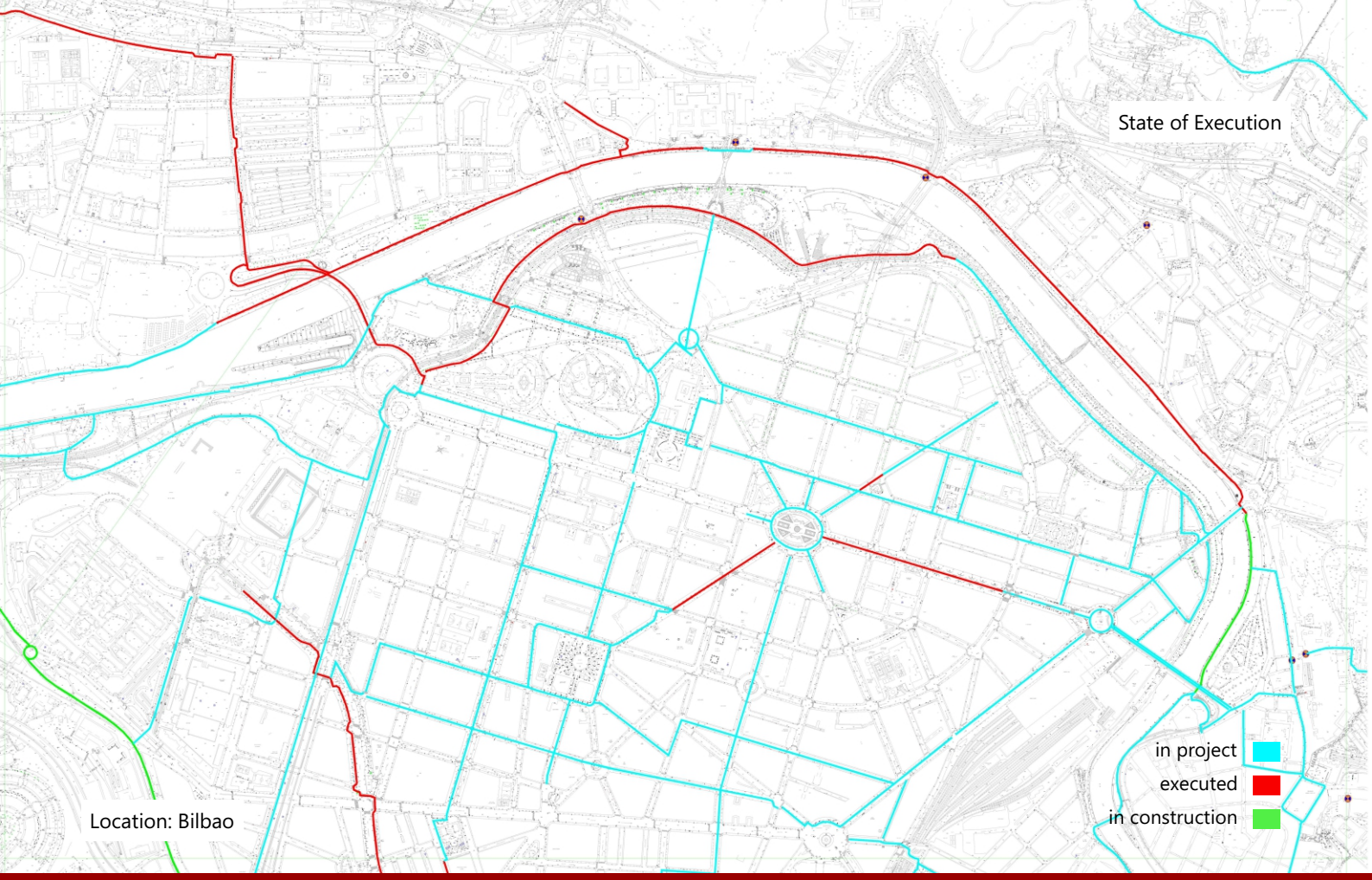

Figure 1b: Bilbao's bicycle network. Although the bike is growly being recognised in the city as a transport mean, the network is still insufficient with only 14 km of lanes. With a scenario of an increase in public transport prices, an increase in the use of the bike is expected. This should make the administration to accomplish the "City Bike Plan" which includes an expansion of the network and the service.

that cities must have the capacity to realize incremental adjust-ments (adaptations), but also, they must seed their capacity to transform. Under normal circumstances, cities usually avoid vulnerabilities leading to those incremental changes in their structure which can eventually lead to spontaneous and self-generating processes leading to transformations in the end. Just to give an example, at local level, the increase of oil prices gradually might make citizens use the public transportation in a regular basis; if maintained, such raise in demand can deliberately induce a transformation of the mobility culture entailing a transformation of the public transport infrastructure or the born of new bicycles renting enterprises for instance. This is also conceptually recognised in the socio-technical transitions discipline where niches of innovation and change are essential to open windows of transformation in upper regimes (Geels, 2004)which can lead to a system's transition. In consonance with this, the socio-ecological systems literature defines this transformability as the capacity of "defining and creating new stability landscapes by introducing new components and ways of making a living" (Walker et al., 2004, p. 5).

In truth, although it might be found a kind of resistance to the change, at some point in the city's management performance, it might be necessary to think about the opportunities that this change might bring. The transformation might affect an evolution in the nature of the structure (i.e. planning, land-use, landscape...), the functions (design, basic services, infrastructures, economic activity ...) and/or the processes of the city (such as social networks performance, governance processes, behaviour, consumption and/or choices). To make this renovation possible, cities need also to seed the capacity to transform using learning and knowledge management as the main tools for resilience management.

As transformations can be deliberate or non-deliberate, the capacity to foresee untenable situations at long term is crucial in order to plan the process of transition. Despite the fact that the intrinsic properties and characteristics of cities such as resource availability, climatic conditions or geo-politic context is of a huge importance to trigger opportunities of adaptation and transformation, the society's ability to take advantage of them is where resilience mainly resides.

The barrier to adaptation and transformation that decision makers might see is that, no guarantee of complete success is given before the intervention is decided. There is not an established model of such a successful transition process. Best practices in other cities need to be reviewed before being implemented in other urban contexts. It is for this reason that experimentation and learning are central in urban resilience management and treating cities as laboratories and innovation hubs is essential to promote transitions to more sustainable and resilient atmospheres (Ernstson et al., 2010, Smith, 2010, Dawson, 2011, Evans, 2011, Hodson and Marvin, 2010). Furthermore, cities still need to learn how to learn and how to manage uncertainties in decision making to generate the flexibility that a real process of urban transition requires in this shifting world. Our job, as thinkers and practitioners, is to foster not only the adaptability of the space and of the services within the city, but also to stimulate transformation through the flexibility that innovation and new opportunities need. This involves reconsidering the urban natural and built environment and also the attitude of managers and users

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Urban Design For The Climate Change

Jana Milosovicova / Germany

The recent news brought by the Club of Rome state that 2 degrees temperature rise by 2050 is now irreversible (Chestney 2012), leaving mankind with no other choice but "act to adapt". With such expected rise of temperatures, weather occurrences will become more extreme throughout the year and most cities in the moderate climate will experience mild winters but hotter and drier summers. Heat islands will rise and the extent and consequences of heat waves might be even more dramatic than during the European heat wave in 2003.

Numerous adaptation strategies are known to humankind, however none of them all-healing and easy-to-implement. Carbon reduction as one of the widely pursued mitigation solutions seems to have no direct impact on the adaptation capacity of cities and other tools are due to the lack of public support often considered to be too complex and cost-demanding for investors and for users of urban spaces. Obviously, only an appropriate attention paid to possible climatic threats and to the estimated effects of well-thought-of adaptation strategies will balance the costs and efforts of complex, comprehensive solutions. What are these however? And, knowing how urgent the necessity of adaptation is, the next question will be: How shall cities of the future look like?

Before seeking answers to these questions, a short outline of a few important factors that influence urban climate might be useful: In cities, the urban form and geometry affect the incoming solar radiation and ventilation conditions, causing heat trapping in man-made surfaces (Givoni 1998, Emmanuel 2005). In addition to that, the natural water cycle modifies in cities significantly as a result of sealing of surfaces and withdrawing vegetation: if rainwater is led into sewage, it cannot evaporate through plants as effectively as it would in natural environments (Schmidt 2010). This means that in cities, the desired cooling effect of vegetation is being restrained.

These phenomena result in microclimatic conditions that might be unfavourable for cities' inhabitants, accompanied by the well-known phenomenon of the urban heat island (UHI). More than that, the effect of the UHI exaggerates when extreme weather events occur, such as heat waves. In such situations, inhabitants, mostly elderly people or people with cardio-vascular problems, might suffer from severe health problems. This threat will become even more alarming with the expected climate change.

On the other hand, the above-mentioned factors, urban form and surface design, also play a significant role in adaptation strategies; an option would be to reproduce natural conditions in urban environments (We all would favour "green cities" over those with lack of green spaces, wouldn't we?). It is indeed the way the urban geometry and the urban surfaces are designed that may alleviate the UHI effect (and improve the microclimatic conditions in general) through purposeful influencing of the natural energy flows: via intended street orientation and built masses' proportions, shading and ventilation and via enhancing the ratio of evaporative surfaces and vegetated areas in cities. As such, maximal cooling effects during hot summers can be provided. This means that pursuing particular urban design strategies can help tackle microclimatic and UHI-related problems, if these address equally and comprehensively the issues of urban form and building and landscape design.

Such climate-responsive strategies, composed in a set of urban design guidelines, could easily become official urban climate change adaptation programs. For hot climates, urban design recommendations have been suggested by Givoni (1998) and Emmanuel (2005); Stone's recommendations (2012) relate to moderate climate. Regrettably, cities seem to underestimate the urgency of adaptation strategies – no known legally binding climate-related urban design guidelines have been adapted yet. Berlin's "City Development Plan Climate" is among first guiding documents of its kind to be followed in new developments or when retrofitting old ones. Other cities partially consider climatic aspects and adaptation strategies when addressing the themes of surface design and rainwater management, for instance, NYC' High Performance Infrastructure Guidelines, Chicago's Guide to Stormwater Best Management Practices and others. Yet it seems to be a long way until all aspects – urban form and geometry and landscape and building design – and, first of all, their effects on the extent of heat islands – will gain necessary attention in the urban development process and in cities' policies.

In the thesis "Climate-Sensitive Urban Design in the Moderate Climate Zone – Responding to Future Heatwaves. Case study Berlin Heidestrasse/Europacity" (2010), the author developed urban a set of design recommendations for the UHI mitigation and climate change adaptation in

and climate change adaptation in the cities of cool moderate climate. These comprehensive strategies, presented in text and graphics, aim to alleviate the effects of anticipated heat waves. The author suggested that such strategies equally address the following categories: Urban form (density, compactness and geometry), ventilation, solar radiation, water cycle and vegetation and special design details of buildings that affect outdoor conditions (e.g. air-conditioning systems). Other general recommendations were made too, for example, cumulation of land uses was suggested for better spatial efficiency.
Particular measures were, among others:

- avoid urban sprawl to prevent excessive consumption of climatically active land;
- consider appropriate urban density, orientation of streets and buildings, building heights, etc. for a desired ratio of incoming radiation and ventilation;
- implement decentralized rainwater management and vegetated built surfaces (such as roofs and façades, vegetated ground areas, etc.) that significantly increase evaporation and as such the natural cooling effect;
- etc.

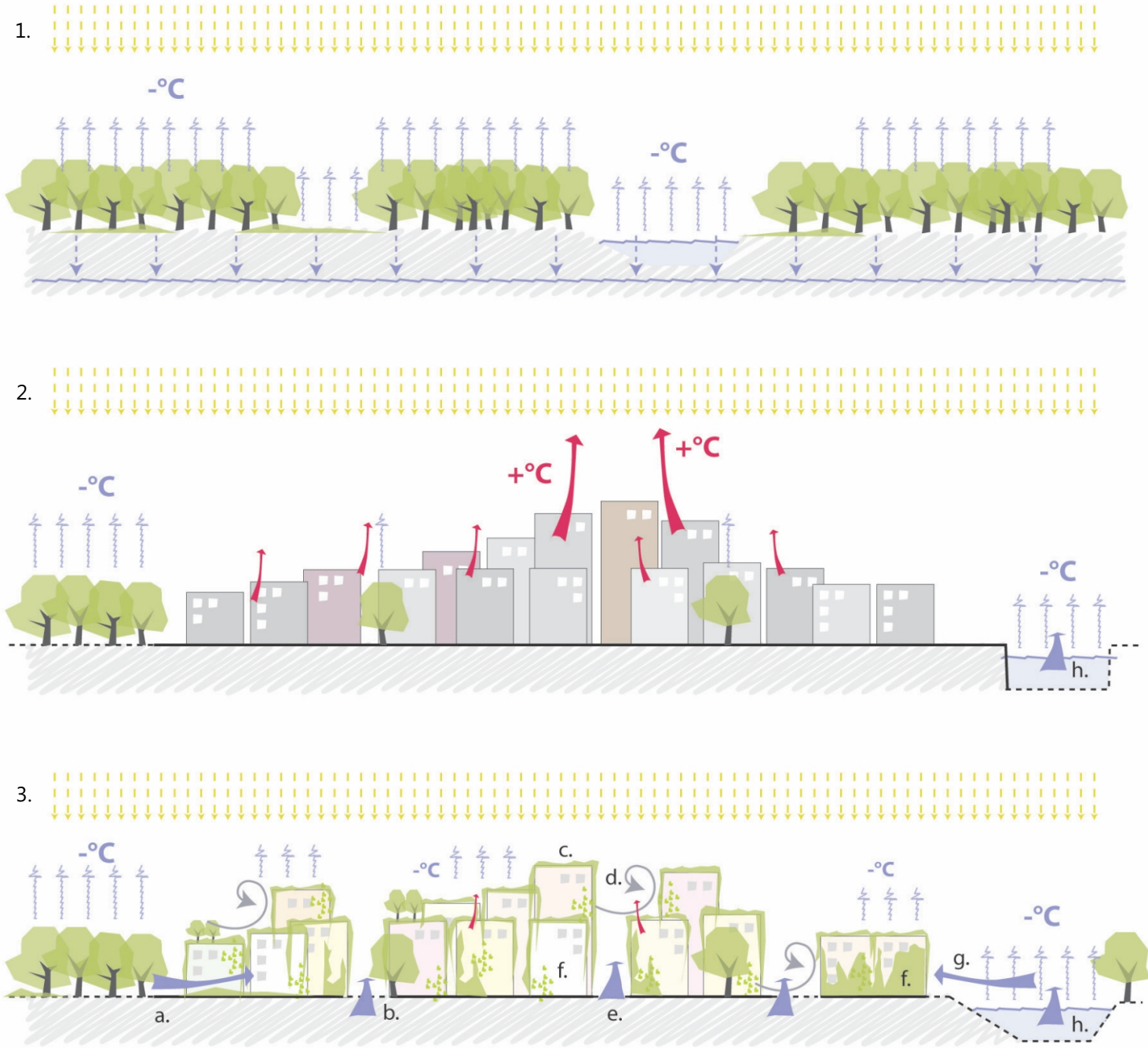
Such a set of measures appears comprehensive, what we however do not know is which exact effects it would have if implemented. The reason for this is that estimation and modelling of microclimatic phenomena is possible only on a local level (say, a square, a parking lot, of a rooftop or park). Due to a complexity of decisive factors however, modelling of the UHI extent and of the ratio of contributing factors is nearly impossible on the level of an urban block, neighbourhood or at the scale of a whole city. All we know is that a summary of known measures can help alleviate extreme conditions in cities considerably.
Extensive implementation could be enabled if regulation of the heat island extent gained considerable weighting and became a prescriptive factor for new developments and for urban retrofits. As such, the focus of urban mitigation and adaptation strategies would very soon shift

Climatic impact of urban form near parks and water areas (schematically).

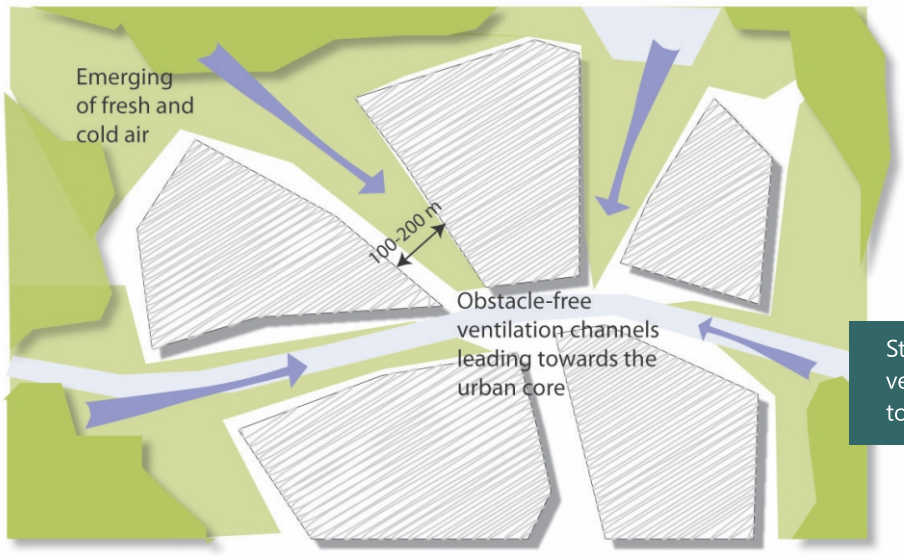
Open building design for better ventilation/air circulation in dense urban areas.

from carbon to the physical form and structure of built environments. As such, both cities and their inhabitants would have an enhanced chance to thrive – and have better predispositions to adapt to the coming change.

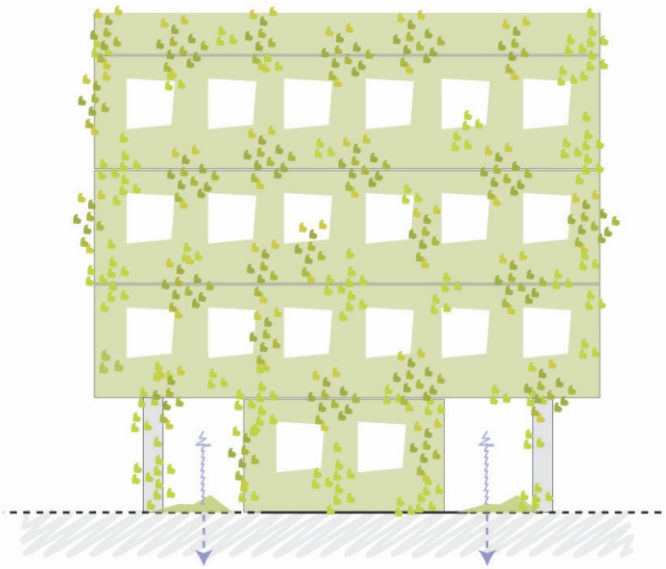
Climate-sensitive urban design: learning from nature, incorporating positive effects of natural phenomena in the design (schematic).

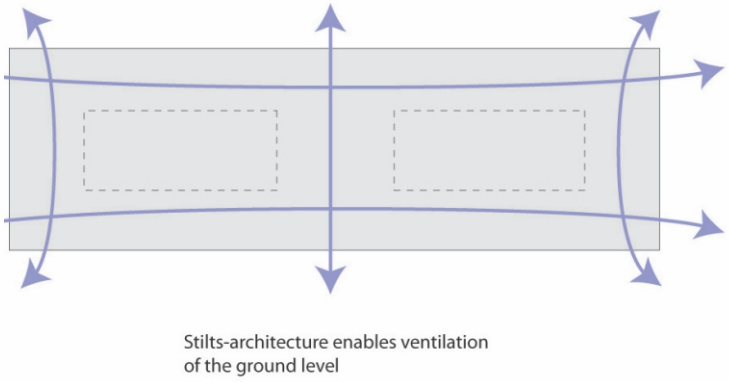


a. Provide air flow channels from the outskirts
b. Build ventilation lanes in the city
c. Green roofs and façades of buildings to support evapotranspiration
d. Induce local turbulent ventilation by correct placement of high rise buildings
e. Pave surfaces with pervious materials
f. Design high albedo surfaces of buildings and pavements
g. Allow ventilation channels transport cool air from rivers
h. River air flow channel



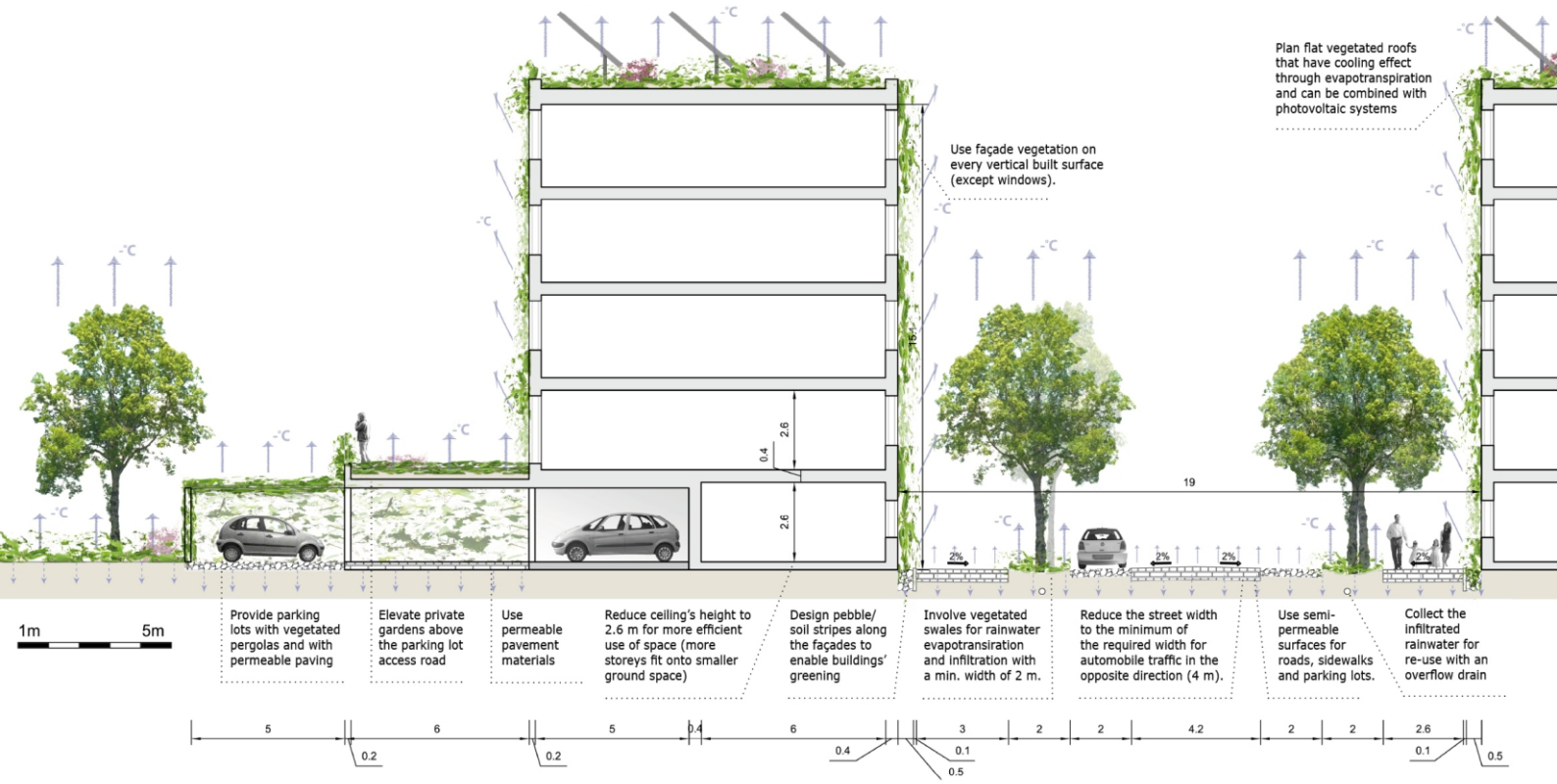
Structural measures on the city scale - ventilation of the city neighbourhoods thanks to carefully elaborated land use.



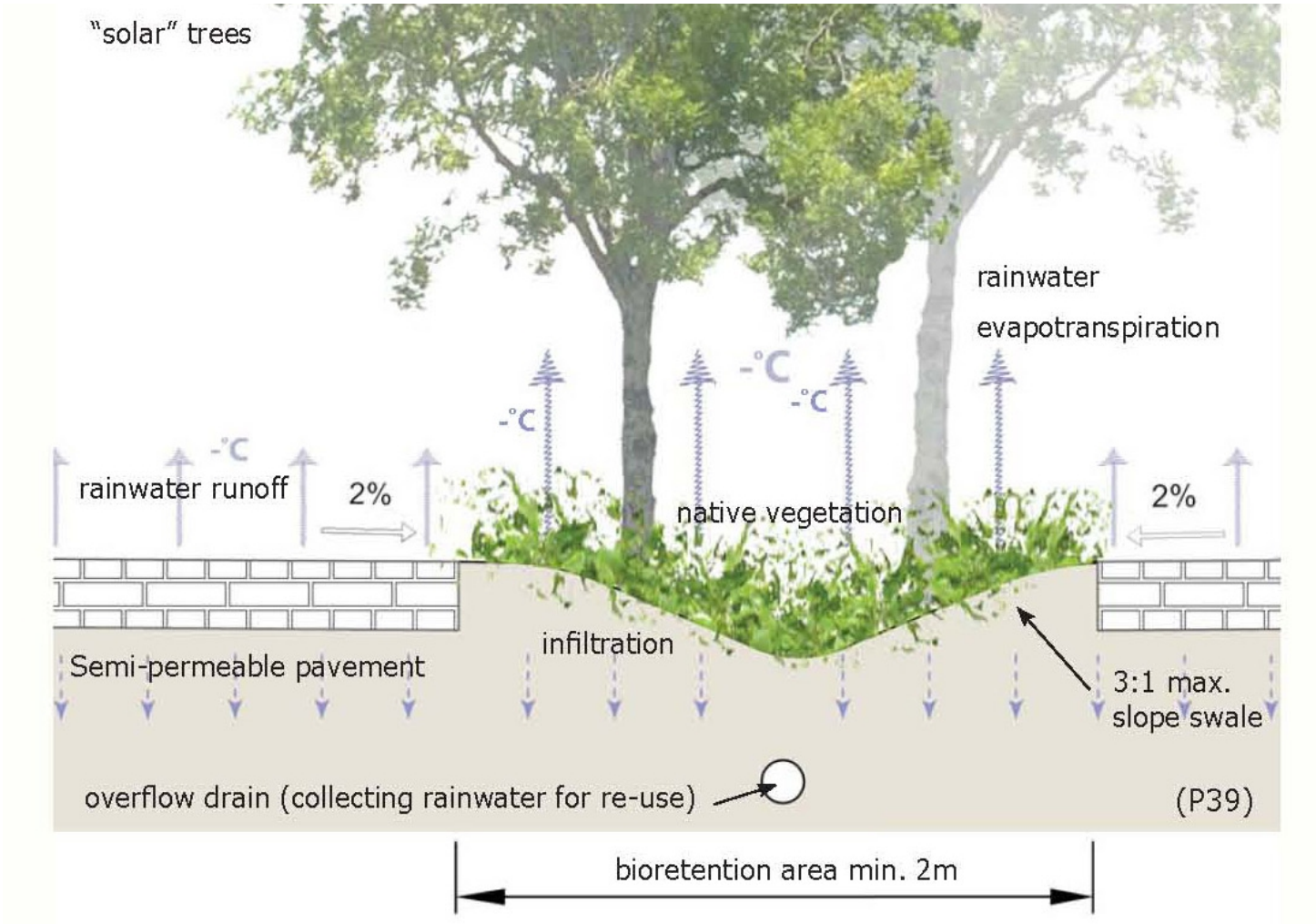


Architecture sits partly on stilts and increases the evaporating surface and improves surface air circulation (top: elevation, bottom: aerial view schematic)

Heidestraße concept
Mitigation and adaptation on urban planning level: Air-sensitive urban design concept for the district Berlin Heidestrasse-Europe City is based on the structural concept of ASTOC / / Urban Catalyst / / Argus from May 2010 (Jana Milosovicova thesis, TU Berlin, 2010)



Heidestraße concept (road section)
Package of measures of climate-sensitive urban design on the example of the proposed road cross section in the Europacity Areal.



Heidestraße (vegetated swales)
Planted troughs: evaporation should have the primary role in the future. The supply depends not only on rain water but also on reclaimed grey water, especially in the dry seasons.

Urban Foraging: Exploring Utilitarian Values Of Nature In Regards To 'biophilic' City

Vladimirs Guculaks / United Kingdom & Latvia

Vladimirs Guculaks studied landscape architecture at Edinburgh College of Art for the past 5 years. His personal interest in foraging derives from a cultural education in my home country of Latvia. Latvian foraging is widespread; knowledge about wild plants, mushrooms and berries is passed onto new generations. The idea of productive landscapes and the various benefits of utilitarian exploration of nature is obvious to the majority of the population. From a landscape architect's perspective he always wondered if humans can transfer foraging into an urban realm and apply knowledge of local biodiversity and the foraging potential of nature to design a new urban environment.

For more than 99% of human history people have lived in hunter-gatherer bands totally and intimately involved with other organisms." (Kellert, 1995, p. 32) "The needs of our ancestors were the same as ours: to find adequate food and water and to protect themselves from the physical environment. We now seek these amenities in a much wider range of environments and by a broader army of means then our ancestors did." (Kellert, 1995, pp. 140-141)

Most of the current world population live in mechanized and urban environments, but as a societal whole still continue (in a fashion) to forage for food, minerals, oil, gas and other valuable resources all around the world using extensive industrialized methods of extraction. With a growing urban population and competition for resources it is becoming necessary to develop more efficient methods of foraging in all regards. It is possible to view the 'Biophylia Hypothesis' as a reactionary acknowledgement of current global circumstances.

"Biophylia states that we should view urban environments from the perspective of an animal that has modified them according to preferences inherited from its distant past." (Kellert, 1995, p. 140)

Biophylia is a particular direction in anthropology that takes into principal consideration values of nature and our genetically inherited reactions to the environment.
The urban population of our planet is almost entirely dependent on the countryside to provide us with necessary resources.
"A recent study of London's ecological footprint found, for example, that the land area needed to support this city of 8 million was nearly 300 times the physical size of the city itself." (Coverley, 2010, p. 10)

It has become obvious that many animals and plants are already fully adapted to live in the urban environment; conversely cities have also become a fertile foraging ground for human beings. The scale and type of urban foraging can be very diverse; ranging from harvesting edible and medicinal plants for private use, to community groups dealing with fruits collection and utilization on a city scale level. Urban foraging for food or materials exists in multitudinous forms and it is important to acknowledge all of them, but my focus remains concentrated upon the small scale foraging of individuals that deal with the exploration of the urban environment through various psychogeographical activities.
Cities, hidden places, undiscovered areas, streets, parks, roads and construction sites have become new destinations for 'urban hunter-gatherers'. Various pressures including the decrease in arable land, expanding urbanization and an increasing shortage of natural resources, a new cultural phenomenon is emerging in our cities.
There are already a great number of useful plant locations and flora in our cities. Landscape architects can study and use pre-existing urban landscape while employing the potential to modify public green spaces; wildlife corridors and vacant lots in our growing urban environment with the aim of extending our foraging grounds into the urban realm.
"Every city can and must find better ways to acknowledge, design within, and profoundly connect with the unique physical and ecological contexts in which they sit." (Beatley, 2011, p. 26)

This new type of thinking about urban design is defined and explored by Timothy Beatley in his latest book 'Biophilic Cities'. Urban foraging as an exploration of the utilitarian values of nature is one of the ways to integrate biophilic design in our cities. In order to implement ideas of urban foraging into planning and design a great deal of foundational work has to be done:

1. Raise public awareness about cities becoming foraging grounds through education and social events.
2. Study local biodiversity - especially wild urban vegetation and the urban ecosystems they spawn.
3. Disseminate information about urban foraging to city dwellers via websites, phone applications, public events and other social media.
4. Promote and support local foraging groups and communities that participate in altering civic areas.
5. Develop a set of guidelines for urban planners and designers that encourage the use of productive plants and versatile wild vegetation that support sustainable local biodiversity.
6. Adjust management plans for public green spaces to allow more diverse vegetation,

decrease level of maintenance and increase the number of foraging opportunities.

Once such changes are engendered, the biophilia hypothesis then emphasises further qualities in cities, which must be considered. Timothy Beatley's headline chapters qualify these as the following: (Beatley, 2011, pp. 45-80)

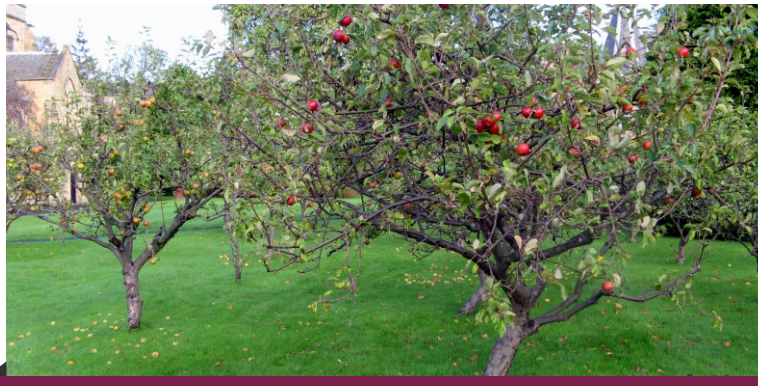
1. Places of easily accessible and abundant nature
2. Rich, textured, multisensory environments
3. Inspired by and mimic nature
4. Exhibit and celebrate the shapes and forms of nature
5. Celebrate their unique nature and biodiversity
6. Actively involved in enjoying, watching, and participating in the nature around them
7. Encourage us to connect with nature
8. Connect us to our climate
9. Invest in the institutions and infrastructure necessary to educate and foster connections to nature near and far
10. Take cues from the larger environment and bioregion

Exploring urban landscape foraging potential and looking at cities as a continuation of our foraging ground humankind can learn a lot about local biodiversity, wildlife and productive landscapes and reconnect with surrounding environment and explore cities and enjoy nature. Further research is required to prove this hypothesis and develop efficient guidelines for urban design and planning. It is also unrealistic to imagine ideas of urban foraging being used without support from the government, city inhabitants and designers.

The gradual change in social and cultural values towards further awareness of sustainability issues is already prominent and landscape architects will necessarily have to follow this trend. Looking at current experiments and case studies that are driven by utilitarian exploration of urban nature, it is possible to begin to test new designs and concepts in collaboration with artists, architects, horticulturists and local people to create bio-diverse, low maintenance, productive, valuable environments.

Edible weeds in Vancouver
Available:
<http://www.flickr.com/photos/urbanwild/573876728/in/set-72157594557353491> Accessed 28 February 2012

Collecting plums in Edinburgh
Author: Ross Pirie



Old apple orchard in Edinburgh
Author: Vladimirs Guculaks, 20 September 2011

Linzergarten edible garden
Available in the book: Susanne Witzgall, Florian Matzner, Iris meder, Kunstlerhaus Wien [2010] Aktuelle Positionen der Naturgestaltung in Kunst and Landschaftsarchitektur, Current Concepts for Shaping Nature in Art and Landscape

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Image References

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Image 5 - Dr. George Washington Carver Edible Park
Available:
<http://www.bountifulcitiesproject.org/gardens/bountiful-cities-gardens/george-washington-carver-edible-park/> Accessed 28 February 2012

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Accessed 28 February 2012

Green Spaces In Polish Modern Cities

Adam Rybka / Poland

Adam Rybka is an Architect, Ass. Prof. and the director of the Department of Architecture and Urban Planning at the Faculty of Civil and Environmental Engineering, Rzeszow University of Technology. He specializes in issues of sustainable development in architecture and urban planning. In previous years, he was participated in the development of research in the field of ecology and architecture. He directed the work of an interdisciplinary research team, dealing with issues of protection of the built environment and its adaptation to changing conditions. The results

1. The development of modern cities and urban spaces.
The development of European cities is no longer depending of the industry. Evolve through the services, as financial centres, control centres, and high technology centres is nowadays trend. In France, England, Germany in the sphere of services works 80 - 90 per cent of residents of the cities. In Poland, the service's work nearly 80 per cent of the residents of Warsaw.

2. Suburb - a New City.
In Poland, cities must to fulfil of several conditions:

- The quality of connections with other centres, the attractiveness of downtown, architectural and cultural attractions, quality residential neighbourhoods, business infrastructure.
  People are moving out of the cities where space is "dehumanised", there is the lack of places where one can relax, find entertainment or just stay with the others.
- The new districts must be developed in harmony, that is, the need to integrate the various elements of public space and green areas. It is necessary to create places where people feel good. This is achieved by giving the architecture the forms appropriate to the local: climate environment, history, geography, mentality of the people.

The ancient Greek philosophers: Socrates, Plato and Aristotle discussed well-being, although it was viewed rather negatively, as they associated it with hedonism or egoism. Well-being has since come to be understood by doctors, psychologists as what is ultimately good for individual. What about the well-being and health of a group of people or of an entire city. Living in the city is a reality for more than half the world's population, with that figure set to rise to 70 per cent by 2050 according to the World Health Organization. Living in cities, there will be neither easy nor pleasant, if today will not start initiated major changes.

Habitat, a UN agency dealing with the problems of population, in the "Report on the status of Cities 2008/2009" predicts that by 2030 will be city dwellers, two-thirds of humanity, and nearly 5 billion people. In the last few decades, those living in cities have experienced a decline in their health and well-being in the European Union. According to the WHO about 30 per cent of adult population has experienced at least one of a series of mental disorders in past few years. The indirect effects of air pollution increasingly cause breathing difficulties, lung and heart diseases. One response to these problems has been the creations of the WHO Healthy Cities Project. It developed out of European policy initiatives in the 1970s and 1980s that changed how people came to thing about and understand health more broadly and coincided with the historic political and social upheavals in Western and Eastern Europe. The Healthy Cities movement is about creating the urban conditions that will allow all a city's residents to live long and healthy lives and achieve their maximum potential. Successful initiative supported by WHO Healthy Cities Project in London was the introduction of a congestion change in 2003 to enter the city centre for bicycle users.

3. Sustainable development of green spaces in Poland as the parks of the second generation.

After the Earth Summit in Rio de Janeiro in 1992, designers departed from earlier exploration of formal and philosophical. A new generation of parks, maintained in the spirit of sustainable development, which very simply be described as environmentally friendly. This trend was parallel to postmodernism, much more congruent with the Polish conditions. Much of the eco-park was established in deprived areas, and requires deep structural changes.

These types of assumptions built in the last 10-15 years, surrounded by degraded both in terms of landscape and society. Form part of the revitalization of urban areas. This shows that access to green spaces is not perceived in terms of luxury. The proximity of green areas and sports facilities and equipment becomes an important element of the strategy for the prevention of social pathologies, improving health and improving the attractiveness of the area, also in terms of investment.

4. Shaping and maintenance of eco-parks - current trends in Poland

Modern Polish parks represent one of two types:
- The park (mostly downtown) of a prestigious, highly integrated with the surrounding modern architecture, characterized by geometric way layout of space,
- Park (usually located outside the centre) in the spirit of sustainable development, possibly integrated with urban greenery. This was Combines elements of post-modern principle of minimum interference in the ambient natural environment and cultural heritage.

The concept of eco-parks is assumed to be minimal effort to establish and care, which aims to increase their popularity and restore the balance between development areas and green areas. In the process of their formation can distinguish several patterns.

5. Minimum interference in the cultural landscape and the natural landscape is needed.

The new urban parks are usually set in the areas of recovery, previously occupied by industry, military and communications. These functions were written in the tradition of the place, and therefore in the transition process tends to leave the characteristic forms of terrain, buildings, or remains of the machinery, are in good condition.

way, are established trails and points of observation of animals that are used in various educaprocesses of nature while you wait to change the function or the main user. Nature itself begins to regenerate degraded areas and plays on them such plant communities, which are able to adapt to local conditions. Over time, develop more complex ecosystems, often much more valuable in terms of natural and artificial planting of a garden centre. This type of green leaves as one of the distinguishing features of the eco-park, just adapting it to the requirements of utility. By the way, are established trails and points of observation of animals that are used in various educational programs?

6. Including the park in a network of ecological relationships is needed.

According to the principles of landscape ecology aims to create or leave as the largest green space, linked by a system of ecological corridors. Natural wealth of the park depends largely on its surface and shape. Better qualities of the park will have a special, compact shape, similar to the circle, because it preserves in its interior a more demanding species of plants and animals. Stretched areas, with a long coastline, are vulnerable to negative external effects.

Rzeszow, Poland. Former here was mined gravel for construction, currently, green and recreation area. Photo author.

7. One needs to include local communities in the design and use of the park.

Establishing a dialogue with local communities and consultation management program at the

Rzeszow, Poland. Former, here was Wislok river flood plains area, nowadays, green area. Photo author.

design stage or planned changes may therefore reduce the risk of errors and speed up the creation of tomorrow's emotional bond with the terrain.

In this context of increasing population included in the design and organization of the park.

In some parks in the simple beauty and cleaning are involved local residents, especially pensioners. In this way, creates a feeling of collective responsibility for the park and maintains a culture of use of space.

8. It is important to the safety use of green space.

The sense of security is to prerequisite for acceptance of each site, especially the park. For this reason, the spaces are often fenced and locked at night. Bicycle paths shall be carried out regardless of the pedestrian, which must be well lit and away visible. Larger clusters of shrubs were surrounded by low barbed-wire entanglements of the species to serve as refuges rather than pathology. Effective or prohibition of dogs, or they are separated for special runs, respectively, kept clean.

9. Conclusions

Today's Polish parks are public spaces, extremely important for the image of the city and well-being of its inhabitants. It is noted a clear trend to increase their number and connect to their network of green routes for pedestrians and cyclists, in a coherent system of nature. Increasingly, in Poland, there are eco-parks,

which significantly more were suited to local conditions. It connects to because of the tendency to reduce the costs of implementation and maintenance of parks by treatments gardening costs reducing. Very important thing is the ease and flexibility of the program development. Main problem is to Integrating people into the process of leisure.

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Recovering Multifunctional Open Spaces In The Contemporary City

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This approach brings up the urban multifunctionality of open urban spaces and reflects on the importance of the ethical issues, concerning the Nature and Culture.
It starts with the definition of rossio, an open urban space Portuguese typology, discussing its location, form and functions; move towards the importance of rossio in the context of the historic and contemporary city; and ends with the explanation of its potential for today's society. The aim is to value this singular open space, to argue for its adaptive capacity in the improvement of our cities, and to underline its character as a fundamental urban unit.

As described by Marques (1987), the rossio is an important open space, present in urban Portuguese spaces since the Middle Ages. This traditional open space typology has singular attributes, namely the dimension, the spatial emptiness and the capacity to join at once various functions. Along centuries the rossio has been the largest and emptiest open space (several acres without impediment), the most multifunctional (express in the tendency for accommodate multiple functions and activities), and the open space more valorized in the collective memories (Freire, 1999). As suggest by Freire (1999), the size, the emptiness and the location are determinant for its occurrence and maintenance along the time:
-The large size and the empty space express occurrences link with the utilitarian vocation (used for agriculture, for commercial exchanges), related with extraordinary events (as the cultural, civics or recreational, involving people masses) and also with the easiness assurance for build up;
-The peripherical location (originally in the transition urban-rural, outdoors the walls and near a city door, and later between the historic and the contemporary city), together with the large size, valid the utilitarian vocation. Such low areas (and, as a consequence, more wet) express the agriculture vocation, which included several rented lands for agriculture. The commercial activity (animal markets, annual or mensal fairs) is also explained by those attributes, which privileged the empty space near the door.
As a result, the rossio is an unusual open space - in size, form, function and meaning. The spatial characteristics underline the extraordinary character and versatile utility.

In the origins its functions were mainly productive and commercial. It was been used for agriculture, for commercial exchanges, and most recently for sociability and for city expansion. It was also appropriated for other functions, always revealing the social nature of space and ability to adapt to new functions, namely some particular cultural evens and sport activities, increasingly valued. Meanwhile the agricultural vocation has been lost and the rossio has been basically a space of exchange (markets and fairs) and a meeting point for people and parking.

Today the space is above all a fragmented void, significantly reduced, with an increase meaning of the 'ideal void' to receive equipments, builds and others constructions spatially disconnect (schools, cultural centers, urban parks, commercial areas, sports constructions, parking areas, new quarters). The residual empty space is exceptionally used for cultural actions, commercial activities, sports or others events, and during the most part of the year is appropriated for parking. Thus a residual space globally de-characterized and de-qualified.

Along the centuries, the perepherical location and the size of the rossio turns it into central place, which is reaffirmed today in the context of the contemporary city. Thus, such continuity (temporal and spatial) makes the typology a fundamental reference in urban areas - an empty space fundamental to societies, which used and maintained them.

Its patrimonial value is related with the important authenticity of the urban/rural context, with the image of historical cities and with the structuring participation in the development of the urban centers.

Over the last century, urban planning and heritage policies favored the accommodation of specific activities and functions, often with

Rossio of Alvito

This functional specialization and spatial dispersion, devalues the multifunctional essence of Mediterranean landscapes, so well explain between others authors by Ribeiro (1987), and the relationship established by societies for centuries. Thus, we defend the need to think the uses and the users needs in a multifunctional perspective.

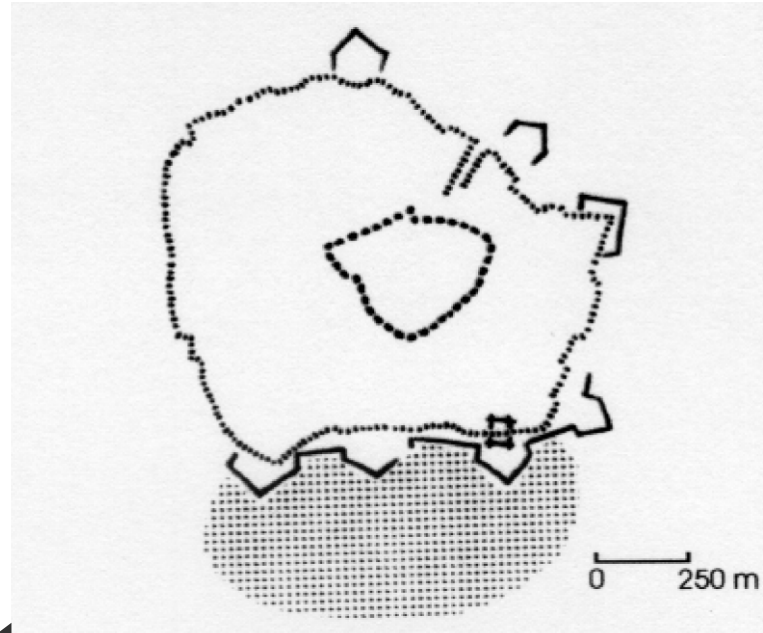
Today cities have varied urban fabrics, differently characterized by the mode of articulation and differentiation of its constituent solids and voids (Choay, 1992). The global fabric includes the historic and the contemporary city. Some urban spaces have exceptional urban units, with incomparable multifunctional capacities, as the traditional urban typology present in urban fabrics in Portugal. As we explained, the main characteristics of the rossio, remarkable in the city live and city transformation turns the typology with great potential in the development of contemporary cities, which is sustained in two aspects:

- The urban open space is the space of physical, ecological, social and cultural continuity. This continuous and hierarchized structure, as to respect the site ecology, the history and culture of societies;

- The exigencies of today society have an exceptional dynamic and an ephemeral character.

The historical value of rossio, together with the singular spatial characteristics (the location, low lands, large and multifunctional void spaces), express an enormous potential, to congregate different requirements (activities, functions, values), especially linked with the ephemeral or transitory character of today's society. Spaces with such characteristics and with such adaptive capacities seem to be crucial for ensuring the dynamic and exigencies of contemporary urban spaces. The resilience of the typology may ensure diverse opportunities for urban living. It may include space for leisure time, for urban agriculture, for gardening, for commercial activities, cultural and civic events and also parking.

Évora, Rossio



Évora, the rossio outside de citywalls

As so, we are defending the recovering of a true porous space – natural and cultural - for water and air flowing, for people circulation, for happening distinct functions and activities. A polyvalent unit surely important for the global structure (ecologic and cultural) as defined Magalhães (2001). Thus, this recovering brings about the ethical issues - towards the nature and the Culture.

A combination of domains - make clear through the spatiality, the functionality, the void atmosphere and in the ecological and cultural meaning – that are suggestive of integrated innovative and sustainable solutions for how to design, plan and manage today cities, in the context of the most ephemeral urban sociability.

Rossio of Estremoz

Rossio of Évora, XVIII.

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Urban Regeneration As Driver Of Adaptive Capacity Of Cities:

Comparative analysis of Norwegian, Portuguese, Spanish and British approaches by Central Governments

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Abstract

The urban built environment creates an intricate web of linked neighbourhoods, combining high inertia in spatial, policy and governance structures with rapidly changing functionality and uncertain futures in climate, demographic, socio-economic and other urban challenges. Upgrading the sustainability of urban areas needs to take place through holistic and integrated projects, linking structure to agency in a multidimensional manner. Urban regeneration instruments can play a relevant role to achieve this goal.

This article analyses urban regeneration scenarios in four different European contexts with very different urban policy traditions: Norway, Portugal, Spain and United Kingdom. It compares how their respective Central Governments are introducing and implementing "methodologies" for action in urban areas, based on innovative and flexible instruments to improve urban neighbourhoods, creating capacity and added value for future resilience.

The comparison between the Norwegian, Portuguese, Spanish and British cases underlines the common problems and the successful approaches in enhancing the adaptive capacity of cities through urban regeneration. This work forms part of the COST TU0902 Action Assessment Technologies to Support the Sustainable Development of Urban Areas (2010 – 2013) (http://iaforcities.com).

Keywords: Urban regeneration, integrated approach, multi-level governance, local governance.

1. Introduction

In principle, cities can offer greater impacts in the resolution of social and environmental problems than rural areas. With good governance, they can deliver education, health care and other services more efficiently than less densely settled areas simply because of their advantages of scale and proximity (www.unfpa.org/pds/urbanization.htm). In environmental terms the city can be seen as both the defendant and victim and it is this characteristic that makes it a priority area of intervention for the environmental and cohesion policies (Rode et al, 2011).

The Leipzig Charter (2007) specifically states that "our cities must also be able to adjust to the threat posed by climate change. Well-designed and planned urban development can provide a low-carbon way of accommodating growth, improve environmental quality and reduce carbon emissions. Cities can achieve these outcomes through innovative prevention, mitigation and adaptation measures which in turn aid the development of new industry and low carbon business"(Leipzig Charter on Sustainable European Cities, 2007). While local and regional context may vary in terms of climate, geography, a wide range of socio-spatial and socio-economic indicators, common drivers, and also barriers can be identified in order to develop better financing, information, regulatory and planning instruments (Wyckmans et al 2012). Integrated approaches toward sustaining the 'health' of cities necessarily considers all of these factors in order to holistically address multi-level urban decline. As such, integration can provide an important context against which urban regeneration practice may be evaluated.

European national governments have developed different approaches to address urban decline through the years. Some of them have been very proactive, implementing urban programmes to tackle social and environmental problems from the sixties, while others have not developed explicit policies until the last decade. At the moment most of them are implementing urban policies to spur transition towards more sustainable urban futures. In the most vulnerable areas, urban regeneration instruments can also introduce innovation and flexibility in planning systems so as to start processes of capacity building in the cities.

This paper addresses urban regeneration approaches that have been developed in Norway, Portugal, Spain and United Kingdom by their respective Central Governments during the last decade, in order to understand how they are

enhancing adaptive capacity in cities, and the similarities and differences in which they are tackling common challenges.

This analysis is a result of the research undertaken in the framework of the COST Action TU0902 and particularly of the Working Group 4 "Strategic urban planning and governance". Among other activities and participating nationalities, participants from Norway, Portugal, Spain and United Kingdom are studying and comparing urban regeneration practices of their respective countries in order to identify common emerging methods of adaptive management.

Figure 1: This paper analyzes and compares urban regeneration policies in four countries of Europe: Norway, Portugal, Spain and United Kingdom (source: self elaboration).

2. Four national scenarios, four different approaches?

a. Norway: the Cities of the Future programme (2008-2014)

The Cities of the Future programme is the largest national programme addressing resilience, climate change mitigation and sustainable development in Norwegian cities (Framtidens Byer 2012). The programme (2008-2014) was initiated by the Ministry of Environment to improve quality of life in the 13 largest cities in Norway while reducing their greenhouse gas emissions. In addition to four Ministries, local and regional authorities, a wide range of industry, research and educational partners contribute to the programme in co-operation with their respective cities. The programme is based on four pillars in which each city is expected to develop and implement transition strategies across urban sectors, taking into account future environmental and socio-economic changes. The four main sectors are land use and infrastructure; stationary energy use; waste and consumption; and climate change adaptation. Clear timelines, project organisation and financial models are proposed to fully integrate the programme into municipal regulations. Project results (positive and negative) are communicated to experts as well as laypeople in order to build awareness and knowledge. In this manner, the cities become a test bed for combining new technologies, policy and business models to regenerate environmental and socio-economic regeneration.

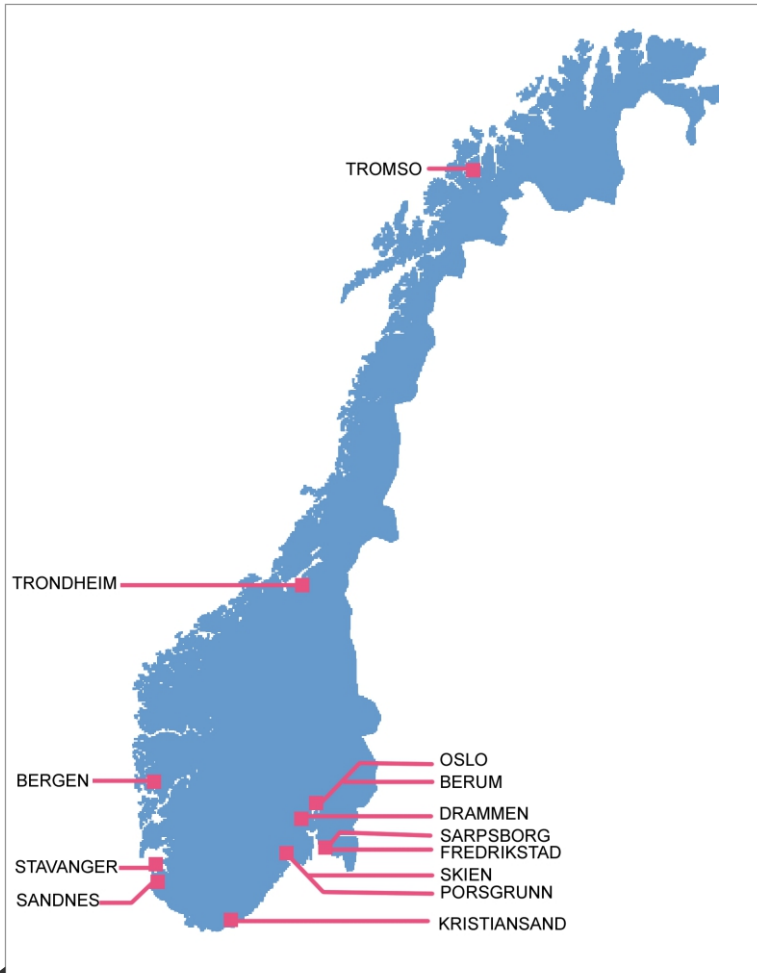

Figure 2: Location of the Cities of the Future Programme (source: http://www.framtidensbyer.no).

b. Portugal: Cities Policy Programme (2007-2013)

The Portuguese Government has established as a priority to develop the capability of cities to become active centres for innovation, competitiveness and participatory citizenship and to improve the quality of life. Taking advantage from the accumulated experience at international level and national level (with the POLIS Program - a program for urban renewal and environmental upgrading of the city that has been running between 2000 and 2008), the current Portuguese urban policy, Portugal Cities Policy - POLIS XXI has been adopted by the Parliament in July 2007 (DGOTDU, 2009). Projected for 2007-2013, POLIS XXI is aimed at strengthening the national urban system, making cities more competitive and attractive to live and work in, avoiding urban sprawl, promoting urban regeneration, improving the quality of public space and built environment, functionality and energy efficiency, modernising infrastructure and service, ensuring social cohesion and employment. Initiated by the Ministry of Environment and Planning and involving municipalities, public and private local and sectoral actors (led by their respective municipality), POLIS XXI programme establishes the following core targets: 60 urban renewal operations; 31 cities and/or networks of cities with Strategic Programmes; 75 innovative urban development projects.

c. Spain: Transforming the Central Government approach towards urban regeneration in the period 2004-2011.

During the period 2004-2011 the Spanish Government undertook activities consisting of the development of acts, propositional documents, networks of exchange, and regeneration instruments (such as the Urban Initiative - Iniciativa Urbana- or the National Plan of Housing and Rehabilitation 2009-2011 -Plan Nacional de Vivienda y Rehabilitación 2009-2011-) for the regeneration of deprived neighbourhoods.

This set of actions was based on a reflection on the urban fabric and revealed a new interest in urban regeneration in stark contrast with the previously passive role played by the Central Administration. The focus and intensity, of this programme of activities had no precedent and made a significant contribution to the practice of urban regeneration in the country.

Indeed, a review of the period 2004-2011 reveals that the action undertaken by the Central Government could be seen as initiating real transformation. It puts urban regeneration in the centre of sustainable urban development in order to make cities more resilient. The development of regeneration projects is based on flexible, strategic, multi-level, integrated and participative approaches where innovation and the capitalization of knowledge are promoted. This action alone can not deliver sustainable urban development criteria in regions and municipalities1 , but it is a necessary step towards change in a country traditionally characterized by a sectoral and non-participative approach in urban policies.

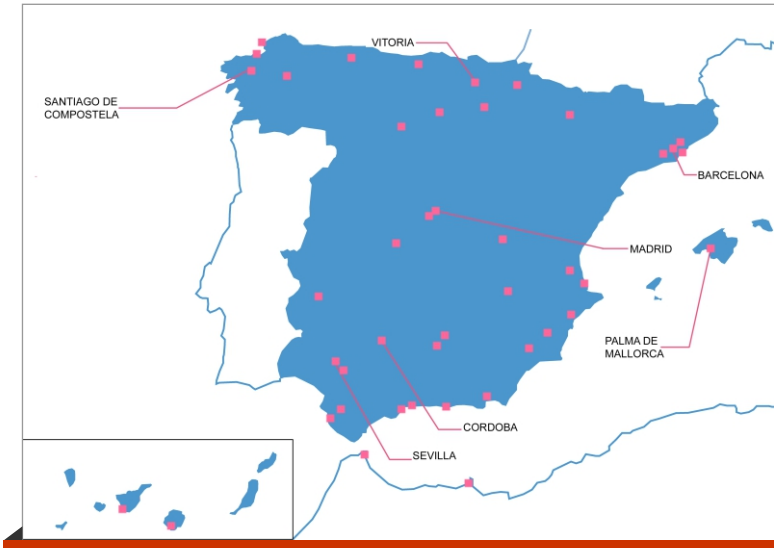

Figure 3: Location of the Iniciativa Urbana Programme (source: self elaboration).

The mentioned Urban Initiative and the National Plan of Housing and Rehabilitation, launched by the Central Government in 2007 and 2009, are based on the URBAN Community Initiative2 reproducing its participative and integrated approach. As in URBAN the most powerful transformative elements in both initiatives are the assumption of the integrated approach (that entails to act in the social, economic and environ-

mental dimensions of urban decline) and the participative and multi-level approach (that aims to transform governance structures in urban policies in a framework of collaboration of the different levels of government, the private sector, the citizens and the local stakeholders).

d. 'Urban Renaissance' and 'Neighbourhood Renewal' in the UK

Since the late 1990's urban regeneration in the UK has been significantly driven by two policy strands - these are commonly referred to as 'Urban Renaissance' and 'Neighbourhood Renewal'. The distinct but broadly complimentary approaches arose principally from the documents 'Towards an Urban Renaissance' (Rogers, 1999) and 'Bringing Britain Together: A national strategy for neighbourhood renewal' (SEU, 1998).

Urban Renaissance emphasised increased densification of urban development in declining towns and city centres as a means to encourage inward commercial investment and urban living. Coupled with a significant focus on design, it sought to achieve this with the creation of high quality and attractive urban environments. This was a distinctly European vision of the city with Barcelona explicitly being heralded as an ideal model. Positive change through good design and the regeneration of urban fabric underpinned this approach. The focus of Neighbourhood Renewal strategies differed somewhat in the sense that regeneration was more explicitly socially-driven specifically targeting deprived neighbourhoods. This was less about material renewal and more about tackling education, worklessness and health, and was in many ways a direct response to the 'top-down' approach to urban regeneration as typified by the Urban Development Corp-orations3 (UDCs) of the previous decade (Deakin and Edwards, 1993).

Whilst Urban Renaissance adopted a relatively targeted approach to city centre regeneration of architecture and public realm, Neighbourhood Renewal incorporated local partnerships (between local communities, local and national government agencies and private industry) as a mechanism to bid for resources to finance more community-focussed regeneration. By including social and environmental dimensions along with the economic, a more holistic approach to tackling urban deprivation was sought.

[1] In Spain the regions and cities have most of the competences regarding urban policy. As a result, the implementation of the Government's vision depends on the political will of decision-makers and practitioners at regional and local level.

[2] The evolution of the Spanish practice of urban regeneration has being highly influenced by the urban policy of the European Union, and specially by its more specific instrument, the URBAN Community Initiative, that was implemented in the country through the development of 39 programmes from 1994 to 2006.

3. Analysis and comparison

The four national approaches toward urban regeneration are firmly embedded within their socio-economic, historical, political and cultural contexts, and so not easily replicated. As a result, the countries analyzed have developed different strategies to promote adaptive urban capacity. They are strongly conditioned by the main problems and challenges addressed in their respective urban systems and by the policy objectives of their Governments. There are two main positions: While Norway has based its actions on a preventive approach, able to enhance resilience and capacity at city level, focusing mainly on environmental challenges (addressing land use and infrastructure, energy, waste and consumption; and climate change adaptation), Portugal, Spain and United Kingdom have developed area-based initiatives that try to overcome ongoing social and economic depravation in vulnerable neighbourhoods, including a relevant socio-economic dimension that is complementary to environmental improvement.

One of the primary challenges identified by this summary of regeneration policies is concerned perhaps not with the individual component parts deemed necessary for sustainable futures, but

their methods of integration. Political culture (at international, national and local levels), institutional architecture and governance combine to provide an important context against which aspirations toward connected integration may or may not be achieved. From this perspective, even if the differences are remarkable, it is relevant to point out that all the countries have developed initiatives that aim to tackle urban depravation from a holistic perspective, integrating social, economic, environmental and management dimensions (even if the social and environmental dimension are promoted in some of them). The integrated approach seems to be understood as a relevant factor in achieving sustainable scenarios at city or neighbourhood level in all the national contexts, despite the potential for multi-level barriers to the integration of sectoral policies (institutional architecture, political culture, inertia towards change, etc.).

Another common element of the approaches and initiatives developed is the integration of mechanisms to transform local governance. In fact, all of them strive to involve stakeholders, citizens and decision-makers in partnerships or collaborative processes of participation in the context of different planning instruments. From this perspective all of them value the role of the communities in their respective regeneration programmes as a means to make a difference to the performance of cities and their adaptive capacity (through the integration of the non-expert knowledge in the urban strategies, the commitment of the community to the projects, the identification of the citizens with their neighbourhoods, the mobilization of local resources, etc.).

The exchange of knowledge and the capitalization of knowledge are common issues as well. In fact, all the initiatives mentioned promote the creation of networks and partnerships for the exchange of experience between the participant cities in order to provide them the capacity to envisage innovative ways to face urban depravation.

Innovation is a central factor of the revitalization and regeneration approaches developed. It is present in all of them, being especially relevant in the Norwegian case, where cities are considered as a living lab for testing out new tools, concepts and technologies. This dynamic conception pursues the adaptation of the methodologies to new challenges.

The different approaches share as well some significant problems. These have to be overcome if urban regeneration initiatives are to deliver adaptive urban capacity and build upon the work achieved so far. For example in the Spanish and British contexts questions remain around the coherence of the strategic framework linking urban regeneration, particularly over the last decade, in providing continuity to the initiatives and to create a clear link between funding and need4 .

The comparison of the four programmes points toward the importance of being able to describe correct and measurable goals, as well as the need for robust scientific but also accessible decision-making tools for urban regeneration projects. In particular, there seems to be a lack of design and assessment tools in practice which really address the synergies and conflicts between quality of life, of built surroundings, and of environment.

[3] UDCs were essentially private planning bodies with the power to grant local planning permissions, compulsory purchase land for development, and to manage the land as necessary for their objectives. Whilst this was deemed necessary at the time to attract private investment UDCs were not strategic plan-making bodies and were also not bound by the strategic plans of local authorities. The partnership approach adopted both in Urban Renaissance and Neighbourhood Renewal policies a decade later sought to address this.

4. Final remarks

The observation of the different strategies implemented in the four national contexts reveals that, even if many of the individual methods, tools and concepts described are in principle transferable to other cities and countries, the reality where urban regeneration is

implemented determinates what is understood as adapting urban capacity, conditioning the methods and contents of the initiatives developed to enhance it.

Nevertheless, the similarities of the visions adopted - based particularly on the adoption of aspirations of: integrated approaches, the promotion of participation, and the flexibility of the methods so as to be adaptive to different local conditions, the networking and exchange of knowledge, and the promotion of innovation-, reveal that the four countries are addressing urban sustainability by assuming common principles of action in the field of urban regeneration. From this perspective, it is relevant to observe that countries without a tradition in urban regeneration policies, such as Portugal and Spain, are developing initiatives of urban regeneration with significant similarities to the British initiatives. The role developed by the urban dimension of the EU policies has been crucial to introducing urban regeneration instruments in the Portuguese and Spanish contexts. This demonstrates the importance of multi-level governance as a factor able for enhancing adaptive urban capacity.

The strategies observed reveal that a coherent framework is needed to test the resilience and adaptive capacity of cities facing grand socio-economic, socio-spatial and climatic challenges. In order to identify synergies and conflicts in otherwise siloed sectors (such as transport, infrastructure, energy, consumption and climate change adaptation), strategic change needs to be incorporated in long term planning policies to avoid 'integration' remaining a theoretical or academic concept. holistic financing models implemented through consistent urban regeneration instruments and strategies, can help avoid lock-ins, provide adaptability to uncertain challenges, and create attractive and competitive cities.

Figures 4: Two stages of the Arouca POLIS XXI Programme (source: Municipality of Arouca).

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Urban Pockets Of Belgrade

Mirjana Jovanović / Serbia

Mirjana Jovanović is landscape architect from Serbia. She graduated landscape architecture and horticulture at Faculty of forestry at Belgrade University.
During studies she vas initiator and participant of many student projects. Most important projects she participated in are "Urban pockets of Belgrade" (2008-2012), "Standards in landscape architecture", "Green roofs of Belgrade" (2001), "Landscape architecture and the city – feel the difference!" (2009) etc.
She was one of founders of Junior Association of Landscape Architects of Serbia in 2008. In 2009. she won Grand Prix as one of the authors of the project'' Urban'' pockets of Belgrade" at The 3rd

Nada Jadžić / Serbia

Nada Jadžić is a landscape architect who with great passion and enthusiasm goes in for profession. Professional motto:'' A God was landscape architect too''.
She graduated at The Faculty of Forestry, Department of Landscape Architecture and Horticulture in 2011. During hers studies with hers colleagues started several projects, of which the most important are: '' Urban pockets of Belgrade", Windy feet'','' Landscape architecture and the city - feel the difference'','' Think globally - act landscapelly!'' , etc.
She is the president and one of the founders of the Junior Association of Landscape Architects of Serbia (PUPA), which promotes the landscape architecture at different levels. Since 2009. she has volunteered as a student demonstrator in teaching subjects Landscape design and Landscape planning at The Faculty of Forestry, Department of Landscape Architecture and Horticulture.

Living conditions in urban environments in Serbia are getting more difficult and burdening for the already tired and weakened city inhabitant. He is overwhelmed, on a daily basis, by different kinds of audio an visual sensations, and forced to spend half of his life in public transportation, traffic jam, waiting in all kinds of lines etc. He wants to spend his leisure time in a comfortable and relaxing ambient. Unfortunately, in city environments those kinds of ambients are getting harder to find, because of poor planning policy, but also because of indifference and passive attitude of citizens themselves.

Efforts of different organizations3, that are dealing with environment protection worldwide, to prevent further deterioration and degradation of, not only natural, but also urban landscapes, effected the development and implementation of efficient measures, that are designed to mitigate catastrophic effects that civilization development could have on future generations. Sustainability is set as a basic concept and guideline for all future actions and development in all segments of contemporary life.

"Urban pockets of Belgrade" is a student project, designed to deal with abandoned and derelict urban spaces, for their activation and improvement to places for relaxation, socialization, play, public art - on sustainable basis. For a project like this to be successful and sustainable, the participation of general public is necessary, and also the participation of experts from different professions and non-governmental organizations that play a role of positive bond between local community and local government.

[1] Project is awarded with a Grand prix on III Landscape architecture exhibition, by a Serbian Landscape Association (SALA) in 2009; project authors: Vesna Gvozdenov, Daliborka Stojakovic, Jelena Radojkovic, Jovana Kovacevic, Lena Madzarevic, Mirjana Jovanovic and Nada Jadzic.

2 Graduation thesis that deals with public participation in project "Urban pocket of Belgrade" is awarded on BELGRADE CHAMBER OF COMMERCE'S TRADITIONAL AWARDS

[3] Intergovernmental Panel on Climate Change (IPCC), United Nations Environment Programme (UNEP), European Environment Agency (EEA) etc.

Brief overview of the project development

Project "Urban pockets of Belgrade" started in 2008, and was, in a way, a reaction to a visit of the National Minister for science and technological development4 to the Faculty of forestry in Belgrade, and a reaction to the Minister's presentation of the National sustainable development strategy. In the lecture about sustainable development, landscape architecture was not even mentioned as one of relevant professions in the field. In Serbia landscape architecture is still seen more as a luxury than as necessity in contemporary way of living.

Encouraged, and partially provoked by this attitude on landscape architecture, seven students of landscape architecture have written a project "Urban pockets of Belgrade" in effort to present the profession and to present potentials that landscape architecture has in field of sustainable development and environment protection.

Awareness that the status of profession in Serbian society and attitude towards it could only be changed by active public participation producing inclusion of this segment in project goals. The project includes the local community, which is directly affected by negative influence of urban development. At the same time, the goal was also to present all richness of landscape architecture as a profession.

The project was presented to Ministers associates and submitted with positive references to the Vračar Municipality in Belgrade. After this stage, the project was successfully presented to local government representatives, and preliminary project interventions at several locations were done.

Preliminary interventions, at first and main

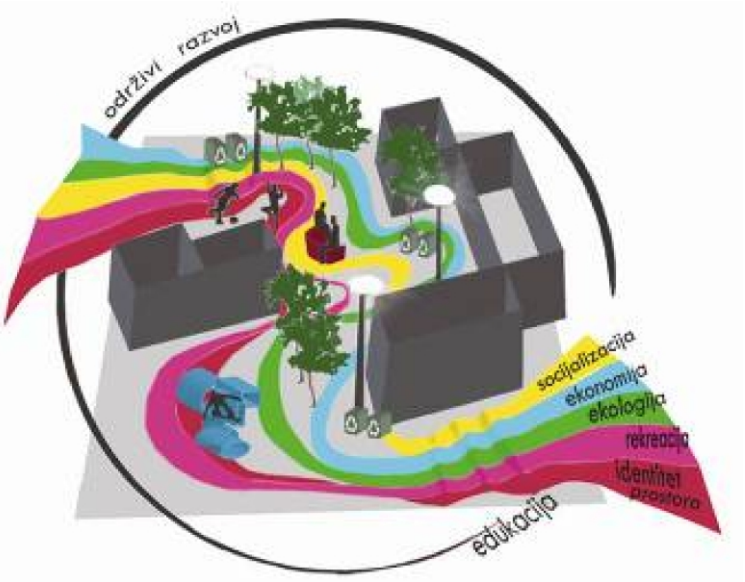
projects after that, were done during 2009 at four specific locations in Vračar Municipality. Those projects were realized during year 2010, 2011 and 2012. After positive experiences working with the authors, local government in Vračar expressed intention to continue with the project in the future.

At the same time with these activities, the project was presented on several different events (exhibitions, public debates etc.). After that, it was decided to imtroduce the possibilities for development of specific aspects of project and for cooperation with different NGOs, governmental institutions and individuals. Development of over 20 new main projects for locations in 12 Belgrade's municipalities and participation of new nine colleagues landscape architects came as a result of a fruitful cooperation with Department for environmental protection in Belgrade, NGOs and the project authors. Linkage of these and some other new green spaces in a comprehensive system as beginning of forming a future green infrastructure, which is necessary component of contemporary urban environments.

[4] Deputy Prime Minister and Minister of Science and Technology of the Republic of Serbia from 2008.-2010., Mr. Bozidar Djelic.

Brief description of project

"The basic idea of the project is implementation of sustainable development concept on reanimation of degraded public spaces and their improvement to places for relaxation, socialization, play, public art etc. The concept of "Urban pockets of Belgrade" implies advancement of economical, ecological and social frame of contemporary urban life through active participation of local community in design and protection of their own environment." (Jovanovic &Stojakovic, 2009). The term "urban pocket" represents public urban spaces, of different dimensions, that could trough adequate design, achieve high ecological, aesthetic and functional value. Most often urban pockets are: abandoned parcels in the block, atriums, neglected inner courtyards, abandoned building development



Urban pocket model
(Jovanović & Radojković, 2008)

parcels, illegal dumps etc. Shortly, urban pockets are all those spaces in the city that one can be called 'no man's land. Those abandoned urban spaces are recognized as city potential that could be developed in several different directions. The result might be, for example, that some old parts of the city could be perceived in a new and interesting way (outdoor theatre or forest in the center of the city). Some of these spaces could, with little effort and investment, became new tourist attractions. By developing these abandoned and neglected spaces, opportunities for remarkable quality landscape architecture designs are made; we just need to listen to the genius loci. Recycled and abandoned spaces could be used as a refugium from the city hustle and bustle, or unbearable urban climate in the summer. At the same time, these are only places where city dwellers could meet with nature.

The basic principles and stages of the project

Model used in project implies development of several different functions and segments of society. Socialization, recreation, economy, ecology, space identity and education, as social functions and segments of society, are realized and developed trough principles of sustainable development.

Local community, citizens who use urban pockets on a daily basis, are in a focus of the project. Their needs and wishes regarding the space, and also possibilities of the specific space are the prism through which future solutions are perceived. It is pointless to create a space for people and that they are not involved in this process, that their identity is not incorporated in the space design. This is especially important if the intention is the one that the people identify themselves with their surroundings and take care of later maintenance. The development of the project involves obtaining detailed insight in the needs of people who are primary users of urban pockets. Identification of users with high quality space, in which they spend their time, also means a positive attitude towards its preservation and will to participate in the maintenance (which is the biggest problem in Belgrade, after the site is finished).

Beginning the project involves the selection of a specific urban pocket, its improvement with the active participation of local populations, monitoring results and ways that people are using the space. This way, newly acquired knowledge and experience can be applied in the further activation of the new urban pockets.

Concept map of urban pocket realization (Jadzic&Jovanovic, 2008)

Concept of the project "Urban pockets of Belgrade" implies that a prerequisite for successful realization of the project is primarily active participation of local communities and local governments, other participants and additional positive reinforcement required for quick and successful implementation. A municipality that chooses to implement this type of urban recycling announces a competition for grants. The budget depends on the model of funding and available financial resources. Assemblies of tenants are entering this contest trough elected representative, usually President of the assembly of tenants.

In the next steps, local community is informed of goals and importance of the project trough series of public presentations and debates. At the same time, landscape architects and decision

Project drawing of a urban pocket in Vracar municipality

makers are conducting surveys with local people involved in the project. Results of surveys give close insight in spectrum of the citizens' needs and wishes regarding some specific urban pocket. Based on those results, and on possibilities of the space itself, landscape architects create specific space design in a form of a preliminary project. The preliminary project is also published in the public debate and subjects to changes, if necessary. After the project is finalized, final design is made, and the site is going under construction. A final survey is conducted one year after the project's completion so the results can be evaluated.

This kind of concept of designing and planning is implemented worldwide for a long time, with positive results 5. One of the project goals is to bring Serbian society closer to European and international trends and standards.

The project received a "Grand Prix" at The 3rd Landscape Architecture Exhibition as well as the Special prize of the "4th Landscape Architecture Exhibition" for graduate thesis "Role of the public in the implementation and realization of landscape architecture projects: Case study "Urban pockets of Belgrade".

[5] City of Copenhagen has a goal to become the city with best urban environment, by 2015 trough improvement of city greenery. Goal is to make possible for 90% of Copenhagen citizens to get to a park, beach or work within 15 minutes of walking. (http://sustainablecities.dk)

Sharing Hassan Fathy's Vision

Elias Messinas / Greece

Elias Messinas is the Founding Chairman of ECOWEEK. A graduate of Yale School of Architecture, Bezalel Academy, holds a doctorate from the National Technical University of Athens, and a post-doctorate from the Technion Institute of Technology. Elias is a practicing Architect and Environmental Consultant, consulting among others the Ministry of Environmental Protection of Israel on 'green' buildings. Elias teaches 'green' Design as an Adjunct Lecturer at the Holon Institute of Technology, Israel. He has published two books on the history and architecture of the synagogues of Greece and numerous articles on architectural and environmental issues. He has lectured widely in Europe, USA, and the Middle East.

HASSAN FATHY (1900-1989): Prize winning architect, often considered as the most famous Egyptian architect, who unlike the architects of the Temples and the Pyramids, he became known for designing and constructing buildings based on vernacular forms and techniques, built of natural materials, primarily mud. Fathy can be considered one of the pioneers of 'green' or sustainable design, in the wider sense: he not only combined craftsmanship, local (appropriate) technology, and low to no-energy construction methods, he also used materials found locally, materials that are natural and produce no waste during construction or after demolition, and addressed the community factor by reviving ancient techniques, and by training unskilled workers as a viable means of employment and sustenance. Fathy also designed his buildigs borrowing from the passive solar techniques of the vernacular Architecture of Egypt, primarily the passive ventilation and cooling methods found in the c.15th Mameluk houses in Cairo.

I came across Fathy's work and his book 'Architecture for the Poor' 2 in 1988. It was the year I graduated from a B.Des. program in Environmental Design, and about to enter a Master's degree program in Architecture. Although Fathy's book was a revelation to me, I did not quite know what to do with it at the time. I purchased the book in the summer 1988 in Cairo, during my first trip to Egypt. Together with a group of Canadian Architecture students, we travelled extensively, vising, among others, Fathy's New Gourna village in Luxor and some of his houses in Giza near Cairo.

One year later, in 1989, just before starting my Master's degree, I travelled to Egypt for the second time. This time I carried Fathy's book with me, and the hope to meet him. I spent most of the time walking the Old City of Cairo, and a few days before departing, I visited the American University (the publisher of Fathy's book). There, accidentally, I met a faculty member, who happened to know Fathy and, who offered to arrange the meeting. The meeting took place on May 13, 1989 one day after my 25th birthday. I met Fathy at his house in Darb al-Labbana, near the Citadel of the old city of Cairo, a Mameluk c. 15th traditional house with an interior courtyard.

The meeting was short. At the end of the meeting, I asked Fathy to sign the book. Also, just before I left, I asked Fathy to share his vision and his insights about Architecture. He reflected for a second and told me: 'Architects have two tasks. The first is to teach the Egyptians to have less children.' The second point was about young architects. He said 'young architects must stop looking and getting their ideas from magazines. Young architects must realize their potential and their ability to influence and benefit their community and society by looking for inspiration from within their community and society.'

This was quite a message to take with me, although it took me many years to understand the meaning. First, I had to understand the population problem, and then to understand the relationship between Architecture and the environment. The biosphere, planet Earth, is hosting about 1.7 million species. However, one species, humankind, is growing faster than the others. Furthermore, its activity, involving the burning of fossil fuels, pollution of earth, air and water, and because of its growing habitation needs, is crawling upon nature, destroying natural habitats, causing distress and extinction of many other species. Humankind is almost 7 billion today, growing exponentially. This growth challenges the ability of Earth to support life in a sustainable way. Further, human ecological footprint, is well beyond what the Earth can support – some countries requiring more than 2 or 3 times what the Earth can provide – for the consumption of food, water, clothing, raw materials, and places to bury waste – creating an unequal (and unsustainable) distribution of resources (and wealth) on Earth.

So, I asked myself: 'is there a way to achieve sustainability?'
In the early 1970s three scientists - Donella Meadows, Jorgen Randers and Dennis Meadows – published their findings based on computer models of human activity on Earth in a variety of

scenarios. In their book 'Limits to Growth'3 they concluded that in order to achieve sustainability three factors are necessary:

a. To limit population growth – which is what Fathy told me when I met him!

b. To define a reasonable level of standard of living which is achievable for the entire planet, and to

c. Replace old polluting technologies with new efficient energy saving renewable technologies.

The task seems simple and straightforward, but since 1972 with the UN Conference on Human Environment in Stockholm, followed by the 1987 Bruntland commission report – published under the title 'Our Common Future'4 – and the Earth Summit in Rio in 1992 and Agenda 21, followed by the Kyoto Protocol in 1997, the COP15 UN Summit in Copenhagen in 2009, the UN Summit in Cancun in 2010 and the Summit in Durban in 2011, we, as humanity, have produced optimism but little significant change, especially in the short term.

ECOWEEK 2012 in Thessaloniki, Greece: for the first time, ECOWEEK experimented in designing and implementing small scale interventions in schools and parks in the city. The team of architect Senem Doyduk (Turkey) designed and remodeled the garden in the courtyard of a public kindergarten. During implementation, both children, teachers, parents and neighbors joined the ECOWEEK workshop team of young architects in the task.
© ECOWEEK 2012

ECOWEEK 2012 in Thessaloniki, Greece: for the first time, ECOWEEK experimented in designing and implementing small scale interventions in schools and parks in the city. The team of architects Dimitris Raidis and Alexandros Kouloukouris (Greece) designed and implemented small scale interventions in a public park in the city. Interventions included a chessboard, seating and playing areas, planting of new trees and bushes, and an exhibit of student art work from an adjacent public primary school. © ECOWEEK 2012

So the task is quite big. So, I asked myself another question: 'where does one start from?'
Architects design buildings, so I decided to look at buildings. Buildings are consumers of energy – about 40% of produced energy - and consumers of natural resources – minerals, water, and wood. In order to influence the way we design and build our buildings, influence our governments and the powerful construction industry and vested interests in the current unsustainable practice of the profession, four steps are necessary:
(a)Increase environmental awareness – at a point where we can influence people's choices and decisions.
(b)Increase social awareness – beyond a mere corporate social responsibility program to a substantial effort for equality in distribution of resources and opportunities.
(c)To promote sustainability as a principle to all that we do – making the design of buildings relevant socially, culturally, environmentally, and economically, and
(d)To create opportunities and incentives for innovation, and for entrepreneurship – especially among young professionals.

The ECOWEEK5 model

Inspired by the vision of Hassan Fathy, and with the mission to raise environmental awareness and to promote sustainability, NGO ECOWEEK was created in Greece in 2005.

ECOWEEK started out as a community environmental event, but soon evolved into a series of international conferences and 'green' design workshops for young professionals taking place in 10 countries in Europe and the Middle East. ECOWEEK programs also include important keynote lectures by, among others,

ECOWEEK 2012 in Thessaloniki, Greece: for the first time, ECOWEEK experimented in designing and implementing small scale interventions in schools and parks in the city. The team of architects and landscape architects Thomas Doxiadis, Despoina Gkirti and Angeliki Mathioudaki (Greece) designed and implemented small scale interventions in a parking lot, serving the adjacent communities also as 'park'. The team intervened in a way as to enable a dual use of the space as both park and parking. © ECOWEEK 2012

ECOWEEK 2012 in Thessaloniki, Greece: for the first time, ECOWEEK experimented in designing and implementing small scale interventions in schools and parks in the city. The team of architects and landscape architects Thomas Doxiadis, Despoina Gkirti and Angeliki Mathioudaki (Greece) designed and implemented small scale interventions in a parking lot, serving the adjacent communities also as 'park'. The team intervened in a way as to enable a dual use of the space as both park and parking. © ECOWEEK 2012

Al Gore, Shigeru Ban, Ken Yeang, Helene-Francoise Jourda, Diebedo Francis Kere, and Prof. David Orr. These speakers together with a team of architects, designers, and landscape architects, who lead the design workshops, inspire and teach young professionals the nuts and bolts of 'green' design while designing real projects in real sites that benefit cities, neighborhoods and local communities around the world.

The principles of Sustainability, Education, and Cooperation run across the entire mindset of ECOWEEK organization and structure, to the point that Palestinian architect Omar Yussef compared ECOWEEK to a forest: 'ECOWEEK is like a healthy forest. It contains the ingredients of a healthy forest, such as biodiversity, mutual support and cooperation.'

Since 2005 when ECOWEEK started its activity in Greece, more than 2,000 young professionals have joined the ECOWEEK workshops and lectures in Europe and the Middle East. The international ECOWEEK network6 numbers today nearly 1,000 members in 30 countries around the world. The ECOWEEK GREENHOUSE7 , the new platform for innovation and entrepreneurship for society and the environment, gives the opportunity to students and young professionals to design real assignments for real clients,

primarily schools, parks, and community buildings. The goal is to implement these projects at low budget for the benefit of the local communities.

The GREENHOUSE is leading projects in Greece and Israel, and will also start activity in Serbia and in other countries.

Since 2005, ECOWEEK is realizing the vision of Hassan Fathy, empowering young professionals and students – primarily architects, landscape architects, and designers – giving them the opportunity to address real design issues, responding to the real needs of communities around the world.

[1] This article was first compiled and presented as a keynote lecture at the GreenAge symposium at the Mimar Sinan Fine Arts University in Istanbul, Turkey in May 27, 2012.

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4. Brundtland, G.H. et at. 1987. Our Common Future. Oxford.
5. ECOWEEK website can be visited at www.ecoweek.org
6. ECOWEEK NET website can be visited at www.ecoweek.net
7. GREENHOUSE website can be visited at www.ecoweekgreehouse.org

Urban Space For Stressed People

Aleksandra Machowska / Poland

Aleksandra Machowska lives in Wrocław, Poland. She studied biology, specialization in botany at Wrocław University, and graduated in 2008 with Master Degree. Since 2009 she has been a landscape architecture student at Wrocław University of Environmental and Life Sciences and at present she is doing her bachelor degree.She did student practices in Polish National Parks as well as in Wrocław Botanical Garden, in landscape architecture company and in Wrocław Regional Environmental Protection Directorate. She took part in workshops organized by both Universities. From September 2011 to January 2012she studied at the University of Copenhagen as Erasmus exchange student.

Abstract

The project described in the present article is the outcome of the Health Design course held at the University of Copenhagen, at the Faculty of Life Sciences in 2011/2012. The purpose of this work is to show how a potential restorative urban environment, where stressed and mentally fatigued people may find peace and restore their minds, could look like.

Introduction

In a contemporary world, where more and more people migrate to cities, serious problem has arisen: inhabitants of urban agglomerations suffer from stress and mental fatigue. Without doing necessary physical exercises, one cannot easily release from stress and that leads to considerable health complications. In addition, people being overloaded with unnecessary information, promptly become mentally fatigued, which unables them to work efficiently.Since stress-inducted illnesses are nowadays a huge global problem, it is very important to start seriously coping with stress. One of methods to help people deal with stress and mental fatigue is to provide them properly designed environments, where they coul spend their time and recover.

Methods

The existing square was re-designed as a restorative environment in the centre of Wrocław, one of five biggest cities in Poland. Three visits to the square were executed in
April and May 2010. During the visits, the square was measured, its condition was described and equipment along with vegetation listed.

Five theories discussed during the course were used, namely:
1. Attention - Restoration Theory

- - ART (Kaplan&Kaplan, 1989) According to ART, natural environment, containing little information to be transformed, enables people to recover from mental fatigue (Grahn&Stigsdotter, 2003).

Kaplan&Kaplan (1998) specified following features of a good restorative setting:

- being away (recovering from mental fatigue requires that one be in some place other than the source of fatigue);
- extent (being a whole different world, that has its own rules and properties);
- fascination (deriving either from interesting places or processes like thinking and doing, eg. watching elements of nature).

2. Perceived sensory dimensions

- PSD (Stigsdotter, 2009)

According to PSD there are eight perceived sensory dimensions in green urban spaces:

Eight perceived sensory dimensions by Ulrika K. Stigsdotter (Nature – wild, untouched, free growing room with a dynamic and intrinsic vitality; Cultural – a room offering an experience of fascination for a lost time; Prospect – a large, open and robust room with vast vistas, offering possibilities for a variety of activities; Festive – a room offering an experience of amusements like kiosks, open-air restaurants and concerts; Space – a room offering an experience of entering a different world; Rich in Species – a room offering an experience of life in form of a vast variety of both animals and plants; Refuge – an enclosed rook offering a n experience of safety and shelter, where one can feel safe; Serene – a silent and calm room that offers an experience of retreat, safeness and being one with nature).

The results of the research show, that the most preferred dimensions are: Serene, Space, Nature and Rich in Species, ranked in order (Grahn &Stigsdotter, 2009). In the present work all of them were applied.

3. Mental Strenght Pyramid (Grahn, 1991; Ottonson&Grahn, 1998)
People, depending on their life situation and mainly on how strong their mental power is, perceive nature very differently.
People coming to a healing garden represent different levels of the pyramid, therefore, we planners should design a setting in a way to please all visitors (Grahn&Stigsdotter).

4. The Prospect-Refuge Theory
– PRT (J. Appleton, 1975) Rooted in evolutionary

psychology, PRT states that the locations most preferred by humans are found at interfaces between prospect-dominant and refuge-dominant
– meaning a landscape containing isolated trees (http://thlandscapedesign.blogspot.com).

5. Selected guidelines for designing restorative environments (Kaplan&Kaplan)
- quiet fascinations - features of the site permitting reflection; coming from the setting itself - eg. sound patterns, play of light or intensity of forms and colours, and from activities
– eg. watching nature and gardening.
- mystery: enhancing the desire to explore a place by applying such elements as acrooked path or vegetation partially obscuring what lies behind (Kaplan &Kaplan, 1998).

The chosen site

The square is 290 m long and 38 m wide, 1,1 ha big. Its surroundings are noisy streets, residential buildings and several stores. It is used by both people from nearby properties and accidental visitors. There grow some Norway maple trees and a few other tree and shrub species. The vegetation is very poor and does not provide enough isolation from the surroundings.

At present the setting is an empty boring place, which does not show any coherency However, it possesses considerable possibilities to offer a fine restorative environment in the middle of the overcrowded city and could give people many opportunities to recover from mental fatigue.

Project

The base of the project was to establish an area offering variety of rooms, where all people could feel better, being as close to nature as possible in the centre of Wrocław.

Existing paths at both sides of the site were left for communication. Another path was created to lead through the area in a crooked line for visitors willing to spend more time on the square. The paths were separated from each other by Miscanthus grasses, providing simultaneously a screen and a connection. There is a possibility to pass from one path to the other.

Using elements like native trees, moss, boulders, water and marshy plants, natural and various surfaces, calming colours, meadow flowers and animal habitats gives people an opportunity to recover from stress and feel close to nature. Creating a social area in cafeteria and playscapes altogether with applying bolder colours lets mentally stronger visitors meet with family and friends, and enjoy spending time together.

It was intended to seclude the square from its surroundings by planting more Norway maples and pollution- and noise-absorbing shrubs (ninebark, snowberry, ural false spirea). Detailed information regarding the ideas and the design can be found in the following figures.

Discussion

Creating restorative environments in overcrowded cities helps people suffering from stress so they can feel better and work more effectively.

This work shows how the potential restorative environment could look like.

There were applied several theories that helped create the setting in a more people-focused way. Many different factors, that impact the visitors' perception of the area, were taken into consideration. The effect is being the re-designed square, which offers people a possibility of experiencing its varied rooms, depending on how they feel and how mentally strong they are. At the same time the site did not lose its communication function. People may decide themselves whether they want to cross the square fast, or stay there longer and profit from its restorative features.

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Outer Space In The Interiors Of Porto.
Green Space Of Porto`s Urban Landscape

Luís Guedes de Carvalho / Portugal

Luís Guedes de Carvalho is a landscape architect, graduated at "Instituto Superior de Agronomia", in Lisbon. Still during his studies and shortly after, Luís worked with landscape architect Joao Nunes for four years at PROAP. In 2002, he established himself as a freelancer landscape architect in Porto. Since 2009, he is the leading landscape architect at AtelierBBV, and is also an Invited Assistant at Faculty of Sciences of Porto`s University. In 2009 (Chaves) and 2012 (Aveiro), two of his projects were awarded with the National Prize of Landscape Architecture.

Francisco Guedes de Carvalho / Portugal

Nuno Miguel Saraiva Lima Leite Costa is a landscape architect, graduated at Faculty of Sciences of Porto`s University. His academic internship was completed in the Ostengen Landskapsarkitekter & Bergo Office, in Oslo, Norway. Nuno also completed a Diploma of Advanced Studies in Planning, Environment and Sustainable Development in Faculty of Sciences of Lisbon`s University, and first worked with AtelierBBV on a proposal to the competition "Rehabilitation of Public Spaces of the Natural Reserve of Dunas de S. Jacinto", in Aveiro, which was awarded the first prize. He is today

Nuno Miguel Saraiva Lima Leite Costa / Portugal

Francisco Guedes de Carvalho is an architect graduated at the Escola Superior Artística do Porto. Prior to the founding of AtelierBBV with the landscape architect Luís Guedes de Carvalho, Francisco worked under the coordination of architect Álvaro Siza, on the Strategic Plan for the Development of Cidade Velha in Cabo Verde, as well as in the project for the restoration of the local cathedral. Francisco is also an active pianist and music teacher, holding, since 1997, the Master Degree in Piano Performance from DePaul University in Chicago, where he studied with the pianist

This paper was presented in the seminar "Sustainability of Urban Renewal Operations" held at Porto`s Customs Building on December 5, 2010, then entitled "Outer Space in the interiors of Porto. Green space of Porto`s Urban Landscape".

Its purpose was to centralize the study on a reflection over the gardens and outdoor space within the blocks of Porto City Center, hidden spaces of Porto`s urban landscape built in the priority intervention area of urban regeneration of Porto City Center.

In addition to an analysis of the current situation and characteristics of these spaces, it also consists on a speculation about solutions for their use as a public space within an urban regeneration.

The large green area "hidden" in Porto, a potential benefit in the process of Porto`s urban regeneration, threatened by increasing land use for areas often built for parking lots, is the primary concern of this paper and the starting point for discovering the metropolitan landscape.

This concern comes to the idea of "Adaptive capacity of cities", as it is intended to demonstrate how to harness the potential of underutilized spaces in the area of intervention making them functional as true "public" spaces.

Porto is a city with 41,5 square kilometers and a population of 227,790 (National Statistics Institute Census 2005). It is part of Porto`s Metropolitan Area, comprised of 14 municipalities, covering an area of 1575 square kilometers and a population of 1.500,000 inhabitants (National Statistics Institute Census 2005).

Overlooking the Douro River, Porto is one of the old cities in Europe, with a Historical Center ranked since 1996 by UNESCO as World Cultural Heritage.

"Porto Vivo, SRU" - Urban Rehabilitation Society of Lower Porto, is a company with public funds, owned by the Portuguese state and the Municipality of Porto, created with the purpose of leading the urban regeneration process of Downtown Porto.

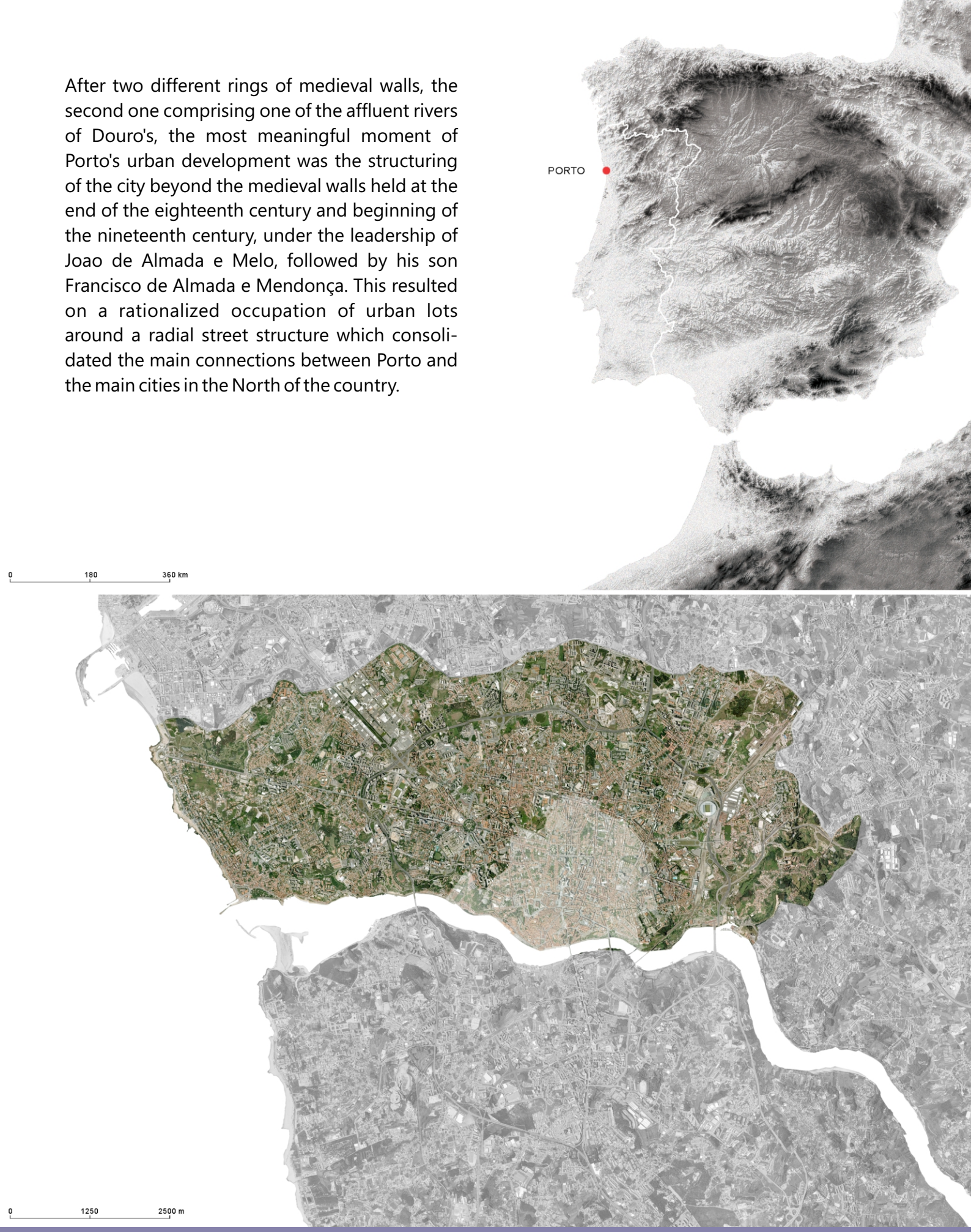
"Porto Vivo, SRU" has, as an area of intervention, the Critical Area Urban Recovery and Conversion (ACRRU), with about 1000 hectares, or about a quarter of the municipality of Porto.

For operational reasons, it was enclosed a smaller area called the Priority Intervention Zone (ZIP), with about 500 hectares, which will focus the efforts of urban renewal.

The ZIP encompasses Porto historical center (classified as a World Heritage Site), traditional Lower site of the city and substantive areas of the parishes of "Bonfim, Santo Ildefonso, Massarelos and Cedofeita", corresponding to the growth of the city in the eighteenth and nineteenth centuries.

The city of Porto is known to have developed from a Celtic fortified settlement, originally located over one of the steep granitic hills which contain the passage of Douro's River at around 5,700 meters from the sea. The development of the city was in great part due to the favorable location for crossing the river, since this became one of the important nodes of a Roman way that eventually consolidated the role of the city as one of the most important in the North of the country.

After two different rings of medieval walls, the second one comprising one of the affluent rivers of Douro's, the most meaningful moment of Porto's urban development was the structuring of the city beyond the medieval walls held at the end of the eighteenth century and beginning of the nineteenth century, under the leadership of Joao de Almada e Melo, followed by his son Francisco de Almada e Mendonça. This resulted on a rationalized occupation of urban lots around a radial street structure which consolidated the main connections between Porto and the main cities in the North of the country.



Iberian Peninsula image font: SRTM - USGS (2004), Shuttle Radar Topography Mission, 1 Arc Second scene, Unfilled Unfinished 2.0, Global Land Cover Facility, University of Maryland, College Park, Maryland, February 2000; Porto image font: Google Earth; Image treatment: Software Adobe Photoshop CS5 2010.

Due to the commercial pressure over the street limits, and also to the technical limitations of the wooden structures used for the separation of each floor and for the roofing itself, the typical urban lot that came out of the Almada's urban expansion policy was about 5.50 meters wide, and had a depth of about 100 meters from the street limit into the interior of the quarter. Of these 100 meters, only the first 30 near the street limit were occupied by building, being the remaining 70 left for use as private yards.

At its origin in the late eighteenth century and early nineteenth century, the Almada's urban expansion of Porto resulted in a structure of quarter's whose lots had only about 30% of its total surface built, remaining the other 70% as permeable green areas.

However, with the industrial revolution and the increasing number of small urban industries, as well as the growing importance of the car in the city, these long backyards were progressively occupied by small industrial shops, at first, and by garages and parking facilities which compensated the ill preparation of the eighteenth century city for the pressure of the car in the late twentieth century.

Parallel to this phenomenon was the economical decaying of many of the nineteenth century bourgeois families which led to the division of the about 550 square meters lot into many small parcels for building and renting to economically deprived tenants.

Although nowadays this division of the large bourgeois lot in Porto's city center is pursued inside each building, resulting in complex restoration architecture exercises, in a first moment this division of the lot was achieved by building small houses along the remaining 70 meters of yard behind the main house, which resulted in narrow streets that ensured access to each house. This urban phenomenon became commonly known as «Porto's islands».

Porto image font: Google Earth.
Image treatment: Software Adobe Photoshop CS5 2010.

As a result of these 200 years of development of one of the most significant models for urban expansion in Porto's history, what was initially a structure of quarters with 70% of their total area green and permeable, became now a problematic gathering of densely built quarters with only about 30% of their total areas free of building, and not always permeable due to the needs of their paving.

The fundamental argument for the present study lies upon an objective study of the public space conditions within this urban frame that came out from the Almada's urban expansion policies. Both in what concerns natural solar exposure, as well as sound comfort, one verifies that the interior of these quarters has always been the most favored outer space within this urban structure.

The claiming of these inner spaces of the Almada's urban quarter structure for the cities' public space, as well as the restoration of the original ratio of 70% of green area within each quarter, are the essential purposes of the 4 scenarios produced as a result of this study.

First Scenario – The union of lots and establishing of inner streets: This is the least radical possibility, and is based upon the idea that the union of lots which communicate with the street at different sides of the quarter will allow the creation of corridors within the yards that can be crossed as inner pedestrian streets, as long as the organization of the ground floor of each extreme permits some level of permeability with the public space.

Second Scenario – Public Squares; If the union of lots is not the most practicable solution, the creation of public squares in the deep interior of the quarter, which eventually are united and communicate with the limits of the square

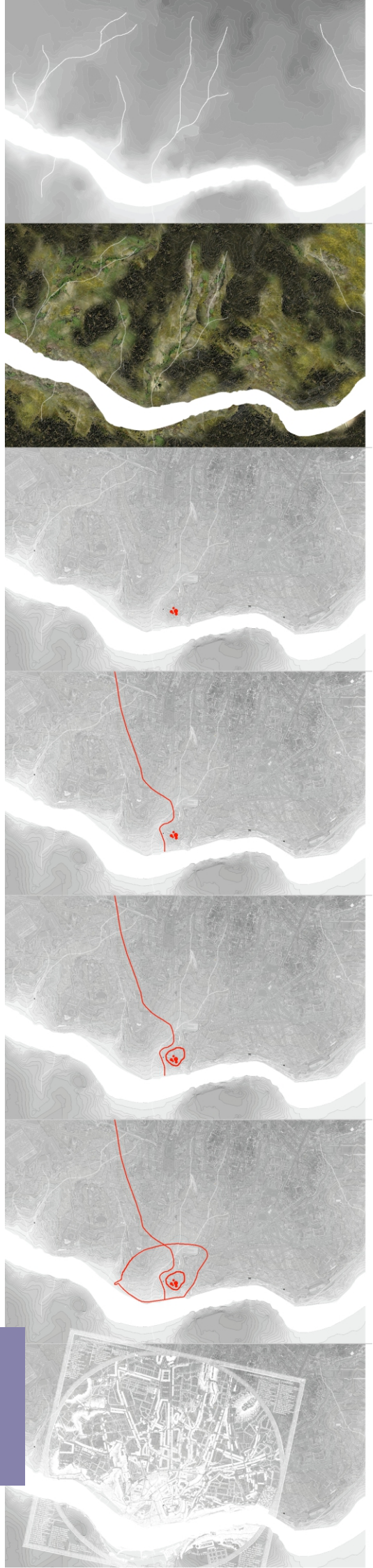


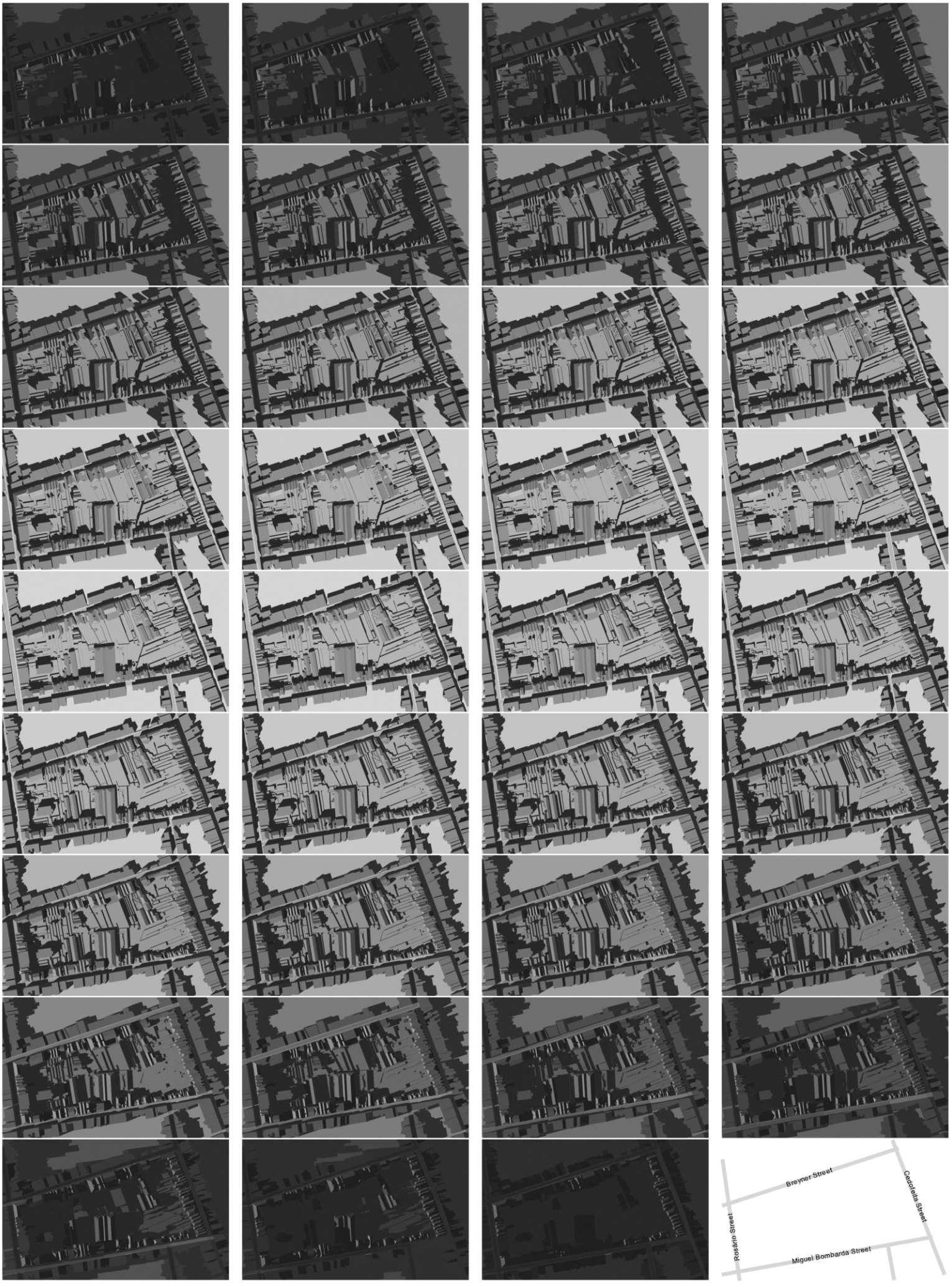
Image 3 - Porto image font: Google Earth; Historical data font: Ferrão, Bernardo José, 2007. Projecto e Transformação Urbana No Porto Na Época dos Almadas. Porto: Faculdade de Arquitectura da Universidade do Porto; 3G Image font: Balch, George, Planta da Cidade do Porto, 1813, Colecção do Museu Nacional de Soares dos Reis.

through the yards of the lots which are prepared to allow the communication with the street is another, more radical, hypothesis to bring out the interior of the quarter to the public space.

Third Scenario – Green Park: A more radical renewal of the eighteenth/ nineteenth century quarter would imply the fusion of the original 70% of each lot that was reserved for use as a backyard, transforming the entire interior of the quarter in a public green park. This rather large project would depend of an absolutely new approach to the built frame of the quarter, whose value would increase largely due to its new relation with the city.

Fourth Scenario – Agricultural Park: Still more radical than the previous is the transformation of the inner quarter into an agricultural park whose production would serve directly the commercial occupation of the ground floors which communicate with the street in the quarter's frame. This solution would increase even more the value of this built frame, opening the way to the feasibility of this renewal.

Topographic information font: Survey, 1:2000 scale, Porto City Council; Image treatment: Software Autodesk Autocad LT 2010 and Adobe Photoshop CS5 2010.



Brewer Street
Caddetels Street
Rosário Street
Miguel Bombarda Street

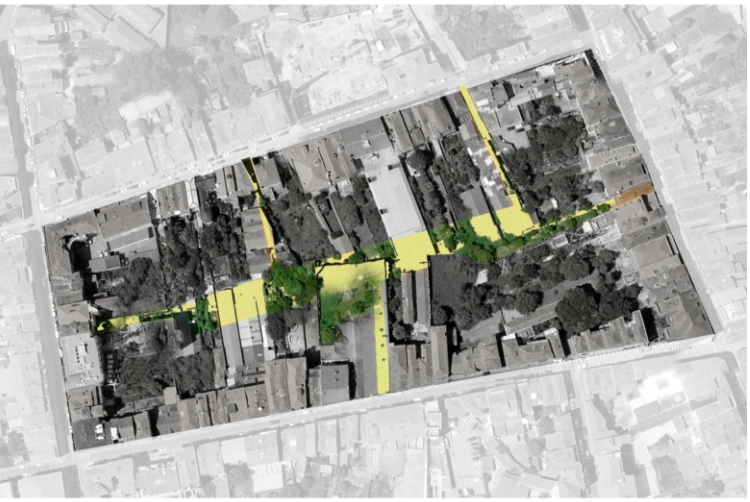


Image base font: Google Earth.
Image treatment: Autodesk - Autocad LT 2010 and Adobe Photoshop CS5 2010.

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Landscape And Heritage: A Sustainable And Resilient Model For (re)designing Cities

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Abstract

This article will contribute to the discussions on the developing process of cities` construction in relation to the territory. We will argue that urban spaces should be (re)design on a regional scale by prioritising landscape as the ruling force in the analysis and planning of contemporary cities. The rules and limits of a landscape together with the forces of nature and its heritage values will be considered when striving for the long-term goal of developing a new urban landscape, socially-cohesive and ecologically-balanced.

The condition of contemporary landscape and the process of urban planning and designing

The crises affecting our current socioeconomic systems highlights the crises felt in the models for territorial organisation and urban planning. The dominant economic criteria ruling the territorial organisation and urban planning systems manifest themselves in fragmented and undifferentiated landscapes, in cities socially and environmentally degraded, and in the abandonment and destruction of heritage. Rapid, intense and overarching social and territorial changes make urgent a fundamental rethinking of the concepts and models for designing landscape and cities.

Our current landscape originates from a historical process which successively explodes urban limits. First, we could find traditional and historical cities. This was the compact city model characterised by a logic of continuity, multi-function and reduced mobility within the city. In this model, centre and limits were precisely defined and there was a symbiotic relationship established between city and the farming lands. This type of city formed a harmonious and balanced unit. On the other end of the scale we have an emergent city model. This model is characterised by the explosion of the city's limits and a dispersion of uses for the soil together with the spreading of activities and populations over the territory. This is the model of the diffused city where stable and clear urban limits are absent, the building tessitura is broken and its density rarefied. Increased dependency on cars and a deficit in infrastructures and urban designing is also typical of diffused cities. Dilapidation of natural resources, territorial fragmentation, a loss in biodiversity and a disrupted relationship with its surroundings, are all additional contributing factors to the unsustainability of the diffused city model [Rueda, 2000].

The explosion of limits in diffused cities has affected the overall understanding of urban systems, the models for territorial occupation and organization and the traditional contents covered by urbanism. The conventional definition of city as consisting of dense and continuous centre with precise limits, together with its associated designing and planning models, is no longer suitable [Portas, 2004]. A new classification must therefore be found to identify, interpret and intervene in the new urban configurations. Secchi [1999] considers 'contemporary city' as the most appropriated classification for this new urban concept which jointly integrates the traditional, continuous and compact cities together with the extensive and discontinuous diffused cities. For Secchi, a new planning model is required for contemporary cities. One that replaces the characterisation through key opposing concepts (urban/rural, centre/peripheries, concentration/dispersion and so on) with a reading of the city as a joint interconnected unit made up of many inseparable parts. According to this model, cities interdependently combine natural and agricultural systems, that is their hinterland, from which they are inseparable.

Emerging concepts and trends: presumptions for intervention strategies and design practices

The new urban form (whether more or less continuous or dispersed, but interconnected) depends on the relationships and associations established between the constructed and non-constructed spaces (the rural and the natural, but with infrastructures, spaces). Its workings will be considered within ecologically and culturally more complex contexts. An up-to-date analysis of city and its construction will require a joint (re)reading of the cities' spaces [Baista, 2009, p. 88; Costa and Batista, 2011]. Rethinking and act-

ing on the new urban territories will therefore be transferred from a local to a regional scale. This notion accepts the development of the city so that it potentially loses its limits and expands into the territory. The process of urban expansion adopts, moreover, landscape as a model for urbanism [Corner, 2006; Reed, 2006, p.31] by integrating and highlighting the ecological principles and natural processes when designing and planning the city [McHarg, 1992, p.55; 1997; Hough, 2004, p.23].

By taking into account the working logics of agro and ecosystems, urban spaces will in the long term benefit from flexibility and stability. Conciliating socioeconomic with ecological interests will prove beneficial for both population and Nature [Forman, 2004, p. 47; 2001]. This is a new urban and systemic design, a new model of urbanism orientated for the landscape. It covers the values and activities of city and countryside, and promotes a relationship between the different spaces aiming to re-establish the unit urban-rural. It brings urban, natural and traditional farming systems together in order to configure a new sustainable city. A new dimension of landscape and urban designing will invest in the sustainability of local and global urban systems and in their multiple dimensions (ecological, aesthetic, cultural, socioeconomic and institutional).

Contemporary cities are now defined by the reality of their regions and landscape. Landscape intervention becomes therefore another 'problem' for the city. Here, landscape intervention will aim to reconcile the city with the countryside by using strategic measures concerning spatial ordering, functional organisation and the territorial articulation of the city with its natural and farming systems. In order to do so, urbanism, ecology and technology must come together [Ruano, 1999, p.11], and, in cooperation, generate a new urban designing focused on the natural and cultural identity of a place. In this context, landscape is read as a dynamic and mutable means, comprehending the unavoidable interaction between form and process [Corner, 2007], in addition to the following:

1. making visible the natural processes and the ecological urban cycles (atmospheric, hydrologic, organic matter and residues, and energy) which connect the city to its surroundings, and turning these processes and cycles into its central focus [Gorham, 1999];

2. valuing the city's wild, untouched and empty spaces, that is, its natural biotopes. Constituted by wild fauna and flora, the city's natural biotopes are highly resistant to urban dynamics [Hough, 2004, p. 17];

3. considering farming systems as an integral and fundamental part of the urban landscape which covers farmed areas with social, economical and ecological roles, together with the cultural network for leisure activities and environmental protection [Telles, 2003];

4. privileging an economy of means, based upon ecological principles which claim minimum energy expenditure may guarantee maximum environmental, social and economical benefits. On the field of architecture, these same ecological principles declare maximum aesthetic emotion and maximum intellectual impact may be obtained with minimal resources [Montaner, 2002, p. 162]. On this it should be added that both in relation to vernacular architecture and to traditional landscape construction, an economy of means has anonymous and collectively been conceived for generations specialising in achieving maximum results in the fields of beauty, functionality and endurance.

In the present context of a consumer-focused and wasteful society, dominated by fragmentation and chaos, Montaner [2002, p. 182] believe that the most balanced interventions and the best actions are the ones which aim for unifying this disjointed territory. To do so, new formal units and compositional principles such as union, harmony, simplicity and diversity are adopted. By taking into consideration connections to place, culture and landscape, minimum resources and forms are used in order to achieve the best possible interventions, from an ecological and social points of view.

Each city should therefore define its own model for sustainable urban development based upon intrinsic traits (biophysical, socio-economical, historical, cultural, etc.) and future possibilities. This, in the long term, has the potential of generating a harmonious relationship between nature and society [Forman, 2004, p. 23], and allows for the dependability in improved life and environmental conditions. The process that guides cities on the route for sustainability should primarily be based on a system of non-constructed spaces as the structural and skeletal approach for the urbanised region. The free collective production spaces (farming, forestry, cattle-raising), the spaces for environmental and heritage protection, and the leisure and sport-related spaces (greenways network, gardens, parks) help to formalise the urban cultural and ecological structures. They contribute significantly to the spatial and functional organisation of the city by making urbanisation compatible with agriculture, heritage and nature, and by creating resilient multifunctional urban spaces, easily adaptable to social and economical transformations and to the multiple needs of contemporary society.

On the one hand, the jump in scale that goes from the compact city to the territory of diffused urbanisation attributes to landscape a decisive role as an element for urban qualification and (re)structuring [Portas, 2004]. On the other hand, landscape, as a dynamic changing system where nothing is fixed, static or immutable, requires a different and creative approach to the urban project. As it goes beyond the typical architectural and urban considerations on formal and stylistic aspects, landscape demands an approach with a bigger focus on defining a method, a process and emergency configurations. Landscape will, in fact, take in the whole process of city (trans)formation [Corner, 2007; 2006].

Conclusion

Contemporary cities, on their regional framework, should become increasingly reliant on landscape-focused urbanism and landscape architecture. Landscape is viewed here as a means to connect and 'support' different forms and spaces, functions and activities, characterised by great plasticity and adaptability to new programmes. This 'new method' for urban designing considers landscape capable of previewing and anticipating change by offering a flexibility of solutions and negotiation. Landscape is integrated into the urban space and acquires in this way resilience and constancy, becoming, in relation to its ecological and cultural structures, a central concept to urbanism. This methodological process is capable of resolving the haziness typical of conventional urban planning. It contributes, moreover, to the spatial and functional organisation of the urban landscape on a regional scale and, in this way, secures the urban region's global coherence and workings, its cultural identity and environmental and economical sustainability.

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The City And The Periphery

A Vision Of The New Models Of Growth And Development In The Outskirts Of Contemporary Cities

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Miguel Gómez Villarino, Architect, Master degree in Specialty of Building, Polytechnic University of Madrid (UPM) 2003. Specialist in Environmental Impact Assessment, UPM 2007. Professional experience since 2000, working as an autonomous professional, and for companies such as Typsa-Tecnoma, Proyeco and Melissa Engineering and Environmental Consulting, in construction and rehabilitation works, town planning and land-use planning. Has collaborated in several award-winning projects and urban competitions with Melissa Engineering and Consulting, since 2001. Professor invited in several courses of graduate of the Polytechnic University of Madrid, the University of Alcalá and the Universidad de los Andes, Venezuela, and the University of Cantabria, between 2009 and 2012.

He has written articles for magazines such as Ecodesign and Sustainability("Ecodiseno y Sostenibilidad") of the UPM and ULA, CUIDES, Notebooks of the Engineering and Development journal ("Cuadernos de la Ingeniería y el Desarrollo"), and City and Territory ("Ciudad y Territorio") Magazine. Currently works as a self-employed professional in Madrid.

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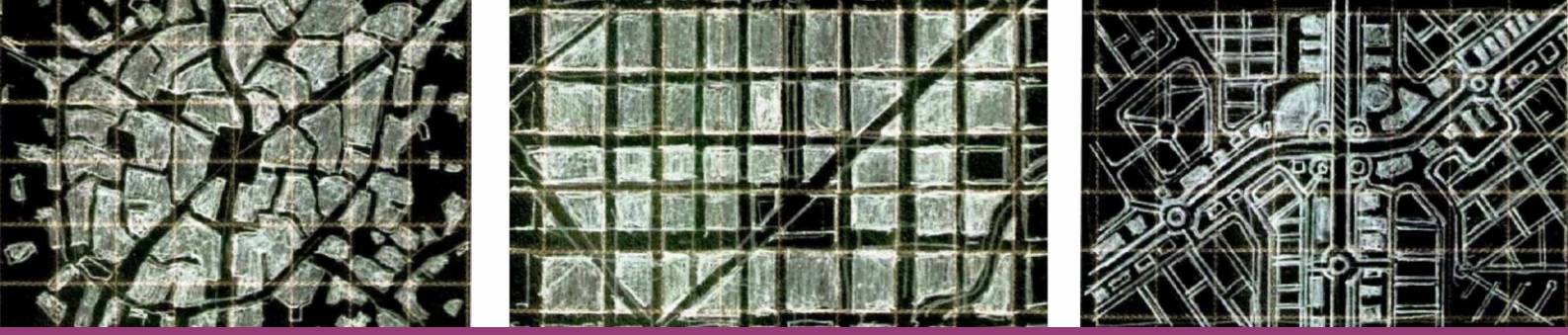
Maria Teřésa Gomez Villarino, Agronomic Engineer Doctor, and Technician in Geographic Information Systems, both from the Polytechnic University of Madrid. Is a founding partner of the company Melissa, Consulting and Environmental Engineering, S.L.(http://www.melissa-sa.com/) where she has carried out an intense professional activity in the fields of the environment, spatial planning and sustainable development. Has also practice in teaching the topics of her specialty: Professor at three Master of the Polytechnic University of Madrid, since 1998, in the Postgraduate of Engineering and Environment of the University of Zaragoza and at numerous training courses for various public and private entities.Has collaborated on books and book chapters, as well as Plans and Studies published in book form.

She has written articles for magazines, and conferences, papers or communications to congresses and scientific meetings.Has collaborated in the design of the IMPRO computer application to perform all phases of the environmental impact assessment in a systematic and orderly way.



Progressive rationalization and planification of the urban plot, that results in a process since the open field beneath city and territory in the past, to the current 'connected-by-networks' system

Abstract

The most recent ways of developing of our cities greatly differ from the traditional way of building of these in the past. Through the new conditions that enforces the industrialization in the capacity of construction and organization of the urban areas -and not just urban, but in general all the productive territories- the progressive rationalization of the societies and the new transport and communication systems, the city becomes an urban territory which is very different governed from the way the city of the past was, in which it prevailed the relations of proximity, the self-construction -under certain ordinances and parameters-, the assumption of constructive types before than serial prototypes (repetition with variation, against simple sequence), the quality of location reflected in the materials, the adaptation to the environment, the climate factor moved into the constructive type, etc., and ultimately a type of relationship which was not submitted to the current channels made by the requirements of technology and mobility. The article proposes an approach to this current urban model, and a schematic interpretation of it, establishing the basic elements in which, in a physical and organizational level, is based: networks of communication and transportation, zoning in functional areas, terminals that tends to organize the life of individuals, the nodes that connect the networks with the areas and terminals.

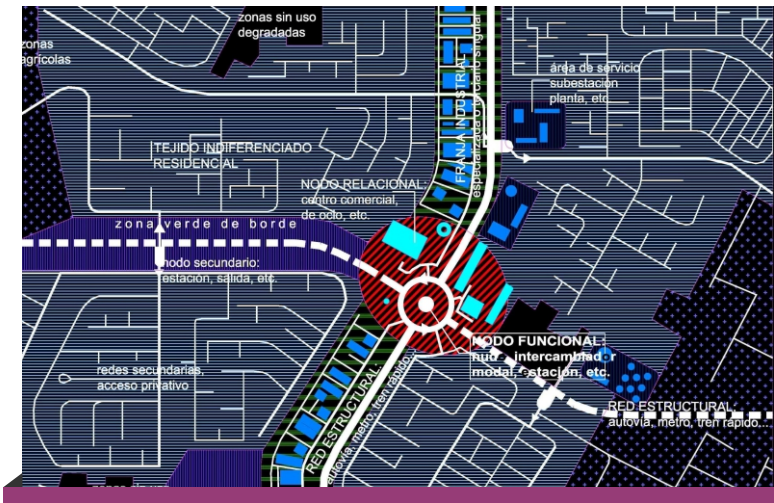
Keywords: Periphery, urban planning, networks, terminal, node, exchanger, metropolitan area

On the way to a completely "urban" planet

The current phenomenon of the global urban development, commented everywhere by all kind of specialists in urban planning and sociology, actually responds to something rather different to the concept of the city commonly handled until the present.

The world population is progressively becoming urban population as a result of a recent and extremely streamlined global reorganization of the territories and production duties; this process is previously conditioned, as is obvious, by the new conditions imposed by an aggressive global and ultra-competitive economy between territories and nations.

The historical place, "beset" by typical facilities of city-suburbs. Logroño, Spain



Typical scheme of a periphery: fast communication networks, and the main nodes as centers concentrating main tertiary or commercial activities

Los Angeles. Urban structures characterized by (1) simplified function areas, and (2) fast "superficially independent" networks. The nexus between the two are (3) the points of joining from the networks to the zones.

In this scene, the traditional difference between urban and rural ways of life becomes diffused, as a result of the systematization -mechanization and specialization- of the productive structures that affects the agrarian to the industrial, natural, and of course tertiary, commercial and administrative territories.

The configuration of the humanized territory, as A. Doxiadis or J. Gottmann announced, tends to dilute in a single model of settlement that extends across the entire planet, a sort of global city, a "country-urban" entity which nevertheless develops itself with different density, and in different conditions, in some areas or others.

One of the reasons for this process resides in a progressive rationalization of life, ways and customs occurred on the last decades; so we find an economic rationality that sets the search for maximum performance and advantage as a main motivation for almost any activity. A bureaucratic rationality that seeks to influence and direct each area of life itself through the establishment of more and more regulations. And a scientific and technological rationality which offers, through specialization, modes and tools more effective to do, to build, to function in life.

The recent periurban developments around our old cities represent, in physical terms, that extreme razionalization in the ways of build and establish the developing and relational rules for its population. They are almost opposite to the way of being of the traditional city: specialized and organized in areas and single-functional networks. Being structured around the technologies of transport and communication, which put aside, however, other "physical" modes of relationship. Becoming a reflection of an artificial mode of exploitation and pursuit of economic performance; being built-up from regulations, rules that make what should be done, how to behave, in each different place.

However, while certain sectors live perfectly integrated in the model, separate, aside, as growing over and over again uncontrollably in their margins, spontaneous modes, typical of an ancestral livability and performance form, arise again and again. Or maybe it happens that just their margins, spontaneous modes, typical of an

ancestral livability and performance form, arise again and again. Or maybe it happens that just common people of these cities begin to make an use of some typical facilities and elements of the modern cities, as commercial centers, parks, free or non-urbanized spaces, in a way that is not the one that they were supposed to be used in. The historic habitat as a link between communities and nature: man, community and place. The formation of the historical city.

"Places", in the words of H. Lefebvre, were in the beginnings of the cultures and civilizations the physical environments configured as a link between human communities and nature, which was the reality that was there before. Communities understood as environments of physical proximity, in which people developed their existence, where they lived and earned their own life.

So it was from a nexus with the territory which they inhabited and lived of, from where the first sedentary communities began to form vital spaces that today we can interpret as "places": artificial creations that man build from nature, from what "was before". A hybrid reality between the environment and man. The simplest way to create a place is to provide a name to a natural enclave; and the reasons for doing it, we dare to say, are mainly two: because of having a practicality: a population, a field, a river, etc., or because of having a meaning: a mountain, a clearing in the forest, some ruins. For a long time there was a lasting balance between the organs of power of states and cities, and the people, guilds, neighborhoods, that in reality made them up, that lived them. That's how we can interpret the creation of the historical cities in Europe through antiquity and the middle ages as the story of the forging of these "places", articulators of cities, on the "frame" of the traces and ordinances that rulers establish and the institutions propagated, by the successive generations, the different communities that integrated them, that inhabited them over time. "Urban" places, such as traditional trades, markets, bars, public squares, public fountains and lavatories, riversides, parks, neigbourhoods, etc.

So we could conclude that historic cities grew up as a trans generational synthesis between structures of public foundation: traces, ordinances, institutions, and the appropriation that successive generations –families, trades, institutions, companies- were making of those spaces and structures: the frame to make, day by day, functional, own, familiar. In other words: there would be no city without the action, interpretation and transformation that these human groups have exercised over the physical reality, buildings or rules, laid by the authorities. Order and control exercised by them was compatible with the ways of doing of each particular, however under the premises imposed by the historical types -resulting in the so attractive landscape of "repetition with variation" between buildings within historic cities- and "helpful" limitations imposed by constructive conditions, weather, materials, of each location; that, in common, gave the historic cities its characteristic coherence and homogeneity that we now admire.

Contemporary cities; towards the "non-city"?

It's been already said that the widespread phenomenon of recent urban development actually has little to do with the traditional concept of urban. It has gradually gone from a form of settlement that established a functional and synergistic relationship with the environment, to the afunctional relationship of mutual estrangement which we see today.

Artificial environment made-up by the man, founded, as Weber or Mumford said, in a progressively arised artificial rationality based on the above-mentioned human logics, has supplanted the natural environment, considering it something optimizable by human; an environment able to fix almost any error or imperfection of the natural, by science and technology. Nature becomes then something strange, aggressive, being frequently necessary to be rectified. In this sense we find that cities landscape has mutated under radical modes of implementation of these "rationalaties": the bureaucratic, or planning "from top to bottom", which leaves aside the citizen in almost any

"rationalaties": the bureaucratic, or planning "from top to bottom", which leaves aside the citizen in almost any process of their existential environment configuration; the economic, resulting in speculative processes and the constant pursuit of profit in the developments; and the technological logic, that determines the form of structuring the new developments.

Briefly outlined the current urban model is based on a specialization in areas of soft uses and also simplified networks that connect them: transport, communication and energy. The organization around physical spaces, as it happened in the past in streets, squares, public buildings etc. is replaced by a progressively impossed relationship in networks, in which each area of life - home, work, commerce and leisure, administration- becomes a "terminal" connected to the network and alien to the neighbor's by his side. For the modern urbanite connected by large networked systems, his city is as much where he resides as that other part of the continent where he flies for business or vacation, much more than the portion of territory extending some kilometers away from his home.

In short, an environment that was familiar, to which we were accustomed, is being progressively altered. The city as a small representation of the world is no longer necessary, when telecommunication systems as the Internet offers more true virtual representations of the same. Architecture, appearance of the complexity of stocking systems of the past, showing with its language which spaces were public, what buildings were main, which neighborhoods were central or residential, loses its representative meaning because the buildings are the same in Japan or in Nairobi, and a shopping-mall looks like an airport or an office building, just like a home looks like another modern home wherever we are on the planet. The feeling of belonging to a community, region, "place" –as well as the name and reference of that place- disappears. We all convert inhabitants of the same global periphery.

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of Landscape Architects

ISBN: 978-9-090-27392-1