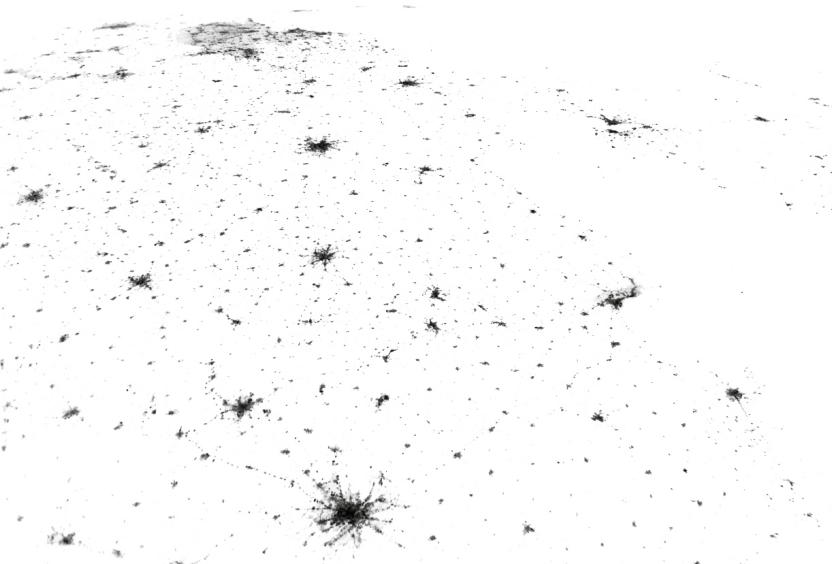
GABRIELE
PAOLINELLI

Landscape Design in a Changing World

S



THOSE WHO DREAM BY
DAY ARE COGNIZANT
OF MANY THINGS WHICH
ESCAPE THOSE WHO
DREAM ONLY BY NIGHT.

Edgar Allan Poe, *Eleonora*

Landscape Design in a Changing World

GABRIELE PAOLINELLI

translation by
LUIS GATT

UNIVERSITÀ DEGLI STUDI FIRENZE
DIDA DIPARTIMENTO DI ARCHITETTURA

This book refers to a series of combined studies, research and educational activities which stimulated and provided material for the proposed framework of culture and technique of landscape design. Some research programmes developed between 2014 and 2017 permitted focusing on specific topics.

didalabs Laboratorio Landscape Design

Uniser POLO UNIVERSITARIO IPPOLITO DESIDERI • PISTOIA

The publication was subjected to a procedure of acceptance and qualitative assessment based on double blind peer review entrusted to the Scientific Committee of the Department of Architecture DIDA.
All publications by the Department of Architecture DIDA are open access on the Web, with the purpose of fostering an assessment process open to the entire international scientific community.

Both publication and printing were co-funded with academic research funds.

cover

Auroras over Europe, Thomas Pesquet (©ESA/NASA).

graphic

didacommunicationlab
Dipartimento di Architettura
Università degli Studi di Firenze

Susanna Cerri
Sara Caramaschi

Printed on paper Fedrigoni Arcoset e Symbol Freelife

didapress
Dipartimento di Architettura
Università degli Studi di Firenze
via della Mattonaia, 8 Firenze 50121

ISBN 9788833380421

INDEX

Landscape Design in a Changing World

GABRIELE PAOLINELLI

To Barbara, Cristian and Juan.
To our journey.

ACKNOWLEDGMENTS

I have always thought and said that we are fortunate, because there are so many authors who have taught us through their thought and their work, stimulating our development: these are the teachers we ourselves choose. To many of them I also owe what I have included in this book: my gratitude to all. A special thanks to Anne-Sylvie Bruel and Christophe Delmar, who agreed with courtesy and trust to my suggestion of collaborating in the illustration of the concepts proposed in the book through the images of some of their works. Thanks to the referees for the care and usefulness of their work and suggestions. Thanks to the friends and colleagues who read the manuscript before it was published, helping me to improve it: Francesco Alberti, Marco Cei, Daniela Colafranceschi, Isotta Cortesi, Fabio Fabbrizzi, Enrico Falqui, Biagio Guccione, and Valerio Morabito. Thanks to Sara Caramaschi, Marinella Carrieri, Nicoletta Cristiani, Marta Buoro, Lorenza Fortuna, Giulia Mancini, Ludovica Marinaro, Claudia Mezzapesa, Giulia Pecchini, Chiara Santi, Francesco Tosi, Margherita Vestri, Camilla Tredici, Antonella Valentini, Paola Venturi, and Flavia Veronesi, for the study, training and research paths we have shared. Thanks to Luis Gatt, for his patient translation of this book into English. Thanks to Susanna Cerri, Gaia Lavoratti, Sara Caramaschi and the staff at the Dida Communication Lab, for the courtesy and professionalism with which they carry out the editorial production of the department.

NATURE AS A WHOLE
IS MODELLED BY EACH
BEING LIKE THE FORM
OF WATER IS MODELLED
BY THE FISH, AND EACH
OF OUR MOVEMENTS
CREATES WAVES AND
TRANSFORMATIONS.

Wovoka, *Native American Chief*
(in Tiezzi, 2001)

Utopia can be understood as

> […] a constant opening toward the unmystified pursuit of possibilities that are different from those which have already been tested (Crespi, 1997, p. XII).

Thus concludes the introduction to the second Italian edition (Donzelli, 1997) of *The Story of Utopias*, published by Lewis Mumford in 1922, and again in 1962; the first Italian edition was published in 1969 by Calderini. The naturalness and effort put into writing this book sensitised me to rediscover Mumford's work. Its contextualisation in the area of the necessity for and meaning of utopia provided a key to the bipolarity I perceived.

Using the categories proposed by Mumford, I attribute the naturalness of the writing to the clarity and force shown by many things which come from the "world of ideas" (Mumford, 1922, p.13), to which Landscape Architecture also contributes with significant thoughts and interventions. The effort instead was related to the frequent distance perceived between the other "one-half the Story of Mankind" (Mumford, 1922, p. 12), represented in this case by the ordinary nature of its habitats, and the world of ideas.

Despite the fact that the current situation is mostly unsatisfying, and in too many cases inadequate, there are many authors and works that show how things can be different. Their efficiency is not necessary linked to above-average economic resources. Proof of this are also the works presented in this book which show possible diversities with the force of images of things realized, of thoughts translated into places and their landscapes. Despite the efforts, the prevailing naturalness of thought thus sustained this writing. The distinction made by Mumford between the "utopia of escape" and the "utopia of reconstruction" was very enlightening, as was his definition of the latter as

> […] a vision of a reconstituted environment which is better adapted to the nature and aims of the human beings who dwell within it than the actual one; and not merely better adapted to the their actual nature, but better fitted to their possible development (Mumford, 1922, p. 21).

Utopia understood therefore as the ensemble of ideas and actions which collaborate toward possibilities that are different from those most commonly practiced; interpretative tension of the real, responsible of its own difference from abstraction. The search for sustainability can be understood as an abstraction and thus result in an utopia of escape. On the other hand, the multiple possibilities for the concreteness of sustainability as utopia of reconstruction, or even of construction, are interesting.

> […] We can never reach the points of the compass; and so no doubt we shall never live in utopia; but without the magnetic needle we should not be able to travel intelligently at all (Mumford, 1922, p. 24-25).

There is a need, more than ever, to provide direction to ideas and actions, especially now that Earth appears from Space as Space appears from Earth. The dimensions change, but there are also similitudes. A galaxy of complex forms stands out luminously. If it is Earth that is observed, it is not groups of stars at distances measured in light years that are seen, but rather buildings and streets, districts and cities, metropolises and metropolitan regions. With their countless streetlights standing a few meters from each other they cover more and more kilometers of inhabited land. The world changes, becoming increasingly more urban.

Landscape Design cannot act at the scale of global processes, it is a scientific and technical tool that can be used for imagining and defining actions at a local scale.

Why is it necessary then to think and to act through Landscape Design? Is it adequate for interpreting the influence on human habitats of supralocal changes? Why?

Introducing arguments in answer to these questions is not particularly useful in field terms. The foundations of Landscape Architecture already provide the most significant scientific and technical answers. In over a century of studies and applications, theoretical stances and a variety of practical experiences have increasingly come to interact. As in all fields, the evolutionary movement continues, open and unforeseeable, and diffusion produces cultural germinations. It happened in Australia, has been happening for a few decades in Mediterranean Europe, and has begun to occur in China. In other parts of the world the field has not yet gained a prominent structur-

al role in the thoughts, studies, decisions and actions regarding the transformation of the forms and spaces of human life: in Africa, most of Asia and also in Latin America. Landscape Architecture developed throughout the 20th century in various phases, and its role was increasingly defined through the progressive historical emergence of the reasons of things. After its foundation in the 19th century, the first half of the 20th century saw an active development. The scientific and technical incubation which took place in a variety of geographical contexts generated a series of positions which then determined subsequent developments. The second half of the century witnessed a progressive development in the field of experiences, thoughts, and professional and educational identities. It is thanks to the 20th century developments on the foundations laid down in the 19th century that today Landscape Architecture is a structured cultural tool which shows a degree of applicative efficiency. Its capacity for interpreting complex problems has developed precisely from their intensity and widespread diffusion. As a consequence of the first industrial revolution, the global situation today presents a series of problematic issues which produce effects at the local level that people have to deal with everyday. Although the causes for these issues lie beyond the scope of any spatial plan or project, it is also through these tools that it is possible to address their effects. Many lessons were learned throughout the 20th century concerning the problems related to abandoned industrial areas and the regenerative treatment of degraded sites. The garden continued to play its ancient role as

a place for research, experimentation, vision and innovation. Infrastructural intensification stimulated a new attention to the effects of transformations and therefore also to the ways in which to interpret them. Many answers were provided and many hypotheses were tested. The cultural, technical and technological heritage was enhanced in terms of quality and quantity of resources, increasing its potential usefulness. It is a fact, however, that the applications of Landscape Architecture have not yet become widespread and normalized. The discipline has come out of its niches and in some parts of the world its principles are being applied more than in the past, yet these cases are still a minority with respect to human activity at large, and also regarding urban landscapes, even in the countries where the field originated. Landscape Architecture in the 21st century thus has the responsibility of increasing its cultural authoritativeness and disseminating its technical application. It is correct to consider that the discipline until now has evolved more through technical application than through theory, whose principles are still not fully structured and widely accepted. This led James Corner to publish, together with Alison Bick Hirsch, the volume *The Landscape Imagination* (2014), which presents a collection of essays written by the American landscape designer between 1990 and 2010. Corner considers the situation of Landscape Architecture in the cultural climate at the end of the Eighties.

> Intellectual work seemed effervescent at that time in so many allied fields – ecology, land art, cultural geography, urbanism, architecture, and philosophy, for example; and yet landscape architecture was stalled, caught between

> strictly vocational, formulaic design practice, on the one hand, and a dichotomous split between the environmentalist and the artists on the other (Corner, 2014, p.7).

It is true that Landscape Architecture is an empirical discipline, like Architecture, which, however, has a few extra millennia of experience. Observing sciences from a historical point of view it is possible to grasp the measure of time required for a congruous stratification, revision and theoretical determination. The fact that the transformations expressed by life and the world have different time frames is also normal and both science and technique have the capacity to operate at the same time on different and misaligned horizons. One regards the research aimed at enhancing the capacity of interpretation of phenomena and of providing solutions to the problems in question, and the other is the search for immediate answers to issues and phenomena that require them. Two years after James Corner, Michael D. Murphy (2016) contributed to the theoretical structure of Landscape Architecture with a detailed and well argued proposal which in fact includes the variable of time in the evolution of the discipline.

> We are still in the early stages of forming a coherent theory of landscape architecture. The attempt here is not to provide a definitive statement of theory but rather to articulate an ecosystemic position from which to develop a comprehensive theory of landscape architecture (Murphy, 2016, p.286-287).

Outside of the specific field of Landscape Architecture, the questions asked at the beginning require answers which are related to the necessary trans-disciplinary na-

ture of design processes for the transformation of landscapes and the cultural diffusion of the motives and manners of intervention determined and proposed by them. These semantic dimensions evade specialisation, require clarity in terms of scientific and technical communication and offer opportunities for dissemination. The field can take advantage by dealing with these needs as opportunities, increasing its cultural authoritativeness and disseminating its ordinary applications, rather than remaining isolated in its extraordinary applications, ultimately becoming stronger through experience.

This book proposes some issues considered as significant for interpreting contemporariness. They are aimed as well at identifying the said necessary elements of the trans-disciplinary dialogue and of the raising of cultural awareness. In this context, the following paragraphs present a general framework of the specific points of view analyzed in the various chapters in relation to their intrinsic overall complementary nature.

Landscapes have recorded over millions of years the natural transformations of the world, and for millennia those of a cultural order. At the origin of the evolution of man and for many thousands of years afterward, these records have been generated by local processes and factors. Their essence changed with modernity, and increasingly in our contemporary era. Landscapes are still today local expressions, yet the influence of global factors and their relationships are much more articulated and marked than in the past. Everything is inscribed and preserved or overwritten in the stratification of these palimpsests, unique

and changing in terms both of space and time. The landscapes of the world are thus essential texts for interpreting natural and cultural histories. Few human expressions have the narrative and documentary scope and the universal languages of landscapes. Like the expressions derived from visual and musical arts, landscapes are interpreted by individuals and people belonging to different cultures and age groups. The fact that they can be experienced is more important than the intrinsic difficulties found in the attempts to ascribe to landscapes an univocal meaning. What counts is that they communicate and that humans communicate through them, using them for interpreting the limits and potentials of their lives. Landscapes are thus the main interface used by humans for deciphering the various environments of Earth, from the time when they began to colonize it, becoming increasingly present and influential inhabitants. The interpretation of the environment used by man during his evolutionary process is more related to the future than to the past. Landscape Design is a contemporary tool to practice it. The potential for integration that the design synthesis can express when it is developed through the interpretative medium of the landscape permits addressing complex problems. Urban settlements today are the habitats with the highest degree of impact, while also being the most fragile; they are strongly affected by global changes, which they in turn have a great influence on.

My reasoning to this point offers an indirect answer to the first question: – Why Landscape Design? It also provides critical resources for answering the second, by establish-

ing the capacity of Landscape Design to contribute to the interpretation of some of the transformations to urban habitats generated by factors at a global, or however a clearly supralocal scale.

Landscape Architecture has developed common bases, although combining and stratifying different cultures and experiences. Like any other field, it is partial by definition, although synthetic in nature and capable of developing its potential through relations with other fields of knowledge.

The mechanistic approach to the development of sciences generated a misunderstanding in the 20th century, both within their own theoretical and empirical scopes and in the transfer of knowledge to technical applications. Specialization is useful to the progress of knowledge and does not have, in itself, limitations to its unitary character, necessary for approaching the complexity of the real. However, the de-facto translation of specialization into sectorialisation has generated a phenomenon which has not been widely understood or efficiently managed. Humanity is still experiencing the growth of the knowledge produced by the specialization of sciences. The difficulty to convert evolved knowledge into synthetic applications has induced a process of isolation of problems aimed at addressing their specific complexity. This is an instrumental process with mediation functions which are useful and often necessary. Defects in terms of usefulness in everyday life became manifest however, in the tendency to transfer this instrumental isolation into applications in reality. Contemporary man, always more capable of acquiring knowledge, thus partially distanced himself from the pos-

sibility of understanding the complexity of the world and of addressing it through adequate choices. All of this took place despite the existence of contrary philosophical and scientific knowledge which facts have demonstrated not to be yet sufficiently widespread. During the past century, the misunderstanding concerning the meaning of specialization and the poor management regarding the isolation of problems produced multiple, marked and widespread effects of separation in both material and intangible realities. These were cases that catalyzed and stressed processes which date back to the 18th and 19th centuries; during the first half of the 20th century signals were sent which in the second half then expressed all of the complexity and a crisis regarding the vital relationship between man and his habitat. Global dimensions have consequently generated problems at a global scale which, however, require local approaches. It is at this local level that the design of the transformations of urban habitats operates, interpreting the policies, as well as the local and global phenomena that concern them. The design approach also changes according to the evolution of knowledge and to the phenomena of the real that are becoming manifest in this period of the history of humanity and of the world.

> The application […] and consequent practice of the project as they have been defined since the Renaissance, were certainly the instruments that made knowledge progressively more operative […], yet there was also an increase in sectoriality which broke and separated the various scientific fields, pulling them toward technoscience. […] In a world like the one today, so dependent on planning, an authentic culture of the project may assume and sustain the specific role of enhancing the values of quality. […] The

> innovation of 'integrated projects' and of 'process projects' […], in responding to real problems with more ease and material concreteness than theoretical studies, may prepare the ground for the convergence of different fields of knowledge, providing an impulse as well to trans-disciplinary practices and influencing the various scenarios of the project, as well as the various scientific categories involved (Urbani, 2013, pp. 17-18).

The sociologist of cultural processes and communication Luca Toschi asserts (2017) that the acquisition and transmission of knowledge are necessary, yet not sufficient, conditions for human evolution. The power of Toschi's introduction to the book *Amico albero*, a recent work of scientific synthesis and cultural proposal by the Florentine colleagues Francesco Ferrini and Alessio Fini, induces me to quote a few passages. It is a call to a necessary long-term outlook; a vision that is altogether applicable, since it depends exclusively of the intentions of people, yet difficult to practice, since it requires a collective intentionality; a vision that can however manage and turn into an opportunity the apparently paradoxical difficulty of understanding and of acting that is characteristic of these times in which the capacity to acquire knowledge and to transmit it has become maximized.

> It is not enough, in fact, only to study and then to teach, to educate and inform. All of this is clearly very important, but will not be enough if we do not begin to strengthen communication, collaboration and cooperation between different realities, if we do not operate concretely for communicating – in the sense of making common, of building together while clearly distinguishing roles and competencies – the world we want on the basis of a project, of a shared vision. It is for this reason that the infinite areas of research and the

numerous areas of society must be different faces – diversity being the main resource available – but of the same shared project. And economy is a full-fledged part of this, although during these last few decades of neo-capitalism a political and cultural manoeuvre was carried out in order to establish it as an autonomous reality, even as a guide for society and research, all in the name of an undefined objectivity of the market. Economy, in fact, must strengthen the social project for the benefit of all, and not openly steer it for the benefit of an increasingly small élite, and to the disadvantage of an increasingly larger multitude of men and women, against life itself in an entire planet. […] This historical phase of great transformation […] (is) marked by the crisis of knowledge as a common good, that is a crisis that does not concern resources but rather the culture of resources […]. Crisis of values. I don't mean those that are enunciated: we are under siege of preachers capable more or less of special effects. I mean a crisis of practiced values: beginning from the value of life in all its infinite forms, physical and symbolical, which indissolubly links every living being, but also non-living. Life is a resource, always: whether we speak of humans, plants, or animals. Not ascribing value to it is the most masochistic and self-harming thing mankind can do: this is why renouncing the use of its energy, diminishing its meaning, marginalising it, humiliating its complexity, reducing it to components that are so small that once they have been de-structured from the powerful and infinite patterns and networks they belong to, one feels authorised to assert, to our partial excuse, that life, in its minimum terms, is really not very important. The force of life cannot be kept in well made, user-friendly containers with attractive designs, since it flows uninterrupted. Its disorder is of a generative, not conservative order. This is why it must be sought in the links, both macro and micro, that connect its infinite forms into a single system, in the endless membranes of the living, in vital metabolic processes which ensure its preservation and development, as well as the creation of other new life (Toschi, 2017, pp.9, 11).

The choice of illustrating this book with an exemplary sample of what is asserted within it, using some works by the Atelier de Paysages Bruel-Delmar of Paris, responds to a variety of reasons, editorial, of geographic-cultural representation, of meaning. Due to the style and length of the book, I preferred the monographic form to the anthological one, which includes various authors. I chose a European expression of thinking and doing Landscape Architecture, sensitive to Mediterranean peculiarities. In this contemporary cultural context, Anne-Sylvie Bruel and Christophe Delmar are among those that better interpret the design of the transformations of landscapes, addressing complexity through the living. It is a concrete demonstration of the actual possibilities of thinking and doing things in ways that are different from the most common practices, seeking the meaning of sustainability and discovering the beauty that makes of it a necessary contemporary utopia.

The things that belong to the world of ideas can therefore become identified with those belonging to the "one-half of the Story of Mankind". If one does not escape reality, it is possible to build utopias.

Florence, December 2017

WE MUST PUT THE TWENTY-FIRST CENTURY CITY IN NATURE RATHER THAN PUT NATURE IN THE CITY.

Diana Balmori, 2010

1. IMAGINING URBAN HABITATS

> Habitat is the place where we live. […] Although we engage in ecological relationships, we have difficulty seeing the places where we live as ecological spaces. Physical habitats are necessary because we need places to interact with which other – to live our lives, to do our work. Our natural environments set certain conditions for the places we live and work: it rains and we need a roof over our head; it freezes and we need heat. The structures that keep us dry and warm establish boundaries for the spaces we inhabit. The physical boundaries mediate our relationships with natural processes as they set frameworks for our interactions with other people (Steiner, 2002, 2016, pp.39-40).

What does imagining urban habitats mean? Certainly addressing the spatial realities on which most of the world's population has concentrated to this day. This does not prove that cities and other recent urban expressions which have developed differently from the archetypes are the best settlement options. It is a fact, however, that since the origins of cities man has developed through them capacities and activities which are significant for the evolution of civilization. Cities have permitted a greater spatial concentration of material and intangible resources than any other settlement type; they are those human habitats on which more has been invested for increasing the efficiency and effectiveness of the systems that compose them.

It is another historical fact that the various types of concentrations typical to cities and in general to urban socio-economic structures are also among the causes of conflict and degradation. The effects become manifest as a result of a variety of dynamic processes. Spatial degradation can be generated as well by social and economic issues, and it can in turn be the cause of further social and economic marginalization. This contributes, together with its own opposite, gentrification, to separating urban habitats, and making them factors of separation. It is the people themselves who end up suffering the consequences of this, their communities and the democracy expressed by the settlements, which is affected by a deficit of spatial accessibility and social inclusion. In an increasingly urban world, in economic and social models, as well as in spaces, it is necessary to think of the urban as landscape, due to its spatial diffusion, to its ecological footprint and to its environmental and social vulnerability.

To imagine urban habitats also means conceiving priority transformations of the existent in terms both of conservation and innovation, as well as managing the development of new settlements whenever necessary. A concrete involvement of the living in these processes can be advantageous.

Observation and study of environments and of the relationships living beings have with them has produced a scientific and cultural tool which is essential for working in the right direction. Although ecology is in evolution, it is nonetheless a solid scientific field. Its technical applications are increasingly widespread, as is its cultural diffusion. Its penetration in thought and in processes is however still insuf-

ficient to meet demands, as seen in reality. It is thus necessary to continue following a path, without losing critical lucidity, yet considering how it is in fact still short due to its recent origins, and also how it has carried many things far from where they were only a century or five decades ago. In studying the reality of natural things and continuing to study them increasingly in relation to human things, ecology has often proposed critical visions of ways of thinking, being and doing that have characterized modernity as well as our contemporary era. Sciences do not produce subversive concepts for their own gratification. These concepts often seem as such due to the extent to which they distance themselves from habitual models perceived as the only possible ones. During the modern era human societies interacted with ecosystems asserting their superiority over nature. In the light of five centuries of experience and of cultural and scientific evolution, the anthropocentric vision that has dominated thought and culture, society and economy, has proven to be abstracted from reality and harmful, even for us human beings. We have therefore understood that we are an essential part of nature and that it, in turn, is essential for us.

> We interact with each other and with our physical environments. We are biological creatures who depend on the living landscape to sustain us. Plants and animals are affected by our actions, and our existence is impacted by plants and animals. We exist within complex sets of interactions – that is, we live in an ecological world. Learning to perceive the world as a never-ending system of interactions – that is, to think about our surroundings and our relationships with our environments and each other ecologically – is challenging. Such thinking forces us to rethink our views of

> economics, politics and business. It suggest different ways to plan and design (Steiner, 2002, 2016, p.1).

Scientific evolution urges and feeds cultural and technical dissemination. The perceptions that people have of their habitats and of their varying combinations of natural and artificial components change, and so do individual and social behaviors, and economic approaches to the production and distribution of goods and services. Also concepts change, as well as the technical criteria and the technological options available for developing projects for the transformation of places and therefore also of urban landscapes. Mankind is a temporary guest in this world, bearer of its own strengths and fragilities. That the world is ecological is a fact ascertained by science. And so is the fact that the ways of living that humans have adopted are mostly unecological, or not ecological enough. As a species, humans have shown that we have not yet developed the sufficient collective intelligence for adequately interpreting our vital relationships with our habitats.

What does it mean, in this sense, to assume as a general objective when imagining urban habitats to integrate the city in nature (Balmori, 2010) instead of its opposite, more frequently desired and often practiced, although probably consisting in little more than a palliative? This question, proposed by Diana Balmori at the end of her *A Landscape Manifesto*, expresses its fundamental epistemological basis. The concept is inspired in the disciplinary tradition of Landscape Architecture and stems from the experience and observation that the author derives from reality. The meaning is explained in the text itself, which continues

by proposing to conceive anthropic systems by borrowing from the operation of natural systems. It is an invitation to base urban systems on them. We have obtained, and can further obtain advantages by interpreting the deeply stratified experiences of landscapes, deriving from them knowledge, models and inspiration. Also according to James Corner, there is a reciprocal relationship between landscapes and imagination. As in the case of music, landscapes are shaped by imagination, and at the same time stimulate it toward new things (Corner, 2014, p.8). Furthermore, the fact that landscapes are sources of inspiration has been made evident by various artistic traditions, in painting, literature, photography, cinema, landart, environmental art and architecture.

In which specific terms do landscapes provide inspiration for Landscape Architecture? Certainly beyond their visible aspect, which is however obviously relevant. Landscapes influence through their functions and dynamics those who interpret them with aims and tools that are adequate for understanding their structures. Landscapes teach lessons to those who study their stratifications seeking in them natural and cultural intelligences in evolution. The awareness of this fosters the development of the capacity to imagine the actions to be carried out in terms of their effects. This same awareness permits conceiving projects in which creativity includes in the imagination the environmental, economic and social variables on which both costs and benefits depend. Landscapes need cultural levers that combine conservation and transformation policies and actions. They also permit the effi-

cient use of natural levers for anthropic purposes. It is a potentially virtuous reciprocal relationship, not symmetrical and open to modulations in its variables. The collaboration of natural and cultural forces and processes favours the co-generation of transformations, reducing their dependence on construction interventions and their relatively greater energy and material requirements, the risk of systemic 'rejection' and reversibility limits. All of this in short invites us to foster the growth of places and landscapes, rather than to produce them. It is a principle of great potential efficiency, yet difficult to put into practice. It is valid from both the ecological and sociological points of view. The difficulties inherent to the ecological co-generation of the transformation of places and landscapes depend mostly on their degree of anthropisation and increase until reaching the widespread artificiality that characterizes cities. The difficulties inherent to the sociological co-generation of transformations are conditioned by the standardization and formal rigidity of the processes, which are also quite present in cities. This explains why it is difficult to carry out the transformation of urban landscapes with a strong co-generation component. This is quite evident from an ecological point of view, yet may seem paradoxical from a sociological point of view. The issue in question, however, is not that of eliminating the constructive component of transformations. It is in fact obvious how it must sometimes prevail, and how it can be useful for preparing the ground for co-generative processes. Instead, I believe that the issue must be addressed in terms of the composition of the roles and responsibili-

ties concerning a modality with respect to the other, in the context of their possible complementarity.

In order to explore this point of view, landscape approaches are necessary which are coherent with the various scientific and technical perspectives that contribute to the determination of policies and interventions that influence the quality of habitats. A well articulated critical perspective regarding the needs and difficulties for generating landscape approaches within the various sciences and techniques involved in the conservation and transformation of landscapes can be found in the essay which Pierre Donadieu (2012, 2014) entitled *Sciences du paysage*, using the plural form intentionally. Simon Bell edited another meaningful volume, together with Ingrid Sarlöv Herlin and Richard Stiles, entitled *Exploring the Boundaries of Landscape Architecture* (2012). It is meaningful that like other disciplines, also Landscape Architecture, and within it Landscape Design, have devised their own specific approaches to the landscape. Jusuck Koh (2013) has developed a trans-disciplinary critical vision, also concerning design.

> A landscape approach to design goes beyond the modernist preoccupation with space and territorial expansion and occupation. It leads to design for time experience: time cultivation, time taking thus dwelling and above all momentary and unexpected time and chance happening. It leads to attention to pulse, breath and land as living system, and our connectedness to it, concern for life/material cycles, and concern for healing and sustenance […]. Articulating the meaning and nature of landscape is then our attempt to call attention to a landscape approach to design as theory and method. Such articulations are intended to give a new clarity and frame for not only our understanding of (de-, sub-)urbanization, but also for our cross-disci-

> plinary search for an integrative and sustainable paradigm of design. Together with related design disciplines, landscape architects can develop the ability to design the city as if landscape matters, design space as if process and time matter, and recognize landscape's self-organizing body and morphogenic power (Koh, 2013, pp. 33-37).

Anne Whiston Spirn's conceptual path (2014) crosses that of the above-mentioned Diana Balmori (2010). Spirn proposes some arguments concerning the potential for designing 'resilient cities', which she considers directly related to Ecological Urbanism. The central themes are: the fact that cities belong to the 'natural world', their fundamental nature as 'habitats', their organisation as 'ecosystems', and their features of 'connectedness' and 'dynamism'. In reference to the concept of 'deep structure', which had been put forth in the Eighties, the American scholar thus affirms that urban design is a powerful adaptive tool through which it is possible to make cities more resilient.

The idea of contemporary habitats is increasingly evolving together with the concept of sustainability. Due to developments which took place during the second half of the 20th century, a new conception is emerging of beauty as co-essential to sustainability. Could this be a symptom of the germination of a new humanism? Spirn herself, as others like her, could have sowed the seeds in that period. As for the 'signal', as partial and weak as it may be, it travels on a 'cultural frequency' which interprets crises of values and the lack of individual and collective well-being. It is therefore also by following weak traces and uncertain paths that we can attempt to innovate the concept of ur-

ban habitats, both in the priority options concerning regeneration, that in those involving new generation.

Elizabeth K. Meyer has put forth several arguments (2008) in support of this type of research and development of design capacities. Some passages from one of her essays deserve to be read directly, due to their relevance in this context.

> Sustainable landscape design is generally understood in relation to three principles – ecological health, social justice and economic prosperity. Rarely do aesthetics factor into sustainability discourse, except in negative asides conflating the visible with the aesthetic and rendering both superfluous. […] Beauty is rarely discussed in the discourse of landscape design sustainability and, if it is, dismissed as a superficial concern. […] Can landscape form and space indirectly, but more effectively, increase the sustainability of the bio-physical environment through the experiences it affords? Both Catherine Howett and Anne Whiston Spirn wrote of these issues twenty years ago in short essays that have the ring of a manifesto. […] Two brief excerpts, one from each author, ground my understanding of how appearance differs from aesthetics, how performance can include ecological function and emotional or ethical revelation, and how a concern for beauty and aesthetics is necessary for sustainable design if it is to have a significant cultural impact.
>
> […] "The domain of aesthetics," wrote Howett, "must come to be seen as coextensive with the ecosphere, rather than narrowed to its traditional applications in art criticism, so that aesthetic values may no longer be isolated from ecological ones. […] In the measure that the forms of the designed landscape artfully express and celebrate that responsiveness, their beauty will be discovered" (Howett 1987:7).
>
> Spirn adds, "This is an aesthetic that celebrates motion

> and change, that encompasses dynamic processes, rather than static objects, and that embraces multiple, rather than singular, visions. This is not a timeless aesthetic, but one that recognizes both the flow of passing time and the singularity of the moment in time, that demands both continuity and revolution" (Spirn 1988:108).
>
> From the writings of landscape architects such as Howett and Spirn […] we can already see how crucial beauty and aesthetics are to an ecological design agenda. They argue that the act of experiencing designed landscapes poly-sensually, over time, through and with the body, is not simply an act of pleasure, but possibly, one of transformation. Through their writings we can infer that new forms of beauty will be discovered, as new techniques and approaches for reclaiming, remaking and reforming a site's natural processes are invented. These new types of beauty will be found through the experience, as well as the making, of landscape. […] Beauty is a key component in developing an environmental ethic […]. I believe that works of landscape architecture […] are cultural products […] that evoke attitudes and feelings through space, sequence and form. […] So while I do not believe that design can change society, I do believe it can alter an individual's consciousness and perhaps assist in restructuring her priorities and values (Meyer 2008, p. 6-10).

It is also significant that this position substantially agrees, from a cultural point of view, with the one expressed in 2010 by the theoretician of sustainability Enzo Tiezzi. The concept of beauty implicitly proposed by the scientist is free of any field dependency. As an eminent chemist and physicist passionately involved in ecological research, he in fact expresses a cultural synthesis, a contemporary objective, which considers that ultimately "we need to be good to be beautiful, as much as possible" (Tiezzi, 2010). While Western culture highlights the deep separation

which has occurred between justice and beauty (*Giustizia e Bellezza*, Zoja, 2007), other thoughts develop within it which aim to their re-composition into a new unity, and which generate reactions in that direction.

Design must develop a proactive criticism of actuality; it is a task which complements that of interpreting it in the present; this in fact does not regard the art of anticipation; from it, however, also short-term design processes linked to actuality by pressing obligations can obtain advantages. The criticism of actuality is necessary for seeking sustainability, which in turn is a pathway of cultural innovation, thus intangible before becoming material. Aesthetics can develop substantial relationships with a series of complementary ethical profiles: ecological, sociological, economic. Under the umbrella of sustainability, the integration of ethical and aesthetic innovations can bring about a contemporary unity of 'justice and beauty'. As a corollary, it would unmask ornament, it would expose emptiness of meaning, making it loose cultural weight and revealing its uselessness, its banality, in other words its unsustainability.

Interpreting the contemporary is necessary and in order to do so it is necessary to not overlook the banal expressions through which the actual is often unsustainable.

YOU SHOULD AVOID BEING UNDER THE EXCLUSIVE INFLUENCE OF ONE FIELD. YOU SHOULD DISTANCE YOURSELVES..., REACH THE LIMITS IN ORDER TO DISCOVER THE VARIOUS POSSIBLE ESCAPE ROUTES.

Michel Corajoud, 2000, 2006

2. LANDSCAPE DESIGN

Almost three decades ago, Tom Turner (1990) expressed a self-critical position in the English journal *Landscape Design*. The provocation set forth in the brief article was efficiently stressed by the title: "Was 'Landscape Architecture' a good idea?". In relation to the name of the discipline, Turner maintained that "landscape architects" may well be people affected by divine aspirations. What was put into question was in fact the possibility itself of designing landscapes. The significance of this criticism still needs to be subscribed today with theoretical and practical awareness and perseverance. It is in fact not possible to plan or design landscapes (Paolinelli, 2011). Because of their complex nature of dynamic resultants – natural and cultural, material and intangible –, landscapes are not circumscribable and manageable within the spaces and time frames of plans and projects. It is however possible, and evidently necessary, to conceive, define and carry out landscape plans and projects for every spatial intervention. In other words, landscapes exist and change; what needs to be designed are the actions that direct toward them, seeking the highest level of coherence regarding their specific features and dynamics. It is not a reduc-

tive, only a realistic proposition. Under this profile the landscape solution to project-related issues is inspired and guided by the research concerning the specific relationships that identify the "deep structures" of the contexts in question (Spirn 1984, 1988, 2014). A few simple data can help consider these elements for what they truly are. Natural factors and processes have been acting for about four billion years, continuously transforming the landscapes of the Earth, through sedimentations and upheavals. In the same way, cultural factors and processes have interacted with environmental ones for the past three hundred thousand years, if one takes the origin of man in Africa as reference, and for the past forty thousand years if one considers the advent of *Homo sapiens sapiens* in Europe instead. These latter are brief time frames relative to those of the history of the Planet, which are measured on an entirely different scale. Mankind, however, has progressively increased its incisiveness in the colonisation of the Earth's habitats. In those geographical areas with more ancient and continuous civilisations, landscapes present structures which, although subordinate to those of a natural order, are identified in cultural terms as well.

The project is a powerful cultural tool for the solution of the problems identified and the fulfillment of the determined requirements. The landscape approach is relatively new, in terms of its theoretical determination, as well as in its application and empirical verification. Aside from scientific and technical structures, it is also deeply rooted in the evolution of the human capacity to learn through experience and to develop as a result of knowledge.

A project-related issue is generally determined when a theme which is in itself abstracted from local specificities is put in relation with one or more places and landscapes. Their spatio-temporal uniqueness generates a 'reaction' between the themes and the spatial realities in question, as well as with the people who inhabit them in various ways.
Nature and culture express in every landscape specific degrees of freedom regarding its anthropic transformations. Projects can therefore refer their conceptions and definitions to the said limits and potentials. Deriving inspiration from them and assuming them as structural binds, they can serve as solid and coherent anchors when making choices, as well as provide the necessary force for their realization.
Observing landscapes, their dynamics, the reactions of their systems to natural and man-related pressures, helps understanding life. These expressions are interesting for Landscape Architecture, which develops important responses to the issues of sustainability.
Criticising the Western cultural condition of mankind which seeks the lost nature by acting on memory and the imaginary, Enrico Fontanari (2006) maintains that it is necessary to cultivate the capacity of the project to anticipate, rather than using it for managing the actual. On the other hand this depends as well from the conservation of landscapes, since it is a side of the same coin, which includes transformation (Koh, 2013). Continuity and change are both intrinsic to landscapes. In them, the spheres of nature and culture are clearly intertwined. On the contrary, perspectives that do not belong to scientific specialization and the consequent sectorialisation of knowledge have

contributed to the separation of technical competencies and decision-making and intervention procedures regarding spaces, as I mentioned in the introduction. The overall outcome is in conflict with the complexity of reality; it produces simplifications that render them inadequate for an efficient interpretation. The reactions of natural systems to anthropic pressure and those of anthropic systems to natural dynamics constitute a complex and dynamic ensemble of variables. The landscape project cannot however halt at their separate analytic consideration, while avoiding a joint synthetic analysis. On this depends both its efficiency and the possibility of its coherent realization. It is in this interpretative and operative context that conservation and transformation become effective through mutual support: the one requires interventions that bring about change, and the other cannot overlook safeguarding needs.

The great French-American tightrope walker Philippe Petit declared that it is wonderful to connect things, and through them also people. In order to do so, precision is necessary in the process of preparation, and creativity in that concerning the vision. This image offers a double metaphor for the deep meaning of the landscape project. As Jordi Bellmunt (2006) maintains, the conception of the project is based on the rigor of knowledge and of the cultural values. This is the necessary base from which to start in order to depart from the limits of the actual, for changing it where it is useful to do so, observing it from points of view which are often not accessible from the most conventional paths. The essence of thinking and doing, both in design and in tightrope walking, lies first of all in interpreting in order to understand, and then in connecting, in put-

ting into a meaningful relation both things and people, establishing vital links and making expressions perceptible. The landscape project is thus active both inside and out of the context for which it is commissioned; it investigates, reveals and produces links and continuities, rather than separations and fragments. According to the teachings of Michel Corajoud (2006), the project tends to sound the consistency of the limits which appear in landscapes, in order to establish relationships capable of rooting visions and actions in their structures. Overcoming limits does not require to break out from the assigned area and to propose interventions outside of it. Rather, it means understanding the relationships which lie beyond it that are also significant for the project. Overcoming limits means exploring landscapes through projects, seeking links to be preserved or generated. It means doing so also beyond the areas of intervention, also with what is not included in them yet is structurally related to them, and is a part of existing relationships or may be a part of those devised and configured. Nothing in a landscape can be considered as isolated from the rest, as a vivid image by Paolo Bürgi (2006) explains: not even a prison cell can be considered as isolated, since the thought of escape toward the outside is intrinsic to it, in the landscape to which it belongs.

The landscapes of the world constitute an empirical patrimony of learning and inspiration, knowledge and creativity: it is possible to turn to them in order to continue investigating and transforming reality. Through them it is possible to interpret conservation objectives in evolutionary and active terms, such as those of transformation following priority requirements of structural and functional coherence.

At the end of the Sixties, several professionals and scholars were working in a context of innovation anticipating visions which would influence Landscape Architecture over the decades to come. This is the case, for example, of Roberto Burle Marx, Vittoria Calzolari, Michel Corajoud, Sylvia Crowe, Garrett Eckbo, Lawrence Halprin, Bernard Lassus, Geoffrey Jellicoe, Ian L. McHarg, Pietro Porcinai, and Jacques Simon. In those same years, Guido Ferrara published the first edition of his *L'architettura del paesaggio italiano*. The photographs included in the book, which were current at the time, now provide a historical testimony of landscapes which have accumulated widespread and often intense transformations. It is however also evident how Italian landscapes preserve fundamental cultural features, as Ferrara himself asserts in the new edition to his book (2017). Their qualities depend positively from them: these are landscapes that still express environmental and cultural diversity, scenic identity, economic values; which include forms of essential beauty, made perceptible by their structural expressiveness. A deep, long-lasting beauty, which distinguishes and safeguards them from widespread yet ephemeral aesthetic visions. A half-century afterwards, it is worth re-reading the chapter *The Landscape and the concept of value*, introductive to the first edition of that cornerstone of European landscape culture. In a few words, one finds what Landscape Architecture could have become, and should still become, as a scientific and technical discipline. The 1968 edition must be kept side by side with that of 2017, rather than simply be replaced by it, since preserving the scientific memory alive is essential for the evolution of the field.

Natural and cultural palimpsests, landscapes carry for

each place the traces and testimony of what has happened and indicate what is to come, what remains throughout evolution and what is transformed. The spatio-temporal and trans-scalar interpretation of their structures and functioning permits considering what may happen or else plan their possible transformations. Landscape thought provides arguments for considering more issues regarding the transformation of urban habitats. These are related to fundamental questions regarding the 'if', 'where' and 'how', based on which projects formulate responses to problems and needs for which the 'why' and 'for whom' have been determined. As I have mentioned in the previous chapter, ethical criticism is intrinsic to the conception of the project, in the same way as aesthetic criticism is co-essential to it. Both are founding elements of the capacity of response to the general objective of the sustainability of transformations. Regarding the need for both the conservation and transformation of landscapes, cognitive and proactive precaution and rigor indicate the way for coherent action rather than for immobilization.

Even in the frequent contexts of uncertainty and indeterminacy, it is necessary to express thoughts and actions. The adequacy of the project to the complexity of things depends as well of the capacity to conceive processes of adaptation to certain dynamics and of reaction to others, in view of the forces and tendencies observed. The research concerning the adaptive and reaction properties of landscapes is a process that does not rely on predictive, deterministic and objectifying approaches. The modalities of the project are in fact, conception, development and definition of the process, socio-cultural participation

and institutional consultation, as well as compositive and technological research. This is therefore related to the scientific and technical activation of the project as a necessary art of anticipation to which I have referred. As such, it concerns as well its cultural role as a tool for fostering consciousness, generating debate and as a functional choice for supporting the development of collective awareness.
Well-known ambivalences of the landscape in terms of meaning, often considered as the cause for its elusive scientific and technical rigor, are actually keys for the development of the project's potential. Design in fact derives benefit from the fact that it is concerned with an entity which manifests itself as both subject and object, reality and representation, end and means. Furthermore, it is both interior and exterior to itself, in the sense put forth by Corajoud concerning the meaning of limits. Every landscape is in fact identified by the contents of which it is also the container, considering, for that matter, that neither the territory nor the environment can assume this role. Spatial articulations of territories refer to important jurisdictional and socio-economic criteria, which however often are not coherent with the structure of landscapes. The environment refers to the fundamental spatial articulations of eco-systemic structures and to other more complex ones that they compose at different scales. It is thus the landscapes and their geographical associations that are the containers of their own contents, in other words both exterior and interior to themselves. These are double, yet not equivocal meanings. Bearing this in mind, they can be used for working on what can be built and on what it is possible to create, grow and let thrive in landscapes and through them.

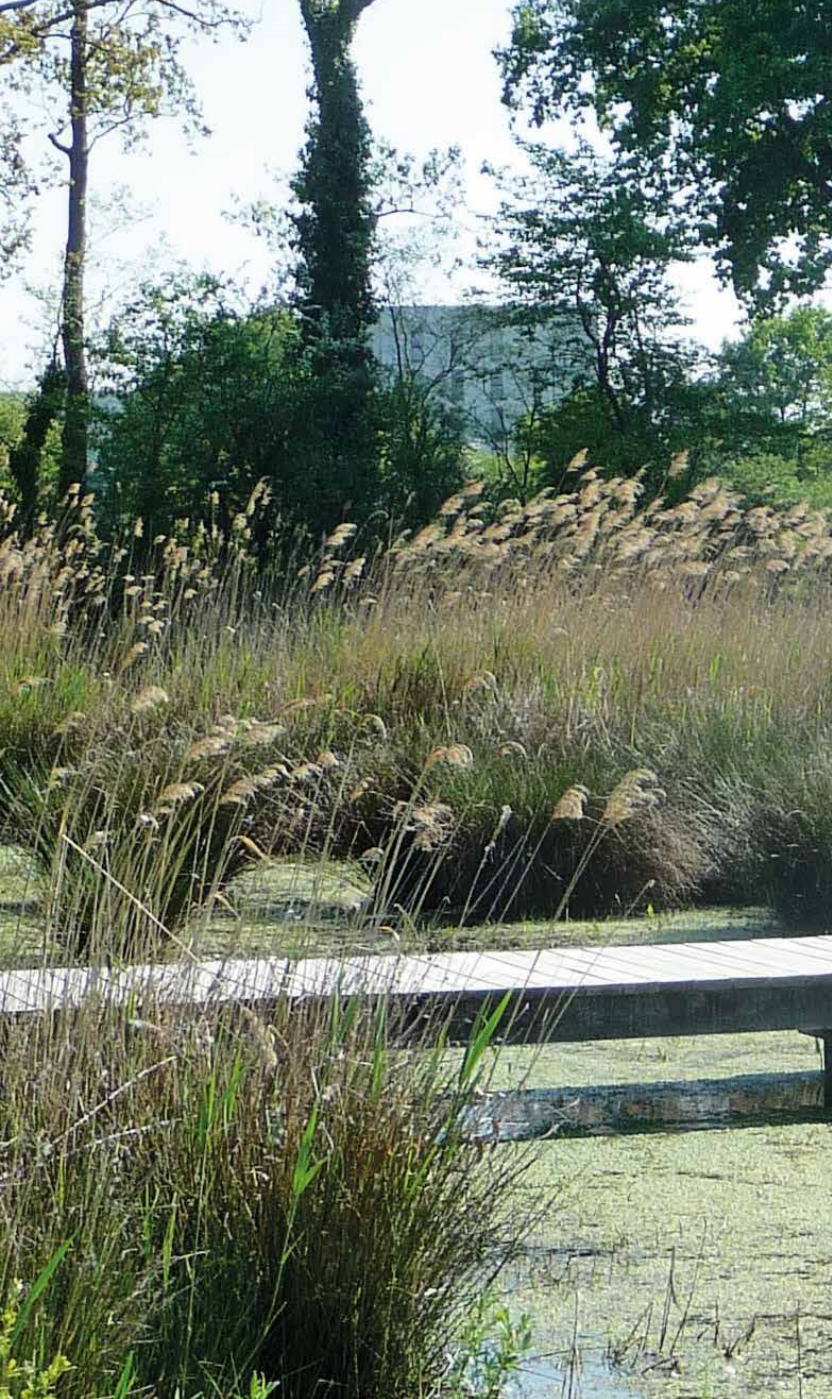
The landscape-related project seeks in this sense the most adequate strategy for fulfilling the objectives it has received as program indications and which it has contributed to clarify through its own critical filters. From a procedural and evolutionary perspective, which must be favored with respect to episodic and exclusively constructive approaches, it is possible that what the project tends toward will require triggers or, before that, the preparation of the necessary conditions for being activated and becoming efficient. Regarding the question of the project it may be discovered that the most straightforward paths, those apparently safe and easy, often are the result of erroneous simplifications of reality. It may seem to adapt to formal structures, whereas it should be the structures in question that have the capacity to adapt, since they are tools for interpreting reality. For example, in order to efficiently solve the problems concerning degradation in an abandoned area and/or for building a park, the conventional methodology is probably not the most effective, due to the degree of abstraction it expresses. Projects can be conceived and executed with the use of procedural rules and structures that under certain aspects can be too rigid, compartmentalized and destructuring. Some technical regulations are good examples of this, as well as certain procedures for the determination and execution of public works, including those concerning funding and management. It is also as a consequence of this that certain traces appear on landscapes which are alien to them and difficult to understand.

The landscape project, as every procedure which includes a technical dimension, must however interact with regulatory obligations. It is useful that at the same time

the scientific criticism traces, follows and contrasts different pathways, also in relation to the temporal dimensions concerning their possible development. The stakes are high, in fact, in the interaction with technical homogenization, which is characteristic of the regulations and procedures they establish, and with technological homogenization, which is typical of industrialized production. The interpretation of fundamental landscape values raises issues concerning the culture of the project, which in turn bring into play the diversities, as well as the functional and expressive capacities of places and landscapes. As a whole, dense with connections, they significantly influence the overall balance of the sustainability of transformations.

Diversity is a key to identity. Already during the Sixties symptoms of the structural simplification, functional impoverishment and semiotic banalisation of landscapes were evident in many parts of the world in which industrialization of production processes and the urbanization of social and economic systems were underway. Reality by now has demonstrated the consistency of these phenomena, which history has documented without margins of uncertainty. On the other hand, the consideration of the symptoms of the problems and the proposals for antidotes to their effects has been scientifically episodic and culturally slow and marginal. During the past five decades both studies on landscapes developed by complementary fields and technical uses of Landscape Architecture have become widespread. However, they have not yet become sufficiently standardized and incorporated into ordinary practices.

Spatial contexts are sensitive in different ways to the type, intensity and diffusion of the pressures they receive. To as-



sume landscape systems as natural and cultural subjects and to recognize their role as agents in the evolution of reality is an option which can be integrated into the project. It defines the cultural context in which it is possible to learn from the intentional and directed involvement of natural and cultural landscape forces in the generation of the evolution of habitats. It is a logical option, considering that landscape systems react to what interacts with them and that their properties can therefore be used as active resources by the project process. Under this profile it is not a negative limitation that the project assumes as reference what the landscape indicates of its own structure. Such a position generates instead a root for sustainability and a predisposition to systemic collaboration that the project can capitalize on. In general terms, a limitation of homogenisation confers identity to the responses that landscape systems can offer to issues of a globalising nature. Although homogenisation produces similarities, the identification and consolidation or the imagination and generation of deep connections with the traits of the landscape produces expressions of identity.

Among the general objectives that the projects for urban transformations have to tackle, adaptation presents various significant aspects. Addressing the complex environmental dimensions is unavoidable and urgent. It is not possible, however, to think otherwise of social questions, nor to let economic concerns inordinately influence both. Projects have limited spatial competencies. They can contribute, however, to local processes of adaptation of human habitats to environmental and social dynamics. The transformations of places influence individual and

collective behaviors and thus also have an indirect effect on local cultures. These are expressed and move increasingly by way of supralocal and global interactions, primarily through digital media networks.

The diffusion of sustainable adaptive transformations can generate processes of cultural contagion and through them feed itself, generating passages of scale in which an effective bottom-up capacity of incidence on the global context can be experienced. Although globalization appears distant, due to the complexity of the relations between the causes of its dynamics, it is in fact present everywhere. Wherever its manifestations and parts of their causes are present. Wherever it may be interpreted, although it may not be possible to manage only from the bottom-up, acting on human behaviors and habitats.

Through adaptation it is also possible to confer to anthropic systems resilience properties which reduce their vulnerability. The multi-functionality and flexibility of places are in this sense the main targets. It is necessary for projects to put them on sight, identifying and safeguarding the qualities that can be observed in landscapes and integrating those which show lacks and the possibility for compensation. From the mid-20th century onward there was instead a growing functional specialization of spaces. Containing its further diffusion, in the many cases in which it is possible, means limiting as well the morphological and material effects it induces. Many causes and consequences of the functional specialization of spaces and of the infrastructuring of landscapes are exemplary of the friction between the importance of the objectives from which they originate and

the criticalities they induce. It is worth reflecting on whether it is really convenient for ends to justify means more or less defined in accordance with sectorial standards. If, for example, this is sustainable for satisfying needs for water-related safety and slow mobility, disregarding the integration into the project of the modalities that are characteristic of the responses in question. A space can carry out the function of protecting others, residential or productive, urban or suburban, from flooding risks, functioning as an overflow or detention basin, yet without being only this. Space is precious: a park can be designed which includes the function of flood protection, while also carrying out on an everyday basis all other environmental and social functions which it is capable of undertaking, thus inducing as well the consequent economic influences. From this point of view the design of an urban park which displaces the solution of a water-related problem despite its adequacy for doing so is weak and limiting. In the same way, a space designed for carrying out the function of overflow basin is incapable of being anything other than a hydraulic protection structure if the environmental and social potentials compatible with it are not developed. Both cases highlight lost opportunities, underlining waste and the under-usage of financial and spatial resources. Common sense does not envisage, as a further example, that even cycle paths can generate problems of spatial and visual congestion of urban and peri-urban landscapes and phenomena of fragmentation of their structural articulations. The same critical hypothesis is valid here, which indicates that it is convenient to privilege the potentials for multi-functionality of open collective spaces.

Places must be devised so as to accommodate people with their needs regarding accessibility, mobility and rest. Spaces capable of containing the functions of transit, permitting flow, including that of cyclists, without being conceded in an exclusive manner to any group of users, can become shared spaces identified by their being open to all. The bicycle is one of the most intelligent vehicles ever invented; it is a sustainable mode of transportation which prolongs its influence as far as the spheres of individual and collective health. In itself it does not determine the absolute and a priori need for separate pathways, different from those people employ when not using a motor vehicle. The use of the bicycle, in itself, does not require crowding the landscape with large numbers of signals which add on to those already in existence due to the progressive increase in motor vehicle traffic. Today's unnecessary expansion of signs and signals paradoxically weakens orientation in urban landscapes, and therefore also the safety of their spaces, resulting in additional criticalities in terms of psycho-physical well-being. In other words, and in the attempt to find a synthesis, the flow, rest, and gathering of people, either on foot or on vehicles, are typical phenomena in collective open public spaces. Through them connections are established with public and private buildings, with their appurtenant open spaces, as well as with private open spaces not directly connected to buildings. The mere elementary consideration of this functional dependency of urban life confers strategic value to public open spaces for collective use and to their network, as a necessary, continuous, accessible ensemble, comprehensively endowed with qualities capa-

ble of satisfying normal needs for psycho-physical well-being of people. The necessity emerges for public open spaces to be multi-functional urban places in which no structural and infrastructural specialization binds are present. Military sites are exceptions to this, as well as those devoted to public health and environmental protection, airports and ports, railways and motorways protected by barriers and junctions. The share of public open spaces for collective use that is not included in specialized categories is relevant, in terms of typological articulation, as well as of spatial diffusion, extension and continuity, the latter ensured at least by the presence of streets, and this is something that must not be disregarded when designing and planning their transformations and new realizations.

As for expressiveness, the difference in the figurative capacity between 20th century urban landscapes and those from preceding generations is also relevant. The former are often connoted by chaotic structures, their images are much more linked to fragments than to ensembles, and their functioning suffers from systemic criticalities. These landscapes are fragile, they suffer disturbances which are amplified by the recurring spatial associations of their defects. It is possible however to intervene with significant efficiency margins on their networks of public open spaces, applying project-related research to the discovery and involvement of the regenerative roles that can be taken on by the collaboration between soil, water and plants.

To aspire to simplicity is reasonable, although it is not easy to obtain. On it depends the force of the image of landscapes to which people are more attracted. To be inspired

by the functional capacity of landscapes to which good qualities are attributed means turning the attention toward the search for advantages, rather than succumbing to the charm of idyllic abstractions. For all these reasons it is necessary to carry on studying landscapes and the lessons derived from them. To analyze the multiple functions of their systems may provide a source of inspiration regarding projects for the transformation of other landscapes which have issues to solve and opportunities to be developed. Furthermore, also the history of European cities teaches that all of this is possible since it has already happened. The road and the square for many centuries were simple and free spaces, expressive and multi-functional. The fact that there are now different derivations from them, one as specialized infrastructure and the other as cluttered container, does not mean that it is not possible to reflect, change and evolve, integrating different spaces and modes in reason of their overall utility and of contemporary needs. Regarding the composite demand for functional and expressive capacity, it is the systemic integration of the answers that must be sought and developed, rather than the spatial separation of resources reserved for them.

The adoption of landscapes as systemic subjects of reference for planning or designing the transformation of places permits envisaging the spatial integration of various functions. Hydro-geological and hydraulic protection, as well as acoustic and atmospheric protection, micro-climatic regulation, visual mediation, and the separation of conflicting usages are environmental and social performance categories, from which economic repercus-

sions are derived. The project-related research concerning their integration permits avoiding spatial compositions which are stiffened by mechanistic separations due to an excess in functional specialization.

Critical proposals activate creativity in terms of the project also by pointing out elements and possible solutions to problems from different points of view from those that appear and are practiced as the only ones possible, often only because they are usual and conventional.

> Technocratic thinking has predominated Western culture for more than two centuries. The emphasis on objective and pragmatic reasoning has promoted a view of life that is more about efficiency of means and ends, methods and techniques, than questions of existence and being. Critical thinking offers a more balanced perspective, focused as much on the "why" as the "what" and the "how". At its best, critical thinking strives to unite art with life, as far as this pertains to the design and habitation of lived environments, critical thinking is of utmost significance to landscape architecture and placemaking (Corner, 2014, p.41).

Upon close scrutiny, project research regarding sustainability does not require different paths and directions than those concerning expressiveness. Lack of expressiveness has a cultural and social relevance. Since sustainability is a resultant which includes those categories, the lack and inadequacy of expressiveness are defects that are specific to sustainability.

Landscape Architecture is sensitive to all this: many studies and interventions are contributing with other fields in order to develop contemporary interpretations of urban habitats. A half-century after the 'Philadelphia Declaration' (1966), which has recently been renewed (2016), Robert Holden

and Jamie Liversedge (2014) reflect on the evolution of Landscape Architecture and propose a projection of the discipline into the near future which is worth considering.

> Its precursor, landscape gardening, was a visual and scenic profession, primary serving a private market of kings and land gentry. Landscape architecture thus began in the nineteenth century as a visual profession, based on an inheritance from garden and park design but now reoriented to serve communities in the new industrial towns and to realize ideas of wilderness protection and agricultural development for society as a whole. In the twentieth century the mission was overlain with an interest in nature conservation and ecology. In the twenty-first century anxieties about ecological health have give rise to a concern for the whole landscape, and to focus on sustainability. In the future landscape architects' primary task promises to be related to finding ways of sustainable living for a predominantly urbanized world (human) population. […] These challenges are all opportunities for the future landscape architecture. We need to change the way we live, to realize that the free market has its limits, that commons in its economic sense should be valued. We need to act as stewards for our world which increasingly is formed and dominated by human activity: we need to treat our planet with care […]. Let us end with a further quotation from the Philadelphia Declaration of 1966 […]. "There is no 'single solution' but groups of solutions carefully related one to another. There is no one-shot cure, nor single-purpose panacea, but the need for collaborative solutions. A key to solving the environmental crisis comes from the field of landscape architecture, a profession dealing with the interdependence of environmental processes" (Holden & Liversedge, 2014, pp.174, 194).

DESIGNERS MUST BEGIN TO LEARN MORE, NOT JUST ‘ABOUT’ THE LANDSCAPE, BUT MORE IMPORTANTLY ‘FROM’ THE LANDSCAPE.

Michael D. Murphy, 2016

3. CONNECTING SOIL AND WATER IN A LIVING CITY

With the passage of time and the variations of space on Earth, landscapes and their transformations have established different relationships between soil and water. For natural history this has occurred since the dawn of time through biotic and abiotic processes of transformation of landscapes. For cultural history it takes on concrete form first with the invention of agriculture and later with that of the garden.

Water and soil are the primary agents of the evolution of landscapes.

> Water is the landscape, in other words it is one of its fundamental and inseparable components. Together with earth and stone, water has constructed the geographies of the planet. It is also landscape since it is the basic element of all biotic life, both animal and plant, of which it conditions the development, survival and reproduction. It is once again a key player in the history and the culture of the landscape, in all forms of narrative and representation of nature and its domestication, from those narrated in the literature of all societies, to those represented in painting, to the material forms of gardens, of course, where the cycle and form of waters have always been transfigured and metaphorised, either as a monument, the fountain, or in more complex and articulated shapes, those of waterways and basins, which are the epiphany of travel on wa-

> ter. Water marks the events of places and peoples. It marks and suggests the birth and the form of cities and also represents, in scarcity and/or excessive abundance, in quality and in quantity, the preoccupation and necessary attention of societies to the relationship between forms of anthropisation of space and the safeguarding of human life, of its works and subsistence production. Water is observed, studied, monitored, controlled. Water is necessary and is thus collected, valorised, purified, reused and is a market commodity and a subject of political dispute. Water can also be dangerous and hazardous, it can generate small problems and huge disasters. Some places have become famous because of their capacity to manage and bend it to their needs. In poorly governed territories, instead, it periodically or occasionally causes calamities. Many cities today are engaged in extensive processes for valorising water resources, with the aim of following policies for the environmental sustainability of the region. Others have assumed water as a medium, redesigning public space in a diffuse or punctual manner, or in the form of a great event (Di Carlo, 2012, p. 109).

Landscapes with a high ecosystemic performance generally show a close relationship between water and soil, from which life depends, that of plants, of animals and men. This is easily observed in contexts of high naturalness, and is apparent as well in rural areas, even in agricultural landscapes subjected to the industrialization of production processes. In general, these features make landscapes both resilient and efficient in ecological, and consequently also in economic terms.

Cities present a high degree of anthropisation of ecosystems, beginning with the widespread and pronounced artificial conditionings of the relationship between water and soil. The first has been increasingly conducted into spa-

tial sections that are more and more narrow and impermeable, hidden under pavements or put into pipes. Behind the solution to some of the problems identified were hidden others that resulted as a consequence of their fundamentally exclusive use. The vulnerability of settlements increased and the ecological and scenic value of their open spaces, both interior and peripheral, were reduced. Urban soil was constipated, polluted, discarded, accumulated, traversed by technological infrastructural networks, paved, waterproofed. Spaces with soil-water-plant interactions capable of expressing considerable systemic properties in terms of collaboration and self-regulation have decreased in quantity and continuity, fragmenting into a nebula which tends to the thinning and reduction of the size of the patches. In this way the capacity of soils to carry out important functions of retention, filtration and infiltration of rain-water has been diminished. These waters thus feed underground aquifers, as well as surface ecosystems, less than in the past. There are direct and indirect water-related effects. Urban spaces affected by rain present an evident vulnerability due to the burden on sewer systems, which are intrinsically static, and bound to the size of the sections at the time of their design; they lack the possibility to compensate beyond their carrying capacity in cases of more or less extraordinary events resulting in the concentration of large amounts of water in short time spans. Furthermore, phenomena due to the lack of water retention and infiltration also generate other indirect hydraulic effects that influence areas which were not directly affected by the rain in question. Flooded plains

and valley floors have systemic causes which originate upstream from those ultimately affected. The criticality of the events is amplified by the lack in the capacity to compensate that is characteristic of urban landscapes.

What does it mean to 'connect' water and soil in view of a 'living city'? The expression is aimed to the systemic, systematic and programmatic search for functional relationships between the two components and underlines its fundamental importance also in urban habitats. It therefore also means to imagine them in connection with the cycles on which living beings depend. Theoretical and practical developments have consolidated the so-called Water Sensitive Design, regarding the relationships of water with soil, the substratum and plants. The landscape trinomial soil-water-plants, fundamental in rural or semi-natural connotations of the landscape, thus presents an increasingly evident strategic value, even in urban contexts. The *Urban Soil Summit* which took place in Los Angeles in 2017 used a telling subtitle: *Urban soil security changes our climate destiny*. Three decades earlier, Phillip J. Craul of the SUNY-College of Environmental Science & Forestry in Syracuse had identified and described eight common features of urban soils, which also point out to their hydrological limits:

> 1. Great vertical and spatial variability. 2. Modified soil structure leading to compaction. 3. Presence of a surface crust on bare soil; usually hydrophobic. 4. Modified soil reaction, usually elevated. 5. Restricted aeration and water drainage. 6. Interrupted nutrient cycling and modified soil organism activity. 7. Presence of anthropic materials and other contaminants. 8. Modified soil temperature regimes (Craul, 1985, p. 53).

In 2012, the Communication of 13 February from the Commission to the European Parliament highlighted how

> […] Soil function – despite their fundamental role for the ecosystem and the economy, and unlike air and water – are taken for granted and perceived to be in abundance. […] Land degradation in its various forms is a fundamental and persistent problem. […] The situation in Europe is mirrored and magnified in many parts of the world. It is also a global development issue, as soil degradation, poverty and migration are mutually reinforcing, but that is often largely ignored, because observed impacts are gradual. […] Between 1990 and 2000, at least 275 hectares of soil were lost per day in the EU, amounting to 1,000 km2 per year. Between 2000 and 2006, the EU average loss increased by 3%, but by 14% in Ireland and Cyprus, and by 15% in Spain (UE, 2012, pp. 2-7).

The report focuses on soils which have not been impoverished or sterilized by urban development. But extent of these areas and their possible further growth should be reason enough for striving to maintain significant amounts of soils with biotic and abiotic properties also in urban settlements.

The EU *Environmental Implementation Review – Country Report* – ITALY, presented to the European Parliament on February 3, 2017, focuses once again on the soil, in terms of the protection, preservation and valorisation of the natural capital. This report presents, vis-a-vis the previous document, a greater accent on phenomena related to settlements and infrastructures, and offers a more comprehensive view of the relationships between protection and regeneration.

> Soil-sealing over wide areas, due to an excessive urban development, has significantly increased hydro-geological

> risk. […] Soil-sealing has increased the vulnerability to landslides and flooding in several areas, which translates into an increased intensity and frequency of flood events and related damages. This problem is exacerbated by low soil organic matter in many regions (EU, 2017, pp. 14).

In this case, furthermore, the so-called 'green infrastructures' are introduced among policies for the 'natural capital' (UE, 2017, p. 16). Although the report specifies that the Italian Ministry for the Environment considers as a priority the application of the said policies for protected areas, references are also made to peri-urban and metropolitan landscapes. The diffusion of this type of strategies permits in fact to address the regeneration of urban landscapes, also through the introduction of systemic objectives concerning the quality of soils and waters and their functional relationships.

As is well-known, climate change needs to be addressed through global policies aimed at their primary factors, but also with local strategies and actions for adapting to its effects. This does not concern only countries in direct contact with the ocean, but also the Mediterranean area which is affected by different phenomena. It suffers drought and processes of erosion of the soil and desertification, as well as concentrated rainfall, further erosion of the soil, hydro-geological instability of slopes and floods in plains as a result of both of the stagnation of rain-water and of the overflow of rivers and streams. In general terms, the more ecosystems are anthropised, the more the landscapes are vulnerable. Although in a simplified form, this provides a comprehensive view of the risks that are typical of cities, in which the environmental vulnerability

and population density both show high levels. Urban ecological deficiencies are translated into considerable social and economic pressures which are difficult to deal with.
Italy, linked to the Mediterranean by seven thousand kilometers of coastline and connected to continental Europe by the Alps, has climatic conditions which are mitigated by both the sea and the mountains. The Apennines constitute a powerful backbone to the peninsula for much of its latitudinal extension. It is due to all these reasons that Italy is one of the richest countries in the world in terms of diversity, but also one of the most vulnerable and in need of care and protection. Prevention actions are fundamental, but are not enough without those concerning transformation and management. The largest expanses of urban habitats are concentrated in areas with less structural and functional natural conditionings. Less does not mean nonexistent, as is obvious for landscapes which have been mostly conquered from the waters through hydraulic transformations. The frequent settlement aggregations and extended coastal conurbations, urban concentrations which occur in a widespread manner in larger valleys, as well as in interior and coastal plains, are highly sensitive to the effects of climate change.
The European Union has recently established guidelines regarding waters and floods. Their implementation concerns an articulated series of arguments; their efficiency will depend most of all of the capacity of integration of the single concepts and actions.
Concerning the landscape planning of urban transformations and specifically the development of ecological relationships between soils and waters in cities, concepts such

as filtration, infiltration and evapotranspiration are key terms. However, before the said functions are triggered in urban hydrology, rain-water can be 'stopped' and 'divided' in terms of quantity per spatio/temporal unit. For this purpose, considerable amounts of widespread vegetation is necessary, which in turn requires sufficient amounts of quality soil.

> Thanks to the presence of trees and shrubs, but also to lawns, there is an immediate reduction of the effect of rainwater through a direct interception which delays the runoff […]; it can subsequently be removed through superficial detention and later by percolation through drains or be slowly absorbed by the soil. The presence of trees and roots of other plants in fact creates an 'underground network' which helps maintaining a stable terrain during heavy rains. Above surface, the foliage of plants and natural mulching contribute, additionally, to reduce the negative effects of wind, reducing the amount of soil lost as dust in the air, thus making it more fertile. The consequences of this are also important in terms of the water that reaches the water-bearing stratum, thanks to the greater capacity of vegetation for removing polluting substances carried by rainwater, in comparison to a soil without vegetation, through processes such as: – biofiltration: this is based on the elimination of polluting substances and other sedimentation particles in rainwater by plants (phytodepuration) and microorganisms; – phytovolatilisation: based on the use of plants for volatilising organic pollutants and liberating them into the atmosphere through the leaves; – phytoextraction: that is the absorbing and translocation of pollutants in the tissues of plants (Ferrini and Fini, 2017, pp. 79-80).

The hydrological and hydraulic balance can be bettered with the contribution of the inclusion in urban landscapes of spaces with the capacity to filtrate the rain-water

discharges from the streets and subsequently to infiltrate it into the soil and the underground, together with the effects of evapotranspiration from the ground and through plants. This also results in protection from flash flooding (Ferrini and Fini, 2017, p. 80). These events have highlighted for decades the hydraulic vulnerability of urban landscapes, yet they have become increasingly intense due to the effects of climate change.

This is a set of project topics on which it is possible to work in order to contribute to the development of settlements truly deserving the epithet 'smart', for ecological before technological reasons, which reduce the overloads of sewer systems and valorise water as a resource, rather than dispose of it as a problem, causing hydro-geological damages to the hydrographic sections of valleys of interbasins and basins.

> The design of green areas and the use of trees and shrubs for regulating rainfall is based on the technique which in the United States is known as 'Low Impact Development' or LID […] that envisages a sustainable approach […] with the purpose of reducing the overload of surface waters. However, water is not considered solely as a factor to be removed from the site in question, but is rather valorised as an opportunity; in fact the LID is based on a closed-cycle system which includes the recovery and reuse of the collected water. Furthermore, from the moment that some studies carried out in the United States have shown how conventional methods for the collection and disposal of rainwater in urban areas damage the quality of waters in natural habitats, another purpose of this technique is that of preventing this type of problems thanks to systems for the depuration (biological and mechanical) of rainwater (Ferrini and Fini, 2017, p. 80).

At the scale of hydrographic basins and interbasins, and in

relation to waterways and their areas of influence, the enhancement of the self-regulatory capacity and the reduction of vulnerability and the risk of floods require systematic and systemic policies and interventions that contribute to compensate the lack in natural detention of slopes and provide flat areas and valley floors with spaces for fluvial expansion proportional to the effective needs for flood compensation.

At the urban scale, however, green roofs, hanging gardens and areas for bio-retention of water at the ground level, such as rain gardens, bioswales, biostripes and tree box filters, are capable of enhancing the capacity for hydrological reaction to hydraulic stress which depend directly from rain-related climatic factors. LID is a model that has become relatively widespread in the United States. In Europe a similar approach is known as Sustainable Urban Drainage Systems (SUDS), whereas the Australian equivalent is known as Water Sensitive Urban Design (WSUD) (Ferrini and Fini, 2017, pp. 80-81).

The importance of systemic relationships in the design and planning of the transformation of landscapes is also present in the *Handbook of Water Sensitive Planning and Design* edited by the landscape ecologist Robert L. France (2002), of the School of Design at Harvard University. The author proposes a framework for the main reference terms related to the topic which highlights its evolution.

> Constraints, challenges, and opportunities in implementing innovative stormwater management techniques.
>
> Past.
> Desire for and love of tightly regulated, top-down control of an element — water with a physical nature that resists

such an approach. Rapid drainage paradigm; i.e., sending water down the pipes and not taking responsibility. Imbalance between understanding of hydraulic engineering sciences (e.g., how to design a trapezoidal channel) and hydrologic engineering sciences (e.g., what the proper design storm is and how it may affect the entire watershed), leaving us with fragmented, partial approaches that do not really solve the problem. Regulatory control restricted to a few professional groups with a narrow, institutionally enforced knowledge base. Flooding and water pollution are accepted standards of urbanization. Perspective of stormwater issues as a relocative problem that someone else at another location will deal with later. Undervaluing water's cultural importance. Even if we knew today what ecological design was, we could not do it; i.e., often the greatest limitations are due to institutional barriers and antiquated development codes that codify the status quo.

Present.
Acceptance of limits to urban growth, water resources, and human ingenuity with respect to solving environmental problems. Early attempts at multiple use of water as it moves down the pipe. Recognition that alterations in stormwater management are multigenerational and that solutions need to be self-sustaining through time. Understanding of the roles of natural, predevelopment processes, and how stormwater behaves there. Gradual evolution of institutional changes to circumvent previously codified and unimaginative regulations. Narrowing the gaps between clients, regulators, and general society. Intermingling of academic knowledge with real-world experience to facilitate and speed up acceptance of innovative solutions. Beginning awareness of appropriate technologies with associated attempts at implementing innovative design solutions. Fusion of technologies and legislative actions for wetland protection, groundwater recharge, and public recreation. Acknowledgment of the importance of cumulative effects.

> Future.
> Search for means to take new technologies and redesign them to deal with ecological issues. An approach for assessing performance that is more like medicine in terms of requirements for quantifiable data, threshold criteria, and checks of implemented solutions. Further education of the comprehensive role water plays in the functional infrastructure of cities. More knowledge needed about the hydrologic importance of groundwater recharge in a watershed context. Implementation of a true hydrologically functional approach supported by a corpus of systematic and vigorous scientific investigation and engineering analysis. Desire for many more high-visibility demonstration projects ably demonstrating creativity and revealing processes; i.e., need to try and prove techniques. Requirement for shared leadership of new, fresh voices along with a corresponding movement toward embracing a plurality of visions in innovative stormwater management; i.e., adoption of the tradeoff leadership strategy exemplified by geese in flight. Greater inclusion of ethics in professional practice; e.g., movement away from large engineering, end-of-pipe solutions that generate large fees, toward small, dispersed, and less lucrative micromanaged solutions. Realization of the limitations of technological solutions alone (France, 2002, 355-356).

An approach to the transformation of urban landscapes that intends to develop an effective systemic sensibility to water requires complementary attention and care concerning the soil. The links of this cultural and operative context to the search for settlement sustainability are evident. The contemporary process of conceptual integration of the search for beauty with that of sustainability is present in the ideas and actions concerning water sensitive urban design.

An example of this, among others, is the volume *Artful Rainwater Design* (ARD), published by Stuart Echols and Eliza

Pennypacker (2015) of the Department of Landscape Architecture at Penn State in Philadelphia, which proposes

> […] an approach to sustainable stormwater management in which the management system is designed as a landscape amenity. ARD not only controls the quantity of runoff and improves its quality but adds experiential value to the landscape. The visible aspect of the design educates, entertains, or enlightens—it celebrates rainwater's resource value and tells the story of how it's being managed (Echols & Pennypacker, 2015, p. 1).

As the authors point out, this is a perspective which is geographical and culturally devised for the context of the United States (Echols & Pennypacker, 2015, p. 4). However, it offers a vast overview in terms of technology and of general principles. Among these the semantic declination of the argument is indicative. Echols and Pennypacker in fact say that they use the term 'rainwater' instead of 'stormwater' due to the difference of vision that they subtend and more specifically because the second has always referred to rainwater as waste to be removed, whereas it is instead a precious resource worthy of being valorised (Echols & Pennypacker, 2015, pp. 1-2). Moreover, the 'educational' value expressed by places in which the vital relationships between water and soil, and between these and plants, are visible, is both commonly accepted and devoid of geographic-cultural attachments. Proposing a different point of view, the authors seek opportunities for "achieving the amenities" that "rainwater design" can offer. Under this profile, five goals are proposed that are complementary to those concerning hydrological efficiency and hydraulic protection: "education", "recreation", "safety", "public re-

lations", and "aesthetic richness" (Echols & Pennypacker, 2015, pp. 23-25).

> The five ARD utility goals were derived from many stormwater management manuals and resources. Taken together, these goals address the central intentions in sustainable stormwater management and consider the needs of both human and natural systems: reduce pollutant loads in rainwater; reduce downstream damage from runoff; safely move, control, and contain rainwater; capture rain for reuse (of all kinds, human and natural, from irrigation and toilet flushing to groundwater recharge); restore or create habitat. The stormwater management objectives used to accomplish these goals are widely recognized in literature and practice: conveyance = move rainwater safely from one place to another; detention = temporarily hold rainwater and control its discharge offsite; retention = capture and hold rainwater on site; infiltration = capture rainwater to recharge groundwater; filtration = reduce pollution carried by rainwater (Echols, Pennypacker, 2015, p.100).

In landscapes, including those in urban contexts, ecosystemic phenomena and scenic manifestations have relationships of varying intensity. When water interacts with soils that have not been entirely sterilized by anthropic agents, plants express its vitality and facilitate its perception in other living organisms.

The study of the specific functional capacities of landscapes and the consideration in terms of the project of the limits and potentialities of their systems permits supporting the satisfaction of important human needs.

> As Tom Liptan […] has said, "Use the landscape!" […]. This approach is both logical and beneficial: Let the water nourish plants while the plants absorb pollulants, and let the water then function within the natural hydrological

> system trough infiltration and evapotranspiration (Echols & Pennypacker, 2015, p. 2).

Thus the axioms and ideas proposed and the doubts discussed by Echols & Pennypacker (2015) highlight the relevance of working through landscapes due to the properties that they provide. Soils are key variables for many of the biotic and abiotic functions of landscapes, they influence their hydrology and hydraulics, and are in turn influenced by them.

> Sustainable stormwater management is a complex process and requires both creativity and accurate quantitative analysis. We offer a set of axioms to keep in mind as you plan and design artful rainwater sites. Axiom 1: Always Slow It Down, Spread It Out, Soak It In […]. Axiom 2: Combine Different Management Systems […]. Axiom 3: Build Distributed, Redundant Stormwater Systems […]. Axiom 4: Use Landscape, Not Pipes, Wherever Possible […]. Axiom 5: Get Your Feet Wet with Small, Nonthreatening, Reversible Interventions […]. Sustainable stormwater management begins with site design."Use the entire site" is a key starting point for sustainable stormwater management and provides the opportunity for ARD. Green infrastructure offers a wide array of stormwater management techniques and the opportunity to make the site landscape work and visibly celebrate rain […].
> Idea 1: Put That Landscape to Work! […].
> Idea 2: Make the Landscape Overtly Celebrate Rain […].
> Idea 3: It Can't Be Just a Working Dog or Just a Show Dog […].
> Doubt 1: "Well, That's Portland. We Can't Do That Here!" […].
> Doubt 2: "Yes, But How Do We Know It Will Work?" […].
> Doubt 3: "It's Too Expensive!" […].
> Doubt 4: "Yes, but It Freezes Here." […].
> Doubt 5: "Maintenance Is Too Much Trouble"[…] (Echols, Pennypacker, 2015, pp. 144-151, 260-266).

These too are project-related issues on which to imagine the urban habitats of the 21st century. So far more initiatives are being undertaken in Northern Europe than in the south of the continent. Among these it is worth concluding with the case of Copenhagen, in which the relevance of an integrated approach is evident even from its prominent traits.

> Why adapt ? The climate is changing. We can expect more rain in the future and cloudbursts such as those Copenhagen has experienced […]: rain in such large quantities that the sewer system cannot handle it and our basements are flooded. Enlarging the sewer system so that it can cope with every possible rain event will be an expensive solution, which would cause construction works for a large part of the city for decades without any further benefits. Instead, in St. Kjeld's Neighbourhood we want to secure the city against the heavy rain with green solutions at street level. Solutions that create lush, beautiful urban spaces while effectively leading water from cloudbursts away from our neighbourhood to areas where it causes no damage. Cloudburst solutions can be green streams in the widest streets of the neighbourhood or it could be new cycle tracks, which can also serve as channels leading large quantities of water from the neighbourhood to the harbour when there are no bikes. At the same time, we will create local solutions such as rain gardens which can detent water, water towers to store water and greener courtyards that contribute to retaining the water. This reduces the pressure on the sewer system from intense daily rain (City of Copenhagen, 2013, p. 7).

The municipal plan for 2011 articulated the process for climatic adaptation of the city on three levels.

> If the risk assessment shows that the risk is so high that it cannot be tolerated, the strategy of the City of Copenhagen is to choose actions that first of all prevent an climate-induced accident from happening. If this cannot be

> done—for either technical or economic reasons—actions that reduce the scale of the accident will be preferred. The lowest priority goes to measures that are only capable of making it easier and/or cheaper to clear up after the accident.
> Level 1. The aim is to reduce the likelihood of the event happening, preferably to completely prevent it. […]
> Level 2. The aim is to reduce the scale of the event. […]
> Level 3. The aim is to reduce vulnerability to the event […] (City of Copenhagen, 2011, p. 11).

The conception of the process of adaptation responds to criteria of systemic integration. Open spaces with plant formations are ascribed a key role in the strategy of urban regeneration. The approach that the City is developing is connotated by the intention to address the needs for the reduction of risks in accordance with a flexible and multi-functional logic. It includes the interpretation of opportunities for enhancing urban landscapes in terms of the collective well-being that can be derived from them.

> The Climate Adaptation Plan recommends that green spaces should contribute to clothing Copenhagen to cope with the weather of the future. A long-term, broad and focused effort to bring about a greener Copenhagen should be a preventive investment in a climate-proof Copenhagen with a high level of quality of life, health and satisfaction for the city's population. If the green element is incorporated now, we ensure that it will work in time. A fundamental aspect of the Copenhagen climate adaptation plan is that a commitment is to be made to flexible adaptation that can develop gradually over the next several years. The work on climate adaptation is not just to focus on minimising the risk in future climate change but also ensure that all the opportunities for developing Copenhagen in a positive direction are utilised. Flexible climate adaptation therefore requires cross-cutting solutions

THE CITY'S GREEN STRUCTURE HAS MANY LIFE-GIVING FUNCTIONS AND IS ESSENTIAL FOR CONTINUED HIGH QUALITY OF LIFE.

City of Copenhagen, 2011

> focused on facing up to more of the challenges posed by future climate change. At the same time, climate adaptation should help in creating a city in which the quality of life of the population is paramount. Every time we have to consider what measures need to be taken to avert a risk, we must also consider what opportunities it presents to develop the city to the benefit of its population. The green approach is emphasised here as a major preventive instrument, as green measures can have a broad and multifaceted impact. […] The green solutions cannot stand alone but have to be combined with a number of other measures such as improvements in the city's sewer network. The green solutions can assist in keeping down expenditure on costly expansions of the sewer network, and above all are a way of working on climate-proofing in the existing densely populated city, where sewer renovation will be very difficult. […] Copenhagen's green structures comprise the city's green and blue spaces and consist of private gardens and courtyards, allotment gardens, public parks, nature areas, green sports grounds, lakes and rivers, churchyards and transport corridors. The city's green structure has many life-giving functions and is essential for continued high quality of life in Copenhagen. The potential of green spaces is to: reduce and prevent stormwater flooding by absorbing and retarding stormwater; moderate and balance temperature; create shade and air circulation, which assists in reducing the city's future energy consumption for the cooling of buildings; remediate and reduce air and noise pollution; prevent stress and create opportunities for recreation; be a home for animals and plants (City of Copenhagen, 2011, pp. 57-58).

The process of adaptation is producing a different urban landscape.

> The City of Copenhagen has an ambition to increase the blue and green infrastructure in future. The drainage of precipitation from intensive downpours is an important element in the physical planning process […]. Pluvial flood-

ing adaptive measures must, therefore, be incorporated into the wider local master plans and urban development projects. […] the Cloudburst Management Plan points to a solution that will protect Copenhagen by combining measures that will make the city greener and bluer by draining stormwater at ground level with tunnels in those areas of the city where ground level drainage is not possible (City of Copenhagen, 2012, p. 8).

OMBROSA NO LONGER EXISTS. LOOKING AT THE EMPTY SKY, I ASK MYSELF IF IT EVER DID REALLY EXIST. THAT MESH OF LEAVES AND TWIGS OF FORK AND FROTH, MINUTE AND ENDLESS.

Italo Calvino, 1957

4. PLANTING SUSTAINABILITY

Planting and sowing trees, bushes and herbs, are ancient activities, significant parts of human existence on Earth. They are still of fundamental importance concerning the satisfaction of nutritional needs and in general terms of health. During the 20th century, the cultural understanding of the contemporary meaning of safeguarding, reproducing and growing plants also recognized the importance of their environmental properties, of the so-called ecosystemic services that plant formations provide. The utility of planting and sowing assumes today the value of a necessary, fundamental and strategic answer. This contribution to sustainability, which is among the most concrete and widely viable, uses plants as low-cost and efficient generators.

If this is not considered enough, if plants are considered as expensive ornaments and sustainability as an abstraction, arguments can be made in support of the opposite thesis. This may be useful in terms of diffusion, of cultural evolution, yet yields little through prescriptive means, however presumed as more concrete and cogent. Ideas and perceptions are like plants: in order to live they need to be born and to grow, they cannot be 'made'. Thus sustain-

ability, commendable aim and possible result if effectively sought, cannot be generated on its own. It can result from the ensemble of behaviors and actions and concern the production or generation of any thing, from the most simple of objects to the most complex of processes.

In the cycles of functioning of ecological systems, plant organisms and their associations play key roles for the survival of the other living beings. Their presence in urban habitats influences their ecology, compensating their vulnerability and functional lacks. Scientific studies in different fields have identified a variety of functions for plant formations in urban landscapes. A partial list of some among the many available references presents a significant framework: Robinette (1972), Crowe (1981), The Metropolitan Tree Improvement Alliance (1985), Nadel & Oberlander (1987), Zoppi (1988), Booth (1990), McPherson & Rowntree (1993), Kuo, Bacaicoa & Sullivan (1998), Nowak, Noble, Sisinni & Dwyer (2001), Toccolini (2002), Herzog & Leverich (2003), Alberti & Marzluff (2004), Trowbridge & Bassuk (2004), Stamps (2005), Home, Bauer & Hunziker (2010), Roya, Byrneb & Pickeringb (2012), Cozzi (2013), Holtan, Dieterlen & Sullivan (2015), Ferrini, Fini & Konijnendijk (2017). Even a list such as this, limited in chronological and field terms, points to a substantial amount and typological variety of additional sources which form a robust body of arguments and documents.

There is therefore well-articulated scientific evidence of the fact that plants have the capacity to influence in many different ways the quality of urban landscapes. And al-

though specialized fields highlight important properties that are not easily observed, under other points of view it is a commonly perceptible fact.

The properties of plants change in relation to the species to which they belong and to the formations they compose. Trees play relevant roles, although bush and herbaceous formations are also of great importance. The systems that trees help to establish and evolve influence the functioning of cities, of metropolises, as well as in general of most landscapes. In this sense, planting trees in urban landscapes, as well as managing their reproduction and growth in peri- and extra-urban landscapes, means introducing efficient sustainability agents.

Trees can be formidable allies of mankind if humans show concrete willingness to share their habitats, guaranteeing for plants adequate living conditions, in cities are not always ideal too.

> People who regard the use of plants in the urban environment as an aesthetic nicety are not seeing the whole picture. It will be increasingly incumbent on professionals to recognize and quantify the many functions that plants serve in order to justify the need for continued funding of the green urban environment in times of restricted budgets. The functions of trees have been empirically measured. These data are essential in mitigating the many environmental aspects of the urban environment that result in more livable cities (Trowbridge & Bassuk, 2004, p. 105).

Trees participate at several levels of sustainability, in which psychological, sociological and economic elements are woven together with environmental factors as a result of their influence on the psycho-physical well-being of people. The

identification of spaces and the visual mediation of the relationships between their components are functions which are precious due to the quality they provide. These must be associated, rather than subordinated, to those with an environmental profile, such as the hygro-thermal micro-climatic conditioning, the control of the volume of rainwater and reduction of its runoff time, the particulate fixation, the transformation and storage of carbon dioxide, etc.

A correct and concrete interpretation of these reasons requires a coherent position in terms of the culture of the project. Trees are living beings which act through the systems they compose and react to the phenomena to which they are subjected. Trees are thus living organisms active within the structures and performances of landscapes.

Nadel and Oberlander (1987) remind us that the relationships with trees are essential for human existence. Considering the size, density and usual pressures of urban habitats, it is not enough to compensate their plant deficits in surrounding agricultural and semi-natural landscapes. Trees are necessary in cities, in quantities and qualities that are coherent with the recognized roles of urban plant formations. This requires, precisely, that projects take into consideration the need for guaranteeing adequate living conditions for trees.

Many significant arguments in favor of the integration of trees into urban landscapes highlight the overall value of their structural use in transformations. A row of trees, for example, can be envisaged as a form of identifying the space of a street. It is possible that it may also have to serve as a scale mediator between the public image of the street

and the private one concerning the area of appurtenance of buildings. It has been proven that it can contribute to the micro-climatic conditioning (temperature, humidity, wind, sunlight, natural lighting) and to the containment of pollution in the street space (exhaust fumes, particulates). The envisaged street will therefore have the possibility to provide a variety of services as a consequence of the functional properties that the project will be capable of conferring to it within the specific constraints in terms of size, shape, as well as to those of an administrative, economic and financial nature.

Regarding the performance of tree formations, Alessandro Toccolini (2002) points out how the classifications proposed by Gary Robinette in 1972 and Norman Booth in 1990 are quite similar, yet with an apparently important terminological difference. Robinette divides the functions into "architectural, engineering, climate control and aesthetic", whereas Booth refers to "structural, environmental and visual" classes of functions. In 1984 Robinette once again stressed the variety of functional services provided by open spaces which tree formations allow to plan and design in order to enhance the 'livability' of cities.

Two properties of urban tree formations are less discussed than the others: the capacity to identify spaces and that of mediating in cases of critical acoustic and visual situations. In the following pages I will use some examples to illustrate the meaning of this and to highlight its practicality and importance.

Spatial identification is a function with several significant implications, which influence the society and economy

of the city through the safety, inclusiveness and recognizability of its collective open spaces.

The spatial identification capacity of plant formations depends mostly on morphologic and dimensional variables, in other words first of all on the species. At the scale of the plant formation the spatial features concerning shape and density are important, as well as the botanical composition. Finally, at the scale of the landscape, the same variables assume meaning in terms of the relationships between two or more plant formations.

In order to provide a brief example, the following considerations are limited to tree formations, from the basic one consisting of a single specimen, and refer to the most common cases.

A tree can serve as a spatial focal point. In that case it connotes an open urban space through its presence, contributing to identify the space through its relationship with the vertical planes of the buildings and the horizontal planes of the pavements. As a consequence of the presence, extension and height of the lower branches, the same tree can provide a demarcation of the vertical dimension for the portion of open space in which it grows. Its foliage generates a 'para-horizontal' spatial indication, a clearly perceptible, yet permeable demarcation which allows the passage of air, water, birds, sounds, light, gazes.

A row of trees, more frequently as equipment of an avenue, but also in parks and gardens, can identify the dominant axial space of a pathway, connoting the section in the planimetric and altimetric terms of botanical composition. The multiplication of the formation of a row

on several lines parallel to the same axis, typical of wide urban boulevards, produces the identification of one or more spatial channels, which are usually sub-units of the street system as a whole. This is thus identified through the structural relationships between the row of trees, the facades of the buildings and the surfaces of the street.
In a park or in a garden, a group of trees can identify a more extensive spatial sub-space than that of an isolated specimen. The tree cover distinguishes it from 'open air' spaces, such as lawns or open paved surfaces. The shape and relative height of the lower branches of trees influence the configuration of the space 'covered' by the tree crowns. The diversification of the conditions of light and shadow of the group of trees relative to its immediate surrounding influences the spatial identification as a result of the density and botanical composition of the formation.
A patch of trees, and even more so a wood, is generally larger than the average grain of an urban and peri-urban landscape mosaic. Thanks to them, these formations have the capacity of generating the so-called 'edge effect', which is variable as a consequence of the spatial features of their planimetric form, tree density and botanical composition of the formation. This effect, which is known in plant and animal ecology, influences the individual and social behaviors of humans in the spatial section in which it manifests itself. The scrub-clearing, mass-surface interface is therefore a landscape tone with peculiar ecological traits also for urban habitats. It diversifies the microclimate in terms of temperature, humidity and light, extending the spatial offer and the physical well-being. This

transition section between arboreal masses (patches and woods) and surfaces (lawns, squares, parking lots) gathers some features of the two spatial types while excluding others. The boundary between the tree patch and the lawn, for example, includes both trees and herbaceous species. At the same time it excludes the typical 'internal' spatial organization of the tree patch, which usually includes partially closed and covered spaces, and the 'external' spatial nature of the lawn, usually uncovered and relatively open. The larger the spaces, from the small tree patch to the urban wood, the more the differences highlighted by the limit effect are pronounced and evident.

Spatial, visual and/or acoustic mediation are complementary categories of spatial identification. Among the elements that compose the urban landscape, they concern in particular the relationships which present more or less pronounced disturbance phenomena.

The use of plants for acoustic mediations, without the sound insulation contribution of embankments, may require large plant formations placed crosswise the propagation of the acoustic waves, and this only for obtaining a mediation effect and not a substantial reduction of the disturbance. In these cases plant formations collaborate in the fulfillment of the objectives in terms of acoustic qualities, rather than provide in themselves a solution to the question. Plant formations, on the other hand, offer a variety of possibilities in terms of visual mediation, to the point of providing spatial separation of the visual fields, whenever appropriate. Critical relationships which require visual mediation or separation are expressed usually in two forms: im-

age scale aberrations, due to the juxtaposition of incompatible spatial entities, and spatial inter-visibility disturbances, which due to their traits and/or uses suffer visual promiscuity even in the absence of the said scale criticalities. Visual mediation with the use of trees makes it possible to intervene as well on the critical connotations of public open spaces and of the urban landscapes which are due to the typological heterogeneity and aggregate irregularity of 20th century urban fabric. It is a broad range of widespread cases which significantly influence the perceptible quality of urban habitats. Tree formations can be used very efficiently in the treatment of the dimensions of spaces and their distortions (Nadel and Oberlander, 1987).

The tree manages in general to solve as well relationships which are often delicate as a consequence of the minute dimensions of collective open spaces, as is often the case in European cities. The boundaries of spaces that mark and protect private spaces can serve as diaphragms which are visually permeable. Trees mediate their relationships and help to focus the attention, both from collective and private spaces. This reduces the direct visual relationships between spaces, and therefore also the cause of the possible reciprocal disturbances.

A tree, and even more so a group of trees, mediates between open spaces and buildings, and has an effect as well on the relationships between their forms and dimensions. The interposition of plant formations in very open visual fields contributes to changing their spatial relationships, generating new articulations and units.

One or more rows of trees, in an avenue or park, mediate

the relationships with the bordering open spaces and with building formations that characterise street fronts. Other types of open spaces can also benefit from these relationships, whether due to the said identification effects, or to those concerning inter-visibility mediation. For example, specialized spaces for sport activities or recreation that require equipment, which in turn needs to be 'contained' in spatial formations adequate for that purpose, are quite common. The corridors of historic urban avenues show how rows of trees contribute to the mediation of the image scale from the collective toward the private, from the center to the outskirts, from the unity which identifies the street space toward the diversity which identifies the building which overlook it. In the urban fabric which was formed over the past sixty years, the same mediation functions of street tree formations are even more incisive on the quality of urban landscapes, due to their specific capacities for compensating the pronounced irregularities of the above-mentioned street fronts.

Tree patches and woods are capable of acting as factors of spatial mediation in wider areas than those specified here. From this point of view, the question of landscape mediation in urban fringes and edges is particularly relevant, where the promiscuity between urban landscapes with predominantly residential building formations and simplified agricultural, prevailingly monocultural or however agro-industrial landscapes, is frequent. The criticalities due to the absence of mediating interfaces between edges, with decidedly varying shapes, dimensions and appearances, can be efficiently treated through forestry in-

terventions envisaged also from this functional point of view, without significantly limiting their environmental and economic productivity.

The set of functions mentioned above contributes to the conditions of well-being that urban landscapes can express. The 'urban forest' emerges as a landscape scale formation. Its overall functional capacities are strategical for working on the city as a habitat which includes living systems.

Reality however shows how the structural potential of trees for the regeneration of urban habitats is underused. It is useful in this sense to direct a cultural criticism to the concepts of plants as urban ornaments and furniture. Plants are not entities to be added to open spaces, following a conception of 'urban decorum' that is inappropriate in view of the true importance and complexity of matters. Plant formations are constituting elements of cities, fundamental for their sustainability and as a consequence also for the quality of their habitats and the life of people. Tree formations are the most important of these, due to their specific and varied functional characteristics and to their capacity for spatial distribution within the urban fabric, yet the functions performed by shrub and herbaceous formations are also significant. Environmental questions, which have become greatly relevant, are at stake, but also social, cultural and economic issues which have an incidence on the well-being of the people who inhabit these urban landscapes, as well as on the real estate value of their spaces.

While keeping both feet firmly on the ground, in order to think it is necessary to turn our eyes toward the sky. Doing

this our gaze will encounter the trees, who spread their roots deep into the ground and raised their crowns into the air long before men appeared. These wonderful living beings combine the capacity for generating conditions of well-being for a great part of the other organisms they interact with a low cost. In the performance of their own vital functions in the systemic terms characteristic of their biology and ecology, trees produce for others in a manner which is irreplaceable. The cost for the establishment and management and the performance capacity of urban plant formations render them highly competitive in relation to other types of interventions aimed at the structural completion and functional enhancement of habitats. These advantages increase further where projects adopt methods of realization which significantly reduce maintenance needs. Even considering only trees, it is worth noting how attitudes concerning the controversial issue of pruning are shifting, through an increasingly widespread and reasoned participation of more types of factors regarding the health of plants, the safety of the inhabitants, the beauty of the city, and the cost of management of open spaces, both public and private.

As living beings, as humans, we must pay more attention to trees. With better living conditions in the city they will have less needs and more to offer. *Amico Albero* (2017) is the title of a remarkable book, which I have mentioned earlier, by Francesco Ferrini and Alessio Fini. The writing is sober, well documented, technical, passionate as to the concepts it discusses and communicates, and educational while scientifically grounded. The authors identify and

link together the various reasons in favor of the structural use of trees and of plants in general in the enhancement of urban habitats. Urban Forestry, which Ferrini and Fini discuss in specialized terms, is a recent view, as well as a relatively new field. It is generating, however, a change of scale inherent to the concept itself. Characteristic of this is the passage from the single specimen to the plant formation, from the single urban open space to the landscape it composes.

Things are evolving in clear structural and functional terms. Thus the persistent cultural view of plants in cities as ornamental entities is also losing ground. Scientific contributions (Ferrini, Fini & Konijnendijk, 2017), actions for technical dissemination (Trees&Design Action Group, 2010, 2011, 2012, 2014) and institutional promotion (FAO-UN, 2016) bear witness to and sustain this process, probably because today there is more awareness of the fact that planting is an action which promotes sustainability.

LIFE IS A CONSTANT PLAY BETWEEN BOUNDARY PROTECTION AND BOUNDARY TRANSGRESSION AND GOOD DESIGNERS SHOULD KNOW HOW TO PUSH AND PULL IN BOTH DIRECTIONS.

Richard Weller, 2014

5. URBAN ACCESSIBILITY AND LIVABILITY

Quality of life in urban habitats is influenced as well by their capacity for social inclusion. This does not depend only on the configuration and condition of spaces, but also on other cultural and socio-economic variables. It is also true that collective open spaces are agents in the processes of social relations and identifications. By influencing individuals, places stimulate and support communities as well.

The accessibility of places is a primary variable of the capacity for social inclusion of habitats. This role is recognized in programmatic and operative terms. The diffusion and intensity of the obstacles to the access and use of places and of the landscapes they belong to are elements which characterize the degree of livability of urban settlements and influence the level of social exclusion or inclusion. Nevertheless, what has been undertaken with respect to the issue of accessibility often highlights defects in the approach. This objective of quality has been addressed in specific terms and mostly at the scale of individual spaces, both interior and exterior to buildings, and often with an incongruous consideration of collective open spaces and irrelevant in terms of the landscape systems to which they belong (Paolinelli, 2014b, p. 163).

In the previous chapters I have considered the meanings, roles and relevance of a series of factors on which the livability of urban habitats depends, which also influence the conditions of psycho-physical well-being of individuals and therefore the social relations of the communities. Accessibility is thus an additional variable that we need to consider as fundamental in terms of the transformations that we plan, design and undertake. It is also a complex variable; it includes the material conditions of access to landscapes, places and resources, that are more commonly recognized and treated, albeit in an unsatisfactory manner; it includes as well the intangible conditions that more or less allow or impede their use.

The reference to accessibility to individual urban places and to the landscapes they belong to is a crucial dimension of the issue, which highlights a double scale. The question concerns public and private buildings, their appurtenant open spaces, central public spaces, or those devoted to transit and connection, which carry out social functions at the neighborhood, district or urban levels. The efficiency in enhancing the level of accessibility of a place can, however, have little influence on that of the landscape it belongs to in the absence of a network of places with similar requirements. Accessibility defects at the scale of the landscape in turn condition individual places.

This has prompted scientific and cultural initiatives and technical and regulatory actions aimed at addressing the issues at the adequate scales and in systemic terms, overcoming the concept of 'surpassing' specific 'barriers' and

coordinating the progressive planning and actions regarding the places in question.

From the point of view of regulation and technical practice, a step forward was given with urban accessibility plans which are activating the consideration of the issue at the settlement scale. These instruments permit as well addressing the complementary relationships with the spaces of peri- and extra-urban landscape mosaics. As for education and research, I will refer to two initiatives which are indicative of innovative perspectives on the topic.

An Erasmus Intensive Programme coordinated by Valerio Morabito was promoted in 2014 under the title *Landscape Accessibility* (Morabito ed., 2014).

> If we extend accessibility in many different ways, we will create a multiplicity of connections, a more open city in which everyone can use every space in different ways. It is not just about producing a beautiful design: it is much more related with the concept of intelligent and innovative ideas. Information, knowledge, culture, religion, community, environment, ecology, and energy are many other unphysical and physical obstacles or borders that characterize the quality of the accesses in the space of the city. They belong to different research and practical fields, sometimes so specific that they avoid every relationship among them (Morabito, 2014, p. 4).

In this respect, Universal Design is the first key word that identifies the topic of accessibility in accordance with a profile of the culture and technique of the project investigated by the inter-departmental research unit *Florence Accessibility lab — Accessibility to Cultural Heritage & Human Development* of the University of Florence, coordinated by Antonio Lauria.

> Accessibility expresses the ability of an environment to guarantee everyone an independent life regardless of their age, gender, cultural background and physical, sensory or cognitive abilities […]. Accessibility concerns every human activity, the use of material assets and the relationships with intangible elements/factors (communication, services, decision-making processes, participation, etc.). […] At the various scales, accessibility is explained through the coherent and comprehensive fulfillment of various requirements: reachability, mobility, environmental communicability, comfort, environmental prevention and safety, usage safety, usage, etc. Accessibility is not a given fact sanctioned by a law, it is not covered by a regulatory dimension and it is wrong to think that it concerns only weak or disabled people: accessibility is a 'value' that regards the right of every person to determine his or her own existence and to participate in collective life and in the development of society on equal basis with others […]. Accessibility, except in specific cases, should not hesitate to enact special policies or interventions, but […] should filtre and feed ordinary decision-making processes which concern the transformation of human spaces and relationships […]. Regarding the specific debate on the re-qualification of places of cultural interest […] accessibility assumes a variety of meanings: mark of civilisation that our era consigns to history, 'bridge' toward culture and beauty, and opportunity for civil and economic well-being (Florence Accessibility lab, 2013).

There are issues concerning the culture and technique of the project that it is useful to consider. The overcoming of barriers, including those of a material nature, is obviously necessary. It is also important not to generate new ones or, whenever inevitable, to accompany them with the spatial conditions necessary for their comfortable overcoming. Reality shows, however, that the fact that such an objective of project quality belongs to the category of the obvious, and is

therefore close to the objective, does not guarantee that it is appropriately considered and correctly pursued.

The phenomena of functional specialization of open spaces (Paolinelli, 2014a), already addressed above, induce separations, contribute to the optimization of specific comforts rather than to the mediation of general comfort-compatible needs. The effects of separation generate spatial sub-units with interaction difficulties that are amplified in morphological and often also material and chromatic terms, and which influence urban landscapes, disarticulating and congesting them. The dimensional consequences of the spatial compartmentalization due to functional specialization are quite relevant. The dimensions of existing urban spaces are in fact binding and in European historic urban fabrics are often minute.

It may therefore be meaningful to address the issue of accessibility in a different way, placing it in relation to its influence on inclusiveness and the overall livability of urban habitats.

I believe it is important first of all to answer a key question, without taking its meaning for granted: – Accessibility for whom?

The conventional answer – for 'disabled' people – has inherent critical limits, but the question can be addressed effectively by shifting the perspective.

In general we turn the attention of the project toward some, identified as 'differently abled', with a frequent expression that is not free of a demagogy. We could, instead, think more about the substance, and less about the form of reality. It shows us that we are all 'differently disabled'

from the physical-motor point of view, regardless of when, since abilities change with time, resulting in a variable level of disability. The present, on which views and strategies are often levelled, is only an instant in the passage of time. 'Normality' is not enough significant for making decisions regarding the structuring of spaces that must respond to the everybody's needs, and be as flexible and long-lasting as possible.

Devising spaces for all as differently disabled is an approach which in itself is programmatically inclusive, ideal for acting on the physical-motor component of accessibility, which is certainly relevant, although partial. In the wide gradient on which spatial disabilities are articulated which are significant for orienting the design of collective open spaces, extreme conditions, such as blindness or severe paralysis of extremities, are fortunately in the minority. To base the design on serious sensory-motor limitations does not, however, jeopardize the creativity that the project can express. The connotation of the places it can produce are variables of everybody's comfort. To refer the interpretation of the project to specific needs also confers meanings to things and to their relationships. For example, a tree is a spatial agent with which different people, in different conditions, can establish different relationships. Considering things from the point of view of the more serious limitations, we can pinpoint a variety of meanings for project choices which are mostly also valid for people who do not have great difficulties and who, however, do not constitute disturbance factors for them. The leaves of a tree behave as elements in an acoustic device that is acti-

vated by the wind. For a partially-sighted person the same tree, at the same moment, can 'sound' differently from the way it sounds to a person who is seeing it at the same time as listening to it. The bark is a world of diversity; its tactile exploration is not necessarily less significant than its visual one. It is different; and it is especially different for those who explore it in this manner while being unable to see. Also as an example, a person affected by deafness is perfectly able to 'read' the tree and the variations it expresses in itself and in its relationships with the place to which it belongs. Based upon his or her specific history and condition, this person can attribute to what he sees the sound he imagines, although he cannot hear the sound produced by the wind as it moves the leaves and the branches. Following this line of thought, the space accessible to a person on a wheelchair is comfortable for an autonomous elderly person and so on and so forth in the various relationships between people, their conditions of perception, and the use of spaces. The person who is in good physical conditions does not sense for that type of space any limitation to his opportunities for using it, but rather benefits from the resulting conditions of well-being.

This shifts the question from the extraordinary to the ordinary, from the exception to the rule, in other words from separation to inclusion. The project is thus not called to resolve problems for specific subjects, but rather to fulfill quality objectives that satisfy everyone. Among these, motor comfort is a fundamental variable in the conditions of well-being regarding the use and enjoyment of spaces and therefore, ultimately also concerning the livability of ur-

ban landscapes. This approach implicitly ascribes responsibility to the project. The reference to a minority in fact apparently makes plausible a series of secondary and subordinate choices which, however, are not ethically justifiable. Contrary to this, the determination of the project based on the entire range of individuals that are part of the collective has two positive consequences: it facilitates the solution of project-related issues concerning the performance effects of spatial integration; it favors inclusion from accessibility, through experience, in relation to a factor that in the absence of coherent views and actions generates instead separation and exclusion.

As for project-related choices, another key question arises:

– 'Motor well-being: how?'.

This requires considering the variables that condition in a prevalent manner the well-being of the people who move and rest in collective open spaces without the help of motor vehicles and with the overall benefits that this entails. In this respect, three qualities are particularly influential and refer to the duplicity of scale that characterizes the interaction of places with their landscapes. This regards the connection of notable places, the shape and size of the sections of the corridors and the degree of inclination of their surfaces. While the two latter variables are linked to the scale of the place, the first refers to the entire urban landscape it belongs to. That the project carries out coherent solutions for generating inclusive accessibility conditions may be valuable in terms of proximity benefits, at the scale of the place itself, or however at that of the vicinity relations within a contained spatial range.

As I have hinted earlier, however, these properties do not emerge at a systemic level in those parts of the landscape which are conditioned by defects in connectivity and accessibility. They can be total, in those places where there is a lack of continuous spaces with adequate dimensions for the movement of people, alternative to the channels which are reserved for the flow of motor vehicles. Or they can be partial, in those cases where spatial corridors exist but are more or less lacking in accessibility. Furthermore, the lines which connect the nodes of a theoretical graph depicting non-motorised urban connectivity, should not be considered merely as spaces destined to the function of connection between nodal places. We must design the same corridors as spatial sequences of places, offering opportunities for rest and for social interaction. This requires attention to the lateral configurations of connecting corridors, following morphological and dimensional choices that are not subordinate to the obvious needs in terms of axial flow of people in movement.

The second project variable that I proposed, the transversal section of spaces for flow, is significant precisely for connecting spaces. Their definition is sensitive to the transversal dimensions as well as to the planimetric forms. It has necessary relationships with technical regulations and expresses a position regarding the topic of exclusiveness versus functional multiplicity of open spaces. In regulatory terms, provisions that determine degrees of specialization in accordance to usage priorities are common. From the dimensional point of view, regulations in general provide for minimum standards, such as those concern-

ing the width of the sections. These are often adopted as coherent, independently of the context, and as models of morphological homogenization along the axis.

The project can choose solutions determining and comparing several alternatives in terms of costs and benefits, due to the position it intends to express within the spatial, cultural and regulatory context in which it operates. Among the meaningful variables for the projects there are obviously those of an economic nature which concern the costs of production and management of the works and those of a functional type that regard the conditions of efficiency and safety of spaces devoted to people. In the determining of project choices, other variables are also meaningful and deserve consideration. The fundamental relationships between soil, water and plants addressed in the previous chapters contribute in a decisive manner in turning accessible spaces into livable places. Two dimensions of the project conception assume as well specific meaning in the search for accessibility as a condition of livability: the expressive capacity and the functional capacity. The first is influenced by the qualities of morphological and dimensional coherence of public open spaces. These same variables condition in fact also the capacity to fulfill a variety of usage needs. Places with specific accessibility functions can be active units in the configuration of the urban landscape, also through the other environmental and social functions they perform. I have already mentioned how the functional density and the dimensions of open spaces which characterize European cities constitute crucial factors for the determination of the project and of its transfor-

mations. If, on the one hand, the dimensions established by regulations concern the minimum admissible, on the other the finiteness and minuteness of the section of the urban corridors require that the project probes the possible alternatives while considering all the significant variables. By preventing the need for the separation of flows of movement of people from becoming dominant or inescapable, we can keep the effects of spatial specialization below evidently incongruous thresholds. In general terms, I believe that the decrease in the available section has to be associated to a progressive reduction of functional specialization and of the relative spatial separations, until reaching its effacement in spaces intentionally destined to be shared. Also in general terms, the containment of obstacles and obstructions, due to the diffusion of artifacts and objects, signs and signals, favors unity, multi-functionality and coherence at the scale of the image of urban collective space. Finally, when the dimensions of spaces allows it, their morphological diversification can result in a significant factor of place identification.

The morphological variation of the margins of pavements and therefore also that concerning the dimension of the flow sections can contribute efficiently to induce slowing-down and rest. The coexistence of these conditions with movement modifies the perception of space, weakening that of infrastructural channel, which is otherwise dominant.

Project research addresses as well the third variable that conditions physical accessibility: the inclination of surfaces. This influences the configuration of places with altim-

etric disparities greater than a half meter. Axial and transversal planimetric dimensions, on the other hand, require specific considerations. For example, for a distance of fifty meters, a slope in the pavement slightly greater than two percent permits overcoming a disparity of a meter, including the necessary horizontal planes interposed to those which are inclined. The movement along that section of space will occur in that case in conditions of motor well-being and complete accessibility. If, however, the same disparity was to be overcome in twenty meters, the average minimum inclination necessary would increase above five per cent, limiting the conditions of motor comfort and accessibility. With only ten meters, the disparity would be overcome only with the help of steps and electro-mechanical devices, since the minimum resulting inclination would be greater than ten per cent. The project must therefore address specific expressions of the general issue of overcoming altimetric disparities. Morphometric research must in fact be used to assess if and how planimetric and altimetric structural binds are compatible with the realization of a pathway with inclined planes that can connect the levels in question. The reference to the term 'path' is significant for the structural conception of a place that is adequate for movement. The design of a series of ramps in the absence of this concept can in fact generate a set of artifacts with the correct functional requirements, composed however in space following an infrastructural, rather than a structural approach. The first proposal expresses a greater degree of functional integration than the second, for equal specifically expected mo-

tor performances. The second expresses a greater specialization of the spaces that carry out the same connection functions as the previous one.

An additional project variable influences the efficiency of the responses. Rotated on average slightly less than a right angle relative to the line of maximum inclination between the misaligned planes to be connected, paths with ramps require great attention to the spatial experience that the place can offer during movement. These, in fact, connect the levels slowly, following a path that is longer and less direct than that of the steps. The disparity to be overcome and the available spatial extension are structural binds that must be interpreted together with those regarding the performance of an axial inclination that is less than five per cent. The less the planimetric extension available, to an equal altimetric variation to overcome, the greater the need for the path to follow an alternate direction within the same spatial sector. It will therefore be important for the place to offer a perceptive reason for the repeated landscape, generating the type of well-being that is more related to an architectural structure than to an infrastructural device.

I believe that the concept just addressed is generally valid. For accessibility to amplify its potential for inclusion, it is necessary for the project to conceive places, not only spaces providing certain functions. There is a need for squares of all types and sizes, and for gardens, linear, central, small or large, that embrace the movement of people in the urban landscape, that offer the opportunity to be enjoyed in and of themselves, in addition to providing the function of connecting other places.

Also regarding the planes of movement of people, I consider two other morphometric arguments relevant: the provisions concerning axial inclinations and requirements regarding transversal inclinations. These are apparently technical details to be addressed in terms of the correct geometric and technological solutions. These variables do not have significant visual influences, and yet they condition the well-being of the people that use the spaces and therefore also their overall quality.

Technical regulations provide indications regarding the maximum axial inclinations admissible so that the planes of movement of people confer accessibility to places. These are minimum quantitative standards which influence quality. Quality, however, is not obtained merely through the respect of the minimum admissible. The project in this respect has the purpose of seeking the maximum comfort that the place can express. In order to do so it is necessary to work toward an overall compositive balance in which limiting the inclination below certain maximum admissible levels is related to the resulting lengths of the pathways for the overcoming of the altimetric disparities. In general terms, whenever the space allows it, a path with a slope between two and three per cent is comfortable. Overcoming the threshold of five per cent should not be considered for paths without mechanical devices, which are usually not adequate for public open spaces, except in specific cases in places which are highly frequented and well taken care of.

The observation of reality shows how in the case of open spaces it is necessary to consider also the transversal in-

clinations of pathways. These are generally present for providing superficial discharge of rainwater, but often also for connecting to the street level, as for example in the case of crossings, driveways, and sidewalk ends. The human organism is sensitive to the slope of the planes on which it rests or moves. The search for physical balance in the presence of lateral inclinations with respect to the direction of the movement or rest generates disturbance. Transversal slopes are often very pronounced and variable also over a few meters. It is evident how in these cases it is necessary to avoid the cause. Coordinating through homogeneous sections the altimetric levels of access to the appurtenances that face the public corridor, it is possible to envisage pathways that are coplanar or raised relative to the street. Coplanarity requires the project to pay careful attention to the demarcation of the roads for motor vehicle use with respect to other public spaces. Rows of trees, for example, help in obtaining an efficient axial architectural distinction of the spatial channels, with a good degree of permeability, both concerning visual relationships and the crossing of pedestrian and bicycle corridors by vehicles moving between the road and the appurtenances lateral to it. The position of paths raised a step above the street level is typical of sidewalks. The dysfunctional effects of the usual connection between the two heights with pavements with crossed and pronounced inclination are more common in narrow sidewalks, along streets with appurtenances at different levels. In the case of transversal sections of pathways with dimensions that are equal to or greater than two metres, their pavings can be made at

the same level, supported by adequate devices for the discharge of water. For transversal motor vehicle accessibility to adjacent appurtenances it is in fact possible to introduce trapezoidal kerbs with a one over three inclination along the side of the street, without generating significant interference with the axial movements of people.

As for street crossings, in these cases wide bumps are advisable at the level of the pathways which they connect on both sides of the road. As for drainage of rainwater, the transversal inclinations of pavements are generally slight, under two per cent. The disturbance of these slopes on movement surfaces may not be perceived by users who do not have motor limits or problems. However, even when using a pram or a shopping cart it is necessary to be constantly correcting their trajectory which otherwise tends to follow a downward shifting curve. The disturbance may be greater when using a manual wheel-chair. It is necessary to intervene in the morphometric definition of the transversal sections of pathways and on drainage and paving technologies. In order to contain lateral inclinations, a functional segmentation of the surfaces can be carried out with the use of drains in those cases in which the paths present pronounced transversal dimensions, at least a few meters wide. However, technological solutions with high drainage capacity and velocity can be used. In any case, the aim is that of containing the transversal inclination for the discharge of rainwater to the minimum, through efficient devices designed for collaborating with it or else for eliminating its need.

I SEE THE EARTH AND ITS LIFE PROCESSES AS A MODEL FOR THE CREATIVE PROCESS, WHERE NOT ONE BUT MANY FORCES INTERACT WITH EACH OTHER WITH RESULTS EMERGENT — NOT IMPOSED.

Lawrence Halprin, 1969
(in Metta & Di Donato, 2014)

6. ADDRESSING COMPLEXITY BY WORKING ON THE LIVING

Interpreting urban habitats by working on the living was not a feature of the modern tradition, from its origins in the Renaissance to the developments which took place in the 17th and 18th centuries. Neither was it during the two first centuries of the contemporary era, although the second half of the 20th century witnessed a significant increase in knowledge and a transformation of consciousness.

Cities, which are previous to the modern era and originated as protected political, social and economic strongholds, were imbued by the culture of the alleged dominion of man over nature and ended by becoming an expression of it, both fragile and influential.

With the increase in their size and structural and functional complexity, cities became not only comfortable, efficient and safe, but also uncomfortable, vulnerable and dangerous. Their limited capacity for resilience does not condition only their recovery after disturbances and traumas. During these sort of phenomena, the capacity for absorbing and compensating their intensity and duration is in fact significant. The widespread lack of these properties limits the possibility for effectively protecting urban systems from enervations which can generate deep alterations.

The progressive increase of the technological complexity of cities has contributed in some respects to making them more rigid, limiting their capacity to react. From issues concerning the internal and external hygro-thermal comfort of buildings and the related micro-climatic regulation needs, to those regarding mobility of people and things, or the networks of energy, material and information input and output flow, everything is increasingly infrastructured, mechanised and partially automatised, also through the progressive application of artificial intelligence.

Between the 18th and 20th centuries, and in particularly with the wars and socio-economic transformations of the Short Twentieth Century, the processes of transformation of European urban landscapes have influenced identities, acting widely and intensely on their material configurations and therefore on the recognizability of their images. This took place as a consequence of the consumption of land, the degradation of spaces, the gentrification of central areas and the ghettoisation of the outskirts. It happened also through the homogenization of languages and the trivialization of places. Without possibilities for appeal, reality shows as a minority everything that managed to resist these phenomena. However noble, these are exceptions which confirm the rule of yielding to prevailing processes.

What are the capacities revealed by humans? Not those concerning the dominion over nature, nor those regarding a technological liberation from it. Humans have rather demonstrated a capacity for deeply altering the natural relationships and dynamics which in ancient cultures, not long ago in the history of the world, were a preroga-

tive of nature itself and of the divinities inspired by it. We have adopted aleatory ways of conceiving our distinction from nature, to the point of generating an improper abstraction. We have certainly shown capacity for imagination, knowledge and invention, main levers in the evolution of our species and in the development of civilizations over the past millenia. These are still the forces that we must exert, although in more intelligent and less muscular terms. To envisage ourselves as beings and communities which are natural in addition to cultural can allow us to go down new development paths, precisely while we are involved with artificial intelligence. I do not believe both paths are necessarily contradictory.

Diana Balmori's proposal (2010) to put the city in nature therefore constitutes a request to interpret the complexity of urban habitats through the living, in order to make them less vulnerable, more resilient and performant.

Working on the living means establishing the conditions for its various forms to collaborate efficiently in the directions considered useful to set goals.

Working on the living means indirectly bringing plants into action so that they can carry out a series of functions in settlements with direct effects on the quality of life of both humans and animals.

Working on the living means also inducing actions which are useful for human beings, through a process of cultural growth as well as through direct educational experiences that the transformation of the places they inhabit can generate.

Working on the living therefore means to continue to re-

search into the potentials of what Ian L. McHarg proposed in *Design with Nature* (1969); namely to continue to critically explore trends and variations, to practice its possible applications, develop options for reducing costs and increasing benefits in environmental, social and also economic terms.

Working on the living means considering the fundamental collaborations with the wide range of the inert; to do so through the observation of both and especially of their fundamental relationships within landscapes.

Working on the living demands that the temporal dimensions of any morphological and material composition be considered. It is in fact through time that life manifests itself in space. Physiological changes in its cycles influence the relationships that every organism establishes and the possible associations it contributes to compose. The recurring changes in seasonal cycles permit the iteration of vital processes.

Working on the living therefore also means considering that human beings have a double sensibility toward the changes in time, which in turn influences their behavior. They register the direct influence on them of the passing of time and elaborate on it by modulating their own behavior. Furthermore, humans, like animals, perceive the transformation of the space that surrounds them, cyclical changes in short time spans throughout the year and transformations that take place over longer spans that they perceive during their lives. Also in these cases they assimilate the influences received, stratifying their sense within their own cognitive evolution and behavioral adaptation. First with tradition and then with history, philosophy and

science, humans have consigned the direct experiences of individuals and of their communities to the heritage of mankind, increasing its potential.

In the light of these considerations, it emerges how landscapes are spatio-temporal mediators of the relationships between humans and their habitats. Landscapes are expressions of reality which link their complexity to space, expressing it in terms of environmental, economic, social and cultural diversity. Urban habitats are relevant expressions of the world. To imagine their transformations triggers a complex series of processes that can be sustained by assuming landscapes as their common reference points, as representatives of life's relationships.

> This work on the living, which is the landscape architect's own, involves considering the notion of time that passes in the evolution of the project, and with it not just that of use but, on the contrary, the notion of maturing. This is why we consider this time as our ally: it plays a part in the approach to the project in order to put in place foundations allowing a life after that of the work in progress and its delivery. This attitude participates in a sedimentary movement where the designer doesn't look to create a "work" but to play a part in an ongoing process, where what he contributes is sometimes in opposition to what has gone before, and which will continue beyond the time he is there. Through this attitude we consider ourselves the momentary actors of the palimpsest of the city and the countryside, from one toward the other and why not the other way round? Through this opening of our eyes and this quest for knowledge […] we tackle all the scales of the project with the same attitude of encouraging the expression of the territory without nostalgia, in a temporality that will allow for others. To open up the field of possibilities (Bruel, 2010, p. 5).

To work on the living, to integrate the city in nature, are cultural stances and scientific, technical and political goals that are crucial in the search for sustainability. Today it has in urban habitats a fundamental challenge that has acquired importance together with other prior issues that are still relevant and unsolved. Problems related to the methods for the supply of resources which benefit some parts of the population of the planet at the expense of others have in fact not been solved, and the same is true concerning the issue of the consumption of non-renewable resources, at the expense in this case of future generations. Neither have the critical effects of industrial production on the planet's ecosystems been solved over the past three centuries. Others have been added, instead, related to urban growth and the increasing mobility of people and things. To the spatial diffusion and demographic growth of settlements must now be added the cultural, social and economic diffusion of urban models beyond the boundaries of cities. In Europe, agricultural landscapes connotated with urban social and economic structures are evidently more widespread than those which are truly rural. These landscapes require long-term ideas, strategies and actions. It is necessary to work toward active and evolutionary methods for preserving their material and intangible heritage. Furthermore, it is strategically necessary to seek social and economic innovation opportunities for the rehabilitation of rural areas in terms of new relationships between producing and dwelling. Yet at the same time we must pay attention to urban dynamics, committing energy to imagination, research, as well as to developing ideas and crystallizing actions. It is necessary

to address complexity also in terms of seeking the human well-being that can be obtained from living sustainable urban landscapes. It is indicative that the Aalborg Charter on urban sustainability (1994) was updated in 2004 with the title *Inspiring Futures*. Interpreting contemporariness means virtuously governing the existing, as well as imagining and progressively building the near future; it means being active players who are aware of the traditions of the present-day and future generations. *Cities leading the way to a better future* is the title of a large dossier on the *State of European Cities* (E.C., U.N., 2016). In this as in other documents concerning urban sustainability, landscapes are not generally mentioned, they do not take on an explicit meaning and are not ascribed a strategic role. This is in line with the stance of the European Commission; the same cannot be said for that of the European Council, which is expressed in the *European Landscape Convention* (EC, 2000). The role of landscape in human development established by the Council should be endorsed. The 'integration' of the landscape (EC, 2000, 5d) is to be pursued in a systematic and concrete manner in order to make sustainable all policies, plans and projects that influence it, conditioning the quality of life (Paolinelli, 2015c). It is not important, however, nor negative in itself, that the landscape is not attributed meanings and aims in the establishment of EU policies and strategies for sustainability. In function of actual level of awareness and will, it is possible to grasp the deep meaning of the landscape as a relational resultant, a dynamic spatio-temporal palimpsest, synthesis of the relationships between humans and environments in the search for answers to their needs in terms of

imagining and organizing their own habitats. The explicit and specific reference to the category of the landscape in relation to a topic or to a series of topics may seem as more concrete, but would probably be more limiting. In Italy, for example, an important institutional and regulatory tradition isolates the landscape within a system of rules and competencies expressly devoted to it, as if it were an entity with a life of its own and not the result of a series or relationships between several factors and processes.

Different, and far more appropriate, although difficult to obtain, is the landscape conception of the policies, plans and projects which determine the processes and actions that transform landscapes.

Considering the landscapes themselves as guiding references for the conception of their transformations and therefore for the formation of habitats is quite simply a logical option. Landscapes in fact express reactions to the phenomena that affect them and therefore the conception of the project can use their properties as resources that can be activated for its own specific purposes, to the extent that these aims are coherent with the structures and functions of the landscapes themselves. These are opportunities which can contribute to the satisfaction of social and economic needs through the development of deep links with the features of the identity of each context. The answers that emerge have the fundamental property of falling under the specific levels of natural and cultural freedom that landscapes indicate for the sustainability of actions and transformations. This influences the adaptative capacity of their ecological and sociological systems.

High-quality landscapes are generally connotated by a wide range of functional capacities. The project can recognize and safeguard them, also due to the opportunity to capitalize on them. It can do so by paying close interpretative attention to the risks of morpho-functional specialisation of spaces, in which it is easy to incur for the various reasons that I have considered. The landscape project of urban transformations is usually called to collaborate in the search for answers to a variety of collective needs. Many functions of spaces confer to their urban formations environmental and social properties with significant and observable economic effects: the depuration of the air and of surface waters, the protection and supply of water-bearing strata, the acoustic safeguarding of open spaces, the hydraulic protection of settlements, infrastructures and productive activities, the hydrological and hydraulic efficiency, but also the micro-climatic regulation of exterior and interior spaces, as well as the scenic identification of places and the visual mediation or spatial separation of conflicting uses. We learn how to know and use these qualities by observing efficient landscapes. These cannot be borrowed from them by designing excessively mechanistic compositions in which spatial separation responds to reasons of functional specialization. The search for sustainability in urban landscapes through the planning of their transformations does not require separate methods but rather their integration, it does not contemplate expressiveness as an aesthetic addition, but includes it as a necessary requirement. The expression which includes the living confers to places and landscapes a deep quality of beauty.

Urban Beauty! (2013) is the title Anna Lambertini has chosen in order to transmit the meaning of a research in which she has identified, described and composed a series of contemporary projects of landscape architecture. The book allows the reader to follow a variety of paths, oriented by a common denominator. We can perceive, through the concrete nature of things imagined, designed and made, how powerful innovation is, as well as how practicable it actually is.

The project can make the beauty inherent in sustainability emerge and can stimulate the understanding of its meaning. In this respect I wish to retake the position of Elizabeth K. Meyer (2008), especially certain particularly significant passages.

> Sustainable landscape design flourishes when fixed categories are transgressed and their limits and overlaps explored. […] Sustainable landscape design must do more than function or perform ecologically; it must perform socially and culturally. […] Nature is not out there but in here, interwoven in the human urban condition. Hydrology, ecology and human life are intertwined.
> […] Ecological mimicry is a component of sustainable landscape design, but the mimicry of natural processes is more important than the mimicry of natural forms. […] Natural-looking landscapes may not be sustainable in the long term, as they are often overlooked in metropolitan areas.
> […] The recognition of art is fundamental to, and a precondition of, landscape design. This is not a new idea […].
> […] Sustainable landscape design should be form-full, evident and palpable, so that it draws the attention of an urban audience distracted by daily concerns of work and family, or the over-stimulation of the digital world.
> […] The experience of hypernature-designed landscapes that reveal and regenerate natural processes/structures

through the amplification and exaggeration of experience, and that artistically exploit the medium of nature – is restorative. A beautiful landscape works on our psyche, affording the chance to ponder on a world outside ourselves. Through this experience, we are decentered, restored, renewed and reconnected to the biophysical world. The haptic, somatic experience of beauty can inculcate environmental values. […] The experience of beauty, a process between the senses and reason, an unfolding of awareness, is restorative. By extension, the aesthetic experience of constructed hyper-nature is transformative, not simply in the nineteenth-century terms or practices known to Olmsted. Rather, aesthetic experience can result in the appreciation of new forms of beauty that […] reveal previously unrealized relationships between human and non-human life processes.

[…] Beautiful sustainable landscape design involves the design of experiences as much as the design of form and the design of ecosystems. These experiences are vehicles for connecting with, and caring for, the world around us. Through the experience of different types of beauty we come to notice, to care, to deliberate about our place in the world.

[…] There will be as many forms of sustainability as there are places/cities/regions. These beauties will not emulate their physical context but act as a magnifying glass, increasing our ability to see and appreciate the context.

[…] The intrinsic beauty of landscape resides in its change over time. Landscape architecture's medium shares many characteristics with architecture, dance and sculpture. Our medium is material and tactile; it is spatial. But more than its related fields, the landscape medium is temporal. Not only do we move through landscape, the landscape moves, changes, grows, declines. […] Since sustainable landscapes reveal, enable, repair and regenerate ecological processes, they are temporal and dynamic. Sustainable beauty arrests time, delays time, intensifies time; it opens up daily experience to what Michael Van Valkenburgh calls "psychological intimate immensity," the wonder of urban social and natural ecologies made palpable through the landscape medium […] (Meyer 2008, 15-19).

Black gold is a product of deep processes of life on Earth; its discovery shook and dislocated the history of humanity. The changing manifestation and flowing of life expresses a fundamental beauty, recognized through a solid base of common sense. The distance between these two precious resources for humanity taken as an example, one material, the other intangible, provides an indication as to how vast and unexplored the "treasure chest" of life can be. To continue probing into it with ideas could reveal its hidden parts and, even more so, some of its unknown applications. The capacity of adaptation and reaction of the living can be investigated through collaborative efforts aimed at valorising it in order to provide answers to human needs while safeguarding it. That which generates life, in the long term, is more powerful than that which destroys and kills. Proof of this can be had through the observation of the secondary ecological successions of the places and landscapes that have suffered deep alterations to their structures and functions. In the absence of one factor of disturbance reactions follow which generate a variety of opportunities for the successions that involve organisms that are more demanding than those that are remediatory, ruderal or pioneer, until reaching sociological processes which witness the return of humans, in different guises and with new needs. In order to aim research and projects toward the living and to capitalize resources requires believing and investing in time which, however, is ultimately more powerful than short-term perspectives and interventions which do not rely on it. Urban habitats will therefore be better, fitter and more beautiful, if we can manage to more effectively use the resources of life in their evolution.

LANDSCAPE IS NOT A BIG GARDEN, JUST AS A CITY IS NOT A BIG ARCHITECTURE. NOT ONLY THE SCALE BUT THE NATURE OF THE PROBLEM DIFFERS.

Jusuck Koh, 2013

The definition and testing of solutions sensitive to scale, to systemic structures and to the complexity of urban habitats has possibilities of being effective, some of which have been proven, and others that can be perceived intuitively. Sectorial and fragmented approaches and processes, more comfortable and directly operative, are not the same thing. Sectors and fragments can induce criticalities in the complex questions regarding collective spaces. Sectors induce self-referential behaviors and separate decisions and actions, generating procedural inefficiency and spatial incoherence. Fragments worsen them, generating deficiencies in terms of accessibility and psycho-physical well-being.
Exploring the word integration in the concreteness of the project, we can imagine and develop actions which converge on two main categories of objectives: the multiplicity of the functional capacities of open spaces and their figurative and expressive identities. It is a powerful approach, as can be observed in numerous authors and works, but first of all in the landscapes themselves which feature good qualities. Their figurative and expressive capacities do not depend on added connotations, on ephemeral images, but on their structural and functional features and

on the dynamics they express. Figurative capacities influence recognisability and therefore part of the identity of landscapes. Expressive capacities influence emotions and thus part of their attractiveness. Through the multiple functions of their structures, life continuously evolves and transmits fundamental messages. We have many opportunities to learn from landscapes. We can still attempt to work with nature, to see it and to use it as an ally, rather than to consider it a priori as an opposing party. So we can rethink of ourselves as part of nature, rather than alien to it. We can think more and foremost of our actions, rather than only later to its reactions. As cultural animals, we are a peculiar part of nature. Culture is something we produce while in first person thinking and acting.

Looking at the relationships between nature and culture in the evolution of habitats, landscapes are sources of knowledge and inspiration, but also the recipients of imagination and actions.

Landscapes are rather more than their images in views and panoramas, they are in fact agents and reagents of which we are both actors and spectators. The problems are therefore not to be posed in terms of the conflicts between conservation and transformation, but in those critical concerning the quality and quantity of the actions related to these profiles.

The project is the tool for the definition of sustainable interventions, for crystallizing values, solving problems and seizing opportunities. It is always worth considering that

> […] no regulation, no rule, no bind can guarantee a correct evolution […] of the landscape (Guccione 2017, p. 7).

We need to be able to cultivate with determination cultural, as well as scientific and technical awareness, in order to understand landscapes and to develop our capacities apprehending and experimenting with whatever is recognized as useful in them. The efficiency and effectiveness of landscapes in fact show possible directions for the evolution of approaches and processes also concerning the transformation of urban habitats, in the various configurations they have taken on.

Sharp thoughts and gazes should be directed toward reality and the possible triviality of its interpretations. The transformation that is not imposed for being uncommon or original is not necessarily trivial. What is trivial is anything that diminishes the identity of a place, consuming its resources and ignoring its deep structures. What is trivial is the repetition in time and space of this type of actions which, in addition to their effects on places, can induce a crisis of identity in the landscape that they belong to.

In cases of degradation it is possible to seek with the sensitive eyes of creativity, to glimpse the beauty of life that goes on and to identify paths to possible regenerations. In degradation we can read the tension of a place toward its future, in function of its present and its past. In banality, instead, are found poverty of meaning, weakness of expression, functional fragility and inability to adapt.

Banality can manifest itself also in efficient contexts, in which everything is in order, regular, preserved, in other words looked-after. Banality can coexist with opulence, with the excess and waste of available economic and environmental resources.

The project has great direct responsibility when it lacks the necessary sobriety for interpreting sustainability and the figurative and expressive force for revealing the significant traits of its beauty.

Banality expresses, even in the absence of degradation, an ugliness that deeply penetrates the perception of places and landscapes and can become standardized in the culture of people and communities as a condition of existence. Banality is unsustainable; it is so in complex terms, combining all the types of crucial variables, from ecology to economics, and from ethics to aesthetics.

Banal can thus also be a synonym of standardized, homogenized, inexpressive or ecologically simplified and fragile, economically weak and unattractive, ethically inadequate and questionable, aesthetically poor and awkward, even when surrounded by abundance.

Considering what can corrupt the transformation of places and the landscapes they belong to induces to recognize the opposition to banality as a fundamental goal to which energy must be devoted in order to orient the project in different directions.

> If the landscape is relation – between nature, culture, society and the individual –, relation between different fields of though and knowledge regarding space, the landscape project is the intervention on the evolution of this space: space of differences, therefore, of 'thresholds' and never simple sum of parts. If the landscape is an image written on the soil of a society and of a culture, it is a language with its own grammar and its own logic – space of encounters, juxtaposition, superposition, interpretation, place of conflicts and compromises – the landscape project is the dialogue between this language and that of the interventions it re-

> acts with. Landscape as open field: geography of hybrid answers, local and global, plural and specific, capable of being one and many at the same time, of the place and of many places together. An 'other' field of meaning between the city and the territory, between the urban and the rural (Colafranceschi, 2007, p. 13).

During the 20th century there were many examples of architectural and landscape banality, which expressed a marked critical inertia and consolidated a fundamental inability for change.

I think that it is necessary to make a dent into apparently unalterable convictions and practices, focusing critical attention on the possible primary factors for the banalisation of places and landscapes. One of these which I have repeatedly referred to is the specialization of the functions of open spaces. A concomitant cause, the sectorialisation of competencies, probably constitutes in itself a second primary factor, which in turn has an endogenous concomitant cause in the specialization of knowledge, a direct factor involving the apparent procedural simplification which has an indirect effect on places and landscapes in terms of structural and functional trivialization. Finally, also technological standardization and the homogenization of the architectural language of spatial transformation have an effect on trivialization, well beyond the local, or even national boundaries. In so far as we recognize these factors as plausible, we also need to analyze their concreteness, to understand their possible combined effects, in order to devise a way to address them.

Far from addressing the subject in a comprehensive manner, in this book I have discussed some specific comple-

mentary topics. I present here some general points which link them, referring back to the introduction with the aim of highlighting their overall relevance.

The specialization of the functions of spaces has recent origins, which in my opinion it is reasonable also to link to the elements that influenced the zonal conception of rationalist urban planning, around which an entire period of 20th century spatial planning was structured and developed. As the limits to that approach to the transformation of urban landscapes and to the urban transformations of rural landscapes became apparent, functional specialization entered into other fields of thought and practices of spatial configuration, driven by several technological and economic factors. We could consider some relevant examples: the transition of agriculture toward industrial monocultures, with the substitution of the socio-economic structures that had produced the previous rural landscapes; the introduction of a new type of street space, which takes on the name of infrastructure, consistent with the meaning of being among, but also with the need of a lexical distinction due to the distance from the archetype of the street as poly-functional collective place; the separation of productive activities from urban nuclei and from the residential fabric in general, even those related to crafts, which are not harmful, and some commercial or administrative; the inexorable reduction of space allocated for surface waters, progressively forced to follow canal-shaped corridors; the consequent obstinacy in building separate spaces for hydraulic compensation of floods and spates, with approaches which in fact exclude hydrol-

ogy as a complex of variables fundamental for the sustainability of transformation and management models.
The sectorialisation of competencies is an indirect factor of spatial trivialization, yet this does not make it a secondary cause. In fact it induces a marked fragmentation in procedural and decisional terms, which in turn often generates a fragmentation in its application, defects in coordination and consequently also regarding the coherence of the interventions. Coming back to the subject of waterways, in Italy it is well known how the technical-administrative separation of competencies in a certain place often involves a basin authority, a land drainage authority, a public works office, and even a specific legislative body. Even if the question involved only the coordination of the thoughts, decisions and actions of several institutions, the mere fact of enunciating them would give us an idea of its complexity. Yet things are even more complex, since these institutions have an instrumental stance concerning the general objectives of risk protection and the well-being of people and their communities. In addition to these entities, other stakeholders participate, such as municipal, provincial and regional administrations, who have their own approaches and budgets, and who are usually incapable of synergy concerning common objectives and actions. This marked fragmentation translates into the landscapes, which register it through their own sensitivity as spatio-temporal palimpsests. Waterways are thus emblems of the fragility of the paradoxical condition of belonging to everyone and, for the same reason, to no one.

The separation of competencies could have been incentivated by a questionable interpretation of the meaning and utility of the specialization of scientific and technical knowledge. The arrival of mechanistic scientific models induced a dominance of analytic approaches, which inevitably presented problems in those cases where decision-making requirements were not competently coordinated with appropriate capacities of diagnostic synthesis. The planning and design of the transformation of spaces was clearly affected by this. It is obvious that specialization is useful in terms of acquiring in-depth knowledge, and that consequently it contributes to understanding the true complexity of places and landscapes. It is however also evident that the same approach is decidedly faulty in those cases where the thematic line of the analysis is accompanied by an equally thematic line of the diagnosis and even more so of the planning and design.

Quite different, instead, is the case in which the usefulness of specialization is effectively taken advantage of in terms of the depth of sectorial knowledge, converging in cogent diagnostics that manage the transition from the separation of the analysis to the synthesis of the plan and the project. In the field of landscape studies, the potential usefulness of a shared vision that gathers together scientific and technical disciplines, allowing those of an analytic-diagnostic nature to better enter into a dialogue with those that are synthetic-projectual. Among the many possible examples, it is worth mentioning the role of hydrography as related to geography, of hydrology as related to ecology, and finally of geology, sociology, history and oth-

er synthetic fields as related to urban planning, architecture and landscape architecture and to the interpretative dimensions characteristic of planning and design.

Let me finally consider the last two hypotheses concerning the standardization of spatial transformations and the homogenization of their architectural languages.

The establishment of more or less unified technical regulations and the industrialization of technologies have induced homogenization, as has happened in the new construction and renovation of buildings, as well as in the case of open spaces, and therefore also for landscapes, which include both. The loss of landscape rootedness in habitat transformations which until the 19th century resulted from a strong technological dependency from local resources is partly inevitable, due to the conditions that industrial production generates concerning construction costs, as well as to the improvements in terms of performance induced by technological development.

A double link connects the standardization of regulations and technology with the homogenization of the spatial languages of transformations. At times the regulatory component expresses morphometric or even chromatic binds. The implementation of projects with respect to regulations permits as well carrying out careful assessments and critical interpretations, which in time can bring about useful evolutions of the same precepts they have had to follow. The technological interpretation of the compositions is available, to a great extent, in the culture of the project. No regulatory or economic bind is so pressing to induce the complete inevitabili-

ty of homogenized and homogenizing spatial languages and compositions.

In the light of these factors that influence the quality of places and landscapes, we could try to direct the processes involved in different directions, toward the combination of knowledge, competencies and functions, seeking the identification of spaces as places and landscapes. This protects from banality and contributes to the imagination and realization of sustainable transformations. The complementary ethical dimensions of ecology and economy can generate contemporary aesthetic expressions which humanity is perhaps discovering in those crucibles of thought and work that still, after millenia, cities represent. I believe we must continue to call them that way, in their various forms, welcoming mutations and semantic variations, rather than substituting the term with others that do not represent the vital nexus between the material and intangible realities which throughout history have identified cities.

Ombrosa no longer exists. Not in the ancient city, either Greek or Roman. Not in the Mediaeval city nor in that of the Renaissance, or of the 17th or 18th centuries. Ombrosa did not exist either in the urban innovations of the 19th and 20th centuries. Until the first half of this last century, however, cities were aggregate formations, more or less extended, yet always finite, within clear limits and contained dimensions. They included a county as direct landscape appurtenance, both scenic, economic and ecological *ante litteram*.

Things are different today and the demographic and so-

cio-economic trends of the Planet do not show any reversal in the widespread urbanization of its landscapes. The need for Ombrosa as a habitat is human, no more, no less. It should not be confused with aspirations to luxury and to exclusiveness. It should rather be interpreted also when it is a latent form, not expressed in the explicit terms of its full awareness.

A network of increasingly dense and performant infrastructures connects the urban constellation that formed and develops on Earth. The digital network eliminates distances in terms of the sharing of information. Human habitats change in scale, although the spaces of the Planet have the same finite dimensions as they did when mankind appeared on it.

Ombrosa may yet exist; as everything that has not been, it is necessary to imagine and experience it; without ambitions that fuel the risk of 'utopias of escape'. We can create it by working on transforming the existent through interventions which produce tangible effects, with a relative decision-making and implementing autonomy at the scale of the City. It is this type of process that from the local can dare to scale in the direction of the global. It is at this level and type of process that landscape design can provide a contribution, together with the other competent disciplines.

In order to move forward along a path that leads to this it is necessary to share a few things in an open-minded and concrete manner. This book concludes by recalling them. I could not do otherwise, or do more, since they are open questions.

Man is not free of nature's demands, but becomes more dependent upon nature. Natural resources are where they are — not where we wish them to be. Those who plan for the future must understand natural resources and processes. These are the basis of life and the prerequisite for planning the good life (LAF, 1966).

Across borders and beyond walls, from city centers to the last wilderness, humanity's common ground is the landscape itself. Food, water, oxygen – everything that sustains us comes from and returns to the landscape. What we do to our landscapes we ultimately do to ourselves (LAF, 2016).

The landscape is an important part of the quality of life for people everywhere: in urban areas and in the countryside, in degraded areas as well as in areas of high quality, in areas recognized as being of outstanding beauty as well as everyday areas (EC, 2000).

"Landscape planning" means strong forward-looking action to enhance, restore or create landscapes (EC, 2000). Integrate landscape into […] regional and town planning policies and in […] cultural, environmental, agricultural, social and economic policies, as well as in any other policies with possible direct or indirect impact on landscape (EC, 2000).

We vow to create places that serve the higher purpose of social and ecological justice for all peoples and all species. We vow to create places that nourish our deepest needs for communion with the natural world and with one another. We vow to serve the health and well-being of all communities (LAF, 2016).

A CIVILISATION EVOLVES BY INTERPRETING THE CONTEMPORARY. ABSTRACTION FROM THE PRESENT DEPRESSES CREATIVITY, BUT THE GAZES BEYOND THE DECEPTIVE APPEARANCES OF ACTUALITY NOURISH IT. CREATIVITY NEEDS THE INACTUAL.

BIBLIOGRAPHY

Agamben G. 2008, *Che cos'è contemporaneo*, Nottetempo, Roma.

Alberti, M., Marzluff, J.M. 2004, *Ecological resilience in urban ecosystems: Linking urban patterns to human and ecological functions*, «Urban Ecosystems», no.7, pp. 241–265.

Amidon, J. 2005. *Hypernature*. In: Meyer E. K. 2008, cit.

Balmori D. 2010, *A Landscape Manifesto*, *Yale Universit*y Press, New Haven and *London*.

Bell S., Sarlöv Herlin I., Stiles R. 2012, *Exploring the boundaries of Landscape Architecture*, Routledge, Taylor & Francis, Oxford.

Bellmunt J. 2006, *Paesaggio come attrazione*, in F. Zagari (a cura di), *Questo è paesaggio 48 definizioni*, Mancosu, Roma.

Booth N.K. 1990, *Basic Elements of Landscape Architectural Desig*n, Waveland Press, Illinois.

Bruel A. S. 2010, *Avant-propos*, in A. S. Bruel, C. Delmar C. (a cura di), *Le territoire comme patrimoine*, ICI Interface, Paris.

Calvino I. 1957, *Il Barone Rampante*, Einaudi, Torino.

Calzolari V., Álvarez Mora A. (a cura di) 2012, *Paesistica / Paisaje*, Instituto Universitario de Urbanìstica, Universidad de Valladolid, Valladolid.

City of Copenhagen 2011, *Copenhagen Climate Adaptation Plan*, Miljø Metropolen, Copenhagen.

City of Copenhagen 2012, *Cloudburst Management Plan*, Copenhagen.

City of Copenhagen 2013, *Climate Resilient Neighbourhood*, Copenhagen.

Colafranceschi D. 2007, *Un Mediterraneo. Progetti per paesaggi critici*, Alinea, Firenze.

Commissione Europea 2012, *Attuazione della strategia tematica per la protezione del suolo e attività in corso*, Relazione della Commissione al Parlamento europeo, al Consiglio, al Comitato Economico e Sociale Europeo e al Comitato delle Regioni, COM(2012) 46 final, 13.2.2012, Bruxelles.

Commissione Europea 2017, *Riesame dell'attuazione delle politiche ambientali dell'UE Relazione per paese – Italia*, Documento di lavoro dei servizi della Commissione che accompagna la comunicazione al Parlamento, al Consiglio, al Comitato Economico e Sociale Europeo e al Comitato delle Regioni, SWD(2017) 47 final, 3.2.2017, Bruxelles.

Corajoud M. 2006, *Esplorare i limiti, oltrepassarli*, in F Zagari (a cura di), cit. Estratto da: Corajoud M. 2000, *I nove compiti necessari per una propedeutica all'apprendimento del progetto di paesaggio*, in J. L. Brisson, a cura di, "Il giardiniere, l'artista e l'ingegnere", Parigi.

Corner J. 2014, *The Landscape Imagination*, Princeton Architectural Press, New York.

Cozzi V. (a cura di), 2013, *Piantare alberi in città*, Fondazione Minoprio, Como.

Craul P. J. 1985, *Urban Soils*, in: L. J. Kuhns, J. C. Patterson (eds.), *Metria*: 5. *Selecting and Preparing Sites for Urban Trees*, Proceedings of the fifth conference of "The Metropolitan Tree Improvement Alliance', The Pennsylvania State University, University Park, Pennsylvania, May 23-24, 1985.

Crespi F., 1997, *Crisi e rinascita dell'utopia*, in L. Mumford1997 (ed. orig. 1922 e 1962), cit.

Crowe S. 1981, *Garden Design*, Packard Publishing Limited, Funtington, West Sussex.

Czerniak J. 2000, *Appearance, Performance: Landscape At Downsview*, in: *Downsview Park Toronto, Prestel Verlag, Munich and New York*, cit. in: Meyer E. K. 2008, cit.

Di Carlo F. 2012, *Forme dell'acqua. Cinque riflessioni sul progetto dell'acqua nel paesaggio urbano*, in F. Ghio, A. Metta, L. Montuori (a cura di), *Open papers*, Edizioni ETS, Pisa.

Donadieu P. 2014, *Scienze del paesaggio. Tra teorie e* pratiche, trad. it. di Inserillo A., Edizioni ETS, Pisa, orig. ed. Donadieu P. 2012, *Sciences du paysage. Entre Théories et pratiques*, Lavoisier, Cachan, France.

Echols S., Pennypacker E. 2015, *Artful Rainwater Design. Creative Ways to Manage Stormwater*, Island Press, Washington DC.

European Commission (E.C.), United Nations (U.N.) 2016, *The State of European Cities 2016. Cities leading the way to a better future*, European Commission, UN-Habitat, London.

European Environment Agency 2011, *Urban soil sealing in Europe*, European Environment Agency, Copenhagen.

European Environment Agency 2014, *Progress in management of contaminated sites*, European Environment Agency, Copenhagen.

European Council (EC), 2000, *Landscape European Convention*, Florence.

Ferrara G. 1968, *L'Architettura del paesaggio italiano*, Marsilio, Venezia.

Ferrara G. 2017, *L'Architettura del* paesaggio *italiano*, Marsilio, Venezia.

Ferrini F., Fini F. 2017, *Amico albero. Ruoli e benefici del verde nelle nostre città (e non solo)*, Edizioni ETS, Pisa.

Ferrini F., Fini A., Konijnendijk C. C. 2017, *Routledge handbook of urban forestry*, Routledge, London.

Florence Accessibility lab (FAL) 2013, *Accessibilità al patrimonio culturale e sviluppo umano*, brochure dell'unità di ricerca Florence Accessibility lab (FAL), Dipartimento di Architettura, Università degli Studi di Firenze, Firenze.

Fontanari E. 2006, *Paesaggio e progetto*, in F. Zagari (a cura di), cit.

France R. L. ed. 2002, *Handbook of Water Sensitive Planning and Design*, Lewis Publishers, Boca Raton, Florida.

Ghio M., Calzolari V. 1961, *Verde per la città. Funzioni, dimensionamento, costo, attuazione di parchi urbani, aree sportive, campi da gioco, biblioteche e altri servizi per il tempo libero*, De Luca Editore, Roma.

Guccione B. 2017, *Maestri di paesaggistica. Progetti e interviste*, Edifir, Firenze.

Herzog T.R., Leverich O.L. 2003, *Searching for legibility*, «Environment and Behavior», 35(4), 459-477.

Holden R., Liversedge J. 2014, *Landscape Architecture. An introduction*, Laurence King Publishing Ltd, London.

Holtan M.T., Dieterlen S.L., Sullivan W.C. 2015, *Social Life Under Cover: Tree Canopy and Social Capital in Baltimore, Maryland*, «Environment and Behavior», 47(5), pp. 502-525.

Home R., Bauer N., Hunziker M. 2010, *Cultural and Biological Determinants in the Evaluation of Urban Green Spaces*, «Environment and Behavior», 42(4), pp. 494-523.

Howett C. 1987, *Systems, Signs, Sensibilities: Sources for a New Landscape Aesthetic*, «Landscape Journal» 6(1), pp. 1-12, cit. in E. K. Meyer 2008 cit.

Koh J. 2013, *On a Landscape Approach to Design. An eco-poetic interpretation of landscape*, Wageningen University, Wageningen.

Kuo F. E., Bacaicoa M., Sullivan W.C. 1998, *Transforming inner-city landscapes: Trees, sense of safety, and preference*, «Environment and Behavior,» 30(1), pp. 28-59.

Lambertini A. (2013). *Urban Beauty. Luoghi prossimi e pratiche di resistenza estetica*, Editrice Compositori, Bologna.

Landscape Architecture Foundation (LAF) 1966, *A Declaration of Concern*, LAF, Philadelphia.

Landscape Architecture Foundation (LAF) 2016, *New Landscape Declaration*, LAF, Philadelphia.

McHarg Ian L. 1969, *Design with Nature*, Doubleday & Company, New York.

McPherson E.G., Rowntree R.A. 1993, *Energy conservation potential of urban tree planting*, «Journal of Arboriculture», 19(6), pp. 321-331.

Metta A., Di Donato B. 2014, *Anna e Lawrence Halprin. Paesaggi e coreografie del quotidiano*, Libria, Melfi.

Meyer E. K. 2008, *Sustaining beauty. The performance of appearance*, «Journal of Landscape Architecture», 3:1, pp. 6-23.

Morabito V. ed. 2014, *Landscape Accessibility*, Aracne, Roma.

Morabito V. 2014, *Landscape accessibility: a holistic imagination*, in V. Morabito, ed. 2014, cit.

Mumford L. 1997 (ed. orig. 1922 e 1962), *Storia dell'utopia*, Donzelli, Roma.

Murphy M. D. 2016, *Landscape Architecture Theory. An Ecological Approach*, Island Press, Washington DC.

Nadel I.B., Oberlander C.H. 1987, *Alberi in città*, Calderini, Bologna.

Nowak D.J., Noble M.H., Sisinni S.M., Dwyer J.F., 2001, *Assessing the US Urban Forest Resource*, «Journal of Forestry», March, 37-42.

Paolinelli G. 2011 (a cura), *Habitare. Il paesaggio nei piani territoriali*, FrancoAngeli, Milano.

Paolinelli G. 2014a, *On Open Spaces Specialization*. In: Morabito V. ed., cit.

Paolinelli G. 2014b, *Paesaggio e accessibilità della città storica*, in G. Paolinelli, M. Zoppi (a cura di), *Conoscere per progettare. Il centro storico di Firenze*, DIDA Dipartimento di Architettura, Firenze.

Paolinelli G. 2015a, *Pistoia Ongoing Masterplan. Notebook 1*. DIDA Dipartimento di Architettura, Firenze (http://issuu.com/dida-unifi/docs/ongoing).

Paolinelli G. 2015b, *Pistoia Ongoing Masterplan. Notebook 2*. DIDA Dipartimento di Architettura, Firenze (http://issuu.com/dida-unifi/docs/ongoing_2).

Paolinelli, 2015c, *Progetto e 'integrazione' del paesaggio*, in A. Maniglio Calcagno (a cura di), *Per un paesaggio di qualità. Dialogo su inadempienze e ritardi nell'attuazione della Convenzione Europea*, FrancoAngeli, Milano.

Paolinelli G. 2016, *Pistoia Ongoing Masterplan. Notebook 3*. DIDA Dipartimento di Architettura, Firenze (http://issuu.com/dida-unifi/docs/ongoing_3).

Robinette G.O. 1984, *How To Make Cities Liveable*, Van Nostrand Reinhold Company, New York.

Roya S., Byrneb J., Pickeringb C. 2012, *A systematic quantitative review of urban tree benefits, costs, and assessment methods across cities in different climatic zones*, «Urban Forestry & Urban Greening», no.11, pp. 351-363.

Spirn A. W. 1984, *The Granite Garden: Urban Nature*, BasicBooks, New York.

Spirn A. W. 1988a, *The Poetics of City and Nature: Toward a New Aesthetic for Urban Design*, «Landscape Journal», 7(2), pp.108-126, cit. in: Meyer E. K. 2008, cit.

Spirn A. W. 1988b, *The Language of Landscape*, Yale University.

Spirn A. W. 2014, *Ecological Urbanism: a Frame for the Design of Resilient Cities*, in: F. O. Ndubisi, *The Ecological Design and Planning Reader*, IslandPress, Washington.

Stamps A.E. 2005, *Enclosure and safety in urbanscapes*, «Environment and Behavior», 37(1), pp. 102-133.

Steiner F. 2002, corrected printing 2016, *Human Ecology. How Nature and Culture Shape Our World*, Island Press, Washington DC.

The Metropolitan Tree Improvement Alliance 1985, *METRIA 5: Selecting and Preparing Sites for Urban Trees*, Proceedings of the Fifth Conference of the Metropolitan Tree Improvement Alliance The Pennsylvania State University University Park, Pennsylvania May 23-24, 1985 https://www.ces.ncsu.edu/fletcher/programs/nursery/metria/metria05/index.html.

Tiezzi E. 2001, *Tempi storici, tempi biologici*, Donzelli, Roma.

Tiezzi E. 2010, *Sustainability in a Changing World, Comment Visions*, Euronews (intervista: https://www.youtube.com/watch?v=W2DIpohdUI0).

Toccolini A. 2002, *Piano e progetto di area verde. Manuale di progettazione*, Maggioli, Rimini.

Toschi L. 2017, *L'albero, l'artificio e l'energia della complessità (prefazione)*, in F. Ferrini, F. Fini, cit., p. 11.

Trees&Design Action Group 2010, *No Trees No Future. Trees in the urban realm*, T&DAG, UK.

Trees&Design Action Group 2011, *The Canopy*, T&DAG, UK.

Trees&Design Action Group 2012, *Trees in the Townscape. A guide for Decision Makers*, T&DAG, UK.

Trees&Design Action Group 2014, *Trees in Hard Landscapes. A Guide for Delivery*, T&DAG, UK.

Trowbridge P.J., Bassuk N.L. 2004, *Trees in the urban landscape. Site assessment, design and installation*, Wiley, Hoboken NJ.

Turner T. 1990, *Was 'Landscape Architecture' a good idea?*, «Landscape Design», no. 191, pp. 28-29.

Weller R. 2014, *Restricted Access.* In: Morabito V. ed., cit.

Zoja L. 2007, *Giustizia e Bellezza*, Bollati Boringhieri, Torino.

Zoppi M.C. 1988, *Progettare con il verde*, vol. 1. Alinea, Firenze.

IMAGE CAPTIONS

chapter	work	pages
introduction	(BC)	28-29
1	(BC)	37, 40, 48-49
	(PC)	42-43
	(SJ)	34-35
2	(BC)	54-55, 57, 62, 68, 74-75, 79-81
	(PC)	60-61
	(SJ)	67
3	(HD)	102-103
	(BC)	86-87, 89, 92, 99, 108-109, 114-115
	(PC)	94-95
4	(BC)	123, 126, 128-129, 136-137
	(PC)	120-121
	(SJ)	133
5	(BC)	143, 146-147, 150-151, 154
	(PC)	159
	(SJ)	162-163
6	(HD)	174, 180-181, 188-189
	(BC)	168-169, 176-177, 184-185
	(PC)	171, 187
conclusions	(HD)	203
final pages	(BC)	212-213
	(SJ)	220-221

HAUTE DEÛLE RIVER BANKS (HD)
Sustainable district in Lille
Lille-Lomme, Nord

Customer: Soreli for the cities of Lille and Lomme and the urban community LMCU
Partners: Profil Ingénierie, VRD – G.Pilet, Eclairagiste – Agh, Haut Débit – Venna Ingénierie & Vantellerie (pont levant) – Stucky, Ingénieurs Conseils hydraulique & structure béton (pontlevant) – Pranlas Descours, Town planner
Date: 2005-2017
Budget | Area: 28.000.000 € / 25 ha
Awards: Sustainable district 2009 special price for the rain-water treatment – Urban Development Prize 2010 – National Ecodistrict Label 2013

BOTTIÈRE-CHÊNAIE (BC)
Ecodistrict in Nantes – Park & Public Spaces
Nantes, Loire Atlantique

Customer: Nantes Métropole Aménagement
Partners: Pranlas-Descours, urban planner – SCE, Civil Civil Engineering – Confluences, Water managment
Date: 2005-2018
Budget | Area: 22.000.000 € / 30 ha

Awards: Eco-District 2009 – Graduated 1° Price for URBAN ART – 'Séminaire Robert Auzelle' – 2011 (15° édition) – Prix départemental d'aménagement Loire Atlantique 2012 – National Eco-District Label 2013

PAVÉ BLANC (PC)
Social-housing in Clamart
Clamart, Hauts-de-Seine

Customer: Immobilière 3F
Partners: Pranlas-Descours, Architecte – Tugec, VRD
Date: 2009-2015
Budget | Area: 4.800.000 € / 5 ha

ECOLOGICAL PARK IN ST JACQUES (SJ)
Saint-Jacques-de-la-Lande,Ille-et-Vilaine

Customer: Ville de Saint Jacques de la Lande
Partners: LM Communiquer, signalétique – Ouest Aménagement, écologie
Date: 2008-2015
Budget | Area: 2.300.000 € / 40 ha
Awards: First Prize for Wet Lands in Urban Situation – 2012

IMAGE CREDITS

The images in this book were published by courtesy of Atelier de Paysages Bruel-Delmar © in Paris (www.brueldelmar.fr), founded and directed by the landscape architects Anne-Sylvie Bruel and Christophe Delmar.

The image on the cover, "Auroras over Europe", was taken by the astronaut Thomas Pesquet (© ESA/NASA).

ABOUT THE AUTHOR

Gabriele Paolinelli (1965) is an architect and professor of Urbanism. He is ordinary member of the Italian Association of Landscape Architecture (AIAPP) since 1995 and affiliated member of the Italian Academic Society of Landscape Architecture (IASLA) since 2018. He obtained his PhD in Landscape Design in 2002; from 2004 to 2008 he taught Landscape Architecture and Drawing and History of Gardens at the Faculties of Architecture and of Economy of the University of Florence and at the Faculty of Agriculture at the Alma Mater Studiorum – University of Bologna. Since 2009 he teaches the MA course in Landscape Architecture at the University of Florence, where he held first the Laboratory of Landscape Planning and then the course on Landscape Design. At the Department of Architecture (DIDA), he has coordinated the syllabus in Landscape Architecture of the PhD in Architecture and leads the training and research Landscape Design Lab of the DIDA.labs system, where he also leads applied studies and consultancies for public and private entities. He is chief editor for the scientific journal of the University of Florence, *RI-VISTA – Ricerche per la progettazione del paesaggio*. He is referee for national and international journals and member of scientific committees of publishing series.

Finito di stampare per conto di
didapress
Dipartimento di Architettura
Università degli Studi di Firenze
Luglio 2018

The search for sustainability can be understood as an abstract "utopia of escape", whereas in fact its concrete nature is interesting as a "utopia of reconstruction". Landscape Architecture is an efficient tool for the sustainable transformation of urban habitats. This book proposes a series of issues considered as significant for interpreting contemporariness which are aimed at identifying the necessary elements for trans-disciplinary dialogue and the raising of cultural awareness. Urban settlements are the most impactful and vulnerable human habitats. They are influenced by changes in the world, upon which they too have an influence, and require specific design efforts and attention. The wish to illustrate the book with an exemplary sample of its contents led the choice towards the work of the Atelier de Paysages Bruel-Delmar in Paris. It is a concrete testimony to the possibility of designing the transformations of landscapes by addressing their complexity through working on the living. Looking for a sense to sustainability while discovering the beauty of this contemporary need urges us to think that it is possible to bring about utopias if we do not flee from reality.

€ 22,00

9 788833 380421