

PAPERS 47 THE CHALLENGE OF LANDSCAPE IN METROPOLITAN AREAS

FOREWORD

Amongst the processes linked to the territorial expansion of the city —particularly to the development of great urban systems— we find the production of metropolitan landscapes, the characteristics of which cannot be understood in the light of the usual landscape categories nor the methods associated to their analysis. That is why remarkable efforts have been made over the last twenty years in order to develop a theoretical body for their understanding, parallel to the efforts carried on by the public administration in order to improve them.

Both their territorial reach and their being the background of most of the population's daily life entail an increasing prominence of metropolitan landscapes as objects of planning, design and management. Furthermore, this prominence is enhanced by the goals of the European Landscape Convention, which introduces the need to dedicate attention to common landscapes, and—in the case of Catalonia—the implementation of the policies stipulated by the *Llei del paisatge* (2005). The articles in this issue of *Papers* suggest a reinterpretation of metropolitan landscapes that can be understood as a challenge to achieve a better articulation of the territory and an improvement of the quality of both places and the lives of their dwellers.

In the first article, Carles Llop refers the most substantive elements and dynamics of metropolitan landscapes and claims the worth of the concepts and instruments unfolded by the territorial planning, and the principles of environmental sustainability, as means to deal with the current stage of the city. In accordance to this goal the author introduces the challenge of renewing territorial planning basing on a reinvention of the landscape.

In the second article, Francesc Muñoz expounds the way in which mobility, besides transforming the territory and the landscape, is determining the appearance of typologies of places and landscapes related to each type of mobility. In particular, the author analyses the rise of a new type of *low cost* geography and landscapes which are linked to the needs of this form of aerial mobility, and the breaking away of

the traditional bonds between individuals and places, to be substituted by a paradoxical *delocated* sense of place.

The third article, by Enric Batlle, deals with the leap of scale regarding the design of parks in metropolitan areas, as landscape plans that intend to respond to territorial functions which go beyond municipal boundaries. The author's discourse runs over a number of design strategies found to be adapted to the scale and characteristics of places—from municipal urban parks to metropolitan park systems—through what he calls value-added environments.

After describing the main features of the process of urbanization of Northern Italy during the second half of the 20th century, Fabio Renzi writes about one of the most innovative experiences of the Lombardia park system: the *Parco Agricolo Sud di Milano*, appeared in the 1990s as a supra-municipal answer to the urban pressure affecting one of the most developed areas of the country. Being based on heritage, ecological and social landscape values, the *Parco* has become a European reference in the field of metropolitan territories and landscapes management.

In the fifth article, Ramon Torra, Antoni Farrero and Víctor Ténez describe the ways in which the successive plans of the metropolitan area of Barcelona have interpreted the Llobregat River, and analyse several initiatives promoted by the *Mancomunitat de Municipis* that aim to create a new type of relation between the river and its territorial environment, according to what they call the *river city*. They deal, amongst others, with the means and projects focused on environment, landscape and social restoration of the last stretch of the riverside.

The last article of the issue is Jaume Busquets', which reflects on the importance of the appreciation of urban peripheries and the evolution of groves as a shaping factor of the entrances to the cities, introducing the project of landscape improvement of the access to the town of Granollers through the BP-5002 road. Based on urban-planning requirements and the understanding of the landscape values of the site, this plan is an example of intervention in peripheral areas, in which landscape improvement cannot be undertaken without regarding the citizens' wellbeing.

METROPOLITAN LANDSCAPES: POLYCENTRISM, EXPANSION, MULTI-PERIPHERIES AND MICRO-PERIPHERIES. From the cliché landscape to the kaleidoscope landscape

Carles Llop

1. Quo vadis city? Quo vadis territory? Quo vadis landscape?

The use of the territory has always followed an expansionist trend. Notwithstanding, up until the last century the city has demonstrated a controlled configuration. Now, the city and the territory are changing inexorably and, consequently, how they are interpreted. But, what we perceive as an "urban landscape" or a "territorial landscape" should not be seen from an apocalyptic or nostalgic point of view. We revise the state of the city and the territory to improve them in an attempt to construct quality landscapes, proving the Catalan aphorism "*el paisatge és l'ànima del territori*" (the landscape is the soul of the territory). After all, it is never too late to start and nothing is completely lost when it comes to city, territory and landscape quality.

There have been a number of seminars and papers read, not forgetting resulting published articles, that have concerned themselves with investigating new landscapes, particularly metropolitan landscapes.¹ In particular, I would like to underline those studies which have talked in detail about densely populated territorial areas where phenomena such as urban sprawl determine the characteristics of public concern that attempts to deal with environmental management from a renewed standpoint.

American cities have already experienced the expansion of the city across the territory many years before us here in Catalonia, and many articles have been published on the phenomena of metropolisation, generating a substantial bibliography of explanations and definitions.² "Cities without Cities" is the title of the introductory conference to the seminar *The Future Metropolitan Landscape: Conference Reflections*, which focused on understanding contemporary regional metropolitan landscapes. This title has a bearing on our awareness of how the traditional city (more or less compact, but which can be measured and delimited) is losing its configuration in the face of the ever-increasing

constitution of an infinite city (spread out and dilating across the territory, not so easy to delimit, heterogeneous and multiform); a kind of city which some scholars have already qualified as a great mixed colloidal cities, curdled cities, or a variety of forms built over a territory ploughed up by infrastructures, spattered with construction and with fragmented geographic continuities.

Metropolitan territories not only have to put up with physical banalisation. More than anything else, this is a question of quality loss that has a clear impact on weakening social integrity and economic power. Degraded landscapes looked upon with displeasure, is how we citizens who live in them verbalise and feel them when we see extensions to “urbanalised” residential areas: the now abandoned agricultural areas, brownfields on the edges of infrastructures, the industrial areas in precarious conditions or the major *spaghetti* junctions at the intersections of principal metropolitan road networks. It is abandonment which degrades the territory and illustrates a belligerent and disappointing landscape where we feel the need to call for a renewed perception of space. To re-think and re-make the landscape of the metropolis is surely the only path to follow to rediscover this lost perception.

2. The landscape as a perception of the territory: multi-landscapes

We can attribute multiple meanings to the word “landscape” to the degree that it begins to generate certain confusion. But, what are the consequences of using the word “landscape” indiscriminately?

A sound reaction would be to try and establish a consensus concerning the meaning we associate with landscape and precise usage so that we can identify or give meaning to shared questions concerning our perception of territories. I have begun by deliberately employing the use of the two key words, but now propose changing their order: “territory” and “perception”. “Territory” is the fundamental key to setting the boundaries of what I am talking about, and “perception” is the term which enriches the interpretation of what happens in the territory. Territory entails a tangible reality, and perception influences our judgement of it, hermeneutically and critically, when it is observed, analysed, and a given evaluation is made. Perception, cognition and emotion are the categories that are applied with one’s view of the landscape.

Landscape is the fusion of what is seen and not seen of the territory; the texture as an expression of a profound structure and the history that has preceded it and determined a “semantic latency” (as suggested by Eugenio Turri) made up of the communities that have lived in the territory and have shaped it geographically

and socially. We have over-consecrated the contents of the “landscape” and we have lost the force and convincing nature of what “territory” is and what it means. Territory signified on the basis of environmental features, transformed by the ways in which it has been inhabited. Landscape needs to rediscover its condition of “land”! There is no sense behind nostalgia for the old landscapes which cannot be recovered, the pseudo-modern defence of —and fascination for— “none-places” or the landscapes of homogenising globalisation. If the territory has no soul then the epidermis dries up and withers.

3. Territories in a world of explosions - explosive landscapes in the territory

We could perhaps agree that the contemporary world bears the marks of explosions: demographic, urban, migration, mobility, economic and, finally, a social explosion which shatters traditional paradigms. It is interesting to observe how we set territories against the limits of certain thresholds to achieve the highest level of urban occupation (the metropolis) and the total absence of anthropisation (the desert). This extreme dualisation, becomes mistaken, attending to the progressive loss of definitive isolation in desert territories, parallel to the growing isolation experienced by humans in the atopy of some metropolitan places. Nature is becoming more and more urbanised and the city is rediscovering new forms of forest abandonment.

Urban explosions are causing an uncontrolled break up of physical space which becomes a broken mirror, a split space, a broken-mosaic, where the fragments still maintain the sense of a decomposed “whole”. It offers a shattered landscape and a desolation in which it attempts to comprehend the integrity of the territory, because the sequences and links between the individual pieces no longer exist. This is the landscape of the ordinary periphery, now transformed into a multitude of incongruous and banal peripheries, polluted and noisy, sliced up by road networks and poorly connected, with little infrastructure and poorly infrastructured. The city sprouts with a wide range of plural processes of different shapes and forms. But we have to accept the “new forms of urbanity” even though the new forms of cities may appear inadmissible. We need to distinguish between ‘city’ and ‘urbs’ as suggested by Henri Lefebvre;³ otherwise we cannot understand, and even less identify, the true reality of the contemporary city.

So, it makes no sense to panegyrisé the city left to the devices of the chaotic flexibility, non-regulations or uncontrolled, nor does it make sense to praise the periphery as a new type of modern space. What is needed here is to be aware of the phenomena which characterise the

metropolis to be able to understand the challenges posed by its possible transformation:

- Extension of the forms of the city over the territory with the resulting dispersal of functions.
- Spread of residential areas which are increasingly located further from the metropolitan centres.
- Polarisation of central functions over the metropolitan access junctions.
- Major internal transformations of the consolidated city.
- Loss of centrality.
- Increase of the peri-urban perimeters.
- Infrastructure congestion.
- Problematic use of certain types of land.

4. Multi-peripheries and micro-peripheries: the effects of dispersed limits in the use of the territory

The city has turned its back on its atavistic relationship with the territory, generating a multiplicity of heterogeneous forms, often fragmented and jumbled up. The real city is a huge “nebulous urban construct”,⁴ that we need to know how to decipher, comprehend and act on accordingly. The new lexicon we are searching for to understand the phenomenon of urban reality, are devices for planning and managing urban processes.

Mobility conditions and determines the shape of the territory, and the metropolis is its ultimate stage. The spread of people over the territory determines the scale of the metropolis. It does not exist without the movement and flows of materials, goods, information and people. The “product” and the “construct” of this mobility are the urbanisation of the territory and the most visible expression of the depths and surfaces of what the metropolis is; its real landscape, in the kinetic perception and in the changes and transformation that it accumulates.

The prolonged use of the territory that has progressively shaped urban life, has spread the city over a vast geographical area, giving rise to a highly anthropised territorial geography, and a system of cities that are increasingly more urbanised and closer.

The spread of the city, the over-occupation and the fragmentation ways of occupying the territory have increased the contact perimeters between the countryside and the city, between countryside and countryside, and between city and city, in the multiple situations that cause contemporary urban realities: commercial strips, infrastructure

landscapes, brownfields, wastelands, major areas occupied by industry, transport and mobility hubs, marginal landscapes, marginalised landscapes, and so on.

5. Recomposing the territory, reinventing it: generating new landscapes

The territory is a permanent archive. It provides clear proof of the biophysical substratum, it expresses environmental dynamics, and it bears witness to social actions. It is the history and geography of the space production. From a holistic perspective of “territory” as a contemporary expression which includes memories of the past and the vindication of an improved future, we understand that it is possible to intervene modifying territory pathologies. The most appropriate strategies involve re-composing it, but also reinventing it.

Recomposing is the order of the day. Re-mix, re-make, re-configure, re-consider”⁵ are formulations applicable to social behaviour and, consequently, to the recomposing of our territories from a standpoint of commitment to ecology, to arrive at an environmental agreement between the contemporary city and the permanent territory.

The city is expanding and the territory welcomes it. This has been and still is the binomial on which territorial transformations are based.

The new paradigm for the contemporary city project would have to establish itself over technical, political and social accords which we have been constructing in territorial governance in recent years, in plans for urban and territorial development, and in citizen proposals. Through all these platforms and agents, we have been putting together a collection of efficient and conceptually solid principles when it comes to planning, projecting and managing this phase of the city which has befallen us. Here, I am mainly talking about the case for Catalonia —alas we are not accompanied along this path by other autonomous communities in the Spanish peninsula. These are to confront:

- Spread, concentration.
- Low population density, work on new population densities that are rationally higher.
- Territorial fragmentation, more rationally compact models.
- Hyper-specialisation, mixture and mixed uses.
- social segregation, the project of social space as an motivating agent for cohesion and solidarity.

- Reticulating polarisation of the capital centres linked by networks to metropolitan medium-sized cities, making good of the network theory principle: autonomy of the parts and being mutually complementary.

Reinventing landscapes means generating renewed ways of relating to the territory, using it and managing it. On the subject of metropolitan landscapes, Bernardo Secchi says, “Watercourses once engineered for transport can be set free or reconnected to wetlands. Industrial areas can be transformed into porous sites, and the infrastructure of rail lines can become an opportunity to enhance mobility and make the city truly accessible to all without relying on private transportation.” These are images that do not belong to the pre-existing territory, but rather to the virtual imagination of new scenery. Reinvention is based on new imaginary conceived in the virtual world, reflecting on the possibilities of changes, on the basis of a spatiality that does not correspond to the real view, but rather the evocation of reflexive thought, and the cybernetic world, in a still non-formal *a priori* that will become possible through the landscape project.

6. A new structure to rethink the efficiency of the metropolis: the territorial-mosaic-city

The renewed territorial project, thus passes through remixing and reinventing, which take shape by expressing the fragments and adapting the different forms of the city in a new system of physical and functional organisation. The “territorial-mosaic-city” is both a morphological and environmental structure at the same time, seen in terms of the ecological mutual adaptation and the co-evolution of urban and natural ecosystems in interaction, based on a mosaic articulated in urban pieces and the biophysical matrix of the territory, environmentally balanced, comprising:

- Consolidated urban structures.
 - High quality urban tesserae on metropolitan perimeters and interstices, as new city spaces.
 - New Attractors fitted out in the contact between the major territorial empty spaces and the urban tesserae.
- The conceptualisation of this model brings with it a series of operative objectives:
- The favouring of osmosis and dissolving of frontiers through planning permeable and exchange spaces.
 - The task of re-classifying boundaries.
 - The articulation of the pieces that make up the mosaic by means of efficient mobility management and an ever more precise plan for road network grids.

- The regeneration and articulation of empty spaces of the metropolis. An active empty space is the “non-city”, comprising the group of spaces of the territory’s biophysical matrix, full of rivers and all their components, of water drainage and the most capillary water supply network, crop growing fields, orchards and forest spaces.

7. The kaleidoscope landscape

The relationship between the city and its surroundings has generated a wide array of confused feelings and a collection of imaginaries or multiple landscapes which praise or criticise the different territorial situations. Often we have found model orphans to manage territorial planning. I believe that we now have to talk from the perspective of the wealth of disciplinary diversity, a forum of visions and polyhedral opinions (even dialectically opposed) because we are living in times of uncertainty. We are living through the tension between the most pernicious liberalism and the demand for a new territorial culture, or “for the territory” which, when all said and done, this is what constitutes the true ecosystem in which we live incorporating the people that live in it.

We need to talk from the perspective of the planner, the project manager, of those who, if I may be allowed to say, is building the city, intervening in the subtle equilibrium of the blurred frontier between the natural and the built, who are aware of what Joseph Rykwert reminds us: Planners today... still have to learn an important lesson from their predecessors [...] that “model” the city may offer has to be strong enough to survive whatever inevitable disorder [...] and has to give structure to the urban experience.⁶

We will have to explore to the full the possibilities of the landscape without a nostalgic yearning for the past and with a deeply rooted enthusiasm for managing the city project which is our fate to live in, giving thought to the construction of the “new” space in this road to the infinite city.

So, we have to reinterpret the possibilities of the landscape as a tool. In the metropolis, landscaping has to create a social contract to: improve the quality of life (environmental, cultural and aesthetic) in places that are useful for the community; provide efficient mobility; create habitability, for the sake of health in an appropriate environment. A new beauty, a new aesthetics, a new feeling for the possibilities of the metropolitan inhabitant to generate comfort and equity.

Our use of the landscape has to be a “tool for social mediation” for “managing transformations”. When planning territorial transformations one realises how “new landscapes” open up.

Landscape planning is thus a tool, cultural mediation to generate a critical view of the abuse of the territory and to pose new paradigms of use. Recycling the territorial abuse of the metropolitan peripheries means generating a ‘landscape factory’ which, in addition to new forms and space, arouses new ethical attitudes in the citizens who inhabit them. As proposed by Gaston Bachelard: “...it is dreamed before contemplated, before becoming a conscious spectacle; all landscapes are an oneiric experience. One only contemplates with aesthetic passion those landscapes that were previously seen in dreams. We have to recognise the prelude of natural beauty in human dreams⁷... If we look at the metropolis in this way, we shall leave behind the cliché that limits and we will be able to glimpse at the possibilities of the kaleidoscope landscape.

- 1 *The Future Metropolitan Landscape: Conference Reflections*, a collection of reflections resulting from the exhibition at the York Museum of Modern Art “Groundswells” (Febrer 2005).
- 2 Llop Torné, Carles, Adrià Calvo and Mara Marincioni: “Formes de ciutat al segle XX” in *L'explosió de la ciutat / The explosion of the city, Barcelona*: COAC i Fòrum Universal de les Cultures Barcelona 2004, pp. 346-352. ISBN: 84-96185-18-4, 2004; and “Mocions i lògiques d'intervenció en el projecte territorial renovat en les regions urbanes” in the same publication, pp. 346-379.
- 3 Lefebvre, H., *Espacio y política*, Editorial Península, Barcelona, 1972.
- 4 *In the last one hundred years, the urban revolution*, based on the concentration of major cities, has given rise to multiple denominations from a diverse to the traditional city, nuclear. See my article: I Timeline “Nuevas formas de ciudad en los siglos XX-XXI”.
- 5 REBAR, group of creators, designers and activists (San Francisco, EE.UU.) <http://www.rebargroup.org/>
- 6 Joseph Rykwert. *La idea de ciudad: antropología de la forma urbana en Roma, Italia, y el mundo antiguo*. Ediciones Sigueme, 2002 (republished from the first edition, 1976).
- 7 Bachelard, Gaston, *El agua y los sueños: ensayo sobre la imaginación de la materia*, Fondo de Cultura Económica, México, 1978.

MOBILITY LANDSCAPES: FROM MULTIPLEX CENTRES TO LOW-COST AIRPORTS

Francesc Muñoz

Introduction

The morphology and evolution of the landscape, which always describe the relationships people establish with places, are matters that have habitually been explained as a result or function of how people inhabit the territory. So, the link between a given community and landscape has always been seen in the light of the activities and, consequently, territorial behaviour of a community, especially with reference to two major issues. First, the type of economy and the way in which it exploits the natural resources, or the assets of the territory.

Second, the type of settlement and housing construction from which we derive both the population structure and the functional and aesthetic characteristics of the constructed buildings. Accordingly, agrarian and industrial societies have given rise to characteristic landscapes seen as a synthesis of not only the economic or social nature of the inhabitants, but also their underlying historical and cultural foundations. Thus, a strong link has been established between our perception of landscape and a whole series of concepts associated with the idea of place, such as identity, vernacular or local character.

However, the sharp increase in urban development, particularly since the second half of the 20th century, and the present-day characteristic levels at a global scale, raise important questions about the key issues which not only explain the production of landscapes but also what they really mean in terms of what characterises, identifies and differentiates a given society. Many of the questions raised by the urban development of a territory cover dynamics such as the ever increasing importance of the spatial mobility of people, a process which is associated with the production of landscapes that are not only specifically related to managing mobility flows, but also to territorial support for this mobility.

In other words, it is not only the mobility of people which is a key consideration to be taken into account in order to understand how a territory functions, but also that we are witnessing the production of specific landscape typologies related to the manifestation of this mobility. As we are increasingly developing different dimensions to our lives in different places simultaneously, our experience of the landscape is not just related to where we live, but rather a whole series of territories with which we coexist when establishing our mobility itineraries. A wide range of places with specific mobility connotations emerge that are particularly important when it comes to defining concepts such as “living space” or a “feeling of belonging to a place”. These landscapes not only stem from the infrastructure that actually copes with mobility —the motorways and airports—; they are also a result of a territorial model which is better explained from the perspective of mobility flows than the levels of population or building density.

Roundabouts, petrol station-shops, multi-screen cinemas or low-cost airports are clear examples of emerging landscapes that raise a key question. If mobility has now become the first order for inhabiting the territory, then it follows that landscapes associated with this mobility can also offer explanations (something which still has not been sufficiently recognised) concerning the association between individual and place, between community and urbanised space mentioned in the opening paragraph. Perhaps they can explain even more than

the landscapes traditionally understood as being responsible for this function of endowing its inhabitants with a sense of their own place and shared history.

1. City and urban development: a history of the 20th century

During the course of the last two centuries, city and urban development has been a continuous process with one particularly important consequence: the city is no longer the exception in a territory where there is no urban development, and has become the most important characteristic feature of inhabited space. Although it is true that a territory may be subject to different degrees of urban development, it is no less the case that non-urbanised, agricultural or natural spaces (which were predominant in the past) have become environments that very often are confined or surrounded by urban stretches, infrastructures and buildings.

The spread of land development for urban purposes was a process which first began, and at a faster rate, in the cities in North Europe which became industrialised cities and had already entered into the dynamics of metropolitan development, particularly in the second half of the 20th century. These images of urban development became the archetypal process of the urban sprawl process with the now familiar features of low residential population density and specialised land use. For their own part, cities in the South of Europe, particularly Mediterranean cities, have preserved an image, that is no less archetypal: urban density, continued building construction density and mixed economic activities and land use. In contrast, the recent development of these compact cities illustrates an urban scenery which is clearly more complex, and which displays alternative urban forms to the compact city and dense population growth. The last thirty years have in fact witnessed a progressive dispersion of the population, activities and types of urban development in global terms throughout the urbanised world. Accordingly, a common metropolitan space has appeared in the majority of these cities characterised by its dispersed structure. This is a territory which combines different spaces, places and landscapes: some have undergone greater urban development, others are less built up, but all of them put to great use by the inhabitants and visitors whose numbers vary depending on the time of the year. Urban life, which in the 19th century was understood as any characteristic of the city and substantially different from life in the countryside, has thus ended up reaching out across the entire territory.

Dejan Sudjic described metropolitan space in similar terms in *The 100 mile city* (1991), in which the peripheries, centres, densely populated areas and the mobility spaces prove to be equally important

when classifying a hybrid territory, and one which has undergone dramatic and discontinuous urbanisation:

"But in its present form, the old urban centre is nothing more than another piece on the board, with the same importance as an airport, medical centre or museum complex. They are all swimming in a sea of shopping centres, hypermarkets and warehouses, road-stop restaurants, anonymous factories, ring roads and motorway areas."

2. From sub-urban territory to the "suburban" landscape

Towards the end of the 20th century it was becoming clear that the model for territorial concentration which had typified the shaping of metropolitan landscapes had undergone a radical change. Improvements and new services in transport and communications meant that it was no longer so necessary to concentrate manufacturing in the city spaces. So, the former economic geography of large industrial and duty-free zones was replaced by a network of industrial estates spread across the territory.

From Detroit to Bilbao or Turin to Rürgebeite, the economic model that had engendered landscapes defined by densely populated urban areas and typified by a strong presence of industry, was no longer applicable due to the dramatic changes that not only affected manufacturing processes but also consumer patterns. Almost in complete contrast to those major urban agglomerations where the centre vs. periphery dynamics explained both the economic function and the morphology of the landscape, a new kind of dispersed metropolitan space appeared to such a clear degree that it was already visible in tangible and physical aspects such as urban sprawl itself.

This continuing expansion process of the urban world had in fact been taking place since the 19th century, and always dependent on technology. Transport and communications, in different shapes and forms with the passing of time, created favourable conditions for the progressive dispersal of the work place, consumer spending and leisure spots frequented by city inhabitants. The advent of the train, followed by the car, were key moments in this development. Railways allowed cities to grow in a linear fashion and extend residential and industrial areas beyond the first belt of what was a densely populated city. The car meant that urban life spread to the degree of furnishing areas much further away and allowed for radial suburban growth, chaotic, to one degree or another, depending on the layout of metropolitan motorways. So, the car consolidated the city with suburbs and paved the way for new forms of inhabiting the territory closely linked to daily mobility.

New types of inhabitants, such as the resident or the commuter, reveal an undeniable fact: the living space of urban inhabitants has progressively spread beyond the city limits drawing a picture of variable metropolitan extensions, inhabited in different ways according to the time of day, whether a work day or weekend, and even depending on the week of the month or the month of the year.

Turning to the dynamics of landscape production, this dramatic increase in the dynamics of urban sprawl has in effect meant the construction of a territory in which low density residential areas have gone hand in hand with the appearance of suburban landscapes, characterised by the cloning of urban uses of the compact city that have emerged adapted, but at a metropolitan scale. The main outcome of this process for landscape morphology has been the appearance of new typologies of urban space defined by their vocation and capacity to attract, generate and manage mobility flows.

So, economic activities, previously located in the central city and its immediate peripheral areas, are taking up residence in new industrial parks or districts. Service industries or merchandise transport logistics are moving to strategic locations further and further away, as part of a new global perception of a vast metropolitan area. Commerce and leisure are combined in premises such as shopping malls, situated between the predominant urban centres and spaces, and easily accessible by road. They not only offer basic products but also specialise in particular areas of the consumer market, such as furniture and interior design (IKEA), DIY (BAUHAUS) or gardening (AKI), and are complemented with all manner of entertainments and services from travel agencies to gymnasiums. The former urban amusement parks are giving way to large theme parks at a regional level; the decline of the cinema within the city space parallels the success of the new multi-screen cinemas, the "multi-plex spaces", while the new ventures of secondary regional airports, where low-cost airlines operate from, offer alternatives to using major airports, located close to the big cities.

At the end of the 1990s, scholars such as Giuseppe Demateis or the urban geographer Robert Fishmann, explained how this physical dilation of built up areas and, in general, the dynamics of urban sprawl, meant that it would become easier and easier to find metropolitan characteristics in places which historically were outside the scope of urban development processes. Fishmann (1998) even argued for the "end of the city", particularly the "major city". The great metropolis or the major city, the metaphor for the type of metropolitan territory that had been necessary for the development of the Ford economic cycle during the course of the 20th century, was no longer

such an important requirement from the point of view of "post-modern capitalist" ventures.

So, on the one hand it was no longer necessary to concentrate either infrastructures, work force or capital and, on the other, advantage was taken of the extension of land for urban uses. This was a territory where medium-sized cities, rather than the major capitals, began to emerge as important urban centres within the framework of the global economy.

The distribution of multiplex centres and the incipient geography illustrated by low-cost flight airports, two of the latest additions to this new suburban landscape, correspond much more to the territorial logic of these medium-sized cities rather than that of major capital cities.

Multiplex spaces are located at equidistance from medium-sized urban centres or between dispersed suburban fabrics. For their part, low-cost airline companies do not operate from major airports, those which for half a century in Europe had associated national airlines with a given state and were located next to state or financial capitals. Low-cost flight companies operate quite differently. They have searched out regional secondary level airport infrastructures, but which offer optimum conditions in terms of being a potential centre and easily accessible from the road and rail transport networks. Airports such as Reus or Vilobí d'Onyar (Girona) in Catalonia, Treviso in Venice, Gatwick in London or Kosice-Bratislava in Slovakia, are names which now make up the toponymy of this new low-cost flight mobility map.

This surge of activity in regional secondary airports, located outside and at a distance from central urban areas, has become more and more linked to rapid changes in land development leading to an accelerated transformation of the landscape. Agricultural and peri-urban spaces reveal the emergence of a "low-cost" landscape which can be seen around the airports where companies such as Easyjet or Ryanair operate in Europe.

This "low-cost" landscape is where B roads, shopping malls, car parks and incipient residential areas or minor services leave their stamp. Here, we could assign the label "suburban": a landscape where traditional images of suburbia mix with the vestiges of the still remaining rural landscape, cultural and iconography.

What we have here is a genuine reinvention of urban landscape in the rural context, linked to the role of the airport, not in relation to the central metropolis but rather intermediary cities and territories which have undergone far less urban development. So, a new type of suburban landscape is beginning to characterise these traditionally agricultural spaces whose transformation can no longer

be explained in terms of depending on the city and its growth and the need for physical expansion, but instead in terms of the new nature illustrated by countryside that has already been urbanised.

3. "Part time" territory, culture and landscape

In this new metropolitan context, how the space is inhabited as well as the kinds of corresponding urban experiences, are two clearly interrelated elements. On the one hand, as mentioned earlier, mobility appears as an increasingly important factor when defining how to inhabit the territory. Put another way, it is the temporary use of metropolitan spaces which determines the appropriation of the territory and how we identify with the landscape. On the one hand, a mobile culture, moving from one place to another, is beginning to be confirmed; a culture which is associated with new kinds of cultural behaviour and habits. This is a culture of simultaneity and fast consumption which takes shape in the form of cultural processes such as the increasing and elevated use of the mobile phone, and territorial processes such as the increased number of territories providing support and related to daily mobility. It is within this cultural and territorial stage where the definitions of city and urban society, inspired by — in the words of Giorgio Piccinato (1993) — "the concentrated universe" of the industrial city or density as the principle attribute of urban areas, are clearly inadequate. Consequently, definitions of concepts such as inhabitant, living space, district, community, local culture, and the vernacular etc., are becoming less relevant, and at the very least need to be reformulated in a context where flexibility and mutability in behaviour describe a metropolitan individual that inhabits cities of variable geometric dimensions set against an equally variable geography.

But if this mobility between places is the factor which is increasingly characterising metropolitan life, how can one develop a sense of belonging to one place in a cultural and territorial context defined in this manner?

People inhabit and appropriate different territories, but precisely because of their new mobility models, they do so from the basis of belonging to a place that is analogous and standardised. Although the territories they frequent or inhabit are not the same, the sense of place which they experience is, in contrast, extremely similar and comparable. This is a sense of place which is compatible with the logic of part time. So, in the same way that living space takes physical form based on the portion of territory where one lives, works or visits, the feeling of belonging to a place is also constructed from the basis of segments of living time which are equally fragmented and discontinuous. Both a feeling of place and the time factor reveal

a kind of special interaction between the individual and the landscape characterised by certain constant factors; a relationship that would be:

- Independent of legal and administration boundaries.
- Disconnected from the local vernacular characteristics which are related to both the physical and social space, and normally taken into consideration in traditional definitions of place and which would be transmitted or passed on to the landscape.
- Divorced from the common cultural substrata which binds a given community and which would make up the equally diverse character of a specific landscape.
- Free from the implications that have traditionally characterised the city as the space of the *civitas*. In other words, a space suitable to be inhabited in social, cultural and political terms.

Present day metropolitan life already provides examples of these characteristics. This can be seen by looking at how people use spaces such as multiplex complexes or low-cost flight airports, which are already a part of the new social map that comprises places and moments in time defined by multiplicity and flexibility.

4. Redefining living spaces and landscapes for consumption: the multiplex as a metaphor

As stated earlier, the new structure of metropolitan mobility is typified by a global increase in the number of journeys people make and which increasingly cover greater distances. In addition the growing and indiscriminate use of the car has had a clear impact on consumer models and, as a consequence, on lifestyles. It is becoming more and more the case that consumer trends which were traditionally linked to the city, the most densely urbanised territory, are beginning to materialise in sites located between cities which are well linked by the motorway network. From this gallery of spaces that make up these new metropolitan landscapes, a particularly noticeable feature is the leisure areas which act as mobility magnets, capable of amassing large concentrations of the population during very specific time slots (such as weekends), as if they were part-time cities. Spaces such as theme parks, shopping malls or outlet stores, thus temporarily alter population density in metropolitan regions. A hidden cartography emerges on a regular basis at given moments in time, and in this map a conspicuous feature is the new multi-screen cinemas because of their ability to attract metropolitan leisure-seekers characterised by their continuous flow and high visit rates.

An abridged explanation of the genesis of these territorial dynamics, reveals how the first consumer habit affected by this process of clearing commercial outlets from urban centres and relocating them across the territory, was the purchase of essential products. Supermarkets and hypermarkets appeared which then evolved to the extent of becoming major specialised commercial complexes. So, from the original idea of "food shopping" once a week at the hypermarket, consumer habits evolved to the degree of "going shopping", which clearly showed a close association between consumption and leisure, or between time spent shopping and free time.

So, as people spent more and more time in these centres, all manner of options began to be set up to occupy this time: live entertainment or games, nurseries and restaurants. The cinema became part of these dynamics as just another available item, but has ended up taking on a very clear leading role to the degree of giving way to a specific, and most certainly new, space typology: the multiplex centre. This is a leisure space associated with filmgoers and defined by three specific features. Firstly, a wide range of films and showing hours, so that decision-making options are multiplied and much more flexible. Secondly, a large number of screen rooms which take up less space and smaller seating capacity compared to the dimensions and seating capacity of the traditional urban cinema. Thirdly, the possibility of combining going to the cinema with other leisure activities. Accordingly, multiplex centres offer greater choice when it comes to the object of consumption, the cinema, but, above all, when it comes to the place and time. Furthermore, a multiplex space includes multiple options in addition to the cinema. Previously, these leisure alternatives tended to have their own location in the city and spread out across different areas, but in the multiplex space they are concentrated and contiguous.

Multiplex spaces operate like space-time compressors, to the degree that leisure becomes a flexible, ambiguous and elastic space-time. Multiplex spaces perhaps represent a space typology that best illustrates the characteristics of how a territory is used at present because they are indifferent to place and independent in terms of time. This is the perfect metaphor for the landscape production process, equally independent of places and their history, as opposed to metropolitan spaces.

All that is found in multiplex centres is a response to the logic of standardisation and analogy: the tickets for the cinema which include a "happy meal", drinks and snacks to take away, or being able to rely on a wide variety of films, etc. These are features that you can find in any multiplex centre and which offer an absolute guarantee of an analogous behaviour that

can be likewise replicated indefinitely at any other new point in the territory. This is the very same standardisation and analogy we can find at any motorway toll, petrol station-shop or airport. We have mobility landscapes constructed in a discontinuous manner but which share a common nature: the explicit autism as regards place and the implicit recreation of new codes of how society uses space, and directly related to the culture of mobility mentioned earlier.

Low-cost airports are the last and most recent example of the dynamics of landscape production, if only for the spectacular expansion they have undergone and the global levels they have reached, at least in the context of Europe. It is these that I would now like to turn to.

5. A new “low-cost” geography in urban Europe

At present European cities show how urban centrality and accessibility between territories are a source of inspiration for planning policies and strategies, just as much, if not more, than planning growth and expanding built up space. In this territorial context, where mobility management (passengers, goods and information) carries as much weight as the distribution of population density, a new geography is emerging from urban development. This new geography is less dependent on physical distances and much more dependent on the accessibility of transport networks and being able to make connections between multi-modal transport means. In short, the centrality of cities and urban spaces are assessed in relation to these thresholds of accessibility, where motorways, high-speed trains, ports and airports make the territory more or less attractive depending on this network. In this new map of the financial cost of travelling between cities, the impact of the so-called “low-cost” airlines has been a key element to understanding two phenomena which, although nothing new *per se*, do represent an economic, social and territorial dimension hitherto unknown.

First of all, a change in the number of people who travel by plane. While it is true to say that commercial flights have a history of their own, the exponential growth in the number of passengers and the number of flights recorded in European airports, they also reveal a clear “social levelling” of airline passengers. This can be explained to a large degree by the significant number of low-cost operators today and how extremely active they are.¹ Secondly, airports have gained protagonism in the metropolitan space and have become focal points that attract economic exploitation and have brought about strategic growth patterns between different cities.

This effect of centrality is, relatively speaking, more important in the case of regional airports that until now were

typically used for summer holiday or national flights. These infrastructures have not only increased their position in airport rankings but have also generated suburban growth, economic activities and transformations regarding land use structures in their surrounding areas. This is a development that further underlines the organising role of the territory which, as stated earlier, is in the hands of medium-sized cities or those outside the more central metropolitan belts -the very territories which are the first choice for low-cost airports in Europe.

6. “Easy-going” culture: low-cost mobility and identity in the “suburban” landscape

The appearance of low-cost flights should not be considered only in terms of economic perspectives or the transformation of the territory, but also that there is a very clear cultural content. While access to low-cost flights may be the explanation for the expansion of the market of air transport users to include new and more numerous fringes of the population, the cultural elements introduced by low-cost geography to the metropolitan experience deserve to be taken into consideration. With this in mind, I would like to consider three main issues.

First, both individual and collective perceptions of physical distances are shrinking as a result of the wide range of mobility possibilities offered by low-cost flights. So, studying questions such as weekend leisure activities, for example, is beginning to provide specific data about how low-cost flight availability has increased the territorial span of non-essential mobility, particularly in the young adult population. The low-cost flight experience in fact fits perfectly with a whole series of young adult iconography which emphasises values such as flexibility, constant change and maximum mobility. Images of this can be seen clearly in advertising campaigns for mobile phones, which are equally aimed at consumers in the same age range. They make reference to an entire cultural universe linked to experiences which range from contact with audiovisual support (videogames being the prime example), to the elevated use of telematics (such as the internet). So, through habits which are starting to become a daily feature, such as using email or a mobile phone, direct contact with “real time” through telecommunications is becoming a part of metropolitan life, existing side by side with the experience of “historical time” of the territory and places.

Second, the low-cost flight experience equally implies use of air transport on a more massive scale. It is quite surprising to review the publicity campaigns and advertisements by airlines in the 1960s, in which the decor is shown almost as if for an interior design spot: somewhere

between a waiting room and a cocktail bar lounge. Windows with curtains or smiling uniformed waitresses bearing menus illustrated the narrow consumer market sector covered by passenger airline transport. However, throughout the course of the last thirty years, the growing number of travellers has meant a wider range of user types, particularly due to fixed holidays and recent options to fly to new destinations. The present-day success of low-cost flights has meant the end of this “social levelling” process mentioned above and has taken the limits of air transport to new levels. But, if we look beyond figures themselves, cheap flights have also meant a more familiar use, almost daily and domestic, of the air transport infrastructure which is very similar to the experience characterised by suburban or commuter trains. This becomes evident when we see how users take their own food, travel with gifts they have bought in another place or use the journey as time to work or for personal entertainment thanks to their laptop computer.

Third, the habit of low-cost flying has not been incorporated into the metropolitan experience of individuals as something new or unknown, but rather quite the opposite: it rounds off a wide range of situations characterised by a high degree of standardisation. It is an experience where perceptions of the territory are constructed on similar, and particularly, comparable urban situations. As I mentioned before, all the motorway tolls are used in an analogous manner in the same way that all the airports adhere to one spatial and iconographic design which welcomes a behaviour which is surely generic.

Low-cost flight airports are an obvious response to the logic of this “easy” standardisation, which Easyjet adopted by including the word as part of the company name -a slogan later copied and adapted in all its franchise sales points. This is a standardisation which, as I commented in the case of multiplex centres, illustrates the malleability of time and the ductility of space in physical and real terms.

Finally, low-cost flight airports constitute a new moment in this process which has placed mobility at the centre of the urban experience. Rather than a residual element of density, mobility has now become a way of inhabiting the territory. Mobility is what shapes the space and style of life, assigns new values to how we perceive landscapes, and accordingly determines a feeling of belonging to a place which is just as fragmented (if not more) as the territories on which it is constructed. As regard the specific shape the landscape is taking on, the new “low-cost” culture reveals the emergence of different situations that are transforming metropolitan landscapes: busy airports and a growing hierarchy located “in the countryside”; accelerated changes to

the landscape which affect its ability to represent territories and identify local cultures; a strange hybridisation among the characteristic elements of suburban landscapes and the most basic iconography of an agrarian world which is still present in a countryside undergoing urban development at an accelerated rate; or a relationship between individual and landscape which can be better understood since it has become mobile and changing than all that understood as fixed and stable. These are tendencies which give shape to a new “suburban” landscape which reveals a new generation of peripheries in European metropolises.

7. Conclusions: society and landscape in mobility territories

On the basis of what has been suggested so far, two final arguments can now be put forward which refer to the way in which we explain the links between society and landscape.

First, at the beginning of this article I posed questions which have a strong bearing on the territorial behaviour of all communities and, therefore, key questions when it comes to understanding the links that are established between a community and a landscape. On the one hand, the type of economy and the ways of exploiting the natural resources which have historically transformed the territory and have given shape to the landscape. On the other hand, the characteristics of housing construction and the corresponding structure of the settlement and the building typology. So, the model, forms and guidelines for mobility which typify the life of a community would be equally important in this explanation about the nature of the landscape seen in terms of a social and cultural construct.

Second, as a consequence of the present-day importance of population mobility within a territory, the emergence and dramatic development of landscapes, directly related to or having strong links with managing and providing support for this mobility, poses a thought-provoking hypothesis which could be formulated as follows: is it possible that the multiplication of mobility landscapes might represent, in reality, a break with the traditional way in which individuals have related to the territory and identified themselves with the landscape?

By way of answer to this question, and by way of conclusion, I would like to make the following remarks.

We can establish that the relationship between individuals and a given landscape, that which characterises the place where they live and which supposedly should be able to interpret and refer to questions of a social nature such as their own culture and identity, is at present a weak relationship.

This is the result of two parallel and simultaneous trends that make up their own system.

First, there is a multiplicity of places and territories which end up forming living space, to the degree that there is a shift from that feeling of belonging to place whose reference is a single landscape, to another multiplied and fractured sense of belonging. This is built on the basis of fragments of space and time of a metropolitan nature which are recognised by perceptive memory precisely from the perspective of mobility and not being there. In other words, it is this very same mobility which links these fragments and appropriates them to shape this new sense of belonging associated with an equally new living space, difficult to delimit but, whatever the case, not determined only by the place where one lives.

Second, the immense capacity nowadays to replicate and clone landscapes in different places means that the association between place and landscape is certainly less clear and has become a cloudy link, or at least easily interchangeable on both sides of the association. Put another way, if it is both possible to recreate any landscape in a given place and the opposite, then any place can host a given landscape. This means that all landscapes can be associated with all places: the replication of beaches from Bali in the Berlin leisure centre *Tropical Island*; the ski slopes inside the *Xanadú* shopping mall in Madrid; the cloning of the streets of New Orleans in the south wing of the *Trafford Centre* shopping mall in Manchester, the formal language of oriental architecture rehashed in fast consumption versions inspired by *One Thousand and One Nights* imposed upon second home urbanisations on the Mediterranean coast; or the standardisation which is clearly visible in the restoration of historical centres and Jewish ghettos in Eastern Europe, which end up reproducing urban design programmes that are surely similar and predictable. These are but a few examples, different moments in a global sequence of landscapes characterised by the easy, indifferent and common transposition with place.

But if the landscape is no longer peculiar to a place, but rather in some way can flow and manifest itself in a multiplicity of places, then this means that there is no necessity to relate to, appropriate or identify with that landscape in a specific place. In other words, a kind of “relocation” of the process which creates the link between the individual and landscape through place. It is as if the landscapes had gone “on strike” and had resigned from the job they were traditionally assigned.

These two simultaneous processes, the new role of mobility in configuring living spaces and the feeling of belonging to a place that is paradoxically relocated, in fact

explain the present-day hypervisibility of mobility landscapes. If, on the one hand, it is mobility which progressively gives meaning to the processes of relationship, appropriation and identification between the individual and the landscape and, on the other hand, the landscapes related to habitation are abandoning their function of explaining the social and cultural content of this relationship, then one could suggest that mobility landscapes, those which are specifically related to the management of mobility flows or providing support for this mobility, are where we now have to search out the way in which relationships are established between society and landscape.

A far cry from marginal stretches, mobility landscapes represent the privileged stage where, at present, the identity of the people and the culture of the places are being negotiated.

¹ “Low-cost” flights are certainly not a new phenomenon as they have an obvious precedent in the charter flights which began in the 1960s.

RENOVATING LANDSCAPE PLANNING IN THE NEW METROPOLITAN PARKS

Enric Batlle i Durany

Introduction

Nature in the city, typically in the form of parks, is a prime example of how the popular spirit associates images of longed-for landscapes with public space. Joseph Rykwert, in his article “The garden of the future, between aesthetic and technology”,¹ invites us to resolve one of the clearest challenges of our times: “Bring nature to the city, and put nature at the service of the citizen.” The relationship between city and nature has led to numerous examples of public space which are the result of the complexities of literally transporting natural models to the city for public use, or the clear contradiction between these urban uses and the nature areas or images of nature these models attempt preserve. In this article I would also like to highlight this key public space paradigm, and help to find urban, ecological and aesthetic meanings that our future open spaces will require.

Finding a new meaning for open metropolitan spaces allows for planning city projects from the perspective of a new continuity model. We are no longer dealing with the traditional compact city and its streets, squares avenues and parks, but rather a new vision, the dispersed city, where new open spaces can act as a cohesive factor, become accessible and be the new strategy which defines the shape the metropolis takes on, perhaps even resulting in a new stratum which

superimposes itself on the multiple strata of construction and meaning which make up metropolitan reality.

In this new relationship between city and territory, where the city is metropolis and open space is one of the basic strata in its makeup, ecology laws will have to be respected, environmental alternatives reinvented, new paths will have to be sought within the agroforestry world in metropolitan areas and, of course, we will have to know how to incorporate all of these issues into urban and territorial planning projects of which they will be an integral part. This stratum that begins from the landscape and runs through all levels, from the metropolis to the city, either revitalising major geographical features of our landscape, or rescuing or inventing small landscape phenomena found everywhere, or that could be found.

Landscape architects work from a perspective which is found in a third approach: trying to explore the possibilities of landscape planning, somewhere between the high-handed attitude of industrial society and the ingenuous attitude of ecologist movements. This third viewpoint is not resigned to apocalyptic visions which forewarn the end of public space or the destruction of genuine urban spaces for everyone. Such concerns are well-argued by Margaret Crawford in her *Narratives of loss*,² which predicts that the only open or free spaces possible in the future will be private open spaces (shopping malls, leisure areas, theme parks and tourist spots, etc.) or mobility spaces (motorways, train stations, ports, airports, etc.).

This third approach gives rise to new landscapes, but not those which result in artificially preserving some form of nature (or some relative historical representation of agricultural) which is fated to lose the personality we assign to it today. This is what Oriol Bohigas claims is the case for urban culture in his book, *La ciutat, refugi del paisatge* (The city: the landscape's refuge).³

The present-day renovation of landscape planning employs very different views of reality which, in principal, are very heterogeneous: designing public space, the environment, regional planning, agroforestry management or regulating natural resources. These are superimposed in an effort to define new open space models for a sustainable city.

In an attempt to look closer at the possible role of open spaces in the context of metropolitan areas, this article is organised into three sections: planning and urban parks; the new metropolitan open spaces; and urban, ecological and metropolitan connectivity. The first section analyses the links between the planning model used and the resulting types of parks. The second section gives examples of new open space

typologies: from the forests of the metropolis to urban agriculture, and from land drainage systems to environments with added value. The third section proposes recovering urban, ecological and metropolitan continuity via an open space programme as a new regional planning tool to cope with the inevitable urban sprawl phenomenon.

1. Planning and urban parks

The most common form of urban planning here in Catalonia in recent years has been, and still is, to develop relatively small sectors according to an urban model (a partial plan or similar) which tackles problems specifically linked to that spot according to previously established parameters and guidelines. Land set aside for open spaces and facilities accounts for between 30% to 50% for the sector's surface area.

The typical land development process focuses planning on the logic behind new street plans or the best property development option, therefore, making open spaces and facilities available generally takes on a very secondary and fragmented role within this logic. Another common tendency is to consider these spaces from the logic of a very local perspective, related to already existing urban fabrics or as a new centre for a proposed urban fabric.

These urban development plans encourage breaking up open spaces into various pieces which are scattered around the outskirts of locations considered ideal for property development. A common tendency is to reject the possibility of exploiting already existing geographical or landscape features in the location, and so they establish a new order that will be built according to the dictates of the projected streets and buildings, and consequently new open spaces will have to be designed from new criteria which are undetermined when the sector is being planned.

Models for developing autonomous pieces of land have regularly left out the surroundings, whether the city that has already been built or the nearby landscape, rejecting the possibilities of open spaces as transitions between densely populated cities which needed green zones and nearby natural or agricultural landscapes which were losing their meaning and value.

A more sustainable urban planning model should pose a unitary and grouped treatment of all the open spaces of a new sector, it should find a layout in the territory that would promote transition or change between the already-built city and the nearby landscape, it should take advantage of the existing geographical or landscape features as generators of new open spaces, and it should try to connect these spaces to potential ecological

corridors which would link the different spaces of natural interest in the metropolis.

By way of illustrating the possibilities of this kind of development within the context of neighbouring urban environments, I would like to give two examples from the town council level, but which are a positive contribution to complementing the metropolitan ecological matrix. These examples are the system of parks in Sant Cugat del Vallès and the Sant Climent to Viladecans urban corridor torrent.

In both cases these are proposals that attempt to establish a system of parks within the city, taking advantage of the voids generated by the city as it has taken over land. In both cases, these voids are torrents that have been turned into new open spaces in the city and have given rise to continuities for pedestrians that were inconceivable before.

These systems of parks have become the best regional planning project option to begin the future development of these cities, and offer three clear advantages in a single operation: first, the city acquires many open spaces and the natural values of the original territory are preserved; second, they allow for controlled city growth with the addition of new districts which round off the previous urban continuum and which define the borders of the system of parks; and third, a sequence of spaces is secured which connects the inner city to neighbouring natural spaces. The link between new city growth and establishing systems of open urban spaces offers a further clear advantage: it facilitates joint financing of the entire area.

In Sant Cugat del Vallès, the embryo of the system of parks allows for a route that runs from the city centre to either the Torre Negra agricultural park and the Collserola Park, or as far as Sant Llorenç del Munt crossing the hypothetical Vallès green corridor.

In Viladecans, the open spaces that have been generated around the Sant Climent torrent have established a sea-mountain route which both breaks and joins with the entire municipality. On the one hand, they are linked to the Garraf natural park system and, on the other hand (seaward), they come into contact with the Llobregat agricultural park and with the nature reserves of the Delta.

In Sant Cugat del Vallès, various open spaces resulting from independent urban development operations have ended up giving shape to a system of parks, despite the fact that there was no formal municipal plan to that effect. Spaces of different typologies have ended up finding a unity in continuity and the vegetation, to the degree of achieving a unification of an agricultural valley reconverted into a system of parks: the Central park the

open spaces of an urban development (Monestir park) and the park which runs along a torrent (Rambla del Cellar park). In the case of the Central park and the Rambla del Cellar park, the original geographic feature, the torrent, has become the centre of the park and the organising characteristic for the entire sector. In the case of Monestir park, a conventional urban model has eliminated all the previous landscape features and has encouraged the breaking up of open spaces into quite fragmented pieces which only recover some kind of unity through the visible presence of vegetation.

In Viladecans, the municipal impetus to recover the Sant Climent torrent has become a global plan which dictates all future projects along the course of the torrent. The design of this park is based on the logic of the natural system of torrents and has mapped out a park system which crosses the entire city, taking advantage of all the spaces it encounters and which is turning into green link between the mountain and the sea.

In these two examples, upper level planning did not originally anticipate these options, and partial urban development plans opted for scattered open spaces located according to more conventional urban planning logic. The result serves as an illustration of how these ideas can be turned into reality while maintaining all the other urban parameters. The two systems of parks have been financed by the private sector, but under municipal control which oversees the execution of these projects. Viladecans is a particularly striking example if we remember that prior to this plan there was a proposal from the ecologist association Depana, which proposed a green corridor between Garraf and the marshes of the Llobregat delta, located between the urban nuclei of Sant Boi del Llobregat and Viladecans itself. This corridor took advantage of an empty interstice between the two urban nuclei and became the natural boundary which justified the possible expansion of Barcelona airport.

This corridor never became a reality. A number of industrial estates programmed into the development project made it impossible as they took up significant urban stretches in both municipalities. When the Viladecans municipal authorities considered the possibility of a similar idea, it was already too late to develop options at this level. But, a much more detailed analysis and more open-minded thinking focused discussion on a minor geographical feature right in the middle of the municipality: the Sant Climent torrent. The torrent did not correspond to the dimensions of the green corridor proposed by Depana, but it ran uninterrupted between Garraf and the Delta, being the most common geographical link between the valleys of the Parc Natural del Garraf and the marshes on the edge of the airport. A

much more detailed urban and landscape study was able to identify the possibility of transforming this thin thread (which proposed urban planning projects had almost erased from the map) into the most important geographical feature in the sector, capable of heading the municipal government's most ambitious urban planning project and gaining sufficient momentum to become the system of urban open spaces the city was looking for.

2. The forests of the metropolis

Urban land use only accounted for 16% of the surface for the Barcelona region in 1992,⁴ and 25% in terms of potential urban land use according to prevailing planning in 1998. Despite the significant percentage of free land, this is not the feeling one gets when travelling through the metropolis, because within this remaining 75% a major portion corresponds to areas where use is non-regulated, abandoned agricultural areas or poor quality agricultural land. So, the infrastructures cut the remaining open spaces into shreds and highlight this feeling of there being little space available. But the space does exist and could be used in coherent planning policies that attempt to avoid undifferentiated urban continuums that in the long run will make it impossible to connect the various natural areas, or the various areas that could be integrated, into the a network of open metropolitan spaces.

Cities can make use of the forest as a basic material to recover degraded urban interstices: on a large scale, as a means to populate extensive surface areas, setting up all manner of ecological links; and on a small scale, as a living reminder of the forests that we yearn for. Metropolitan forests can be accountable in financial terms, incorporating different types of urban farming: from agriculture integrated into the concept of the forest (controlled exploitation of the forest or traditional plantations in the forest clearings), to more intensive productive agriculture that could occupy large extensions of land (protected designation of origin vineyards, tree nurseries or agricultural parks). Metropolitan forests and urban agriculture are profitable at a local level because they provide wood, food products or leisure spots. In addition, they can be profitable at a global level because they absorb carbon dioxide and can counteract climatic change because they retain water, control erosion and prevent floods; and because they become a source of biodiversity.

Urban forests require multiple land use management that would simultaneously promote public use of these areas and the production of raw materials in the same place. In order to put such a system into effect we need to overcome the traditional dilemma between production and preservation. It is neither a question of setting up systems of intensive

forestry production management, nor promoting static conservation without any kind of management. Intensive forest management favours planting fast-growing trees, with continual forest renewal and a preference for regular and single crop spaces. In contrast to this kind of planning, management systems can be set up which promote forest diversity and structural complexity, with uneven masses of trees comprising different species and varying surface areas. With this kind of management one can foment positive exploitation of the natural resources while respecting the beauty and environmental role of the forest.

The Parc du Sausset in the *banlieue* of Paris, is an excellent example of a practical park built on the basis of recovering agroforestry systems as urban systems capable of being used in the public spaces of the new metropolitan context. This park, designed by a team led by Michel Corajoud, is not a case of defining a final image, but instead has set up a construction process for the park which still continues. In Sausset, agriculture is not something that derives from the designer's romantic recollections, but rather is the driving force behind the park and has resulted in a system of metropolitan forests. Rather than proposing the preservation of some existing natural value, instead a new nature has been constructed. Rather than using water as a decorative device, instead it has become the answer to new environmental problems and has led to the creation of new water ecosystems. Rather than employing geometry to establish new architectural forms, instead it has been used to create a new landscape.

The idea here is to forest the metropolis through sturdy management systems and new ideas that attempt to produce rich and beautiful forests; self-sufficient metropolitan forests which could continue to generate environmental and social benefits; forests which we will see as having added value, not residual value. In the words of Martí Boada, the forest, "Is not marginal".⁵

3. Urban agriculture

Urban agriculture is our response to the fascination of natural and agricultural spaces that we value, or spaces that have made up the image of landscapes we want to preserve. Agricultural images can become the images of our contributions; and they can be the basis of new images that we can generate through new strategies. Agricultural processes are part of the land culture, they are the ideal system for managing these landscapes, and the strategy that allows these spaces to be organised according to their kind of land management, giving rise to new images —changing over time— which allow us new ways of relating to the city where they are located.

Humanity's desire to harness nature, whether as a source of food, medicine or contemplation, has resulted in the development of an array of farming techniques and services, which have later evolved from agriculture to decorative features or leisure activity areas: from irrigation systems to monumental fountains, from terrace farming to garden terraces, from protection systems to hedges or garden fences, from pruning to increase production to topiary art. If agriculture is one of the origins of the garden, then it follows that after a long period of extreme artificiality and lost roots, one could think that parks can return to agriculture, be agriculture, and recover their former horticultural character.

One particular case of urban agriculture is allotments located in public land in peri-urban areas. Although they are considered as marginal in areas such as the Barcelona metropolis, this is one activity which, if carefully regulated and even suitably promoted, can contribute to structuring peri-urban areas, generating laudable landscapes and satisfying the needs of many people. Examples of this can be seen in the outskirts of many central and northern European towns and cities. Private allotments can be compatible with traditional open spaces or incorporated into new metropolitan open spaces. Transforming this avocation, removing it from marginal spaces and relocating it in suitable locations where it can be regulated, is something which needs to be done, but we can also see it as a good solution to shaping to our open spaces. Many European cities are going back to the policy of including allotments in public parks, thus reclaiming the tradition begun in Germany at the end of the 19th century.

4. Land drainage systems

Land drainage projects begin from the premise that water is a basic resource and their primordial objective is to maintain and protect a flow of clean water. The point here is to rethink something we already know: without the river or land drainage, now or in the past, there would be no river valley. To understand the central role of fluvial corridors means studying the entire river basin area. A comprehensive understanding of the natural system allows us to adopt a more thorough ecological approach and can help us to determine the best solutions to conflicts that we commonly find in the more urban developed zones.

Storing water and irrigating the territory not only helps to cope with our water needs, but can also lead to generating new landscapes. First, this would mean adopting small scale water management strategies: storing it so that it can be accumulated, slowing down the river flow, irrigating the territory and controlling it in forest, agricultural and urban areas.

Second, to encourage the preservation of all the land drainage systems and to store available water volume at all stages would lead to new humid landscapes linked to the forests, agricultural zones and the new urban areas. Third, applying these measures would also mean that in the event of heavy rainfall, water volume could be reduced at the upper course levels of the rivers and torrents, and also the river flow speed could be moderated and help to prevent all manner of floods. This would not only palliate present-day problems but also give added value in the form of quality landscapes and environment: increasing forest mass, exploiting irrigation channels, improving ground water levels, reducing soil erosion, creating new humid areas and potential ecosystems, and the possibility of generating new landscapes in the areas surrounding our rivers and torrents. Fourth, putting various measures into effect at the same time could be, in the case for Catalonia, the best water management strategy to avoid meaningless projects and actively involve the entire country in water-related problems. Furthermore, this would add clear economic benefits to evident ecological advantages that are not only viable but could even be indispensable.

Rediscovering watercourses through land drainage systems allows us to bring to spotlight the notion that indiscriminate land occupation has discarded: the continuity of outdoor spaces. If we rediscover watercourses we will be able to recover the ecological continuity of land drainage systems and we will have taken the first step towards the continuity needed in our metropolis. If the only stratum with continuity in the present-day dispersed city is the infrastructures, then remembering that land drainage systems can also provide continuity will help us to begin constructing a new stratum composed of all the metropolitan open spaces.

Recovering land drainage systems entails designing a rational water cycle, which in turn makes water processes visible to citizens and leads to a new urban ecosystem composed of water collecting areas: small reservoirs, storage tanks, secondary drainage systems, various alternative water supply networks, waste-water treatment plants and green filters. Furthermore, it would provide for an infinite range of possible spaces which, alongside the main streams, rivers and coast line could act as a framework for the metropolitan hydric system.

The continuity of a land drainage system allows for recovering original geographic features when building cities. Water management seen from these parameters and planning spaces linked to this kind of management, would allow us to put into effect a system (by definition continuous) that would not only take into consideration the major watercourses (rivers and torrents), but would also be visible at all levels and would include any

minor topographical depression which would then become another integral part of this fundamental project.

Land drainage systems would become "green routes" in very real terms because they guarantee the inescapable link between the continuity of water and biodiversity made possible by planning projects focused on contiguous areas. The continuity of water and biodiversity could be complemented by possible routes available to citizens via paths that follow land drainage systems or connect to nearby urban fabrics. A land drainage system project sets before our eyes the continuity of a drop of water, a bird, a boar that has got lost, added biodiversity, clean air, a green citizen and everything else that could be compatible with these principles.

5. Environments with added value

Environments with added value are the result of carrying out the best possible study on the environmental impact of the project we want to put into effect in the territory. They are the positive balance from a positive interaction between the planning project and the natural potential of the landscape which it has to manage. Environments with added value are spaces that can complement the natural and public spaces in the metropolis.

These environments can be a value added to a given land development project which is in progress. The impact of land development projects is often regarded as always damaging to the landscape and that it is therefore necessary to ascertain the impact on the environmental so that subsequent necessary corrective measures can be taken. As Ramon Folch states in his book, *Que lo hermoso sea poderoso*⁶ (Oh, that the beautiful were powerful), these measures unfurl as follows:

"The last chapter in this process begins when the civil construction work is coming to an end, although it can continue long after it is finished. This is the healing of the wounds that have been inflicted. Attempts are made to set up screens, regenerate zones affected by temporary stockpiling of materials and installations, build paths for animals that have to cross this stretch, and so on.

This process is far too often reduced to summary circumstantial gardening that has little to do with any real attempt at global restoration and, furthermore, tends to be expensive to put into effect and extremely expensive to maintain. What was already there has been destroyed unnecessarily and cost nothing, and what did not exist has been placed there, in poor conditions, and is very costly."

Environments with added value need to make sense for their own sake and they need to become a landscape feature that rises above the specific planning project

they coexist with. This means working actively with the materials the landscape itself provides, avoiding disaster and designing with nature, confident that one is working towards a better world. Lewis Mumford, in his introduction to the acclaimed book by Ian L. McHarg, *Design with nature*,⁷ puts it in the following terms:

“Although it is presented as a call to action, it is not aimed at those who believe in intensive programmes or immediate solutions. Instead, what it offers us is a fresh path made up of pebbles running over an already existing landscape. In this book we find the foundations of a civilisation which, without doubt, will replace a contaminated world: terrains mistreated by major earth movements, dominated by machines, dehumanised, threatened by explosions and which at the moment is disintegrating and disappearing before our eyes. By offering us this striking vision of the exuberance of organic elements and human delight which ecology and ecological design promise to unravel, McHarg restores confidence in the idea of a better world.”

Design with nature, lets us resolve these land development programmes from the basis of a thorough knowledge of the landscape's social and cultural values and a concern for producing programmes that are able to incorporate what ecologists already know. The recovery of degraded spots or the old industrial sites, is an opportunity to use this knowledge to try and produce new landscapes which will become part of the image of the metropolis.

We could go back to the way we worked before and deposit our marvellous products on natural areas that are still uncorrupted, but we have already seen that our products are not always compatible and that nearby nature is often degraded as a result. The added value of these land development projects could be open spaces that would help us to integrate the corresponding object into the overall framework of the landscape project for that spot.

These open spaces could be the environs best suited to correcting environmental impact, or the result of an established land development project seen as if it were an open space. In both cases, this means considering all the elements as a single landscape unit which groups together a specific development project and its surrounding areas. This unit should simultaneously dictate the features of the development project and the environment in such a way that they would be seen as inseparable. Environments with added value would not only be the open spaces of individual projects, but also those related to a global system of metropolitan open spaces, satisfying and complementing civic and ecological purposes.

A metropolitan infrastructure plan with the necessary installations, if approached from the perspective of added value, leads to

what we could call “green infrastructures”: hybrid versions of a specific programme and landscape; a new open space typology. Environments with added value can be projects that are congruous with general notions of metropolitan open spaces or perhaps simply isolated operations related to a specific problem which has arisen. Whatever the case, this means contributing to building the best metropolitan landscape.

The Roques Blanques metropolitan cemetery and the Garraf land fill are two examples of environments with added value. Both are being developed over natural areas which make up part of a system of metropolitan open spaces. The cemetery is developing a complex programme of sepulchres in forest areas located next to Collserola, while the land fill was sited in a deep valley in the Garraf massif and recently has been the object of a landscape restoration programme.

The Roques Blanques metropolitan cemetery is a group of gardens inside the forest. Each cemetery is a small garden where the view of the sepulchres is overshadowed by the features of the entire landscape. This cemetery project allows for preserving the perimeter and interstitial forests, maintained by the cemetery, and implementing these new garden-cemeteries which will be absorbed by the forest with the passing of time.

The Garraf land fill indiscriminately occupied a valley in the Garraf natural park. The project for the final exploitation stage defines the end topography that will be achieved and has provided for exploiting resulting gases as an alternative energy source. The objective of the restoration project is to return the spot to the natural park by creating a new landscape seen in terms of a productive agricultural area. A series of different farming terraces outline the projected landscape and establish all the elements necessary to regulate it, from the end of the land fill stage to the crop planting that will be required.

The Trinitat intersection park and the Tramvia park, located within the Barcelona ring roads, are two examples of the intrinsic difficulties of transforming infrastructures into “green infrastructures”. Here we have two examples in the Barcelona area of projects for infrastructure environs that have managed to correct the inadequacies of the original infrastructure project. The former is the development of a park within a major road network intersection, while the latter project is attempting to develop a new landscape over the covered stretch of a motorway.

The Trinitat intersection park is the area around an infrastructure and a landscape in itself. One could say that this park is the result of a thorough study into the environmental impact of a complex and necessary infrastructure project. But the

park is in fact the result of a landscape project that looks at the bigger picture and focused on overcoming the complexities of the problem and hopes to develop a public park for the nearby city districts. This park is a landscape that has been built from the perspective of topography and agriculture, but it is also a complex structure right in the middle of a road network intersection which is intended to be used as an open space. The solution that was adopted attempts to link this spot to a hypothetical system of outdoor spaces through the continuity of various rows of trees which enter the city accompanied by different motorways. This park is a “green infrastructure” and the result of handling a project with particularly difficult points of conflict.

The Tramvia park occupies the spaces that regional planning projects had originally reserved for a motorway. When work began on this infrastructure it was met by persistent complaints from the municipal government who successfully argued for it being semi-covered, making land available for constructing a park. The park now occupies a series of previously fragmented spaces that were poorly linked to the nearby urban fabrics, and the hope is that this park will become an element of urban connectivity and a metropolitan forest which could cross the entire stretch of motorway. The end result is a green route that connects two municipalities and a metropolitan forest that can continue to expand: the environs of an infrastructure with added value which the municipalities can continue to build on.

These two projects show us the possibilities offered by infrastructures to provide open spaces in the urban environs they cross through. The solutions adopted here show only a part of the immense range of possibilities that could be exploited if one could programme major infrastructures from the perspective of “green infrastructures”. A joint approach project that considers both infrastructures and the urban environs can offer a great deal of added value to the city and help to build on a system of open spaces in our metropolises.

6. Urban, ecological and metropolitan continuity

The new “green systems” are built on the idea of recovering lost connectivity, but they are also built over the base of each of the new open spaces that can be established. These new open spaces (on the outskirts of the city or at metropolitan interstices) cannot be designed exclusively from a local development project programme, instead they have to take on and assume the role that falls to them within a hypothetical ideal system. These open spaces could become part of a series of spaces which attempt to establish some kind of connectivity or could be essential for recovering degraded natural spots.

These new parks could also be linked to existing potential natural systems or to new natural systems that could be set up to develop ecological values that have been nullified.

Building on these new green systems requires establishing multiple connections or green links between the different areas of the city and between the different existing open spaces. Green links are a modern version of Olmstead's systems of parks or interconnecting parkways. They encourage walks, engender a great deal of interest in the metropolis because they allow citizens to interact with all the open spaces, and they are the foundations of a network which offers the possibility of being able to choose and expand routes.

Green links would basically be understood as tree spaces which could also serve for draining city water. The continuity of routes for pedestrians or cyclists is essential, because it is essential to find good solutions for all the intersections and junctions that will be created with other infrastructures. Green links could be simple urban walkways or be closer to the ideas of an ecological corridor guaranteeing continuity of nature. Transforming these spaces into land drainage systems seen from the city means exploiting rainwater to create humid areas that would turn green links into part of the system of parks and into a self-contained natural system. Green links are another piece in the urban routes that can be established in our cities.

The metropolitan landscape has to be constructed based on simultaneously exploiting the values of urban connectivity, ecological connectivity and metropolitan connectivity. Urban connectivity is achieved from urban public space projects, recovering the positive aspects of the compact city which we still wish to preserve. Ecological connectivity can be built from the metropolitan interstices projects, based on the inevitable application new ecological values. Metropolitan connectivity we have to learn to programme given the need to regulate the values of the dispersed city where we live. The intentional layering of these continuities is the first tool when it comes to renovating landscape planning in the new metropolitan parks, and the best instrument for building a better metropolitan landscape.

Public spaces can be the visible image of metropolitan continuity. The composition of these spaces can be dispersed and fragmented, as a logical consequence of the diversity of elements that it contains; but it can also be coherent and continuous, as a direct consequence of the new ideas that we need to implement.

(September 1995), *Journal of Architectural Education*, vol. 2, no. 1, Southern California Institute of Architecture.

- 3 Bohigas, O. (1985); *Reconstrucció de Barcelona*, Barcelona, Edicions 62.
- 4 Acebillo, J., i R. Folch (2000); *Atlas ambiental de l'àrea de Barcelona*, Barcelona, Ariel Ciencia.
- 5 Boada, M.; «El bosque no es marginal», *El País*, August 8th 1999.
- 6 Folch, R. (1990); *Que lo hermoso sea poderoso*, Barcelona, Editorial Altafulla.
- 7 Mumford, L. (1967); «Introducció». A: McHarg, I. L. (2000); *Design with nature*, Barcelona, Gustavo Gili.

AGRARIAN LANDSCAPES IN THE ITALIAN METROPOLITAN ENVIRONMENT

The case of the South Milan Agricultural Park

Fabio Renzi

"Là dove c'era l'erba ora c'è una città, e quella casa in mezzo al verde ormai dove sarà?"

"Where once there was grass there is a city, and in that house in the green, where might it be?"

Il ragazzo della Via Gluck – a song by
Adriano Celentano

1. The years of urban expansion

Over the second half of the last century, like other European countries, Italy underwent an intense urbanization process which caused both a territorial and social transformation. Above all this transformation altered the largest cities. One need only consider that during the 50's and 60's Turin became the largest "Southern" city of Italy, due to the many immigrants from the south who came to work at Fiat.

This urban expansion and building boom was carried out with little or no city planning and an emphasis on profit. The physical and visual results make up the environment and background of many Italian films of the post-war period. The roman countryside with its suburban towns and the new neighborhoods of the outskirts are seen in Pasolini's movies. De Sica's and Visconti's films show the beachheads on the landscapes of the Lombard countryside which have since become the infinite city that covers the area from Turin to Venice. Francesco Rosi's beautiful and intense film, "Le Mani sulla Città", tells the story of the "sack of Naples" under Mayor Lauro (of the famous shipping family). This radical and profound change in both the physical and human backdrop of the country would become the subject of ever popular protoecologist Italian pop song, *Il ragazzo della Via Gluck* by Adriano Celentano.

In almost every large Italian city, this urbanization brought about the existence of working class suburbs, unauthorized settlements and the new neighborhoods on the city outskirts, all of which have

developed along the various main roads granting access to the city. The countryside, small towns, and rural settlements were upset and absorbed into a chaotic and irrational hodgepodge. Many logistic and infrastructure problems still afflict Italian cities. In particular the relationship between the periphery and the center of the cities, where the center remains the site of nearly all functions and services. The transformation of Italy's agricultural landscapes shows the various phases of civilizations that have marked the country. Their division into lots, their grid work of sharecropping farms, have become vacant lots awaiting buildings or areas to place unhealthy industrial plants. In this manner not only the visual, aesthetic properties of many Italian landscapes with their historical and cultural identities are upset but also the deeper structure of ecological relationships is likewise traumatized. This will lead to a progressive process of degradation of the areas surrounding cities and the impoverishment and loss of their biodiversity while fostering particularly aggressive pollution. Such pollution particularly jeopardizes the hydrographic system, putting the groundwater at risk.

So the Italian cities find themselves poorer not only find their formal and aesthetic elements, but also the social aspects, due to the lack of services and infrastructure and particularly the lack of green.

2. The community's new demand for quality: Agrarian landscapes and urban parks

The aggression towards our territory was facilitated by a legislative vacuum that lasted more than twenty years. Only in 1968, with the introduction of the urbanistic standards, did urban green areas become a theme in city planning. It was a substantial step forward even though it did have its limitations. The letter and spirit of the standards concentrated on more quantitative and compensative aspects (including payments for damages) as a solution to the frightful deficiencies in citizen services and structures. Gardens and areas for sports facilities were the dominant in the planning of public green areas. It was not until some years ahead, in the 70's and 80's Italian city halls made use of their more mature, complex and articulate experience. The trauma to the agricultural space near or between cities, historical gardens, hydrographic networks rather than physical augmentation became a fundamental component of urban planning. The emergence of a public and collective demand regarding the quality of life (from workplace safety to the livability of the city), and its subsequent political renaissance which impacted many Italian administrations, led to the spread of city planning experiences aimed at the creation of parks both inside and beyond the city limits.

1 Rykwert, J.; «El jardín del futuro, entre la estética y la tecnología», *Rasegna*, no. 8.

2 Crawford, M. «Contesting the public realm: struggles over public space in Los Angeles»

The city of Ferrara selected about 1,200 hectares of productive agricultural land (at the time corn, wheat and beets were prevalent) which ran from the Po river to the northern walls of the city, with the aim of maintaining the direct relationship between the countryside and the city walls which dates from the end of the 15th century. The setting aside this area as a park (as part of the 1977 general regulatory planning variation) had dual objective:

- At the territorial level, the possibility to determine a positive relationship between the city and the countryside, optimizing the agricultural employment of the area while also recreational use of the same area, in particular the area near the river.
- At the urban level, the improvement of the facilities and services located in the area next the walls, including sports, cultural and leisure time facilities, within an organic and unified design.

Bologna developed the idea of a hilltop park and an agricultural park near the city which uses the hydrographic network as a strategic element in the upkeep of the open spaces that interrupt the continuity of buildings.

Florence, beginning with the Cascine Park, intervened along the Arno with a strategy of public spaces and equipment.

These are just some of the events which developed in Italian cities during that period which announced the process of reevaluating agrarian landscapes as something more than a gap between buildings. From a social and cultural point of view, as well as when considering practical planning, it is significant that the central and northern areas of Italy were the center of this process. The south of the country was not involved, and still today the cities of the south remain the site of illegal building and aggressive urbanization. One need only think of the area near Vesuvius, the Conca d'Oro of Palermo, the Valley of Temples near Agrigento or the agrarian landscapes of the Calabrian Coast.

FROM THE PARKS TO THE SYSTEM: THE EXPERIENCE OF THE REGION OF LOMBARDIA

The metropolis of Milan, with over five million inhabitants distributed over a territory that extends from the regional capitol to the prealpine hills, surely represents one areas in which the gamble to preserve diffuse natural environments, landscape elements, and even the identity of the territory is most difficult. There the urban coverage is based on an extremely compact model, where the phenomenon of urban sprawl is confined to the outskirts, while (especially in the North sector of the city) the area covered by urban buildings can reach over 70% of the total territory. This density has led to serious environmental crises in all of the

environmental sections: from water to air. The case of water is characterized by a torrential flow of the hydrographic net which is unable to receive the enormous volume waste water flushed by millions of citizens and industries. The case of air is made particularly critical by northern Italy's orography. The mountain range creates a continuous and impervious barrier to wind ground currents. Obviously the urban and infrastructure policies with their overwhelmingly centrifugal design with respect to the city of Milan, form a formidable obstacle for the ecological connectivity of the territory.

Already in the 1970's the first regional experience were founded, which were particularly daring in some cases. It began with the Regional Park of the Valley of Ticino. With over 90,000 hectares of terrain which underwent a special planification aimed at safeguarding the most important river flow in North Italy, which brushes against the western Milanese area. It is home to the most important plains forest of the Po Valley (mainly oak-hornbeam with formations of elm and alder), but also extends over a particularly valued agricultural territory and distinguished by the cultivation of rice. Immediately after it touched a stretched of land particularly assaulted by the advance of cement at the gates of Milan which extends northward to the ancient geological terrace formed by river and glacial movement. This area is the Groane Park, instituted in 1976, and composed of almost 4,000 hectares of oak and sylvester pine woods (which were cultivated there in the period of Maria Teresa of Austria and later grew wild) with large arid clearings occupied by precious heaths at the foot of the mountains. Later an urban park was instituted within the regional park system, the North Milan Park, which still represents one of Italy's most important ecological recuperations of abandoned industrial areas between Milan, Sesto San Giovanni and Cinisello Balsamo, Italy's little Ruhr.

SOUTH MILAN AGRICULTURAL PARK

Certainly the bravest and most innovative operation was that which brought about the institution of the South Milan Agricultural Park. This Park actually embraces the entire southern sector of the province of Milan, the least overcome by the advance of cement due to its extremely profitable agriculture. For centuries this area has benefited from extremely fertile soil and an abundance of wells. These were optimized with works of monumental relevance at the end of first mediaeval period by the monastic orders seated in a great abbatial complex: the three Cistercian abbeys of Milan of Chiaravalle, Mirasole and Viboldone. The Park spreads over 50,000 hectares of primarily agricultural land in 68 municipalities, disseminating the wells and springs innervated by a dense network of irrigation.

It is a Park that interweaves, in a way that is perhaps unique in Europe, the reasons for safeguarding and protecting the territory with the defense of an economic function like agriculture which has marked the history and development of this area. It is a Park that must take into account the ever growing community demand for open, useable, and culturally rich spaces, all of which in one of the country's most developed metropolitan areas.

This territory truly has nothing that can be genuinely defined natural. It is in fact a constructed landscape as Cattaneo writes, from the hydraulic works to the use of the water resources which are so rich in this province. The constant, hard work of has been employed to regulate and model the course of water for its military, agricultural, and commercial and traffic transport value.

Having been founded in 1990 under the strong push of committees and associations, the park must seek to safeguard the antique agricultural vocation of this territory, reconciling it with the present need for green spaces and the chance for urban citizens to socialize and enjoy themselves. It has an enormous and yet unexplored potential to make the concept of multiuse profitable and lucrative. The agricultural sector is called to invest in this concept.

THE LANDSCAPE OF AGRICULTURE

The story of the *grassa* (Italian agricultural argon meaning "fertile") agricultural plains south of Milan intersect with the slow, constant and systematic adaptation works realized by man to satisfy his own needs. Being both rich in water and well extended, the great plains of the southern Milanese province had an almost certain destiny: to become a vast cultivation crossed by draining ditches, canals and farming machinery.

Soon man realized that the hay for cows grew abundantly among the hedges and rows of trees in Po valley fields. Agriculture took hold of this territory and made it one of the most fertile agricultural zones in the world. In the transformation of the terrain the Cistercian monks of the Lower Milanese region with their abbeys and the intense system of work and prayer played a fundamental role.

Through the grandiose strategy of canalization of the countryside, which connected irrigation ditches and waterways, in order to make up "water meadows" (fields upon which a thin layer of water is present year-round, which heats and protect during the winter, allowing the flourishing growth fodder grasses) and the use of groundwater from wells (small natural oases in the countryside). The monks made this a unique area from an agricultural point of view. Even today the secular work of hydraulic-agrarian transformation of this

countryside is testimony to the history of this territory and extraordinarily represents the signs of transformation and the care of the agrarian landscape.

The once dense network of water meadows and springs has slowly disintegrated. Modern agricultural techniques have privileged cultivation methods of greater productivity and decreased expense in manpower. The overly costly and difficult management of the springs and sluices for the water meadows faced the profits obtained with insulates (animal fodder obtained through a fermentation process from corn and other cereals). That is why the Park proposes incentives to farmers who maintain the water meadows.

The *cascine* (traditional square court farmsteads of Lombardy) and the places of peasant civilization selected offer a perspective of the characteristic agriculture of the Park South.

In the Park there are more than 1,400 farming enterprises which employ approximately 4,000 workers. The area of the Park is characterized as one of the most intensive agricultural zones in the nation.

The raising of cows and pigs is the primary activity (in terms of revenue produced) with 305 farms in an area equal to 30% of the agricultural territory of the Park.

The most widespread and characteristic cultivation of the area is that of cereal (43% of the agricultural territory), followed by rice (22%) and grass (16%). There are minor percentages of sunflowers, soy, vegetables, water meadows, floriculture, greenhouses, poplar plantation and wooded areas.

The safeguarding and qualification of the Agro-sylvo-cultural activities is one of the key points of the Park. That is why one of the Park's goals is the adaptation of "measures and initiative aimed at sustaining a progressive reduction of the ecological impact of agricultural activities, aimed at agronomic practices which are more compatible with the safeguarding of the environment", that is to say organic agriculture.

The Park occupies a surface area of approximately 46,300 hectares for agricultural use. This agricultural territory spreads out like leopard spots from the limits of the Park, spotted between 19,000 hectares of urbanized territory.

THE CULTURAL LANDSCAPE

The South Milan Agricultural Park also represents a cultural resource. In it, one finds buildings of architectural and historical value distributed in the less well known corners of the territory. Houses and buildings, witnesses to the peasant's way of life and work, are supported by

the silence of the countryside circled by a network of rural streets, tow waterways, bicycle paths (finished or being finished), drainage ditches, canals, locks and springs. Abbies emerge, a witness to the reclamation work done under the orders of the Chiaravalle (Cistercian), Mirasole and Viboldone (Humiliati) Monasteries.

Other structures remain hidden below the rice fields and water meadows. A rich patrimony of monumental goods present in the Milanese ground is waiting of to be discovered and appreciated.

The presence of castles provide testimony of the times of the Visconti and of the Sforza in this territory. For centuries these buildings were used to oversee the countryside and the agricultural work. The castles of Binasco, Cusago and Melegnano are of considerable value, as are those of Cassino Scanasio (14th century), Locate and Peschiera (15th), Buccinasco and Macconago (16th), and Rocca Brivio (17th). The villas around Milan, which often developed along the waterways, were the vacation homes or hunting lodges of the Milanese nobility during the 1700's and 1800's.

Beside this testimony of a most noble past there is the genuine beauty of a poor and more concrete farm, the *cascine* and prized rural hamlets, with their annexed icehouses for the conservation of food, and little chapels and windmills.

From amongst the *cascine* the fortified agricultural complexes of Carpiano, Fagnano, Gudo Visconti, Tolcinasco, Settala, and Coazzano emerge along with the rural hamlets of Cascina, Resenterio, Selvanesco, Conigo, Cassinetta, Bagnolo, and Sarmazzano. Besides these, there are the ancient windmills like those of Bazzanella, Vione, Gudo Gambaredo; the ancient farm structures with towered gates like in Dresano, Locate, and Zivido. There are the *cascine* whose structures show their monastic origins such as in Colturano, Gaggiano-Vigano, Mediglia, and Tribiano. There are interesting examples of 19th century neogothic *cascine* in Cislano, Rozzano and Zibido. Finally the country villas of Bareggino, Corbetta, Gaggiano, Trenzanesio, and Vittuone are well worth mentioning.

There are many architectural elements which, although they may not be of any value at all, still make up a fascinating testimony to rural architecture and are of a cultural significance which should be maintained. They serve as a physical memory of the passage of the past systems of production.

The recuperation of the architectural and monumental goods for a use coherent with their origins represents an enormous opportunity for the Park. Some significant examples of the recuperation of the *cascine* and of other elements connected to the agricultural tradition have already

been done. Take for example the *giazzera* (icehouse) of Cornaredo, the agricultural museums of Albairate and San Giuliano, and the restructuring of the *cascine* in Albairate, Assago, Buccinasco, Milan and Rozzano, which were transformed into exposition and cultural centers. Within an Agricultural Park the structure of peasant origins, linked to the so-called "lesser" rural architecture represents an important cultural, educative and recreational resource.

The development of simple rural tourism which is compatible with the environment (agro-ecological education, direct sales of typical products, restaurants in the ancient osterie outside the city walls, instructional walks through the traditional rural landscape, etc.) are an important path towards the revitalization and appreciation of the rural architectural patrimony.

THE NATURAL LANDSCAPE

The Park wrapping around Milan presents a greater extension of agricultural areas than wooded areas.

In the beginning, there was a dense forest made up of various oaks and white hornbeams, mixed with lime, elm, ash, maples, wild flowers and wild cherries, which substituted the current landscape of agricultural uniformity.

The wetlands and riverside environments were also diffused. There were oxbows and meanders of the Lambro and other water flows, with flowering zones on its banks (just below the ground level of some of the plains). Springs and swamps hosted the typical vegetation of wetlands, with black alders, poplars and willows, as well as beds of reeds and rushes. This created a rich ecosystem capable of supporting the presence of precious fauna: herons, raptors, swans, egrets, wild geese, night herons and other swamp animals which have since disappeared like the otter, beaver, wolf, bear and deer.

There are however a series of green areas of naturalistic area which is still spread across the territory which serves to testify to the unique and irrepeatable natural wealth of the area.

An important role is played in this area by the springs. The springs are sources of water which spout where the ground water encounters impermeable clay layers which allow the water to rise to the surface. The water shoots out forming a font that is a source which is the origin of the so called spring. Alongside this, a rich, flourishing vegetation develops which creates a natural oasis in the countryside.

The Park has selected some zones to safeguard particularly important natural resources. These are the Fontanile Nuovo (Bareggio), Muzzetta Springs (Rodano) and Lacchiarella Oasis Natural Reserves. In them there are zones which curate the

appreciation of the landscapes formed by the integration of nature and agriculture which are typical of the plains. It is a landscape in which the main role is filled by hedges and rows of trees (consider the area west of the Park around the cities of Cusago, Cislano, Bareggio and Vittuone), and traditional cultivations (rice, water meadows, grass) of the "set-aside" fields (a practice instituted and subventioned by the European Union in order to limit excess agricultural production and favor, among other things, the formation of a refuge for wild fauna).

In other zone of naturalistic interest, incentives are provided for naturalization interventions in the territory for woods and wetlands: the Woods of Cusago, Riazolo, and Caregione and the wetlands of Lamberin di Opera, Pasturago di Vernate and Paullo are just some of the significant examples in terms of scientific interest and the evolution of the vegetation. Additionally, the use of agricultural techniques which are more compatible with the wealth and biodiversity of the ecosystem are supported, such as organic farming, and naturalization interventions along the vegetation strips parallel to the course of the river (including intervention through naturalistic engineering).

THE EXPERIENCE OF WOODS IN THE CITY AND THE CAVE PARK

The Cave Park in the eastern belt of Milan and the area of the Woods in the city, occupy a surface area of over 2 million square meters within the South Milan Park.

The requalification plan issued in 1997 brought the 33 initial hectares of the Cave Park up to the current 110 hectares. The Woods in the city, which spreads over 80 hectares, is one of the first examples of urban forestation realized in Italy. It began in 1986 with the volunteer actions of the environmental association Italia Nostra. It is also for this reason that it received the important "Treasure of the world/ Unesco" recognition which is given by Unesco clubs to site of particular natural, cultural and social interest which are cared for and recuperated with the full cooperation of the local community. Despite the extraordinary success and the notable recognition, today, this precious urban green area is threatened by urbanistic pressure.

THE PLANNING

Through the Piano Territoriale di Coordinamento or PTC (Territorial Plan of Coordination) the South Milan Agricultural Park has selected different "types" of territory or zones:

- a. Agricultural territory in the metropolitan belt and green areas of the urban belt
These are the areas dedicated to professional agricultural activities in closet proximity to the city. The agricultural activity is preserved through

the management of the territory in a manner to avoid the introduction of new infrastructure and buildings that could bring about a fragmentation or alteration of the rural building patrimony (except for transformations for agricultural purposes).

- b. The Natural Reserves of Fontanile Nuovo, Muzzetta Springs, the Woods of Cusago and the Lacchiarella Oasis. These are the most esteemed naturalistic areas of the Park.
- c. Zones dedicated to the promotion of the landscape. It is a zone in which agriculture assumes a particular importance in the characterization of the landscape. Traditional cultivations, set-aside fields, and the improvement of the hedges and trees is promoted. They are set up for cultural, recreational and sports use.

These include sub-zones ("parks of existent or projected local interest", "existent and projected sports and recreational structures and centers", and "abandoned mines") which bridge the areas outside the park and the agricultural areas of the metropolitan belt.

Alongside the activities of agricultural enterprises in this zone, it is proposed to carry out interventions aimed at the cultural, recreational and sports use of the Park.

- d. Areas for the cultivation of mines as industrial and conventional archeological sites. The activities in these areas are regulated in accordance with the province level plan for mines and the laws regarding areas connected to archeological value.

PROJECTS FOR THE SOUTH MILAN AGRICULTURAL PARK

In the Accordo Quadro 2002 (2002 General Agreement) between the Ministry of the Environment, the Ministry of the Treasury, Budget and Economic Planning and the Region of Lombardy funds were made available for projects in the regionally protected areas, aimed at the acquisition of areas of naturalistic value, requalification projects, studies in fauna or the environments which produce reports and management plans for the conservation of habitats and species.

Among the projects planned, the Park and the Region have agreed upon the guidelines and the end of the project named Ecological requalification interventions – Forestation and floral requalification of the South Milan Agricultural Park. During the preliminary drawing up of the project, the 61 municipalities of the Park were called upon to collaborate and make available city lands (when the cities had such land available), where such interventions could be carried out.

The goals of the project, agreed upon with the Region of Lombardy, concern:

- a. The forestation of uncultivated areas and the floristic requalification of the existing forest areas. The vegetable species to put in place have been selected from among the indigenous plants of the Lombard plains woods by the technicians of the Park, by ERSAF (Regional Entity for Agriculture and Forest Services) and by the Regional Center for Autochthonous Flora, which collaborated on the project;
- b. The creation of two centers for environmental education and naturalistic use near the Lake of Basiglio and the Fontanili di Rho Park;
- c. The reinforcement and requalification of the ecological passages of the Park.

During the course of the predisposition of the definitive-executive project a list of tree, bush, and grass species was written up to be used in the renaturalization interventions. The selection criteria considered the purely phytogeographic elements, excluding a priori all species that were not autochthonous to the valley, as well as the station ecological characteristics of the project area, the ease with which such species take root and the available of the Center for Autochthonous Flora to attempt, based on previous experience, the experimentation of cultivations, particularly in regard to the herbage plants.

FROM THE PARKS SYSTEM TO THE ECOLOGICAL NETWORK OF THE PROVINCE OF MILAN

The newest project in the recuperation of metropolitan landscapes is the Green backs project of ecological passages conceived to recuperate the connection of green with the heart of the metropolis, setting aside spaces between urban areas and the major axes of infrastructure. The construction of the green back requires a substantial activation of the municipalities through the institutions of the Local parks of Supermunicipal Interest.

These types of parks, only foreseen in the regional legislation of Lombardy, are areas that are realized from the round up, from initiatives from the municipalities called to coordinate amongst themselves for the urbanistic safeguarding of the territory. 17 supermunicipal parks have been instituted in the province of Milan alone (70 in all of Lombardy), and many of these are actually areas left over from the urban advance, often lacking their own naturalistic value, but deserving of protection as a "benchmark" in the ecological project of the province of Milan. It is not so much to safeguard the natural environment but to reconstruct a natural trauma which has been lost over the last few decades through the disorganized occupation of the terrain,

and to create a new natural metropolis. Initiative have already been identified which, beyond the institutional activation, call the community and citizen's associations into play. New woods are already growing in North Milan, thanks to the efforts of volunteers, school groups, and elderly groups. Often these have been coordinated and encouraged by associations such as, above all others, the Circoli della Legambiente.

RECOVERING METROPOLITAN RIVER LANDSCAPES

The project for recovering the Llobregat river environment and landscape in the Baix Llobregat region

Ramon Torra i Xicoy
Antoni Farrero i Compte
Victor Ténez i Ybern.

How should we embark upon an understanding of the city in relation to the countryside? (...)

After a little study we can move on to the generalisation of the "valley section" (...)

This profile is associated with a diagrammatic representation related to the early occupations conditioned by this relief.

This serves as an introduction to the rational geography of cities from the point of view of its regional origins. To begin with, they can be better studied and understood if we start from the valley and its resulting occupations with the consequential types of human settlements (...)

This principle of "geographic control" is of vital importance both for understanding cities as well as the layout of new cities; and their disastrous violation, (...) is an important cause of constant economic waste and aesthetic havoc.

«The valley section», Patrick Geddes

In *Cities in Evolution*,¹ Patrick Geddes suggests that when considering cities that spread across the territory we should begin from the two-way tension between two approaches to the matter: that which is based on the Town-Country tension and the opposite, or corresponding approach, the Country-Town tension. Although time and translations of his work have come and gone, this consideration by Geddes' still holds true when we talk about this reversible tension between the city and the countryside, the urban reality and its environs. From as far back as 1915, Geddes, with remarkable prophetic foresight, drew attention to how urban development processes, as generators of metropolitan regions, tend to transfer their immediate needs to the territory, the Town-Country tension, far too often ignoring the potential of incorporating

non-urbanised territories to enrich the structures of major cities. In other words, ignoring the Country-Town tension.

When Geddes, biologist and precursor of modern theories about the metropolis, tries to explain to us the basis of this often overlooked Country-Town approach, he resorts to the example of a valley which, as a synthesis, illustrates the capacity of environmental features to give order to land development. A valley provides tangible evidence of an already existing order in the territory which urban development strategies have to understand if we want to avoid wasting economic resources and wreaking aesthetic havoc. In other words, what is called for here is the need to articulate an organic relationship between urban areas and their metropolitan environs, which at the same time opens up the debate about the potential of the environment to play an active part in the structure of the metropolitan city.

Almost one century later, Geddes' warnings about the dangers of uncontrolled urban sprawl left to the devices of the Town-Country logic quickly come to mind when we consider a metropolitan river such as the Llobregat: from the urban perspective it is the vestige of a road running through the territory, a level location suitable for building over more or less organised grids and it even constitutes a precarious, but practical, drainage and sewage system (albeit said with certain irony). The river also provides a vast extension which is a kind of paradigmatic "vague terrain": although not always a river as such, it will be from time to time as it runs between wider and narrower avenues. This is a space which is resistant to the processes of land development, yet difficult to classify and far too often left abandoned to its destiny of becoming marginalised.

So, recovering the river does not simply mean asking how we can preserve it in the face of urban development which tends to degrade it, but, first and foremost, understanding how the river can enhance the metropolitan city. There can be no strategy for halting the adverse effects of river urban development which does not contemplate making use of the river in the city. The history of the urbanisation of the river and the civil engineering works to make use of the river in the Barcelona metropolitan area are the topics elaborated on over the following pages.

1. The urbanised river

THE RIVER AS A ROAD

The coast of Catalonia is an exceptionally uneven territory. In such cases, rivers, even small rivers like those we find in the metropolitan area, become determining factors, not only for locating settlements but also for tracing out the dynamic

connections that link the various nuclei at a local and territorial level. They trace the directions in which these nuclei develop, how they are expressed as a system of cities, and at the same time constitute the basis for terrestrial communications and supply lines at a regional level.

The Besòs and Llobregat river basins, in fact, constitute a stretch of the natural route that enters the Iberian Peninsula from Europe. Hannibal with his army and elephants crossed the Martorell gorge as did Augustus later; the same point was the dividing line between what would later be Medieval Catalonia and the territory occupied by the Moors for almost two centuries; and, once again, the gorge was to be the pass through which Napoleon's troops commanded by Saint-Cyr entered the peninsular during the Spanish War of Independence. So, it comes as no surprise that nowadays the Llobregat river is accompanied by three double line railway networks, a motorway, an expressway and at least two secondary road networks (the BV-2002 and the N-340) which are, nonetheless, very important for the metropolitan area, in a strip of land that is little over one kilometre wide.

In the case of major infrastructures such as the AP-7 motorway, the A-2 expressway or the High Speed Train line, they have been planned out according to the criterion of reducing impact on urban fabrics. The result of all this is a river trapped between a giant system of banks which support these infrastructures and protect the settlements from floods, even though by doing so they have inevitably confined the river within a reduced and isolated fluvial space from an ecological and public perspective.

It should be remembered that the Llobregat Valley has not just attended to the need to sustain a flow of vehicles: a huge number of installations, the majority buried, take advantage of unoccupied spaces with gentle slopes. All manner of channels supplying substances, energy or information wind their way alongside a large number of hydraulic waste pipes. Generally speaking, these tend to be discrete but they can be determining factors for operations such as planting forest zones, excavations or managing water drainage or filtering for the territory, etc.

THE RIVER: PROVIDER AND BASIS OF ACTIVITIES

As Xavier Latorre explains in his book, *Història de l'Aigua a Catalunya* (The History of Water in Catalonia),² the first projects that envisaged channelling the waters of the Llobregat for use in Barcelona date back to the mid sixteenth century when the city proposed a dam project sited at the elevation of the Martorell Gorge in an attempt to reinforce the flow of the Rec Comtal. The proposal failed due to the opposition of the Baix Llobregat water concessionaires, and so the first

successful undertaking to improve hydraulic exploitation of the river was the major 19th century water civil engineering works, although the strategy adopted was focused more on land irrigation than supplying water to urban areas. The Infanta Luisa Carlota Canal and the Dreta del Llobregat Canal were opened in 1819 and 1861, respectively, consolidating exploitation for irrigation and defining a key urban figure that would explain the evolution of the territory during the following 150 years: the "regants" (the Catalan term for those authorised to use the water for irrigation purposes).

Although the irrigated fields later receded to a certain degree, they proved to be the only type of agricultural land able to resist the dynamics of urban development. The dry farming lands, with a very strong tradition of vineyards, olive groves and fruit orchards up to the first half of the 20th century, diminished dramatically. Although this was due in part to the pressure of urban sprawl, the main reason was the breakdown in the "masia" structure (the traditional Catalan farmhouse and associated land structure) located at elevations above the valley nuclei. Details in the 1953 Pla Comarcal (Regional Plan) and American orthophotomaps, show that there were still major extensions of agricultural land on the lower slopes of the Garraf, Ordal and particularly Collserola; these had almost completely disappeared in favour of forest areas when the Pla General Metropolità (General Metropolitan Development Plan -henceforth referred to as the PGM) was drawn up in 1976. Today, dry farming has diminished significantly in the mountains on right side and has almost completely disappeared from the left side, particularly downstream from the confluence with the Rubí torrent.

As regards the original structure of the settlements, the municipal nuclei offer characteristics that let one clearly see their position in relation to the river, from which three clearly differing types can be identified. Those which, like Castellbisbal or El Papiol, begin at a distance from the alluvial plain and whose structures therefore reflect negotiating the slopes. Within this category we could also include the more distant mountain municipalities which are scattered across the mountains of the Garraf and Ordal, always located in relation to a main torrent which generates the access route in the relief morphology. At the other end of the scale we find the more river nuclei in the strictest sense, such as Pallejà and Sant Andreu de la Barca. They begin from a nucleus at the edge of the flood plain followed by suburban growth along the river bank paths that continue forming a characteristic elongated shape. The third category comprises municipalities such as Sant Boi de Llobregat, which are also located close to the river but located slightly above the plain, thus protecting them from floods.

Just as Geddes claimed, the valley and the river are determining factors in the layout and structure of settlements and their development around the Llobregat, at least up to the beginning of an awareness of a metropolitan Barcelona, which can be dated back to the 1930s, the moment when the first attempts were made to plan out this new reality.

THE PLANNED RIVER

The 1932 Regional Planning, with visionary foresight, identified the need to tailor the development of the areas around Barcelona to pre-existing territorial features, clearly establishing a correspondence between the Llobregat fluvial environs and the main focus of Catalan land development. At the same time, to paraphrase Manuel de Torres i Capell,³ it also clearly introduced the idea of boundaries between areas set aside for urban development and the unoccupied territorial structures, the former being the determining element.

As regards Llobregat, the 1932 Regional Planning proposed a structure from the sea to Martorell, that was perhaps a trifle simplistic and not particularly metropolitan given its high degree of territorial specialisation. But, it was well defined in terms of its relationship with the physical environment as it set out industrial areas on the left bank of the river over the delta preserving the neighbouring river forest areas. The industrial fabrics would only reappear from Martorell onwards being located over the double structure of the Llobregat and Anoia. Between Martorell and Sant Boi the irrigable plain was preserved the same as was done below the Somontà axis in Gavà and Viladecans. All of this allowed for a garden city continuum above the river nuclei (which could be seen as a permeable fabric adapted to the environment as in the Howard or Unwin examples), occupying the foot of the lower slopes of the mountains, always above the territorial communication routes, and defining the edges of the alluvial plain. The subsequent regional planning presented an identical section of the river up to the summits on the two sides, and at the same time alleviated an area from the pressures of the most intense urbanisation; an area comprising dimensions that could be considered critical for the metropolitan area as a whole.

This major scale trial was immediately followed by the Pla Macià (Macià Plan), which expressed the metropolitan structure based more on the coastline than on the river areas. The next was the 1953 Plan de Ordenación de Barcelona y su Zona de Influencia (Regional Plan for Barcelona and its Field of Influence), also known as the Pla Comarcal (Regional Plan), the first attempt at planning with the Metropolitan Area as the prime focus. It is common knowledge that the Pla Comarcal follows the lines set out in Patrick

Abercrombie's plans for the metropolitan area of London, himself one of the most eminent followers of Geddes. In fact, both scholars were present at the presentation of the 1932 Regional Planning report as well as the Pla Comarcal. However, careful study of the Pla Comarcal reveals that although one can establish clear parallels in methodology and particularly in the underlying urban planning ideology, it also becomes evident that the planning of these two metropolitan areas had quite different objectives.

The anticipated major population growth (that would rise from some 1,200,000 inhabitants at that time to a threshold of 4,000,000) was distributed across the various municipal nuclei attempting to avoid an accumulation of the population in the metropolitan centre as was proposed by Abercrombie. However, the structure of the proposed growth and its zoning was unclear in terms of a hierarchical settlement logic and even less so as a proposal based on a reading of the physical geographic layout of the territory. The Pla Comarcal included activities which had already started up under little or no administrative control. The division into zones, much more detailed than in the previous cases, was presented, however, in a confused manner over an asymmetrically sectioned Llobregat. The right side incorporated the territorial mobility axis while the left side included a minor road hierarchy bordering the nuclei around Collserola and was accordingly adapted to the degree of encroaching on, sometimes drastically, the irrigated river plain. Similarly, land uses were scattered irregularly across the two sides. On the left bank the Molins and Sant Feliu nuclei fused into a disproportionate industrial grid, and a Sant Joan Despi, Cornellà and Sant Just conurbation was proposed for the strip taken up by major industrial companies that were occupying the central space between various types of residential fabrics, added without any apparent logic. To the south Gavà and Viladecans were fused and major industrial areas were set out below the Somontà bank, right in the delta zone. In contrast, above Sant Boi the proposal drastically reduced urban land use for Santa Coloma de Cervelló and Sant Vicenç dels Horts, mainly residential uses, to change the Quatre Camins areas where the presence of the Molins bridge generated an extensive industrial agglomeration, centred on the junction, which almost reached the scree.

Although the Pla Comarcal begins to put forward protectionist measures for spaces considered to be of value, how it relates to the river is somewhat confusing. This is so apparent that the Pla Comarcal transmits a strong sensation of running aground against the tensions generated by the emerging metropolisation, leaving the ability of the environment to shape the city completely neutralised. It should be borne in mind that the Pla Comarcal was

drawn up before the first Spanish State Statutory Land Law and raises a certain degree of doubt as to whether it could be implemented in a coordinated manner,⁴ as was also the case for the later 1959 Plan Provincial de Ordenación de Barcelona (Barcelona Regional Development Plan). Nevertheless, assigning land uses and classifying types were to be conditioning criteria for later attempts: first for the 1966 Esquema Director del Área Metropolitana (Master Outline for the Metropolitan Area), and then the 1976 PGM itself.

The Esquema Director pursues a clear metropolitan decentralisation objective: defining a new and significant increase in the area of influence, which almost extends to the boundaries of Region I, and proposing a grid development model to alleviate central population growth congestion. The intention was thus to give priority to new poles of development in pursuit of an economically homogenous territory. It proposed new centres of activities with the objective of providing the various sectors with an isotropic infrastructure grid that would have to be able to spin out activities such as industry and the tertiary sector to meliorate urban development in the second and third belt. For all of these reasons, and bearing in mind its characteristics, typical of major scale operations, we could say that this was the plan that was furthest from the ideal of creating a dialogue with the river, or with the territory in general. The discussion concerning alternatives, based on five models, reveals the high degree of indifference of the infrastructure proposals towards the actual physical geography of the territory and, consequently, the fluvial network in general and the Llobregat river in particular. The proposed polarisation, seen as a catalyst for the development impetus at that time, reveals a perception of metropolitan dynamics limited to interpreting the territory as an obstacle to overcome. Among these alternatives in the Esquema Director, the fourth coincides with the "Barcelona 2000" proposal by the mayor Porcioles. This envisaged a route running from the capital city towards Vallés by means of various tunnels running through Collserola, a "Gran Via" (Major Road) crossing an urbanised delta in the form of a megastructure and a major capacity axis to the right passing through cornice strip over the municipalities, from Martorell to Castelldefels. This proposal, without a doubt, marks the height of indifference of metropolitan planning towards the physical geography of the territory. In contrast, however, the integration of existing structures was to be one of the main guidelines in the next stage: the PGM.

The PGM incorporated substantial new changes compared to previous planning. It split the local roads and regional roads removing the latter which were located on both sides of the river like polders in the eventuality of floods, while the local roads make up the lower bank of the

urban continuums of the fluvial face. An extensive and clearly defined strip is left in the middle of these two infrastructures, set aside for agricultural use. By protecting the arable plain, the PGM began a process of evaluating the river environs which recognised the river's ability to establish and order development which, despite now having almost heaped up facades, appeared to secure a more or less homogenous section to the central part of the valley. In spite of this, the demand for land continued to prevail over acknowledging the valley tree structure and its ability to establish an order: the industrial areas would occupy the torrent plains denying their vocation as open space structures, while the low-population residential fabric would continue to scale the slopes degrading the quality of the environment and the landscape.

At the end of the day the PGM was a step forward, as it reinforced measures to protect areas which it considered to be ecologically valuable, generally measures associated with forest areas that would take on a systemic character. However, it did not do the same for fluvial spaces, which would only acquire the category of systems in areas strictly determined by water supply and less for agriculture even though, as time has proven, the latter were the most fragile. Generally speaking, the PGM advanced attempts to organise the valley and delta section, but it did so from the basis of a protectionist principle of emphasising the mutual exclusion between urbanised land and land that could be developed, territory considered as reserved and environmentally valuable space. Today we know that this setting up of boundaries, clearly necessary in 1976 to halt the predatory urban advances since the 1960s, introduced this problematic tendency to marginalise open spaces in the metropolitan context.

The search for a new and mutually invigorating relationship between the occupied and unoccupied areas of the valley, was to be the very guiding star for subsequent research: first by the Corporació Metropolitana de Barcelona (Barcelona Metropolitan Corporation) and then later by the Mancomunitat de Municipis de l'Àrea Metropolitana de Barcelona (Association of Town Councils for the Barcelona Metropolitan Area).

RESEARCH INTO THE RIVER CITY

After various studies had been carried out focusing on metropolitan agricultural plains associated with the rivers in the 1980s, the first step taken by the Mancomunitat de Municipis de l'Àrea Metropolitana de Barcelona in its undertaking to include river spaces, started towards the beginning of the 1990s. It set up a multidisciplinary team within the heart of its own technical resources, aimed specifically at researching river spaces. The task undertaken by this first river team, headed by Jaume Vendrell and Serafi Presmanes,

was basically to analyse the state of the spaces, their function in the context of the metropolitan region and to determine their potential.

The first publication to emerge was, *Criteris i tendències per a la recuperació dels espais fluvials metropolitans* (Recovering metropolitan river spaces: criteria and trends), which focused on the Llobregat and Besòs river basins within the metropolitan area. This was a first draft document that was the beginning of a practically continuous series of analyses and proposals for metropolitan river spaces proposed by the Mancomunitat. This first document spelled out the enormous complexity of this kind of operation and, at the same time, put forward a clear methodology in order to make progress in handling fluvial spaces. First, it established arguments in favour of carrying out research: finding working guidelines to neutralise the environmental degradation of the rivers that would harmonise with changes to infrastructures and with the urban spread of the river municipalities with the final objective of reconverting the rivers into living spaces for metropolitan cities.

This approach begins from reading the territory, and more specifically, for the first time questions related to water play a central role in interpreting the capabilities of the environment: the river determines the various homogenous zones, incorporating the area of the torrents as part of the fluvial system and an environmental approach prevails. In addition, while working within the confines of what were then infrastructure and urban development proposals (incidentally, quite close to the present day reality), an analysis was also made of the vestiges, often completely erased, that had traditionally been the links between the river and the nuclei (not forgetting agricultural areas) in an accelerated process of transformation.

The 1995 "Proposta Marc per a la recuperació dels espais fluvials metropolitans" (Framework proposal for the recovery of metropolitan fluvial spaces) now made it clear that these spaces were needed to redress territorial disequilibrium, as a source of environmental and landscape resources, opening up the debate on which human activities they could accommodate. Whatever the case, it underlined the need for far-reaching changes to redirect the ever-accelerating process of degradation of the metropolitan rivers, pointing out the complexity of the operations given the wide range of authorities involved and the need to assign major resources.

Not surprisingly, efforts to recover the river were to receive support from other institutions that sponsored a variety of studies and proposals, among which I would like to make mention of two that, from all standpoints have been essential

for the Llobregat. First, around 1994, the Diputació de Barcelona (Barcelona Regional Council) began to push the Pla Especial del Parc agrícola del Baix Llobregat (Special Plan for the Baix Llobregat Agricultural Park), which took ten years to be given final approval. It proposed protecting 3,332 hectares of agricultural land managed by the Consorci del Parc Agrari del Baix Llobregat: a new management system to improve the economic feasibility of the irrigable stretches in Vall Baixa and the Delta, and a programme to promote the integration of agricultural lands within its confines, as well as to enhance its landscape qualities. Second, the Agència Catalana de l'Aigua (Catalan Water Authority) backed the Pla d'Espais Fluvials (Fluvial Spaces Plan) which studies the Llobregat as well as other rivers in the inland basins of Catalonia from the perspective of water supply, not only considering surface water management but also the entire hydrologic cycle and its ecological implications.

The formal setting out of these issues, as stated in the Programa Marc, was to be the objective of the following step within the MMAMB itself: the Projecte-Marc de recuperació ambiental de l'espai fluvial del Llobregat en la comarca del Baix Llobregat (Framework-Project for environmental recovery of the Llobregat and Baix Llobregat region fluvial space).⁵ This was the outcome of the agreement signed to this effect by the Consell Comarcal del Baix Llobregat (Baix Llobregat Regional Council), the Diputació de Barcelona (Barcelona Regional Council) and the MMAMB in 2001. The work, managed this time by Fidel Vázquez, was carried out in close collaboration with those municipalities affected which, this time, embraced all of the Baix Llobregat riparian municipalities. Attempts were now made to identify in specific terms the types of areas of operational areas to create the necessary databases to deal with the complexity of the fluvial territory and to lay out clear and methodologically well-defined objectives.

This task required, first and foremost, a major deployment of resources focused on compiling the enormous amount of information necessary to deal with an area of 50 kilometres of river with a direct link to a surface area of more than 1,600 hectares and an even larger surface area of territories linked to the project. This was an area that, in addition, was undergoing continual transformation and that also needed to be appraised from wide range of perspectives such as mobility and territorial logistics, surface and ground water supply, urban development and management of open natural spaces, etc.

This compilation of data helped to establish three main objectives: to delimit the fluvial space, establish a methodology and operational criteria, and finally to put forward a projects framework concerning the fluvial space embracing varying

dimensions and characteristics. The delimitation of the fluvial space could be practically automatic if we consider it from a multidisciplinary perspective: geomorphology can indicate the limits of the alluvial plain, as can hydraulics, if we relate them to the laws defining what a fluvial zone is. Nevertheless, the complexity of the pressures to which the Llobregat fluvial space is subjected transforms this decision into an overall strategy and, in fact, almost into a project. Thus, apart from the aforementioned points, we need to bear in mind urban, infrastructure and landscape issues, especially ecological questions, to approach delimitation from a multi-factorial analysis standpoint. The result was not the delimitation of a single fluvial space, but instead an entire system of spaces of interest, incorporated into the scree zone and the banks, which was superimposed with a series of more accessible spaces that attempted to recover the traditional ways in which the various nuclei had interacted with the river. Furthermore, the Projecte Marc began to conceive of the river in terms of a hydrologic system that would incorporate the complex system of torrents and canals comprising its river basin, in a gesture that made its complex relationship with the territory even more evident.

Beginning from the basis of delimitation, it was possible to define a diagnostic for each zone and the corresponding strategy to be employed with the clear precondition that preserving the environment in good condition is the starting point for recovering fluvial space. So, by analysing the interrelationship between the physical environment, the natural environment and the human environment, it was understood that any works in the fluvial space territory that might affect environmental equilibrium would be produced by actions taken in the physical environment or in the human environment, but that these would have a direct effect on the natural environment. To bring about this improvement, the Projecte Marc called for, first and foremost, making both the public and politicians aware of the value and the need to recover the fluvial space, to later be able to put forward a progressive recovery programme that would define the degree of space restoration works as being inversely proportional to corresponding maintenance needs.

Finally, and as a result of the study, the Projecte proposed a 12-point programme for river management:

1. Follow a policy of joint management.
2. Maintain or increase the river open spaces.
3. Check the march of urban land occupation and antagonistic uses.
4. Establish communications with the infrastructures.

5. Enhance the hydrologic performance of the fluvial system.
6. Preserve the interaction between surface and ground water.
7. Improve the quality of the water.
8. Improve vegetation structures and quality.
9. Promote natural habitat diversity.
10. Integrate national heritage.
11. Determine accessibility and make it compatible.
12. Carry out specific operations, evaluate results and programme maintenance.

The deployment of this project entailed programming a total of more than 50 operations that covered the entire lower stretch of the river basin. This meant that river works were not limited to fluvial system specific operations and, furthermore, they incorporated the analyses from a wide range of proposals such as new sectors for urban development in the municipalities in the regions, so as to determine how these proposals can contribute to improving the river. So, in cooperation with the town councils and other institutions involved, jointly agreed operations can be proposed which are related to the operations so as to achieve the best results from the environment and which also have a clearly urban function: to structure a part of the Metropolitan Area from the basis of the fluvial system, that is, those municipalities which make up the Llobregat river basin.

2. Recovery of the river

At present, the various studies that have been carried out during the last two decades have received a significant boost to the development potential of specific operations thanks to the establishment of the Consorci (Consortium) for the recovery and conservation of the Llobregat river. This is a new institution that has come about as a result of the collaborative efforts of a diverse range of administrative bodies: the Administració general de l'Estat (General Spanish State Government) represented by the Ministerio del Medioambiente (Spanish Ministry for the Environment), the Departament de Medi Ambient i Habitatatge (Department for the Environment and Housing), the Departament de Política Territorial i Obres Públiques (Department for Territorial Policies and Public Works), the Diputació de Barcelona (Barcelona Regional Council), the Consell Comarcal del Baix Llobregat (Baix Llobregat Regional Council), the Entitat Metropolitana dels Serveis Hidràulics i Tractament de Residus (Metropolitan Body for Water Services and Wastewater Treatment) and the MMAMB itself. All have joined forces and resources

to begin a whole series of projects focused on recovering the Llobregat River environment and landscape.

Two executive projects were drawn up in 2006 which were approved and assigned in May 2007 by the MMAMB, accordingly delegated to act by the Consorci, and are at present in the implementation phase. Two stretches of the river have been chosen as the first operations for which projects have been drawn up to recover the environment and landscape. One runs from the Martorell Gorge to the confluence of the river with the Rubí torrent, affecting the municipalities of Martorell, Castellbisbal, Sant Andreu de la Barca and Palau de Jorja. The other begins at the Sant Boi de Llobregat municipal limits and passes through Sant Joan Despí, Cornellà and Hospitalet reaching the C-31 viaduct running over the Llobregat in the El Prat municipality. Despite the spatial diversification of the proposals for the river derived from studies carried out in the Projecte-Marc, it has been decided to begin important work on the scree and nearby fluvial area, even though the choice of stretches corresponds more to an interim situation. It was decided to continue monitoring the fluvial stretch that would be affected by the land taken up by the high-speed train line until construction finishes. The objective was to avoid interference and to be able to assess the effects of these works on the fluvial system, and thus be able to adapt environmental and landscape recovery operations to the corrective measures needed to counter the impact of the train line construction work. These two stretches, which are presently under construction, are various projects run by various agents that have been determined by tender.⁶ All in all, both projects, as well as the intermediary stretch which has been developed to the stage of an advance project, show certain common criteria and characteristics and which will have to guarantee conceptual unity. These are projects which focus their operations on the environment and the landscape, which is why they have been drawn up by multidisciplinary teams able to deal with the specific demands of the task.

Apart from the issue of recovering the environment and landscape, the task of regulating access to the river has also been a central consideration of these projects. They include, as a minimum requirement, a pedestrian and cycle path on each bank along the entire stretch of the river, which are situated just next to the scree edge in the area of the public water supply. Also, at certain given points, the projects propose new access means from the nuclei to the fluvial area. It would be far too simplistic to set the objective of environmental improvement in opposition to works that facilitate frequenting these areas, providing they are adequately planned. The almost non-existent relationship between the public and the river could be considered one of the determining factors behind the marginalisation of the fluvial space, therefore to re-establish this relationship

is an essential factor for its recovery. The Projecte-Marc had already pointed out this absence from its own detailed research into which paths had historically linked urban nuclei and its case by case analysis of the possibilities of recovering them. This proved to be a difficult task given that in the majority of cases the construction of major infrastructures made this infeasible. This is why it has been necessary to consider, at certain points, new strategies to integrate the river into the urban network of open spaces, perceiving it as a new type of open space at a metropolitan scale comparable only with Collserola because of its magnitude and possibilities.

The recovery of the river for the general public and bringing it back into the minds of metropolitan inhabitants constitutes a project theme that we can see as a strategic objective in a large number of metropolitan areas around the world. The work by Anne Whinston Spirn and James Corner in Philadelphia, the recovery of the Anacostia in Washington or the Don in Toronto, the IBA-Emscher Park, the Thames and the River Lea in London or the impressive project for recovering the Cheonggyecheon in Seoul, demonstrate the vital importance of recovering the river in metropolitan contexts as elements that generate environmental and landscape quality and, all things considered, as spatial structures capable of building the metropolis, oddly enough, from their non-urban character...just as Geddes called for.

- 1 Patrick Geddes, *Cities in Evolution*, 1915. Taken from the Spanish translation edition, *Ciudades en Evolución*, Ediciones Infinito, Buenos Aires 1960. The Spanish edition includes texts and some photographs from the exhibition on cities by Geddes from 1905 onwards.
- 2 Xavier Latorre, *Història de l'Aigua a Catalunya*, L'abecedari, Premià de Mar 1995.
- 3 Manuel de Torres i Capell, *La formació de la urbanística metropolitana de Barcelona*, MMAMB, Barcelona 1999.
- 4 Antonio Font, Carles Llop, Josep Maria Vilanova, *La Construcció del Territori Metropolità. Morfogènesi de la regió urbana de Barcelona*, MMAMB, Barcelona 1999.
- 5 For more detailed information on the methodology of the Projecte Marc, see Fidel Vázquez Alarcón and Ramon Vázquez López, *La transformación del espacio fluvial del Llobregat en el Baix Llobregat*, Ramon Folch (Coord.), *El territorio como sistema*, Diputació de Barcelona, Barcelona 2003.
- 6 The Martorell to Rubí torrent project director is the architect and landscape designer Alfred Fernández de la Reguera; the lower stretch is headed by the company of architects Batlle i Roig.

RESTORATION OF PERIPHERAL URBAN AREAS

Project for improving the landscaping of the access to Granollers along the BP-5002.

Jaume Busquets i Fàbregas

"...i aquesta ciutat la voltaria d'unes arbredes altes i verdíssimes"

(and I would enfold this city in high and lush green trees)

Josep Carner

1. Restoration of urban peripheries and landscape improvement

In metropolitan contexts, urban peripheries — understood here as the outskirts of cities — have often been forgotten areas; places that have not enjoyed the attention that we pay to historical quarters or newly-created residential areas. They are areas that almost always take on an unfinished, precarious and impersonal appearance, and in many cases, are associated with negative ideas of marginality and lack of public safety.

The urban peripheries of metropolitan areas are often the meeting point between two visible worlds (the urban world, in the strict sense of the word, and the rural world), generating an often uneasy dialogue and a landscape that seems disturbing because it fails to conform to either the tidy image of city centres or the more or less bucolic image of the countryside.

In recent decades, the dispersed nature of urban growth and the uncontrolled proliferation of peri-urban activities have contributed to an expanding area displaying some of the characteristic traits that are attributed to peripheral landscapes, such as disorder, lack of identity or the "banalisation" of these areas.

In addition, the distinction between city centre and outskirts is becoming increasingly weak in contemporary metropolitan environments, and we are seeing the creation of areas that are difficult to categorise using the conventional categories, and which are above all characterised by the hybridisation of uses and functions. One of the dangers of this dynamics is the formation of a landscape that is hard to read, while at the same time being depersonalised.

Within this context, the accesses to urban centres become tremendously important in the processes of evaluating urban peripheries; on the one hand, because they establish the relationship of function and significance between cities and their metropolitan environments, between inside and outside, between the past and the present. On the other hand, because they become a great opportunity for re-conquering peri-urban areas for public use and for creating more liveable places.

This article deals with the importance of trees and the arrangement of uses and spaces in configuring the entry points to cities, and describes the landscape improvement project for the access to Granollers along the BP-5002 road on the Palou plain, in the Barcelona Metropolitan Area.

2. Accesses to city centres and the role of trees

There was a time when the approaches to the majority of towns and cities were along roads lined with leafy trees. Travellers knew they were approaching a built up area because a kilometre before arriving they would find themselves travelling through the green archways formed by the trees at the entrances to the towns. And apart from the approaches to the towns, trees formed a common part of the make-up of many roads and stopping places.

Later, the country experienced economic growth, and the car became the vehicle of choice for the middle classes and one of the icons of a society that was striving to distance itself from the poverty of the first decades of the Franco dictatorship. In the nineteen sixties, with the increased popularity of the motor car, public areas and roads had to be adapted to its needs and demands. Old roads were widened, pavements were narrowed, parking areas were set aside (often at the cost of public areas), etc. In a short time, the automobile had become lord and master of our towns and cities, at the same time as becoming a work tool for many and an instrument of leisure for an increasingly broad swathe of the population.

The elimination of trees from our roadsides was a part of this process of transformation of the urban environment and infrastructures, in order to satisfy the needs of an ever growing level of traffic. Many still recall the sight of freshly felled shade-giving plane trees lining the roadside and the striking image of the roads left desolate. These were the times of the development boom, and trees were seen as an obstacle to progress, as an element associated with a world that seemed condemned to disappear, all in the name of a better future. The press of the day talked of security, avoiding accidents, adapting to change, etc. The truth however is that other options that might have achieved the same goals by less drastic means were not even considered. An example of an alternative strategy was that adopted by numerous French towns and now reinstated, of turning two-way streets into one-way thoroughfares; a system that allowed a great number of trees to be saved, many of which are now over a hundred years old.

Later, the country embarked upon an intensive phase of political reform, with the holding of democratic local elections. The new local authorities had to deal with high urban deficits and confront many social challenges. By then, some of the drawbacks of the age of the motor car were already becoming evident (ever-heavier traffic, gridlocked roads, chronic shortage of parking space, pollution, noise, etc.), and a new trend

began, with policies aimed at recovering public areas, pedestrianising old town centres, introduction of speed limits, etc. Almost three decades later, this process is far from over, and we now live the apparent paradox of having to balance a growing number of cars on the roads with the demand for cities that are better places to live and for safer traffic conditions. As with all man-made things, the automobile, far from being a panacea, has shown itself in all its complexity, with both undoubted advantages and serious drawbacks which we need to learn to deal with rationally, to be able to make cities more comfortable places to live in and with a better quality of life for their inhabitants.

Today the need to improve urban peripheries and make driving a more pleasant experience means that trees have regained their importance and potential in the configuration of urban areas that are more people friendly, and this potential can be seen as especially useful in defining the accesses and approaches to towns and cities. In this sense, the restoration of roadside trees should not be thought of as an exercise in nostalgia, or simply an act of decoration, but as an opportunity to design decent approaches to towns and cities, to improve the environment and increase people's quality of life.

The project presented below shows how trees have been used in an urban periphery restoration project, in a case where it was not possible to replicate the traditional model of planting a double row of trees in tunnel form, since the width of the road made this option impossible.

3. The project for improving the landscaping of approach to Granollers

The project for improving the landscaping of the southern approach to Granollers, in the area known as the Palou plain, is set within the framework of landscape improvement initiatives envisaged by *Law 8/2005 of June 8th, concerning the protection, management and arrangement of the landscape. Among other actions, this law establishes The landscape improvement of the peripheral areas and the access roads to towns and cities, and also the elimination, reduction and transferral of the elements, uses and activities that degrade them* (Article 8b) as one of the kinds of landscaping actions embarked upon by the public authorities.

The project was carried out between 2005 and 2007, by means of a collaboration agreement between three administrations: the Department of Land Policy and Public Works' Office of Architecture & Landscaping, Barcelona County Council and Granollers City Council. Their objectives were:

- The improvement of the urban infrastructure on the approach to this city along the BP-5002.
- The preparation of the area for pedestrian use.
- The improvement of the general road safety conditions.
- To dignify the image of a particular environment —the Palou plain — by maintaining its rural character.

The draft landscape improvement project was drawn up by the Landscaping Service of the Office of Architecture & Landscaping in 2005, and the executive project was produced in 2006 under the direction of architects Quim Rosell and Natalia Bernárdez. The total surface area acted upon was 29,000 sq. metres, and the total cost of the work (co-financed by the three signatories to the agreement) was 1,869,743 €, with a pass-through of 70.00 €/m². The tenders for the work were awarded in 2006 and the work was completed in 2007.

The Palou plain, to the south of Granollers, was formerly a district belonging to the village of Palou, until it was absorbed into the city in 1928. It consists of a flat area bounded by the railway line and the River Congost. Its agricultural nature has been maintained as a result of the desire of the city council to preserve the area as non-developable. The plain consists of an agricultural patchwork made up of a network of rural thoroughfares such as the Ral road, along which stand a number of farmhouses and a church of Romanesque origin. Other elements of historical interest include the lines of terraced houses, occupied in the 18th and 19th centuries by farm workers, grouped together in small rows alongside the road.

In recent decades, its closeness to the built up area and the city's progressive expansion, together with the proliferation of activities and buildings typical of peri-urban areas, have partially altered the traditional make-up of the Palou plain, although it still preserves its particular farmland character in one of the most active areas in the region of Vallès. This preservation has been possible due to the firm stance of Granollers City Council in recent years in defending the area's non-development character, a posture which culminated in the approval in 2007 of the Municipal Urban Development Plan, which classified this area as non-developable land.

For practical purposes, the BP-5002 road, which runs along the length of the Palou plain, has until now been the main road for accessing and entering Granollers for vehicles coming off the AP-7 motorway, and has suffered some of the most common problems in this type of thoroughfare: heavy traffic, lack of road safety, poor urban infrastructure, lack of comfort, uninspiring landscape, etc.

4. Scope and aims of the project

The project covers a 1.5 kilometre long stretch of the BP-5002 from the motorway access junction to the centre of Granollers. Up until the middle of the 20th century, as was common in many approaches to towns and cities in Catalonia, it was characterised by rows of trees planted along both sides of the roadway, as can be gleaned from photographs and chronicles of the period.

This arrangement was to disappear, as was the case in other roads in the region, with the increase in popularity of automobile use. The felling of trees and the laying of tarmac changed the appearance of the area, and it was further altered by the gradual appearance of new constructions and activities along the sides of the road (housing, workshops, shops, warehouses, restaurants, etc.).

When it came to evaluating the Palou plain project, the appearance of this area was not substantially different to a great many other accesses to town and city centres (partial and broken urban development, lack of functionally defined public areas, disordered presence of advertising, the continued existence of obsolete elements, etc.), yet it had one remarkable feature: the coexistence of this set of problems together with an exceptional landscape potential: a quality environment, wide views of the Palou plain farmland, availability of areas to act upon, etc.

The specific goals of the project were aimed at putting right the multiple deficits that the area presented, and involved:

- Restoring an overall unitary image of the approach, adapting the width and level of the road to the current physical determining factors and functional needs.
- Planting roadside trees as a continuous element along the whole of the route, while strengthening the area's most valuable visible elements and filtering out the less fortunate sites.
- The formal definition and delimiting of the areas adjacent to the road in terms of their safety, functionality and harmony.
- The setting out of public areas for pedestrians to move around and spend time in.
- Slowing down the traffic flow by redefining the road width.
- The provision of urban fixtures.
- The removal of overhead cables.

One of the most important challenges of the project was to find a suitable solution to the asymmetry that existed between the two sides of the road, both in terms of

the distribution of space, and the layout of buildings and the diverse elements that accompany the thoroughfare. The road runs in a north-south direction, from Granollers to the motorway junction. The eastern side of the road has the greater amount of buildings and activities, whereas on the western side, next to the river, the physical occupation of the area is less pronounced. This leads to an intermittence of views on the mountain side, and a more constant view on the river side, where the majority of the farmhouses and the small village of Palou stand. In a north-south direction, the sector closest to Granollers, some 500m long, is practically free of buildings, which are in contrast concentrated in the half that is further from the town.

Finally, it should be noted that the BP-5002 road landscape improvement project is part of a more ambitious process of municipal actions aimed at restoring the whole Palou plain. The more important of these actions include improvements to the Ral road that runs alongside the main road and the river, the dredging of the river bed and the creation of a flowing current, and other more specific actions aimed at strengthening other significant elements.

5. Features of the project

The main idea behind the project for improving the landscaping of the southern access to Granollers was to develop the landscape of the area so as to restore its character as a "gateway to the city". In this context, conceiving the road as a "gateway to the city" meant that throughout its length, the BP-5002 had to become a privileged route from which to perceive the approach to the town and the relationship existing between the city and its surrounding areas. A second important idea, closely related to the first, was the improvement of the thoroughfare's urban functionality and comfort, especially for pedestrians and local residents.

The project envisages the road as an element integrating the activities and buildings that lie along its length, and as a prominent and structuring element of the wider Palou plain restoration project. With this end, it provides a wide-ranging and coherent response to the succession of situations and needs arising along the thoroughfare, at the same time as strengthening the visual and unitary perception of the area's landscape.

One of the features of the Palou plain already mentioned is the lack of symmetry between the two sides of the road. The project resolved this asymmetry by designing a differentiating width of the two roadsides, combined with a homogenous treatment of the same throughout its length. In addition, it reinforces the presence of the network of small roads on the Palou plain, by selectively planting

vegetation where these roads form crossroads with the main road, in such a way that a logical visual connection is established between the two road systems that attenuates the separation between the main road and its surrounding area.

The main actions that have allowed the goals of the project to be achieved are detailed below:

RESTRUCTURING OF THE WIDTH OF THE ROADWAY

The width of the roadway was reduced significantly: from an average width of 9.5 m including verges, it was reduced to a width of 7 m for vehicles. This reduction allowed the number of lanes to be retained, while promoting a reduction in traffic speed to 50 kph, as in any urban area. Traffic lights, improved signposting and the setting out of parking areas were other actions that contributed to pedestrian safety and mobility.

The slowing down of the traffic rate was a key aspect of the proposal, since the reduction of the space available to traffic enables pavements to be installed with enough room for planting vegetation and creating a more agreeable environment for pedestrians and residents. In addition, it has enabled the creation of new areas designed to enable people to relax and take in their surroundings.

CONSTRUCTION OF PAVEMENTS

The construction of pavements along the whole stretch allowed pedestrians to walk in safety and comfort. The size of the pavements was adapted to the dimensions and elements of the stretch of road itself, although maintaining a minimum width of 1.5 m at all times. Some elements were maintained constant throughout, such as the paving and lighting, whereas others were installed in a discontinuous though coherent and unitary manner, such as the urban fixtures.

The paving consists of prefabricated concrete paving stones. Two colours have been used, yellow and red, with similar shades, and these are interlaced in such a way as to create a pattern that evokes the adjacent agricultural structure. The project maintains vehicle access to the properties by means of sloping kerbstones on the pavements.

The installing of new urban fixtures along the route and new lighting along the western pavement completed the work of adapting the pavements and the public area as a whole.

PLANTING OF NEW VEGETATION

Together with paving, vegetation is one of the main elements that define the road's new image. The presence of vegetation, particularly trees, enables an order and continuity to be introduced over and above the heterogeneity of some often clashing forms and elements. In addition, trees

enable a rhythm to be established that acts as a guiding element on the route, as well as providing comfortable areas of shade.

In the project, the vegetation has been structured into three arrangement criteria, which pursue clearly separate aims and results:

- The planting of a sturdy line of trees that accompany the main road on its eastern side and enable the road to be identified as a new civic thoroughfare, while at the same time harking back to its former design. The species chosen for this row of trees is a variety of maple, *Acer Freemanii*: the trunk size and dimensions (approximately 15 m of height reached within 20 years), together with the seasonal colour variations of this tree make it especially attractive for urban environments.
- Formation of small clumps of trees, on the western side. The main function of these clumps is to highlight and create new points of interest, normally related to junctions with country roads or to areas of activity. They are made up of trees of a single species — poplars, Judas trees, *liriodendrons*, chinaberry trees, ginkgoes, etc. — that offer an attractive and varied counterpoint to the homogenous rows on the opposite side of the road, while at the same time helping to frame or highlight certain visual elements.
- The planting of a grass verge, made up of a single species in a compact mass and uniform texture and outline, to border the road. Grass was planted on the banks and areas marking the limit between the fields and the pavement, and also in the openings made for the planting of trees between the pavements and the roadway, in such a way that, in some stretches, the pedestrians pass between them.

SETTING OUT THE TECHNICAL INFRASTRUCTURES

The rationalisation and improvement of the technical supply infrastructures was another of the project's main actions. The work carried out to redesign the areas created the opportunity for running power lines underground and installing the telecommunication network (including the providing of empty ducting to cover future growth in the current network). In addition, the existing network of drains and sewers was also improved or renewed, and the water supply optimised.

ELIMINATION OF ADVERTISING HOARDINGS

The presence of a large number of advertising hoardings arranged in a disordered manner is a factor that has a negative affect on the quality of the landscape. They are intrusive and act as visual barriers that hide or limit views. Arranging them in a more ordered way

or removing them altogether leads to an instant improvement in the appearance of the landscape in any setting.

In the case under study, there were various sets of hoardings standing at right angles to the road. The intention of the project, though not a straightforward matter given the existence of the various legal procedures to be overcome, was to remove the hoardings, and where appropriate, to regulate these elements in the future to ensure that no more of these eyesores could again be put up.

IMPROVEMENT OF THE WALLS OF ADJOINING PROPERTIES

The presence of various unsightly and poorly-maintained property boundary walls is another aspect to be considered in this type of operation. The local residents often put up walls at the boundaries of their land, be they residential or properties or cultivated terrain. This leads to the appearance of a repetitive element that does not respect any common guidelines, and results in the forming of poor quality environments.

The project proposed installing a single type of boundary wall, with the aim of regulating and unifying the criteria for their installation. This was also a difficult goal to achieve, given the pre-existence of these features, and the difficulty of intervening directly in elements that form a part of private property.

MAINTENANCE PROVISION

- With regard to vegetation, both the materials and the plant species employed were selected to ensure maximum durability with minimum maintenance. Species were chosen that would adapt perfectly to the conditions of the area, and which, once consolidated, would not require watering. Nonetheless, a number of minimum maintenance tasks was envisaged, such as annual tree pruning and the mowing of the grass.
- In addition, the choice of concrete paving was made to ensure the maximum durability of the pieces and the maximum ease of replacement. They were laid on a concrete base to ensure both the stability and durability of the paved surface, even in the event of vehicles running on them. Lastly, the models of urban fixtures chosen were the most suitable for public areas, however, as these are elements susceptible to acts of vandalism, they are the ones that require the greatest amount of attention by the maintenance service.

Conclusions

The strong turnout by residents of the Palou plain on the day the finished project

was inaugurated by the Minister of the Territorial Policies and Public works of the Generalitat, Joaquim Nadal (July 14th 2007), in the presence of the Mayor of Granollers, Mr Josep Mayoral, and the Director General of Architecture and Landscaping, Mr Joan Ganyet, was a clear sign of how well-accepted this type of project can be by its most direct users.

The execution of the Palou plain landscape improvement project has provided a solution to some of the important urban problems concerning local residents, as well as giving added dignity the environment in which they spend their daily lives. Both the residents and the public passing through have been able to see how an area that had until that point been peripheral, unsafe and difficult to access, has been transformed into an accessible and comfortable area that encourages the establishment of new, more satisfactory social relationships.

Faced with the recurring and specific landscaping problems presented by the approaches to urban areas, and certain bad practices that have often led to the gateways to cities becoming a haven for untidiness, and which have led to the destruction of a historical heritage of trees with an undeniable landscaping value, there is a need to promote actions that restore order and value to such areas.

Public administrations have a special responsibility in this task, since it was their neglect and their errors in the past that was often the root cause of these processes. Along the lines initiated by the Law regarding the protection, management and ordering of landscapes, interventions in such areas has become both a priority and a challenge. The Department of Land Policy and Public Works, by means of its Office of Architecture & Landscaping, and thanks to the collaboration with other administrations, is determined to promote landscape improvement projects like the one described in this article, i.e. those aimed at restoring landscapes and capable of standing as examples.

In this same vein, 2007 saw the first announcement of the granting of tenders for public area landscaping improvement actions for avenues, boulevards and other tree-lined thoroughfares in municipalities in Catalonia; an initiative which springs from a desire to have a positive effect on the improvement of public urban areas by using roadside trees as a leading element in these projects.